

Spielholz)

. (et al. 2001

(awkward posture)

.(Jafry and O'Neill 2000; Bernard 1997)

Johansson 1994)

(Malchaire et al. 2001; Battenvi 1998

.(Miedema 1997; Aaras and Strandén 1988)

.(OSHA 3125)

(MSDs)

Musculoskeletal Disorders

Shahnavaz 2003)

.(1987; Maul et al.

Quintana 1999)

; (and Pawlowitz

(LUBA

.(Kee 2001 ; Kemmlert 1994)

US Department of (BLS)

% labor

(Mattila, Vilkki

. 1999)

; (Shahnavaz 1987)

(d = %)

%

Postural Loud Index (PLI)

$$n_0 = \frac{z_{1-\frac{\alpha}{2}}^2 p (1 - p)}{d^2}$$

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(Kuorinka et al. 1987)

.148mm

12X

NVB

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(

) LUBA

LUBA

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LUBA

.(Kee 2001)

STATA

SPSS (ver 11/5) (Release 7)

MSDs

MSDs

MSDs

MSDs

($p < 1$)

: MSDs

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MSDs

(Cut off)

;

(% /) (% /)

(% /) (% /)

(% /)

MSDs

($p < 1$)

Hussain 2004; Bao 1995)

/

.(Lin 1991 ; Chee and Rampal 2004;

/

:MSDs

(

O'sullivan and Gallwey)

(2002; Chee and Rampal 2004 .(p< /)

.(p< /) (OR) /
:(LUBA) (/) /

.(% /)

.(p< /) /
(Bernard 1997; Bao 1995)

MSDs /

Malchaire)
et al. 2001; Battenvi et al. 1998; Johansson
(1994; Lin 1991; Chee and Rampal 2004

.(Hussain 2004)

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