

Effectiveness of interventions that aim to improve work participation for patients within clinical health care as compared to care as usual or other interventions that focus on work participation

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Research question

For this guideline module a systematic review of the literature was performed to answer the following question:

What is the effectiveness of interventions that aim to improve work participation for patients within clinical health care as compared to care as usual or other interventions that focus on work participation?

Methods

PICO, literature search and selection

P: patients

For the purpose of this search we considered working age patients with any non-psychiatric condition who are involved in work participation and treated within secondary or tertiary clinical health care. Work participation was regarded as paid employment, which includes full-time work or part-time work. Patients receive treatment within secondary or tertiary clinical health care within a hospital or specialized clinic, regardless of the type of disease or condition. We excluded reviews about patients with primary psychiatric conditions.

I: intervention

We considered interventions aiming to enhance work participation. The intervention could be aiming at an individual patient as well as being delivered to a group of patients. The interventions could focus on different elements influencing work participation, and could be undertaken by any qualified professional (e.g. medical specialist, specialized nurse, psychologist, physical therapist, occupational therapist, social worker). For the purpose of this review, we divided the interventions into:

- Psycho-educational interventions: interventions that include any type of psycho-educational interventions, such as training coping skills (e.g. identifying barriers of employment such as transport or attitudinal barriers), education (e.g. development of job skills, job-specific skills and licensing (e.g. driver's license), training to increase self-efficacy for employment), counseling (e.g. help to identify work skills and aptitudes). We excluded interventions in this group which are not primary aimed at enhancing work participation.
- Vocational interventions: interventions that include any type of intervention focused on employment. Vocational interventions are programs which aim to encourage return-to-work, vocational rehabilitation, or occupational rehabilitation (e.g. job coaching, job placement schemes, workplace adjustment such as modified work hours or modified tasks).
- Physical interventions: interventions that include any type of physical training (e.g. cardiac rehabilitation), physical exercises (e.g. muscle strengthening programs), or training of bodily functions (e.g. vocal training). We excluded interventions in this group which are not primary aimed at enhancing work participation.
- Medical interventions: interventions in which work participation is used as main factor in choice of medical treatment, such as during shared-decision making. We excluded interventions in this group which are not primary aimed at enhancing work participation.
- Multidisciplinary interventions: interventions that use a combination of one or more of the above-mentioned interventions.

We excluded reviews of workplace interventions in which the setting was outside clinical health care. We excluded reviews of intervention that were embedded within an occupational health care or primary health care setting. We excluded reviews that primarily focused on helping people to maintain or return occupational roles and activities that are unpaid and unlikely to provide an income.

C: control

We included any systematic review that compares or synthesises evidence from studies which include 'usual care' or other interventions that focus on work participation (i.e. different vocational interventions). We excluded alternative programs with no relevant comparison.

O: outcome measure

The main outcome was work participation. Work participation was operationalized as maintaining paid work or return to work in a person's current or a new job.

We will collect data on rates of work placement in any type of paid employment, which includes any time of employment including full-time work or part-time work, and casual, fixed term, permanent or self-employed. We collected continuous date (e.g. duration to return-to-work, sick leave duration) or rates (such as RTW rate) as reported by the review authors.

We did not specify the time points at which the authors must report the outcomes. We were interested in both short term (i.e. less six months), medium term (i.e. between six months and one year) as well as long-term outcomes (i.e. more than one year).

S: setting

We considered reviews of interventions to enhance work participation which were delivered within or which are guided from secondary or tertiary health care in a hospital or specialized clinic. The aim of the intervention had to be to help adults receiving treatment from a hospital or specialized clinic to maintain or return to work.

Relevant outcome measures

Critical outcome measure for decision making: work participation.

Other outcome measures: cost of interventions, cost-effectiveness of interventions, side effects or adverse effects.

The working group defined the outcome measures as follows:

- Maintaining paid work or return to work in a person's current or new job.
- The most relevant period for RTW from disease diagnosis or start of an intervention (in case of chronic disease in which an intervention was initiated later) was regarded as a medium term (between 6 to 12 months). Therefore, if possible we selected proportion of RTW on medium term (between 6 to 12 months), otherwise we chose the most appropriate outcome to report in our main findings.

The working group defined the following minimal clinically (patient) important differences:

- Outcome measure work participation: Since heterogenic findings in patients population as well as types of interventions, the working group was unable to define minimal clinically important differences.

Search strategy and screening

Search strategy

We identified relevant reviews by searching:

- Cochrane Database of Systematic Reviews (Ovid).
- MEDLINE (Ovid).
- EMBASE (Ovid).
- CINAHL (EBSCOhost).

Search strategies were developed by the research team in collaboration with an information specialist of the domain of work and health and clinical work-integrating care. We searched all databases from 2012 to the date of the search. We use this delimitation in time because the clinical practice focused on work participation considerably more limited before that period and insufficiently focused on how contemporary care is organized. We included only studies reported in English or Dutch. We retrieved full review reports of any potentially eligible reviews that were published as abstracts or conference proceedings only. We did not search for any ongoing or recently completed reviews. For our search strategy we refer to appendix 5-8.

Screening and selecting

Title and abstract screening of the reviews was done using a machine learning algorithm with the open-source software ASreview (van de Schoot, 2021). Two reviewers independently performed this selection. The machine learning algorithm continuously calculated which titles and abstract were most relevant based on the decisions the reviewer made along the process. The most relevant articles were presented first to the reviewer, which made it not necessary to screen all title and abstracts. Each reviewer at least screened 20% of all titles or stopped after screening 200 irrelevant articles in a row. In the initial stage relevant and irrelevant articles were presented to the software to train the algorithm. These articles were chosen by the reviewers based on our prior knowledge of the available evidence. Different starting points for both reviewer were used by presenting the algorithm with different articles as initial input. We used the standard settings of the software, which have proven to provide the best results (van de Schoot, 2021). For the input articles and the settings of the software we refer to appendix 9.

Afterwards, the data sets of both reviewers were compared and any disagreements were resolved until consensus was reached. Any abstract that was screened by only one reviewer was also be reviewed by the second reviewer. Abstract that have not been seen by any reviewer, we regarded as irrelevant. Full text articles of all relevant abstracts were obtained.

Full text screening was done by pairs of two reviewers independently using Rayyan. Disagreements were resolved through discussion, involving the review team where necessary. When more than one systematic review concerning the same patient population (e.g. two or more reviews considering cancer), we selected the systematic review with the highest quality based on the AMSTAR 2 risk of bias assessment (Shea, 2017), or most recent systematic review.

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Autorisatiefase februari 2024

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- van de Schoot, R., de Bruin, J., Schram, R., Zahedi, P., de Boer, J., Weijdema, F., . . . Oberski, D. L. (2021). An open source machine learning framework for efficient and transparent systematic reviews. *Nature Machine Intelligence*, *3*(2), 125-133. doi:10.1038/s42256-020-00287-7.

Results

Summary of literature

Description of studies

In total, 4940 titles were identified (i.e. 1494 from Cochrane Database of Systematic Reviews, 1054 from MEDLINE, 1627 from EMBASE, and 765 from CINAHL) and after removing duplicates by the librarian 2387 titles and abstracts were screened using ASreview. Next, 75 articles were retrieved and screened for full text. A list of excluded studies can be found in appendix 4.

We selected 12 reviews for the risk of bias assessment using the AMSTAR 2 tool, after which we excluded 5 more reviews based on being lower quality reviews of similar patient populations (i.e. two reviews regarding cancer survivors, one review regarding people with coronary heart disease, and one regarding people with chronic low back pain) or being more recent (i.e. one review regarding patients with inflammatory arthritis). For an overview of the risk of bias assessment we refer to appendix 3. Finally, 7 reviews were included which all considered a specific patient population (i.e. people diagnosed and treated for cancer, people with coronary heart disease, people with chronic pain (including musculoskeletal and low back pain), people with inflammatory arthritis, pregnant women with complaints of the lumbopelvic region, people with spinal cord injury, and people with traumatic brain injury). For the characteristics of the 7 included reviews we refer to appendix 1 and for a detailed describing of the evidence we refer to appendix 2.

Generic – not disease-specific

No systematic reviews were found that considered a generic clinical patient population and included generic interventions for clinicians to help patients with (returning or maintaining) work.

Cancer

- The overall confidence of the quality of the review (1) was determined as high. In total, data from 15 RTCs that were included in this review were relevant for our research question. The risk of bias was low for 9 RCTs and 6 RCTs were rated as having a high overall risk of bias. The total sample consisted of 1535 people with cancer. Most studies evaluated breast cancer, but other types of cancer (e.g. prostate cancer, cancer of head and neck, cervical cancer or colorectal cancer) were also present among the study sample. We identified three major types of interventions relevant for this review, namely psycho-educational, physical training, and multidisciplinary interventions.
- Psycho-educational interventions aimed to ameliorate the psychological consequences of the diagnosis and treatment of cancer on the ability to work. These interventions often started when active treatment was still provided, in one RCTs it started in the follow-up phase. Multidisciplinary teams were involved, consisting of oncologist and other involved physicians, psychologist, social workers, oncology nurse, and dieticians. The duration was 4 weeks to six months.
- Physical training interventions aimed to ameliorate the physical consequences of the diagnosis and treatment of cancer on the ability to work. These interventions also often took place during active treatment, but also several weeks after surgery during recovery phase. The involved professionals were physiotherapist, exercise

specialists or instructors, health educators, and nurses. The durations was 12 weeks till 6 months, or was synchronized with the chemotherapy treatment.

- Multidisciplinary interventions aimed to amend the psychological, vocational and/or physical consequences of the diagnosis and treatment of cancer on the ability to work. Most interventions started during the follow-up phase, one during active inpatient treatment. The involved professionals were arranged in multidisciplinary teams including oncology nurses, treating physicians, social workers, psychologists, physiotherapists, and occupational health professionals such as oncology occupational physician, occupational nurse, and case managers. The duration ranged from 4 weeks to 14 months.

