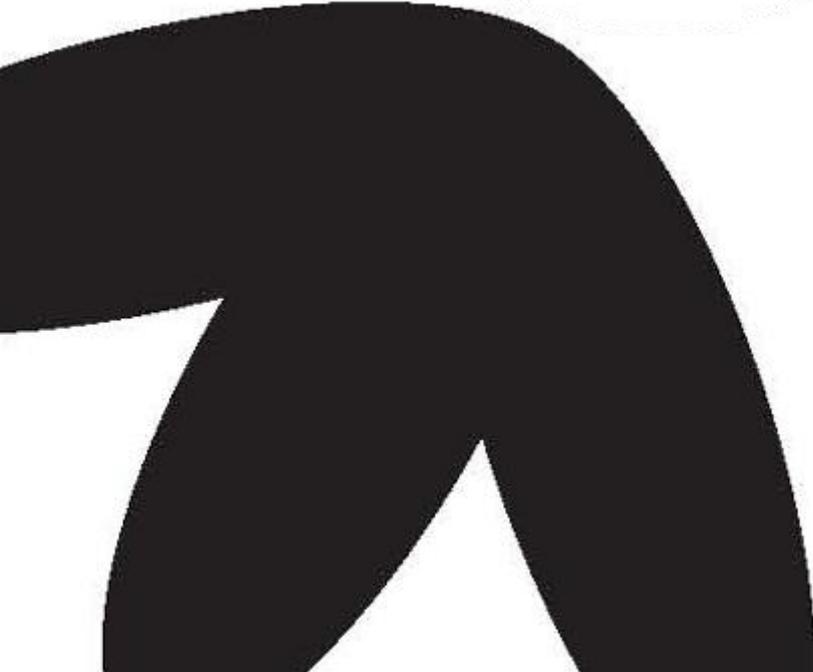




Background document

To accompany Registration Guidelines E003
Job related depression



Netherlands Center
for **Occupational Diseases**

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Job-related depression – description of the disorder

Job-related depression exists if a depressive disorder or a minor/sub-clinical depression is predominantly caused or exacerbated by demanding psychological conditions at work. Depressive disorders are psychological disorders that occur frequently in the general population. In an extensive study (NEMESIS) carried out in the Netherlands, (lifetime) prevalence was 19% and 12-month prevalence was 7.6%. This disorder, together with anxiety disorders and alcohol abuse, is the most frequently occurring disorder.¹ Within the working population, 7% of people have a suspected depression.² Finally, of a group of employees who were absent from work and consulted the occupational physician for psychological problems, 22% were suffering from a depressive disorder.³ The percentage of employees suffering from a depressive disorder that can be diagnosed as job-related depression is not known. However, it has been established that, in 2004, 6% of the cases of occupational psychological disorders reported to the Netherlands Centre for Occupational Diseases (NCvB) involved job-related depression.⁴

Main risk groups:

Most of the studies of the relationship between the work environment and depression are carried out with groups of people in similar occupations. An exception to this is the research by Eaton et al. (1990) into the incidence of depression in a range of occupations. This research showed that depression was most prevalent among lawyers (odds ratio 3.6, 95% reliability interval 1.4-9.3), teachers (odds ratio 2.8, 95% reliability interval 1.2-6.8) and secretarial staff (odds ratio 1.9, 95% reliability interval 1.2-3.1).⁵

Clinical diagnosis

Depressive disorders are diagnosed on the basis of an anamnesis in accordance with DSM-IV.⁶ According to this international classification system, the subject is suffering from a major depressive disorder if five of the nine symptoms (see guidelines) have been present for at least two weeks. If 2-4 symptoms are present, the diagnosis is minor depressive disorder. According to DSM-IV, if the symptoms can be attributed to a substance (e.g. exposure to lead or organic solvents), the diagnosis must not be depressive disorder. From the perspective of differential diagnosis, it can be important to examine possible physical and chemical causes. Also from the perspective of differential diagnosis, it is important to distinguish between depression and burnout or nervous breakdown. Sadness is a symptom that also occurs in burnout and nervous breakdown. The distinguishing features of depression are a persistent depressive mood, lack of positive emotions, and depressive thoughts about one's identity, achievements and often about the past or immediate future. Strong feelings of guilt and worthlessness, and suicidal tendencies, relate only to the symptoms of depression and are not consistent with burnout or nervous breakdown.⁷

Causal exposure

The system of the Dutch Institute for Healthcare Improvement (CBO)⁸ was used to indicate the level of evidence in the conclusions with regard to the relationship between work-related risk factors and depression. The CBO system comprises 4 levels. Level 1 means that the conclusion is based on at least 1 systematic review or two independent prospective cohort studies that meet the quality requirements. (See Appendix 1 for an overview of the system).

