



**“REVISIÓN BIBLIOGRÁFICA PARA LA ELABORACIÓN DE
PROTOCOLO PARA EL DIAGNÓSTICO, VIGILANCIA Y
EVALUACIÓN MÉDICO LEGAL DE LESIONES
MUSCULOESQUELÉTICAS DE ORIGEN LABORAL”**

INFORME COMPLEMENTARIO

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Introducción Método de Búsqueda

Con la finalidad de recuperar artículos de mayor calidad, se emplearon las bases de datos Isi Web of Knowledge, específicamente la base de datos Web of Science el ISI Citation Report,; la primera para realizar la búsqueda de referencias y la segunda para obtener el Factor impacto de las revistas.

Las búsquedas fueron realizadas por las palabras claves proporcionadas por la contraparte y fueron acotadas por el rango de años 1995-2009.

Como en revisiones anteriores se utilizaron los operadores booleanos para efectuar las búsquedas avanzadas con conexión de términos.

Luego de la búsqueda inicial, los resultados fueron ordenados por relevancia, realizando los mapas de citas de los primeros 3 artículos para visualizar las citas retrospectivas y prospectivas de una referencia determinada, es decir, las referencias citadas y los artículos citantes del artículo original. Además, para determinar el nivel de profundidad del mapa se seleccionó sólo la primera generación.

Una vez que se obtuvo el mapa de citas, se seleccionaron las referencias que eran atingentes al tema central de la presente revisión bibliográfica.

Otras referencias fueron obtenidas mediante búsquedas avanzadas dentro de la base de datos, sin embargo, al realizar los mapas de citas no se encontraron resultados relevantes a la búsqueda.

Cabe destacar que no se obtuvieron resultados para los siguientes conceptos proporcionados por la contraparte: factor atribuible, capacidad de ganancia, capacidad de pérdida y evaluación del daño, por lo tanto fue necesario emplear otros términos de mayor amplitud para intentar recuperar documentos relacionados.

A continuación se dan a conocer los descriptores empleados en las diversas búsquedas y el No. de resultados obtenidos.

Tabla 1. Descriptores que han resultado de la búsqueda

Descriptor	Números de Resultados
Epicondylitis, work related risk	21
Epicondylitis + work- related + review	7
Epicondylitis + work related + incapacity	1
Epicondylitis + occupational health+ compensation	1
Epicondylitis + work related+compensation	5
Epicondylitis + work related + risk factor + attributable risk proportion	0
Epicondylitis + work related+profits capacity	0
Epicondylitis + work related+lost profits	0
Epicondylitis+damage evaluation	0
Evaluation damage + musculoskeletal disorder +work related	0
Epicondylitis, work related attributable risks	0
Epicondylitis, work related ,disorder attributable	0
Damage assessment + musculoskeletal disorder	0

Árboles de búsqueda

A continuación se presentan los árboles resultantes de la búsqueda realizada

Título de Artículo Central 1: Interventions to reduce work-related musculoskeletal disorders

Author(s): Silverstein B, Clark R

Source: JOURNAL OF ELECTROMYOGRAPHY AND KINESIOLOGY Volume: 14 Issue: 1
Pages: 135-152 Published: FEB 2004

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Título de Artículo Central 2: Physical and psychosocial risk factors for lateral epicondylitis: a population based case-referent study

Author(s): Haahr JP, Andersen JH

Source: OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 60 Issue: 5 Pages: 322-329 Published: MAY 2003

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34. Pehkonen, I 2009-APPLIED ERGONOMICS Evaluation of a participatory ergonomic intervention process in kitchen work

Título de Artículo Central 3: Why most workers with occupational repetitive trauma do not file for workers' compensation

Author(s): Rosenman KD, Gardiner JC, Wang J, Biddle J, Hogan A, Reilly MJ, Roberts K, Welch E

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 42
Issue: 1 Pages: 25-34 Published: JAN 2000

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18. Welch, LS 2007-INTERNATIONAL JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL HEALTH Is the apparent decrease in injury and illness rates in construction the result of changes in reporting?
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Preguntas orientadoras

A continuación se presentan los cuadros de las preguntas orientadoras y las referencias encontradas para cada una de ellas. En el cuadro superior se indican los títulos incorporados en el Informe previo y en el inferior (sin enumerar y en negrita) las que ha aportado esta nueva búsqueda.

Pregunta N° 1: Estudios de Prevalencia.

Pregunta	Referencias
1. Estudios de prevalencia	<p>1.1 Kurppa K, Viikari-Juntura E, Kuosma E, Huuskonen M, Kivi P. Incidencia de tenosinovitis o peritendinitis y epicondilitis en en trabajadores en fabricas procesadores de carne. Institute of Occupational Health, Helsinki, Finland.. Scand J Work Environ Health. 1991 Feb;17(1):32-7.</p> <p>1.2 Roto P, Kivi P. Prevalencia de epidcondilitis y tenosinovitis entre cortadores de carne. Scand J Work Environ Health. 1984 Jun;10(3):203-5.</p> <p>1.3 McCormack RR Jr, Inman RD, Wells A, Berntsen C, Imbus HR. Prevalencia de tendinitis relacionadas a desordenes en extremidades superiores en trabajadores manufactureros. Cornell University Medical College, New York, NY. J Rheumatol. 1990 Jul;17(7):958-64.</p> <p>Factor impacto: 3.151</p> <p>1.4 Luopajarvi T, Kuorinka I, Virolainen M, Holmberg M. Prevalencia de tenosinovitis y lesiones de extremidades superiores en trabajos repetitivos. Scand J Work Environ Health. 1979;5 suppl 3:48-55.</p> <p>1.5 Rahman Shiri, Eira Viikari-Juntura, Helena Varonen, Markku Heliovaara. Prevalencia y factores determinantes de epicondilitis lateral y medial: Una Población en Estudio. Am J Epidemiol. 164(11).</p> <p>1.6 Sáez Víctor, Arriagada Conrado, Marco K, Manríquez O. Prevalencia de Lesiones Músculo-Esqueléticas y Factores de Riesgo en Trabajadores de Plantas Procesadoras de Crustáceos en Chile. Cien Trab. 2004 jul/sep; 6(13).</p> <p>1.7 Grupo de estudio Pays Loire. Melchior M (Melchior, M.), Roquelaure Y (Roquelaure, Y.), Evanoff B (Evanoff, B.), Chastang JF (Chastang, JF), Ha C (Ha, C.), Imbernón E (Imbernón, E.), M Goldberg (Goldberg, M.), Leclerc A (Leclerc, A.) ¿Por qué están los trabajadores manuales en alto riesgo de trastornos de las extremidades superiores? El papel de los factores de trabajo físico en una muestra aleatoria de los trabajadores en Francia. Occupational and Environmental Med. 63(11): 754-761</p> <p>1.8 Ministerio de la Protección Social. Guía de Atención Integral Basada en la Evidencia para Desórdenes Musculo-esqueléticos (DME) relacionados con Movimientos Repetitivos de Miembros Superiores (Síndrome de Túnel Carpiano, Epicondilitis y Enfermedad de De Quervain (GATI- DME) Bogotá, Diciembre de 2006.</p>

Pregunta N° 2: Factores de Riesgo Ambiental

Preguntas	Referencias
<p>2.1 Existencia de protocolos de vigilancia ambiental en otros países y cuáles son sus objetivos, relacionándolos con marcos jurídicos y/o normativos</p>	<p>2.1.1 Donna Russell Doran, Jeffrey Gold, Francis Serbaroli, Edward L. Hannan, Paul F. Macielak, William F. Streck. La superación de las barreras en el acceso a los servicios de asistencia médica especializada. Prev Chronic Dis [serie publicada on-line] Abril 2005 [fecha de la cita]. Disponible en: URL: http://www.cdc.gov/pcd/issues/2005/apr/04_0142o_es.htm.</p> <p>2.1.2 Robin Baker, Robert Dwoney, Mary Ruth Gross, Charles Reiter Labor Occupational Health Program (LOHP) School of Public Health, University of California, Berkeley CA. http://www.cdc.gov/elcosh/docs/d0200/d000260/d000260-s.html</p> <p>2.1.3 Robin Baker, Robert Downey, Mary Ruth Gross, Charles Reiter. Labor Occupational Health Program (LOHP) School of Public Health, University of California, Berkeley Ca. http://www.cdc.gov/elcosh/docs/d0200/d000231/d000231-s.html</p> <p>2.1.4 Robin Baker, Robert Dwoney, Mary Ruth Gross, Charles Reiter Labor Occupational Health Program (LOHP) School of Public Health, University of California, Berkeley CA. http://www.cdc.gov/elcosh/docs/d0200/d000259/d000259-s.html</p> <p>2.1.5 Robin Baker, Robert Downey, Mary Ruth Gross, Charles Reiter. Labor Occupational Health Program (LOHP) School of Public Health, University of California, Berkeley Ca. http://www.cdc.gov/elcosh/docs/d0200/d000230/d000230-s.html</p>
	<p>2.2.1 . K-Walker- Bone, C Cooper. Trabajo duro nunca daño a nadie: o lo hizo? Un examen de las asociaciones profesionales con los tejidos blandos de los trastornos musculoesqueléticos de cuello y extremidades superiores Anales de la Enfermedades Reumáticas 2005; 64:1391-1396; doi: 10.1136/ard.2003.020016 Copyright © 2005 BMJ Publishing Group Ltd & Liga Europea contra el Reumatismo</p> <p style="text-align: center;">Factor impacto: 6.411</p> <p>2.2.2 Werner RA, Franzblau A, Gell N, Hartigan A, Ebersole M, Armstrong TJ. Predictores de persistencia de tendinitis de codo entre trabajadores de ensamble. J Occup Rehabil. 2005 Sep;15(3):393-400</p> <p>2.2.3 Descatha A, Leclerc A, Chastang JF, Roquelaure Y; El Grupo de Estudio sobre el trabajo repetitivo. Escenario de la epicondilitis medial ocupacional: prevalencia, incidencia y factores de riesgo asociados. Occup Environ Med. 2003 Sep; 45 (9):993-1001</p> <p style="text-align: center;">Factor impacto: 2.817</p> <p>2.2.4 Haahr JP, Andersen JH. Factores de riesgo medico y psicológicos para la epicondilitis lateral: Una base poblacional de Casos Referentes de estudio. Occup Environ Med. 2003 May;60(5):322-9.</p> <p style="text-align: center;">Factor impacto: 2.817</p> <p>2.2.5 Chiang HC, Ko YC, Chen SS, Yu HS, Wu TN, Chang PY. Prevalencia de desordenes de hombro y miembros superior entre trabajadores de la industria</p>

2.5 ¿Qué evidencias causales existen entre exposición a factores de riesgo y las lesiones definidas?

2.5.1 Nicoletti S, Battevi N. Los trastornos musculoesqueléticos (UL-WMSDs) de las extremidades superiores y la latencia de efecto relacionados con el trabajo. *Med Lav.* 2008 Sep-Oct;99(5):352-61.

2.5.2 Ono Y, Nakamura R, Shimaoka M, Hiruta S, Hattori Y, Ichihara G, Kamijima M, Takeuchi Y. Epicondilitis entre cocineras en escuela de enfermería. *Occup Environ Med.* 1998 Mar;55(3):172-9.

Factor impacto: 2.817

2.5.3 Kryger AI, Lassen CF, Andersen JH. El rol del médico examinador en estudios de enfermedades músculo esqueléticas de codo. *Occup Environ Med.* 2007 Nov;64(11):776-81.

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2.5.4 Hakkanen M, Viikari-Juntura E, R Martikainen. La incidencia de los trastornos musculoesqueléticos entre los trabajadores recientes de la industria. *Scand J Work Environ Health.* 27(6):381-387

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1.2. Roto P, Kivi P. Prevalencia de epidcondilitis y tenosinovitis entre cortadores de carne. *Scand J Work Environ Health.* 1984 Jun;10(3):203-5.

1.3 Mc Cormack RR Jr, Inman RD, Wells A, Berntsen C, Imbus HR.

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Factor impacto: 3.151

1.4 Luopajarvi T, Kuorinka I, Virolainen M, Holmberg M. Prevalencia de tenosinovitis y lesiones de extremidades superiores en trabajos repetitivos. *Scand J Work Environ Health.* 1979;5 suppl 3:48-55.

2.2.2 Werner RA, Franzblau A, Gell N, Hartigan A, Ebersole M, Armstrong TJ. Predictors of persistent elbow tendonitis among auto assembly workers. *J Occup Rehabil.* 2005 Sep;15(3):393-400

2.2.5 Chiang HC, Ko YC, Chen SS, Yu HS, Wu TN, Chang PYP. Prevalencia de desordenes de hombro y miembros superior entre trabajadores de la industria pesquera. *Scand J Work Environ Health.* 1993 Apr;19(2):126-31

2.2.6. Haahr JP, Andersen JH. Factores pronósticos en epicondilitis lateral: un ensayo seleccionado al azar con carta recordativa anual en 266 casos nuevos trató con la intervención ocupacional mínima o la práctica del acercamiento en general. *Rheumatology (Oxford).* 2003 Oct;42(10):1216-25.

Factor impacto: 4.095

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Pregunta N° 3: Criterios Preventivos.

Preguntas	Referencias
<p>3.1 ¿Se ha determinado algún instrumento de evaluación de riesgos que tenga un valor predictivo positivo "adecuado" en relación a estas patologías?</p>	<p>2.3.1 George Piligian, MD, MPH, 1Robin Herbert, MD, 1 Michael Hearn, MD, 2Jonathan Dropkin, MS, PT, 1Paul Landsbergis, EdD, MPH, 1,3 y Cherniack Martin, MD, MPH4. Evaluación y Gestión de trabajo crónico. Trastornos musculoesqueléticos relacionados con trastornos de extremidades distales superiores. Am J Ind Med. 37:75 ± 93 (2000) Factor impacto: 1.597</p> <p>2.3.2 Colombini Un método de observación para la clasificación de la exposición repetitiva a los movimientos de las extremidades superiores. Unidad de Investigación de EPM, Via Riva Villasanta, 11 - 20145 Milán, Italia.</p>
<p>3.2 Criterios metodológicos para efectuar una evaluación "cualitativa" del riesgo de los factores de riesgo para estas lesiones, orientado a:</p> <p>3.2.A. Priorizar la evaluación y/o intervención en aquellas empresas con mayor "peligrosidad".</p> <p>3.2.B Priorizar la evaluación y/o intervención en aquellos puestos de trabajo con mayor "peligrosidad" al interior de una empresa en particular.</p>	<p>3.2. B.1 S. Nicoletti, M. CARINA, G. EL LEÓN, G. Trani, DANIELA COLOMBINA, E. Occhipinti La evaluación del riesgo y los movimientos de esfuerzo repetidos en Extremidad superior en treinta empresas del sector de tapizados de muebles. Med Lav 2008; 99, 4: 262-270</p> <p>3.2.B.2 ORGANIZACION INTERNACIONAL DEL TRABAJO. Documento de información técnica sobre los puntos modificados y nuevos cuya inclusión se propone en la lista actualizada de enfermedades profesionales que figura como anexo de la Recomendación sobre la lista de enfermedades profesionales, 2002 (núm. 194) Programa InFocus de Seguridad y Salud en el Trabajo y Medio Ambiente (SafeWork) Ginebra, octubre de 2005 Página 13.</p> <p>2.2.7. Occhipinti E, Colombini B. Evaluación de la exposición repetitiva a movimientos de las extremidades superiores: AIE un documento de consenso. Tutb newsletter. Junio 1999, n11 -12.</p> <p>Publicación de NIOSH núm. 2006-148: Previsión de trastornos musculoesqueléticos en la realización de ecografías http://www.cdc.gov/spanish/niosh/docs/wp-solutions/2006-148_sp/</p>
<p>3.3 Criterios metodológicos para la determinación de un nivel de acción en los lugares de trabajo</p>	<p>2.2.7. Occhipinti E, Colombini B. Evaluación de la exposición repetitiva a movimientos de las extremidades superiores: AIE un documento de consenso. Tutb newsletter. Junio 1999, n11 -12.</p> <p>OSHA. Ergonomics Program Management Guidelines For Meatpacking Plants http://www.osha.gov/Publications/OSHA3123/3123.html</p> <p>OSHA. Ergonomics for the Prevention of Musculoskeletal Disorders. Draft Guidelines for Retail Grocery Stores. http://www.osha.gov/ergonomics/guidelines/grocerysolutions/index.html</p> <p>Publicación de NIOSH núm. 2006-148: Previsión de trastornos musculoesqueléticos en la realización de ecografías http://www.cdc.gov/spanish/niosh/docs/wp-solutions/2006-148_sp/</p>
<p>3.4 Evidencias de</p>	<p>3.4.1. M. William J. Sullivan, Andre Panagos, Joseph P. Zuhosky, Aaron W. Sable,</p>

Pregunta N° 4: Etapa de Vigilancia Médica

Preguntas	Referencias
<p>4.1 ¿Cuáles son los criterios a considerar para calificar la enfermedad como de origen laboral, diferenciándola de enfermedad común?</p>	<p>4.1.1. CJ, Maclaren WM, COURTBROWN C, Hughes SPF, Porter RW, Wallace WA, GRAVES RJ, PETHICK AJ, CA SOUTAR. Las relaciones entre la extremidad superior de tejidos blandos y trastornos de movimientos repetitivos en el trabajo. Am J Ind Med. 27(1):75-90 Citado veces: 29 Referencias: 19 Factor impacto: 1.597</p> <p>OSHA. Occupational Injury and Illness Recording and Reporting Requirements - 66:5916-6135 http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=FEDERAL_REGISTER&p_id=16312</p>

<p>4.2 Existencia de exámenes de laboratorio específico que oriente al diagnóstico ocupacional de estas patologías</p>	<p>2.3.2 .D. Colombini</p> <p>Un método de observación para la clasificación de la exposición repetitiva a los movimientos de las extremidades superiores</p>
<p>4.3 ¿Cómo se hace el diagnóstico específico de estas patologías laborales? Existencia de normas o protocolos médicos, cuáles son sus criterios</p>	<p>4.3.1. Coates VH, Turkelson CM, Chapell R, Bruening W, Mitchell MD, Reston JT, Treadwell JR. Diagnóstico y tratamiento de trabajadres relacionados a desordenes músculo esqueléticas de extremidades superiores Evid Rep Technol Assess (Summ). 2002 Oct;(62):1-12.</p> <p>4.3.2 Keith Palmer, Karen Walker-Born, Cathy Linaker, Isabel de lectura, Samantha Kellingray, David Coggon, Cyrus Cooper. El calendario de Southampton examen para el diagnóstico de los trastornos musculoesqueléticos de la extremidad superior. Ann Rheum Dis 2000; 59:5-11 (enero)</p> <p>4.1.1. CJ, Maclaren WM, COURTBROWN C, Hughes SPF, Porter RW, Wallace WA, GRAVES RJ, PETHICK AJ, CA SOUTAR. Las relaciones entre la extremidad superior de tejidos blandos y trastornos de movimientos repetitivos en el trabajo. Am J Ind Med. 27(1):75-90 Citado veces: 29</p> <p>Factor impacto: 1.597 <i>Véanse todas las referencias de la pregunta 2.1</i></p>
<p>4.4 Existencia de algún equipo/instrumento de apoyo, para evaluar al trabajador (ej. dinamometría) y que esté validado</p>	<p>4.4.1 B. Sennoune, V. Costa y C. Dumontier . Tratamiento Artroscópica de codo de tenista: experiencia preliminar con 14 pacientes Revue de Chirurgie orthopédique Réparatrice et de l'appareil Moteur . 2005; 91(2): 158-164 (SIN ACCESO)</p> <p>Strength and fatigability of selected muscles in upper limb: Assessing muscle imbalance relevant to tennis elbow O. Alizadehkhayat, A.C. Fisher, G.J. Kemp, S.P. Frostick Journal of Electromyography and Kinesiology - August 2007 (Vol. 17, Issue 4, Pages 428-436, DOI: 10.1016/j.jelekin.2006.04.007)</p>

<p>4.5 Criterios de periodicidad de las evaluaciones y vigilancia médica</p>	
<p>4.6 Criterios para la definición de expuestos ¿Que trabajadores/as (puestos de trabajo, actividad económica) deben ingresar a una VM para estas patologías?</p>	<p>4.6.1. Baron and Habes, 1992 S.L. Baron and D. Habes, Desordenes musculo esqueléticos entre cajeros de supermercados, <i>Scand J Work Environ Health</i>. 1992 18 (2):127-129.</p> <p>1.1 Kurppa K, Viikari-Juntura E, Kuosma E, Huuskonen M, Kivi P. Incidencia de tenosinovitis o peritendinitis y epicondilitis en en trabajadores en fabricas procesadores de carne. Institute of Occupational Health, Helsinki, Finland.. <i>Scand J Work Environ Health</i>. 1991 Feb;17(1):32-7.</p> <p>1.2. Roto P, Kivi P. Prevalencia de epidcondilitis y tenosinovitis entre cortadores de carne. <i>Scand J Work Environ Health</i>. 1984 Jun;10(3):203-5.</p> <p>1.3. McCormack RR Jr, Inman RD, Wells A, Berntsen C, Imbus HR. Prevalencia de tendinitis relacionadas a desordenes en extremidades superiores en trabajadores manufactureros. Cornell University Medical College, New York, NY. <i>J Rheumatol</i>. 1990 Jul;17(7):958-64</p>

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4.7¿Cuáles	<p>4.7.1. Burt S., Hornung R., & Fine L. J. (1990). NIOSH Reporte de evaluación de riesgo, HETA, 89-250-2046.</p> <p>4.7.2 McCormack RR Jr, Inman RD, Wells A, Berntsen C, Imbus HR. Prevalencia de tendinitis y su relación con desordenes en extremidades superiores en trabajadores de la manufactura. J Rheumatol 1990;17(7):958-64.</p> <p>4.7.3 Dr. Johan Hviid Andersen, MD *, Ove Gaardboe, MD Desordenes músculo esqueléticas de cuello y miembros superiores entre operadores de maquinas de cocer: Una investigación clínica.</p> <p>4.7.4. Punnett L, Robins JM, Wegman DH, Keyserling WM. Desorden en tejidos blandos in miembros superiores de mujeres trabajadores de prendas de vestir. Scand J Work Environ Health. 1985 Dec;11(6):417-25</p> <p>2.5.4 Hakkanen M, Viikari-Juntura E, R Martikainen. La incidencia de los trastornos musculoesqueléticos entre los trabajadores recientes de la industria. Scan J Work Environ Health.2(6): 381-387</p> <p>2.2.7. Occhipinti E, Colombini B. Evaluación de la exposición repetitiva a movimientos de las extremidades superiores: AIE un documento de consenso. Tutb newsletter. Junio 1999, n11 -12.</p> <p>4.6.1 Baron and Habes, 1992 S.L. Baron and D. Habes, Desordenes musculo esqueléticos entre cajeros de supermercados, Scan J Work Environ Health. 1992 18 (2):127–129.</p>
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<p>4.8¿Cuáles son los factores de riesgo individuales que deben tenerse en cuenta durante la evaluación de los/as trabajadores/as en riesgo de desarrollar estas lesiones ME?</p>	<p>2.2.5 Chiang HC, Ko YC, Chen SS, Yu HS, Wu TN, Chang PY. Prevalencia de la parte superior del hombro y trastornos de las extremidades-entre los trabajadores de la industria procesadora de pescado. Scand J Work Environ Health. 1993 Abr; 19 (2):126-31.</p> <p>2.2.6. Haahr JP, Andersen JH. Factores pronósticos en epicondilitis lateral: un ensayo seleccionado al azar con carta recordativa anual en 266 casos nuevos trató con la intervención ocupacional mínima o la práctica del acercamiento en general. Rheumatology (Oxford). 2003 Oct;42(10):1216-25. Epub 2003 Jun 16.</p> <p>Factor impacto: 4.095</p> <p>2.2.7. Occhipinti E, Colombini B. Evaluación de la exposición repetitiva a movimientos de las extremidades superiores: AIE un documento de consenso. Tutb newsletter. Junio 1999, n11 -12.</p>

	<p>Individual factors and musculoskeletal disorders: a framework for their consideration . Donald C. Cole, Irina Rivilis Journal of Electromyography and Kinesiology - February 2004 (Vol. 14, Issue 1, Pages 121-127, DOI: 10.1016/j.jelekin.2003.09.021)</p> <p>Guía técnica para la evaluación y prevención de los riesgos relacionados con las vibraciones mecánicas. REAL DECRETO 1311/2005, de 4 de noviembre BOE nº 265, de 5 de noviembre</p> <p>http://www.insht.es/InshtWeb/Contenidos/Normativa/Guias Tecnicas/Ficheros/Vibraciones.pdf</p> <p>Guía técnica para la evaluación y prevención de los riesgos relativos a la Manipulación manual de cargas http://www.insht.es/InshtWeb/Contenidos/Normativa/GuiasTecnicas/Ficheros/cargas.pdf</p> <p>Lesiones por movimientos repetitivos en los Estados miembros de la UE. Resumen de un informe de la Agencia http://www.insht.es/InshtWeb/Contenidos/Documentacion/TextosOnline/FichasNotasPracticas/Ficheros/facts6_es.pdf</p> <p>Publicación de NIOSH núm. 2006-148: Prevención de trastornos musculoesqueléticos en la realización de ecografías http://www.cdc.gov/spanish/niosh/docs/wp-solutions/2006-148_sp/</p>
<p>4.9¿Qué pruebas de tamizaje se pueden aplicar para la detección de trabajadores/as susceptibles o sintomáticos/as?</p>	<p>4.9.1. CL Ping, Keung SC, Yee PL. Evaluación funcional de tensión repetida: dos estudios de casos. J Hand Ther. 1996 Oct-Dic; 9 (4):394-8.</p>
<p>4.10¿Cuáles son los signos de alarma y diagnósticos diferenciales de estas enfermedades ocupacionales?</p>	<p>2.8.1 Ministerio de la Protección Social. Guía de Atención Integral Basada en la Evidencia para Desórdenes Musculoesqueléticos (DME) relacionados con Movimientos Repetitivos de Miembros Superiores (Síndrome de Túnel Carpiano, Epicondilitis y Enfermedad de De Quervain (GATI- DME) Bogotá, Diciembre de 2006. Pag. 1358.</p>

	<p>M. Solomonow . Ligaments: a source of work-related musculoskeletal disorders Journal of Electromyography and Kinesiology - February 2004 (Vol. 14, Issue 1, Pages 49-60, DOI: 10.1016/j.jelekin.2003.09.011)</p>
<p>4.11¿Cuáles son los criterios de evolución de las enfermedades ocupacionales definidas, considerando los factores de riesgo, tiempo de exposición y edad del trabajador?</p>	<p>2.2.7. Occhipinti E, Colombini B. Evaluación de la exposición repetitiva a movimientos de las extremidades superiores: AIE un documento de consenso. Tutb newsletter. Junio 1999, n11 -12.</p> <p>Injury and adaptive mechanisms in skeletal muscle Robert G. Cutlip, Brent A. Baker, Melinda Hollander, James Ensey Journal of Electromyography and Kinesiology - 04 September 2008 (10.1016/j.jelekin.2008.06.007)</p> <p>Factors involved in strain-induced injury in skeletal muscles and outcomes of prolonged exposures William T. Stauber Journal of Electromyography and Kinesiology - February 2004 (Vol. 14, Issue 1, Pages 61-70, DOI: 10.1016/j.jelekin.2003.09.010)</p> <p>Inflammation reduces physiological tissue tolerance in the development of work-related musculoskeletal disorders Ann E. Barr, Mary F. Barbe Journal of Electromyography and Kinesiology - February 2004 (Vol. 14, Issue 1, Pages 77-85, DOI: 10.1016/j.jelekin.2003.09.008)</p>
<p>4.12¿Existen pruebas que se puedan realizar para pesquisar oportunamente a trabajadores/as susceptibles?</p>	<p>4.12.1. Liliana Vigil, Rita Gutiérrez, Walter Cáceres, Héctor Collantes, Julio Beas, (REBA). Salud ocupacional en el trabajo de estiba: los trabajadores de mercados mayoristas de Huancayo 2006*</p> <p>2.3.2. D. Colombini. Un método de observación para la clasificación de la exposición repetitiva a los movimientos de las extremidades superiores. Unidad de Investigación</p> <p>2.5.1. Nicoletti S, Battevi N. Med Lav. 2008 Sep-Oct;99(5):352-61. Las extremidades superiores relacionados con el trabajo de y la latencia de efecto.</p> <p>3.2.B.1 Nicoletti S, M Carino, Di Leona G, G Trani, Colombini D, E. Occhipinti</p> <p>La evaluación de riesgos de trabajo relacionados con las extremidades superiores de los trastornos musculoesqueléticos en treinta fábricas en la industria de muebles tapizados. Med Lav. 2008 Jul-Ago; 99(4):262-70.</p>

	<p>The objective diagnosis of early tennis elbow by magnetic resonance imaging</p> <p>David Mackay¹, Amar Rangan¹, G. Hide¹, Tracey Hughes² and Joanne Latimer²</p> <p><i>Occupational Medicine</i> 2003;53:309–312</p> <p>DOI: 10.1093/occmed/kqg031</p> <p>Health Hazard Evaluation Report 95-0386-2582 Cooper Power Systems. East Stroudsburg, Pennsylvania December 1996. Veronica Herrera-Moreno Daniel J. Habes</p> <p>http://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0386-2582.pdf</p>
<p>4.13¿Cuál es el pronóstico de estas patologías ocupacionales?</p>	<p>2.2.6. Haahr JP, Andersen JH. Factores pronósticos en epicondilitis lateral: un ensayo seleccionado al azar con carta recordativa anual en 266 casos nuevos trató con la intervención ocupacional mínima o la práctica del acercamiento en general. <i>Rheumatology (Oxford)</i>. 2003 Oct;42(10):1216-25. Epub 2003 Jun 16.</p> <p>Factor impacto: 4.095</p> <p>2.8.1 Ministerio de la Protección Social. Guía de Atención Integral Basada en la Evidencia para Desórdenes Musculoesqueléticos (DME) relacionados con Movimientos Repetitivos de Miembros Superiores (Síndrome de Túnel Carpiano, Epicondilitis y Enfermedad de De Quervain (GATI- DME) Bogotá, Diciembre de 2006. Pag. 38.</p>
<p>4.14¿El acceso sólo por la consulta pasiva implica que es un mecanismo muy tardío para esperar una reversibilidad de la patología laboral?</p>	<p>4.14.1 Livengood L. Trastornos ocupacionales de los tejidos blandos de la mano y el antebrazo. <i>Sab Med J</i>. 1992 Oct; 91 (10) :583-4</p>
<p>4.15¿Cuál es la proporción de enfermos que quedan con una</p>	

pérdida de capacidad de ganancia permanente, dados estos diagnósticos?	
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Pregunta N° 5: Etapa Médico Legal

Preguntas	Referencias
5.1 ¿Cuáles son los indicadores de tendencia central y dispersión que permiten conocer el grado de PCG que generan estas patologías?	
5.2 Criterio para la determinación del porcentaje de incapacidad de ganancia	
5.3 Estudios que cuantifiquen la incapacidad del daño en las personas	
5.4 Criterios existentes respecto a la repetibilidad de una evaluación	<p>2.2.2 Werner RA, Franzblau A, N Gell, Hartigan A, Ebersole M, Armstrong TJ. Predictores de la persistencia de tendinitis del codo entre los trabajadores de montaje de automóviles. J Occup Rehabil. 2005 Sep; 15 (3) :393-400.</p> <p>2.2.7 Occhipinti E, Colombini B. Evaluación de la exposición repetitiva a movimientos de las extremidades superiores: AIE un documento de consenso. Tutb newsletter. Junio 1999, n11 -12.</p>

Pregunta N° 6: Etapa de Recaudación y readaptación

Cuadro N° 10. Referencias sobre Estudios de Etapa Recaudación y Readaptación

Preguntas	Referencias
<p>6.1 Criterios metodológicos para la readaptación del trabajador con secuelas por lesión ME de codo o muñeca de origen laboral, con énfasis desde el punto de vista económico, ético y salud pública.</p>	
<p>6.2 ¿Cuáles son los componentes de un programa de rehabilitación laboral?</p>	<p>6.2.1 R. Bergamasco, C. Girola, Colombini D. Directrices para el diseño de puestos de trabajo con tareas repetitivas. Ergonomics. 1998, 41(9):1364-1383.</p> <p>Factor impacto: 1.484</p> <p><u>Omid Alizadehkhayata, Anthony C. Fisherb, Graham J. Kempc, Karthik Vishwanathand, Simon P. Frosticka</u> Assessment of functional recovery in tennis elbow</p> <p>JOURNAL OF ELECTROMYOGRAPHY AND KINESIOLOGY Volume 17, Issue 4, Pages 428-436 (August 2007)</p> <p>Received 6 October 2007; received in revised form 10 December 2007; accepted 31 January 2008. published online 17 March 2008.</p>

Resúmenes organizados en orden de las preguntas orientadoras:

2.2¿Cuáles son los principales factores de riesgo ocupacional causantes de las lesiones definidas y sus principales características?

Epidemiology of musculoskeletal disorders among computer users: lesson learned from the role of posture and keyboard use Fred Gerra, Michele Marcusbc, Carolyn Monteilh Journal of Electromyography and Kinesiology - February 2004 (Vol. 14, Issue 1, Pages 25-31, DOI: 10.1016/j.jelekin.2003.09.014)

Abstract

Reports in the scientific literature and lay press have suggested that computer users are at increased risk of upper extremity musculoskeletal disorders (MSDs). Early studies often found elevated rates of MSD outcomes among keyboard users when compared to non-users. Attention soon focused on specific aspects of keyboard work that might be responsible for the observed rate increase. In this review, the epidemiological evidence examining associations between MSD outcomes and computer user posture and keyboard use intensity (hours of computer use per day or per week) are examined.

Results of epidemiological studies of posture and MSD outcomes have not been entirely consistent. Reasons for the inconsistency in results include cross-sectional study design (with possible failure to assure that measured exposure preceded health effect), imprecision of posture measures used, and difficulties involved in analyzing multiple related variables. Despite the inconsistencies, it appears from the literature that posture is an independent risk factor of modest magnitude for MSDs among computer users. It appears that lowering the height of the keyboard to or below the height of the elbow and resting the arms on the desk surface or chair armrests is associated with reduced risk of neck and shoulder MSDs.

Results of epidemiological studies examining computer use (hours keying per day or per week) are more consistent than those examining posture, although some inconsistency is observed. Reasons for the inconsistency include possible selective survival bias resulting from cross-sectional study design, differences in exposure categorization, and possible interaction with other exposure variables. Overall, the literature shows that daily or weekly hours of computer use is more consistently associated with hand and arm MSDs than with neck and shoulder MSDs.

Keywords: Computers, Video display terminals, Office workers, Musculoskeletal disorders, Cumulative trauma disorders, Posture, Risk factors, Review

2.6 ¿Cuáles son las fracciones atribuibles % (FA) para los factores de riesgo ocupacional psicosocial y organizacional en la ocurrencia de estas patologías?

3.4 Evidencias de la efectividad de intervenciones para el control de los factores de riesgo causantes de las lesiones definidas. ¿Cuáles son las efectivas y cuáles son las no efectivas y cómo se relacionan en la combinación entre ellas?

Interventions to reduce work-related musculoskeletal disorders. Barbara Silverstein, Randy Clark
Journal of Electromyography and Kinesiology - February 2004 (Vol. 14, Issue 1, Pages 135-152,
DOI: 10.1016/j.jelekin.2003.09.023)
[http://www.jelectromyographykinesiology.com/article/S1050-6411\(03\)00138-X/abstract](http://www.jelectromyographykinesiology.com/article/S1050-6411(03)00138-X/abstract)

Abstract

Work-related Musculoskeletal Disorders (WMSDs) continue to present a major challenge to workers and their employers in virtually every industry sector. Many disciplines have been involved in providing advice and working on interventions to prevent WMSDs or reduce their consequences. Since the early 1990s, 15 systematic reviews (excluding specific treatment modalities) have appeared in the peer-reviewed literature addressing musculoskeletal disorder reduction. The National Research Council–Institute of Medicine summarized many of these efforts in 2001. Using a systematic literature search strategy, we identified 20 randomized controlled studies, 17 quasi-experimental studies with control groups, and 36 paper reporting case studies with in the peer-reviewed literature between 1999–2003. Evidence is continuing to build that demonstrates combinations of measures appear to have the greatest effect in reducing WMSDs, although individual engineering and administrative controls can also have positive effects.

Keywords: Musculoskeletal disorders, Interventions, Systematic review, Prevention

3.4 Evidencias de la efectividad de intervenciones para el control de los factores de riesgo causantes de las lesiones definidas. ¿Cuáles son las efectivas y cuáles son las no efectivas y cómo se relacionan en la combinación entre ellas? Rotaciones de puestos de trabajo, Programas de pausas activas, Capacitaciones a trabajadores/as, Etc.

Health Hazard Evaluation Report 95-0386-2582 Cooper Power Systems. East Stroudsburg, Pennsylvania December 1996. Veronica Herrera-Moreno Daniel J. Habes
<http://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0386-2582.pdf>

Resumen:

On February 1 and 2, 1996, National Institute for Occupational Safety and Health (NIOSH) representatives conducted a Health Hazard Evaluation (HHE) at the Cooper Power Systems plant in East Stroudsburg, Pennsylvania, in response to a confidential request submitted by employees in the Assembly Department. There quest concerned repetitive motion resulting in carpal tunnel syndrome and other musculoskeletal disorders.

Work practices and operations were observed during a walk-through inspection of the Assembly Department. The ergonomic evaluation included video taping and subsequent analysis of the job tasks to assess repetition and posture.

