

**NIOSH-CPWR**

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National Institute of Occupational Health-Center to Protect Workers Rights (NIOSH-CPWR)

SPSS

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NIOSH-CPWR

(% / ) ( % / )  
.(Chubine 2003) ( % )

.( NIOSH 1997)

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% (Welch et al. 1998)  
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%(Anderson 1992)

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.(Hildebrandt 1995)

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.( Cook et al. 1996)

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.(Zimmerman et al. 1997)

lundholm and Swartz )

.(2006

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(% ) .(Goldshyder 2002)

CPWR

Chaffin and Anderson 1984; Keyserling )  
et al. 1988; Alazab 2004; Rosecrance et al.  
( 2002

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Chaffinand and Anderson )  
1984; Buchholz 1996; kittusamy 2004;  
(Keyserling et al. 1988

Posture-  
Activity-Tools and Handling (PATH)

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CPWR

(Hajaghazadeh 2006)

CPWR

Center to Protect Workers

Rights (CPWR)

(Elcosh 2004)

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(Kuorinka et al. 1987)

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T-test

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;Zimmerman et al. 1997) .

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.(Rosecrance et al. 2002)

Chaffinand and )

Anderson 1984; Buchholz 2003; kittusamy  
(2004; Keyserling et al. 1988

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**NIOSH-CPWR**

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Max: /

SD: /



## References

- Alazab, R., 2004. Work-Related Diseases and Occupational injuries among Workers in the construction industry. *J Afr Newslett Occup Health and safety*, **14**, pp. 37-42.
- Andersson, GBj., 1999. Epidemiological features of chronic low-back pain. *The Lancet*, **354**(9178), pp. 581-585.
- Buchholz, B., 1996. PATH; A work sampling –based approach to ergonomic job analysis for construction and other non-repetitive work. *J Applid Ergonomics*, **27**(3), pp. 177-187.
- Buchholz, B., 2003. Quantifications of Ergonomic Hazards for Ironworker performing Concerte Reinforcement Task during Heavy Highway Construction. *AIHA journal*, **64**, pp. 243-250.
- Chaffin, DB. and Anderson, G., 1984. Occupational Biomechanics. New York: wiley.
- Chubine, A., 2003. *Methods of assessment Posture in occupational Ergonomy*, Fanavaran, Tehran [In Persian].
- Cook, TM., Rosecrance, JC. and Zimmerman, CL., 1996. The university of Iowa constration survey. The center to protect workers right. (Report No.E1-96).washington, DC.
- ELCOSH Construction Ergonomics Checklist.htm Copyright., 2004. CPWR – Center for Construction Research and Training (CPWR).
- Goldsheyder, D., 2002. Prevention of work-related musculoskeletal disorder in construction labores.
- Hajaghazade, M.F., 2006. *Assessment moscoloskeletal disorders risk factor in construction workers by PATH method.a case study of the oromia.MS tehran university* [In Persian].
- Hildebrandt, VH., 1995. Back pain in the working population, *prevalence rate in Dutch trades and professions.Ergonomics*, **38**(6), pp. 1283-1298.
- Keyserling, NK., Punnett, L. and Fine, LJ., 1988. Trunk posture and back pain: Identification and contorol of occupational risk factors. *Applied Industrial Hygiene*, **3**, pp. 87-92.
- Kittusamy, NK., 2004. Wole body vibration and postural stress among operator of construction equipment:Aliterature review.
- Kuorinka, I., Jonsson, Kilbom, A., Vinterberg H. and Biering-Sorensen, F., 1987. Standardize Nordic Questionnaires for the Analysis of musculoskeletal symptoms. *Appl Ergon.* **18**, pp. 233-237.
- Lundholm, L. and Swartz H., 2006 Musculoskeletal ergonomic in the consruction industry, Swedish work Environment authority, Statistics division, SE-171 84 Solna.
- National Institute for Occupational Safty and Health [NIOSH]., 1997. Musculoskeletal disorders and workplace risk factor: A critical review of epidemiological evidence for work-related musculoskeletal disorders of the neak, uper extremity, and low back (NIOSH publication 97-141).cincinnati,OH:author.
- Rosecrance, J., Cook, T., Fেকেce, E. and Merlinol, F., 2002. 2: Musculoskeletal disorders among construction apprentices in Hungary. *Cent Eur J Public health*, **9**(4), pp. 183-7.
- Welch, LS., Hunting, KL. and Mendez, M., 1998. Disability among sheet workers (abstract). *American public Health Association*. Washington, D.C.
- Zimmerman CL., Cook, TM. and Rosecrance, JC., 1997. Operating Engineers: Work-related musculoskeletal disorders and the trade. *Applied Occupational and Environmental Hygiene*, **12**, pp. 670-680.