Results in detail:

- Four studies investigated psycho-educational interventions compared to usual care. Psycho-educational interventions probably result in little to no difference in RTW at 12 months (RR 1.09, 95% CI 0.95 to 1.24) when compared with usual care in cancer patients.
- Five studies investigated physical interventions compared to usual care. Physical interventions likely increase RTW at 12 months (RR 1.23, 95% CI 1.08 to 1.39) when compared with usual care in cancer patients. Six studies investigated multidisciplinary interventions compared to usual care. Multidisciplinary interventions likely increase RTW at 12 months (RR 1.24, 95% CI 1.11 to 1.35) when compared with usual care in cancer patients.

Coronary heart disease

- The overall confidence of the quality of the review (2) was determined as high. In total, data from 34 RTCs that were included in this review were relevant for our research question. The risk of bias of 12 RCTs was judged as high, 6 RCTs had low risk of bias and for 16 RCT the risk of bias was unclear. The total sample consisted of 4438 people with coronary heart disease. Most interventions included patients with (acute) myocardial infarction. Four types of interventions were compared with usual care within this review namely, psychological, counseling, physical exercise and combined interventions.
- Psychological and work-directed counseling intervention often started in the inpatient phase immediate after the event happened. Involved professionals in psychological interventions and work-directed counseling were often nurses, cardiologist or attending physicians and psychologists. The aim of psychological interventions was to facilitate return to work by changing people's perceptions of their illness such that they see themselves again as capable workers and not just as recuperating patients. The aim of work-directed counseling was to facilitate RTW by reducing perceived or actual barriers to returning to work by implementing workplace design changes, pauses, and such.
- Physical and combined interventions often started during the recovery phase days or weeks after discharge from the hospital in an outpatient setting. Involved professionals in physical interventions were often physical therapists. The aim was to facilitate return to work by equipping patients with a level of functional capacity that is necessary to perform work tasks safely and successfully. Combined interventions often took place in a rehabilitation setting and multi-disciplinary teams were involved. Combined interventions used components of the three previous mentioned interventions.
- For findings on short (<6 months), long (>1 to <5 years) and extended long term (>5 years), days until RTW and adverse event we refer to appendix 2.

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Results in detail:

- Eleven studies investigated psychological interventions compared to usual care. The evidence is very uncertain about the effect of psychological interventions on RTW in medium term (6 months to 1 year) when compared with usual care in patients with coronary heart disease.
- Four studies investigated work-directed counseling compared to usual care. Work-directed counseling may result in little to no difference (from two RCTs respectively, RR 1.07, 95% CI 0.97 to 1.17, and RR 0.91, 95% CI 0.83 to 1.0) in RTW in medium term (6 months to 1 year) when compared with usual care in patients with coronary heart disease.
- Nine studies investigated physical conditioning interventions compared to usual care. Physical interventions may result in little to no difference (RR 1.09, 95% CI 0.99 to 1.20) in RTW in medium term (6 months to 1 year) when compared with usual care in patients with coronary heart disease.
- Thirteen studies investigated combined interventions compared to usual care. Combined interventions may result in little to no difference (RR 1.06, 95% CI 1.00 to 1.13) in RTW in medium term (6 months to 1 year) when compared with usual care in patients with coronary heart disease.

Chronic pain (including musculoskeletal and low back pain)

- The overall confidence of the quality of the review (3) was determined as moderate. In total, data from 10 RCTs that were included in this review were relevant for our research question. The risk of bias was low for 2 RCTs, unclear for 2 RCTs and high for 6 RCTs. The total sample consisted of 3373 people with chronic pain. Chronic pain was defined as pain which persists for more than 3 months or beyond the expected healing time. The sample consisted of people with musculoskeletal pain, soft tissue injuries, back pain, neck pain, and shoulder pain.
- We identified four major types of interventions, namely psycho-educational, vocational, physical training, and multidisciplinary interventions. Three RCTs compared psycho-educational interventions to usual care or a brief intervention. Only one RCT reported on a vocational intervention and was compared with multidisciplinary care. Respectively, three RCTs compared physical training and six RCTs compared multidisciplinary interventions to usual care. All interventions aimed to improve the employees' psychological and/or physical capacity, enabling them to successfully RTW. The involved professionals of all interventions were most often physiotherapists or consisted of a multidisciplinary team. The duration of the interventions ranged from 3 days till 3 months, with a median of 4 weeks.
- The review authors did not perform any meta-analysis due to heterogeneity of the outcome measures.

Results in detail:

- The evidence is very uncertain about the effect of psycho-educational interventions, physical training and multidisciplinary interventions on RTW at 1 year when compared with usual care in patients with chronic pain. The evidence is very uncertain about the effect of vocational interventions on RTW at 1 year when compared with multidisciplinary interventions in patients with chronic pain.
- Detailed descriptions of all outcomes for each different RCT can be found in appendix 3.

Inflammatory arthritis

- The overall confidence of the quality of the review (4) was determined as low. In total, data from 3 RCTs that were included in this review were relevant for our research question. The risk of bias was low for all three RCTs. The total sample consisted of 224 people with inflammatory arthritis (including rheumatoid arthritis, psoriatic arthritis and axial spondyloarthritis).
- In all RCTs, job loss prevention interventions were compared to usual care. These interventions contained components from educational and vocational interventions. One RCT involved a multidisciplinary team and the other two RCTs involved an occupational therapist. The duration of the interventions was between 1 and 6 months.
- The review authors did not perform any meta-analysis due to heterogeneity of the outcome measures.

Results in detail:

One study investigated job loss at 6 and 9 months. Job loss prevention interventions may result in little to no difference in job loss at 6 (RR 0.97, 95% CI 0.90 to 1.03) and 9 months (RR 0.93, 95% CI 0.84 to 1.023) when compared with usual care in patients with inflammatory arthritis. The evidence is very uncertain about the effect of job loss prevention intervention on absenteeism when compared with usual in patients with inflammatory arthritis.

Pregnant women with complaints of the lumbopelvic region

- The overall confidence of the quality of the review (5) was determined as moderate. Two RCTs that were included in this review were relevant for our research question. The risk of bias of these RCTs was low. The interventions concerned both physical training interventions compared with usual care. The total sample consisted of 1156 pregnant women with lumbopelvic pain. In both RCTs the intervention was led by a physiotherapist and had a duration of 12 weeks. The components of both interventions were aerobic training and strength training aiming to reduce sickness absence due lumbopelvic pain during pregnancy.
- The review authors did not perform any meta-analysis due to heterogeneity of the outcome measures.

Results in detail:

- The evidence is very uncertain about the effect of physical training on reducing sickness absence due to lumbopelvic pain when compared with usual care in healthy pregnant women at 32-36 weeks of gestation (for each RCT respectively, RR 0.84, 95% CI 0.56 to 1.28, and RR 0.73 95% CI 0.58 to 0.94).

Spinal cord injury

- The overall confidence of the quality of the review (6) was determined as critically low. Data from 1 RCTs that was included in this review was relevant for our research question. The risk of bias was low at one year follow up and considered high at two years follow up due to a large loss in follow-up. The total sample consisted of 201 people with spinal cord injury which had been unemployed for several years. On average 12.4 years post-injury the participants were enrolled in a vocational

intervention which followed the principles of the individual placement and support model coordinated by a vocational rehabilitation counselor.

Results in detail:

- Supported employment may increase work participation at one year follow-up (RR 3.5, 95% CI 1.7 to 7.2) when compared to usual care in unemployed people spinal cord injury. The evidence is unclear about the effect at two years.

Traumatic brain injury

- The overall confidence of the quality of the review (7) was determined as moderate. In total, data from 4 RCTs that were included in this review were relevant for our research question. The risk of bias was low in three RCTs and high in one. The total sample consisted of 604 people with traumatic brain injury. The severity differed between the RCTs and was mild-to-moderate or moderate-to-severe. Except for one RCT, all RCTs reported on war veterans.
- All interventions involved cognitive rehabilitation which aimed to improve overall performance of people with traumatic brain injury by improving specific cognitive aspects such as memory, visuospatial abilities, apraxia and aphasia. Four different comparisons with either no treatment, conventional treatment, another cognitive strategy or hospital-based versus home-based were made. All interventions took place in the recovery phase. They involved an interdisciplinary team, a psychiatric nurse or an employment specialist. The duration was 20 days to 16 weeks.
- The review authors did not perform any meta-analysis due to heterogeneity of the outcome measures.

Results in detail:

- Each comparison involved one RCT.
- The evidence is very uncertain about the effect of cognitive rehabilitation on RTW in short term (14 weeks) when compared with no treatment (RR 1.43, 95% CI 0.87 to 2.33) in patients with traumatic brain injury.
- Cognitive rehabilitation may result in little to no difference in RTW in medium term (6 months) when compared with conventional treatment (RR 0.95, 95% CI 0.85 to 1.05) in patients with traumatic brain injury.
- Hospital-based cognitive rehabilitation likely results in little to no difference in RTW in long term (2 years) when compared with a home program in patients with traumatic brain injury.
- Cognitive rehabilitation likely results in little to no difference in RTW in medium term (1 year) when compared with another cognitive strategy (RR 1.10, 95% CI 0.83 to 1.46) in patients with traumatic brain injury.

Quality of evidence of the literature

Cancer

- For psycho-educational interventions compared to usual care the level of evidence regarding the outcome measure proportion of participants RTW at 12 months was downgraded by one level because of study limitations (risk of bias).
- For vocational interventions compared to usual care the level of evidence regarding the outcome measure proportion of participants RTW at 12 months was downgraded by three levels because of study limitations (risk of bias); data was available from only one RCT with small numbers of included patients (imprecision).
- For physical interventions compared to usual care the level of evidence regarding the outcome measure proportion of participants RTW at 12 months was downgraded by one level because of the number of included patients (imprecision).
- For multidisciplinary interventions compared to usual care the level of evidence regarding the outcome measure proportion of participants RTW at 12 months was downgraded by one level because of study limitations (risk of bias).