Confidential medical interviews were conducted with all “assemblers” from the Assembly Department, and review of the Occupational Safety and Health Administration (OSHA) Log and Summary of Occupational Injuries and Illnesses (Form 200) for the previous six years.

The ergonomic evaluation determined the presence of stereotyped repetitive motions in the Assembly Department jobs as the most notable upper extremity ergonomic stressor. Other stressors observed were higher than necessary muscular effort to fasten nuts onto certain bolts, awkward and unsupported trunk postures resulting from the wide variety of chairs in use in the department, pinch grips to pick up nuts, washers, and other small parts that are located

on work table tops, and awkward postures of the shoulder to retrieve parts that are not conveniently located within the reach envelope of the worker.

All 14 “assemblers” from the department, present during the NIOSH site visit, were interviewed. Ten (71%) reported work-related neck, shoulder, elbow or hand pain, resulting in six of them missing work or being assigned light duty during the preceding year. One worker had bilateral carpal tunnel surgery.

The OSHA 200 logs from January 1, 1990, until December 31, 1995, showed a total of 129 entries. Of the 39 entries from the Assembly Department, 14 (36%) were for musculoskeletal disorders, including neck strains, shoulder strains, elbow tendinitis, forearm strains, wrist and hand disorders (one case of carpal tunnel syndrome).

Three entries were for musculoskeletal disorders other than upper extremities.

4.4 Existencia de algún equipo/instrumento de apoyo, para evaluar al trabajador (ej. Dinamometría) y que esté validado.

Strength and fatigability of selected muscles in upper limb: Assessing muscle imbalance relevant to tennis elbow O. Alizadehkhayat, A.C. Fisher, G.J. Kemp, S.P. Frostick
Journal of Electromyography and Kinesiology - August 2007 (Vol. 17, Issue 4, Pages 428-436, DOI: 10.1016/j.jelekin.2006.04.007)

Abstract Purpose

The aetiology of **tennis elbow** has remained uncertain for more than a century. To examine muscle imbalance as a possible pathophysiological factor requires a reliable method of assessment. This paper describes the development of such a method and its performance in healthy subjects. We propose a combination of surface and fine-wire EMG of shoulder and forearm muscles and wrist strength measurements as a reliable tool for assessing muscle imbalance relevant to the pathophysiology of **tennis elbow**.

Methods Six healthy volunteers participated. EMG data were acquired at 50% maximal voluntary isometric contraction from five forearm muscles during grip and three shoulder muscles during external rotation and abduction, and analysed using normalized median frequency slope as a fatigue index. Wrist extension/flexion strength was measured using a purpose-built dynamometer.

Results Significant negative slope of median frequency was found for all muscles, with good reproducibility, and no significant difference in slope between the different muscles of the shoulder and the wrist. (Amplitude slope showed high variability and was therefore unsuitable for this purpose.) Wrist flexion was $27 \pm 8\%$ stronger than extension (mean \pm SEM, $p = 0.006$).

Conclusion: This is a reliable method for measuring muscle fatigue in forearm and shoulder. EMG and wrist strength studies together can be used for assessing and identifying the muscle balance in the wrist–forearm–shoulder chain.

Keywords: Lateral epicondylitis, Electromyography, Muscle fatigue, Wrist strength

4.8; Cuáles son los factores de riesgo individuales que deben tenerse en cuenta durante la evaluación de los/as trabajadores/as en riesgo de desarrollar estas lesiones ME?

Individual factors and musculoskeletal disorders: a framework for their consideration Donald C. Cole, Irina Rivlis. *Journal of Electromyography and Kinesiology* - February 2004 (Vol. 14, Issue 1, Pages 121-127, DOI: 10.1016/j.jelekin.2003.09.021)
[http://www.jelectromyographykinesiology.com/article/S1050-6411\(03\)00140-8/abstract](http://www.jelectromyographykinesiology.com/article/S1050-6411(03)00140-8/abstract)

Abstract

Individual factors have been variously defined as non-work, demographic, physiological or psychological factors. They may represent a variety of important constructs at different relevant levels that may not be initially evident in their measurement. These include: work-related factors e.g., job assignment, duration of exposure, work style, anthropometric mismatches, and differential responses to job demands; concomitant external or internal exposures e.g., sports, smoking, and endogenous hormones; and physical, psychological and social vulnerabilities e.g., prior injury, depression, socio-economic status. Such factors operate in different ways in the development, course and response to interventions of musculoskeletal disorders. Newer framings of their contribution to musculoskeletal disorders are providing new insights into the role of such factors as some among many which contribute to the burden of MSK disorders in working age populations. As researchers, practitioners and policy makers, we need to consider them in order to reduce burden, to protect the vulnerable and to match interventions to different groups of people most appropriately.

Keywords: Musculoskeletal disorders, Epidemiological designs, Etiology, Prognosis, Confounding, Effect measure modification

Guía técnica para la evaluación y prevención de los riesgos relacionados con las vibraciones mecánicas. REAL DECRETO 1311/2005, de 4 de noviembre BOE nº 265, de 5 de noviembre.
<http://www.insht.es/InshtWeb/Contenidos/Normativa/GuiasTecnicas/Ficheros/Vibraciones.pdf>

El Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT), de acuerdo con lo dispuesto en el artículo 5 del Real Decreto 39/1997 de 17 de enero, por el que se aprueba el Reglamento de los Servicios

de Prevención, tiene entre sus cometidos el relativo a la elaboración de Guías destinadas a la evaluación y prevención de los riesgos laborales.

El Real Decreto 1311/2005 de 4 de noviembre, sobre la protección de la salud y la seguridad de los trabajadores frente a los riesgos derivados o que puedan derivarse de la exposición a vibraciones mecánicas, encomienda de manera específica, en su disposición final primera, al Instituto Nacional de Seguridad e Higiene en el Trabajo, la elaboración y actualización de una Guía Técnica, de carácter no vinculante, para la evaluación y prevención de los riesgos derivados de la exposición a vibraciones mecánicas en los lugares de trabajo.

La presente Guía proporciona criterios y recomendaciones que pueden facilitar la interpretación y aplicación del citado Real Decreto a todas las personas a las que obligue o afecte, especialmente en lo que se refiere a la evaluación de riesgos para la salud de los trabajadores involucrados y en lo concerniente a medidas preventivas aplicables.

Guía técnica para la evaluación y prevención de los riesgos Relativos a la Manipulación manual de cargas.

<http://www.insht.es/InshtWeb/Contenidos/Normativa/GuiasTecnicas/Ficheros/cargas.pdf>

El Instituto Nacional de Seguridad e Higiene en el Trabajo, de acuerdo con lo dispuesto en el Artículo 5 del Real Decreto 39/1997 de 17 de enero, por el que se aprueba el Reglamento de los Servicios de Prevención, tiene entre sus cometidos el relativo a la elaboración de Guías destinadas a la evaluación y prevención de los riesgos laborales.

El Real Decreto 487/1997 de 14 de abril, por el que se establecen las Disposiciones Mínimas de Seguridad y Salud relativas a la manipulación manual de cargas que entrañe riesgos, en particular dorsolumbares, para los trabajadores, encomienda de manera específica, en su disposición final primera, al Instituto Nacional de Seguridad e Higiene en el Trabajo, la elaboración y el mantenimiento actualizado de una Guía Técnica para la evaluación y prevención de los riesgos relativos a la manipulación manual de cargas.

La presente Guía proporciona criterios y recomendaciones que pueden facilitar a los empresarios y a los responsables de prevención la interpretación y aplicación del citado Real Decreto especialmente en lo que se refiere a la evaluación de riesgos para la salud de los trabajadores involucrados y en lo concerniente a medidas preventivas aplicables.

Lesiones por movimientos repetitivos en los Estados miembros de la UE. Resumen de un informe de la Agencia

http://www.insht.es/InshtWeb/Contenidos/Documentacion/TextosOnline/FichasNotasPracticas/Ficheros/facts6_es.pdf

Algunos Estados miembros han formulado políticas y planes específicos con objeto de prevenir las LMR de origen laboral. Estas iniciativas presentan distintas características e incluyen: _ acciones preventivas destinadas a sectores concretos; _ mejora de los sistemas de información;

_ financiación de la investigación o estudios específicos;

_ elaboración de material informativo, directrices, etc.;

- _ protocolos de control de la salud;
- _ establecimiento de planes de acción y fijación de objetivos para reducir la incidencia.

Al parecer, en otros Estados miembros, la prevención de las LMR forma parte de los respectivos planteamientos globales de prevención de riesgos profesionales y de ejecución de la legislación europea. Las LMR pueden considerarse como parte de un grupo más amplio de trastornos musculoesqueléticos, que incluyen, entre otros, lesiones dorsolumbares provocadas por la manipulación manual de cargas, lo que explica por qué algunos de los ejemplos mencionados por los Estados miembros también se refieren a este tipo de trabajo.

4.10 ¿Cuáles son los signos de alarma y diagnósticos diferenciales de estas enfermedades ocupacionales?

M. Solomonow. Ligaments: a source of work-related musculoskeletal disorders Journal of Electromyography and Kinesiology - February 2004 (Vol. 14, Issue 1, Pages 49-60, DOI: 10.1016/j.jelekin.2003.09.011)

Abstract

The mechanical and neurological properties of ligaments are reviewed and updated with recent development from the perspective which evaluates their role as a source of neuromusculoskeletal disorders resulting from exposure to occupational activities. Creep, tension-relaxation, hysteresis, sensitivity to strain rate and strain/load frequency were shown to result not only in mechanical functional degradation but also in the development of sensory-motor disorders with short- and long-term implication on function and disability. The recently exposed relationships between collagen fibers, applied mechanical stimuli, tissue microdamage, acute and chronic inflammation and neuromuscular disorders is delineated with special reference to occupational stressors.

Keywords: Ligaments, Muscles, Reflexes, Risk factors, Ergonomics

4.11 ¿Cuáles son los criterios de evolución de las enfermedades ocupacionales definidas, considerando los factores de riesgo, tiempo de exposición y edad del trabajador?

Injury and adaptive mechanisms in skeletal muscle Robert G. Cutlip, Brent A. Baker, Melinda Hollander, James Ensey Journal of Electromyography and Kinesiology - 04 September 2008 (10.1016/j.jelekin.2008.06.007)

Factors involved in strain-induced injury in skeletal muscles and outcomes of prolonged exposures William T. Stauber. Journal of Electromyography and Kinesiology - February 2004 (Vol. 14, Issue 1, Pages 61-70, DOI: 10.1016/j.jelekin.2003.09.010)
[http://www.jelectromyographykinesiology.com/article/S1050-6411\(03\)00132-9/abstract](http://www.jelectromyographykinesiology.com/article/S1050-6411(03)00132-9/abstract)

Abstract

Repetitive motion disorders can involve lengthening of skeletal muscles to perform braking actions to decelerate limbs under load often resulting in muscle strains and injury. Injury is a loss of isometric force (weakness) requiring days to recover. The capacity of skeletal muscle to tolerate repeated strains is dependent on multiple factors including individual variation. The most important factors producing muscle strain injury are the magnitude of the resisting force (peak-stretch force) and the number of strains. Other factors such as muscle length and fiber type contribute to the susceptibility to injury as well, but to a lesser degree. Strain injury can also lead to inflammation and pain. Chronic exposure to repeated strains can result in fibrosis that is not completely reversed after months of rest. Long rest times appear to be the only factor reported to prevent inflammation in rats following repeated strain injury. Further understanding of the mechanism for prevention of histopathologic changes by long rest times should provide a rationale for prevention of negative outcomes.

Keywords: Repetitive motion disorders, Prevention, Outcomes, Causative factors

Inflammation reduces physiological tissue tolerance in the development of work-related musculoskeletal disorders. Ann E. Barr, Mary F. Barbe. *Journal of Electromyography and Kinesiology* - February 2004 (Vol. 14, Issue 1, Pages 77-85, DOI: 10.1016/j.jelekin.2003.09.008) [http://www.jelectromyographykinesiology.com/article/S1050-6411\(03\)00134-2/abstract](http://www.jelectromyographykinesiology.com/article/S1050-6411(03)00134-2/abstract)

Abstract

Work-related musculoskeletal disorders (MSDs) cause substantial worker discomfort, disability and loss of productivity. Due to the difficulty in analyzing the tissues of patients in the early stages of work-related MSD, there is controversy concerning the pathomechanisms of the development of these disorders. The pathophysiology of work-related MSD can be studied more easily in animal models. The purpose of this review is to relate theories of the development of tissue injury due to repeated motion to findings of recent investigations in animals that address the role of the inflammatory response in propagating tissue injury and contributing to chronic or recurring tissue injury. These tissue effects are related to behavioral indicators of discomfort and movement dysfunction with the aim of clarifying key time points for specific intervention approaches. The results from animal models of MSD are discussed in the light of findings in patients, whose tissues are examined at a much later phase of MSD development. Finally, a conceptual model of the potentially negative impact of inflammation on tissue tolerance is proposed along with suggestions for future research directions.

Keywords: Work-related musculoskeletal disorders, Repetitive motion disorders, Inflammation, Animal models, Pathophysiology, Tissue injury

6.2 Cuáles son los componentes de un programa de rehabilitación laboral

Assessment of functional recovery in tennis elbow. Omid Alizadehkhayata, Anthony C. Fisherb, Graham J. Kempc, Karthik Vishwanathand, Simon P. Frosticka. *JOURNAL OF ELECTROMYOGRAPHY AND KINESIOLOGY* Received 6 October 2007; received in revised form 10 December 2007; accepted 31 January 2008. published online 17 March 2008. [http://www.jelectromyographykinesiology.com/article/S1050-6411\(08\)00030-8/abstract](http://www.jelectromyographykinesiology.com/article/S1050-6411(08)00030-8/abstract)

Abstract

Objectives: (a) To investigate changes in muscular strength, fatigue and activity in recovered tennis elbow (RTE); (b) to assess the appropriateness of EMG and strength measurements in monitoring functional recovery in tennis elbow (TE).

Methods: Study included three age-matched female groups of Control (C) ($n = 8$, no history of musculoskeletal problems), TE ($n = 7$, local tenderness at the lateral epicondyle and pain with resisted wrist and middle finger extension) and RTE ($n = 6$, asymptomatic for at least 6 months, no lateral epicondyle tenderness). Measurements included metacarpophalangeal (MCP), wrist, shoulder and grip isometric strength and EMG measures of muscle fatigue and activity for five forearm muscles (wrist extensors and flexors).

Results: Strength was greater ($p < 0.05$) for all measurements in C compared to RTE and TE except for MCP extension. Only MCP extension was stronger in RTE than TE. EMG revealed increased activity of extensor carpi radialis (ECR) in RTE, decreased in TE.

Conclusions: Despite attenuation of pain, global upper limb weakness in RTE indicated incomplete functional recovery. Increased strength of MCP extension may protect weakened wrist extensors from further injury. Monitoring the ECR activity as well as strength measurements may provide a useful assessment of functional recovery in TE.

Keywords: Lateral epicondylitis, Electromyography, Muscle strength, Muscle fatigue, Muscle activity

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Resúmenes del árbol de referencias “Interventions to reduce work-related musculoskeletal disorders”

Interventions to reduce work-related musculoskeletal disorders

Author(s): Silverstein B, Clark R

Source: JOURNAL OF ELECTROMYOGRAPHY AND KINESIOLOGY Volume: 14 Issue: 1
Pages: 135-152 Published: FEB 2004

Times Cited: 18 References: 65 Citation Map

Abstract: Work-related Musculoskeletal Disorders (WMSDs) continue to present a major challenge to workers and their employers in virtually every industry sector. Many disciplines have been involved in providing advice and working on interventions to prevent WMSDs or reduce their consequences. Since the early 1990s, 15 systematic reviews (excluding specific treatment modalities) have appeared in the peer-reviewed literature addressing musculoskeletal disorder reduction. The National Research Council-Institute of Medicine summarized many of these efforts in 2001. Using a systematic literature search strategy, we identified 20 randomized controlled studies, 17 quasi-experimental studies with control groups, and 36 paper reporting case studies with in the peer-reviewed literature between 1999-2003. Evidence is continuing to build that demonstrates combinations of measures appear to have the greatest effect in reducing WMSDs, although individual engineering and administrative controls can also have positive effects. (C) 2003 Elsevier Ltd. All rights reserved.

Document Type: Proceedings Paper

Language: English

Author Keywords: musculoskeletal disorders; interventions; systematic review; prevention

KeyWords Plus: LOW-BACK-PAIN; RANDOMIZED CONTROLLED-TRIAL; WORKSTATION IMPROVEMENT PROGRAM; RISK ASSESSMENT TEAM; VIDEO-DISPLAY UNITS; ERGONOMIC INTERVENTION; OCCUPATIONAL INJURY; FOLLOW-UP; SYSTEMATIC REVIEWS; COST-EFFECTIVENESS SIN ACCESO

MAPA DE CITAS:

1. **Beahler, CC 2000-AMERICAN JOURNAL OF PREVENTIVE MEDICINE Information retrieval in systematic reviews - Challenges in the public health arena**

Abstract: Background: Information retrieval for systematic reviews in occupational injuries and other public health areas is much more elusive than retrieval for reviews in clinical medicine, due to the interdisciplinary nature of the field and the lack of a significant body of evaluative literature.

Objective: The objective of this study is to provide information about challenges and methodology in relevant literature retrieval for systematic reviews in the effectiveness of strategies to prevent occupational injury.

Methods: Participants from Injury Control Research Centers and Agricultural Health and Safety Centers identified 12 areas of occupational injury and evaluated the effectiveness of interventions in each area. A systematic review of the literature was conducted, and results were critically reviewed and summarized.

Results: The search strategy captured 41,871 abstracts or titles across all research topics. After screening, 1356 documents were identified as being potentially eligible studies. Relevant articles were also identified through gleaning references and contact with professionals in the field.

Conclusions: Literature reviews in the field of occupational injury cannot be limited to database searches. Much of the literature is not well-indexed, and librarians must employ information retrieval methods other than database searching to retrieve relevant literature in the field.

Document Type: Article

Language: English

Author Keywords: accidents-occupational; databases-bibliographic; information science; library service; medical library; MEDLINE; public health SIN ACCESO

2. Delisle, A 2007-INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS The effects of two interventions on persistent pain: A multiple single-case study among sign language interpreters

Abstract: The goals of the present study were: (1) to explore the effects of two interventions (B: stress management and C: work style) among sign language interpreters (SLIs), using a single-case cross-over design; and (2) to document the feasibility of using such a repeated measures design in exploring work intervention impact. Seven participants reporting persistent pain during the baseline measurements were followed up every week using a questionnaire (psychological stress, musculoskeletal symptoms) and direct measurements (electromyography and goniometry) throughout the entire study. Interviews with the participants, management and union representatives, and questionnaires to the teachers and deaf students were used to assess feasibility. After the first baseline was established for all participants, three of them received intervention B followed by a second baseline and intervention C. The four other participants first received intervention C, followed by the second baseline and intervention B. Both interventions demonstrated a potential to reduce pain. For three of the four participants showing a reduction in pain, it was accompanied by a reduction in either the perceived stress or mechanical exposure, or both. It cannot be concluded that one intervention is better than the other. However, the fact that some individuals respond to one intervention or the other reveals that implementing both interventions would have the best chance for success in preventing disability among workers reporting persistent pain. Performing such a repeated measures design on a weekly basis was challenging for the participants, especially for instrumented measures. This type of design might however prove to be useful when exploring new interventions, especially if direct measurements are not of interest. SIN ACCESO

**3. Johnson, MD 2001-INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS
Impact of a change from an 8-h to a 12-h shift schedule on workers and occupational injury rates**

Abstract: Many industries find it necessary to operate 24 h per day, 7 d per week. Traditionally, industries have relied on 8-h work schedules that rotate on a weekly basis. In recent years, industries have begun implementing rotating 12-h schedules. The purpose of this study was to evaluate the impact on a group of production workers of changing from an 8-h to a 12-h rotating schedule. Factors evaluated in the study included the frequency of occupational injuries, the impact on workers' health, social and family life, and their overall schedule preference. Results of the study indicated a strong preference of the workers for the 12-h schedule with positive influences on the workers' subjective feeling toward health and social family life. The study also indicated that there was no significant change in the occupational injury rate.

Document Type: Article

Language: English

Author Keywords: shiftwork; rotating shift schedules; occupational health; safety SIN ACCESO

4. Yassi, A 2001-SPINE A randomized controlled trial to prevent patient lift and transfer injuries of health care workers

Abstract: Study Design. Randomized controlled trial (RCT).

Objectives. To compare the effectiveness of training and equipment to reduce musculoskeletal injuries, increase comfort, and reduce physical demands on staff performing patient lifts and transfers at a large acute care hospital.

Summary of Background Data. Back injury to nursing staff during patient handling tasks is a major issue in health care. The value of mechanical assistive devices in reducing injuries to these workers is unclear.

Methods. This three-armed RCT consisted of a "control arm," a "safe lifting" arm, and a "no strenuous lifting" arm. A medical, surgical, and rehabilitation ward were each randomly assigned to each arm. Both intervention arms received intensive training in back care, patient assessment, and handling techniques. Hence, the "safe lifting" arm used improved patient handling techniques using manual equipment, whereas the "no strenuous lifting" arm aimed to eliminate manual patient handling through use of additional mechanical and other assistive equipment.

Results. Frequency of manual patient handling tasks was significantly decreased on the "no strenuous lifting" arm. Self-perceived work fatigue, back and shoulder pain, safety, and frequency and intensity of physical discomfort associated with patient handling tasks were improved on both intervention arms, but staff on the mechanical equipment arm showed greater improvements. Musculoskeletal injury rates were not significantly altered.

Conclusions. The "no strenuous lifting" program, which combined training with assured availability of mechanical and other assistive patient handling equipment, most effectively improved comfort with patient handling, decreased staff fatigue, and decreased physical demands. The fact that injury rates were not statistically significantly reduced may reflect the less sensitive nature of this indicator compared with the subjective indicators.

Document Type: Article

Language: English

Author Keywords: back injury; health care workers; prevention; randomized controlled trial

KeyWords Plus: LOW-BACK-PAIN; ERGONOMIC EVALUATION; NURSES; EPIDEMIOLOGY; WHEELCHAIR; CLAIMS; TASKS; RISK SIN ACCESO

5. Pehkonen, I 2009-APPLIED ERGONOMICS Evaluation of a participatory ergonomic intervention process in kitchen work

Abstract: We evaluated a participatory ergonomic intervention process applied in 59 Municipal kitchens. In groups of three to five kitchens, the workers participated in eight workshops, and generated and evaluated solutions to optimize musculoskeletal load in their work. Ail ergonomist initiated and supported the process. By the end, 402 changes were implemented. Evaluative data were collected using research diaries, questionnaires, and focus group interviews. The intervention model proved feasible and the participatory approach was mostly experienced as motivating. The workers' knowledge and awareness of ergonomics increased, which improved their ability to tackle ergonomic problems by themselves. The changes in ergonomics were perceived to decrease physical load and improve musculoskeletal health. As hindering factors for implementation, lack of time and motivation, and insufficient financial resources were mentioned. In addition, the workers expressed a wish for more support from the management, technical staff, and ergonomists. (C) 2008 Elsevier Ltd. All rights reserved.

Document Type: Article

Language: English

Author Keywords: Participatory approach; Intervention process; Musculoskeletal load

KeyWords Plus: BACK-PAIN; MUSCULOSKELETAL DISORDERS; RISK-FACTORS; IMPLEMENTATION; PREVENTION; STRATEGIES; PROGRAMS; HEALTH; NECK SIN ACCESO

6. Denis, D 2008-APPLIED ERGONOMICS Intervention practices in musculoskeletal disorder prevention: A critical literature review

Abstract: Musculoskeletal disorders (MSDs) affect much of the workforce and remain a major form of occupational ill health. With a view to improving the efficacy of interventions, this review examined preventative actions relating to these disorders. A detailed analysis grid was used to classify the information contained in the 47 reviewed articles whose common aspect was to report actions carried out in the workplace that led to the implementation of changes to prevent MSDs. The analysis identified and characterized three major categories of intervention processes in MSD prevention: the complete type (n = 17), the shortened type (n = 16), and the turnkey type (n = 14). These three groups of intervention processes were differentiated by their approaches and their contexts of application. The result was important differences in the changes implemented. Because of the variability in intervention processes and possible impacts on MSD prevention, a proposal to "delimit" these processes so as to improve their effectiveness is presented. (C) 2007 Elsevier Ltd. All rights reserved.

Document Type: Review

Language: English

Author Keywords: workplace; intervention processes; changes

KeyWords Plus: PARTICIPATORY ERGONOMICS APPROACH; VIDEO-DISPLAY UNITS; TRAINING-PROGRAM; OCCUPATIONAL-HEALTH; PSYCHOSOCIAL STRESS; INDUSTRIAL-WORKERS; NURSING PERSONNEL; PHYSICAL WORKLOAD; UPPER EXTREMITY; VDU OPERATORS SIN ACCESO

7. Wassell, JT 2000-JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION A prospective study of back belts for prevention of back pain and injury

Abstract: Context Despite scientific uncertainties about effectiveness, wearing back belts in the hopes of preventing costly and disabling low back injury in employees is becoming common in the workplace.

Objective To evaluate the effectiveness of using back belts in reducing back injury claims and low back pain.

Design and Setting Prospective cohort study. from April 1996 through April 1998, we identified material-handling employees in 160 new retail merchandise stores (89 required back belt use; 71 had voluntary back belt use) in 30 states (from New Hampshire to Michigan in the north and from Florida to Texas in the south); data collection ended December 1998, median follow-up was 6 1/2 months.

Participants A referred sample of 13 873 material handling employees provided 9377 baseline interviews and 6311 (67%) follow-up interviews; 206 (1.4%) refused baseline interview.

Main Outcome Measurer Incidence rate of material-handling back injury workers' compensation claims and 6-month incidence rate of self-reported low back pain.

Results Neither frequent back belt use nor a belt-requirement store policy was significantly associated with back injury claim rates or self-reported back pain. Rate ratios comparing back injury claims of those who reported wearing back belts usually every day and once or twice a week vs those who reported wearing belts never or once or twice a month were 1.22 (95% confidence interval [CI], 0.87-1.70) and 0.95 (95% CI, 0.56-1.59), respectively. The respective odds ratios for low back pain incidence were 0.97 (95% CI, 0.83-1.13) and 0.92 (95% CI, 0.73-1.16).

Conclusions In the largest prospective cohort study of back belt use, adjusted for multiple individual risk factors, neither frequent back belt use nor a store policy that required belt use was associated with reduced incidence of back injury claims or low back pain.

Document Type: Article

Language: English PROBLEMAS INGRESO

8. Alexandre, NMC 2001-REVISTA DE SAUDE PUBLICA Evaluation of a program to reduce back pain in nursing personnel

Abstract: Objective To evaluate the effectiveness of a program designed to reduce back pain in nursing aides.

Methods Female nursing aides from a university hospital who had suffered episodes of back pain for at least six months were included in the Study. Participants were randomly divided into a control group and an intervention group. The intervention program involved a set of exercises and an educational component stressing the ergonomic aspect, administered twice a week during working hours for four months. All subjects answered a structured questionnaire and the intensity of pain was assessed before and after the program using a Visual analogue scale (VAS). Student's t-test or the Wilcoxon Rank Sum Test for independent samples, and Chi-square test or the Exact Fisher test for categorical analysis, were used. The McNemar test and the Wilcoxon matched pairs test were used to compare the periods before and after the program.

Results There was a statistically significant decrease in the frequency of cervical pain in the last two months and in the last seven days in the intervention group. There was also a reduction in cervical pain intensity in the two periods (2 months, 7 days) and lumbar pain intensity in the last 7 days.

Conclusions The results suggest that a program of regular exercise with an emphasis on ergonomics can reduce musculoskeletal symptoms in nursing personnel.

Document Type: Article

Language: English

Author Keywords: back pain, therapy; occupational health program; exercise; nurses aides; program evaluation; ergonomics (environmental health); occupational diseases, prevention and control OK

**9. Morken, T 2002-INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS
Effects of a training program to improve musculoskeletal health among industrial workers -
effects of supervisors role in the intervention**

Abstract: The aim of this randomized, controlled intervention study among operators in the aluminum industry in Norway was to examine the effects of a 1-year training program on musculoskeletal symptoms, psychosocial factors and coping. The program consisted of 10 meetings and focused on awareness of preventing musculoskeletal symptoms and on the process of promoting musculoskeletal health in the work environment. Three types of intervention groups comprised 549 workers from eight plants: (1) shift group with supervisor; (2) shift group without supervisor, and (3) managers only. A total of 721 workers were in a control group from the production line and 3699 workers in a control group from other sections. The number of operators included in the final evaluation was 2181. The effects were measured using a questionnaire including items on musculoskeletal symptoms, coping, job demands, control and social support. Participants in the intervention group, "operators without a supervisor", used coping strategies more often and tended towards increased social support. We found no significant changes in musculoskeletal symptoms. The intervention groups implemented changes in the work environment such as redesigning the workplace, changing working tools and increasing job variation. We suggest that there will be further improvements when the changes implemented by the intervention groups have been in place longer.

Relevance to industry

Industry uses various programs to reduce musculoskeletal disorders. However, their effects on health are little known. This study shows that training and actively involving the workers in solving specific problems in the work environment influence coping with musculoskeletal symptoms. This is important for preventing occupational disability from musculoskeletal disorders. (C) 2002 Elsevier Science B.V. All rights reserved.

Document Type: Article

Language: English

Author Keywords: training program; coping; musculoskeletal symptoms; social support; randomized controlled study SIN ACCESO

10. Foley, M 2009-AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Impact of Implementing the Washington State Ergonomics Rule on Employer Reported Risk Factors and Hazard Reduction Activity

Abstract: Background In Washington State an ergonomics rule was adopted in 2000 that focused on primary prevention. The implementation process followed a 6-year phase-in schedule where employers came into compliance hosed upon their size and industry. In late 2003 tire ride was repealed by an industry funded voter initiative. Evaluating the implementation of this cite offers a unique opportunity to observe the general deterrent effect of a new public health regulation and to study how employers and workers responded to new, requirements.

Methods weighted survey regression methods here used to analyze the results from three employer surveys covering more than 5,000 workplaces administered in 2001, 2003, and 2005. These were. compared to a baseline employer surge v conducted in 1998 before the cite was promulgated. Questions covered the following topics: WMSDs experienced at the workplace; levels of employee exposure to musculoskeletal hazards;.steps being taken, if any, to address these hazards; results of these steps; curd sources of ergonomic information/ assistance used.

Results Front 1998 to 2003 there was a reduction in reported exposures among workplaces in the highest hazard industries. Following the rule's repeal, however; hazard exposures increased. While more workplaces reported taking steps to reduce exposures between 1998 and 2001, this gain was reversed in 2003 and 2005. Employers who took steps reported positive results in injury and absenteeism reduction. Large workplaces in the high hazard industries were more active in taking steps and used a wide variety of resources to address ergonomics issues. Small employers relied more on trade associations and the state. Am. J. Ind. Med. 52:1-16. 2009. (C) 2008 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: ergonomics; work-related musculoskeletal disorders; regulation; public health law; occupational injuries; occupational diseases; economic impacts; regulatory effectiveness

KeyWords Plus: TUNNEL-SYNDROME SIN ACCESO

11. Lagerstrom, M 1998-SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH Work-related low-back problems in nursing

Abstract: This scientific literature review focuses on the relation between nursing work and low-back problems. Its aim was to estimate the risk of physical, psychosocial, and work organizational exposure factors that may lead to low-back problems. In addition this paper reviews and evaluates reported ergonomic intervention, with the object of decreasing the prevalence and incidence of low-back problems among nurses. A considerable number of studies of nursing staff has shown the connection between lifts and transfers of patients on one hand and low-back problems on the other. Factors in nursing work that may be significant in this connection are staff density and work satisfaction. In this review the single individual factor that was indisputably related to low-back problems was "history of back problems". Prevention programs do not show unequivocally positive results. There is a great need to carry out prospective studies with preventive programs.

Document Type: Review

Language: English

Author Keywords: ergonomic intervention; nurses; physical factors; psychosocial factors; review; work organizational factors

KeyWords Plus: INJURY PREVENTION PROGRAM; RISK-FACTORS; MUSCULOSKELETAL DISORDERS; ERGONOMIC INTERVENTION; SECONDARY PREVENTION; OCCUPATIONAL-HEALTH; GENERAL-POPULATION; HOSPITAL NURSES; JOB STRAIN; PAIN SIN ACCESO

12. Daynard, D 2001-APPLIED ERGONOMICS Biomechanical analysis of peak and cumulative spinal loads during simulated patient-handling activities: a substudy of a randomized controlled trial to prevent lift and transfer injury of health care workers

Abstract: Back injuries are a serious problem for nursing personnel who perform frequent patient-handling activities. Common prevention strategies include body mechanics education, technique training, and ergonomic interventions such as the introduction of assistive equipment. This investigation assessed and compared the effectiveness of two patient-handling approaches to reducing injury risk. One strategy involved using improved patient-handling technique with existing equipment, and the other approach aimed at eliminating manual patient handling through the use of additional mechanical and other assistive equipment. Both intervention arms received training in back care, patient assessment, and use of the equipment available on their particular wards. An analysis of compliance with interventions and the effects of patient-handling methods on both peak and cumulative spinal compression and shear during various tasks was conducted. Results showed greater compliance with interventions that incorporated new assistive patient-handling equipment, as opposed to those consisting of education and technique training alone. In several tasks, subjects who were untrained or non-compliant with interventions experienced significantly higher peak spinal loading. However, patient-handling tasks conducted with the aid of assistive equipment took substantially longer than those performed manually. This, along with variations in techniques, led to increases in cumulative spinal loading with the use of patient-handling equipment on some tasks. Thus, the use of mechanical assistive devices may not always be the best approach to reducing back injuries in all situations. No single intervention can be recommended; instead all patient-handling tasks should be examined separately to determine which methods maximize reductions in both peak and cumulative lumbar forces during a manoeuvre. (C) 2001 Elsevier Science Ltd. All rights reserved.

Document Type: Article

Language: English

Author Keywords: biomechanical analysis; spinal loading; patient handling

KeyWords Plus: LOW-BACK-PAIN; ERGONOMIC EVALUATION; NURSING PROFESSION; NURSES; RISK; EPIDEMIOLOGY; PREVALENCE; DISABILITY; WHEELCHAIR; PERSONNEL SIN ACCESO

13. Shinozaki, T 2001-AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Intervention for prevention of low back pain in Japanese forklift workers

Abstract: Background The effectiveness of two different approaches for the prevention of low back pain (LBP) was compared in forklift workers. The first approach (personal) consisted of providing lumbar support, arctic jacket and physical exercise, and the second (facility approach) included the improvement of forklift seats and tires.

Methods The self-reported prevalence of LBP was surveyed three times before and after the two forms of interventions, in 260 male blue-collar workers including 27 forklift workers, and 55 male white-collar workers of a copper smelter

Results The initial prevalence of LBP was 63% in the forklift workers, which was significantly higher than that found in the other blue-collar workers (32%) and in the white-collar workers (22%). One year after the first intervention (personal approach) to the forklift workers, the prevalence of LBP fell to 56%. The second intervention (facility approach), which was mainly comprised of a reduction in whole body vibration, was subsequently added, and 9 months later the prevalence of LBP in the forklift workers further decreased to 33%. The reduction of the prevalence from the initial survey was significant ($P = 0.008$), and that from the second survey was nearly significant ($P = 0.070$).

Conclusions These findings suggest that the facility approach is more effective for a reduction of LBP than the personal approach. (C) 2001 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: low back pain; forklift worker; prevention; personal approach; facility approach

KeyWords Plus: CONTROLLED TRIAL; LUMBAR SUPPORTS; DISORDERS SIN ACCESO

14. Rosenstock, L 2002-AMERICAN JOURNAL OF PUBLIC HEALTH Attacks on science: The risks to evidence-based policy

As government agencies, academic centers, and researchers affiliated with them provide an increasing share of the science base for policy decisions, they are also subject to efforts to politicize or silence objective scientific research. Such actions increasingly use sophisticated and complex strategies that put evidence-based policy making at risk. To assure the appropriate use of scientific evidence and the protection of the scientists who provide it, institutions and individuals must grow more vigilant against these tactics. Maintaining the capacity for evidence-based policy requires differentiating between honest scientific challenge and evident vested interest and responding accordingly, building and diversifying partnerships, assuring the transparency of funding sources, agreeing on rules for publication, and distinguishing the point where science ends and policy begins.

15. Ostelo, RWJG 2003-SPINE Rehabilitation following first-time lumbar disc surgery - A systematic review within the framework of the Cochrane Collaboration

Abstract: Study Design: A systematic review of randomized controlled-trials.

Background. Although several rehabilitation programs, physical fitness programs, or, protocols regarding instruction for patients to return to work after lumbar disc surgery have been suggested, little is known about the efficacy of these treatments, and there are still persistent fears of causing: reinjury, reherniation; or instability.

Objectives. The objective of this systematic review was to evaluate the effectiveness of active treatments that are used in the rehabilitation after first-time lumbar disc surgery:.

Methods. The authors searched the MEDLINE, Embase, and Psyclit databases up to April 2000 and the Cochrane Controlled Trials Register 2001, issue 3. Both randomized and nonrandomized controlled trials on any type of active rehabilitation program after first-time disc surgery were included. Two independent reviewers performed the inclusion of studies; and two other reviewers' independently performed the methodologic quality assessment. A rating system that consists of four levels of scientific evidence summarizes the results.

