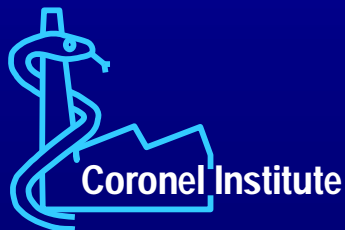


Criteria for determining the work-relatedness of non-specific Low Back Pain (LBP)

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Aim

To develop an evidence-based **PRACTICAL TOOL** to evaluate the magnitude of work-relatedness of non-specific low back pain



Methods

Systematic literature review



Decision model

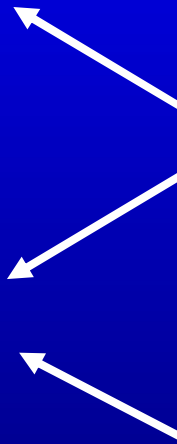


Practical tool:

- 1) Diagnosis
- 2) Risk factors
- 3) Work relatedness

National Expert Meetings
International Invitational
Conference

Evaluation of applicability



Practical tool

Step 1. Case definition of 'non-specific low back pain'

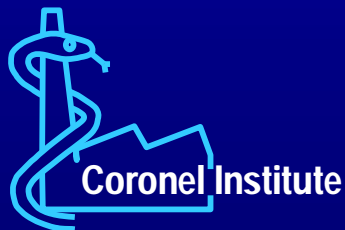
Step 2. Inventory of work related risk factors

Step 3. Probability of work-relatedness (occupational disease)

References

Lötters F, A Burdorf, J Kuiper, H Miedema, **Model for the work-relatedness of low back pain**. Scand J Work Environ Health 2003; 29: 431-440

Kuiper JI, A Burdorf, MHW Frings-Dresen, PPFM Kuijer, D Spreeuwers, FJ Lötters, HS Miedema, **Assessing the work-relatedness of nonspecific low-back pain (workshop report)**, Scand J Work Environ Health 2005 31: 237-43.



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Step 1: diagnosis

Case definition:

'Pain in the lower back region lasting at least 24 hours without any demonstrable physical cause'



Step 2: work related risk factors

Risk Factors

(from systematic reviews)

Risk estimate

(pooled Odds Ratio)

Physical risk factors

high exposure

Manual Materials Handling (MMT)

- 1.51

- 1.92

Frequent Bending/Twisting Trunk (FBT)

- 1.68

- 1.93

Whole Body Vibrations (WBV)

- 1.39

- 1.68

High Physical Workload

- 1.13 ns

Psychosocial risk factors

Monotonous Work

- 1.00 ns

Job Dissatisfaction

- 1.30



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Step 2: work related risk factors

Manual materials handling

- Does worker handle objects $> 5\text{kg}$ $> 2\text{x}$ per minute for total of > 2 hours per working day, or objects $> 25\text{kg}$ $> 1\text{x}$ per day?
- Does worker handle objects $> 15\text{ kg}$ during $> 10\%$ of working day?

Bending or twisting of the trunk

- Does worker work with trunk bent and/or twisted $> 20^\circ$ for > 2 hours per working day?
- Does worker work with trunk bent and/or twisted $> 40^\circ$ for $> \frac{1}{2}$ hour per working day?

Whole body vibration

- Is worker exposed to average vibration levels $> 0.5\text{ m/s}^2$ per working day?
- Has worker been exposed to average vibration levels $> 1\text{ m/s}^2$ per working day for ≥ 5 years?

A Manual materials handling

= lifting, holding or moving object by hand without help of mechanical tools

A1 Does worker handle objects > 15kg during > 10% of working day?

Yes, score 7 & go to B

No, go to A2

A2 Does worker handle objects > 5kg during > 2x per min for total of > 2 hours per working day, or objects >25 kg >1x per working day?

Yes, score 4

No, score 0

Score

4

B Bending / twisting of trunk

=bending trunk forwards or sideways and/or twisting trunk

B1 Does worker work with trunk bend and/or twisted > 40° for >1/2 hour per working day?

Yes, score 7 & go to C

No, go to B2

B2 Does worker work with trunk bend and/or twisted > 20° for > 2 hours per working day?

Yes, score 5

No, score 0

pooled Odds Ratio

5

C Whole body vibration

C1 Has worker been exposed to average vibration levels > 1m/s² per working day for >5 yr?

Yes, score 5

No, go to C2

C2 Is worker exposed to average vibration levels > 0,5m/s² per working day?