Coronary heart disease

- For psychological interventions compared to usual care the level of evidence regarding the outcome measure RTW in medium term (6 months to 1 year) was downgraded by three levels because of study limitations (risk of bias); substantial heterogeneity (inconsistency); pooled confidence interval is wide and includes either a possible appreciable harm or benefit (imprecision); publication bias.
- For work-directed counseling compared to usual care the level of evidence regarding the outcome measure RTW in medium term (6 months to 1 year) was downgraded by two levels because of study substantial heterogeneity (inconsistency); confidence interval is wide and includes either a possible appreciable harm or benefit (imprecision).
- For physical conditioning interventions compared to usual care the level of evidence regarding the outcome measure RTW in medium term (6 months to 1 year) was downgraded by two levels because of study limitations (risk of bias); publication bias.
- For combined interventions compared to usual care the level of evidence regarding the outcome measure RTW in medium term (6 months to 1 year) was downgraded by two levels because of study limitations (risk of bias).

Chronic pain (including musculoskeletal and low back pain)

- For psycho-educational interventions compared to usual care the level of evidence regarding the outcome measure RTW at 1 year was downgraded by three levels because of substantial heterogeneity (inconsistency); only a narrative description was provided by the review authors (imprecision).
- For vocational interventions compared to multidisciplinary interventions the level of evidence regarding the outcome measure RTW at 1 year was downgraded by three levels because of study limitations (risk of bias); only one study reported on this outcome (inconsistency); confidence interval is wide and includes either a possible appreciable harm or benefit (imprecision).
- For physical training interventions compared to usual care the level of evidence regarding the outcome measure RTW at 1 year was downgraded by three levels because of study limitations (risk of bias); only one study reported on this outcome (inconsistency); confidence interval is wide and includes either a possible appreciable harm or benefit (imprecision).
- For multidisciplinary interventions compared to usual care the level of evidence regarding the outcome measure RTW at 1 year was downgraded by three levels because of study limitations (risk of bias); only one study reported on this outcome (inconsistency); confidence interval is wide and includes either a possible appreciable harm or benefit (imprecision).

Inflammatory arthritis

- The level of evidence regarding the outcome measure job loss was downgraded by two levels because data was available from only one RCT with small numbers of included patients (imprecision).

Pregnant women

- The level of evidence regarding the outcome measure sickness absence at 32-36 weeks of gestation was downgraded by three levels because of no meta-analysis

performed by the review authors due to heterogeneity (inconsistency); applicability, in one study primary care was present among the sample (bias due to indirectness); no significant results (imprecision).

Spinal cord injury

- The level of evidence regarding the outcome measure proportion of participants RTW at 12 months was downgraded by two levels because data was available from only one RCT with small numbers of included patients (imprecision).

Traumatic brain injury

- For cognitive rehabilitation on when compared with no treatment the level of evidence regarding the outcome measure RTW in short term (14 weeks) was downgraded by three levels because of study limitations (risk of bias); a wide confidence interval which includes either a possible appreciable harm or benefit and a small sample size (imprecision).
- For cognitive rehabilitation compared with conventional treatment the level of evidence regarding the outcome measure in RTW in medium term (6 months) was downgraded by two levels because of a wide confidence interval which includes either a possible appreciable harm or benefit and a small sample size (imprecision).
- For hospital-based cognitive rehabilitation compared with a home the level of evidence regarding the outcome measure RTW in long term (2 years) was downgraded by one level because of a small sample size (imprecision).
- For cognitive rehabilitation compared with another cognitive strategy the level of evidence regarding the outcome measure RTW in medium term (1 year) was downgraded by one level because of a wide confidence interval which includes either a possible appreciable harm or benefit (imprecision).

Conclusions

Generic

	<p>No systematic review was found about the effects of interventions in a generic clinical patient population (i.e. not disease-specific) for clinicians that aim to help patients with (returning/maintaining) work.</p> <p><i>Sources: (Kluit, 2022; Effectiveness of interventions to enhance work participation for patients in clinical health care: a systematic review of reviews)</i></p>
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Cancer

Moderate GRADE	<p>Psycho-educational interventions probably results in little to no difference in RTW at 12 months when compared with usual care in cancer patients.</p> <p><i>Sources: (de Boer, 2024; Interventions to enhance return-to-work for cancer patients)</i></p>
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Moderate GRADE	<p>Physical interventions likely increase RTW at 12 months when compared with usual care in cancer patients.</p> <p><i>Sources: (de Boer, 2024; Interventions to enhance return-to-work for cancer patients)</i></p>
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Moderate GRADE	<p>Multidisciplinary interventions likely increase RTW at 12 months when compared with usual care in cancer patients.</p> <p><i>Sources: (de Boer, 2024; Interventions to enhance return-to-work for cancer patients)</i></p>
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Coronary heart disease

Very low GRADE	<p>The evidence is very uncertain about the effect of psychological intervention on RTW in medium term (6 months to 1 year) when compared with usual care in patients with coronary heart disease.</p> <p><i>Sources: (Hegewald, 2019; Interventions to support return to work for people with coronary heart disease (Review))</i></p>
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Low GRADE	<p>Work-directed counseling may result in little to no difference in RTW in medium term (6 months to 1 year) when compared with usual care in patients with coronary heart disease.</p> <p><i>Sources: (Hegewald, 2019; Interventions to support return to work for people with coronary heart disease (Review))</i></p>
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Low GRADE	<p>Physical interventions may result in little to no difference in RTW in medium term (6 months to 1 year) when compared with usual care in patients with coronary heart disease.</p> <p><i>Sources: (Hegewald, 2019; Interventions to support return to work for people with coronary heart disease (Review))</i></p>
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Low GRADE	<p>Combined interventions may result in little to no difference in RTW in medium term (6 months to 1 year) when compared with usual care in patients with coronary heart disease.</p> <p><i>Sources: (Hegewald, 2019; Interventions to support return to work for people with coronary heart disease (Review))</i></p>
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Chronic pain (including musculoskeletal and low back pain)

Very low GRADE	<p>The evidence is very uncertain about the effect of psycho-educational interventions on work participation when compared with usual care or a brief intervention in patients with chronic pain.</p> <p><i>Sources: (Wegrzynek, 2020; Return to work interventions for chronic pain: a systematic review; GRADE assessment by L Kluit)</i></p>
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Very low GRADE	<p>The evidence is very uncertain about the effect of vocational interventions on work participation when compared with multidisciplinary interventions (usual care) in patients with chronic pain.</p>
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	<i>Sources: (Wegrzynek, 2020; Return to work interventions for chronic pain: a systematic review; GRADE assessment by L Kluit)</i>
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Very low GRADE	The evidence is very uncertain about the effect of physical training interventions on work participation when compared with usual care in patients with chronic pain. <i>Sources: (Wegrzynek, 2020; Return to work interventions for chronic pain: a systematic review; GRADE assessment by L Kluit)</i>
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Very low GRADE	The evidence is very uncertain about the effect of multidisciplinary interventions on work participation when compared with usual care in patients with chronic pain. <i>Sources: (Wegrzynek, 2020; Return to work interventions for chronic pain: a systematic review; GRADE assessment by L Kluit)</i>
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Inflammatory arthritis

Low GRADE	Job loss prevention interventions may result in little to no difference in job loss at 6 and 9 months compared with usual care in patients with inflammatory arthritis. <i>Sources: (Madsen, 2021; A systematic review of job loss prevention interventions for persons with inflammatory arthritis; GRADE assessment by L Kluit)</i>
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Pregnant women

Very low GRADE	The evidence is very uncertain about the effect of physical training on work participation when compared with usual care in healthy pregnant women. <i>Sources: (Pedersen, 2018; Systematic review of interventions targeting sickness absence among pregnant women in healthcare settings and workplaces; GRADE assessment by L Kluit)</i>
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Spinal cord injury

Low GRADE	Supported employment may increase work participation at one year follow-up when compared to usual care in unemployed people spinal cord injury. <i>Sources: (Roels, 2016; Hospital- and community-based interventions enhancing (re)employment for people spinal cord injury: a systemic review; GRADE assessment by L Kluit)</i>
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Traumatic brain injury

Very low GRADE	The evidence is very uncertain about the effect of cognitive rehabilitation on RTW in short term (14 weeks) when compared with no in patients with traumatic brain injury.
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	<i>Sources: (Kumar, 2017; Cognitive rehabilitation for adults with traumatic brain injury to improve occupational outcomes (Review))</i>
Low GRADE	<p>Cognitive rehabilitation may result in little to no difference in RTW in medium term (6 months) when compared with conventional treatment in patients with traumatic brain injury.</p> <p><i>Sources: (Kumar, 2017; Cognitive rehabilitation for adults with traumatic brain injury to improve occupational outcomes (Review))</i></p>
Moderate GRADE	<p>Hospital-based cognitive rehabilitation likely results in little to no difference in RTW in long term (2 years) when compared with a home program in patients with traumatic brain injury.</p> <p><i>Sources: (Kumar, 2017; Cognitive rehabilitation for adults with traumatic brain injury to improve occupational outcomes (Review))</i></p>

Moderate GRADE	<p>Cognitive rehabilitation likely results in little to no difference in RTW in medium term (1 year) when compared with another cognitive strategy in patients with traumatic brain injury.</p> <p><i>Sources: (Kumar, 2017; Cognitive rehabilitation for adults with traumatic brain injury to improve occupational outcomes (Review))</i></p>
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Appendices