Results Thirteen studies were included, six of which were of high quality. :T here is no strong evidence for the effectiveness for any treatment starting immediately post-surgery, mainly because of the lack of good quality studies. For treatments that start 4 to 6 weeks postsurgery there is strong evidence (level 1) that intensive exercise programs are-more effective on functional status and faster return to work (short-term follow-up) as compared to mild exercise programs, and there is strong evidence (level 1) that on long-term follow-up there is no difference between intensive exercise programs and mild exercise programs with regard to overall improvement: For all other primary outcome measures for the comparison between intensive and mild exercise programs, there is conflicting evidence (level 3) with regard to long-term follow-up. Furthermore, there is no strong evidence for the effectiveness of supervised training as compared to home exercises. There is also no strong evidence for the effectiveness of multidisciplinary rehabilitation as compared to usual care. There is limited evidence (level 3) that treatments in working populations that aim at return to work are more effective than usual care with regard to return to work. Also, there is limited evidence (level 3) that low tech and high tech exercises, started more than 12 months postsurgery are more effective in improving low back functional status as compared to physical agents, joint manipulations, or no treatment. Finally, there is no strong evidence for the effectiveness of any specific intervention when added to an exercises program, regardless of whether exercise programs start immediately postsurgery or later. None of the investigated treatments seem harmful with regard to reherniation or reoperation.

Conclusions. There is no evidence that patients need to have their activities restricted after first-time lumbar disc surgery. There is strong evidence for intensive exercise programs (at least if started about 4-6 weeks post operative) and no evidence they increase the reoperation rate. It is unclear what the exact content of postsurgery rehabilitation should be. Moreover, there are no studies that investigated whether active rehabilitation programs should start immediately postsurgery for a possible 4 to 6 weeks later.

Document Type: Review

Language: English

Author Keywords: low back pain; postsurgery; lumbar disc surgery; systematic review; rehabilitation; exercises

KeyWords Plus: LOW-BACK-PAIN; CLINICAL-TRIAL; EXERCISE; HERNIATION; DISKECTOMY; MICRODISCECTOMY; DISCECTOMY; OUTCOMES; RETURN SIN ACCESO

**16. Stover, B 2007-JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE
Prognostic factors of long-term disability in a workers' compensation system MEDICO
LEGAL**

Abstract: Objective: We identified predictive factors of long-term disability in new workers' compensation claims to guide secondary, prevention research and target interventions for high-risk claims. Methods: Workers with 4 or more days of work disability resulting from workplace injuries were followed for approximately 6 years in a population-based retrospective inception cohort study of 81,077 workers. Results: Predictors of long-term disability included delay between injury and first medical treatment, older age, construction industry, logging occupation, longer time from medical treatment to claim filing, back injury, smaller firm size, female gender, higher unemployment rate, and having dependents. We used logistic and quantile regression to investigate predictors of disability. These models produced consistent information regarding predictors. Conclusion: These factors can be used to identify Jobs or workers at increased risk for long-term disability that warrant Prevention intervention.

Document Type: Article

Language: English

KeyWords Plus: RETURN-TO-WORK; LOW-BACK-PAIN; OF-THE-LITERATURE; UPPER-EXTREMITY; MUSCULOSKELETAL DISORDERS; WASHINGTON-STATE; OCCUPATIONAL INJURY; HEALTH-CARE; OUTCOMES; DURATION SIN ACCESO

17. Aaras, A 2001-APPLIED ERGONOMICS Musculoskeletal, visual and psychosocial stress in VDU operators before and after multidisciplinary ergonomic interventions. A 6 years prospective study - Part II

Abstract: A prospective epidemiological field study covering a 2 years period has earlier been published (Appl. Ergon. (1998) 29(5) 335). The study has a parallel group design with two intervention groups (T and S) and one control group (C) of Visual Display Unit (VDU) operators. The present paper covers the period from 2 to 6 years of the study. After 3.5 years, the C group got the same intervention in terms of new fighting system, new workplaces and at last an optometric examination and corrections if needed. The C group reported a significant reduction in visual discomfort after interventions while the two groups (T and S) continued to report significant reduction of visual discomfort after 6 years. By supporting the forearm on the table top, the C group reported significant reduction of shoulder and neck pain while the T group reported significant reduction in shoulder and back pain after 6 years. Organizational and psychosocial factors at work and outside work did not show any significant changes during the study period. (C) 2001 Elsevier Science Ltd. All rights reserved.

Document Type: Article

Language: English

Author Keywords: VDU workplaces; lighting conditions; visual conditions; visual discomfort; musculoskeletal illness

KeyWords Plus: COMPUTER MOUSE; DISPLAY UNIT; WORK; HEALTH SIN ACCESO

18. Fanello, S 1999-REVUE DU RHUMATISME Evaluation of an educational low back pain prevention program for hospital employees

Abstract: Objectives. To evaluate the impact of an educational low back pain prevention program in a cohort of hospital employees. Methods. A cohort of 136 nonclerical hospital employees attended classes on safe postures and patient handling, then received advice by educators who observed them while they performed their typical workday tasks. Each of the subjects in this intervention group was matched on age, sex, and job category with a control. Musculoskeletal complaints and changes in habits during work and recreational activities were evaluated before the intervention (or the corresponding date in the control group) and after two years. Results. In the intervention group, 36% of subjects with low back pain at baseline were free of this symptom at follow-up, whereas only 26% were in the opposite situation. The proportion of subjects with low back pain episodes lasting longer than 30 days increased significantly from baseline to follow-up in the control group (from 30% to 49%) but not in the intervention group. The number of sick leaves longer than 30 days decreased significantly in the intervention group. Only 33% of the intervention group subjects felt the intervention had been helpful; this proportion varied across job categories. Conclusion. Our data suggest that differences in job categories should be taken into account when designing educational programs for preventing low back pain. They also indicate that back school programs may be more effective in subjects with a history of low back pain, whereas instruction on safe postures and patient handling may be the best approach in subjects who have not previously experienced low back pain. Observing and providing advice to employees while they are performing their usual duties may be an essential component of low back pain prevention.

Document Type: Article

Language: English

Author Keywords: low back pain; prevention; hospital employees

KeyWords Plus: INJURIES SIN ACCESO

**19. Fredriksson, K 2001-INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS
The impact on musculoskeletal disorders of changing physical and psychosocial work environment conditions in the automobile industry**

Abstract: In the car-body-sealing department at an automobile assembly plant in Sweden, a reorganisation of work from lineout to line production was performed. The aim of the present investigation was to study the influence of changes in physical and psychosocial conditions on musculoskeletal disorders. Working conditions were studied on two occasions, before and after the change. Physical workload regarding strenuous postures and movements was assessed by questionnaires, direct measurements recordings and by computer based observations registrations, and the psychosocial conditions by questionnaires and group discussions. The musculoskeletal disorders of the workers were studied by reports from the occupational health care centre and by self-reported musculoskeletal symptoms. A decrease in the time spent in strenuous positions was found, but the work cycle time decreased considerably and the worker felt 'robotised'. There was a marked decrease in the perception of opportunities to influence the work, as well as the stimulation at work. The amount of musculoskeletal disorders increased for the study group, but not for a reference group from the same plant. A possible explanation for the increase in

musculoskeletal disorders was the increase in perceived physical exertion and the decrease in occupational pride.

Relevance to industry

This paper illustrates the importance of paying attention to psychosocial issues in order to avoid musculoskeletal disorders after an intervention mainly aimed at physical workstation design. (C) 2001 Elsevier Science B.V. All rights reserved.

Document Type: Article

Language: English

Author Keywords: line production; change process; physical working conditions; psychosocial working conditions; perceived physical exertion; occupational pride; musculoskeletal disorders

KeyWords Plus: UPPER-LIMB DISORDERS; LOW-BACK-PAIN; RISK-FACTORS; UPPER EXTREMITY; ERGONOMIC INTERVENTION; SHOULDER DISORDERS; REPETITIVE WORK; ASSEMBLY WORK; CARE-SEEKING; FOLLOW-UP SIN ACCESO

20. Landstad, BJ 2002-ERGONOMICS A statistical human resources costing and accounting model for analysing the economic effects of an intervention at a workplace

Abstract: The study had two primary aims. The first aim was to combine a human resources costing and accounting approach (HRCA) with a quantitative statistical approach in order to get an integrated model. The second aim was to apply this integrated model in a quasi-experimental study in order to investigate whether preventive intervention affected sickness absence costs at the company level. The intervention studied contained occupational organizational measures, competence development, physical and psychosocial working environmental measures and individual and rehabilitation measures on both an individual and a group basis. The study is a quasi-experimental design with a non-randomized control group. Both groups involved cleaning jobs at predominantly female workplaces. The study plan involved carrying out before and after studies on both groups. The study included only those who were at the same workplace during the whole of the study period. In the HRCA model used here, the cost of sickness absence is the net difference between the costs, in the form of the value of the loss of production and the administrative cost, and the benefits in the form of lower labour costs. According to the HRCA model, the intervention used counteracted a rise in sickness absence costs at the company level, giving an average net effect of 266.5 Euros per person (full-time working) during an 8-month period. Using an analogue statistical analysis on the whole of the material, the contribution of the intervention counteracted a rise in sickness absence costs at the company level giving an average net effect of 283.2 Euros. Using a statistical method it was possible to study the regression coefficients in sub-groups and calculate the p-values for these coefficients; in the younger group the intervention gave a calculated net contribution of 605.6 Euros with a p-value of 0.073, while the intervention net contribution in the older group had a very high p-value. Using the statistical model it was also possible to study contributions of other variables and interactions. This study established that the HRCA model and the integrated model produced approximately the same monetary outcomes. The integrated model, however, allowed a deeper understanding of the various possible relationships and quantified the results with confidence intervals.

Document Type: Article

Language: English

Author Keywords: Human Resources Costing and Accounting (HRCA); statistical analyses; integrated model; economic effects; early intervention; workplace; women; musculoskeletal diseases

KeyWords Plus: HEALTH PROMOTION; SELECTION BIAS; PROGRAMS; SUPPORT; SAMPLE; WORK SIN ACCESO

21. Demure, B 2000-JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Video display terminal workstation improvement program: I. Baseline associations between musculoskeletal discomfort and ergonomic features of workstations

Abstract: Associations between selected sites of musculoskeletal discomfort and ergonomic characteristics of the video display terminal (VDT) work station were assessed in analyses controlling for demographic, psychosocial stress, and VDT use factors in 273 VDT users from a large administrative department. Significant associations with wrist/hand discomfort were seen for female gender; working 7+ hours at a VDT; low job satisfaction; poor keyboard position; use of new, adjustable furniture; and layout of the workstation. Significantly increased odds ratios for neck/shoulder discomfort were observed for 7+ hours at a VDT, less than complete job control, older age (40 to 49 years), and never/infrequent breaks. Lower back discomfort was related marginally to working 7+ hours at a VDT. These results demonstrate that some characteristics of VDT workstations, after accounting for psychosocial stress, can be correlated with musculoskeletal discomfort.

Document Type: Article

Language: English

KeyWords Plus: WORK POSTURE; DISORDERS; SYMPTOMS; HEALTH; OPERATORS; EMPLOYEES; TASK SIN ACCESO

22. KARSH BT 2001-THEORETICAL ISSUES E Article title not available

23. Zwerling, C 1997-AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Design and conduct of occupational injury intervention studies: A review of evaluation strategies

Abstract: Occupational injuries continue to exact a great toll on American workers and their employers-the physical and financial costs are enormous. However, in the current political climate, few employers or regulatory agencies will implement injury prevention interventions without specific evidence of their effectiveness. This paper reviews the literature on the design, conduct, and evaluation of occupational injury interventions. Our review suggests that randomized controlled trials are rare and also notes that the quasi-experimental studies in the literature often use the weakest designs. We recommend a hierarchical approach to evaluating occupational injury interventions-beginning with qualitative studies, following up with simple quasi-experimental designs using historical controls, continuing with more elaborate quasi-experimental designs comparing different firms' experience, and, when necessary, implementing randomized controlled trials. (C) 1997 Wiley-Liss, Inc.

Document Type: Proceedings Paper

Language: English

Author Keywords: injury; intervention; evaluation; occupational; methodology

KeyWords Plus: LOW-BACK INJURY; ERGONOMIC INTERVENTION; SECONDARY PREVENTION; IMPACT; SAFETY; PAIN; INDUSTRY; PROGRAM; HEALTH; WORK SIN ACCESO

24. Walker-Bone, K 2005-ANNALS OF THE RHEUMATIC DISEASES Hard work never hurt anyone: or did it? A review of occupational associations with soft tissue musculoskeletal disorders of the neck and upper limb

Abstract: Pain in the neck and upper limb is common and contributes considerably to absence from work due to sickness. Evidence suggest that prolonged abnormal posture and repetition contribute to such conditions. Psychosocial risk factors may also play a part in the aetiology of upper limb disorders.

Document Type: Review

Language: English

KeyWords Plus: CARPAL-TUNNEL-SYNDROME; RISK-FACTORS; PSYCHOSOCIAL FACTORS; RHEUMATIC DISORDERS; SHOULDER PAIN; CRITERIA; SYMPTOMS; ONSET OK

25. Eklof, M 2006-APPLIED ERGONOMICS Are simple feedback interventions involving workplace data associated with better working environment and health? A cluster randomized controlled study among Swedish VDU workers

Abstract: Objective: To test whether feedback and discussion of ergonomic and psychosocial working environment data during I short session with individual, groups, or supervisors of VDU workers had effects on (1) the quality of implemented modifications in workplace design, working technique, or psychosocial aspects; (2) psychological demands, decision latitude, and social support, (3) comfort during computer work, emotional stress, and prevalence Of musculoskeletal symptoms or eye discomfort.

Methods. Thirty-six workgroups from 9 organizations were randomized to 3 feedback conditions (individual, workgroup, supervisor) or control. Follow-up was 6 months after intervention. Questionnaire data aggregated on the workgroup level were used.

Results: Effect (positive) on social support was indicated from feedback to Supervisors.

Conclusion: Feedback and discussion of ergonomic and psychosocial working environment data with supervisors of white-collar VDU workers may have positive effect on social support measured as a group Characteristic. Sources of potential bias are discussed. (c) 2005 Elsevier Ltd. All rights reserved.

Document Type: Article

Language: English

Author Keywords: intervention; psychosocial factors; VDU work

KeyWords Plus: MUSCULOSKELETAL DISORDERS; PSYCHOSOCIAL FACTORS; STRESS; MANAGEMENT; ERGONOMICS; FRAMEWORK; SYMPTOMS; MEMORY; RISK SIN ACCESO

26. Ketola, R 2002-SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH Effects of ergonomic intervention in work with video display units

Abstract: Objectives This study evaluated the effect of an intensive ergonomic approach and education on workstation changes and musculoskeletal disorders among workers who used a video display unit (VDU).

Methods A randomized controlled design was used. The subjects (N=124) were allocated into three groups (intensive ergonomics, ergonomic education, reference) using stratified random sampling. The evaluation involved questionnaires, a diary of discomfort, measurements of workload, and an ergonomic rating of the workstations. The assessments were made 2 weeks before the intervention and after 2 and 10 months of follow-up.

Results The intensive and training groups showed less musculoskeletal discomfort than the reference group after 2 months of follow-up. Positive effects on discomfort were seen primarily for the shoulder, neck, and upper back areas. No significant differences were found for the strain levels or prevalence of pain. After the intervention the ergonomic level was distinctly higher in the intensive ergonomic group than in the education or reference group.

Conclusions Both the intensive ergonomics approach and education in ergonomics help reduce discomfort in VDU work. In attempts to improve the physical ergonomics of VDU workstations, the best result will be achieved with cooperative planning in which both workers and practitioners are actively involved.

Document Type: Article

Language: English

Author Keywords: diary of discomfort; musculoskeletal discomfort; musculoskeletal pain; musculoskeletal strain; neck pain; participatory ergonomics; shoulder pain; randomized controlled trial; workload

KeyWords Plus: COMPUTER USERS; MUSCULOSKELETAL DISORDERS; HEALTH; NECK; PAIN

27. Dahl, JC 2001-EUROPEAN JOURNAL OF PAIN-LONDON Evaluation of a randomized preventive behavioural medicine work site intervention for public health workers at risk for developing chronic pain

Abstract: Because of the substantial increase of sick listing, reports of work disabilities and early retirement due to the musculoskeletal chronic pain, prevention studies at the work site are greatly needed. The purpose of the present study was to investigate the effects of a cognitive behavioural work site intervention on a group of public health workers judged to be at risk for developing chronic pain. Following baseline measurements, a group of 29 practical nurses with daily pain symptoms working at services for the elderly were randomized into two conditions: an active treatment based on cognitive behaviour therapy and a passive treatment based on traditional symptom alleviation. The two treatment conditions, provided by a registered nurse and a physical therapist, took place 30 min a week each once a week, on an individual basis for 4 weeks at the work site during work time. Results at 4 and 8 weeks and at 6, 12 and 24 month follow-ups showed improvements for those individuals receiving the active treatment with regard to the reduction of use of pain-killers, perception of one's self as being sick and the fear-avoidance response to work-related activities. A preliminary conclusion was that this short-term work site programme for the prevention of chronic pain for individuals at risk may be a promising development in the treatment of pain. (C) 2001 European Federation of Chapters of the International Association for the Study of Pain.

Document Type: Article

Language: English

Author Keywords: prevention; chronic pain; behavioural medicine; work site; public health workers

KeyWords Plus: LOW-BACK-PAIN; PRIMARY-CARE; GENERAL-PRACTICE; MPI-S; PROGRAM; FEAR; PREDICTORS; DISABILITY; VERSION; TRIAL SIN ACCESO

28. van den Heuvel, SG 2003-SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH Effects of software programs stimulating regular breaks and exercises on work-related neck and upper-limb disorders

Abstract: Objectives This study evaluated the effects on work-related neck and upper-limb disorders among computer workers stimulated (by a software program) to take regular breaks and perform physical exercises. Possible effects on sick leave and productivity were studied as well.

Methods A randomized controlled design was used with cluster randomization. Altogether 268 computer workers with complaints in the neck or an upper limb from 22 office locations were randomized into a control group, one intervention group stimulated to take extra breaks and one intervention group stimulated to perform exercises during the extra breaks during an 8-week period. Questionnaires were administered before and after the intervention, and questions were generated by the software during the intervention period. Computer usage was recorded online.

Results The data on self-reported recovery suggested a favorable effect; more subjects in the intervention groups than in the control group reported recovery (55% versus 34%) from their complaints and fewer reported deterioration (4% versus 20%). However, a comparison between the reported pre- and postintervention scores on the severity and frequency of the complaints showed no significant differences in the change among the three groups. No effects on sick leave were observed. The subjects in the intervention groups showed higher productivity.

Conclusions The use of a software program stimulating workers to take regular breaks contributes to perceived recovery from neck or upper-limb complaints. There seems to be no additional effects from performing physical exercises during these breaks.

Document Type: Article

Language: English

Author Keywords: computer work; microbreaks; productivity; randomized controlled trial; rest breaks; sick leave

KeyWords Plus: MUSCULOSKELETAL DISORDERS; REST BREAKS; SHOULDER SIN ACCESO

29. Carrivick, PJW 2002-JOURNAL OF OCCUPATIONAL HEALTH Effectiveness of a participatory workplace risk assessment team in reducing the risk and severity of musculoskeletal injury

Abstract: This study evaluates the effectiveness of a participatory workplace risk assessment team (the intervention) in reducing the rate and severity of musculoskeletal and non-musculoskeletal injuries among a cohort of 137 cleaners within a hospital setting. The date, workers' compensation claims cost and hours lost from work were obtained for each injury occurring during the 4-yr pre-intervention and 3-yr post-intervention period. The age, gender and hours worked during the study period, were ascertained for every cleaner whether injured or not. For musculoskeletal injuries, the intervention was associated with

significant reductions of two-thirds in injury rate, 65% in workers' compensation claims cost per hour worked, and 40% in hours lost per hour worked. Cleaners also experienced a significant two-third post-intervention reduction in non-musculoskeletal injury rate; but the corresponding changes in severity rates were not significant. The intervention supports the adoption of a participatory approach to reducing the rate and consequence of musculoskeletal injuries in the workplace.

Document Type: Article

Language: English

Author Keywords: manual handling; musculoskeletal injury; participatory ergonomics; workplace risk assessment

KeyWords Plus: WORKING-CONDITIONS; ENGINEERING WORKSHOP; ERGONOMICS APPROACH; MIXED MODELS; HEALTH SIN ACCESO

30. MAY DC 2002-APPL OCCUP ENV HYG Article title not available

31. Elders, LAM 2000-INTERNATIONAL ARCHIVES OF OCCUPATIONAL AND ENVIRONMENTAL HEALTH Return to work after sickness absence due to back disorders - A systematic review on intervention strategies

Abstract: Objectives: The aim was to review the literature with regard to the effectiveness of intervention programmes for the prevention of aggravation of back disorders or prolonged duration of sickness absence. Methods: A systematic search of the literature was performed using three groups of key words and inclusion/exclusion criteria. Effectiveness was evaluated using two measures: the difference between intervention and referent groups in return to work, and the fraction of sickness absence among referent groups that could be prevented if these referents had undergone the same intervention (preventable Fraction). Results: Twelve articles with quantitative information on the effect of ergonomic interventions on return to work were included. In eight studies, introduction of a back-school programme was the preferred intervention, combining exercise and functional conditioning, and training in working methods and lifting techniques. In seven out of eight back-school studies, return to work was significantly better in the intervention group. Intervention after 60 days, in the subacute phase of back pain, showed the most promising results. In these studies the preventable fraction varied between -11% and 80%, largely depending on the stage and phase of back disorders and the time of follow-up. The success of intervention also depended on the profile of the referents when left untampered. In all studies compliance during the intervention was fairly good, but there was a lack of information on sustainability of the intervention during the follow-up and on recurrence of back complaints and consequent sickness absence. Conclusions: Few studies were performed to assess the outcome return to work after ergonomic intervention. However, there is evidence that intervention in the subacute phase of back pain is preferable. Future intervention studies should address intervention sustainability and recurrence of sickness absence due to back pain over at least a 1-year follow-up period.

Document Type: Article

Language: English

Author Keywords: review; back disorders; return to work; intervention; back-school

KeyWords Plus: FUNCTIONAL RESTORATION PROGRAM; RANDOMIZED CLINICAL-TRIAL; RISK-FACTORS; FOLLOW-UP; PAIN; DISABILITY; REHABILITATION; PREVENTION; INJURY; SCHOOL SIN ACCESO

32. HORNEIJ E 2001-J REHABIL MED Article title not available

33. Hagg, GM 2003-APPLIED ERGONOMICS Corporate initiatives in ergonomics - an introduction

Abstract: Examples in the literature of corporate initiatives in ergonomics are reviewed. Different types of programmes are identified with ambitions ranging from time-limited interventions to continuous processes. Common elements are health surveillance, workstation design and choice of tools, product design, quality aspects, participative aspects and education, training and information. The implementation of ergonomics programmes varies substantially depending on the type of company, and company policies and organisation.

Some of the most developed ergonomics programmes originate from the automobile industry. Other businesses with many established programmes are the electronics industry, the food industry and the office environment. A participative approach, as well as ergonomics expertise, are crucial ingredients for a successful programme. The scientific evaluation of ergonomics programmes, especially in economical terms, is in too many cases insufficient or missing. Furthermore, links to company core values such as quality improvement are often lacking. Programmes in ergonomics are still often seen as solely a matter of health and safety. Only a few companies have reached the state where ergonomics constitutes an integrated part of the overall strategy of the enterprise. (C) 2002 Elsevier Science Ltd. All rights reserved.

Document Type: Editorial Material

Language: English

Author Keywords: intervention; participation; education; training; process

KeyWords Plus: VIDEO-COMPUTER INTERACTION; UPPER LIMB DISORDERS; PARTICIPATORY ERGONOMICS; WORK; MUSCULOSKELETAL; INTERVENTION; QUALITY; IMPACT; HEALTH; ENVIRONMENT SIN ACCESO

34. Marras, WS 2000-ERGONOMICS Prospective validation of a low-back disorder risk model and assessment of ergonomic interventions associated with manual materials handling tasks

Abstract: The evaluation of low-back disorder risk associated with materials handling tasks can be performed using a variety of assessment tools. Most of these tools vary greatly in their underlying logic, yet few have been assessed for their predictive ability. It is important to document how well an assessment tool realistically reflects the job's injury risk, since only valid and accurate tools can reliably determine whether a given ergonomic intervention will result in a future reduction in back injuries. The goal of this study was to evaluate how well a previously reported low-back disorder (LBD) risk assessment model (Marras et al. 1993) could predict changes in LBD injury rates as the physical conditions to which employees are exposed were changed. Thirty-six repetitive materials handling jobs from 16 different companies were included in this prospective cohort study. Of these 36 jobs, 32 underwent an ergonomic intervention during the observation period, and four jobs in which no intervention occurred served as a comparison group. The trunk motions and workplace features of 142 employees performing these jobs were observed both before and after workplace interventions were incorporated. In addition, the jobs' LBD rates were documented for these pre- and post-intervention periods. The results indicated that a statistically significant correlation existed between changes in the

jobs' estimated LBD risk values and changes in their actual low-back incidence rates over the observation period. Linear and Poisson regression models also were developed to predict a change in a job's incidence rate and the number of LBD on a job respectively, as a function of the job's risk change using this assessment model. Finally, this prospective study showed which ergonomic interventions consistently reduced the jobs' mean low-back incidence rates. These results support use of the LBD risk model to assess accurately a job's potential to lead to low-back injuries among its employees.

Document Type: Article

Language: English

Author Keywords: industrial ergonomics; low-back disorder risk; validation; workplace interventions; manual materials handling

KeyWords Plus: PAIN; WORKPLACE; INJURY; MOTION; DESIGN SIN ACCESO

35. Maier-Riehle, B 2001-INTERNATIONAL JOURNAL OF REHABILITATION RESEARCH The effects of back schools - a meta-analysis

Abstract: Back schools are educational programmes for the prevention and rehabilitation of back pain. A quantitative review (meta-analysis) was performed to synthesize the existing evidence on their effectiveness, for different outcome criteria and time categories. On the basis of a systematic literature research, 15 controlled back school studies with a total of 1682 participants could be included in the meta-analysis. Effect sizes that compared back school patients with patients in a control group were calculated for 14 outcome criteria and four time categories. Effectiveness of back schools was shown for the time period within 6 months of intervention. However, effects for the 14 examined criteria revealed large differences: in contrast to the strong effects on correct back posture and movements and on knowledge of back school contents, the intervention had only small effects on health economic variables (e.g. utilization of the health care system) and no effects on clinical variables (e.g. pain intensity). With regard to the time period following the 6 months after intervention, the analysed data does not strongly support the effectiveness of back schools. It is concluded that the effectiveness of back school intervention depends on the outcome criterion and time of measurement. The results suggest that the concept of back school programmes should be improved and systematically re-evaluated. (C) 2001 Lippincott Williams & Wilkins.

Document Type: Article

Language: English

Author Keywords: back school; low-back pain; meta-analysis; prevention; rehabilitation

KeyWords Plus: BODY MECHANICS INSTRUCTION; WORK PERFORMANCE; PAIN; TRIAL; PREVENTION; EFFICACY; THERAPY; INJURY SIN ACCESO

36. Larsson, B 2007-BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY Work related neck-shoulder pain: a review on magnitude, risk factors, biochemical characteristics, clinical picture and preventive interventions

Abstract: The purpose of this review is to scrutinize the physiology of neck-shoulder pain and trapezius myalgia based on the most recent scientific literature. Therefore, systematic literature searches have been conducted. Occurrence of neck-shoulder pain, risk factors for development of

neck-shoulder pain, and its work-relatedness are addressed. Furthermore, the latest information on the biochemical milieu within healthy and painful neck-shoulder muscles is reviewed. Finally diagnosis of and intervention for neck and shoulder pain are discussed.

Document Type: Article

Language: English

Author Keywords: algesic; biopsy; human; intervention; metabolism; microdialysis; muscle; myalgia; pain; neck; review; risk factor; shoulder; trapezius; work-related

KeyWords Plus: RANDOMIZED CONTROLLED-TRIAL; HUMAN MASSETER MUSCLE; EXTREMITY MUSCULOSKELETAL DISORDERS; TISSUE RHEUMATIC DISORDERS; HUMAN SKELETAL-MUSCLE; TENSION-TYPE HEADACHE; MOTOR UNIT-ACTIVITY; IN-VIVO EVIDENCE; PROSTAGLANDIN E-2; TRAPEZIUS MUSCLE SIN ACCESO

37. Martocchio, JJ 2000-PERSONNEL PSYCHOLOGY Connections between lower back pain, interventions, and absence from work: A time-based meta-analysis

Abstract: We conducted qualitative and quantitative reviews of the medical literature to develop an understanding of the linkages between nonspecific lower back pain (LBP) and employee absenteeism, and the efficacy of lower back pain interventions (LBPI) in reducing absenteeism. First, we offered a general time-based framework to clarify the causal flows between LBP and absence. Second, we inspected LBPIs designed to ameliorate LBP, which should, in turn, lead to reduced absence-taking. Third, we conducted a meta-analysis of 45 effect sizes involving 12,214 people, to examine the relationships between both LBP and LBPIs and absenteeism. Consistent with a presumption in the medical literature, we found support for the idea that chronic LBP has a positive overall relationship with absence-taking. The relationship was stronger for absence frequency measures than time lost measures. In addition, we found that increasing aggregation time (i.e., increases in the periods over which absence is observed) enhances the size of the chronic LBP-absence connection. Further, evidence showed that LBPIs were effective overall in reducing absenteeism. Finally, when there was a temporal mismatch between the form of LBP (acute vs, chronic) and the absenteeism aggregation period in LBPI studies, effect sizes were significantly smaller. We concluded with a discussion of these results, methodological limitations, and suggestions for future research that blends medical with organizational approaches to the etiology of absence.

Document Type: Proceedings Paper

Language: English

KeyWords Plus: RANDOMIZED CLINICAL-TRIAL; BED REST; SICK-LEAVE; EMPLOYEE ABSENCE; CONSERVATIVE TREATMENT; EMPIRICAL-RESEARCH; JOB-SATISFACTION; MEDICAL-SERVICES; GRADED ACTIVITY; LONG-TERM SIN ACCESO

38. Gatchel, RJ 2003-JOURNAL OF OCCUPATIONAL REHABILITATION Treatment- and cost-effectiveness of early intervention for acute low-back pain patients: A one-year prospective study

Abstract: In an attempt to prevent acute low-back pain from becoming a chronic disability problem, an earlier study developed a statistical algorithm which accurately identified those acute low-back pain patients who were at high risk for developing such chronicity. The major goal of the present

study was to evaluate the clinical effectiveness of employing an early intervention program with these high-risk patients in order to prevent the development of chronic disability at a 1-year follow-up. Approximately 700 acute low-back pain patients were screened for their high-risk versus low-risk status. On the basis of this screening, high-risk patients were then randomly assigned to one of two groups: a functional restoration early intervention group (n=22), or a nonintervention group (n=48). A group of low-risk subjects (n=54) who did not receive any early intervention was also evaluated. All these subjects were prospectively tracked at 3-month intervals starting from the date of their initial evaluation, culminating in a 12-month follow-up. During these follow-up evaluations, pain disability and socioeconomic outcomes (such as return-to-work and healthcare utilization) were assessed. Results clearly indicated that the high-risk subjects who received early intervention displayed statistically significant fewer indices of chronic pain disability on a wide range of work, healthcare utilization, medication use, and self-report pain variables, relative to the high-risk subjects who do not receive such early intervention. In addition, the high-risk nonintervention group displayed significantly more symptoms of chronic pain disability on these variables relative to the initially low-risk subjects. Cost-comparison savings data were also evaluated. These data revealed that there were greater cost savings associated with the early intervention group versus the no early intervention group. The overall results of this study clearly demonstrate the treatment- and cost-effectiveness of an early intervention program for acute low-back pain patients.

Document Type: Article

Language: English

Author Keywords: acute low-back pain; cost effectiveness; early intervention; functional restoration; treatment effectiveness

KeyWords Plus: FUNCTIONAL RESTORATION; CONTROLLED TRIAL; SOFT-TISSUE; FOLLOW-UP; DISABILITY; EXERCISE; INJURIES; PREDICTORS; OUTCOMES; CLAIMS SIN ACCESO

39. Walker-Bone, K 2005-ANNALS OF THE RHEUMATIC DISEASES Hard work never hurt anyone - or did it? A review of occupational associations with soft tissue musculoskeletal disorders of the neck and upper limb

Abstract: Pain in the neck and upper limb is common and contributes greatly to absence due to sickness. Evidence is accumulating that factors such as prolonged abnormal posture and repetition contribute to these conditions. Psychosocial factors may also play a part and the relative importance of these is not yet known. Primary and secondary prevention trials are needed.

Document Type: Review

Language: English

KeyWords Plus: CARPAL-TUNNEL-SYNDROME; RISK-FACTORS; PSYCHOSOCIAL FACTORS; RHEUMATIC DISORDERS; SHOULDER PAIN; CRITERIA; SYMPTOMS; ONSET OK

40. Westgaard, RH 1997-INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS Ergonomic intervention research for improved musculoskeletal health: A critical review

Abstract: This literature review of ergonomic intervention studies aims to identify effective ergonomic interventions for improved musculoskeletal health in the workplace and to make recommendations for

quality criteria in ergonomic intervention research. To avoid ambiguity in terminology a list of definitions of the ergonomic terms used in this paper is provided in an appendix. Models were developed for use in the classification of ergonomic intervention research and to illustrate the problems in interpreting ergonomic intervention data. The relevant literature was identified by a two-step process. First the relevant literature was identified by inclusion criteria, then, quality criteria were applied to identify studies of good quality for effective intervention. These appear to be firstly "organizational culture" and secondly modifier interventions, the former using multiple interventions with high stakeholder commitment to reduce identified risk factors, and the latter especially focusing workers at risk and using measures which actively involve the individual. A list of recommendations is provided.

Relevance to industry

It is critically important in the planning of practical interventions to know which intervention strategy has the best chance of success.

Document Type: Review

Language: English

Author Keywords: musculoskeletal complaints; ergonomic interventions; ergonomic guidelines

KeyWords Plus: LOW-BACK-PAIN; INJURY PREVENTION PROGRAM; PATIENT TRANSFERRING TASKS; NECK PAIN; TRAPEZIUS MUSCLE; SECONDARY PREVENTION; OCCUPATIONAL-HEALTH; COST-EFFECTIVENESS; CLINICAL-TRIAL; POSTURAL LOAD SIN ACCESO

**41. Tuncel, S 2008-HUMAN FACTORS AND ERGONOMICS IN MANUFACTURING
Research to practice: Effectiveness of controlled workplace interventions to reduce
musculoskeletal disorders in the manufacturing environment - Critical appraisal and meta-
analysis**

Abstract: Previous studies on the effectiveness of interventions in reducing musculoskeletal disorders (MSD) in manufacturing facilities had contradictory results, indicating a need for a quality assessment of these studies followed by a quantitative assessment of the overall effectiveness of the interventions. These assessments may also provide suggestions for practical implementations. The first objective of this study is to assess the effectiveness of controlled workplace interventions to reduce the occurrence of MSD in the manufacturing environment by utilizing meta-analysis integrated with the study quality score. The second objective is to translate the research findings into practical guidelines. Two hypotheses were tested pertinent to the first objective: (1) Controlled workplace interventions are effective in reducing the occurrence of MSD in different body regions among manufacturing workers and (2) the study quality scores do not depend on the evaluator. The study quality was assessed for all articles, however, meta effect size (meta-OR) was calculated only for the articles that reported prevalence of low back disorders (LBDs), using the Mantel-Haenszel method. The effect of study quality was included into meta-OR. The chi-square test of independence was employed to test the second hypothesis. Seven articles were identified. Study quality was poor (0.39 out of 2) to moderate (0.97). Insignificant reduction in LBDs prevalence (meta-OR=0.925; 95% CI: 0.566-1.512) was found. Integration of the study quality did not have a substantial effect on the meta-OR (meta-OR = 0.933; 95% CI: 0.571-1.525). Each evaluator's study quality scores were not independent from the agreed quality scores ($p < 0.01$). The results suggested that practitioners should consider scientific evidence during design and implementation of an intervention, especially in terms of study duration, confounders, outcome measures, and data analysis. The articles reviewed exhibited the following: (1) the statistical insignificance of the meta-OR; (2) the

relatively low methodological quality of studies; and (3) the small number of studies included in the meta-OR. The extent of the generalizability of meta-OR for LBD to other body regions was also in question. Future research should consider the following: (1) the physical and nonphysical work environment should be assessed to determine the workplace-specific needs, and the intervention should be structured around these needs; (2) group comparability, participation rate, subject loss, and randomization of subjects should be taken into account; (3) exposure and outcome measurement methods should be reported, as well as blinding of the observers and subjects, when applicable, to ensure reliability and validity; and (4) data analysis should be conducted adjusting for covariates and confounders, different lengths of follow-up, and level of exposure. (C) 2008 Wiley Periodicals, Inc.

Document Type: Article

Language: English

KeyWords Plus: LOW-BACK-PAIN; OCCUPATIONAL INJURY; ERGONOMICS PROGRAM; RISK-FACTORS; SICK LEAVE; NECK PAIN; WORK; INDUSTRY; SYMPTOMS; HEALTH SIN ACCESO

42. Staal, JB 2002-SPORTS MEDICINE Return-to-work interventions for low back pain - A descriptive review of contents and concepts of working mechanisms

Abstract: Low back pain is a major medical and social problem associated with disability, work absenteeism and high costs. Given the impact of the problem, there is a need for effective treatment interventions in occupational healthcare that aim at the prevention of chronic disability and the realisation of return to work. These so-called return-to-work (RTW) interventions are becoming increasingly popular. As well as questions concerning the effectiveness of RTW interventions, there are also important questions on the actual content and underlying concepts of these multifactorial intervention strategies.

The purpose of this review is to examine the literature on the content and underlying concepts of RTW interventions for low back pain. A systematic literature search identified 14 randomised controlled trials (RCTs) evaluating the effects of 19 RTW interventions. The content and concepts of these RTW interventions are described, compared and discussed in this review. Further, the contents of the RTW interventions are classified by the use of predefined components (physical exercises, education, behavioural treatments and ergonomic measures).