Psychosocial risk factors

In 2004, Roos and Sluiter carried out a systematic literature study into the relationship between work-related psychosocial risk factors and depression.⁹ They identified six studies¹⁰⁻¹⁵ that met the quality requirements, such as a proper diagnosis of the depression and a response percentage of >50%. In three of the studies, depressive symptoms were related to a lack of social support (including harassment) at work. Two studies showed that this also applies in the case of job unsuitability. Given the strengths of the correlations (odds ratio >2, based on the lower limit of the reliability interval) it can be said that these two factors can contribute individually to the extent that the disorder can be defined as a job-related depression.

Level 1	<p>It has been shown that lack of social support is a risk factor for depression.</p> <p><i>A1 Roos & Sluiter, 2004⁹ (Op basis van A2 Kawakami et al, 1992¹², A2 Kivimäki et al, 2003¹³, A2 Niedhammer et al, 1998¹⁴)</i></p>
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Level 2	<p>There are strong indications that having an unsuitable job is a risk factor for depression.</p> <p>A2 Kawakami et al, 1992¹² B Kawakami et al, 1990¹¹</p>
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The identified studies also showed that a number of psychosocial factors at work can contribute to a depressive episode, but the link was less strong (odds ratio <2) or the results of the studies were inconsistent when compared: excessive workload (varying outcomes between the studies), lack of influence/control at work (varying outcomes), psychologically demanding work (1 study) and stressful events experienced at work (1 study).

Level 1	<p>There are indications that an excessive workload and a lack of influence/control over the work are risk factors for depression.</p> <p><i>A1 Roos & Sluiter, 2004⁹ (Based on A2 Kawakami et al, 1992¹² B Kawakami et al, 1990¹¹ A2 Shields et al, 1999¹⁵, A2 Griffin et al, 2002¹⁰ A2 Niedhammer et al, 1998¹⁴)</i></p>
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Level 3	<p>There are limited indications that psychologically demanding work and stressful events are risk factors for depression.</p>
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	<i>A2 Niedhammer et al, 1998¹⁴</i>
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After publication of the aforementioned literature study, a secondary analysis was published of one of the six identified studies by Roos and Sluiter.¹³

Secondary analyses showed that a poor working atmosphere (lack of employee involvement in decision-making, lack of clarity and consensus regarding work objectives), and unfairness and lack of respect on the part of management can influence the development of depression.¹⁶ This has not been included as a separate psychosocial factor in the registration guidelines because there is a significant overlap with the concept “lack of social support (harassment)”. A further finding from the secondary analyses was that low procedural justice also influences the development of depression. Procedural justice means that decisions in the workplace are made in a way that is precise, consistent and open to appeal. This factor *is* included in the registration guidelines.

Level 3	There are limited indications that procedural justice is a risk factor for depression.
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A2 Ylipaavalniemi et al, 2005¹⁶

Physical and chemical risk factors

A limited search for the following physical and chemical risk factors at work was carried out for literature on the link between exposure in the workplace and depression: noise, lead, light deprivation and organic solvents. For the purpose of this search, only the Medline database (via PubMed) was used.

It is known that there is a correlation between environmental noise (e.g. living close to an airport) and psychological problems, but not with clinical disorders such as depressive disorders.¹⁷ In an extensive cross-sectional study of the relationship between noise at work and psychological problems, a relationship between noise and depressive symptoms was found only for women.¹⁸ As yet, there are insufficient indications to identify noise in the workplace as a risk factor for depression. Therefore, noise in the workplace is not included in the registration guidelines.

Level 4	There are insufficient indications that noise in the workplace is a risk factor for depression.
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C Melamed et al, 1992¹⁸

This search found no indications of a causal relationship between light deprivation and (seasonal) depression.