Appendix 1 Characteristics and PICO elements of included reviews

Appendix 2 Evidence table

Appendix 3 Risk of Bias table AMSTAR 2

Appendix 4. Table of excluded studies

Appendix 5. Cochrane Database of Systematic Reviews (Ovid) search strategy

Appendix 6. MEDLINE (Ovid) search strategy

Appendix 7. EMBASE (Ovid) search strategy

Appendix 8. CINAHL (EBSCOhost) search strategy

Appendix 9. Prior knowledge of existing reviews and ASreview settings

Appendix 1 Characteristics and PICO elements of included reviews

de Boer 2022		
Aim of the review	To evaluate the effectiveness of interventions aimed at enhancing return to work (RTW) in cancer patients compared to alternative programs including usual care or no intervention	
Date of last search	18 August 2021	
Cochrane review	Yes	
Used RoB tool	Each included RCT was assessed within ten domains of risk of bias: (i) adequacy of sequence generation; (ii) allocation concealment; (iii) blinding; (iv) how incomplete outcome data (drop-outs) were addressed; (v) use of intention-to-treat (ITT) analysis; (vi) evidence of selective outcome reporting; (vii) similarity of baseline characteristics; (viii) similarity or avoidance of cointerventions; (ix) acceptability of compliance; (x) similarity of the timing of outcome assessments. For cluster-RCTs, five additional domains of risk of bias were assessed (Higgins 2011): 1) recruitment bias (differential participant recruitment in clusters for different interventions); 2) baseline imbalance; 3) loss of clusters; 4) incorrect analysis; and 5) comparability with individually randomized trials.	
PICO elements	Population	Adults (≥ 18 years old) who had been diagnosed with any type of cancer and were in paid employment (employee or self-employed) at the time of diagnosis
	Interventions	<ul style="list-style-type: none"> - Interventions that have returned to work as primary outcome - Interventions may have been carried out either with an individual or in a group - Intervention should primarily focus on different factors which influence RTW, such as coping (in psycho-educational interventions), workplace adjustments (in vocational interventions), physical exercises (in physical interventions), or a combination of those factors (in multidisciplinary interventions). As such, interventions were divided in: psycho-educational, vocational, physical and multidisciplinary - Medical interventions (e.g. surgery or pharmaceutical) were excluded

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	Comparisons	Usual care or no intervention
	Outcomes	<p><i>Main outcomes:</i></p> <p>RTW, which included return to either full- or partial-time employment to the same or a reduced role, and to either the previous job or any new employment</p> <p><i>Additional outcomes:</i></p> <p>Quality of life (QoL), including overall QoL, physical QoL and emotional QoL</p>
	Setting	Clinical setting or in the community
Number of included studies		16 RCTs (15 included in our review)
Hegewald 2019		
Aim of the review		To assess the effects of person- and work-directed interventions aimed at enhancing return to work in patients with coronary heart disease (CHD) compared to usual care or no intervention
Date of last search		October 2018
Cochrane review		Yes
Used Risk of Bias tool		'Risk of bias' tool recommended by Cochrane
PICO elements	Population	- Adults (18 years and older) who had been diagnosed with CHD, who experienced a myocardial infarction (MI), of a coronary revascularization procedure like coronary artery bypass surgery (CABG) or percutaneous coronary angioplasty (PCI) as well as people with angina pectoris or angiographically-defined CHD.

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	<ul style="list-style-type: none"> - Participants should have been employed (either in paid employment or self-employment) at the time of diagnosis and on sick leave or otherwise not working at the time of the study because of CHD. - Within each study >80% had to fulfill these criteria
Interventions	<ul style="list-style-type: none"> - Work-directed interventions: these can include changes in the work environment, work tasks or working methods such as in a stepwise occupational reintegration (SOR) program - Psychological interventions: all psychological interventions, such as counseling and health education; screening and treatment of comorbid psychological disorders; stress management and relaxation training; social support; gender-specific interventions undertaken by any qualified professional (e.g. psychologist) - Physical conditioning interventions: any supervised or unsupervised inpatient, outpatient, or community- or homebased intervention including some form of physical training or physical exercises that is applied to cardiac rehabilitation patient population - Combined interventions: any combination of the above
Comparisons	No intervention (usual care as described in the study report)
Outcomes	<p><i>Main outcomes:</i></p> <p>Return to work (including full- or part-time employment; to previous job; to the same role or with changes in work status, such as changes in function)</p> <p><i>Additional outcomes:</i></p> <ul style="list-style-type: none"> - Health-related quality of life within the return-to-work process - Number of participants who returned to work and who were still working after an extended period of one and five years - Adverse effects

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	Setting	Not specified
	Number of included studies	39 RCTs, of which 1 cluster-RCT and of which 34 in quantitative synthesis (meta-analysis) (34 included in our review)
Kumar 2017		
	Aim of the review	To evaluate the effects of cognitive rehabilitation on RTW, independence in daily activities, community integration (occupational outcomes) and quality of life in people with traumatic brain injury, and to determine which cognitive rehabilitation strategy better achieves these outcomes
	Date of last search	30 March 2017
	Cochrane review	Yes
	Used RoB tool	Cochrane risk of bias tool
PICO elements	Population	<ul style="list-style-type: none"> - Adults (aged 16 years and above) who had sustained a traumatic brain injury of any clinical severity - Studies who also included participants with non-traumatic etiology were excluded
	Interventions	Any type of non-pharmacological rehabilitation intervention aimed at improving cognitive functions
	Comparisons	Non-intervention controls or alternative interventions
	Outcomes	<p><i>Main outcomes:</i></p> <ul style="list-style-type: none"> - Return to work - Independence in ADL measured using standard tools (e.g. Functional Independence Measure (FIM)) or the status of independent living (or both) - Community integration measured using standard tools (e.g. Community Integration Questionnaire)

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
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		<i>Additional outcomes:</i> Quality of life measured using standard tools (e.g. Perceived Quality of Life (PQOL) scale)
	Setting	Hospital-rehabilitation and home-based rehabilitation
Number of included studies		9 RCTs (4 included in our review)
Madsen 2021		
Aim of the review		To get an overview of the evidence to date of the effect of job loss prevention interventions that aim to improve work ability or decrease absenteeism and job loss in persons with inflammatory arthritis
Date of last search		February 2021
Cochrane review		No
Used RoB tool		Cochrane Risk of Bias tool
PICO elements	Population	- Adults with inflammatory arthritis, encompassing rheumatoid arthritis, psoriatic arthritis, and axial spondyloarthritis (including Morbus Bechterew and Ankylosing spondylitis) - Adults of working age (18-65 years)
	Interventions	Job loss prevention interventions that contained at least two of the following criteria: - Interventions targeting work challenges including trying out different strategies and adaptations to improve specific work situations - Interventions directed at the individual person, including job coaching and training, vocational counseling, empowerment for work or self-management

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		- Interventions directed at the work environment, including work adaptations, ergonomic measures, job accommodations or interventions targeted directly at the participants, supervisors or co-workers The above mentioned intervention strategies could be delivered as part of a multidisciplinary intervention
	Comparisons	- Usual care (including medical treatment as well as outpatient consultations with a doctor and/or nurse) - Receiving general oral or written information about living with a rheumatological disease
	Outcomes	<i>Main outcomes</i> - Work participation (e.g. work functioning and work ability) - Sickness absenteeism - Job loss
	Setting	Not specified; remark, only western countries were included (meaning all European countries, Australia/New Zealand, Canada, USA)
Number of included studies		6 RCTS (3 included in our review)
Pedersen 2018		
Aim of the review		To evaluate the effectiveness of interventions in healthcare settings and workplaces targeting sickness absence among pregnant woman
Date of last search		April 2017
Cochrane review		No
Used RoB tool		Critical appraisal instruments from the Joanna Briggs Institute
	Population	- Pregnant women at any gestational age.

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	<ul style="list-style-type: none"> - The population included pregnant women employed in private or public workplaces in all types of work. - No restrictions based on sociodemographic factors such as age, ethnicity, parity, socioeconomic factors or health-related factors.
Interventions	<ul style="list-style-type: none"> - Any intervention targeted at pregnant women defined as any initiative to retain pregnant women. - The review compared the effectiveness of interventions carried out in all kinds of
Comparisons	- Care as usual, no treatment, second intervention
Outcomes	<p><i>Main outcome:</i></p> <ul style="list-style-type: none"> - Sickness absence or absenteeism during pregnancy measured as number of sickness absence episodes and/or length of absence in days/weeks
Setting	<ul style="list-style-type: none"> - Workplace settings (workplace or vocational rehabilitation initiatives) - Healthcare settings (antenatal care, maternal care services, or consultations by general practitioners or midwives)
Number of included studies	5 RCTs in health care setting (2 included in our review)
Roels 2016	
Aim of the review	To identify interventions enhancing employment in the spinal cord injury (SCI) population and report the effect of the intervention on employment rate and duration
Date of last search	February to May 2014
Cochrane review	No
Used RoB tool	Cochrane Collaboration's risk of bias assessment tool

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PICO elements	Population	Have suffered SCI and be at least 16 years of age
	Interventions	Rehabilitation interventions enhancing employment following SCI
	Comparisons	Not defined
	Outcomes	<i>Main outcome:</i> Employment rate and duration of employment
	Setting	Hospital or community based
Number of included studies		2 RCTs (two references were from the same study); 5 case series, 1 retrospective cohort study, and 6 case studies (1 RCT included in our review)
Wegzwynek 2020		
Aim of the review		To analyze which tertiary RTW interventions may be useful in promoting RTW for people with chronic pain
Date of last search		October 2018
Cochrane review		No
Used RoB tool		Cochrane risk of bias tool
PICO elements	Population	- Workers over the age of 18 - Employed on any type of contract or self-employed - Signed off work for 4 weeks or longer due to chronic pain (defined as pain which persists for more than 3 months or beyond the expected healing time)
	Interventions	- Individual, tertiary RTW interventions (defined as reactive intervention, addressing problems already experienced by employees, and following a period of sickness absence)

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	Comparisons	- Usual care or treatment as usual
	Outcomes	<p><i>Main outcome:</i></p> <p>Return to work, operationalized using any easily measurable ‘administrative’ criteria, such as work status, number of hours worked, time until RTW.</p> <p><i>Additional outcomes:</i></p> <ul style="list-style-type: none"> - Pain - Disability - Employee psychosocial/affective factors
	Setting	Not a priori determined by the authors
Number of included studies		13 RCTs (10 included in our review)
Abbreviates: RCT, randomized controlled trial; RTW, return to work		