The identified RTW interventions varied with respect to the disciplines involved, the target population and the number and duration of sessions. The classification showed that physical exercises were a component of most of the selected interventions, followed by education, behavioural treatments and ergonomic measures. The most prevalent combination of components was the combination of physical exercises, behavioural treatment and education. However, the types of physical exercises, behavioural treatment and education varied widely among the RTW interventions.

The described concepts for the physical exercises were an increase of muscle strength, coordination, range of motion of the spine and cardiovascular fitness, and a decrease of muscle tension. Education as a part of RTW interventions is believed to increase the understanding of patients regarding their disorder and treatment. Behavioural treatments were mainly based on the gate control theory of pain (psychophysiological processes are involved in pain perception) and/or the operant conditioning hypothesis (pain behaviour is determined by its consequences). No concepts were described for ergonomic measures.

Finally, the plausibility of the described concepts is discussed. Future RCTs on this topic should evaluate the underlying concepts of the RTW intervention in addition to its effectiveness.

Document Type: Review

Language: English

KeyWords Plus: RANDOMIZED CONTROLLED TRIAL; FUNCTIONAL RESTORATION; CLINICAL-TRIAL; FOLLOW-UP; EXERCISE THERAPY; GRADED ACTIVITY; RISK-FACTORS; PREVENTION; PROGRAM; DISABILITY

SIN ACCESO

43. Carrivick, PJW 2002-JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Effectiveness of a workplace risk assessment team in reducing the rate, cost, and duration of occupational injury

Abstract: This study evaluates the effectiveness of a participatory workplace risk assessment team (the intervention) in reducing the rate and severity of musculoskeletal and non-musculoskeletal injuries among a cohort of 137 cleaners within a hospital setting. The date, workers' compensation claims cost and hours lost from work were obtained for each injury occurring during the 4-yr pre-intervention and 3-yr post-intervention period. The age, gender and hours worked during the study period, were ascertained for every cleaner whether injured or not. For musculoskeletal injuries, the intervention was associated with significant reductions of two-thirds in injury rate, 65% in workers' compensation claims cost per hour worked, and 40% in hours lost per hour worked. Cleaners also experienced a significant two-third post-intervention reduction in non-musculoskeletal injury rate; but the corresponding changes in severity rates were not significant. The intervention supports the adoption of a participatory approach to reducing the rate and consequence of musculoskeletal injuries in the workplace.

Document Type: Article

Language: English

Author Keywords: manual handling; musculoskeletal injury; participatory ergonomics; workplace risk assessment

KeyWords Plus: WORKING-CONDITIONS; ENGINEERING WORKSHOP; ERGONOMICS APPROACH; MIXED MODELS; HEALTH SIN ACCESO

44. Goggins, RW 2008-JOURNAL OF SAFETY RESEARCH Estimating the effectiveness of ergonomics interventions through case studies: Implications for predictive cost-benefit analysis

Abstract: Problem: Cost-benefit analysis (CBA) can help to justify an investment in ergonomics interventions. A predictive CBA model would allow practitioners to present a cost justification to management during the planning stages, but such a model requires reliable estimates of the benefits of ergonomics interventions. Method: Through literature reviews and Internet searches, 250 case studies that reported the benefits of ergonomics programs and control measures were collected and summarized. Results: Commonly reported benefits included reductions in the number of work-related musculoskeletal

disorders (WMSDs) or their incidence rate, as well as related lost workdays, restricted workdays, and workers' compensation costs. Additional benefits reported were related to productivity, quality, turnover and absenteeism. Discussion: Benefits reported were largely positive, and payback periods for ergonomics interventions were typically less than one year. Summary: The results of this review could be used to develop predictive CBA models for ergonomics programs and individual control measures. Impact on Industry: Cost-justifying ergonomics interventions prior to implementation may help to secure management support for proposed changes. Numbers used for the benefits side of a cost-benefit analysis (CBA) need to be based on "real world" data in order to be credible. The data presented in this paper may help in the development of simple cost-benefit models for ergonomics programs and control measures. Published by Elsevier Ltd.

Document Type: Article

Language: English

Author Keywords: ergonomics; musculoskeletal disorders; cost benefit analysis; interventions; effectiveness

KeyWords Plus: DISORDERS; WORK SIN ACCESO

45. Stover, B 2007-JOURNAL OF OCCUPATIONAL REHABILITATION Accuracy of a disability instrument to identify workers likely to develop upper extremity musculoskeletal disorders

Abstract: Background Work related upper extremity musculoskeletal disorders (MSD) result in substantial disability, and expense. Identifying workers or jobs with high risk can trigger intervention before workers are injured or the condition worsens.

Methods We investigated a disability instrument, the QuickDASH, as a workplace screening tool to identify workers at high risk of developing upper extremity MSDs. Subjects included workers reporting recurring upper extremity MSD symptoms in the past 7 days (n = 559).

Results The QuickDASH was reasonably accurate at baseline with sensitivity of 73% for MSD diagnosis, and 96% for symptom severity. Specificity was 56% for diagnosis, and 53% for symptom severity. At 1-year follow-up sensitivity and specificity for MSD diagnosis was 72% and 54%, respectively, as predicted by the baseline QuickDASH score. For symptom severity, sensitivity and specificity were 86% and 52%. An a priori target sensitivity of 70% and specificity of 50% was met by symptom severity, work pace and quality, and MSD diagnosis.

Conclusion The QuickDASH may be useful for identifying jobs or workers with increased risk for upper extremity MSDs. It may provide an efficient health surveillance screening tool useful for targeting early workplace intervention for prevention of upper extremity MSD problems.

Document Type: Article

Language: English

Author Keywords: cumulative trauma disorders; musculoskeletal diseases; occupational diseases; workplace surveillance

KeyWords Plus: CARPAL-TUNNEL-SYNDROME; FUNCTIONAL STATUS MEASURES; QUALITY-OF-LIFE; ERGONOMIC INTERVENTION; WASHINGTON-STATE; UPPER-LIMB; HEALTH; RESPONSIVENESS; OUTCOMES; NECK

46. Torkki, M 2002-SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH. Individually fitted sports shoes for overuse injuries among newspaper carriers

Abstract: Objectives The aim of the study was to determine the effectiveness of new, individually fitted sports shoes against overuse injuries to the lower limb among newspaper carriers.

Methods Patients (N = 176) with lower-limb overuse injuries were randomly assigned to use new, individually adjusted footwear with good shock absorbing properties (test group = 80) or the subjects own, used footwear (control group = 90). The main outcome measurements were lower-limb pain intensity during walking, as rated on a visual analogue scale (0-100), number of painful days, subjective assessment of global improvement, foot fatigue, number of hyperkeratotic skin lesions and diagnosed overuse injuries, and costs of foot care as compared between the treatment groups.

Results At the 6-month follow-up there was a difference in favor of the test group with respect to lower-limb pain intensity and number of painful days, when compared with the control group. At 1 year, 53% and 33% of the test and control groups, respectively, thought they were better than at the time of the baseline examination (number needed to treat being 5 between the test and control groups). The test subject had less foot fatigue and fewer hyperkeratotic skin lesions. There was no difference in the number of diagnosed overuse injuries between the groups. During the year of follow-up, the all-inclusive mean costs of foot care were USD 70 and USD 158 in the test and control groups, respectively.

Conclusions Individually adjusted shock-absorbing shoes offer slight health benefits for lower-limb overuse injuries. Proper shoes may decrease the need to use health care resources.

Document Type: Article

Language: English

Author Keywords: footwear; lower-limb overuse injuries; randomized controlled trial; shock attenuation; shoes SIN ACCESO

47. Demure, B 2000-JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Video display terminal workstation improvement program: II. Ergonomic intervention and reduction of musculoskeletal discomfort

Abstract: The effects of an ergonomic intervention on musculoskeletal discomfort in 118 video display terminal (VDT) users were assessed 1 year after intervention. The intervention consisted of recommended changes to workstations, which were based on the evaluation of 15 ergonomic characteristics. Compliance with the intervention was at least 75 % for most workstation characteristics. Reduction in discomfort was substantial and was highest for the wrist/hand (57 %), lower back (43 %), and neck/shoulder (41 %) severity of discomfort outcomes. Neither compliance with intervention on individual workstation characteristics nor summary intervention scores were associated with reduction in discomfort. Our results demonstrate that although reduction of musculoskeletal discomfort may be observed in the context of an intervention study, it may be difficult to link these benefits to specific interventions.

Document Type: Article

Language: English

KeyWords Plus: WORK POSTURE; DISORDERS; SYMPTOMS; HEALTH; TASK SIN ACCESO

48. Sorock, GS 1996-ERGONOMICS Epidemiologic concerns for ergonomists:

Abstract: Ergonomics and epidemiology are unique fields that share some common interests. Epidemiologic methods are increasingly being utilized in ergonomic studies of the work-related risk factors of musculoskeletal disorders. This multidisciplinary approach requires a shared knowledge base and understanding of the methodology of both disciplines. In this paper, basic epidemiologic concepts are introduced. Examples from the upper extremity musculoskeletal disorder literature are used to illustrate study design issues and to suggest improved study methods. Epidemiologic design problems including selection bias (healthy worker survivor effect), misclassification, and confounding are discussed. Prospective research designs are described as a feasible approach for the study of these disorders. Increased collaboration between ergonomists and epidemiologists is encouraged to improve progress towards the reduction of workplace injuries and illnesses.

Document Type: Article

Language: English

Author Keywords: epidemiology; ergonomics; work-related illness; musculoskeletal disorders; research methods; repetitive motion

KeyWords Plus: CARPAL-TUNNEL SYNDROME; CUMULATIVE TRAUMA DISORDERS; OCCUPATIONAL FACTORS; UPPER EXTREMITIES; UPPER LIMBS; AGE; PREVALENCE; INDUSTRY; COHORT; RISK SIN ACCESO

49. Frank, JW 1996-SPINE Disability resulting from occupational low back pain - What do we know about primary prevention? A review of the scientific evidence on prevention before disability begins

Abstract: This is the first of two papers that systematically review available scientific evidence on the causes of disability from occupational low back pain, and the effectiveness of interventions to prevent it-before disability begins (primary prevention-Part I) and after its onset (secondary prevention-Part II). This first paper reviews the risk factors for the onset of pain and associated disability followed by a critical summary of intervention studies attempting to achieve prevention and to evaluate the results.

Document Type: Article

Language: English

Author Keywords: disability; (low) back pain; prevention; review; Workers' Compensation

KeyWords Plus: ERGONOMIC INTERVENTION; WORKERS COMPENSATION; PSYCHOSOCIAL FACTORS; GENERAL-POPULATION; WORKPLACE FACTORS; LIFTING STRENGTH; UNITED-STATES; RISK-FACTORS; INDUSTRY; EPIDEMIOLOGY SIN ACCESO

**50. Brisson, C 1999-SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH
Effects of an ergonomic training program on workers with video display units**

Abstract: Objectives This study evaluated the effect of an ergonomic training program on workstation changes and on the prevalence of musculoskeletal disorders among video display unit (VDU) users at a large university.

Methods A pretest-posttest design with a reference group was used with random allocation of administrative and geographic units. In each group, the measurements involved direct observation of the workstations, a self-administered questionnaire, and a physical examination. The measurements were performed 2 weeks before and 6 months after the training in parallel in both groups. The study population was composed of 627 workers (81% of those eligible).

Results The prevalence of all 3 of the postural stressors evaluated decreased in the experimental group after the training. In the reference group, 2 of the 3 stressors decreased in frequency but to a less extent. Some of these beneficial changes were more frequent in workers under 40 years of age. The prevalence of musculoskeletal disorders decreased among the workers under 40 years of age in the experimental group, from 29% to 13% determined by questionnaire and from 19% to 3% determined by physical examination. In other groups, there was no significant change in the prevalence of musculoskeletal disorders.

Conclusions Improvements in postural stressors occurred more frequently in the experimental group, and these beneficial changes tended to be more frequent in workers under 40 years of age. Improvements in musculoskeletal disorders occurred in the experimental group among the workers under 40 years of age.

Document Type: Article

Language: English

Author Keywords: age; clerical work; intervention study; musculoskeletal disorders; physical examination; static postural load; work station components

KeyWords Plus: MUSCULOSKELETAL DISORDERS; ASSEMBLY WORKERS; JOB SIN ACCESO

**51. Scheer, SJ 1997-ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION
Randomized controlled trials in industrial low back pain .3. Subacute/chronic pain
interventions**

Abstract: The most significant costs attributed to settlement of workplace back injury claims are related to chronic low back pain (LBP). Unfortunately, our knowledge of this fact has not led to a reduction of the considerable costs paid out annually by employers and insurers to deal with the chronic pain syndrome. This article is the third in a series of reviews on randomized controlled trials found in the English language medical literature between 1975 and 1993. Of more than 4,000 LBP citations, 35 studies met the selection criteria of randomization, reasonable concurrent controls, and work return comparisons. This review focuses on the 12 studies utilizing nonsurgical interventions for subacute and chronic LBP, including multidisciplinary pain clinics, exercise, cognitive-behavioral strategies, and others. A 26-point quality system was again used to compare the methodologic rigor of each study. The majority of prospective studies investigating return to work after chronic LBP have methodological limitations; additional research is clearly needed to more confidently answer the question of what interventions improve work capacity in patients with chronic LBP. (C) 1997 by the American Congress of Rehabilitation Medicine and the American Academy of Physical Medicine and Rehabilitation.

Document Type: Review

Language: English

KeyWords Plus: FOLLOW-UP; OUTPATIENT TREATMENT; CLINICAL-TRIAL;
PSYCHOLOGICAL INTERVENTIONS; FUNCTIONAL RESTORATION; PHYSICAL
MEASUREMENTS; COPING STRATEGIES; EXERCISES; REHABILITATION; INPATIENT

**52. Loisel, P 2002-OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Cost-benefit and
cost-effectiveness analysis of a disability prevention model for back pain management: a six
year follow up study**

Abstract: Aims: To test the long term cost-benefit and cost-effectiveness of the Sherbrooke model of management of subacute occupational back pain, combining an occupational and a clinical rehabilitation intervention.

Methods: A randomised trial design with four arms was used: standard care, occupational arm, clinical arm, and Sherbrooke model arm (combined occupational and clinical interventions). From the Quebec WCB perspective, a cost-benefit (amount of consequence of disease costs saved) and cost-effectiveness analysis (amount of dollars spent for each saved day on full benefits) were calculated for each experimental arm of the study, compared to standard care.

Results: At the mean follow up of 6.4 years, all experimental study arms showed a trend towards cost benefit and cost effectiveness. These results were owing to a small number of very costly cases. The largest number of days saved from benefits was in the Sherbrooke model arm.

Conclusions: A fully integrated disability prevention model for occupational back pain appeared to be cost beneficial for the workers' compensation board and to save more days on benefits than usual care or partial interventions. A limited number of cases were responsible for most of the long term disability costs, in accordance with occupational back pain epidemiology. However, further studies with larger samples will be necessary to confirm these results.

Document Type: Article

Language: English

KeyWords Plus: INTERVENTION; WORK; WORKPLACE; RETURN; PILOT; CARE SIN ACCESO

53. Melhorn, JM 2001-HUMAN AND ECOLOGICAL RISK ASSESSMENT Successful management of musculoskeletal disorders

Abstract: A National Academy of Sciences study found that musculoskeletal disorders of the back and arm are an important national health problem with over 1,000,000 workers missing time from their job each year, at a cost of over \$50 billion a year. When one takes indirect costs such as reduced productivity, loss of customers due to errors made by replacement workers and regulatory compliance into account, estimates place the total yearly cost of all workplace injuries at well over \$1 trillion or 10% of United States Gross Domestic Product. Debates regarding causation and subsequent financial responsibility have delayed the opportunity to provide effective prevention in the workplace. Effective prevention of workplace illnesses (musculoskeletal disorders) through active intervention is not only possible, but results in significant costs savings for the employer while reducing the disability experienced by the individual employee.

Document Type: Article

Language: English

Author Keywords: occupational; injury; illness; risk assessment; workplace SIN ACCESO

54. Larsen, K 2002-SPINE Can passive prone extensions of the back prevent back problems? A randomized, controlled intervention trial of 314 military conscripts

Abstract: Background Data. Back schools may be effective in treating back problems, but there is conflicting evidence of the effect on prevention.

Objectives. To investigate if passive prone extensions of the back can prevent back problems.

Study Design. Prospective, randomized controlled intervention trial.

Methods. In total, 314 male conscripts were randomized into two groups. After randomization, 65 conscripts dropped out for administrative reasons, leaving 249 conscripts to participate fully in the study. Data were collected through questionnaires at the start of military duty and after 10 months. All conscripts in the intervention group had one 40-minute theoretical lesson on back problems and ergonomics and had to perform passive prone extensions of the back daily during the rest of their military duty. The control group had no intervention. Outcome variables were as follows: 1) number of persons with self-reported back problems during the last 3 weeks; 2) number of persons with self-reported back problems during the last year; and 3) number of persons who reported having consulted the regiment medical physician with back problems during their military service.

Results. In an intention-to-treat analysis, significantly fewer persons in the intervention group versus those in the control group reported back problems during the last year (33% versus 51%), and the number needed to prevent was 6. Significantly fewer persons in the intervention group versus those in the control group consulted the regiment infirmary (9% versus 25%), and the number needed to prevent was 6.

Conclusion. It may be possible to reduce the prevalence rate of back problems and the use of health care services during military service, at a low cost, using passive prone extensions of the back motivated by a back school approach, including the theory of the disc as a pain generator and ergonomic instructions.

Document Type: Article

Language: English

KeyWords Plus: PAIN; POPULATION; CHILDREN; FLEXION SIN ACCESO

55. Dellve, L 2008-SOCIAL SCIENCE & MEDICINE The impact of systematic occupational health and safety management for occupational disorders and long-term work attendance

Abstract: Despite several years of conducting formalized systematic occupational health and safety management (SOHSM), as required by law in Sweden and most other industrialized countries, there is still little evidence on how SOHSM should be approached to have an impact on employees' health. The aim of this study was to investigate the importance of SOHSM, considering structured routines and participation processes, for the incidence of occupational disorders and the prevalence of long-term work attendance among home care workers (HCWs). Municipal human service organizations were compared concerning (a) their structured routines and participation processes for SOHSM and (b) employee health, i.e. the municipal five-year incidence of occupational disorders and prevalence of work attendance among HCWs. National register-based data from the whole population of HCWs (n = 154773) were linked to register-data of occupational disorders and prevalence of long-term work attendance. The top managers and safety representatives in selected high- and low-incidence organizations (n = 60) answered a

questionnaire about structure and participation process of SOHSM. The results showed that prevalence of long-term work attendance was higher where structure and routines for SOHSM (policy, goals and plans for action) were well organized. Highly structured SOHSM and human resource management were also related to high organizational incidence of reported occupational disorders. Allocated budget and routines related to HCWs' influence in decisions concerning performance of care were also related to long-term work attendance. The participation processes had a weak effect on occupational disorders and work attendance among HCWs. Reporting occupational disorders may be a functional tool to stimulate the development of effective SOHSM, to improve the work environment and sustainable work ability. (C) 2008 Elsevier Ltd. All rights reserved.

Document Type: Article

Language: English

Author Keywords: Sweden; work organization; leadership; participation processes; work environment; home care workers; health and safety; nursing assistants

KeyWords Plus: CARE WORKERS; INTERVENTION; ENVIRONMENT; ERGONOMICS; CLIMATE; STRESS; SWEDEN SIN ACCESO

56. Nevala-Puranen, N 2003-INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS Ergonomic intervention on neck, shoulder and arm symptoms of newspaper employees in work with visual display units

Abstract: Shoulder and arm symptoms are typical in work with visual display units (VDUs) among newspaper employees. The aim of this study was to compare the effects of two different intervention models for VDU work (E = redesign measures for the environment only, ET = redesign measures for both the environment and work techniques) on neck, shoulder and arm symptoms among newspaper employees. Twenty newspaper employees participated in the study. Work posture, monitor viewing, muscular activity, and musculoskeletal pain were measured before and after the 7-month intervention. Difference was statistically significant between the groups for the change in shoulder flexion ($p = 0.0134$) and the muscular activity of right trapezius ($p = 0.04109$) and right extensor carpi radialis ($p = 0.0379$) in the pre- and postintervention measurements. The reduction of pain symptoms in the neck ($p = 0.0073$), shoulders ($p = 0.0071$) and elbows ($p = 0.0490$) was greater in the ET group than in the E group. This study showed that repeated neck, shoulder and arm symptoms can be more efficiently reduced among newspaper employees if ergonomic measures to improve the work environment are combined with changes in work techniques than if the redesign measures focus only on the work environment.

Document Type: Article

Language: English

Author Keywords: ergonomics; newspaper employee; visual display unit; physical strain; electromyography

KeyWords Plus: MUSCULOSKELETAL DISORDERS; KEYBOARD DESIGN; POSTURE; RECOMMENDATIONS; PERFORMANCE; DISCOMFORT; OPERATORS; POSITIONS; COMFORT; STRESS SIN ACCESO

57. Premji, S 2008-AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Would a \"One-Handed\" scientist lack rigor? How scientists discuss the work-relatedness of musculoskeletal disorders in formal and informal communications

Abstract: Background When research results concerning occupational health are expressed ambiguously, compensation and prevention can be affected. This study examined the language used by scientists to discuss the relation between work and musculoskeletal disorders (MSDs).

Methods Language regarding work and MSDs in twenty articles from two peer-reviewed journals was compared with that in 94 messages on MSDs posted by published scientists to an internet list.

Results Almost all the articles found some link between work and MSDs. However, few articles expressed belief in such a link unambiguously in the title or abstract, and language on links was often hard for a non-health scientist to interpret. Language and methods gave excess weight to negative results. On the listserve, many scientists expressed unambiguous views on linkages between work and MSDs.

Conclusions Scientists must express their opinions more forthrightly if they wish their results to be used to favour prevention and to foster access to workers' compensation.

Document Type: Article

Language: English

Author Keywords: work-relatedness; musculoskeletal disorders; causation; epidemiology; statistics; compensation

KeyWords Plus: CUMULATIVE TRAUMA DISORDERS; CARPAL-TUNNEL-SYNDROME; UPPER EXTREMITY; STRAIN INJURY; RISK-FACTORS; BACK-PAIN; COMPENSATION; HEALTH; WORKPLACE; INTERVENTIONS SIN ACCESO

58. LINTON SJ 2000-SPINE Article title not available

59. Tappin, DC 2008-ERGONOMICS The role of contextual factors for musculoskeletal disorders in the New Zealand meat processing industry

Abstract: Musculoskeletal disorders (MSD) are the leading cause of occupational injury internationally. In New Zealand, the highest incidence of MSD is in meat processing, accounting for over half the injury compensation costs for the sector. MSD in meat processing have proven highly resistant to physical, micro-level interventions, suggesting a new approach is required. This paper reports on part of a 2-year study looking at MSD in the New Zealand meat processing industry. The qualitative study involved interviews with 237 workers, management, union and safety personnel in 28 processing sites. These data were summarised into a list of contextual factors, which, it is postulated, may create conditions under which greater exposure to physical and psychosocial factors

can occur in meat processing. Some of the contextual factors are recognised as problematic by the industry, but have not previously been associated with MSD risk. The paper concludes by reflecting on conducting MSD research with a focus on contextual factors and how this may influence MSD prevention. The manuscript provides industry-based data on MSD risk and outlines the approach used in its collection. Identifying contextual factors and understanding their role in creating MSD risk may help improve the acceptance and effectiveness of MSD interventions in industry.

Document Type: Article

Language: English

Author Keywords: musculoskeletal disorders; contextual risk factors; organisational factors; meat processing; occupational injury

KeyWords Plus: UPPER-LIMB; PSYCHOSOCIAL FACTORS; WORK; ERGONOMICS; HEALTH; INTERVENTIONS SIN ACCESO

60. Faucett, J 2002-APPLIED ERGONOMICS A test of two training interventions to prevent work-related musculoskeletal disorders of the upper extremity

Abstract: We investigated, on behalf of a large electronics manufacturer, two types of worker training interventions for their efficacy in preventing unnecessary muscle tension and the symptoms of work-related musculoskeletal disorders. The first intervention, Muscle Learning Therapy(TM) (MLT), used electromyographic (sEMG) feedback and operant conditioning to decrease muscle tension during complex work tasks. The second intervention used adult learning and cognitive behavioral techniques in small group discussion to advance the worker's capabilities for symptom and stress management and problem-solving. Workers were randomly assigned to a control group or one of the two treatment conditions. Prior to training, baseline data were collected using symptom diaries and sEMG recordings of the trapezius and forearm muscles of the left and right arms. The training interventions were conducted for 6 weeks with reinforcement training provided at 18 and 32 weeks post-baseline. Follow-up data were collected after the initial 6-week training period and at 32 weeks, prior to the reinforcement training. Symptom outcomes demonstrated significant differences at 6 weeks, increasing in severity for the control group and declining modestly for the educational group, with little change for the MLT group. These differences were not maintained at further follow-up. The MLT group was consistently effective in reducing muscle tension in the trapezius areas after 6 and 32 weeks, and was partially effective for the forearms. Further testing is recommended of these training interventions, especially with the inclusion of strategic, periodic reinforcement of the worker's learning. (C) 2002 Elsevier Science Ltd. All rights reserved.

Document Type: Article

Language: English

Author Keywords: musculoskeletal disorders; worker training; electromyography

KeyWords Plus: WORKSTATION DESIGN; SYMPTOMS; DISCOMFORT; POSTURE; NECK
OK

61. Risikko, T 2008-INTERNATIONAL JOURNAL OF OCCUPATIONAL SAFETY AND ERGONOMICS Implementation of Cold Risk Management in Occupational Safety, Occupational Health and Quality Practices. Evaluation of a Development Process and Its Effects at the Finnish Maritime Administration

Abstract: Cold is a typical environmental risk factor in outdoor work in northern regions. It should be taken into account in a company's occupational safety, health and quality systems. A development process for improving cold risk management at the Finnish Maritime Administration (FMA) was carried out by FMA and external experts. FMA was to implement it. Three years after the development phase, the outcomes and implementation were evaluated. The study shows increased awareness about cold work and few concrete improvements. Concrete improvements in occupational safety and health practices could be seen in the pilot group. However, organization-wide implementation was insufficient, the main reasons being no organization-wide practices, unclear process ownership, no resources and a major reorganization process. The study shows a clear need for expertise supporting implementation. The study also presents a matrix for analyzing the process.

Document Type: Article

Language: English

Author Keywords: cold work; ergonomics development; occupational safety and health; cold risk management implementation; evaluation

KeyWords Plus: PERFORMANCE; WORK; INTERVENTIONS; ENVIRONMENTS; WORKPLACE; TASKS SIN ACCESO

62. SHOJANIA KG 2001-EFF CLIN PRACT Article title not available

63. Wergeland, EL 2003-SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH A shorter workday as a means of reducing the occurrence of musculoskeletal disorders

Abstract: Objectives The study examined the relation between daily workhours and the occurrence of neck-shoulder or back pain in physically demanding care work.

Methods Unpublished data were obtained from three intervention projects in care institutions. The projects had been conducted independently in Oslo (46 participants, 175 referents before and 158 referents after the intervention), Helsingborg (60 participants, 89 referents) and Stockholm (41 participants, 22 referents) between 1995 and 1998. The intervention was a reduction of daily workhours from greater than or equal to 7 to 6 hours (or 30 hours weekly). Full-time salary was retained, and extra personnel were employed to compensate for the reduction in workhours. Data were collected by self-administered questionnaires before and during the intervention periods, lasting from 12 to 22 months.

Results The prevalence of neck-shoulder pain decreased from 40.9% to 25.6% in Oslo and from 57.1% to 39.1% in Helsingborg after 1.5 years with a 6-hour workday; for Stockholm the decrease was from 81.6% to 68.3% after 1 year. No decrease was observed in the reference groups. The prevalence of back pain did not show the same consistent pattern.

Conclusions The shortening of regular workdays from greater than or equal to 7 hours to 6 hours may considerably reduce the prevalence of neck-shoulder pain among persons with physically demanding care work. The potential health benefits should encourage intervention studies also in other occupations with increased risk of work-related musculoskeletal disorders.

Document Type: Article

Language: English

Author Keywords: back; hours of work; neck; pain; shoulder; worktime; women; workload

KeyWords Plus: WORKING; HEALTH; NECK SIN ACCESO

64. Mekhora, K 2000-INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS The effect of ergonomic intervention on discomfort in computer users with tension neck syndrome

Abstract: Study Design, A randomized controlled design super imposed on treatment as usual was used to compare the effects of a cognitive-behavior intervention aimed at preventing chronicity with two different forms of information.

Objective. To develop a coping-oriented preventive intervention applicable in primary care, and to compare its impact with educational information.

Summary of Background Data. Preventing long-term disability resulting from spinal pain has proved difficult. The information provided by health care professions and early interventions aimed at preventing long-term disability may be important, but little scientific evidence exists concerning their rise.

Methods, A protocol for a six-session cognitive-behavior group intervention was developed on the basis of earlier research. The main focus was to prevent long-term disability by changing patients' behaviors and beliefs so they can cope better with their problems. Comparison groups received either a pamphlet shown earlier to have an effect, or a more extensive information package consisting of six installments. All the groups continued to receive treatment as usual in primary care. There were 243 patients with acute or subacute spinal pain who perceived that they were at risk for developing a chronic problem. These patients were randomized to the cognitive-behavioral intervention or one of

the two information groups, Because the aim was to prevent long-term disability, the key outcome variables at the 1-year follow-up assessment were sick absenteeism and health care use. Other variables were pain, Function, fear-avoidance beliefs, and cognitions.

Results. The comparison groups reported benefits. However, the risk for a long-term sick absence developing was lowered ninefold for the cognitive-behavior intervention group as compared with the risk for the information groups (relative risk, 9.3). Participants in the cognitive behavior group also reported a significant decrease in perceived risk. In addition, the cognitive-behavior group demonstrated a significant decrease in physician and physical therapy use as compared with two groups receiving information, in which such use increased. All three groups tended to improve on the variables of pain, fear-avoidance, and cognitions.

Conclusions. This study demonstrates that a cognitive-behavior group intervention can lower the risk of a long-term disability developing. These findings underscore the significance of early interventions that specifically aim to prevent chronic problems. This approach might be applied to primary care settings.

Document Type: Article

Language: English

Author Keywords: back pain; behavioral; chronic disability; cognitive; early intervention; information; neck pain; prevention; primary

KeyWords Plus: LOW-BACK-PAIN; PRIMARY-CARE; SECONDARY PREVENTION; CLINICAL-TRIAL; FOLLOW-UP; BED REST; SCALE; QUESTIONNAIRE; MANAGEMENT; ABSENCE

65. van den Hout, JHC 2003-CLINICAL JOURNAL OF PAIN Secondary prevention of work-related disability in nonspecific low back pain: Does problem-solving therapy help? A randomized clinical trial

Abstract: Objectives: Given the individual and economic burden of chronic work disability in low back pain patients, there is a need for effective preventive interventions. The aim of the present study was to investigate whether problem-solving therapy had a supplemental value when added to behavioral graded activity, regarding days of sick leave and work status.

Design: Randomized controlled trial.

Patients and Setting: Employees who were recently on sick leave as a result of nonspecific low back pain were referred to the rehabilitation center by general practitioner, occupational physician, or

rehabilitation physician. Forty-five employees had been randomly assigned to the experimental treatment condition that included behavioral graded activity and problem-solving therapy (GAPS), and 39 employees had been randomly assigned to behavioral graded activity and group education (GAGE).

Outcome Measures: Days of sick leave and work status. Data were retrieved from occupational health services.

Results: Data analyses showed that employees in the GAPS group had significantly fewer days of sick leave in the second half-year after the intervention. Moreover, work status was more favorable for employees in this condition, in that more employees had a 100% return-to-work and fewer patients ended up receiving disability pensions one year after the intervention. Sensitivity analyses confirmed these results.

Conclusions: The addition of problem-solving therapy to behavioral graded activity had supplemental value in employees with nonspecific low back pain.

Document Type: Article

Language: English

Author Keywords: low back pain; problem solving; randomized clinical trial; secondary prevention; work disability

KeyWords Plus: FOLLOW-UP; SCREENING QUESTIONNAIRE; UNIPOLAR DEPRESSION; PROGRAM; REHABILITATION; MANAGEMENT; POPULATION; EFFICACY; HISTORY; SKILLS SIN ACCESO

66. Evanoff, BA 1999-AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Effects of a participatory ergonomics team among hospital orderlies

Abstract: Background: High rates of work-related injuries are seen among health care workers involved in lifting and transferring patients. We studied the effects of a participatory worker-management ergonomics team among hospital orderlies.

Methods: This prospective intervention trial examined work injuries and other outcomes before and after the intervention, with other hospital employees used as a concurrent control. All orderlies in a 1,200-bed urban hospital were studied using passively collected data (mean employment during study period 100-110 orderlies); 67 orderlies (preintervention) and 88 orderlies (postintervention) also completed a questionnaire. The intervention was the formation of a participatory ergonomics team with three orderlies, one supervisor and technical advisors. This team designed and implemented changes in training and work practices.

Results: The 2-year postintervention period was marked by decreased risks of work injury (RR = 0.50, 95% CI 0.35-0.72), lost time injury (RR = 0.26, 95% CI 0.14-0.48), and injury with three or more days of time loss (RR = 0.19, 95% CI 0.07-0.53). Total lost days declined from 136.2 to 23.0 annually per 100 full-time worker equivalents (FTE). Annual workers compensation costs declined from \$237/FTE to \$139/FTE. The proportion of workers with musculoskeletal symptoms declined and there were statistically significant improvements in job satisfaction perceived psychosocial stressors, and social support among the orderlies.

Conclusion: Substantial improvements in health and safety were seen following implementation of a participatory ergonomics program. *Am. J. Ind. Med.* 35:358-365, 1999. (C) 1999 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: occupational health; participatory ergonomics; ergonomics teams; health care workers; intervention research; injury prevention; work-related musculoskeletal disorders

KeyWords Plus: BACK-PAIN; WORKERS; INTERVENTION; PREVENTION; DISORDERS; PROJECT; INJURY; NURSES SIN ACCESO

**67. Smedley, J 2003-SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH
Impact of ergonomic intervention on back pain among nurses**

Abstract: Objectives This study assessed the impact of ergonomic intervention on rates of low-back pain among hospital nurses.

Methods Altogether 1239 female nurses from two hospitals in southern England completed a baseline postal questionnaire about low-back pain and associated risk factors. Between 18 and 28 months after the baseline survey, major intervention was implemented at one hospital to minimize unassisted patient handling and high-risk nursing tasks. At the other, no intervention was initiated, and efforts to improve patient handling were more limited. Thirty-two months after the baseline survey, a second postal survey was carried out in both hospitals (1167 respondents) to reassess the prevalence of symptoms and risk factors.

Results After adjustment for nonoccupational risk factors, prevalent low-back pain at baseline was associated with low job satisfaction and the performance of patient-handling activities without mechanical aids. After the intervention, the prevalence of occupational risk factors was somewhat lower, but similar improvements occurred at the comparison hospital. At the intervention site the prevalence of symptoms increased slightly (from 27% to 30%), whereas at the comparison site there was no change, the prevalence remaining constant at 27%. Calculations based on the association of risk factors with symptoms at baseline and the observed changes in their prevalence indicated that the change in risk factors was insufficient to produce a substantial reduction in back pain.

Conclusions These findings cast doubt on the means by which many hospitals are attempting to improve the ergonomics of nursing activities. More effective methods of implementing changes in work systems are needed.

Document Type: Article

Language: English

Author Keywords: low-back pain; lifting; patient handling; occupational health; health personnel; in-service training

KeyWords Plus: MUSCULOSKELETAL PAIN; JOB STRAIN; PREVALENCE; WORK; PERSONNEL; SYMPTOMS; STRESS

68. Linton, SJ 2002-AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Early identification and intervention in the prevention of musculoskeletal pain

Abstract: Background A large number of people suffer from upper extremity disorders, but a few apparently consume the majority of the resources. Early interventions are badly needed to prevent the development of persistent disability. Since psychological factors are central in the development of a chronic problem these might be utilized in this endeavor

Methods A series of studies are described where a screening procedure based on psychological risk factors was employed to help identify people at risk for developing long-term work disability. The utility of a cognitive-behavioral group intervention that focuses on coping strategies as prevention was assessed in three randomized-controlled studies where participants had low, medium, and high risk, respectively.

Results The study with low risk showed no significant difference between the groups, while the studies with medium- and high-risk populations demonstrated significantly lower work disability, than control groups receiving treatment as usual.

Conclusions It appears to be feasible to identify, patients with high levels of risk and to subsequently lower the risk for work disability by administering a cognitive-behavioral intervention focusing on psychological aspects of the pain problem. (C) 2002 Wiley-Liss, Inc.