Yes, score 3

No, score 0

3

12

Total score (0-19)

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Step 3: Work-relatedness

Exposure score	Age (years)		
	< 35	35 – 45	> 45
	Probability of work-relatedness		
0	0	0	0
1	7	7	6
2	14	13	12
3	20	18	17
4	26	23	22
5	31	28	26
6	35	32	30
7	39	35	33
8	43	39	36
9	46	42	39
10	49	44	42
11	52	47	44
12	55	49	46
13	57	50	47
14	59	51	48
15	60	52	49
16	61	53	50
17	62	54	51
18	63	55	52
19	64	56	53

The probability is 49% that the individual's non-specific LBP is due to work-related risk factors (attributable fraction)

Step 3: Work-relatedness

Non-specific LPB registered as an Occupational Disease:

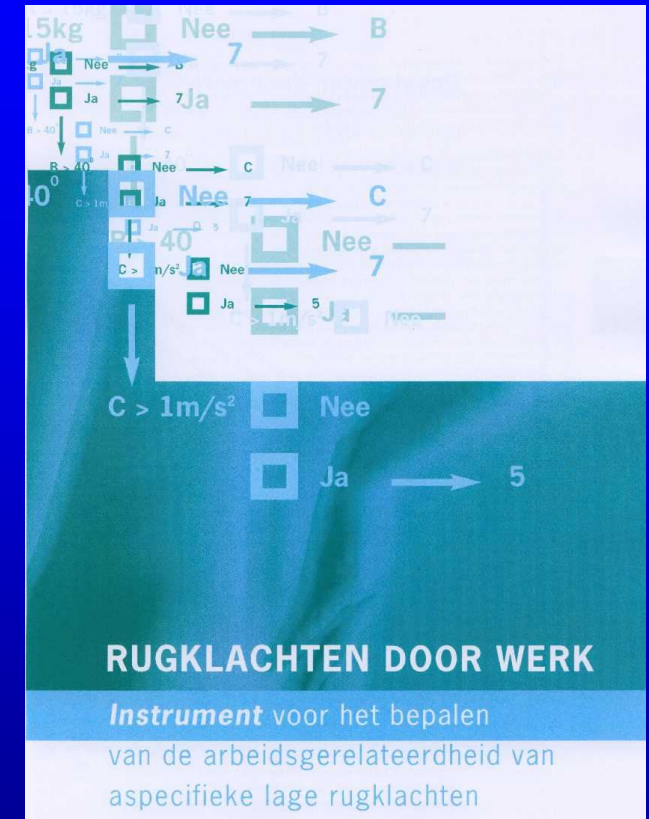
- Probability > 50%, or
- NIOSH Lifting Index > 2, or
- Daily exposure to vibration during an eight-hour reference period > 1,15m/s², or
- Expert opinion of Occupational Physician

Netherlands Center for Occupational Diseases, 22 November 2005

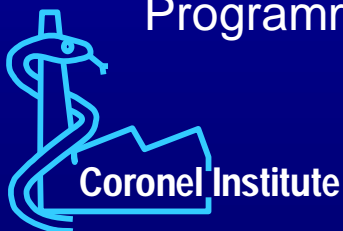
www.beroepsziekten.nl, registration guideline D004

Take home messages

- Evidence based risk factors for non-specific LBP are manual material handling, bending and twisting of the trunk, whole body vibration and job dissatisfaction
- The practical tool assists professionals in making an evidence based judgment on the work-relatedness of non-specific LBP in an individual worker



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Stap 4: Preventie!

- Tiltechniek (door de knieën vs bukken) resulteert niet in een lagere belasting van de rug Van Dieën e.a. 1999
- Tiltraining voorkómt geen rugklachten Martimo e.a. 2007
- Aanpassen van de werkhoogte en de inzet van mechanische hulpmiddelen zijn waarschijnlijk effectiever dan alleen het verlagen van het blokgewicht van der Molen e.a. 2005, Kuijer e.a. 2007
- Lichamelijk actief zijn is de best bewezen effectieve maatregel om rugklachten te voorkómen Burton e.a. 2005, www.backpaineurope.org



Werkt de registratierichtlijn?

Geilenkirchen e.a, 2007 TBV:

‘De onderrapportage voor het melden van de beroepsziekte specifieke lage rugklachten bij een vestiging van een arbodienst met 17 bedrijfsartsen, 815 bedrijven met 42.125 werknemers bedroeg 100% in 2005. Het aantal gevallen van beroepsziekte was minimaal 12’.

NCvB meldingen D004:

- 2005 (365) -> 2008 (810)