Appendix 2 Evidence table

Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
Cancer									
Psycho-educational interventions vs usual care	Proportion of participants RTW at 12 months	de Boer 2022	Lepore 2003 Purcell 2011 Hass 2017 Singer 2018	625 per 1000	681 per 1000 (593 to 774)	RR 1.09 (0.95 to 1.24)	569 (4)	Moderate ¹	
Physical interventions vs usual care	Proportion of participants RTW at 12 months	de Boer 2022	Burgio 2006 Rogers 2009 van Waart 2015 Jong 2018 Mijwel 2019	627 per 1000	771 per 1000 (677 to 871)	RR 1.23 (1.08 to 1.39)	462 (5)	Moderate ⁸	One study (Rogers 2009, 28 participants) was in a community setting
Multidisciplinary interventions vs usual care	Proportion of participants RTW at 12 months	de Boer 2022	Maguire 1983 Berglund 1994 Hubbard 2013	625 per 1000	776 per 1000 (694 to 844)	RR 1.24 (1.11 to 1.35)	505 (6)	Moderate ¹	One study (Grunsfeld 2019, 47 participants) set place a home and was guided by researcher. One study (Hubbard 2013, 18

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
			Tamminga 2013 Grunfeld 2019 Zaman 2021						participants) took partly place in a community setting
Coronary heart disease									
Psychological interventions (including health education) vs usual care	Proportion of participants RTW in short term (up to 6 months)	Hegewald 2019	Rahe 1979 Horlick 1984 PRECOR 1991 Petrie 2002 Broadbant 2009 Figueiras 2017	63 per 100	68 per 100 (53 to 88)	RR 1.08 (0.84 to 1.40)	375 (6)	Very low ^{1,2,5,9}	Heterogeneity could not completely be explained
	Proportion of participants RTW in medium term (6 months to 1 year)	Hegewald 2019	Pozen 1977 Rahe 1979 Fielding 1980 Stern 1983	63 per 100	78 per 100 (59 to 100)	RR 1.24 (0.95 to 1.63)	316 (7)	Very low ^{1,2,5,9}	Heterogeneity could not completely be explained

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
			Horlick 1984 Haerem 2000 Figueiras 2017						
	Proportion of participants RTW in long term (>1 to <5 years)	Hegewald 2019	Rahe 1979 PRECOR 1991 Hansson 2009	74 per 100	81 per 100 (65 to 99)	RR 1.09 (0.88 to 1.34)	239 (3)	Low ^{1,5}	
	Days until RTW	Hegewald 2019	Fielding 1980 Hanssen 2009	-	Mean difference in RTW was -9.7 days (-35.09 to 15.69)	-	125 (2)	Very low ^{1,2,3}	Heterogeneity could not completely be explained
Work-directed counseling vs usual care	Proportion of participants RTW in short term (up to 6 months)	Hegewald 2019	Pfund 2001	41 per 52	40 per 48	RR 1.06 (0.87 to 1.28)	100 (1)	Low ^{3,8}	No meta-analysis performed by review authors
	Proportion of participants RTW in medium term (6 months to 1 year)	Hegewald 2019	Picard 1989 Pilote 1992	88 per 102 87 per 92	91 per 99 82 per 95	RR 1.07 (0.97 to 1.17) RR 0.91 (0.83 to 1.00)	201 (1) 187 (1)	Low ^{2,7}	No meta-analysis performed by review authors

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
	Proportion of participants RTW in long term (>1 to <5 years)	Hegewald 2019	Burgess 1987	67 per 76	68 per 77	RR 1.00 (0.89 to 1.12)	153 (1)	Low ^{3,7}	No meta-analysis performed by review authors
	Days until RTW	Hegewald 2019	Burgess 1987 Picard 1989 Pilote 1992 Pfund 2001	-	Mean difference in RTW was -7.52 (-20.07 to 5.03)	-	618 (4)	Low ^{2,6}	Heterogeneity could not completely be explained
	Adverse events: Cardiac death	Hegewald 2019	Picard 1989 Pilote 1992	2 per 100	2 per 100 (0 to 8)	RR 1.00 (0.19 to 5.39)	388 (2)	Moderate ⁵	
Physical conditioning vs usual care	Proportion of participants RTW in short term (up to 6 months)	Hegewald 2019	Andersen 1981 Worcester 1993 Froelicher 1994 Dugmore 1999	68 per 100	80 per 100 (66 to 96)	RR 1.17 (0.97 to 1.41)	460 (4)	Very low ^{1,2,5}	Heterogeneity could not completely be explained
	Proportion of participants RTW in medium term	Hegewald 2019	Stern 1983 Marra 1985	75 per 100	82 per 100 (74 to 90)	RR 1.09 (0.99 to 1.20)	510 (5)	Low ^{1,9}	

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
	(6 months to 1 year)		Worcester 1993 Holmbäck 1994 Dugmore 1999						
	Proportion of participants RTW in long term (>1 to <5 years)	Hegewald 2019	Maeder 1977 Andersen 1981	64 per 100	67 per 100 (53 to 84)	RR 1.04 (0.82 to 1.30)	156 (2)	Low ¹	
	Proportion of participants RTW in extended long term (>5 years)	Hegewald 2019	Dugmore 1999	37 per 100	68 per 100 (47 to 99)	RR 1.83 (1.26 to 2.66)	119 (1)	Low ³	
	Days until RTW	Hegewald 2019	Maeder 1977 Marra 1985 Bethell 1990 Holmbäck 1994	-	Mean difference in RTW was -7.86 days (-29.46 to 13.74)	-	430 (4)	Low ^{1,2}	Heterogeneity could not completely be explained
	Adverse events: Cardiac death	Hegewald 2019	Marra 1985 Dugmore 1999	8 per 100	8 per 100 (3 to 24)	RR 1.00 (0.35 to 2.80)	285 (2)	Moderate ⁵	

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
	Adverse events: Reinfarctions	Hegewald 2019	Marra 1985 Holmbäck 1994	5 per 81 2 per 34	9 per 80 0 per 35	RR 0.70 (0.26 to 1.88)	230 (2)		
Combined interventions vs usual care	Proportion of participants RTW in short term (up to 6 months)	Hegewald 2019	Rivas 1988 PRECOR 1991 Bertie 1991 Higgins 2001	39 per 100	61 per 100 (48 to 78)	RR 1.56 (1.23 to 1.98)	395 (4)	Low ^{1,5}	One study was not in a hospital setting (home-based)
	Proportion of participants RTW in medium term (6 months to 1 year)	Hegewald 2019	Erdman 1986 Vermeulen 1988 Rivas 1988 Oldridge 1991 Froelicher 1994 Lidell 1996 Engblom 1997	72 per 100	76 per 100 (72 to 81)	RR 1.06 (1.00 to 1.13)	992 (10)	Low ¹⁰	One study was not in a hospital setting (home-based)

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
			Hofman-Bang 1999 Higgins 2001 Andersson 2010						
	Proportion of participants RTW in long term (>1 to <5 years)	Hegewald 2019	Bengtsson 1983 PRECOR 1991 Bertie 1991 Engblom 1997 Hofman-Bang 1999 Andersson 2010	53 per 100	60 per 100 (51 to 72)	RR 1.14 (0.96 to 1.37)	491 (6)	Very low ^{5,10}	
	Proportion of participants RTW in extended long term (>5 years)	Hegewald 2019	Erdman 1986 Lidell 1996 Engblom 1997 Andersson 2010	37 per 100	41 per 100 (32 to 51)	RR 1.09 (0.86 to 1.38)	350 (4)	Very low ^{5,10}	

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
	Days until RTW	Hegewald 2019	Bengtsson 1983 Higgins 2001	-	Mean difference in RTW was -40.77 days (-67.19 to -14.35)	-	181 (2)	Moderate ²	- Heterogeneity could not completely be explained - One study was not in a hospital setting (home-based)
	Adverse events: Cardiac death	Hegewald 2019	Bengtsson 1983 Erdman 1986 Rivas 1988 Hofman-Bang 1999	6 per 52 4 per 40 1 per 102 0 per 46	6 per 64 0 per 40 1 per 53 1 per 41	RR 1.43 (0.59 to 3.51)	438 (4)		
	Adverse events: Reinfarctions	Hegewald 2019	Bengtsson 1983 Erdman 1986 Vermeulen 1988	10 per 100	6 per 100 (2 to 15)	RR 0.56 (0.23 to 1.43)	265 (3)	Moderate ⁵	
Chronic pain (including musculoskeletal and low back pain)									
Psycho-educational intervention vs brief	Proportion of participants RTW at 3 months	Wegrzynek 2020	Reme 2016	-	-	Significant higher proportion of participant RTW in brief	203 (1)	Very low ^{3,12}	Comparator of Reme 2016 is brief intervention group

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
intervention or usual care						intervention group			
	Proportion of participants RTW at 12 months	Wegrzynek 2020	Brendbekken 2016	-	-	No difference	284 (1)	Very low ^{2,12}	Comparator of Reme 2016 is brief intervention group
			Reme 2016	60 per 100	50 per 100	No difference	203 (1)		
	Proportion of participants RTW at 24 months	Wegrzynek 2020	Brendbekken 2016	-	-	RR 1.42 (0.87-2.33, p=0.17)	284 (1)	Low ^{3,7}	
	Absence from work at 18 months	Wegrzynek 2020	Jensen 2001	-	-	No difference	97 (1)	Very low ^{1,3,7}	
Risk of early retirement at 18 months	Wegrzynek 2020	Jensen 2001	-	-	OR 0.1 (0.0-0.6)	97 (1)	Very low ^{1,3,7}		
Vocational intervention vs	Proportion of participants RTW at 12 months	Wegrzynek 2020	Myhre 2014	152 per 204	142 per 209	RR 1.17 (0.85 to 1.60)	413 (1)	Very low ^{1,3,7}	