Document Type: Proceedings Paper

Language: English

KeyWords Plus: LOW-BACK-PAIN; PSYCHOSOCIAL FACTORS; RANDOMIZED TRIAL; RISK-FACTORS; SCREENING QUESTIONNAIRE; CHRONIC DISABILITY; SICKNESS ABSENCE; PRIMARY-CARE; SPINAL PAIN; NECK PAIN OK

69. Arnetz, BB 2003-JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Early workplace intervention for employees with musculoskeletal-related absenteeism: A prospective controlled intervention study

Abstract: Sickness absenteeism caused by musculoskeletal disorders (MSDs) is a persistent and costly occupational health challenge. In a prospective controlled trial, we compared the effects on sickness absenteeism of a more proactive role for insurance case managers as well as workplace ergonomic interventions with that of traditional case management. Patients with physician-diagnosed MSDs were randomized either to the intervention group or the reference group offered the traditional case management routines. Participants filled out a comprehensive questionnaire at the initiation of the study and after 6 months. In addition, administrative data were collected at 0, 6, and 12 months after the initiation of the project. For the entire 12-month period, the total mean number of sick days for the intervention group was 144.9 (SEM 11.8) days/person as compared to 197.9 (14.0) days in the reference group ($P < 0.01$). Compared with the reference group, employees in the intervention group significantly more often received a complete rehabilitation investigation (84% versus 27%). The time for doing this was reduced by half (59.4 (5.2) days versus 126.8 (19.2), $P < .01$). The odds ratio for returning to work in the intervention group was 2.5 (95% confidence interval 1.2-5.1) as compared with the reference group. The direct cost savings were USD 1195 per case, yielding a direct benefit-to-cost ratio of 6.8. It is suggested that the management of MSDs should to a greater degree focus on early return to work and building on functional capacity and employee ability. Allowing the case managers a more active role as well as involving an ergonomist in workplace adaptation meetings might also be beneficial.

Document Type: Article

Language: English

KeyWords Plus: LOW-BACK-PAIN; CONTROLLED TRIAL; HEALTH-CARE; WORK; DISABILITY; IMPACT; CLAIMS; COST SIN ACCESO

Resúmenes del árbol de referencias “Physical and psychosocial risk factors for lateral epicondylitis: a population based case-referent study”

1- Humeral epicondylitis among gas- and waterworks employees

Author(s): Ritz BR

Source: SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH Volume: 21
Issue: 6 Pages: 478-486 Published: DEC 1995

Abstract: Objectives In this cross-sectional study 290 male employees of the public gas- and waterworks of Hamburg, Germany, were examined for symptoms of epicondylitis. Forty-one workers were diagnosed with symptoms of lateral or medial epicondylitis. The effect of employment in different job categories on the prevalence of epicondylitis was explored.

Methods The diagnosis of epicondylitis was based on the study's own criteria and compared with criteria used in former studies. Jobs were categorized into high, moderate, and no exposure groups according to tasks regarded as strenuous for the elbow. The data were analyzed with the help of multivariate logistic regression.

Results with the study's diagnostic criteria, the prevalence odds ratio (OR) for 10 years of high exposure to elbow straining work was 1.7 [95% confidence interval (95% CI) 1.04-2.68] for currently held jobs and 2.16 (95% CI 1.08-4.32) for formerly held jobs. For workers regarded as moderately exposed in current jobs the odds ratio for 10 years was 1.4 (95% CI 1.00-1.93). Very similar results were obtained for current exposure when stricter diagnostic criteria were employed.

Conclusions The results suggest a cumulative exposure effect with length of employment. Workers with high exposure in former jobs compared with employees with high exposure in their current job exhibited more residual or slight epicondylitis symptoms upon examination.

2- Management of lateral epicondylitis: Current concepts

Author(s): Calfee RP (Calfee, Ryan P.), Patel A (Patel, Amar), DaSilva MF (DaSilva, Manuel F.)1, Akelman E (Akelman, Edward)1

Source: JOURNAL OF THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS Volume: 16 Issue: 1 Pages: 19-29 Published: JAN 2008

Abstract: Lateral epicondylitis, or tennis elbow, is a common cause of elbow pain in the general population. Traditionally, lateral epicondylitis has been attributed to degeneration of the extensor carpi radialis brevis origin, although the underlying collateral ligamentous complex and joint capsule also have been implicated. Nonsurgical treatment, the mainstay of management, involves a myriad of options, including rest, nonsteroidal anti-inflammatory drugs, physical therapy, cortisone, blood and botulinum toxin injections, supportive forearm bracing, and local modalities. For patients with recalcitrant disease, the traditional open debridement technique has been modified by multiple surgeons, with others relying on arthroscopic or even percutaneous procedures. Without a standard protocol (nonsurgical or surgical), surgeons need to keep abreast of established and evolving treatment options to effectively treat patients with lateral epicondylitis.

3- Computer users' risk factors for developing shoulder, elbow and back symptoms

Author(s): Juul-Kristensen B, Sogaard K, Stroyer J, Jensen C

Source: SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH Volume: 30 Issue: 5 Pages: 390-398 Published: OCT 2004

Abstract: Objectives This prospective study concentrated on determining factors of computer work that predict musculoskeletal symptoms in the shoulder, elbow, and low-back regions.

Methods A questionnaire on ergonomics, work pauses, work techniques, and psychosocial and work factors was delivered to 5033 office workers at baseline in early 1999 (response rate 69%) and to 3361 respondents at the time of the follow-up in late 2000 (response rate 77%). An increased frequency or intensity of symptoms was the outcome variable, including only nonsymptomatic respondents from the baseline questionnaire (symptom frequency below 8 days within the last 12 months or intensity score below 4 within the last 3 months).

Results In the follow-up, 10%, 18%, and 23% had symptoms more often in the elbow, shoulder, and low back, respectively, and 14%, 20%, and 22% had more intense symptoms. Women were more likely to be afflicted than men in all regions. In the full-fit multivariate logistic regression analysis, little influence on the timing of a rest pause and being disturbed by glare or reflection were significant predictors of shoulder symptoms, screen below eye height was a significant predictor for elbow symptoms, and previous symptoms was a significant predictor for symptoms in all regions. Computer worktime and psychosocial dimensions were not significant predictors.

Conclusions Influence on work pauses, reduction of glare or reflection, and screen height are important factors in the design of future computer workstations. Since previous symptoms was a significant predictor of recurrent symptoms in all three regions under study, it can be concluded that musculoskeletal symptoms are persistent.

4- Computer use associated with poor long-term prognosis of conservatively managed lateral epicondylalgia

Author(s): Waugh EJ, Jaglal SB, Davis AM

Source: JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY Volume: 34 Issue: 12
Pages: 770-780 Published: DEC 2004

Abstract: Study Design: Multicenter prospective design with a cohort of patients with lateral epicondylalgia commencing physical therapy.

Objective: To identify key factors associated with long-term prognosis of conservatively managed lateral epicondylalgia.

Background: The response to conservative management of lateral epicondylalgia is inconsistent and the rate of recovery varies widely among individuals. The reasons for these discrepancies are not understood. The identification of factors associated with prognosis will aid in the prediction of patient outcomes.

Methods and Measures: Sixty patients with lateral epicondylalgia, recruited from 9 sports medicine clinics and 2 hospital outpatient physical therapy departments in Ontario, Canada, were followed for 6 months. A baseline clinical assessment was conducted on each participant using standard physical therapy techniques. The Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire and a 100-mm pain visual analog scale (VAS) were completed at baseline and 6 months later.

Results: The key factor associated with both 6-month DASH and pain VAS scores was repetitive-work tasks (DASH, 9.8 [$P<.01$]; pain VAS, 13.1 mm [$P=.0105$]). A subanalysis indicated that women were more likely than men to have cervical joint signs and, among women, positive cervical articular signs were also associated with higher final DASH and pain VAS scores.

Conclusions: Although many of the participants identified sports activities as the cause of their injury, these findings emphasize the importance that a patient's work tasks can have on recovery of lateral epicondylalgia. This would suggest that management should perhaps focus on work stations, postures, and behaviors.

5-Risk factors for specific upper limb disorders as compared with non-specific upper limb pain: assessing the utility of a structured examination schedule

Author(s): Walker-Bone K, Reading I, Coggon D, Cooper C, Palmer KT

Source: OCCUPATIONAL MEDICINE-OXFORD Volume: 56 Issue: 4 Pages: 243-250
Published: JUN 2006

Abstract: Background Few community-based epidemiological investigations of upper limb disorders (ULDs) have classified cases by validated procedures involving a structured clinical examination.

Aim To compare risk factor profiles for different diagnostic categories of ULD using one such examination scheme.

Methods A questionnaire about upper limb pain and demographic, occupational and psychosocial risk factors was mailed to 10 264 adults from two English general practices, followed by standardized physical examination in those with arm or neck pain. Logistic regression was used to compare those with specific ULDs and non-specific arm pain with those who had no neck or arm symptoms.

Results There was a 59% response rate. A total of 1197 subjects with arm or neck pain underwent standardized physical examination and were classified as having one or more of 11 specific ULDs or nonspecific regional pain. Among these, 250 subjects with specific ULDs and 176 with only non-specific arm pain were compared with 2248 subjects who had no neck or arm symptoms. Certain physical risk factors were more strongly associated with specific disorders than with non-specific pain. In comparison with pain-free subjects, the odds ratios (ORs) in keyboard users (≥ 1 h versus < 1 h/day) were 3.1 (95% CI 1.3, 7.8) for hand-wrist tendonitis but 1.3 (0.8, 2.1) for non-specific hand-wrist pain. Other differential associations were found with age, sex, manual versus non-manual employment and smoking. Unexpectedly, low vitality was similarly associated with both specific disorders and non-specific pain.

Conclusion These findings suggest that the schedule may usefully distinguish disorders that differ in their association with physical risk factors.

Document Type: Article

Language: English

Author Keywords: classification; occupational; soft tissue rheumatism

KeyWords Plus: SOUTHAMPTON EXAMINATION SCHEDULE; MUSCULOSKELETAL DISORDERS; SHOULDER PAIN; CLASSIFICATION SYSTEMS; PSYCHOSOCIAL FACTORS; GENERAL-POPULATION; CASE DEFINITIONS; PREVALENCE; EPICONDYLITIS; SYMPTOMS

6- A case-control study of risk factors for arm pain presenting to primary care services

Author(s): Ryall C, Coggon D, Peveler R, Reading I, Palmer KT

Source: OCCUPATIONAL MEDICINE-OXFORD Volume: 56 Issue: 2 Pages: 137-143
Published: MAR 2006

Times Cited: 5 References: 40 Citation Map

Abstract: Objectives To investigate the association of occupational activities, mental health and comorbidity with care seeking for arm pain, and to test the hypothesis that specific disorders arise from physical risk factors and non-specific pain from psychological ones.

Methods Patients with a new episode of arm pain and matched controls were recruited from eight general practices. A questionnaire about risk factors was completed and cases were classified using a validated examination schedule. Questions were asked about occupational activities and psychosocial stressors. Mental health was assessed using the Hospital Anxiety Depression Scale, elements of the Brief Symptom Inventory (somatizing tendency) and the Whiteley Index (health anxiety); comorbidity from chronic fatigue syndrome (CFS) and chronic widespread pain (CWP) was ascertained using standard definitions. Associations were explored using logistic regression and summarized as odds ratios (ORs) with 95% confidence intervals (95% CIs).

Results Altogether, 132 cases and 127 controls were studied. Consulting with arm pain was strongly associated with all of the mental health variables and with CFS and CWP, irrespective of the site of arm pain or diagnosis. The OR in those with > 3 versus < 3 distressing somatic symptoms was 3.9 (95% CI 1.7-9.0). There were several significant associations with physical activity, but none with occupational psychosocial stressors. Repeated wrist/finger movements and carrying weights were more strongly associated with specific diagnoses than with non-specific pain.

Conclusions Somatizing tendency, health anxiety, low mood, CFS and CWP are more common in arm pain consulters. Certain mechanical activities are also overrepresented, particularly in those with specific pathology.

7- Anatomical and mechanical changes following repetitive eccentric exertions

Author(s): Sesto ME, Radwin RG, Block WF, Best TM

Source: CLINICAL BIOMECHANICS Volume: 20 Issue: 1 Pages: 41-49 Published: JAN 2005

Times Cited: 11 References: 30 Citation Map

Abstract: Background. Submaximal eccentric exertions occur occupationally when rapidly rising tool-generated forces exceed the operator's capacity to react against them. The purpose of this study was to investigate the effects of short duration repetitive submaximal eccentric forearm exertions at levels comparable to industrial power hand tool use on dynamic mechanical properties (stiffness, effective mass and damping) and on forearm edema.

Methods. This study investigated changes following short term repetitive submaximal eccentric exertions comparable to occupational levels. Eight male participants exercised eccentrically for 30 min at 50% of isometric maximum voluntary contraction forearm supination in a posture and loading similar to power

hand tool use in the workplace. Dynamic mechanical properties (stiffness, effective mass and damping) of the upper limb were measured before, immediately following, and daily for three days after the activity. An MRI scan to assess edema was also performed for five of the participants before, on day one and day three following the activity.

Findings. Mechanical stiffness decreased 51% ($P < 0.05$) and effective mass decreased 43% ($P = 0.052$) immediately following eccentric exercise. Average isometric strength also decreased 42% immediately following exercise ($P < 0.01$) and pain persisted for two days. The recovery of static strength however was not correlated with changes in mechanical stiffness ($r = 0.56$) or effective mass ($r = 0.30$). The exercised arms had a 360% increase ($P < 0.01$) in supinator-extensor T-2 relaxation time difference, a quantifiable measure of edema, one day after exercise while the non-exercised arms had no significant changes.

Interpretation. Changes in both T-2 relaxation time, indicative of edema, and forearm mechanical properties, were observed following short duration submaximal repetitive exercise. If similar changes in dynamic mechanical properties of the upper extremity occur following repetitive submaximal eccentric activity in the workplace, they could negatively impact the ability of the arm to react to rapid forceful loading during repetitive industrial work activities and increase mechanical loading of the upper limb. (C) 2004 Elsevier Ltd. All rights reserved.

8- Insertion tendopathy of the elbow

Author(s): Placzek R, Lang M, Perka C, Rompe JD

Source: ZEITSCHRIFT FUR ORTHOPADIE UND IHRE GRENZGEBIETE Volume: 144 Issue: 1
Pages: R1-R13 Published: JAN-FEB 2006

Times Cited: 0 References: 60 Citation Map

Document Type: Article

Language: German

KeyWords Plus: BOTULINUM TOXIN INJECTION; CHRONIC TENNIS ELBOW; SHOCK-WAVE THERAPY; LATERAL EPICONDYLITIS; MEDIAL EPICONDYLITIS; MUSCULOSKELETAL DISORDERS; SURGICAL-TREATMENT; EXTENSOR ORIGIN; RISK-FACTORS; UPPER-LIMB

9-Role of mechanical and psychosocial factors in the onset of forearm pain: prospective population based study

Author(s): Macfarlane GJ, Hunt IM, Silman AJ

Source: BRITISH MEDICAL JOURNAL Volume: 321 Issue: 7262 Pages: 676-679 Published:
SEP 16 2000

Times Cited: 78 References: 16 Citation Map

Abstract: Objective To determine the aetiology of forearm pain. In particular to determine the relative contribution of (a) psychological factors, features of somatisation, and health anxiety and behaviour, (b) work related mechanical factors, and (c) work related psychosocial factors in the onset of forearm pain.

Design 2 year prospective population based cohort study, with retrospective assessment of exposures at work.

Setting Altrincham, Greater Manchester.

Participants 1953 individuals aged 18-65 years.

Outcome measures Forearm pain of new onset.

Results At follow up, 105 (8.3%) participants reported forearm pain of new onset lasting at least one day in the past month. Among these, 67% also reported shoulder pain, 65% back pain, and 45% chronic widespread pain. Increased risks of onset were associated with high levels of psychological distress (relative risk 2.4, 95% confidence interval 1.5 to 3.8), reporting at least two other somatic symptoms (1.7, 0.95 to 3.0), and high scores on the illness behaviour subscale of the illness attitude scales. The two work related mechanical exposures associated with the highest risk of forearm pain in the future were repetitive movements of the arm (4.1, 1.7 to 10) or wrists (3.4, 1.3 to 8.7), whereas the strongest work related psychosocial risk was dissatisfaction with support from colleagues or supervisors (4.7, 2.2 to 10).

Conclusions Psychological distress, aspects of illness behaviour, and other somatic symptoms are important predictors of onset of forearm pain in addition to work related psychosocial and mechanical factors. Misleading terms such as "cumulative trauma disorder" or "repetitive strain injury," implying a single uniform aetiology, should be avoided.

10-Poorer elbow proprioception in patients with lateral epicondylitis than in healthy controls: A cross-sectional study

Author(s): Juul-Kristensen B (Juul-Kristensen, Birgit)^{1,2,3}, Lund H (Lund, Hens)⁴, Hansen K (Hansen, Klaus)³, Christensen H (Christensen, Hanne)³, Donneskiold-Samsøe B (Donneskiold-Samsøe, Bente)⁴, Bliddal H (Bliddal, Henning)⁴

Source: JOURNAL OF SHOULDER AND ELBOW SURGERY Volume: 17 Issue: 1 Pages: 72S-81S Supplement: Suppl. 1 Published: JAN-FEB 2008

Times Cited: 0 **References:** 67 **Citation Map**

Abstract: Two groups of women, 15 patients with lateral epicondylitis and 21 healthy controls, were studied to compare proprioception in the elbows and knees between the groups. Outcome measures were absolute error and variable error for joint position sense and for threshold to detection of a passive movement. Both absolute error and variable error of threshold to detection of a passive movement were greater in the lateral epicondylitis-diagnosed elbows than in the controls' elbows (lateral epicondylitis, 1.8 degrees vs controls 1.1 degrees, $P = .026$; lateral epicondylitis, 0.8 degrees vs controls 0.3 degrees, $P = .015$), and there was a tendency toward a greater absolute error of joint position sense compared with the control elbows (lateral epicondylitis, 8.2 degrees vs controls, 5.6 degrees; $P = .078$). Absolute error of joint position sense was greater in the elbows than in the knees of the lateral epicondylitis patients, but no

group differences were found for knees. Proprioception seems, therefore, to be poorer in elbows with lateral epicondylitis elbows than in the controls' elbows.. This needs to be taken into consideration in the management of lateral epicondylitis.

11- Prognostic factors in lateral epicondylitis: a randomized trial with one-year follow-up in 266 new cases treated with minimal occupational intervention or the usual approach in general practice

Author(s): Haahr JP, Andersen JH

Source: RHEUMATOLOGY Volume: 42 Issue: 10 Pages: 1216-1225 Published: OCT 2003

Times Cited: 18 References: 26 Citation Map

Abstract: Objectives. To determine whether minimal intervention by occupational specialists involving information about the disorder, encouragement to stay active and instruction in graded self-performed exercises could enhance the prognosis of lateral epicondylitis compared with the treatment usually given in general practice, to quantify workplace factors associated with the prognosis, and to consider treatments given in general practice.

Methods. A randomized controlled trial was performed in a cohort of 266 consecutive new cases of lateral epicondylitis diagnosed in general practice. Workplace factors were assessed with questionnaires at the time of inclusion, and patients completed follow-ups at 3, 6 and 12 months. Status at 1 yr was assessed as overall improvement and pain reduction compared with the time of diagnosis. General practitioners (GPs) registered the treatments given for both cases and controls during follow-up. Numbers of contacts with GPs and physiotherapists were obtained from the National Health Insurance registry. Prognostic factors were analysed by multiple logistic regression analysis.

Results. After 1 yr, 83% of cases showed improvement in the condition, but the intervention was found to have had no advantage. Poor overall improvement was associated with employment in manual jobs [odds ratio (OR) 3.0, 95% confidence interval (CI) 1.0-8.7], a high level of physical strain at work (OR 8.5, CI 1.0-74.7) and a high level of pain at baseline (OR 2.3, CI 1.0-5.3). Pain reduction less than 50% was associated with manual jobs (OR 2.3, CI 1.1-5.1), high physical strain at work (OR 3.6, CI 1.0-12.9), high baseline distress (OR 1.9, CI 1.0-4.0) and tennis elbow on the dominant side (OR 3.1, CI 1.4-6.8). The intervention group received less treatment and fewer treatment modalities, but the intervention was not followed by a reduction in the number of visits to GPs and physiotherapist clinics during 12 months of follow-up.

Conclusions. Poor prognosis at 1 yr of follow-up for lateral epicondylitis was related to manual work and high baseline pain, whilst no relation was found between the type of medical treatment given/chosen and prognosis. This may have implications for the future management of lateral epicondylitis in terms of a greater focus on interaction with the workplace regarding job modification to reduce physical demands during recovery.

12- Short-term changes in upper extremity dynamic mechanical response parameters following power hand tool use

Author(s): Sesto ME, Radwin RG, Richard TG

Source: ERGONOMICS Volume: 48 Issue: 7 Pages: 807-820 Published: JUN 2005

Times Cited: 2 References: 33 Citation Map

Abstract: Dynamic mechanical response parameters (stiffness, damping and effective mass), physiological properties (strength and swelling) and symptoms of the upper limb were measured before power tool operation, immediately following and 24 h after power tool operation. Tool factors, including peak torque (3 Nm and 9 Nm) and torque build-up time (50 ms and 250 ms), were controlled in a full factorial design. Twenty-nine inexperienced power hand tool users were randomly assigned to one of four conditions and operated a pistol grip nutrunner four times per min for 1 h in the laboratory. Isometric strength decreased immediately following tool use (15%) ($p < 0.01$) and 24 h later (9%) ($p < 0.05$). Mechanical parameters of stiffness ($p < 0.05$) and effective mass ($p < 0.05$) were affected by build-up time. An average decrease in stiffness (43%) and effective mass (57%) of the upper limb was observed immediately following pistol grip nutrunner operation for the long (250 ms) build-up time. A previously developed biomechanical model was used to estimate handle force and displacement associated with the tool factors in the experiment. The conditions associated with the greatest predicted handle force and displacement had the greatest decrease in mechanical stiffness and effective mass, and the greatest increase in localized discomfort.

13- Surveillance case definitions for work related upper limb pain syndromes

Author(s): Harrington JM, Carter JT, Birrell L, Gompertz D

Source: OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 55 Issue: 4 Pages: 264-271 Published: APR 1998

Times Cited: 101 References: 15 Citation Map

Abstract: Objectives-To establish consensus case definitions for several common work related upper Limb pain syndromes for use in surveillance or studies of the aetiology of these conditions.

Methods-A group of healthcare professionals from the disciplines interested in the prevention and management of upper Limb disorders were recruited for a Delphi exercise. A questionnaire was used to establish case definitions from the participants, followed by a consensus conference involving the core group of 29 people. The draft conclusions were recirculated for review.

Results-Consensus case definitions were agreed for carpal tunnel syndrome, tenosynovitis of the wrist, de Quervain's disease of the wrist, epicondylitis, shoulder capsulitis (frozen shoulder), and shoulder tendonitis. The consensus group also identified a condition defined as "non-specific diffuse forearm pain" although this is essentially a diagnosis made by exclusion. The group did not have enough experience of the thoracic outlet syndrome to make recommendations.

Conclusions-There was enough consensus between several health professionals from different disciplines to establish case definitions suitable for use in the studies of several work related upper limb pain syndromes. The use of these criteria should allow comparability between studies and centres and facilitate research in this field. The criteria may also be useful in surveillance programmes and as aids to case management.

14- Pain, functional disability, and psychologic status in tennis elbow

Author(s): Alizadehkhayat O (Alizadehkhayat, Omid), Fisher AC (Fisher, Anthony C.), Kemp GJ (Kemp, Graham J.), Frostick SP (Frostick, Simon P.)

Source: CLINICAL JOURNAL OF PAIN Volume: 23 Issue: 6 Pages: 482-489 Published: JUL-AUG 2007

Times Cited: 0 References: 55 Citation Map

Abstract: Objectives: First to compare pain and functional disability in tennis elbow (TE) patients with healthy controls. Second, to evaluate the relationship between the 2 major psychologic factors (anxiety and depression) and TE.

Methods: Sixteen TE patients were recruited from 46 consecutive attendees at an upper limb clinic: inclusion criteria were lateral epicondyle tenderness, pain with resisted wrist and middle finger extension and at least 3 months localized lateral elbow pain. Sixteen healthy controls with no upper limb problem were recruited from students and staff. Participants were given 4 questionnaires, together with instructions for completion: Disabilities of the Arm, Shoulder, and Hand, Patient-Rated Forearm Evaluation Questionnaire, Patient-Rated Wrist Evaluation Questionnaire, and Hospital Anxiety and Depression Scale. The independent t test was used to compare the total and subscale scores between the groups.

Results: Significantly higher scores were found in TE for pain and function subscales and also total score for Disabilities of the Arm, Shoulder, and Hand, Patient-Rated Forearm Evaluation Questionnaire, and Patient-Rated Wrist Evaluation Questionnaire. For Hospital Anxiety and Depression Scale, both anxiety and depression subscales ($P < 0.001$) and the total score ($P < 0.01$) were significantly higher in TE. According to the anxiety and depression subscales, 55% and 36% of patients, respectively, were classified as probable cases (score > 11).

Discussion: TE patients showed markedly increased pain and functional disability. Significantly elevated levels of depression and anxiety pointed out the importance of psychologic assessment in TE patients. In the development of supportive and treatment strategies, we suggest the combination of "upper limb" and "psychologic" assessment tools.

15- Case-Control study of risk-factors for disease in the neck and shoulder area

Author(s): EKBERG K, BJORKQVIST B, MALM P, BJERREKIELY B, KARLSSON M, AXELSON O

Source: OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 51 Issue: 4 Pages: 262-266 Published: APR 1994

Times Cited: 68 References: 16 Citation Map

Abstract: A case-control study was performed to elucidate the strength of the relation between musculoskeletal disorders in the neck and shoulders and physical, organisational, and psychosocial aspects of the work environment. Cases were identified as those persons who consulted a physician in a community in southern Sweden for new musculoskeletal disorders in the neck and shoulders during a study period from August 1988 to the end of October 1989. One hundred and nine cases were collected and clinically examined. The cases also answered the Nordic questionnaire on symptoms as well as a on work conditions and factors. Controls were drawn as a random sample of the working population in the community where the cases appeared. A total of 637 controls answered the same questionnaires as the cases. Odds ratios (ORs) were calculated by logistic regression. The odds ratios were 11.4 for women 4.9 for immigrant background, and 3.7 for current smoking. To exercise rarely, compared with often, appeared as a preventive factor with an OR of 0.3. The ORs for various determinants of physical work load were 7.5 for repetitive movements demanding precision, 13.6 for Light Lifting, 3.6 for uncomfortable sitting positions, 4.8 for work with lifted arms, and 3.5 for a rushed work pace. Regarding work organisational determinants, the ORs were 16.5 for ambiguity of work role (uncertainty whether the person could manage the work) 2.6 for low quality work, and 3.8 for high demands on attention. Several of the determinants showed a significant dose-response relation with disease. It seems that work organisation and psychosocial work conditions are as important determinants for disease in the neck and shoulders as are the physical work conditions.

16- A randomized controlled trial of extracorporeal shock wave therapy for lateral epicondylitis (Tennis elbow)

Author(s): Staples MP (Staples, Margaret P.)^{1,6}, Forbes A (Forbes, Andrew)², Ptasznik R (Ptasznik, Ronnie)^{4,3}, Gordon J (Gordon, Jeanine)⁵, Buchbinder R (Buchbinder, Rachelle)¹

Source: JOURNAL OF RHEUMATOLOGY Volume: 35 Issue: 10 Pages: 2038-2046 Published: OCT 2008

Times Cited: 0 References: 44 Citation Map

Abstract: Objective. The aims of this double-blind, randomized, placebo-controlled trial were to determine whether ultrasound-guided extracorporeal shock wave therapy (ESWT) reduced pain and improved function in patients with lateral epicondylitis (tennis elbow) in the short term and intermediate term.

Methods. Sixty-eight patients from community-based referring doctors were randomized to receive 3 ESWT treatments or 3 treatments at a subtherapeutic dose given at weekly intervals. Seven Outcome measures relating to pain and function were collected at followup evaluations at 6 weeks, 3 months, and 6 months after completion of the treatment. The mean changes in Outcome variables from baseline to 6 weeks, 3 months, and 6 months were compared for the 2 groups.

Results. The groups did not differ in demographic or clinical characteristics at baseline and there were significant improvements in almost all outcome measures for both groups over the 6-month followup period, but there were no differences between the groups even after adjusting for duration of symptoms.

Conclusion. Our study found little evidence to support the use of ESWT for the treatment of lateral epicondylitis and is in keeping with recent systematic reviews of ESWT for lateral epicondylitis that have drawn similar conclusions.

17- Disabling musculoskeletal pain and its relation to somatization: a community-based postal survey

Author(s): Palmer KT, Calnan M, Wainwright D, Poole J, O'Neill C, Winterbottom A, Watkins C, Coggon D

Source: OCCUPATIONAL MEDICINE-OXFORD Volume: 55 Issue: 8 Pages: 612-617
Published: DEC 2005

Times Cited: 11 References: 27 Citation Map

Abstract: Background Somatization (a tendency to report distress from somatic symptoms) is a little studied, but potentially important, confounder and effect modifier in occupational studies of musculoskeletal disease.

Aims To assess the role of somatization as a risk factor for disabling regional pain.

Methods A questionnaire was mailed to 4998 subjects of working age. Questions were asked about chronic and disabling pain in the past 12 months affecting the arm, low back, knee or combinations of these sites. Distress from physical symptoms was assessed using elements of the Brief Symptom Inventory and mental well-being was assessed using the short-form 36 (SF-36). Associations were

examined by modified Cox regression and expressed as hazard ratios (HRs) with 95% confidence intervals (CI).

Results Among 2632 responders, 24% reported chronic pain and 25% disabling pain at one or several sites. Risk of chronic or disabling pain increased strongly according to the number of somatic symptoms reported as bothersome. For example, the HR for chronic upper limb pain in those distressed by ≥ 2 somatic symptoms in the past 7 days versus none was 3.9 (95% CI 2.9-5.3), and that of disabling upper limb pain was 5.8 (95% CI 4.1-8.3). Similar patterns were found for the low back and knee, and there was a gradient of increasing risk according to the number of sites with disabling pain. In comparison, associations with SF-36 mental well-being score were weaker.

Conclusion Somatizing tendency should be evaluated as a possible confounder or effect modifier in studies of occupational risk factors for musculoskeletal pain.

18- Work-related musculoskeletal health and social support

Author(s): Woods V

Source: OCCUPATIONAL MEDICINE-OXFORD Volume: 55 Issue: 3 Pages: 177-189
Published: MAY 2005

Times Cited: 4 References: 88 Citation Map

Abstract: Background This review concerns the relationship between inequalities experienced at work with respect to social support (e.g. poor communication channels, unsatisfactory work relationships, unsupportive organizational culture) and work-related musculoskeletal ill-health.

Methods Cross-sectional, case control and prospective studies, published between 1985 and 2003, that investigated this association were selected and reviewed.

Results Studies varied greatly in the breadth of definitions of social support used and many measures were employed for the collection of data. There is good evidence for an association between poor social support and an increased risk in musculoskeletal morbidity. There is also limited evidence that poor social support is associated with musculoskeletal sickness absence, restricted activity and not returning to work after a musculoskeletal problem. A small number of studies have shown the effects of good social support

and its importance in protecting against musculoskeletal ill-health and helping workers cope with problems.

Conclusions The overall findings of this review have implications for the design of proactive broad-based prevention programmes and organizational policies for the management of musculoskeletal ill-health and its potential outcomes, i.e. sickness absence and early retirement. Further research, using stronger study designs and more concise definitions of social support, to investigate the importance of social support in the amelioration of musculoskeletal ill-health is identified, e.g. the contribution of social support received away from the workplace.

19- Local steroid injections for tennis elbow: Does the pain get worse before it gets better? Results from a randomized controlled trial

Author(s): Lewis M, Hay EM, Paterson SM, Croft P

Source: CLINICAL JOURNAL OF PAIN Volume: 21 Issue: 4 Pages: 330-334 Published: JUL-AUG 2005

Times Cited: 7 References: 25 Citation Map

Abstract: Objectives: To compare the early effects of local corticosteroid injection, naproxen, and placebo as treatments for tennis elbow in primary care. Specifically, to find out whether the extra pain reduction experienced by patients who are given the steroid injection in the short-term would be realized within the first 5 days of treatment and to attempt to assess how much extra pain may be associated with the injection initially.

Methods: A randomized controlled trial carried out in 23 family practices in the United Kingdom. A total of 164 patients aged 18 to 70 years presenting with a new episode of tennis elbow were recruited and invited to keep a daily record of their pain intensity and medication use over the first 5 days of randomized treatment using a "diary."

Results: On day 1, pain scores were higher in the injection group compared with the naproxen group and placebo group, and the injection group was also taking more painkillers. By day 4, the converse was true, pain scores were significantly lower in the injection group than the other 2 groups, and patients given an injection were less likely to be taking painkillers than those in the placebo group.

Discussion: Steroid injection was associated with an increase in reported pain for the first 24 hours of treatment, but the therapeutic benefits compared with naproxen and placebo were evident 3 to 4 days after the start of treatment.

20-Tennis elbow: Blending basic science with clinical practice

Author(s): Fedorczyk JM (Fedorczyk, Jane M.)

Source: JOURNAL OF HAND THERAPY Volume: 19 Issue: 2 Pages: 146-153 Published: APR-JUN 2006

Times Cited: 2 References: 71 Citation Map

Abstract: Tennis elbow defines a condition of varying degrees of pain or point tenderness on or near the lateral epicondyle. It is prevalent in individuals who perform a combination of forceful and repetitive activities including athletes and wheelchair users. The most common work-related disorder at the elbow is tennis elbow. Histopathological findings indicate that tennis elbow is a degenerative condition, called tendinosis, of the common extensor tendon, with the extensor carpi radialis brevis tendon more commonly implicated as the primary location of tendinosis. Despite the absence of inflammation, patients with tennis elbow still present with pain. Neurochemicals including glutamate, substance P, and calcitonin gene-related peptide have been identified in patients with chronic tennis elbow and in animal models of tendinopathy. Their presence provides an alternative mechanism for pain mediation. Based on what is known about tissue changes within chronic tendinopathies, implications for therapy including examination and interventions are discussed.

21- Rotator cuff degeneration and lateral epicondylitis - a comparative histological study

Author(s): CHARD MD, CAWSTON TE, RILEY GP, GRESHAM GA, HAZLEMAN BL

Source: ANNALS OF THE RHEUMATIC DISEASES Volume: 53 Issue: 1 Pages: 30-34
Published: JAN 1994

Times Cited: 81 References: 21 Citation Map

Abstract: Objectives-Rotator cuff tendinitis and lateral epicondylitis are common in clinical practice but the underlying pathology is poorly understood. The study examined both normal and biopsy tendon specimens histologically, to determine the mechanisms involved in tendon degeneration.

Methods: Rotator cuff tendons from 83 cadavers aged 11-94 and tendon biopsy specimens from 20 patients with lateral epicondylitis aged 27-56 years were examined histologically.

Results: The microscopic changes found in the tendon biopsies from the elbow were similar to those found in the cadaveric rotator cuff tendons. Abnormalities ranged from minor blood vessel wall changes and loss of tenocytes to calcification. The most frequent abnormality was glycosaminoglycan infiltration and fibrocartilaginous transformation. There appeared to be some sequence in the changes observed which were milder in younger patients. Only 17% of cadaver tendons, below the age of 39 were abnormal but abnormalities increase in later life to around 40-50%.

Conclusions: There was an increasing incidence of degenerative changes in tendons with age. The changes observed in biopsy samples of common extensor tendons were the same as those seen in aged supraspinatus tendons, but these changes were not seen in control common extensor tendons.

22- Lateral elbow tendinopathy' is the most appropriate diagnostic term for the condition commonly referred-to as lateral epicondylitis

Author(s): Stasinopoulos D (Stasinopoulos, Dirnitrios), Johnson MI (Johnson, Mark I.)

Source: MEDICAL HYPOTHESES Volume: 67 Issue: 6 Pages: 1400-1402 Published: 2006

Times Cited: 2 References: 27 Citation Map

Abstract: A plethora of terms that have been used to describe lateral epicondylitis including tennis elbow (TE), epicondylalgia, tendonitis, tendinosis and tendinopathy. These terms usually have the prefix extensor or lateral elbow. Lateral elbow tendinopathy seems to be the most appropriate term to use in clinical practice because other terms make reference to inappropriate aetiological, anatomical and pathophysiological terms. The correct diagnostic term is important for the right treatment. (c) 2006 Elsevier Ltd. All rights reserved.

23- Psychosocial factors at work in relation to back and limb disorders

Author(s): LEINO PI, HANNINEN V

Source: SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH Volume: 21
Issue: 2 Pages: 134-142 Published: APR 1995

Times Cited: 96 References: 23 Citation Map

Abstract: Objectives This study was a 10-year follow-up of the associations between work content, work control, social relationships at work, mental overstrain, physical work load, and musculoskeletal morbidity in the neck, shoulder and upper limb region, the low back, and the lower limbs among workers in the metal industry.

Methods A sample of 902 blue- and white-collar employees were studied. Measurements were made twice at a 10-year interval by questionnaire and clinical examination.

Results At the beginning of the study, mental overstrain showed several associations with both the symptoms and the findings. The other psychosocial factors were the most consistently associated with the symptoms in the region of the neck, shoulder, and upper limbs and also in the lower-limb region among the middle-aged men. Prospectively, the social relations and the work content scores predicted the change in several morbidity scores. The associations were independent of physical work load.

Conclusions Work-related psychosocial factors were associated with, and predicted, the change in the occurrence of musculoskeletal disorders when age, gender, social class, and physical work load were controlled for.

24- Course and prognosis of elbow complaints: a cohort study in general practice

Author(s): Bot SDM, van der Waal JM, Terwee CB, van der Windt DAWM, Bouter LM, Dekker J

Source: ANNALS OF THE RHEUMATIC DISEASES Volume: 64 Issue: 9 Pages: 1331-1336
Published: SEP 2005

Times Cited: 12 References: 42 Citation Map

Abstract: Objective: To describe the course of new episodes of elbow complaints in general practice, and to identify predictors of short term and long term outcome in terms of pain intensity and functional disability.