Level 4	There are no indications that light deprivation in the workplace is a risk factor for depression.
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With regard to occupational exposure to lead, the following indications were found. There is a correlation between the concentration of lead in the blood of employees and the self-reporting of depressive stemming.¹⁹ In a somewhat dated (1983) but longitudinal study, a relationship was found between lead in the blood and the development of depressive symptoms.²⁰

Level 3	There are limited indications that occupational exposure to lead is a risk factor for depression. <i>A2 Baker et al, 1983²⁰ C Maizlish et al, 1995¹⁹</i>
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Two cross-sectional studies showed that employees who have been exposed to solvents are at greater risk of developing a depressive disorder according to the DSM-IV criteria than employees who have not been exposed to these substances.^{21;22} It should be noted that, since somatic presentation is an exclusion criterion in DSM-IV, only the symptom descriptions for the DSM-IV criteria have been included in the considerations.

	There are limited indications that exposure to solvents is a risk factor for depression. <i>C Morrow et al, 2000²¹ C Condray et al, 2000²²</i>
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To summarise, there are only limited indications that exposure to the factors lead and organic solvents are risk factors for the symptoms of a clinical depression. Partly because somatic presentation (as in exposure to lead or solvents) is an exclusion criterion for diagnosis according to DSM-IV, these chemical risk factors are not included in these guidelines as risk factors. In the event of suspected occupational exposure to lead or solvents, it is recommended to consider the diagnosis of substance-induced mood disorder.

Predisposing factors

Depression usually has several causes: congenital factors, factors in the physical and social environment, personality and developmental traits.

The personality traits of hostility, low self-esteem and danger avoidance can be a risk factor for depression^{23;24} but not to the extent that they can fully explain the relationship between work-related factors and depressive symptoms. With regard to physical factors, physical (chronic) illness^{25;26} should also be considered, while lack of parental care during childhood is a developmental trait that can contribute to a depressive episode later in life.²⁷

References

- (1) Bijl RV, Ravelli A, van ZG. Prevalence of psychiatric disorder in the general population: results of The Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Soc Psychiatry Psychiatr Epidemiol* 1998; 33(12):587-595.
- (2) Andrea H, Bultmann U, Beurskens AJ, Swaen GM, van Schayck CP, Kant IJ. Anxiety and depression in the working population using the HAD Scale--psychometrics, prevalence and relationships with psychosocial work characteristics. *Soc Psychiatry Psychiatr Epidemiol* 2004; 39(8):637-646.
- (3) Nieuwenhuijsen K, de Boer AG, Verbeek JH, Blonk RW, van Dijk FJ. The Depression Anxiety Stress Scales (DASS): detecting anxiety disorder and depression in employees absent from work because of mental health problems. *Occup Environ Med* 2003; 60 Suppl 1:i77-i82.
- (4) NCvB. Signaleringsrapport beroepsziekten 2005.
- (5) Eaton WW, Anthony JC, Mandel W, Garrison R. Occupations and the prevalence of major depressive disorder. *J Occup Med* 1990; 32(11):1079-1087.
- (6) *Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV)*. American Psychiatric Association, 1994.
- (7) Multidisciplinaire richtlijn Depressie, CBO: 2005.
http://www.cbo.nl/product/richtlijnen/folder20021023121843/rl_depressie_2005.pdf/view
- (8) CBO: Evidence-based Richtlijnontwikkeling: handleiding voor werkgroepleden. 2005.
http://www.cbo.nl/product/richtlijnen/handleiding_ebro/default_view
- (9) de Roos L SJ. Depressie als beroepsziekte: Identificatie van werkgebonden psychosociale risicofactoren uit de landelijke registratie en een systematisch literatuuronderzoek. *TBV* 2004; 12:365-371.
- (10) Griffin JM, Fuhrer R, Stansfeld SA, Marmot M. The importance of low control at work and home on depression and anxiety: Do these effects vary by gender and social class? *Social Science & Medicine* 2002; . 54(5).
- (11) Kawakami N, Araki S, Kawashima M. Effects of job stress on occurrence of major depression in Japanese industry: A case-control study nested in a cohort study. *Journal of Occupational Medicine* 1990; . 32(8).
- (12) Kawakami N, Haratani T, Araki S. Effects of perceived job stress on depressive symptoms in blue collar workers of an electrical factory in Japan. *Scandinavian Journal of Work, Environment & Health* 1992; . 18(3).
- (13) Kivimaki M, Elovainio M, Vahtera J. Workplace bullying and sickness absence in hospital staff. *Occup Environ Med* 2000; 57(10):656-660.
- (14) Niedhammer I, Goldberg M, Leclerc A, Bugel I, David S. Psychosocial factors at work and subsequent depressive symptoms in the Gazel cohort. *Scand J Work Environ Health* 1998; 24(3):197-205.
- (15) Shields M. Long working hours and health. *Health Rep* 1999; 11(2):33-48.