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
multidisciplinary intervention (control)	Days until RTW	Wegrzynek 2020	Myhre 2014	158 days	161 days	p = 0.45	413 (1)	Very low ^{1,3,7}	
Physical training intervention vs usual care	Proportion of participants RTW at 12 months	Wegrzynek 2020	Mitchel 1994	79 per 100	78 per 100	No difference	542 (1)	Very low ^{1,3,7}	
	Days of work disability compensation payment at 6 months	Wegrzynek 2020	Heinrich 2009	153 days (range 48-181)	181 days (range 119-184)	HR 0.5 (0.3 to 0.9, p=0.03)	103 (1)	Very low ^{1,3,8}	
	Days of work disability compensation payment at 12 months	Wegrzynek 2020	Heinrich 2009	165 days (range 48-365)	228 days (range 122-365)	HR 0.7 (0.4 to 1.1, p=0.12)	103 (1)	Very low ^{1,3,7}	
	Absence from work at 18 months	Wegrzynek 2020	Jensen 2001	-	-	No difference	102 (1)	Very low ^{1,3,12}	
	Risk of early retirement at 18 months	Wegrzynek 2020	Jensen 2001	-	-	OR 0.1 (0.0 to 0.8)	102 (1)	Very low ^{1,3,12}	

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Autorisatiefase februari 2024

Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
Multidisciplinary intervention vs usual care	Proportion of participants RTW at 12 months	Wegrzynek 2020	Haland Haldorsen 1998	53 per 100	52 per 100	RR 1.02 (0.76 to 1.37)	469 (1)	Very low ^{1,3,7}	
	Proportion of participants RTW at 14 months	Wegrzynek 2020	Haland Haldorsen 2002	-	-	Light and extensive interdisciplinary interventions increase the possibility of RTW by about 10% (I1 vs C $\chi^2 = 3.6$, df = 1, p=0.05; I2 vs C $\chi^2 = 4.6$, df = 1, p<0.04)	I1: 491 (1) I2: 432 (1)	Low ^{1,3}	
	Proportion of participants RTW at 9-27 months	Wegrzynek 2020	Corey 1996	-	-	Significant difference between I and C for low back pain (t=3.28, p=0.002) No differences between I and C	200 (1)	Very low ^{1,3,12}	

Bijlage Effectiveness of interventions that aim to improve work participation for patients within clinical health care as compared to care as usual or other interventions that focus on work participation

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Autorisatiefase februari 2024

Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
						for non-back pain (t=-.07, p=0.95)			
	Days of work disability compensation payment at 6 months	Wegrzynek 2020	Heinrich 2009	137 days (range 48 to 181)	133 days (range 70 to 183)	HR 0.8 (0.5 to 1.3, p=0.43)	151 (1)	Very low ^{1,3,7}	
	Days of work disability compensation payment at 12 months	Wegrzynek 2020	Heinrich 2009	137 days (range 48 to 365)	148 days (range 75 to 343)	HR 0.9 (0.6 to 1.4, p=0.72)	151 (1)	Very low ^{1,3,7}	
	Days of sick leave at 12 months	Wegrzynek 2020	Lambeek 2010	175 (IQR 51 to 164)	82 (IQR 51 to 164)	Mann-Whitney U test, p=0.003	134 (1)	Low ^{1,3}	
	Absence from work at 18 months	Wegrzynek 2020	Jensen 2001	-	-	No difference	111 (1)	Very low ^{1,3,12}	
Inflammatory arthritis									
	Job loss at 6, 12, 18 and 24 months	Madsen 2021	de Buck 2005	Job loss occurred in control group	Job loss occurred in intervention group	- No significant difference in job loss between I	140 (1)	Very low ^{3,12}	

Bijlage Effectiveness of interventions that aim to improve work participation for patients within clinical health care as compared to care as usual or other interventions that focus on work participation

Generieke module Arbeidsparticipatie voor medische specialistische richtlijnen

Autorisatiefase februari 2024

Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
Job loss prevention interventions vs usual care						and C was identified at any time point - No statistically significant difference in trend between the 2 groups (interaction between time and intervention group: p = 0.13, main effect: p = 0.86) was observed over the entire period			
	Proportion of participants with job loss at 6 months	Madsen 2021	Hammond 2018	0 per 26	1 per 29	RR 0.97 (0.90 to 1.03)	55 (1)	Low ^{3,8}	
	Proportion of participants with	Madsen 2021	Hammond 2018	0 per 26	2 per 29	RR 0.93 (0.84 to 1.023)	55 (1)	Low ^{3,8}	

Bijlage Effectiveness of interventions that aim to improve work participation for patients within clinical health care as compared to care as usual or other interventions that focus on work participation

Generieke module Arbeidsparticipatie voor medische specialistische richtlijnen

Autorisatiefase februari 2024

Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
	job loss at 9 months								
	Absenteeism due to arthritis at 6 months (number of days with sickness absence)	Madsen 2021	Hammond 2018	13	12	No difference	55 (1)	Very low ^{3,12}	
	Absenteeism due to arthritis at 6 months (mean change of missed workdays per month)	Madsen 2021	Macedo 2009	0.63 (SD 4.86)	-2.80 (SD 6.18)	No significance p = 0.10	32 (1)	Very low ^{3,12}	
	Absenteeism due to arthritis at 9 months (number of days with sickness absence)	Madsen 2021	Hammond 2018	14	14	No difference	55 (1)	Very low ^{3,12}	
	Proportion of participants receiving disability benefits	Madsen 2021	de Buck 2005	At 6 months 4 per 59	At 6 months 14 per 66	p = 0.02, but the difference disappeared at 12 months	140 (1)	Very low ^{3,12}	

Bijlage Effectiveness of interventions that aim to improve work participation for patients within clinical health care as compared to care as usual or other interventions that focus on work participation

Generieke module Arbeidsparticipatie voor medische specialistische richtlijnen

Autorisatiefase februari 2024

Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
	at 6 and 12 months			At 12 months -	At 12 months -				
Pregnant women (with complaints of lumbopelvic region)									
Physical training vs usual care	Sickness absence at follow-up (32-36 weeks of gestation)	Pedersen 2018	Mørkved 2007	38 per 153	31 per 148	RR 0.84 (0.56 to 1.28)	301 (1)	Very low ^{2,4,7}	No meta-analysis performed by the review authors due to heterogeneity
			Stafne 2012	111 per 365	89 per 397	RR 0.73 (0.58 to 0.94)	762 (1)		
Spinal cord injury									
Supported employment vs usual care	Proportion of participants RTW at 12 months	Roels 2016	Ottomanelli 2012	8 per 100	26 per 100	RR 3.5 (1.7 to 7.2)	201 (1)	Low ¹¹	
	Proportion of participants RTW at 2 years	Roels 2016	Ottomanelli 2014	8 per 100	31 per 100	RR 4.1 (2.0 to 8.4)	201 (1)	Very low ^{1,11}	
Traumatic brain injury									

Bijlage Effectiveness of interventions that aim to improve work participation for patients within clinical health care as compared to care as usual or other interventions that focus on work participation

Generieke module Arbeidsparticipatie voor medische specialistische richtlijnen

Autorisatiefase februari 2024

Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
Cognitive rehabilitation vs no treatment	Proportion of participants RTW in short term (14 weeks)	Kumar 2017	Twamley 2014	278 per 1000	500 per 1000 (206 to 1000)	RR 1.80 (0.74 to 4.36)	50 (1)	Very low ^{1,13}	Sample consisted of war veterans with mild-to-moderate traumatic brain injury
Cognitive rehabilitation vs conventional treatment	Proportion of participants RTW in medium term (6 months)	Kumar 2017	Cicerone 2008	412 per 1000	589 per 1000 (358 to 959)	RR 1.43 (0.87 to 2.33)	68 (1)	Low ¹³	
Hospital-based cognitive rehabilitation vs home program	Proportion of participants RTW in long term (2 years)	Kumar 2017	Salazar 2000	943 per 1000	896 per 1000 (802 to 991)	RR 0.95 (0.85 to 1.05)	120 (1)	Moderate ⁸	Sample consisted of war veterans with moderate-to-severe traumatic brain injury
One cognitive strategy (cognitive didactic) vs another cognitive strategy (functional experiential)	Proportion of participants RTW in medium term (1 year)	Kumar 2017	Vanderploeg 2008	354 per 1000	389 per 1000 (294 to 516)	RR 1.10 (0.83 to 1.46)	366 (1)	Moderate ⁷	Sample consisted of war veterans with moderate-to-severe traumatic brain injury
*outcome data from review									
CI, confidence interval; RR, relative risk; RTW, return to work									

Bijlage Effectiveness of interventions that aim to improve work participation for patients within clinical health care as compared to care as usual or other interventions that focus on work participation

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Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
<p>GRADE Working Group grades of evidence; in bold we adopted the GRADE scores from the review authors</p> <p>High certainty: We are very confident that the true effect lies close to that of the estimate of the effect</p> <p>Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different</p> <p>Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect</p> <p>Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect</p>									
<p>¹ Downgraded one level due to risk of bias</p> <p>² Downgraded one level due to substantial heterogeneity</p> <p>³ Downgraded one level, because only one study reported on this outcome</p> <p>⁴ Downgraded one level due to indirectness (in one study primary care was present among the sample)</p> <p>⁵ Downgraded one level due to imprecision (pooled confidence interval is wide and includes either a possible appreciable harm or benefit)</p> <p>⁶ Downgraded one level due to imprecision (two of the four studies did not report the standard deviation)</p> <p>⁷ Downgraded one level due to imprecision (no significance or confidence interval is wide and includes either a possible appreciable harm or benefit)</p> <p>⁸ Downgraded one level due to imprecision (small sample size)</p> <p>⁹ Downgraded one level, because results of a funnel plot indicated possible publication bias</p>									