Methods: 181 patients with elbow complaints filled in questionnaires at baseline and at 3, 6, and 12 months of follow up. Baseline scores of pain and disability, characteristics of the complaint, sociodemographic and psychosocial factors, physical activity, general health, and comorbidity were investigated as possible predictors of outcome. Outcome measures were analysed separately using multiple regression analyses.

Results: 13% of the patients reported recovery at the 3 month follow up and 34% at 12 months. Irrespective of outcome and length of follow up, a longer duration of the complaint before consulting the general practitioner, having musculoskeletal comorbidity, and using "retreating" as coping style increased the likelihood of an unfavourable outcome. Less social support was associated with an unfavourable outcome at 3 months, and having a history of elbow complaints and using "worrying" as coping style were associated with an unfavourable outcome at 12 months. The explained variance of the models ranged from 46% to 49%.

Conclusions: Recovery of patients with elbow complaints in general practice was poor. Besides characteristic of the complaint, passive coping and less social support were related to a worse prognosis. The results of this study may help general practitioners to provide patients with more accurate information about their prognosis.

25- Effectiveness of low-level laser therapy for lateral elbow tendinopathy

Author(s): Stasinopoulos DI, Johnson MI

Source: PHOTOMEDICINE AND LASER SURGERY Volume: 23 Issue: 4 Pages: 425-430
Published: AUG 2005

Times Cited: 8 **References:** 45 **Citation Map**

Abstract: Objective: Our aim was to determine the effectiveness of low-level laser therapy (LLL) in the management of lateral elbow tendinopathy (LET) and to provide recommendations based on this evidence. **Background data:** LET is a common clinical condition, and a wide array of physiotherapy treatments is used for treating LET. **Methods:** Randomized controlled trials (RCTs) identified by a search strategy in six databases were used in combination with reference checking. RCTs that included LLLT,

patients with LET, and at least one of the clinically relevant outcome measure were selected. A qualitative analysis of the selected studies was conducted using the Chalmers' technique. Results: Nine RCTs fulfilled the criteria and were included in the review. Although these studies had satisfactory methodology, shortcomings were not absent; poor results were revealed as to the effectiveness of LLLT for LET management. Conclusions: LLLT need not be ruled out for LET as it is a dose-response modality, and the optimal treatment dose has obviously not yet have been discovered. Further research with well-designed RCTs is needed to establish the absolute and relative effectiveness of this intervention for LET.

26- Upper limb mechanical changes following short duration repetitive eccentric exertions

Author(s): Sesto ME, Radwin RG, Best TM, Richard TG

Source: CLINICAL BIOMECHANICS Volume: 19 Issue: 9 Pages: 921-928 Published: NOV 2004

Times Cited: 4 References: 37 Citation Map

Abstract: Background. Power hand tool use is considered a risk factor for upper extremity musculoskeletal disorders. It is unclear if submaximal eccentric activity inherent to power tool use adversely affects the mechanical properties of muscle.

Methods. This study investigated in vivo changes in human upper limb dynamic mechanical properties following exposure to short-term repetitive submaximal eccentric exertions that are similar to operating an industrial power hand tool. Eighteen subjects (12 males and 6 females) were assigned to one of three exercise groups (isometric, eccentric or control) and exercised 10 min for 60 repetitions at 50% of isometric forearm supination maximum voluntary contraction. Supination strength and dynamic mechanical properties (stiffness, effective mass, and damping) of forearm rotation, modeled as a single-degree-of-freedom system during maximal exertion, were ascertained prior to exercise, immediately following exercise and 24 h later.

Findings. Strength decreased for the isometric (17%) ($P < 0.05$) and eccentric (34%) ($P < 0.01$) groups following exercise. Only the eccentric exercise group had a reduction in mechanical stiffness (53%) ($P < 0.01$) and effective mass (58%) ($P < 0.05$). The other groups had no changes in mechanical properties.

Interpretation. The change in mechanical properties following repetitive submaximal eccentric activity could negatively impact the ability of the arm to react to rapid forceful loading during repetitive industrial

work activities and may indicate mechanical strain on the upper limb. (C) 2004 Elsevier Ltd. All rights reserved.

27- Prevalence and determinants of lateral and medial epicondylitis: A population study

Author(s): Shiri R (Shiri, Rahman), Viikari-Juntura E (Viikari-Juntura, Eira), Varonen H (Varonen, Helena), Heliovaara M (Heliovaara, Markku)

Source: AMERICAN JOURNAL OF EPIDEMIOLOGY Volume: 164 Issue: 11 Pages: 1065-1074
Published: DEC 1 2006

Times Cited: 8 References: 28 Citation Map

Abstract: Epicondylitis is a common disorder of the arm, yet the role of individual- and work-related factors has not been addressed in a population study. The aims of this study were to estimate the prevalence of lateral and medial epicondylitis and to investigate their risk factors. The target population of this study comprised a representative sample of people aged 30-64 years residing in Finland during 2000-2001. Of the 5,871 subjects, 4,783 (81.5%) were included in this study. The prevalence of definite lateral epicondylitis was 1.3%, and that of medial epicondylitis was 0.4%. The prevalence did not differ between men and women and was highest in subjects aged 45-54 years. Current smoking (adjusted odds ratio (OR) = 3.4, 95% confidence interval (CI): 1.4, 8.3) and former smoking (OR = 3.0, 95% CI: 1.3, 6.6) were associated with definite lateral epicondylitis. An interaction ($p = 0.002$) was found between repetitive movements of the arms and forceful activities for the risk of possible or definite lateral epicondylitis (for both repetitive and forceful activities vs. no such activity: OR = 5.6, 95% CI: 1.9, 16.5). Smoking, obesity, repetitive movements, and forceful activities independently of each other showed significant associations with medial epicondylitis. Epicondylitis is relatively common among working-age individuals in the general population. Physical load factors, smoking, and obesity are strong determinants of epicondylitis.

28- Interview versus questionnaire for assessing physical loads in the population-based MUSIC-Norrtalje study

Author(s): Wiktorin C, Vingard E, Mortimer M, Pernold G, Wigaeus-Hjelm E, Kilbom A, Alfredsson L

Group Author(s): MUSIC Norrtalje Study Grp

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 35 Issue: 5 Pages: 441-455 Published: MAY 1999

Times Cited: 41 References: 42 Citation Map

Abstract: Background MUSIC-Norrtalje study is a case-referent study, the aim of which is to find risk and health factors for low back and neck/shoulder disorders. In this part of the study, the interview technique and the self-administered questionnaire used for assessment of physical loads are described and the inter-method reliability of parts of the self-administered questionnaire is estimated. The distribution of exposure levels in a general population is also described.

Methods The study period was three years, from November 1993 to November 1996 and the study subjects totaled 2,480 persons (813 female and 610 male referents, 380 female and 315 male low back cases, 252 female and 106 male neck/shoulder cases). The interview concerned "a typical working day" during the preceding 12 months and comprised assessment of energy expenditure, work postures, and manual materials handling for work and leisure time, including regular sport activities. The self-administered questionnaire comprised 18 questions, each covering 5 different points of time: right now, 5, 10, 15, 20 years ago. The answers to eight of the questions about current conditions were compared to corresponding interview responses. The interview was considered as the "gold standard."

Results Ninety-eight percent of the subjects completed the interview without any great difficulties. According to the interview: the distributions of different exposure levels were generally positively skewed, i.e., the frequency of highly exposed subjects was low in the study base. The correlation between interview and questionnaire responses among the referents was high for time spent "sitting at work" ($r = 0.82$), "VDU work" ($r = 0.87$), and work-related "motor vehicle driving" ($r = 0.80$). The correlation was moderate for work-related "hands above shoulder level" ($r(s) = 0.63$), and "hands below knee level (trunk flexion)" ($r(s) = 0.66$). The correlation was lower for leisure time activities such as "domestic work" ($r = 0.55$), "time for own activities" ($r = 0.39$), and "sitting during leisure time" ($r = 0.38$). Subjects seeking care for low back or neck/shoulder disorder estimated equally correctly or not, as had the referents. However; non-differential misclassification was present in all questions, which will attenuate observed estimates of the relative risk.

Conclusions Even though interview data are preferable, questionnaire data may be useful for assessing well-defined work tasks and for "sitting at work." *Am. J. Ind. Med.* 35:441-455, 1999. (C) 1999 Wiley-Liss, Inc.

29-Compensating occupationally related tenosynovitis and epicondylitis: a literature review

Author(s): Palmer KT (Palmer, Keith T.), Harris EC (Harris, E. Clare), Coggon D (Coggon, David)

Source: OCCUPATIONAL MEDICINE-OXFORD Volume: 57 Issue: 1 Pages: 67-U1 Published: JAN 2007

Times Cited: 1 References: 40 Citation Map

Abstract: Objectives To assess occupational associations with tenosynovitis and epicondylitis, we conducted a systematic literature review. We focused particularly on evidence that might support compensation of these disorders 'on the balance of probabilities'.

Methods We searched the MEDLINE and EMBASE electronic biomedical databases to 1 January 2005 using combinations of keyword and medical subject headings, and also the references cited in two state-of-the-art reviews from the 1990s. Primary research reports were retrieved and checked for further relevant citations. From each paper, we abstracted a standardized set of information on study populations, exposure contrasts and estimates of effect.

Results We found and summarized 18 papers. In the main, these based analysis on job titles rather than on directly assessed physical activities. Few occupations were studied more than once, however, and there was little consistent evidence of jobs or work activities that carried more than a doubling of risk for either disorder.

Conclusion Compensation of occupational illness can be problematic for disorders that are not specific to work and for which there are no distinctive clinical features in occupationally related cases. Attribution can, however, be made on the balance of probabilities if there is convincing evidence that risk is at least doubled in an occupational group. Our review highlights the relative lack of data to support such attribution for tenosynovitis and epicondylitis, and discusses the difficulty of compensating upper limb disorders.

30-Reproducibility of a questionnaire for assessment of physical load during work and leisure time

Author(s): Wiktorin C, Hjelm EW, Winkel J, Koster M

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 38 Issue: 2 Pages: 190-201 Published: FEB 1996

Times Cited: 57 References: 41 Citation Map

Abstract: A self-administered questionnaire on Physical load in lifetime occupational work, in present job, and in present leisure activities was tested for reproducibility with the test-retest method in 126 male and 217 female workers from 30 occupations. The questionnaire contained 92 questions and nine different response scales. The results indicated that questions concerning physical activity retrospectively and in the present job, vibrations in the present job, working postures involving the whole body, and questions concerning specific leisure activities (eg ball games, skiing, etc) seem to offer sufficient reproducibility to be worth testing for validity, at least at a 5-point ordinal level. Questions concerning working postures involving parts of the body, including awkward postures, and questions concerning manual materials handling seem to offer too poor reproducibility to be used in studies in which the aim is to quantify duration in proportions of a typical working day and frequencies in times per hour. questions concerning level of physical activity and exertion in domestic work seem to offer too poor reproducibility

to be used at a 5-point ordinal level. Gender, age, and musculoskeletal complaints did not influence the reproducibility to any great extent.

31-Epicondylitis among cooks in nursery schools

Author(s): Ono Y, Nakamura R, Shimaoka M, Hiruta S, Hattori Y, Ichihara G, Kamijima M, Takeuchi Y

Source: OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 55 Issue: 3 Pages: 172-179 Published: MAR 1998

Times Cited: 21 References: 45 Citation Map

Abstract: Objectives-To investigate the prevalence and risk factors of epicondylitis among cooks in nursery schools in a cross sectional study because they are suspected to have strenuous workloads on the hands and arms.

Methods-Prevalence of epicondylitis among 209 nursery school cooks and 366 control workers aged 40-59 were studied. Both groups consisted of women workers chosen from 1299 subjects who agreed to participate from 1329 social welfare employees in a city. All workers were interviewed with a questionnaire and had a clinical examination of the tenderness to palpation of epicondyles and epicondylar pain provoked by resisted extension and flexion of the wrist.

Results-Nursery school cooks had a significantly higher prevalence of epicondylitis (11.5%) than the controls (2.5%). In a logistic regression model, job title of the cook was also found to have a strong association with epicondylitis (odds ratio (OR) 5.4, 95% confidence interval (95% CI) 2.4 to 11.9) after adjustment for age, body length, and body mass index. Weaker associations were also found between epicondylitis and suspected job stress or workload scores for mechanical workload and psychosocial stressors based on factor analysis.

Conclusions-This study supported the hypothesis that nursery school cooks had a higher prevalence of epicondylitis than other workers with less strenuous hand and arm tasks. It was suggested that risk factors of epicondylitis would be multifactorial, including mechanical workload and psychosocial factors.

32- Repetitive industrial work and neck and upper-limb disorders in females

Author(s): OHLSSON K, ATTEWELL RG, PALSSON B, KARLSSON B, BALOGH I, JOHNSON B, AHLM A, SKERFVING S

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 27 Issue: 5 Pages: 731-747 Published: MAY 1995

Times Cited: 61 References: 48 Citation Map

Abstract: A cross-sectional study was performed in which physical examinations of the neck and upper limbs were conducted on 82 currently working female industrial workers with exposure to repetitive work

tasks and on 64 currently working referent subjects without exposure to repetitive work tasks. Associations between results of symptom questions and physical examination were sought with variables related to the work environment and to the individuals. In a multivariate model, there were statistically significant associations between exposure to repetitive work and diagnoses in both the neck/shoulders (prevalence odds ratio, POR = 4.6) and elbows/hands (POR = 3.5). In addition, age (POR = 1.9, 75th vs. 25th percentiles), tendencies towards subjective muscular tension (POR = 2.3), and stress/worry (POR = 1.9) were also associated with diagnoses in the neck/shoulders; however, there was not an association between these variables and the prevalence of diagnoses in elbows/hands. Standardized evaluation of videotape recordings in 74 of the industrial workers revealed significant associations between neck flexion, and elevation and abduction of the arm and the prevalence of neck/shoulder diagnoses. In the multivariate model, neck flexion was significantly associated with diagnoses in the neck/shoulders ($p = 0.005$). In addition, low muscle strength, lack of emotional well-being at work, and a variety of psychosomatic symptoms were associated with diagnoses in the neck/shoulders (all $p < 0.001$). Lack of strength was also associated with disorders of elbows/hands ($p = 0.007$). This study demonstrated a substantial prevalence of neck and upper limb disorders associated with repetitive work performed with a flexed neck and elevated and abducted arms, as well as a possible potentiation of these ergonomic factors by certain personal traits in some workers. (C) 1995 Wiley-Liss, Inc.

33- Evaluation of questionnaire-based information on previous physical work loads

Author(s): Torgen M, Winkel J, Alfredsson L, Kilbom A

Group Author(s): Stockholm MUSIC 1 Study Grp

Source: SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH Volume: 25
Issue: 3 Pages: 246-254 Published: JUN 1999

Times Cited: 35 References: 16 Citation Map

Abstract: Objectives The principal aim of the present study was to evaluate questionnaire-based information on past physical workloads (6-year recall).

Methods Effects of memory difficulties on reproducibility were evaluated for 82 subjects by comparing previously reported results on current work loads (test-retest procedure) with the same items recalled 6 years later. Validity was assessed by comparing self-reports in 1995, regarding work loads in 1989, with worksite measurements performed in 1989.

Results Six-year reproducibility, calculated as weighted kappa coefficients ($k(w)$), varied between 0.36 and 0.86, with the highest values for proportion of the workday spent sitting and for perceived general exertion and the lowest values for trunk and neck flexion. The six-year reproducibility results were similar to previously reported test-retest results for these items; this finding indicates that memory difficulties was a minor problem. The validity of the questionnaire responses, expressed as rank correlations ($r(s)$) between the questionnaire responses and workplace measurements, varied between -0.16 and 0.78. The highest values were obtained for the items sitting and repetitive work and the lowest and "unacceptable" values were for head rotation and neck flexion. Misclassification of exposure did not appear to be differential with regard to musculoskeletal symptom status, as judged by the calculated risk estimates.

Conclusions The validity of some of these self-administered questionnaire items appears sufficient for a crude assessment of physical work loads in the past in epidemiologic studies of the general population with predominantly low levels of exposure.

34- Effectiveness of extracorporeal shock wave therapy for tennis elbow (lateral epicondylitis)

Author(s): Stasinopoulos D, Johnson MI

Source: BRITISH JOURNAL OF SPORTS MEDICINE Volume: 39 Issue: 3 Pages: 132-136
Published: MAR 1 2005

Times Cited: 9 References: 48 Citation Map

Abstract: Randomised controlled trials were reviewed to evaluate the evidence of the effectiveness of extracorporeal shock wave therapy in the management of tennis elbow. Seven relevant trials were found, which had satisfactory methodology but conflicting results. Further research with well designed randomised control trials is needed to establish the absolute and relative effectiveness of this intervention for tennis elbow.

35- Exercises versus arthroscopic decompression in patients with subacromial impingement: a randomised, controlled study in 90 cases with a one year follow up

Author(s): Haahr JP, Ostergaard S, Dalsgaard J, Norup K, Frost P, Lausen S, Holm EA, Andersen JH

Source: ANNALS OF THE RHEUMATIC DISEASES Volume: 64 Issue: 5 Pages: 760-764
Published: MAY 2005

Times Cited: 18 References: 16 Citation Map

Abstract: Objectives: To compare the effect of graded physiotherapeutic training of the rotator cuff versus arthroscopic subacromial decompression in patients with subacromial impingement.

Methods: Randomised controlled trial with 12 months' follow up in a hospital setting. Ninety consecutive patients aged 18 to 55 years were enrolled. Symptom duration was between six months and three years. All fulfilled a set of diagnostic criteria for rotator cuff disease, including a positive impingement sign. Patients were randomised either to arthroscopic subacromial decompression, or to physiotherapy with exercises aiming at strengthening the stabilisers and decompressors of the shoulder. Outcome was shoulder function as measured by the Constant score and a pain and dysfunction score. "Intention to treat" analysis was used, with comparison of means and control of confounding variables by general equation estimation analysis.

Results: Of 90 patients enrolled, 84 completed follow up (41 in the surgery group, 43 in the training group). The mean Constant score at baseline was 34.8 in the training group and 33.7 in the surgery group. After 12 months the mean scores improved to 57.0 and 52.7, respectively, the difference being non-significant. No group differences in mean pain and dysfunction score improvement were found.

Conclusions: Surgical treatment of rotator cuff syndrome with subacromial impingement was not superior to physiotherapy with training. Further studies are needed to qualify treatment choice decisions, and it is recommended that samples are stratified according to disability level.

36- A prospective cohort study of arm pain in primary care and physiotherapy - prognostic determinants

Author(s): Ryall C (Ryall, C.), Coggon D (Coggon, D.), Peveler R (Peveler, R.), Poole J (Poole, J.), Palmer KT (Palmer, K. T.)

Source: RHEUMATOLOGY Volume: 46 Issue: 3 Pages: 508-515 Published: MAR 2007

Times Cited: 2 References: 41 Citation Map

Abstract: Objective. To investigate outcome and prognostic determinants for arm pain presenting to primary care and physiotherapy services.

Methods. Patients with arm pain were recruited as they presented to primary care and physiotherapy services, and were followed for 12 months. At baseline, they were classified by diagnosis using a validated examination schedule. Depression, somatizing tendency, health anxiety, fear-avoidance beliefs and chronic pain outside the arm were ascertained using standard definitions. Three outcomes were considered: same-site pain during the final month of follow-up (continuing pain); pain present on most days of that month; and pain present without a break of 7 days over follow-up ('unremitting' pain). Associations were explored in multi-level logistic regression models and summarized as odds ratios (ORs) with 95% confidence intervals (95% CIs).

Results. Altogether, 313 (83%) of 375 subjects completed follow-up, including 53% with 'continuing' and 24% with 'unremitting' pain. 'Continuing' pain was predicted most strongly by male sex (OR 1.9, 95% CI 1.2-3.2) (this association was restricted largely to the elbow), higher frequency of pain in the past month at baseline (OR 2.5, 95% CI 1.1-5.6), chronic pain at sites outside the arm (ORs 1.6-2.4 for different sites) and current smoking (OR 3.3, 95% CI 1.6-6.6). There were also indications that mental health and fear-avoidance beliefs influenced prognosis. Predictors for the other two adverse outcomes were similar.

Conclusion. Arm pain often persists in patients who consult medical services. Predictors of persistence include male sex (elbow only), frequency of pain at baseline, chronic pain at other sites and smoking.

Resúmenes del árbol de referencias “Why most workers with occupational repetitive trauma do not file for workers' compensation”

Why most workers with occupational repetitive trauma do not file for workers' compensation

Author(s): Rosenman KD, Gardiner JC, Wang J, Biddle J, Hogan A, Reilly MJ, Roberts K, Welch E

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 42
Issue: 1 Pages: 25-34 Published: JAN 2000

Times Cited: 50 References: 16

Abstract: Despite the availability of no fault insurance for wage replacement and medical care costs, the majority of workers diagnosed with an occupational disease do not apply for workers' compensation. The objective of the study was to determine the reasons why workers diagnosed with work-related musculoskeletal disease did not apply for workers' compensation benefits. A cross-sectional study of 1598 individuals diagnosed with neck, upper extremity, and low back work-related musculoskeletal disease from April to June 1996 was performed. All individuals were interviewed over the telephone using a standardized questionnaire. The questionnaire included questions about the precipitating event; demographics; health limitations; mood; pain level; and attitudes toward their health care provider, fellow workers, management, work environment, and filing for workers' compensation. Whenever possible, standardized questions from previous surveys were used. The interviewed individuals with work-related musculoskeletal disease were reported by health care practitioners as required by the state of Michigan's occupational disease reporting law. Workers reported during 12 weeks in the spring of 1996 by a Michigan health care professional as having a neck, back, or upper extremity musculoskeletal disorder were eligible to participate. Among the 2703 reports received, 490 individuals could not be reached, 22 did not speak English, 12 had died or were too incapacitated by other medical conditions, and 581 refused. We interviewed 59% of all eligible workers and 73% of all workers who were reachable and capable of responding in English. Only 25% of workers diagnosed with musculoskeletal disease filed a workers' compensation claim. The factors significantly associated with filing a claim were (1) increased length of employment (>21 years: odds ratio [OR] 3.01, 95% confidence interval [CI], 1.31 to 6.90); 11 to 20 years: OR, 2.34 95% CI, 1.01 to 5.47; 6 to 10 years: OR, 1.76, 95% CI, 0.73 to 4.25; 1 to 5 years: OR, 2.36, 95% CI, 1.03 to 5.42; < 1 year: OR, 1.00; (2) lower annual income (<\$40,000: OR, 1.75, 95% CI, 1.06 to 2.88 vs \$80,000: OR, 1.00); (3) workers' dissatisfaction with coworkers (OR, 1.76, 95% CI, 1.01 to 3.06); (4) physician restrictions on activity (OR, 2.16, 95% CI, 1.55 to 3.00); (5) type of physician providing treatment (specialist, including surgeon or orthopedist: OR, 3.63, 95% CI, 2.37 to 5.55); physical and occupational therapist: OR, 2.15 95% CI, 1.35 to 3.43); family practitioner: OR, 1.33, 95% CI = 0.89 to 2.01; company physician: OR = 1.00); (6) off work greater than or equal to 7 days (OR, 14.85, 95% CI, 10.57 to 20.85); (7) decreased current health status (OR, 0.82, 95% CI, 0.70 to 0.96); and (8) increased severity of illness (OR, 1.24, 95% CI, 1.06 to 20.88). This study showed that only 25% of workers with a work-related musculoskeletal condition filed for workers' compensation and refutes the common perception that an individual with a work-related Problem is likely to file a workers' compensation claim. The strongest predictors of who would file were those factors associated with the severity of the condition. Other factors were increasing length of employment, lower annual income, and worker dissatisfaction with coworkers. Our study population consisted mainly of unionized autoworkers, and our findings may not be generalizable to the total workforce.

Document Type: Article

Language: English

KeyWords Plus: DISABILITY; JUSTICE; PAIN

MAPA DE CITAS

1. A review of health-related work outcome measures and their uses, and recommended measures

Author(s): Amick BC, Lerner D, Rogers WH, Rooney T, Katz JN

Source: SPINE Volume: 25 Issue: 24 Pages: 3152-3160 Published: DEC 15 2000

Times Cited: 51 References: 55 Citation Map

Abstract: Despite the growing recognition that work can contribute to the development of musculoskeletal disorders,(1,8) there are almost no data on whether and how physicians investigate the contribution of work to patients' health status or the influence of health status on work performance. This is particularly true of primary care, where much of the medical care for patients with work-related low back pain is provided.(51) As more patients with musculoskeletal injuries show up in primary care settings, it will become important to document health-related work outcomes and incorporate into practice outcome tools that enable the physician to obtain a quick and accurate accounting of needed information about patients' work.

Health-related work outcomes relate to a person's labor market status: Is a person working or not working? How well is he or she working? Did the person return to a job of pay and skill comparable to the preinjury job? Outcomes can incorporate time: How long has a person been out of work? How many hours, days, or weeks has a person been reported absent? Is the person working full- or part-time? How many hours does the person perform at full effectiveness? Finally, health-related work outcomes can capture the interplay between a person's health status and work role performance: How difficult is it for a person with a given health status to perform work activities? Typically, health-related work outcomes have not specifically referred to unpaid work activities, such as volunteer work or household labor. The authors support the importance of capturing both paid and unpaid work outcomes, but in this article, paid work is the focus.

Multiple publications in the literature contribute conceptually and methodologically to the health-related work outcomes field. These range from industrial psychology and labor economics to health services research, epidemiology, and pharmacoeconomics. In this paper, a window into health-related work outcomes research is created by considering the reasons for measuring these outcomes and briefly reviewing and illustrating several classes of measures. The advantages and limitations of each measure will be discussed, as the authors draw examples from own work. Although prior work has focused on upper extremity musculoskeletal disorders, the general principles for using health-related work outcomes are similar for researchers studying back injuries and disorders. In addition, a new work-related health outcome tool for measuring successful return to work (RTW) is discussed to illustrate a new class of measures. Hereafter, health-related work outcomes as are referred to as work outcomes.

Document Type: Article

Language: English

KeyWords Plus: LOW-BACK-PAIN; MUSCULOSKELETAL DISORDERS; INTERVENTION PROGRAM; DISABILITY; MANAGEMENT; EMPLOYEES; VALIDITY; TRIAL; CARE

2. Trends in work-related musculoskeletal disorder reports by year, type, and industrial sector: A capture-recapture analysis

Author(s): Morse T, Dillon C, Kenta-Bibi E, Weber J, Diva U, Warren N, Grey M

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 48 Issue: 1 Pages: 40-49
Published: JUL 2005

Times Cited: 12 References: 44 Citation Map

Abstract: Background Musculoskeletal disorders (MSD) are thought to be declining based on Bureau of Labor Statistics survey data, but there is also evidence of MSD under-reporting, raising the possibility of contrary trends. The magnitude of MSD under-reporting over time, and its industry distribution have not been adequately described.

Methods Capture-recapture analysis of 7 years of Connecticut MSD (1995-2001), utilizing Workers' Compensation and physician reporting data was performed.

Results Only 5.5%-7.9% of MSD cases appear to be reported to Workers Compensation annually. The capture-recapture estimated average annual rate for upper-extremity MSD was 133.1 per 10,000 employed persons, far above BLS rates. By industry Manufacturing, State Government, and the Finance/Insurance/Real Estate sectors all had significantly higher MSD rates than Wholesale/Retail Trade.

Conclusions Upper-extremity MSD appears to be significantly under-reported, and rates are not decreasing over time. Capture-recapture methods provide an improved surveillance method for monitoring temporal trends in injury rates. (c) 2005 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: cumulative trauma disorders; epidemiology; prevalence; workers' compensation; MSD; under-reporting

3. Understanding work-related upper extremity disorders: Clinical findings in 485 computer users, musicians, and others

Author(s): Pascarelli EF, Hsu YP

Source: JOURNAL OF OCCUPATIONAL REHABILITATION Volume: 11 Issue: 1 Pages: 1-21
Published: MAR 2001

Times Cited: 32 References: 115 Citation Map

Abstract: Four hundred eighty five patients whose chief complaints were work related pain and other symptoms received a comprehensive upper-body clinical evaluation to determine the extent of their illness. The group had a mean age of 38.5 years. Sixty-three percent of patients were females. Seventy percent were computer users, 28% were musicians, and 2% were others engaged in repetitive work. The time between the onset of symptoms and our initial visit ranged from 2 weeks to over 17 years. A majority sought care within 30 months with the greatest number of them seeking care before 12 months. Fifty nine percent of subjects were still working when seen despite increasing pain and symptoms such as weakness, numbness, tingling, and stiffness. Following a history, a physical assessment utilizing commonly employed clinical tests were performed including evaluation of joint range of motion, hyperlaxity, muscle tenderness, pain, strength, and imbalance. Neurologic tests included Tinel's sign performed in wrist, elbow, tricipital sulcus, and neck and tests for thoracic outlet syndrome (TOS). Specific tests such as Finkelstein's test for deQuervain's tenosynovitis, Phalen's test for carpal tunnel syndrome and grip strengths were included in the examination protocol. Significant findings included postural misalignment with protracted shoulders (78%), head forward position (71%), neurogenic TOS (70%), cervical radiculopathy (0.03%), evidence of sympathetic dysfunction (20%), and complex regional pain syndrome (RSD) (0.6%). Hyperlaxity of fingers and elbows was found in over 50%, carpal tunnel syndrome in 8%, radial tunnel syndrome in 7%, cubital tunnel in 64%, shoulder impingement in 13%, medial epicondylitis in 60%, lateral epicondylitis in 33%, and peripheral muscle weakness in 70%. We conclude that despite initial presentation distally, work-related upper-extremity disorders are a diffuse neuromuscular illness with significant proximal upper-body findings that affect distal function. While neurogenic TOS remains a controversial diagnosis, the substantial number of patients with positive clinical findings in this study lends weight to the concept that posture related neurogenic TOS is a key factor in the cascading series of physical events that characterize this illness. A comprehensive upper-body examination produces findings that cannot be obtained through laboratory tests and surveys alone and lays the ground work for generating hypotheses about the etiology of work related upper-extremity disorders that can be tested in controlled investigations.

Document Type: Review

Language: English

Author Keywords: work-related upper-extremity disorders; computer users; medical examination

KeyWords Plus: THORACIC OUTLET SYNDROME; REPETITIVE STRAIN INJURY; MUSCULOSKELETAL DISORDERS; IMPINGEMENT SYNDROME; NERVE COMPRESSION; SCALENE MUSCLE; ARM PAIN; HAND; ANOMALIES; SYMPTOMS

4. What percentage of workers with work-related illnesses receive workers' compensation benefits?

Author(s): Biddle J, Roberts K, Rosenman KD, Welch EM

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 40
Issue: 4 Pages: 325-331 Published: APR 1998

Times Cited: 73 References: 21 Citation Map

Abstract: This study estimates the rate at which workers suffering from occupational illnesses file for workers' compensation lost wage benefits and identifies some of the factors that affect the probability that a worker with an occupational illness will file. A database of reports of known or suspected cases of occupational illness is matched with workers' compensation claims data. Overall, between 9% and 45% of reported workers file for benefits. Data limitations prevent a more precise estimate of this rate, but a large proportion of workers with occupational illnesses clearly does not utilize the worker's compensation system. Legit analysis of a choice-based sample shows that women and employees of small firms are more likely than others to file for workers' compensation and that filing rates vary considerably across industries and diagnostic categories. Acute conditions related to the current job are no more likely to lead to claims than chronic conditions with long latency periods between exposure and development of disease.

Document Type: Article

Language: English

KeyWords Plus: OCCUPATIONAL-DISEASE; ABSENTEEISM; INSURANCE; SURVEILLANCE

5. Capture-recapture estimation of unreported work-related musculoskeletal disorders in Connecticut

Author(s): Morse T, Dillon C, Warren N, Hall C, Hovey D

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 39 Issue: 6 Pages: 636-642 Published: JUN 2001

Times Cited: 25 References: 39 Citation Map

Abstract: Background Estimates of the extent of musculoskeletal disorders (MSD) are usually based upon workers' compensation reports, although recent reports indicate that there may be widespread under-reporting of MSD.

Methods An estimate of the incidence of arm and hand work-related MSD was made using capture-recapture analysis of the overlap between state workers' compensation reports and physician reports in Connecticut for 1995. The resulting estimate was compared to a population-based survey of MSD.

Results There was very small overlap between the two state injury reporting systems: 6.7% of 793 reported workers' compensation cases, or 8% of 661 physician's reports. The estimate for MSD not captured by either system was 13,285 resulting in 14,686 (95% CI: 9,733-18,453) total reported and non-reported cases. This compares to an estimate of 13,775 cases (95% CI: 8,800-18,800) based on a phone survey.

Conclusions This analysis points to substantial under-reporting of MSD in Connecticut: estimates of unreported cases exceed those officially, reported by a factor of 11:1. The findings have an important bearing on injury prevention programs and policy making. Am. J. Ind. Med. 39:636-642, 2001. (C) 2001 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: musculoskeletal disorders; cumulative trauma disorders; epidemiology; prevalence; workers' compensation

KeyWords Plus: CARPAL-TUNNEL SYNDROME; CUMULATIVE TRAUMA DISORDERS; REPETITIVE STRAIN INJURIES; UPPER EXTREMITIES; UNITED-STATES; COMPENSATION; SURVEILLANCE; PREVALENCE; ASCERTAINMENT; MORBIDITY

6. Prognostic factors of long-term disability in a workers' compensation system

Author(s): Stover B (Stover, Bert), Wickizer TM (Wickizer, Thomas M.), Zimmerman F (Zimmerman, Fred), Fulton-Kehoe D (Fulton-Kehoe, Deborah), Franklin G (Franklin, Gary)

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 49
Issue: 1 Pages: 31-40 Published: JAN 2007

Times Cited: 7 References: 59 Citation Map

Abstract: Objective: We identified predictive factors of long-term disability in new workers' compensation claims to guide secondary, prevention research and target interventions for high-risk claims. Methods: Workers with 4 or more days of work disability resulting from workplace injuries were followed for approximately 6 years in a population-based retrospective inception cohort study of 81,077 workers. Results: Predictors of long-term disability included delay between injury and first medical treatment, older age, construction industry, logging occupation, longer time from medical treatment to claim filing, back injury, smaller firm size, female gender, higher unemployment rate, and having dependents. We used logistic and quantile regression to investigate predictors of disability. These models produced consistent information regarding predictors. Conclusion: These factors can be used to identify Jobs or workers at increased risk for long-term disability that warrant Prevention intervention.

Document Type: Article

Language: English

KeyWords Plus: RETURN-TO-WORK; LOW-BACK-PAIN; OF-THE-LITERATURE; UPPER-EXTREMITY; MUSCULOSKELETAL DISORDERS; WASHINGTON-STATE; OCCUPATIONAL INJURY; HEALTH-CARE; OUTCOMES; DURATION

7. Accuracy of a disability instrument to identify workers likely to develop upper extremity musculoskeletal disorders

Author(s): Stover B (Stover, Bert), Silverstein B (Silverstein, Barbara), Wickizer T (Wickizer, Thomas), Martin DP (Martin, Diane P.), Kaufman J (Kaufman, Joel)

Source: JOURNAL OF OCCUPATIONAL REHABILITATION Volume: 17 Issue: 2 Pages: 227-245 Published: JUN 2007

Times Cited: 0 References: 57 Citation Map

Abstract: Background Work related upper extremity musculoskeletal disorders (MSD) result in substantial disability, and expense. Identifying workers or jobs with high risk can trigger intervention before workers are injured or the condition worsens.

Methods We investigated a disability instrument, the QuickDASH, as a workplace screening tool to identify workers at high risk of developing upper extremity MSDs. Subjects included workers reporting recurring upper extremity MSD symptoms in the past 7 days (n = 559).

Results The QuickDASH was reasonably accurate at baseline with sensitivity of 73% for MSD diagnosis, and 96% for symptom severity. Specificity was 56% for diagnosis, and 53% for symptom severity. At 1-year follow-up sensitivity and specificity for MSD diagnosis was 72% and 54%, respectively, as predicted by the baseline QuickDASH score. For symptom severity, sensitivity and specificity were 86% and 52%. An a priori target sensitivity of 70% and specificity of 50% was met by symptom severity, work pace and quality, and MSD diagnosis.

Conclusion The QuickDASH may be useful for identifying jobs or workers with increased risk for upper extremity MSDs. It may provide an efficient health surveillance screening tool useful for targeting early workplace intervention for prevention of upper extremity MSD problems.

Document Type: Article

Language: English

Author Keywords: cumulative trauma disorders; musculoskeletal diseases; occupational diseases; workplace surveillance

KeyWords Plus: CARPAL-TUNNEL-SYNDROME; FUNCTIONAL STATUS MEASURES; QUALITY-OF-LIFE; ERGONOMIC INTERVENTION; WASHINGTON-STATE; UPPER-LIMB; HEALTH; RESPONSIVENESS; OUTCOMES; NECK

8. Reducing the costs of work-related musculoskeletal disorders: targeting strategies to chronic disability cases

Author(s): Baldwin ML

Source: JOURNAL OF ELECTROMYOGRAPHY AND KINESIOLOGY Volume: 14 Issue: 1
Pages: 33-41 Published: FEB 2004

Times Cited: 12 References: 25 Citation Map

Abstract: Musculoskeletal disorders impose a significant direct cost burden on health care systems in the US and Canada and account for even greater indirect losses of productivity. The overall prevalence of musculoskeletal disorders is high, but a disproportionate share of costs is associated with a small number of cases with chronic pain. This is especially true for cases of occupational back pain, the single most common and costly musculoskeletal disorder in the workplace. A number of studies identify workplace characteristics associated with prolonged disability among cases of work-related back pain. These characteristics include: failure to receive job accommodations, receipt of disability benefit payments, and employment in high-risk industries or jobs that require heavy lifting. Research on the predictors of high-cost cases is limited, however, because of the lack of high-quality data and the need for a multidisciplinary approach. A new study, the Arizona State University Healthy Back Study, addresses some of these issues and promises new insights into effective strategies to reduce the proportion of high-cost claims. (C) 2003 Elsevier Ltd. All rights reserved.

