Scand J Work Environ Health 2014;40(2):133–145.doi:10.5271/sjweh.3409

Associations of work activities requiring pinch or hand grip or exposure to hand-arm vibration with finger and wrist osteoarthritis: a meta-analysis[1]

by Paula EC Hammer,[2] Rahman Shiri, Ann I Kryger, Lilli Kirkeskov, Jens P Bonde.

[1] Supplementary tables A and B

[2] Correspondence to: Department for Occupational and Environmental Medicine, Bispebjerg University Hospital, Bispebjerg Bakke 23, 2400 Copenhagen, Denmark. [E-mail: paulahammer@dadlnet.dk]

Table A. Steps in a systematic literature search in Pubmed and EMBASE (up to June 2013) on manual work and hand OA. The search strings resulting in 1951 hits after merging are detailed in the footnote

Exclusion criteria	Papers excluded	Papers left
Other diagnoses than hand OA	932	1019
Management of hand OA and epidemiological studies addressing occurrence in the population	620	399
Clinical hand OA without radiological information	257	142
Addressing non-occupational risk factors	83	59
No risk estimates or data allowing computation of risk estimates	51	8
Papers retrieved by sifting reference lists and reviews		12
Papers included in review		20

Search strings with restriction to original papers in English addressing humans:

PUBMED 1 (medical subject headings, MESH-terms): (‘osteoarthritis’ OR ‘joint diseases’) AND (‘hand’ OR ‘hand bones’ OR ‘hand joints’ OR ‘hand strength’ OR ‘hand deformities’ OR ‘hand deformities, acquired’ OR ‘hand injuries’ OR ‘hand-arm vibration syndrome’ OR ‘finger joint’ OR ‘finger phalanges’ OR ‘thumb’ OR ‘wrist’ OR ‘wrist joint’ OR ‘wrist injuries’ OR ‘pinch strength’) AND (‘occupations’ OR ‘occupational exposure’ OR ‘occupational medicine’ OR ‘occupational injuries’ OR ‘occupational diseases’ OR ‘occupational health’ OR ‘occupational groups’ OR ‘occupational accidents’ OR ‘industry’ OR ‘employment’ OR ‘disorders of environmental origin’ OR ‘environmental exposure’)

PUBMED 2 (open search): (‘osteoarthritis’ OR ‘osteoarthrosis’ OR ‘degenerative joint disease’) AND (‘hand’ OR ‘finger’ OR ‘thumb’ OR ‘wrist’) AND (‘occupational’ OR ‘work activities’ OR ‘hand-arm vibration’)

EMBASE 1 (Emtree terms): (‘osteoarthritis’ OR ‘degenerative disease’ OR ‘osteoarthropathy’ OR ‘hand osteoarthritis’) AND (‘carpal joint’ OR ‘finger’ OR ‘finger joint’ OR ‘hand joint’ OR ‘ metacarpophalangeal joint’ OR ‘thumb’) AND (‘occupation’ OR ‘occupation related phenomena’ OR ‘occupational accident’ OR ‘vibration’ OR ‘vibration disease’)

EMBASE 2 (multi-field search): (‘osteoarthritis’ OR ‘osteoarthrosis’) AND (‘hand’ OR ‘finger’ OR ‘thumb’ OR ‘wrist’) AND (‘occupational’ OR ‘work’ OR ‘vibration’)

Table B. Completeness of reporting assessed based on a modified version of a checklist that originally was proposed by van der Windt et al (27)									
Study	**Items evaluated**								
	Design	**Sampling frame**	**In- and exclusion criteria**	**Populations characteristics**	**Response rates**	**Exposure ascertainment**	**Outcome ascertainment**	**Statistical analysis**	**Sum scores**
Studies on pinch grip									
Fontana et al, 2007 (24)	1	1	1	1	0	1	0	1	6/8
Solovieva et al, 2006 (18)	1	1	1	1	1	1	1	1	8/8
Solovieva et al, 2005 (25)	1	1	1	1	1	1	1	1	8/8
Lehto et al, 1990 (26)	1	1	0	1	1	1	1	1	7/8
Lawrence 1961 (33)	1	1	0	1	1	1	1	1	7/8
Kellgren & Lawrence 1958 (34)	1	1	0	0	1	1	1	1	6/8
Studies on hand grip									
Bernard et al, 2010 (41)	1	1	1	0	0	1	1	1	6/8
Rossignol et al, 2005 (35)	1	1	0	1	0	1	0	0	4/8
Haara et al, 2004 (36)	1	1	1	1	1	1	0	0	6/8
Haara 2003 et al, (37)	1	1	1	1	1	1	0	0	6/8
Kessler et al, 2003 (42)	1	1	0	1	0	1	1	1	6/8
Jones et al, 2002 (43)	1	1	1	1	0	0	0	1	5/8

Nakamura et al, 1993 (38)	1	0	0	0	1	1	1	0	4/8
Lawrence et al, 1966 (39)	1	1	0	1	1	1	1	1	7/8
Kellgren & Lawrence 1958 (34)	1	1	0	0	1	1	1	1	6/8
Kellgren & Lawrence 1952 (40)	1	1	0	0	1	1	1	0	5/8
Studies on hand-arm vibration									
Kivekas et al, 1994 (44)	1	1	1	0	1	1	1	0	6/8
Bovenzi et al, 1987 (45)	1	1	0	1	0	1	1	0	5/8
Malchaire et al, 1986 (46)	1	0	0	0	0	1	1	0	3/8
Kumlin et al, 1973 (47)	1	0	1	0	0	1	0	0	3/8
Hellstrom & Andersen 1972 (48)	1	0	0	0	1	1	0	0	3/8

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