Intervention and comparison	Outcome	Systematic review	Studies	Assumed risk with comparator* (95% CI)	Assumed risk with intervention* (95% CI)	Relative effect (95% CI)	No of participants (studies)	Quality of evidence (GRADE)	Comment
¹⁰ Downgraded two levels due to risk of bias ¹¹ Downgraded two levels due to serious imprecision (small sample size from only one study) ¹² Downgraded two levels due to serious imprecision (only a narrative description was provided by the review authors) ¹³ Downgraded two levels due to serious imprecision (confidence interval is wide and includes either a possible appreciable harm or benefit and small sample size of only one study)									

Appendix 3 Table - Risk of Bias of included systematic reviews using AMSTAR 2

Included review	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9- RCT	Q9- NRSI	Q10	Q11- RCT	Q11- NRSI	Q12	Q13	Q14	Q15	Q16	Overall confidence	Remark
Cancer																				
Algeo 2021	++	+	-	-	-	-	-	-	++	n/a	-	++	n/a	-	-	++	-	++	Critically low	Excluded ¹
de Boer 2022	++	++	-	++	++	++	++	++	++	n/a	++	++	n/a	++	++	++	++	++	High	
Wilson 2022	++	++	-	++	++	++	-	+	++	++	-	-	-	++	-	++	-	++	Critically low	Excluded ²
Coronary heart disease																				
Hegewald 2019	++	++	++	++	++	++	++	++	++	n/a	++	++	n/a	++	++	++	++	++	High	
O'Brien 2018	-	+	-	-	++	++	-	-	++	n/a	-	-	n/a	-	-	-	-	++	Critically low	Excluded ³
Chronic pain (including musculoskeletal and low back pain)																				
Wegrzynek 2020	++	++	++	+	-	-	++	++	++	n/a	-	n/a	n/a	n/a	-	++	n/a	++	Moderate	
Ishimaru 2021	-	-	-	-	++	-	-	++	++	n/a	-	n/a	n/a	n/a	-	-	n/a	++	Critically low	Excluded ⁴
Inflammatory arthritis																				
Hoving 2014	-	+	-	++	++	++	++	++	++	n/a	-	n/a	n/a	n/a	++	++	n/a	++	Low	Excluded ⁵
Madsen 2021	++	-	-	-	++	-	-	++	++	n/a	-	n/a	n/a	n/a	++	++	n/a	++	Low	Update of Hoving 2014 with 3 additional studies

Bijlage Effectiveness of interventions that aim to improve work participation for patients within clinical health care as compared to care as usual or other interventions that focus on work participation

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Pregnant women																				
Pedersen 2018	++	-	-	-	++	++	-	++	+	n/a	-	n/a	n/a	n/a	++	++	n/a	++	Moderate	
Spinal cord injury																				
Roels 2016	-	-	++	-	++	++	-	+	++	++	-	n/a	n/a	n/a	++	-	n/a	-	Critically low	Only 1 RCT included of our interest
Traumatic brain injury																				
Kumar 2017	++	++	++	+	-	++	++	++	++	n/a	++	++	n/a	++	++	++	-	++	Moderate	
- Not met + Partially met ++ Fully met																				
¹ Based on critically low overall confidence and overlap of 6/9 studies with de Boer 2022 (of which two were excluded by de Boer 2022). Of the 3 remaining studies, one was in the wrong setting																				
² Based on critically low overall confidence and overlap of 6/8 studies with de Boer 2022 (of which one was excluded by de Boer 2022)																				
³ Based on critically low overall confidence and overlap of only 12/18 studies with Hegewald 2019																				
⁴ Based on critically low overall confidence and only 4/9 studies are within the right setting of which one overlapping study with Wegrzynek 2020, one is an workplace intervention, and one is guided by an occupation physician																				
⁵ Based on the availability of a more recent study with the same overall confidence																				
Q1 Did the research questions and inclusion criteria for the review include the components of PICO?																				
Q2 Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol?																				
Q3 Did the review authors explain their selection of the study designs for inclusion in the review?																				

<p>Q4 Did the review authors use a comprehensive literature search strategy?</p> <p>Q5 Did the review authors perform study selection in duplicate?</p> <p>Q6 Did the review authors perform data extraction in duplicate?</p> <p>Q7 Did the review authors provide a list of excluded studies and justify the exclusions?</p> <p>Q8 Did the review authors describe the included studies in adequate detail?</p> <p>Q9-RCT Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that were included in the review (for RCT)?</p> <p>Q9-NRSI Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that were included in the review (for NRSI)?</p> <p>Q10 Did the review authors report on the sources of funding for the studies included in the review?</p> <p>Q11-RCT If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results (for RCT)?</p> <p>Q11-NRSI If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results (for NRSI)?</p> <p>Q12 If meta-analysis was performed, did the review authors assess the potential impact of RoB in individual studies on the results of the meta-analysis or other evidence synthesis?</p> <p>Q13 Did the review authors account for RoB in individual studies when interpreting/ discussing the results of the review?</p> <p>Q14 Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review?</p> <p>Q15 If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?</p> <p>Q16 Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?</p> <p>n/a, not applicable; NRSI, Non-randomized studies of interventions; RCT, Randomized controlled trial</p>
<p>AMSTAR-2: critical item were Q1, Q4, Q8, Q9, Q11, Q12</p>

High confidence: Zero or one non-critical weakness

Moderate confidence: More than one non-critical weakness

Low confidence: One critical flaw with or without non-critical weaknesses

Critically low confidence: More than one critical flaw with or without non-critical weaknesses

Appendix 4a.

Studies awaiting classification

Cullen KL, Irvin E, Collie A, Clay F, Gensby U, Jennings PA, Hogg-Johnson S, Kristman V, Laberge M, McKenzie D, Newnam S, Palagyi A, Ruseckaite R, Sheppard DM, Shourie S, Steenstra I, Van Eerd D, Amick BC 3rd. Effectiveness of Workplace Interventions in Return-to-Work for Musculoskeletal, Pain-Related and Mental Health Conditions: An Update of the Evidence and Messages for Practitioners. *J Occup Rehabil.* 2018 Mar;28(1):1-15. doi: 10.1007/s10926-016-9690-x. PMID: 28224415; PMCID: PMC5820404.

Verhoef JAC, Bal MI, Roelofs PDDM, Borghouts JAJ, Roebroek ME, Miedema HS. Effectiveness and characteristics of interventions to improve work participation in adults with chronic physical conditions: a systematic review. *Disabil Rehabil.* 2022 Apr;44(7):1007-1022. doi: 10.1080/09638288.2020.1788180. Epub 2020 Jul 20. PMID: 32686963.

Appendix 4b. Table of excluded studies

Author and year	Reason for exclusion
Alexander 2019	No risk of bias assessment
Anderson 2017	Interventions no specific focus on work participation
Berger 2016	No work participation as outcome
Bilodeau 2017	No quantitative analysis of outcome
Bogaert 2022	Interventions no specific focus on work participation
Brasure 2013	Interventions no specific focus on work participation
Brouns 2019	No quantitative analysis of outcome
Canhete Pereira 2019	No quantitative analysis of outcome
Cocchiara 2018	Overview review
Cochrane 2016	Conference abstract (study excluded)
Cochrane 2017	No secondary or tertiary health care setting
de Boer 2015	Conference abstract (study included)
Desmeules 2016	No work participation as outcome
Donker-Cools 2016	No secondary or tertiary health care setting
Farragher 2020	No risk of bias assessment
Guo 2021	No risk of bias assessment

Gussenhoven 2013	No secondary or tertiary health care setting
Hoefsmit 2012	Setting unclear
Hou 2013	Update in 2013
Hou 2017	No studies included
Hunter 2017	No quantitative analysis of outcome
Johnson 2021	No quantitative analysis of outcome
Kamper 2014	Setting unclear
Kamper 2015	Duplicate (study excluded)
Kersey 2022	Interventions no specific focus on work participation
Knutti 2020	Overview review
Kowlakowsky-Hayner 2012	No RCTs
Kudre 2020	No RCTs
Laires 2017	No risk of bias assessment
Lefever 2018	Workplace interventions
Levack 2021	Overview review
Li 2018	Conference abstract (study retracted)
Mangone 2022	Overview review
Marin 2017	Setting unclear
McLennan 2021	No RCTs
Moens 2019	Interventions no specific focus on work participation
Murray 2021	No quantitative analysis of outcome
Nastasi 2021	No secondary or tertiary health care setting
Nazarov 2019	No secondary or tertiary health care setting
O'Keefe 2017	Conference abstract (study excluded)
O'Keefe 2019	No risk of bias assessment
Powell 2016	No work participation as outcome
Probyn 2021	Participants with primary psychiatric conditions
Radomski 2016	No quantitative analysis of outcome
Rehman 2020	Interventions no specific focus on work participation

Robinson 2015	Interventions no specific focus on work participation
Sadeghi 2022	Interventions no specific focus on work participation
Schaafsma 2013	Setting unclear
Schofield- Robinson 2018	Interventions no specific focus on work participation
Sleight 2022	Interventions no specific focus on work participation
Stapelfeldt 2019	No work participation as outcome
Stehle 2022	No RCTs
Sun 2015	No RCTs
Trenaman 2014	No risk of bias assessment
van der Giessen 2012	Setting unclear
Verhagen 2013	No secondary or tertiary health care setting
Verhoef 2022	Setting unclear. Update 2024: Based on feedback from experts this study will be included in a future update of this literature review and is now mentioned in Table 4a Studies awaiting classification.
Vooijs 2015	Overview review
Wainwright 2019	No quantitative analysis of outcome
Wegrzynek 2018	Conference abstract (study included)
Wei 2016	No quantitative analysis of outcome
Wheeler 2016	No work participation as outcome
Xie 2021	No risk of bias assessment

Appendix 5. Cochrane Database of Systematic Reviews (Ovid) search strategy

Cochrane Database of Systematic Reviews

Issue 7 of 12, July 2022

20 hits

Cochrane Central Register of Controlled Trials

Issue 7 of 12, July 2022

1494 hits

ID Search Hits

#1 ("return to work" or "sick leave" or "sickness absence" or "work ability" or "work activity" or "work capacity" or "work disability" or "work participation" or "work rehabilitation" or "work retention" or "work status" or "employment status" or absenteeism or occupation*):ti,ab,kw 19702