Document Type: Proceedings Paper

Language: English

Author Keywords: musculoskeletal disorders; back pain; economics; work disability

KeyWords Plus: LOW-BACK-PAIN; UNITED-STATES; COMPENSATION; DURATION; HEALTH; PREVALENCE; INDUSTRY; CLAIMS; TRAUMA; CANADA

9. Underreporting of work-related injury or illness to workers' compensation: Individual and industry factors

Author(s): Fan ZJ (Fan, Z. Joyce), Bonauto DK (Bonauto, David K.), Foley MP (Foley, Michael P.), Silverstein BA (Silverstein, Barbara A.)

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 48
Issue: 9 Pages: 914-922 Published: SEP 2006

Times Cited: 5 References: 29 Citation Map

Abstract: **Objective:** We quantified the underreporting of work-related injury or illness to workers' compensation (WC). **Methods:** Using data from 2612 wage-earning respondents who participated in the 2002 Washington State Behavioral Risk Factor Surveillance System, we assessed work related injury or illness in the previous year and identified the factors associated with WC claim filing by logistic regression. **Results:** The self-reported rate of work-related injury or illness of respondents was 13 %. Among those who had a work-related injury or illness, 52 % filed a WC claim. After adjustment for age, gender, and race, those who filed WC claims were more likely to be overweight and married. WC claim filing varies considerably across industry and occupation groups holding all other measured factors constant. **Conclusions:** Individual and industry/occupation factors are related to underreporting of work-related injury or illness to the WC system.

Document Type: Article

Language: English

KeyWords Plus: OCCUPATIONAL INJURY; MUSCULOSKELETAL DISORDERS; SURVEILLANCE; PREVALENCE; BENEFITS; TRENDS; COSTS; FILE; SIZE

10. Occupational injury costs and alternative employment in construction trades

Author(s): Waehrer GM (Waehrer, Geetha M.), Dong XS (Dong, Xiuwen S.), Miller T (Miller, Ted), Me Y (Men, Yurong), Haile E (Haile, Elizabeth)

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 49
Issue: 11 Pages: 1218-1227 Published: NOV 2007

Times Cited: 1 References: 35 Citation Map

Abstract: Objective: To present the costs of fatal and non-fatal days-away-from-work injuries in 50 construction occupations. Our results also provide indirect evidence on the cost exposure of alternative construction workers such as independent contractors, on-call or day labor, contract workers, and temporary workers. Methods: We combine data from the Bureau of Labor Statistics on average annual incidence from 2000 to 2002 with updated per-case costs from an existing cost model for occupational injuries. The Current Population Survey provides data on the percentage of alternative construction workers. Results: Construction laborers and carpenters were the two costliest occupations, with 40% of the industry's injury costs. The 10 costliest construction occupations also have a high percentage of alternative workers. Conclusions: The construction industry has both a high rate of alternative employment and high costs of work injury. Alternative workers, often lacking workers' compensation, are especially exposed to injury costs.

Document Type: Article

Language: English

KeyWords Plus: WORKERS-COMPENSATION; WASHINGTON-STATE; UNITED-STATES; ILLNESS; INDUSTRY; SAFETY; CONTINGENT

11. The global expansion of precarious employment, work disorganization, and consequences for occupational health: A review of recent research

Author(s): Quinlan M, Mayhew C, Bohle P

Source: INTERNATIONAL JOURNAL OF HEALTH SERVICES Volume: 31 Issue: 2 Pages: 335-414 Published: 2001

Times Cited: 70 References: 170 Citation Map

Abstract: In this review of a range of studies on the health and safety effects of precarious employment in industrialized societies published since 1984, the authors examine the overall findings and methodological issues and identify areas in need of further research. Of the 93 published journal articles and monographs/book chapters reviewed, 76 studies found precarious employment was associated with a deterioration in occupational health and safety (OHS) in terms of injury rates, disease risk, hazard

exposures, or worker (and manager) knowledge of OHS and regulatory responsibilities. Of the more than 25 studies each on outsourcing and organizational restructuring/downsizing, well over 90 percent find a negative association with OHS. The evidence is fairly persuasive for temporary workers, with 14 of 24 studies finding a negative association with OHS. The evidence is less strong for small business, and a handful of studies on part-time workers found no clear association with negative OHS outcomes (in some cases the reverse). Further research is needed to more clearly link health effects to particular business practices and neoliberal policies and to explore the regulatory implications of the growth of precarious employment. The authors suggest some ways to conceptualize the association between precarious employment and occupational health.

Document Type: Review

Language: English

KeyWords Plus: CARE WORKERS; PETROCHEMICAL INDUSTRY; ORGANIZATIONAL-CHANGE; CONTINGENT WORKERS; SICKNESS ABSENCE; JOB INSECURITY; HOME CARE; WHITEHALL-II; SAFETY; EMPLOYEES

12. Return to work following injury: The role of economic, social, and job-related factors

Author(s): MacKenzie EJ, Morris JA, Jurkovich GJ, Yasui Y, Cushing BM, Burgess AR, DeLateur BJ, McAndrew MP, Swiontkowski MF

Source: AMERICAN JOURNAL OF PUBLIC HEALTH Volume: 88 Issue: 11 Pages: 1630-1637
Published: NOV 1998

Times Cited: 77 References: 55 Citation Map

Abstract: Objectives. This study examined factors influencing return to work (RTW) following severe fracture to a lower extremity.

Methods. This prospective cohort study followed 312 individuals treated for a lower extremity fracture at 3 level-1 trauma centers. Kaplan-Meier estimates of the proportion of RTW were computed, and a Cox proportional hazards model was used to examine the contribution of multiple risk factors on RTW.

Results. Cumulative proportions of RTW at 3, 6, 9, and 12 months postinjury were 0.26, 0.49, 0.60, and 0.72. After accounting for the extent of impairment, characteristics of the patient that correlated with higher rates of RTW included younger age, higher education, higher income, the presence of strong social support, and employment in a white-collar job that was not physically demanding. Receipt of disability compensation had a strong negative effect on RTW!

Conclusions. Despite relatively high rates of recovery, one quarter of persons with lower extremity fractures did not return to work by the end of 1 year. The analysis points to subgroups of individuals who are at high risk of delayed RTW, with implications for interventions at the patient, employer, and policy levels.

Document Type: Article

Language: English

KeyWords Plus: ALCOHOLISM SCREENING-TEST; SICKNESS IMPACT PROFILE; SPINAL-CORD INJURY; LOW-BACK-PAIN; MULTIPLE INJURIES; TRAUMA PATIENTS; DISABILITY; COMPENSATION; RECOVERY; EMPLOYMENT

13. Occupational injury and illness surveillance: Conceptual filters explain underreporting

Author(s): Azaroff LS, Levenstein C, Wegman DH

Source: AMERICAN JOURNAL OF PUBLIC HEALTH Volume: 92 Issue: 9 Pages: 1421-1429
Published: SEP 2002

Times Cited: 75 References: 116 Citation Map

Abstract: Occupational health surveillance data are key to effective intervention. However, the US Bureau of Labor Statistics survey significantly underestimates the incidence of work-related injuries and illnesses. Researchers supplement these statistics with data from other systems not designed for surveillance.

The authors apply the filter model of Webb et al. to underreporting by the Bureau of Labor Statistics, workers' compensation wage-replacement documents, physician reporting systems, and medical records of treatment charged to workers' compensation. Mechanisms are described for the loss of cases at successive steps of documentation. Empirical findings indicate that workers repeatedly risk adverse consequences for attempting to complete these steps, while systems for ensuring their completion are weak or absent.

Document Type: Review

Language: English

KeyWords Plus: WORK-RELATED ASTHMA; CARPAL-TUNNEL SYNDROME; NEW-YORK-STATE; HEALTH-CARE; MUSCULOSKELETAL DISORDERS; CUMULATIVE TRAUMA; COMPENSATION DATA; UNITED-STATES; NEW-JERSEY; BACK PAIN

14. An inappropriate title: "Why most workers with occupational repetitive trauma do not file for workers' compensation" – Reply

Author(s): Roseman KD

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 42
Issue: 6 Pages: 574-574 Published: JUN 2000

Times Cited: 0 References: 1 Citation Map

Document Type: Letter

Language: English

15. Commentary on the scientific basis of the proposed Occupational Safety and Health Administration Ergonomics Program standard

Author(s): Punnett L

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 42
Issue: 10 Pages: 970-981 Published: OCT 2000

Times Cited: 7 References: 163 Citation Map

Document Type: Editorial Material

Language: English

KeyWords Plus: CUMULATIVE TRAUMA DISORDERS; LOW-BACK-PAIN; CONCRETE REINFORCEMENT WORKERS; WHOLE-BODY VIBRATION; CARPEL TUNNEL-SYNDROME; LIMB MUSCULOSKELETAL DISORDERS; PSYCHOSOCIAL RISK-FACTORS; UPPER EXTREMITY DISORDERS; HEAVY PHYSICAL WORK; NECK SHOULDER PAIN SIN ACCESO

16. Work-related musculoskeletal disorders: Design as a prevention strategy. A review

Author(s): Amell T, Kumar S

Source: JOURNAL OF OCCUPATIONAL REHABILITATION Volume: 11 Issue: 4 Pages: 255-265
Published: DEC 2001

Times Cited: 3 References: 88 Citation Map

Abstract: Work-related musculoskeletal disorders are of serious concern to many organizations, including industry, insurance, and health care. They are also of immediate concern to the workers and their families who are adversely affected by, these disorders. Work-related musculoskeletal disorders are a substantial source of economic drain to these organizations. Sources of this drain include economic losses incurred from lost or decreased productivity as well as medical treatment and indemnity costs. Therefore, it is within the best interest of these organizations to prevent work-related musculoskeletal disorders from occurring, before they manifest into serious issues of medical, social, and economic concern. The purpose of this paper is to review the concept of work-related musculoskeletal disorders and discuss the basis of their prevention as a primary means of occupational injury and illness management. The principal contributory role of ergonomics/human factors is presented as a viable means of prevention and an important contributor to the comprehensive management of these disorders.

Document Type: Review

Language: English

Author Keywords: work-related musculoskeletal disorders; injury and illness prevention; ergonomics; human factors

KeyWords Plus: CUMULATIVE TRAUMA DISORDERS; UPPER EXTREMITY DISORDERS; WORKPLACE RISK-FACTORS; CARPAL-TUNNEL SYNDROME; PRIMARY-CARE; PSYCHOPHYSICAL RESEARCH; ERGONOMIC DEFICIENCIES; OCCUPATIONAL INJURIES; BACK-PAIN; ARM PAIN

17. Ergonomics, loss management, and occupational injury and illness surveillance. Part 1: elements of loss management and surveillance. A review

Author(s): Amell TK, Kumar S, Rosser BWJ

Source: INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS Volume: 28 Issue: 2
Pages: 69-84 Published: AUG 2001

Times Cited: 1 References: 53 Citation Map

Abstract: This paper discusses ergonomic design principles and programs in terms of a practical, comprehensive corporation-wide loss management viewpoint. Comprehensive loss management may be novel to some individuals in the field of ergonomics, and hence its basic premises are introduced and discussed. One key component of any comprehensive ergonomic program and inherently the loss management program employing ergonomic strategies is the need for thorough and integrated information concerning Occupational Injury and Illness within the organization. These data are utilized to identify and justify the need for an ergonomic design intervention as well as serve as a means of evaluating the efficacy of the intervention. The Occupational Injury and Illness surveillance system model employed by a mid-sized industrial organization is reviewed in Part 1 of this paper. Part 2 of this paper presents the complete Occupational Injury and Illness profile of the mid-sized industrial corporation based upon a comprehensive loss management system model.

Document Type: Article

Language: English

Author Keywords: occupational injury; occupational illness; occupational health surveillance; loss management; risk management; ergonomics; macroergonomics

KeyWords Plus: WORKERS COMPENSATION DATA; WORKPLACE RISK-FACTORS; CARPAL-TUNNEL SYNDROME; MUSCULOSKELETAL DISORDERS; PSYCHOPHYSICAL RESEARCH; SYSTEMATIC REVIEWS; CUMULATIVE TRAUMA; PROGRAM; HEALTH; EMERGENCY

18. Prevalence and reporting of occupational illness by company size: Population trends and regulatory implications

Author(s): Morse T, Dillon C, Weber J, Warren N, Bruneau H, Fu RW

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 45 Issue: 4 Pages: 361-370 Published: APR 2004

Times Cited: 3 References: 29 Citation Map

Abstract: Background Reports of occupational disease using the Bureau of Labor Statistics (BLS)/OSHA survey have shown increasing rates with larger establishment size. The literature is divided on whether this pattern is an artifact of under-reporting in smaller businesses or is the result of differences in underlying risk factors.

Methods A population-based survey [the Connecticut Upper-Extremity Surveillance Project (CUSP)] assessing prevalence of likely, work related musculoskeletal disorders (MSD) in CT coded by, establishment size, is compared to CT MSD incidence rates based on the BLS/OSHA survey.

Results When analyses were controlled for age, gender, physical risks, and occupation, there was a marginally significant association between business size and the rate of MSD [odds ratio (OR) = 0.91, CI 0.82-1.01], but in the opposite direction of the BLS/OSHA rates, with larger businesses having somewhat lower rates of MSD. Reported risk factors varied in a similar direction, though with mid-sized companies having the highest physical risks.

Conclusions The increased rates of occupational illness in larger businesses reported in the BLS/OSHA survey does not appear to be due to actual incidence or distribution of risk factors, but appears more likely to be due to under-reporting in smaller businesses. Estimates based on the assumption that the ORs based on size are actually similar to the CUSP population survey results suggest that MSD incidence is approximately 3.6-times the reported rates. (C) 2004 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: surveillance; business size; ergonomics; MSD; occupational illness

KeyWords Plus: WORKERS-COMPENSATION BENEFITS; MUSCULOSKELETAL DISORDERS; INJURY; FATALITIES; SAFETY; FILE; RISK

**19. Physical workload, work intensification, and prevalence of pain in low wage workers:
Results from a participatory research project with hotel room cleaners in Las Vegas**

Author(s): Krause N, Scherzer T, Rugulies R

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 48 Issue: 5 Pages: 326-337 Published: NOV 2005

Times Cited: 9 References: 46 Citation Map

Abstract: Background Occupational injury rates among hotel workers exceed the national service sector average. This study assesses the prevalence of back and neck pain, and its associations with physical workload, ergonomic problems, and increasing work demands.

Methods Nine hundred forty-one unionized hotel room cleaners completed a survey about health and working conditions. Associations between job demands and pain were determined by logistic regression models adjusting for individual characteristics, cumulative work demands, care-taking responsibilities at home, and psychosocial job factors.

Results The 1-month prevalence of severe bodily pain was 47% in general, 43% for neck, 59% for upper back, and 63% for low back pain. Workers in the highest exposure quartiles for physical workload and ergonomic problems were between 3.24 and 5.42 times more likely to report severe pain than workers in the lowest quartile. Adjusted odds ratios for work intensification ranged from 1.74 (upper back) to 2.33 (neck).

Conclusions Most room cleaners experience severe back or neck pain. Severe pain showed strong associations with physical workload, work intensification, and ergonomic problems.

Document Type: Article

Language: English

Author Keywords: musculoskeletal disorders; work-related low back pain; job stress; ergonomics

KeyWords Plus: LOW-BACK INJURY; PSYCHOSOCIAL JOB FACTORS; URBAN TRANSIT OPERATORS; OF-THE-LITERATURE; NECK PAIN; DISABILITY; HEALTH; COMPENSATION; DURATION; WORKPLACE

OTRAS BÚSQUEDAS

20. A review of health-related work outcome measures and their uses, and recommended measures

Author(s): Amick BC, Lerner D, Rogers WH, Rooney T, Katz JN

Source: SPINE Volume: 25 Issue: 24 Pages: 3152-3160 Published: DEC 15 2000

Times Cited: 51 References: 55 Citation Map

Abstract: Despite the growing recognition that work can contribute to the development of musculoskeletal disorders,(1,8) there are almost no data on whether and how physicians investigate the contribution of work to patients' health status or the influence of health status on work performance. This is particularly true of primary care, where much of the medical care for patients with work-related low back pain is provided.(51) As more patients with musculoskeletal injuries show up in primary care settings, it will become important to document health-related work outcomes and incorporate into practice outcome tools that enable the physician to obtain a quick and accurate accounting of needed information about patients' work.

Health-related work outcomes relate to a person's labor market status: Is a person working or not working? How well is he or she working? Did the person return to a job of pay and skill comparable to the preinjury job? Outcomes can incorporate time: How long has a person been out of work? How many hours, days, or weeks has a person been reported absent? Is the person working full- or part-time? How many hours does the person perform at full effectiveness? Finally, health-related work outcomes can capture the interplay between a person's health status and work role performance: How difficult is it for a person with a given health status to perform work activities? Typically, health-related work outcomes have not specifically referred to unpaid work activities, such as volunteer work or household labor. The authors support the importance of capturing both paid and unpaid work outcomes, but in this article, paid work is the focus.

Multiple publications in the literature contribute conceptually and methodologically to the health-related work outcomes field. These range from industrial psychology and labor economics to health services research, epidemiology, and pharmacoeconomics. In this paper, a window into health-related work outcomes research is created by considering the reasons for measuring these outcomes and briefly reviewing and illustrating several classes of measures. The advantages and limitations of each measure will be discussed, as the authors draw examples from own work. Although prior work has focused on upper extremity musculoskeletal disorders, the general principles for using health-related work outcomes are similar for researchers studying back injuries and disorders. In addition, a new work-related health outcome tool for measuring successful return to work (RTW) is discussed to illustrate a new class of measures. Hereafter, health-related work outcomes as are referred to as work outcomes.

Document Type: Article

Language: English

KeyWords Plus: LOW-BACK-PAIN; MUSCULOSKELETAL DISORDERS; INTERVENTION PROGRAM; DISABILITY; MANAGEMENT; EMPLOYEES; VALIDITY; TRIAL; CARE

21. Trends in work-related musculoskeletal disorder reports by year, type, and industrial sector: A capture-recapture analysis

Author(s): Morse T, Dillon C, Kenta-Bibi E, Weber J, Diva U, Warren N, Grey M

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 48 Issue: 1 Pages: 40-49
Published: JUL 2005

Times Cited: 12 References: 44 Citation Map

Abstract: Background Musculoskeletal disorders (MSD) are thought to be declining based on Bureau of Labor Statistics survey data, but there is also evidence of MSD under-reporting, raising the possibility of contrary trends. The magnitude of MSD under-reporting over time, and its industry distribution have not been adequately described.

Methods Capture-recapture analysis of 7 years of Connecticut MSD (1995-2001), utilizing Workers' Compensation and physician reporting data was performed.

Results Only 5.5%-7.9% of MSD cases appear to be reported to Workers Compensation annually. The capture-recapture estimated average annual rate for upper-extremity MSD was 133.1 per 10,000 employed persons, far above BLS rates. By industry Manufacturing, State Government, and the Finance/Insurance/Real Estate sectors all had significantly higher MSD rates than Wholesale/Retail Trade.

Conclusions Upper-extremity MSD appears to be significantly under-reported, and rates are not decreasing over time. Capture-recapture methods provide an improved surveillance method for monitoring temporal trends in injury rates. (c) 2005 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: cumulative trauma disorders; epidemiology; prevalence; workers' compensation; MSD; under-reporting

22. Understanding work-related upper extremity disorders: Clinical findings in 485 computer users, musicians, and others

Author(s): Pascarelli EF, Hsu YP

Source: JOURNAL OF OCCUPATIONAL REHABILITATION Volume: 11 Issue: 1 Pages: 1-21
Published: MAR 2001

Times Cited: 32 References: 115 Citation Map

Abstract: Four hundred eighty five patients whose chief complaints were work related pain and other symptoms received a comprehensive upper-body clinical evaluation to determine the extent of their illness. The group had a mean age of 38.5 years. Sixty-three percent of patients were females. Seventy percent were computer users, 28% were musicians, and 2% were others engaged in repetitive work. The time between the onset of symptoms and our initial visit ranged from 2 weeks to over 17 years. A

majority sought care within 30 months with the greatest number of them seeking care before 12 months. Fifty nine percent of subjects were still working when seen despite increasing pain and symptoms such as weakness, numbness, tingling, and stiffness. Following a history, a physical assessment utilizing commonly employed clinical tests were performed including evaluation of joint range of motion, hyperlaxity, muscle tenderness, pain, strength, and imbalance. Neurologic tests included Tinel's sign performed in wrist, elbow, tricipital sulcus, and neck and tests for thoracic outlet syndrome (TOS). Specific tests such as Finkelstein's test for deQuervain's tenosynovitis, Phalen's test for carpal tunnel syndrome and grip strengths were included in the examination protocol. Significant findings included postural misalignment with protracted shoulders (78%), head forward position (71%), neurogenic TOS (70%), cervical radiculopathy (0.03%), evidence of sympathetic dysfunction (20%), and complex regional pain syndrome (RSD) (0.6%). Hyperlaxity of fingers and elbows was found in over 50%, carpal tunnel syndrome in 8%, radial tunnel syndrome in 7%, cubital tunnel in 64%, shoulder impingement in 13%, medial epicondylitis in 60%, lateral epicondylitis in 33%, and peripheral muscle weakness in 70%. We conclude that despite initial presentation distally, work-related upper-extremity disorders are a diffuse neuromuscular illness with significant proximal upper-body findings that affect distal function. While neurogenic TOS remains a controversial diagnosis, the substantial number of patients with positive clinical findings in this study lends weight to the concept that posture related neurogenic TOS is a key factor in the cascading series of physical events that characterize this illness. A comprehensive upper-body examination produces findings that cannot be obtained through laboratory tests and surveys alone and lays the ground work for generating hypotheses about the etiology of work related upper-extremity disorders that can be tested in controlled investigations.

Document Type: Review

Language: English

Author Keywords: work-related upper-extremity disorders; computer users; medical examination

KeyWords Plus: THORACIC OUTLET SYNDROME; REPETITIVE STRAIN INJURY; MUSCULOSKELETAL DISORDERS; IMPINGEMENT SYNDROME; NERVE COMPRESSION; SCALENE MUSCLE; ARM PAIN; HAND; ANOMALIES; SYMPTOMS

23. What percentage of workers with work-related illnesses receive workers' compensation benefits?

Author(s): Biddle J, Roberts K, Rosenman KD, Welch EM

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 40
Issue: 4 Pages: 325-331 Published: APR 1998

Times Cited: 73 References: 21 Citation Map

Abstract: This study estimates the rate at which workers suffering from occupational illnesses file for workers' compensation lost wage benefits and identifies some of the factors that affect the probability that a worker with an occupational illness will file. A database of reports of known or suspected cases of

occupational illness is matched with workers' compensation claims data. Overall, between 9% and 45% of reported workers file for benefits. Data limitations prevent a more precise estimate of this rate, but a large proportion of workers with occupational illnesses clearly does not utilize the worker's compensation system. Legit analysis of a choice-based sample shows that women and employees of small firms are more likely than others to file for workers' compensation and that filing rates vary considerably across industries and diagnostic categories. Acute conditions related to the current job are no more likely to lend to claims than chronic conditions with long latency periods between exposure and development of disease.

Document Type: Article

Language: English

KeyWords Plus: OCCUPATIONAL-DISEASE; ABSENTEEISM; INSURANCE; SURVEILLANCE

24. Medical costs and sources of payment for work-related injuries among Hispanic construction workers

Author(s): Dong XW (Dong, Xiuwen)¹, Ringen K (Ringen, Knut)¹, Men YR (Men, Yurong)¹, Fujimoto A (Fujimoto, Alissa)¹

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 49
Issue: 12 Pages: 1367-1375 Published: DEC 7 2007

Times Cited: 1 References: 26 Citation Map

Abstract: Objective: To assess medical costs of occupational injuries and sources of payment among Hispanic and non-Hispanic construction workers. Methods: More than 7000 construction workers, including 1833 Hispanic workers were examined using the Medical Expenditure Panel Survey, 1996 to 2002. Univariate and multivariate analyses were conducted using SUDAAN. Results: Annually, work-related injuries in construction cost \$1.36 billion (2002 dollars), with 46% paid by workers' compensation. Compared with non-Hispanic workers, Hispanic workers were 53% more likely to have medical conditions resulting from work-related injuries, but 48% less likely to receive payment for medical costs from workers' compensation ($P < 0.05$). Conclusions: This study suggests an urgent need to reform the current workers' compensation system to reduce the burden shifted to injured workers and society. Such reforms should include easier access and more assistance for Hispanic and other immigrant workers.

Document Type: Article

Language: English

KeyWords Plus: UNITED-STATES; COMPENSATION; ILLNESS

25. How many work-related injuries requiring hospitalization in British Columbia are claimed for workers' compensation?

Author(s): Alamgir H, Koehoorn M, Ostry A, Tompa E, Demers PA

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 49 Issue: 6 Pages: 443-451 Published: JUN 2006

Times Cited: 5 References: 27 Citation Map

Abstract: Background Workplace compensation claims datasets represent an important source of information on work-related injuries. This study investigated the concordance between hospital discharge records and workers' compensation records for work-related serious injuries among a cohort of sawmill workers in British Columbia (BC), Canada. It also examined the extent to which workers' compensation capturing patterns varied by cause, severity of injuries, and demographic characteristics of workers.

Methods Work-related injuries were identified in hospitalization records between April 1989 and December 1998, and were matched by dates and description of injury to compensation records.

Results The agreement between the hospital records and compensation records was good ($\kappa=0.84$, $P < 0.01$). A lower claim reporting rate for work-related hospitalization was observed for older and non-white workers. More serious injuries defined by longer length of stay and emergency admissions were more likely to be reported. Falls, struck against, and overexertion injuries had lower reporting rates; whereas, machinery-related, cutting/piercing, and caught in/between injuries had higher reporting rates.

Conclusions When compared with hospital discharge records, the compensation agency underreported incidents of serious work-related injuries by 10-15% among the sawmill workers.

Document Type: Article

Language: English

Author Keywords: work-related injury; workers' compensation; hospital discharge records; injury surveillance; Canada

KeyWords Plus: OCCUPATIONAL INJURIES; NEW-JERSEY; SURVEILLANCE; POPULATION; DATABASE; ILLNESS; BENEFITS; HEALTH; FILE

26. Capture-recapture estimation of unreported work-related musculoskeletal disorders in Connecticut

Author(s): Morse T, Dillon C, Warren N, Hall C, Hovey D

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 39 Issue: 6 Pages: 636-642 Published: JUN 2001

Times Cited: 25 References: 39 Citation Map

Abstract: Background Estimates of the extent of musculoskeletal disorders (MSD) are usually based upon workers' compensation reports, although recent reports indicate that there may be widespread under-reporting of MSD.

Methods An estimate of the incidence of arm and hand work-related MSD was made using capture-recapture analysis of the overlap between state workers' compensation reports and physician reports in Connecticut for 1995. The resulting estimate was compared to a population-based survey of MSD.

Results There was very small overlap between the two state injury reporting systems: 6.7% of 793 reported workers' compensation cases, or 8% of 661 physician's reports. The estimate for MSD not captured by either system was 13,285 resulting in 14,686 (95% CI: 9,733-18,453) total reported and non-reported cases. This compares to an estimate of 13,775 cases (95% CI: 8,800-18,800) based on a phone survey.

Conclusions This analysis points to substantial under-reporting of MSD in Connecticut: estimates of unreported cases exceed those officially, reported by a factor of 11:1. The findings have an important bearing on injury prevention programs and policy making. *Am. J. Ind. Med.* 39:636-642, 2001. (C) 2001 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: musculoskeletal disorders; cumulative trauma disorders; epidemiology; prevalence; workers' compensation

KeyWords Plus: CARPAL-TUNNEL SYNDROME; CUMULATIVE TRAUMA DISORDERS; REPETITIVE STRAIN INJURIES; UPPER EXTREMITIES; UNITED-STATES; COMPENSATION; SURVEILLANCE; PREVALENCE; ASCERTAINMENT; MORBIDITY

27. An evaluation of hospital discharge records as a tool for serious work related injury surveillance

Author(s): Alamgir H, Koehoom M, Ostry A, Tompa E, Demers P

Source: OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 63 Issue: 4 Pages: 290-296 Published: APR 2006

Times Cited: 2 References: 38 Citation Map

Abstract: Objectives: To identify and describe work related serious injuries among sawmill workers in British Columbia, Canada using hospital discharge records, and compare the agreement and capturing patterns of the work related indicators available in the hospital discharge records.

Methods: Hospital discharge records were extracted from 1989 to 1998 for a cohort of sawmill workers. Work related injuries were identified from these records using International Classification of Disease (ICD- 9) external cause of injury codes, which have a fifth digit, and sometimes a fourth digit, indicating place of occurrence, and the responsibility of payment schedule, which identifies workers' compensation as being responsible for payment.

Results: The most frequent causes of work related hospitalisations were falls, machinery related, overexertion, struck against, cutting or piercing, and struck by falling objects. Almost all cases of machinery related, struck by falling object, and caught in or between injuries were found to be work related. Overall, there was good agreement between the two indicators (ICD- 9 code and payment schedule) for identifying work relatedness of injury hospitalisations (kappa = 0.75, p < 0.01). There was better concordance between them for injuries, such as struck against, drowning/ suffocation/ foreign body, fire/ flame/ natural/ environmental, and explosions/ firearms/ hot substance/ electric current/ radiation, and poor concordance for injuries, such as machinery related, struck by falling object, overexertion, cutting or piercing, and caught in or between.

Conclusions: Hospital discharge records are collected for administrative reasons, and thus are readily available. Depending on the coding reliability and validity, hospital discharge records represent an alternative and independent source of information for serious work related injuries. The study findings support the use of hospital discharge records as a potential surveillance system for such injuries.

Document Type: Article

Language: English

KeyWords Plus: COMPENSATION BENEFITS; OCCUPATIONAL INJURIES; NEW-JERSEY; HEALTH; POPULATION; DATABASE; EPIDEMIOLOGY; VALIDITY; ILLNESS; FILE

28. Prognostic factors of long-term disability in a workers' compensation system

Author(s): Stover B (Stover, Bert), Wickizer TM (Wickizer, Thomas M.), Zimmerman F (Zimmerman, Fred), Fulton-Kehoe D (Fulton-Kehoe, Deborah), Franklin G (Franklin, Gary)

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 49
Issue: 1 Pages: 31-40 Published: JAN 2007

Times Cited: 7 References: 59 Citation Map

Abstract: Objective: We identified predictive factors of long-term disability in new workers' compensation claims to guide secondary, prevention research and target interventions for high-risk claims. Methods: Workers with 4 or more days of work disability resulting from workplace injuries were followed for approximately 6 years in a population-based retrospective inception cohort study of 81,077 workers. Results: Predictors of long-term disability included delay between injury and first medical treatment, older age, construction industry, logging occupation, longer time from medical treatment to claim filing, back injury, smaller firm size, female gender, higher unemployment rate, and having dependents. We used logistic and quantile regression to investigate predictors of disability. These models

produced consistent information regarding predictors. Conclusion: These factors can be used to identify Jobs or workers at increased risk for long-term disability that warrant Prevention intervention.

Document Type: Article

Language: English

KeyWords Plus: RETURN-TO-WORK; LOW-BACK-PAIN; OF-THE-LITERATURE; UPPER-EXTREMITY; MUSCULOSKELETAL DISORDERS; WASHINGTON-STATE; OCCUPATIONAL INJURY; HEALTH-CARE; OUTCOMES; DURATION

29. Reducing the costs of work-related musculoskeletal disorders: targeting strategies to chronic disability cases

Author(s): Baldwin ML

Source: JOURNAL OF ELECTROMYOGRAPHY AND KINESIOLOGY Volume: 14 Issue: 1
Pages: 33-41 Published: FEB 2004

Times Cited: 12 References: 25 Citation Map

Abstract: Musculoskeletal disorders impose a significant direct cost burden on health care systems in the US and Canada and account for even greater indirect losses of productivity. The overall prevalence of musculoskeletal disorders is high, but a disproportionate share of costs is associated with a small number of cases with chronic pain. This is especially true for cases of occupational back pain, the single most common and costly musculoskeletal disorder in the workplace. A number of studies identify workplace characteristics associated with prolonged disability among cases of work-related back pain. These characteristics include: failure to receive job accommodations, receipt of disability benefit payments, and employment in high-risk industries or jobs that require heavy lifting. Research on the predictors of high-cost cases is limited, however, because of the lack of high-quality data and the need for a multidisciplinary approach. A new study, the Arizona State University Healthy Back Study, addresses some of these issues and promises new insights into effective strategies to reduce the proportion of high-cost claims. (C) 2003 Elsevier Ltd. All rights reserved.

Document Type: Proceedings Paper

Language: English

Author Keywords: musculoskeletal disorders; back pain; economics; work disability

KeyWords Plus: LOW-BACK-PAIN; UNITED-STATES; COMPENSATION; DURATION; HEALTH; PREVALENCE; INDUSTRY; CLAIMS; TRAUMA; CANADA

30. Underreporting of work-related injury or illness to workers' compensation: Individual and industry factors

Author(s): Fan ZJ (Fan, Z. Joyce), Bonauto DK (Bonauto, David K.), Foley MP (Foley, Michael P.), Silverstein BA (Silverstein, Barbara A.)

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 48
Issue: 9 Pages: 914-922 Published: SEP 2006

Times Cited: 5 References: 29 Citation Map

Abstract: **Objective:** We quantified the underreporting of work-related injury or illness to workers' compensation (WC). **Methods:** Using data from 2612 wage-earning respondents who participated in the 2002 Washington State Behavioral Risk Factor Surveillance System, we assessed work related injury or illness in the previous year and identified the factors associated with WC claim filing by logistic regression. **Results:** The self-reported rate of work-related injury or illness of respondents was 13 %. Among those who had a work-related injury or illness, 52 % filed a WC claim. After adjustment for age, gender, and race, those who filed WC claims were more likely to be overweight and married. WC claim filing varies considerably across industry and occupation groups holding all other measured factors constant. **Conclusions:** Individual and industry/occupation factors are related to underreporting of work-related injury or illness to the WC system.

Document Type: Article

Language: English

KeyWords Plus: OCCUPATIONAL INJURY; MUSCULOSKELETAL DISORDERS; SURVEILLANCE; PREVALENCE; BENEFITS; TRENDS; COSTS; FILE; SIZE

31. Occupational injury costs and alternative employment in construction trades

Author(s): Waehrer GM (Waehrer, Geetha M.), Dong XS (Dong, Xiuwen S.), Miller T (Miller, Ted), Men Y (Men, Yurong), Haile E (Haile, Elizabeth)

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 49
Issue: 11 Pages: 1218-1227 Published: NOV 2007

Times Cited: 1 References: 35 Citation Map

Abstract: **Objective:** To present the costs of fatal and non-fatal days-away-from-work injuries in 50 construction occupations. Our results also provide indirect evidence on the cost exposure of alternative construction workers such as independent contractors, on-call or day labor, contract workers, and temporary workers. **Methods:** We combine data from the Bureau of Labor Statistics on average annual incidence from 2000 to 2002 with updated per-case costs from an existing cost model for occupational injuries. The Current Population Survey provides data on the percentage of alternative construction workers. **Results:** Construction laborers and carpenters were the two costliest occupations, with 40% of the industry's injury costs. The 10 costliest construction occupations also have a high percentage of alternative workers. **Conclusions:** The construction industry has both a high rate of alternative employment and high costs of work injury. Alternative workers, often lacking workers' compensation, are especially exposed to injury costs.

Document Type: Article

Language: English

KeyWords Plus: WORKERS-COMPENSATION; WASHINGTON-STATE; UNITED-STATES; ILLNESS; INDUSTRY; SAFETY; CONTINGENT

32. The global expansion of precarious employment, work disorganization, and consequences for occupational health: A review of recent research

Author(s): Quinlan M, Mayhew C, Bohle P

Source: INTERNATIONAL JOURNAL OF HEALTH SERVICES Volume: 31 Issue: 2 Pages: 335-414 Published: 2001

Times Cited: 70 References: 170 Citation Map

Abstract: In this review of a range of studies on the health and safety effects of precarious employment in industrialized societies published since 1984, the authors examine the overall findings and methodological issues and identify areas in need of further research. Of the 93 published journal articles and monographs/book chapters reviewed, 76 studies found precarious employment was associated with a deterioration in occupational health and safety (OHS) in terms of injury rates, disease risk, hazard exposures, or worker (and manager) knowledge of OHS and regulatory responsibilities. Of the more than 25 studies each on outsourcing and organizational restructuring/downsizing, well over 90 percent find a negative association with OHS. The evidence is fairly persuasive for temporary workers, with 14 of 24 studies finding a negative association with OHS. The evidence is less strong for small business, and a handful of studies on part-time workers found no clear association with negative OHS outcomes (in some cases the reverse). Further research is needed to more clearly link health effects to particular business practices and neoliberal policies and to explore the regulatory implications of the growth of precarious employment. The authors suggest some ways to conceptualize the association between precarious employment and occupational health.

Document Type: Review

Language: English

KeyWords Plus: CARE WORKERS; PETROCHEMICAL INDUSTRY; ORGANIZATIONAL-CHANGE; CONTINGENT WORKERS; SICKNESS ABSENCE; JOB INSECURITY; HOME CARE; WHITEHALL-II; SAFETY; EMPLOYEES

33. Return to work following injury: The role of economic, social, and job-related factors

Author(s): MacKenzie EJ, Morris JA, Jurkovich GJ, Yasui Y, Cushing BM, Burgess AR, DeLateur BJ, McAndrew MP, Swiontkowski MF

Source: AMERICAN JOURNAL OF PUBLIC HEALTH Volume: 88 Issue: 11 Pages: 1630-1637
Published: NOV 1998

Times Cited: 77 References: 55 Citation Map

Abstract: Objectives. This study examined factors influencing return to work (RTW) following severe fracture to a lower extremity.