- (16) Ylipaavalniemi J, Kivimaki M, Elovainio M, Virtanen M, Keltikangas-Jarvinen L, Vahtera J. Psychosocial work characteristics and incidence of newly diagnosed depression: a prospective cohort study of three different models. *Soc Sci Med* 2005; 61(1):111-122.
- (17) Stansfeld SA, Haines MM, Burr M, Berry B, Lercher P. A Review of Environmental Noise and Mental Health. *Noise Health* 2000; 2(8):1-8.
- (18) Melamed S, Luz J, Green MS. Noise exposure, noise annoyance and their relation to psychological distress, accident and sickness absence among blue-collar workers--the Cordis Study. *Isr J Med Sci* 1992; 28(8-9):629-635.
- (19) Maizlish NA, Parra G, Feo O. Neurobehavioural evaluation of Venezuelan workers exposed to inorganic lead. *Occup Environ Med* 1995; 52(6):408-414.
- (20) Baker EL, Feldman RG, White RF, Harley JP. The role of occupational lead exposure in the genesis of psychiatric and behavioral disturbances. *Acta Psychiatr Scand Suppl* 1983; 303:38-48.
- (21) Morrow LA, Gibson C, Bagovich GR, Stein L, Condray R, Scott A. Increased incidence of anxiety and depressive disorders in persons with organic solvent exposure. *Psychosom Med* 2000; 62(6):746-750.
- (22) Condray R, Morrow LA, Steinhauer SR, Hodgson M, Kelley M. Mood and behavioral symptoms in individuals with chronic solvent exposure. *Psychiatry Res* 2000; 97(2-3):191-206.
- (23) Paterniti S, Niedhammer I, Lang T, Consoli SM. Psychosocial factors at work, personality traits and depressive symptoms. Longitudinal results from the GAZEL Study. *Br J Psychiatry* 2002; 181:111-117.
- (24) Jurado D, Gurpegui M, Moreno O, Fernandez MC, Luna JD, Galvez R. Association of personality and work conditions with depressive symptoms. *Eur Psychiatry* 2005; 20(3):213-222.
- (25) Donie JF. The relationship between diabetes and depression: improving the effectiveness of case management interventions. *Lippincotts Case Manag* 2004; 9(4):177-183.
- (26) Massie MJ. Prevalence of depression in patients with cancer. *J Natl Cancer Inst Monogr* 2004;(32):57-71.
- (27) Repetti RL, Taylor SE, Seeman TE. Risky families: family social environments and the mental and physical health of offspring. *Psychol Bull* 2002; 128(2):330-366.
- (28) Evidence-based Richtlijnontwikkeling, Handleiding voor werkgroepleden. CBO: 2005.
http://www.cbo.nl/product/richtlijnen/handleiding_ebro/handl_totaal.pdf/view

Appendix 1: Methodological quality of studies and level of evidence of the conclusions²⁸

Table 1.1 Classification van methodological quality of studies into damage or side-effects, aetiology and prognosis.

A1	Systematic review of at least two studies (A2 level) carried out independently of each other.
A2	Prospective cohort study of sufficient scale and follow-up, with satisfactory controls for confounding variables, and selective follow-up is sufficiently eliminated.
B	Prospective cohort study, but not with all the features specified under A2, or retrospective cohort study or patient-control study.
C	Non-comparative study.
D	Opinion of experts.

Table 1.2 Level of evidence of conclusions, based on the evidence offered in support of the conclusion

Level	Conclusion based on
1	One systematic review (A1) or at least two studies (level A2) carried out independently of each other.
2	At least two studies (level B) carried out independently of each other.
3	One study at level A2 or B, or at least one study at level C.
4	Opinion of experts (e.g. workgroup members)