Methods. This prospective cohort study followed 312 individuals treated for a lower extremity fracture at 3 level-1 trauma centers. Kaplan-Meier estimates of the proportion of RTW were computed, and a Cox proportional hazards model was used to examine the contribution of multiple risk factors on RTW.

Results. Cumulative proportions of RTW at 3, 6, 9, and 12 months postinjury were 0.26, 0.49, 0.60, and 0.72. After accounting for the extent of impairment, characteristics of the patient that correlated with higher rates of RTW included younger age, higher education, higher income, the presence of strong social support, and employment in a white-collar job that was not physically demanding. Receipt of disability compensation had a strong negative effect on RTW!

Conclusions. Despite relatively high rates of recovery, one quarter of persons with lower extremity fractures did not return to work by the end of 1 year. The analysis points to subgroups of individuals who are at high risk of delayed RTW, with implications for interventions at the patient, employer, and policy levels.

Document Type: Article

Language: English

KeyWords Plus: ALCOHOLISM SCREENING-TEST; SICKNESS IMPACT PROFILE; SPINAL-CORD INJURY; LOW-BACK-PAIN; MULTIPLE INJURIES; TRAUMA PATIENTS; DISABILITY; COMPENSATION; RECOVERY; EMPLOYMENT

34. Creating safer and healthier workplaces: Role of organizational factors and job characteristics

Author(s): Shannon HS, Robson LS, Sale JEM

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 40 Issue: 3 Pages: 319-334
Published: SEP 2001

Times Cited: 34 References: 171 Citation Map

Abstract: Background A comprehensive understanding of workplace organizational risk factors for illness and injury and interventions to alleviate these factors is important for workplace prevention efforts.

Methods We summarize the evidence for the role of workplace organizational factors and work factors in occupational health and safety (OHS). To the extent possible, we concentrate on factors at the level of the workplace, rather than the level of the individual.

Results Three types of outcomes are considered: injuries, ill-health, and musculoskeletal problems; and we note the evidence for their relationship to work. We review workplace interventions intended to alleviate each type of outcome and note methodological limitations of previous research.

Conclusions Despite the methodological limitations, the balance of the literature supports the work-relatedness of the three types of outcomes, although questions remain about exact mechanisms and the effectiveness of specific interventions. We discuss barriers to and incentives for creating safer and healthier workplaces. (C) 2001 Wiley-Liss, Inc.

Document Type: Proceedings Paper

Language: English

Author Keywords: occupational safety; healthy workplace; musculoskeletal disorders; injuries; organizational factors; interventions; work stress

KeyWords Plus: PSYCHOSOCIAL WORK-ENVIRONMENT; DEMAND-CONTROL MODEL; INTERVENTION RESEARCH; OCCUPATIONAL-SAFETY; DECISION LATITUDE; BACK-PAIN; MUSCULOSKELETAL DISORDERS; CARDIOVASCULAR-DISEASE; MYOCARDIAL-INFARCTION; ACCIDENT PREVENTION

35. Occupational injury and illness surveillance: Conceptual filters explain underreporting

Author(s): Azaroff LS, Levenstein C, Wegman DH

Source: AMERICAN JOURNAL OF PUBLIC HEALTH Volume: 92 Issue: 9 Pages: 1421-1429
Published: SEP 2002

Times Cited: 75 References: 116 Citation Map

Abstract: Occupational health surveillance data are key to effective intervention. However, the US Bureau of Labor Statistics survey significantly underestimates the incidence of work-related injuries and illnesses. Researchers supplement these statistics with data from other systems not designed for surveillance.

The authors apply the filter model of Webb et al. to underreporting by the Bureau of Labor Statistics, workers' compensation wage-replacement documents, physician reporting systems, and medical records of treatment charged to workers' compensation. Mechanisms are described for the loss of cases at successive steps of documentation. Empirical findings indicate that workers repeatedly risk adverse consequences for attempting to complete these steps, while systems for ensuring their completion are weak or absent.

Document Type: Review

Language: English

KeyWords Plus: WORK-RELATED ASTHMA; CARPAL-TUNNEL SYNDROME; NEW-YORK-STATE; HEALTH-CARE; MUSCULOSKELETAL DISORDERS; CUMULATIVE TRAUMA; COMPENSATION DATA; UNITED-STATES; NEW-JERSEY; BACK PAIN

36. An estimate of the US government's undercount of nonfatal occupational injuries

Author(s): Leigh JP, Marcin JP, Miller TR

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 46
Issue: 1 Pages: 10-18 Published: JAN 2004

Times Cited: 37 References: 60 Citation Map

Abstract: Debate surrounds the size of the underestimate of nonfatal occupational injuries produced by the U.S. Bureau of Labor Statistics (BLS). We developed models that separated categories of injuries: BLS Annual Survey, federal government, agriculture, state and local government, self-employed outside agriculture, and all other. The models generated varying estimates depending on the assumptions for each category pertaining to job risks and amount of underreporting. We offered justification for the assumptions based on published studies as well as our own analyses of BLS data. The models suggested the Annual Survey missed from 0% to 70% of the number of injuries (from private firms, excluding the self-employed) it was designed to capture. However, when we included firms and governments the Annual Survey was not designed to capture, and considered reasonable assumptions regarding underreporting, we estimated the BLS missed between 33% and 69% of all injuries. We concluded that there was substantial undercapture in the BLS Annual Survey, some due to the excluded categories of government workers and the self-employed, as well as some due to underreporting.

Document Type: Article

Language: English

KeyWords Plus: WORKERS-COMPENSATION BENEFITS; CAPTURE-RECAPTURE; UNITED-STATES; FIRM SIZE; ILLNESS; CONSTRUCTION; ACCIDENTS; INDUSTRY; COSTS; RATES

37. Commentary on the scientific basis of the proposed Occupational Safety and Health Administration Ergonomics Program standard

Author(s): Punnett L

Source: JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE Volume: 42
Issue: 10 Pages: 970-981 Published: OCT 2000

Times Cited: 7 References: 163 Citation Map

Document Type: Editorial Material

Language: English

KeyWords Plus: CUMULATIVE TRAUMA DISORDERS; LOW-BACK-PAIN; CONCRETE REINFORCEMENT WORKERS; WHOLE-BODY VIBRATION; CARPEL TUNNEL-SYNDROME; LIMB MUSCULOSKELETAL DISORDERS; PSYCHOSOCIAL RISK-FACTORS; UPPER EXTREMITY DISORDERS; HEAVY PHYSICAL WORK; NECK SHOULDER PAIN

38. Costs of occupational injuries in agriculture

Author(s): Leigh JP, McCurdy SA, Schenker MB

Source: PUBLIC HEALTH REPORTS Volume: 116 Issue: 3 Pages: 235-248 Published: MAY-JUN 2001

Times Cited: 11 References: 47 Citation Map

Abstract: Objective. This study was conducted to estimate the costs of job-related injuries in agriculture in the United States for 1992.

Methods. The authors reviewed data from national surveys to assess the incidence of fatal and non-fatal farm injuries. Numerical adjustments were made for weaknesses in the most reliable data sets. For example, the Bureau of Labor Statistics (BLS) Annual Survey estimate of non-fatal injuries is adjusted upward by a factor of 4.7 to reflect the BLS undercount of farm injuries. To assess costs, the authors used the human capital method that allocates costs to direct categories such as medical expenses, as well as indirect categories such as lost earnings, lost home production, and lost fringe benefits. Cost data were drawn from the Health Care Financing Administration and the National Council on Compensation Insurance.

Results. Eight hundred forty-one (841) deaths and 512,539 non-fatal injuries are estimated for 1992. The non-fatal injuries include 281,896 that led to at least one full day of work loss. Agricultural occupational injuries cost an estimated \$4.57 billion (range \$3.14 billion to \$13.99 billion) in 1992. On a per person basis, farming contributes roughly 30% more than the national average to occupational injury costs. Direct costs are estimated to be \$1.66 billion and indirect costs, \$2.93 billion.

Conclusions. The costs of farm injuries are on a par with the costs of hepatitis C. This high cost is in sharp contrast to the limited public attention and economic resources devoted to prevention and amelioration of farm injuries. Agricultural occupational injuries are an underappreciated contributor to the overall national burden of health and medical costs.

Document Type: Article

Language: English

KeyWords Plus: WORKERS-COMPENSATION; WASHINGTON-STATE; ILLNESS

39. Work-related musculoskeletal disorders: Design as a prevention strategy. A review

Author(s): Amell T, Kumar S

Source: JOURNAL OF OCCUPATIONAL REHABILITATION Volume: 11 Issue: 4 Pages: 255-265 Published: DEC 2001

Times Cited: 3 References: 88 Citation Map

Abstract: Work-related musculoskeletal disorders are of serious concern to many organizations, including industry, insurance, and health care. They are also of immediate concern to the workers and their families who are adversely affected by, these disorders. Work-related musculoskeletal disorders are a substantial source of economic drain to these organizations. Sources of this drain include economic

losses incurred from lost or decreased productivity as well as medical treatment and indemnity costs. Therefore, it is within the best interest of these organizations to prevent work-related musculoskeletal disorders from occurring, before they manifest into serious issues of medical, social, and economic concern. The purpose of this paper is to review the concept of work-related musculoskeletal disorders and discuss the basis of their prevention as a primary means of occupational injury and illness management. The principal contributory role of ergonomics/human factors is presented as a viable means of prevention and an important contributor to the comprehensive management of these disorders.

Document Type: Review

Language: English

Author Keywords: work-related musculoskeletal disorders; injury and illness prevention; ergonomics; human factors

KeyWords Plus: CUMULATIVE TRAUMA DISORDERS; UPPER EXTREMITY DISORDERS; WORKPLACE RISK-FACTORS; CARPAL-TUNNEL SYNDROME; PRIMARY-CARE; PSYCHOPHYSICAL RESEARCH; ERGONOMIC DEFICIENCIES; OCCUPATIONAL INJURIES; BACK-PAIN; ARM PAIN

40. Ergonomics, loss management, and occupational injury and illness surveillance. Part 1: elements of loss management and surveillance. A review

Author(s): Amell TK, Kumar S, Rosser BWJ

Source: INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS Volume: 28 Issue: 2
Pages: 69-84 Published: AUG 2001

Times Cited: 1 References: 53 Citation Map

Abstract: This paper discusses ergonomic design principles and programs in terms of a practical, comprehensive corporation-wide loss management viewpoint. Comprehensive loss management may be novel to some individuals in the field of ergonomics, and hence its basic premises are introduced and discussed. One key component of any comprehensive ergonomic program and inherently the loss management program employing ergonomic strategies is the need for thorough and integrated information concerning Occupational Injury and Illness within the organization. These data are utilized to identify and justify the need for an ergonomic design intervention as well as serve as a means of evaluating the efficacy of the intervention. The Occupational Injury and Illness surveillance system model employed by a mid-sized industrial organization is reviewed in Part 1 of this paper. Part 2 of this paper presents the complete Occupational Injury and Illness profile of the mid-sized industrial corporation based upon a comprehensive loss management system model.

Document Type: Article

Language: English

Author Keywords: occupational injury; occupational illness; occupational health surveillance; loss management; risk management; ergonomics; macroergonomics

KeyWords Plus: WORKERS COMPENSATION DATA; WORKPLACE RISK-FACTORS; CARPAL-TUNNEL SYNDROME; MUSCULOSKELETAL DISORDERS; PSYCHOPHYSICAL RESEARCH; SYSTEMATIC REVIEWS; CUMULATIVE TRAUMA; PROGRAM; HEALTH; EMERGENCY

41. Methodologic issues in the use of workers' compensation databases for the study of work injuries with days away from work. I. Sensitivity of case ascertainment

Author(s): Oleinick A, Zaidman B

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 45 Issue: 3 Pages: 260-274 Published: MAR 2004

Times Cited: 6 References: 58 Citation Map

Abstract: Background Case ascertainment costs vary substantially between primary and secondary data sources. This review summarizes information on the sensitivity of state administrative databases in workers' compensation systems for the ascertainment of days-away-from-work (DAFW) work injuries for use in modeling studies.

Methods Review of the literature supplemented by data from governmental or organizational reports or produced for this report.

Results Employers currently appear to provide workers' compensation insurance coverage for 98.9% of wage and salary workers. Wage and salary jobs account for approximately 90% of jobs in the United States. In industries such as manufacturing, the fraction of covered jobs is probably closer to 98%. In Minnesota, the number of DAFW cases ascertained by the Bureau of Labor Statistics' annual survey of occupational injuries and illnesses is approximately 92-97% concordant with the number of wage compensation claims for injuries producing DAFW over the period 1992-2000, once adjustments are made to permit direct comparisons of the numbers. The workers' compensation databases provide information for more than 95% of the total DAFW resulting from work injuries. Covariate estimates are unaffected by this less than 5% loss because effects appear dependent on time from injury.

Conclusions Statewide workers' compensation administrative databases can have substantial utility for epidemiologic study of work injuries with DAFW because of their size, using high sensitivity for case ascertainment as the evaluative criterion. 2004. (C) 2004 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: review; occupational disability; outcomes; work injuries; epidemiologic methods

KeyWords Plus: OCCUPATIONAL BACK INJURY; DISORDERS; WORKPLACE; BENEFITS; ILLNESS; CONSEQUENCES; DISABILITY; RESEARCH/; TRAUMA; RETURN

42. Prevalence and reporting of occupational illness by company size: Population trends and regulatory implications

Author(s): Morse T, Dillon C, Weber J, Warren N, Bruneau H, Fu RW

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 45 Issue: 4 Pages: 361-370 Published: APR 2004

Times Cited: 3 References: 29 Citation Map

Abstract: Background Reports of occupational disease using the Bureau of Labor Statistics (BLS)/OSHA survey have shown increasing rates with larger establishment size. The literature is divided on whether this pattern is an artifact of under-reporting in smaller businesses or is the result of differences in underlying risk factors.

Methods A population-based survey [the Connecticut Upper-Extremity Surveillance Project (CUSP)] assessing prevalence of likely, work related musculoskeletal disorders (MSD) in CT coded by, establishment size, is compared to CT MSD incidence rates based on the BLS/OSHA survey.

Results When analyses were controlled for age, gender, physical risks, and occupation, there was a marginally significant association between business size and the rate of MSD [odds ratio (OR) = 0.91, CI 0.82-1.01], but in the opposite direction of the BLS/OSHA rates, with larger businesses having somewhat lower rates of MSD. Reported risk factors varied in a similar direction, though with mid-sized companies having the highest physical risks.

Conclusions The increased rates of occupational illness in larger businesses reported in the BLS/OSHA survey does not appear to be due to actual incidence or distribution of risk factors, but appears more likely to be due to under-reporting in smaller businesses. Estimates based on the assumption that the ORs based on size are actually similar to the CUSP population survey results suggest that MSD incidence is approximately 3.6-times the reported rates. (C) 2004 Wiley-Liss, Inc.

Document Type: Article

Language: English

Author Keywords: surveillance; business size; ergonomics; MSD; occupational illness

KeyWords Plus: WORKERS-COMPENSATION BENEFITS; MUSCULOSKELETAL DISORDERS; INJURY; FATALITIES; SAFETY; FILE; RISK

43. Physical workload, work intensification, and prevalence of pain in low wage workers: Results from a participatory research project with hotel room cleaners in Las Vegas

Author(s): Krause N, Scherzer T, Rugulies R

Source: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE Volume: 48 Issue: 5 Pages: 326-337 Published: NOV 2005

Times Cited: 9 References: 46 Citation Map

Abstract: Background Occupational injury rates among hotel workers exceed the national service sector average. This study assesses the prevalence of back and neck pain, and its associations with physical workload, ergonomic problems, and increasing work demands.

Methods Nine hundred forty-one unionized hotel room cleaners completed a survey about health and working conditions. Associations between job demands and pain were determined by logistic regression models adjusting for individual characteristics, cumulative work demands, care-taking responsibilities at home, and psychosocial job factors.

Results The 1-month prevalence of severe bodily pain was 47% in general, 43% for neck, 59% for upper back, and 63% for low back pain. Workers in the highest exposure quartiles for physical workload and ergonomic problems were between 3.24 and 5.42 times more likely to report severe pain than workers in the lowest quartile. Adjusted odds ratios for work intensification ranged from 1.74 (upper back) to 2.33 (neck).

Conclusions Most room cleaners experience severe back or neck pain. Severe pain showed strong associations with physical workload, work intensification, and ergonomic problems.

Document Type: Article

Language: English

Author Keywords: musculoskeletal disorders; work-related low back pain; job stress; ergonomics

KeyWords Plus: LOW-BACK INJURY; PSYCHOSOCIAL JOB FACTORS; URBAN TRANSIT OPERATORS; OF-THE-LITERATURE; NECK PAIN; DISABILITY; HEALTH; COMPENSATION; DURATION; WORKPLACE

Plabras Claves: Epicondylitis Work related + Incapacity

Resultados: 1 solo artículo.

Comentario: Este artículo comenta sobre la Resonancia Magnética como método diagnóstico para determinar lesiones iniciales asintomáticas y sintomáticas del codo de tenista. Un estudio demostró que en pacientes asintomáticos el método diagnóstico pudo demostrar edemas iniciales y en los pacientes sintomáticos muestra edema, inchazón y desgarros del extensor común. El estudio se basó en una muestra de 33 pacientes sintomáticos y 17 asintomáticos (no presentaban queja de dolor). Se confirmó que el extensor común es el principal sitio de la lesión de codo. Y necesariamente la inchazón o el desgarro en el extensor común (en su origen) es un diagnóstico objetivo a través de la Resonancia Magnética. (Artículo completo)

1-Mackay D, Rangan A, Hide G, Hughes T, Latimer J The objective diagnosis of early tennis elbow by magnetic resonance imaging OCCUPATIONAL MEDICINE-OXFORD Volume: 53 Issue: 5 Pages: 309-312 Published: AUG 1 2003

Abstract: Objective To identify the salient magnetic resonance imaging (MRI) features of tennis elbow. An objective diagnosis is important when managing work-related incapacity due to ill-defined lateral arm pain.

Method Twenty-three symptomatic and 17 asymptomatic elbows in 20 patients with tennis elbow, no evidence of other pathology and no previous treatment were imaged using established MRI sequences.

Results In the symptomatic elbows, the common extensor origin (CEO) showed signs of oedema in 23, thickening in 19, peri-tendon oedema in 3 and tears in 13 cases. More extensive abnormalities were demonstrated in only two elbows. Six out of 17 asymptomatic elbows also showed oedema in the CEO.

Conclusions The CEO is confirmed as the primary site of MRI changes in tennis elbow. Oedema was commonly found in asymptomatic elbows, necessitating the presence of thickening or tears in the CEO tendon to objectively diagnose tennis elbow on MRI.

Document Type: Article

Language: English

Author Keywords: diagnostic criteria; MRI; tennis elbow

KeyWords Plus: LATERAL EPICONDYLITIS

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Publisher: OXFORD UNIV PRESS, GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND

Subject Category: Public, Environmental & Occupational Health

IDS Number: 707WH

ISSN: 0962-7480

DOI: 10.1093/occmed/kqg031

2- Artículos generados:

1- Martin CE, Schweitzer ME. MR imaging of epicondylitis Source: SKELETAL RADIOLOGY Volume: 27 Issue: 3 Pages: 133-138 Published: MAR 1998 (No disponible articulo completo)

Times Cited: 33 References: 27 Citation Map

Abstract: Objective. To systematically evaluate the MR findings in patients with epicondylitis compared with asymptomatic volunteers.

Design and patients. We imaged 43 elbows: 24 with epicondylitis (22 lateral, 2 medial) diagnosed by clinical examination, and 19 in 16 normal volunteers. MRI was performed at 1.5 T using axial T1-weighted, axial fat-saturated FSE, and coronal or sagittal Fast STIR sequences. Two independent observers evaluated the images for intratendon signal, tendon thickening, periosteal reaction, fluid in the radial head bursa, and anconeus edema.

Results. All 24 patients with epicondylitis had increased signal on fat-saturated FSE and Fast STIR images. Twenty-two of these patients had increased intratendon T1 signal, and 19 had tendon thickening. No patient demonstrated fluid in the radial head bursa or periosteal reaction. Only two patients had subtle anconeus edema, while three patients unexpectedly had increased T2 signal within the involved epicondyle. One asymptomatic volunteer (high-performance athlete) had increased T1 and T2 signal with tendon thickening. An additional two asymptomatic volunteers had increased T1 signal only.

Conclusion. MRI of epicondylitis demonstrates tendon thickening with increased T1 and T2 signal, but these findings may be seen in a small minority of asymptomatic individuals. Anconeus edema, previously demonstrated on MRT in epicondylitis, was only rarely found, and distension of the radial head bursa, surgically described, was not seen. Increased marrow T2 signal within the involved epicondyle is occasionally seen.

Document Type: Article

Language: English

Author Keywords: elbow injuries; epicondylitis; elbow, MRI; tendons, MRI

KeyWords Plus: LATERAL EPICONDYLITIS; TENNIS ELBOW; MEDIAL EPICONDYLITIS; INJURIES

2- Schenk, M 1997-ORTHOPEDIC CLINICS OF NORTH AMERICA Imaging of the elbow - An update

Schenk M, Dalinka MK, Imaging of the elbow - An update Source: ORTHOPEDIC CLINICS OF NORTH AMERICA Volume: 28 Issue: 4 Pages: 517-& Published: OCT 1997

Times Cited: 9 References: 55 Citation Map

Abstract: The elbow is a complex joint that acts as a link between the shoulder and the hand, enhancing the flexibility of hand motion and transmitting generated forces.(22) It is vulnerable to a variety of injuries as a result of acute traumatic events, or more often, chronic overuse.(9) Routine radiographs and computed tomography (CT) are excellent methods for evaluating the osseous structures and detecting fluid, calcification, or ossification in and about the joint. MR Imaging allows for direct assessment of nonossified structures including muscles, tendons, ligaments, nerves, and cartilage and, as a result, is particularly useful for evaluation of elbow pain secondary to chronic overuse. MR imaging also has a major use in the treatment planning of bone and soft-tissue neoplasms and is helpful in detecting osseous lesions, such as bone contusions, occult fractures, and osteochondritis dissecans.

The accurate evaluation of the complex anatomy of the elbow requires optimization of MR imaging, including imaging parameters and positioning. Additionally, familiarity with the normal anatomy and signal characteristics of structures of the elbow is essential in the detection of subtle abnormalities and early pathologic findings.

Document Type: Article

Language: English

KeyWords Plus: ULNAR COLLATERAL LIGAMENT; DISTAL BICEPS TENDON; MR ARTHROGRAPHY; INJURIES; EPICONDYLITIS; DISSECANS; JOINT

3-Calfee, RP 2008-JOURNAL OF THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS Management of lateral epicondylitis: Current concepts

Calfee RP (Calfee, Ryan P.), Patel A (Patel, Amar), DaSilva MF (DaSilva, Manuel F.)¹, Akelman E (Akelman, Edward)¹ Management of lateral epicondylitis: Current concepts. Source: JOURNAL OF THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS Volume: 16 Issue: 1 Pages: 19-29 Published: JAN 2008

Times Cited: 0 References: 80 Citation Map

Abstract: Lateral epicondylitis, or tennis elbow, is a common cause of elbow pain in the general population. Traditionally, lateral epicondylitis has been attributed to degeneration of the extensor carpi radialis brevis origin, although the underlying collateral ligamentous complex and joint capsule also have been implicated. Nonsurgical treatment, the mainstay of management, involves a myriad of options, including rest, nonsteroidal anti-inflammatory drugs, physical therapy, cortisone, blood and botulinum toxin injections, supportive forearm bracing, and local modalities. For patients with recalcitrant disease, the traditional open debridement technique has been modified by multiple surgeons, with others relying on arthroscopic or even percutaneous procedures. Without a standard protocol (nonsurgical or surgical), surgeons need to keep abreast of established and evolving treatment options to effectively treat patients with lateral epicondylitis.

Document Type: Article

Language: English

KeyWords Plus: RANDOMIZED CONTROLLED-TRIAL; SHOCK-WAVE THERAPY; TENNIS ELBOW; SURGICAL-TREATMENT; FOLLOW-UP; CORTICOSTEROID INJECTION; HUMERAL EPICONDYLITIS; BOTULINUM TOXIN; NATURAL-HISTORY; LASER THERAPY

4- Kijowski, R 2007-SKELETAL RADIOLOGY Magnetic resonance imaging findings in patients with peroneal tendinopathy and peroneal tenosynovitis

Kijowski R (Kijowski, Richard), De Smet A (De Smet, Arthur), Mukharjee R (Mukharjee, Rajat) Magnetic resonance imaging findings in patients with peroneal tendinopathy and peroneal

**tenosynovitis Source: SKELETAL RADIOLOGY Volume: 36 Issue: 2 Pages: 105-114
Published: FEB 2007**

Author(s):

Times Cited: 1 References: 24 Citation Map

Abstract: Objective: To compare the magnetic resonance (MR) imaging findings of a group of patients with clinically diagnosed peroneal tendonopathy and peroneal tenosynovitis with the MR imaging findings of a control group of patients with no clinical evidence of peroneal tendon disorder. Subjects and methods: The MR examinations of 24 patients with symptomatic peroneal tendinopathy or peroneal tenosynovitis and 70 patients with no clinical evidence of peroneal tendon disorder were retrospectively reviewed to determine the presence or absence of four MR imaging findings: 1) predominantly or uniform intermediate signal intensity within the peroneal tendons on one or more axial proton density-weighted images, 2) predominantly or uniform intermediate signal intensity within the peroneal tendons on three consecutive axial proton density-weighted images, 3) intermediate T2 signal intensity within the peroneal tendons, and 4) circumferential fluid within the common peroneal tendon sheath greater than 3 mm in maximal width. The sensitivity and specificity of these MR imaging findings for determining the presence or absence of symptomatic peroneal tendinopathy or peroneal tenosynovitis were calculated. Results: The sensitivity of MR imaging findings 1, 2, 3, and 4 for determining the presence of peroneal tendinopathy or peroneal tenosynovitis were 92%, 92%, 50%, and 17% respectively. The specificity of MR imaging findings 1, 2, 3, and 4 for determining the absence of peroneal tendinopathy or peroneal tenosynovitis were 57%, 79%, 93%, and 100% respectively. Conclusion: The presence of predominantly or uniform intermediate signal intensity within the peroneal tendons on three consecutive axial proton density-weighted images is a highly sensitive and moderately specific indicator of symptomatic peroneal tendinopathy. The presence of intermediate T2 signal within the peroneal tendons, and the presence of circumferential fluid within the peroneal tendon sheath greater than 3 mm in maximal width, are highly specific indicators of peroneal tendinopathy and peroneal tenosynovitis respectively.

Document Type: Article

Language: English

Author Keywords: peroneal tendons; tendinopathy; tenosynovitis; MRI

KeyWords Plus: BREVIS TENDON; MR; INJURIES; FEATURES; TEARS; EPICONDYLITIS; DISORDERS; LONGUS; ANKLE

5- Steinborn, M 1999-EUROPEAN RADIOLOGY Magnetic resonance imaging of lateral epicondylitis of the elbow with a 0.2-T dedicated system

Steinborn M, Heuck A, Jessel C, Bonel H, Reiser M Magnetic resonance imaging of lateral epicondylitis of the elbow with a 0.2-T dedicated system Source: EUROPEAN RADIOLOGY Volume: 9 Issue: 7 Pages: 1376-1380 Published: SEP 1999

Times Cited: 18 References: 15 Citation Map

Abstract: The purpose of this study was to evaluate MR imaging findings of the common extensor tendon in patients with lateral epicondylitis and asymptomatic volunteers studied on a 0.2-T dedicated system. In 23 patients (age range 29-58 years, mean age 47 years) with clinical symptoms of lateral epicondylitis MR imaging was performed using T1-, T2- and contrast-enhanced T1-weighted spin-echo sequences. In addition, the elbows of seven healthy volunteers (age range 22-29 years, mean age 25 years) and the symptom-free contralateral elbow of 11 of the 23 patients (age range 29-58 years, mean age 47 years) were studied as controls. Five patients were surgically treated after the MR examination and the results of histopathology were correlated with MR findings. Of the patients, 95.6% showed intratendinous signal intensity changes on T1-weighted images on the symptomatic side. In 69.6% signal alterations were observed on T2-weighted sequences and in 56.5% an intratendinous contrast enhancement was present. Histopathology showed fibrovascular proliferation and fatty degeneration in patients with distinct signal intensity changes and contrast enhancement. Patients with only minor signal intensity changes on T1- and T2-weighted sequences and no contrast enhancement demonstrated fibrosclerotic degeneration and intratendinous cartilage formation in histopathology. The contralateral elbow showed signal intensity changes in 6 of 11 (54.5%) cases on T1-weighted images and in 3 of 11 (27.3%) on T2-weighted images. In the group of healthy volunteers minor signal intensity changes of the common extensor tendon could be seen in only 1 case. In patients with lateral epicondylitis of the elbow the type and extent pathologic changes within the common extensor tendon can be evaluated using a dedicated low-field MR system. On the basis of MR imaging findings a more specified therapy planning among the variety of treatment modalities can be achieved.

Document Type: Article

Language: English

Author Keywords: MR imaging; elbow injuries; tendon injuries

KeyWords Plus: HISTOPATHOLOGIC FINDINGS; MR; INJURIES; KNEE

6- Fritz, RC 2004-CLINICS IN SPORTS MEDICINE Radiographic and special studies: recent advances in imaging of the elbow

Fritz RC, Breidahl WH Radiographic and special studies: recent advances in imaging of the elbow
Source: CLINICS IN SPORTS MEDICINE Volume: 23 Issue: 4 Pages: 567-+ Published: OCT 2004

Times Cited: 3 References: 25 Citation Map

Abstract: Advanced imaging techniques such as computed tomography, ultrasound, and magnetic resonance imaging provide clinically useful information by detecting and characterizing pathologic conditions of the elbow. The information provided by these techniques can help establish an anatomic diagnosis in a noninvasive fashion. A timely and accurate imaging diagnosis may be an important piece of the puzzle in a diagnostic workup that allows implementation of proper treatment and improved outcome. In this article, the authors focus on recent advances in diagnostic imaging of the elbow joint.

Document Type: Article

Language: English

KeyWords Plus: ULNAR COLLATERAL LIGAMENT; POSITRON-EMISSION-TOMOGRAPHY; MUSCULOSKELETAL APPLICATIONS; THROWING ATHLETE; EPICONDYLITIS; ARTHROGRAPHY; ULTRASOUND; DIAGNOSIS; FRACTURES; TENDON

7- Kijowski, R 2005-SKELETAL RADIOLOGY Magnetic resonance imaging findings in patients with medial epicondylitis

Kijowski R, De Smet AA Magnetic resonance imaging findings in patients with medial epicondylitis
Source: SKELETAL RADIOLOGY Volume: 34 Issue: 4 Pages: 196-202 Published: APR 2005

Times Cited: 6 References: 24 Citation Map

Abstract: Objective: To compare the MR imaging findings of 13 patients with clinically diagnosed medial epicondylitis with the MR imaging findings of 26 patients of similar age with no clinical evidence of medial epicondylitis. Design and patients: The study group consisted of 13 patients with clinically diagnosed medial epicondylitis. The control group consisted of 26 patients of similar age with no clinical evidence of medial epicondylitis. The medical records and MR imaging findings of these patients were retrospectively reviewed by two fellowship-trained musculoskeletal radiologists. Results: Eleven of the 13 patients in the study group had thickening and increased signal intensity of the common flexor tendon on both T1-weighted and T2-weighted images. The remaining two patients in the study group had soft tissue edema around a normal-appearing common flexor tendon. Twenty-one of the 26 patients in the control group had a normal-appearing common flexor tendon on MR imaging. Three patients in the control group had a thickened common flexor tendon which was of intermediate signal intensity on T1-weighted images but of uniform low signal intensity on T2-weighted images. Two patients in the control group had a thickened common flexor tendon which was of intermediate signal intensity on both T1-weighted and T2-weighted images. None of the patients in the control group had soft tissue edema around the common flexor tendon. Conclusion: MR imaging findings of patients with clinically diagnosed medial epicondylitis included thickening and increased T1 and T2 signal intensity of the common flexor tendon and soft tissue edema around the common flexor tendon. The presence of intermediate to high T2 signal intensity or high T2 signal intensity within the common flexor tendon and the presence of paratendinous soft tissue edema were the most specific findings of medial epicondylitis on MR imaging.

Document Type: Article

Language: English

Author Keywords: MRI; medial epicondylitis; elbow

**8- Kraushaar, BS 1999-JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME
Tendinosis of the elbow (tennis elbow) - Clinical features and findings of histological,
immunohistochemical, and electron microscopy studies**

Kraushaar BS, Nirschl RP Tendinosis of the elbow (tennis elbow) - Clinical features and findings of histological, immunohistochemical, and electron microscopy studies Source: JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME Volume: 81A Issue: 2 Pages: 259-278
Published: FEB 1999

Times Cited: 120 References: 73 Citation Map

Document Type: Review

Language: English

KeyWords Plus: LATERAL EPICONDYLITIS; MECHANICAL-PROPERTIES; TENDON-RUPTURE; COLLAGEN

9- POTTER, HG 1995-RADIOLOGY LATERAL EPICONDYLITIS - CORRELATION OF MR-IMAGING, SURGICAL, AND HISTOPATHOLOGIC FINDINGS

**POTTER HG, HANNAFIN JA, MORWESSEL RM, DICARLO EF, OBRIEN SJ, ALTCHERK DW LATERAL EPICONDYLITIS - CORRELATION OF MR-IMAGING, SURGICAL, AND HISTOPATHOLOGIC FINDINGS Source: RADIOLOGY Volume: 196 Issue: 1 Pages: 43-46
Published: JUL 1995**

Times Cited: 87 References: 11 Citation Map

Abstract: PURPOSE: To determine the value of magnetic resonance (MR) imaging in the clinical management of chronic refractory lateral epicondylitis.

MATERIALS AND METHODS: Coronal three-dimensional Fourier transform, multiplanar gradient-recalled-echo, and fat-suppressed sagittal images were obtained in 33 patients. Twenty of these patients underwent surgical debridement and/or primary tendon repair and were included in the correlative study. Surgical and pathologic reports were reviewed to determine the location and gross characteristics of the tissue.

RESULTS: Findings at MR imaging correlated with the surgical findings of primary degeneration of the extensor carpi radialis brevis (n = 20). Histopathologic examination demonstrated neovascularization, disruption of collagen, and mucoid degeneration without inflammation.

CONCLUSION: The use of MR imaging in patients with recalcitrant lateral epicondylitis assists in surgical planning. The definition of tendon degeneration and degree of tear, as depicted on MR images, correlate well with surgical and histologic findings.

Document Type: Article

Language: English

Author Keywords: ELBOW, INJURIES; ELBOW, MR; TENDONS, INJURIES; TENDONS, MR

KeyWords Plus: TENNIS ELBOW; SIGNAL

10- GABEL GT 1998-INSTRUCTIONAL COURSE LECTURES, VOL 47 - 1998 Tennis elbow

No disponible

11- Faro, F 2007-JOURNAL OF HAND SURGERY-AMERICAN VOLUME Lateral epicondylitis: Review and current concepts

Nodisponible

12- Mackay, D 2003-OCCUPATIONAL MEDICINE-OXFORD The objective diagnosis of early tennis elbow by magnetic resonance imaging

Mackay D, Rangan A, Hide G, Hughes T, Latimer J The objective diagnosis of early tennis elbow by magnetic resonance imaging Source: OCCUPATIONAL MEDICINE-OXFORD Volume: 53 Issue: 5 Pages: 309-312 Published: AUG 1 2003

Times Cited: 5 References: 9 Citation Map

Abstract: Objective To identify the salient magnetic resonance imaging (MRI) features of tennis elbow. An objective diagnosis is important when managing work-related incapacity due to ill-defined lateral arm pain.

Method Twenty-three symptomatic and 17 asymptomatic elbows in 20 patients with tennis elbow, no evidence of other pathology and no previous treatment were imaged using established MRI sequences.

Results In the symptomatic elbows, the common extensor origin (CEO) showed signs of oedema in 23, thickening in 19, peri-tendon oedema in 3 and tears in 13 cases. More extensive abnormalities were demonstrated in only two elbows. Six out of 17 asymptomatic elbows also showed oedema in the CEO.

Conclusions The CEO is confirmed as the primary site of MRI changes in tennis elbow. Oedema was commonly found in asymptomatic elbows, necessitating the presence of thickening or tears in the CEO tendon to objectively diagnose tennis elbow on MRI.

Document Type: Article

Language: English

Author Keywords: diagnostic criteria; MRI; tennis elbow

**13- Davis, TRC 1998-JOURNAL OF HAND SURGERY-BRITISH AND EUROPEAN VOLUME
Diagnostic criteria for upper limb disorders in epidemiological studies Displaying 1 - 13 of 13**

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Davis TRC Diagnostic criteria for upper limb disorders in epidemiological studies Source: JOURNAL OF HAND SURGERY-BRITISH AND EUROPEAN VOLUME Volume: 23B Issue: 5 Pages: 567-569 Published: OCT 1998

Author(s):

Times Cited: 16 References: 2 Citation Map

Document Type: Article

Language: English

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Publisher: CHURCHILL LIVINGSTONE, JOURNAL PRODUCTION DEPT, ROBERT STEVENSON HOUSE, 1-3 BAXTERS PLACE, LEITH WALK, EDINBURGH EH1 3AF, MIDLOTHIAN, SCOTLAND

Subject Category: Orthopedics; Surgery

IDS Number: 298KJ

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