#2 (work or worker* or workplace* or job or jobs or occupation* or employ* or unemploy* or career*):ti 11567

#3 #1 or #2 26311

#4 ((secondary or tertiary or outpatient* or ambula*) near/2 (care or healthcare or hospital* or clinic*)):ti,ab,kw 35020

#5 MeSH descriptor: [Secondary Care] explode all trees 48

#6 MeSH descriptor: [Tertiary Healthcare] explode all trees 21

#7 MeSH descriptor: [Secondary Care Centers] explode all trees 7

#8 (vocational near/1 (guidance or counseling or rehabilitation)):ti,ab,kw 852

#9 ("ambulatory care" or "outpatient clinic*" or "rehabilitation center*" or "physical therap*" or psychotherapist* or "occupational therap*" or "occupational health service*" or "vocational guidance" or "multidisciplinary intervention*" or "psychoeducational intervention*" or "educational intervention*" or "physical intervention*"):ti,ab,kw 17136

#10 #4 or #5 or #6 or #7 #8 or #9 42095

#11 #3 and #10 with Cochrane Library publication date Between Jan 2012 and Jul 2022, in Cochrane Reviews 20

#12 #3 and #10 with Cochrane Library publication date Between Jan 2000 and Jun 2022, in Trials 1494

#13 #11 or #12 1514

Appendix 6. MEDLINE (Ovid) search strategy

Database(s): **Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily** 1946 to July 07, 2022

Search Strategy:

#	Searches	Results
1	Absenteeism/ or work/ or return to work/ or employment/ or unemployment/ or workplace/ or Occupational Health/ or Occupational Medicine/ or exp Occupations/ or Sick Leave/	191306
2	(sickleav* or absenteeism* or presenteeism* or employab* or workability).ti,ab,kf.	9809
3	("return to work" or "sick leave" or "sickness absence" or "work ability" or "work activity" or "work capacity" or "work disability" or "work participation" or "work rehabilitation" or "work retention" or "work status" or "employment status").ti,ab,kf.	37791
4	(work or worker* or workplace* or job or jobs or occupation* or employ* or unemploy* or career*).ti,kf.	327533

5	1 or 2 or 3 or 4	449097
6	secondary care/ or tertiary healthcare/ or Ambulatory Care/ or ambulatory care facilities/ or exp outpatient clinics, hospital/ or Rehabilitation Centers/ or exp "continuity of patient care"/ or *patient-centered care/ or exp physical therapy modalities/ or Physical Therapists/ or psychotherapists/ or occupational therapists/ or rehabilitation/ or Rehabilitation, Vocational/ or occupational therapy/ or Occupational Health Services/ or Vocational Guidance/	490577
7	((secondary or tertiary or outpatient* or ambula*) adj3 (care or healthcare or hospital* or clinic*).ti,ab,kf.	204331
8	((multidisciplinary or brief or rehabilitation* or psychoeducational or psycho-educational or educational or physical) adj3 intervention*).ti,ab,kf.	43438
9	(vocational adj (guidance or counseling or rehabilitation)).ti,ab,kf.	3310
10	6 or 7 or 8 or 9	700924
11	5 and 10	38373
12	(meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.) not (comment/ or editorial/ or ((exp animals/ or exp models, animal/) not humans/))	578255
13	5 and 10 and 12	1552
14	comment/ or editorial/ or Frail Elderly/ or Geriatric Assessment/ or exp Pediatrics/ or (pediatr* or paediatr* peadiatr* or child*).ti.	2398950
15	((exp Animals/ or exp Animal Experimentation/ or exp models, animal/) not Humans/) or animal*.ti.	5080333
16	exp Child/ not Adult/	1387098
17	13 not 14 not 15 not 16	1460
18	limit 17 to yr="2012 -Current"	1054

Appendix 7. EMBASE (Ovid) search strategy

Database(s): **Embase Classic+Embase** 1947 to 2022 July 07

Search Strategy:

#	Searches	Results
1	absenteeism/ or work/ or return to work/ or employment/ or unemployment/ or exp occupation/ or exp employment status/ or workplace/ or occupational health/ or employability/ or work disability/ or work capacity/ or work resumption/ or medical leave/	550928

2	(sickleav* or absenteeism* or presenteeism* or employab* or workability).ti,ab,kf.	14514
3	("return to work" or "sick leave" or "sickness absence" or "work ability" or "work activity" or "work capacity" or "work disability" or "work participation" or "work rehabilitation" or "work retention" or "work status" or "employment status").ti,ab,kf.	48700
4	(work or worker* or workplace* or job or jobs or occupation* or employ* or unemploy* or career*).ti,kf.	386738
5	1 or 2 or 4	811297
6	exp secondary health care/ or exp tertiary health care/ or ambulatory care/ or outpatient department/ or rehabilitation center/ or rehabilitation/ or occupational therapy/ or occupational therapist/ or vocational rehabilitation/ or occupational health service/ or vocational guidance/ or psychotherapists/ or *health care system/ or *health program/	494626
7	((secondary or tertiary or outpatient* or ambula*) adj3 (care or healthcare or hospital* or clinic*).ti,ab,kf.	341094
8	((multidisciplinary or brief or rehabilitation* or psychoeducational or psycho-educational or educational or physical) adj3 intervention*).ti,ab,kf.	59591
9	(vocational adj (guidance or counseling or rehabilitation)).ti,ab,kf.	5082
10	6 or 7 or 8 or 9	723648
11	5 and 10	64226
12	(meta analysis/ or "meta analysis (topic)"/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.) not (editorial/ or note/ or ((exp animal/ or exp animal experiment/ or exp animal model/ or exp veterinary medicine/) not human/))	814282
13	5 and 10 and 12	2283
14	editorial/ or note/ or exp geriatrics/ or geriatric assessment/ or frail elderly/ or exp pediatrics/ or (pediatr* or paediatr* peadiatr* or child*).ti.	2920981
15	((exp animal/ or exp animal experiment/ or exp animal model/ or exp veterinary medicine/) not human/ or animal*.ti.	6326093
16	exp child/ not adult/	2464158
17	13 not 14 not 15 not 16	2116
18	limit 17 to yr="2012 -Current"	1627

Appendix 8. CINAHL (EBSCOhost) search strategy

Systematic reviews, 2012-heden:

765 hits:

Published Date: 20120101-20221231

(((MH "Absenteeism") OR (MH "Work") OR (MH "Job Re-Entry") OR (MH "Employment") OR (MH "Unemployment") OR (MH "Work Environment") OR (MH "Occupational Health") OR (MH "Occupational Health") OR (MH "Occupational Medicine") OR (MH "Occupations and Professions") OR (MH "Sick Leave")) OR (TI (sickleav* or absenteeism* or presenteeism* or employab* or workability) OR AB (sickleav* or absenteeism* or presenteeism* or employab* or workability) OR TI (("return to work" or "sick leave" or "sickness absence" or "work ability" or "work activity" or "work capacity" or "work disability" or "work participation" or "work rehabilitation" or "work retention" or "work status" or "employment status") OR AB (("return to work" or "sick leave" or "sickness absence" or "work ability" or "work activity" or "work capacity" or "work disability" or "work participation" or "work rehabilitation" or "work retention" or "work status" or "employment status") OR TI (work or worker* or workplace* or job or jobs or occupation* or employ* or unemploy* or career*))

AND

(((MH "Secondary Health Care") OR (MH "Tertiary Health Care") OR (MH "Ambulatory Care") OR (MH "Ambulatory Care Facilities") OR (MH "Surgicenters") OR (MH "Pain Clinics") OR (MH "Nurse-Managed Centers") OR (MH "Outpatient Service") OR (MH "Occupational Therapy Service") OR (MH "Rehabilitation Centers")) OR ((MH "Physical Therapy") OR (MH "Physical Therapists") OR (MH "Occupational Therapists") OR (MH "Psychotherapists")) OR ((MH "Rehabilitation") OR (MH "Occupational Therapy")) OR ((MH "Rehabilitation, Vocational") OR (MH "Occupational Health Services+") OR (MH "Vocational Guidance"))) OR (TI ((secondary or tertiary or outpatient* or ambula*) N3 (care or healthcare or hospital* or clinic*)) OR AB ((secondary or tertiary or outpatient* or ambula*) N3 (care or healthcare or hospital* or clinic*)) OR TI ((multidisciplinary or brief or rehabilitation* or psychoeducational or psycho-educational or educational or physical) N3 intervention*) OR AB ((multidisciplinary or brief or rehabilitation* or psychoeducational or psycho-educational or educational or physical) N3 intervention*) OR TI (vocational N1 (guidance or counseling or rehabilitation)) OR AB (vocational N1 (guidance or counseling or rehabilitation)))

AND

(((MH "Systematic Review") OR (MH "Meta Analysis")) OR (TI (metaanaly* or meta-analy* or metanaly*) OR AB (metaanaly* or meta-analy* or metanaly*) OR TI ((systemati* or scoping or umbrella or "structured literature") N3 (review* or overview*)) OR AB ((systemati* or scoping or umbrella or "structured literature") N3 (review* or overview*))) OR (TI systemic* N1 review* OR AB systemic* N1 review*) OR (TI ((systemati* or literature or database* or data-base*) N10 search*) OR AB ((systemati* or literature or database* or data-base*) N10 search*)) OR (TI ((structured or comprehensive* or systemic*) N3 search*) OR AB ((structured or comprehensive* or systemic*) N3 search*)) OR (TI ((literature adj3 review*) and (search* or database* or data-base*)) OR AB ((literature adj3 review*) and (search* or database* or data-base*)) OR TI (("data extraction" or "data source*") and "study selection") OR AB (("data extraction" or "data source*") and "study selection")) OR (TI ((literature adj3 review*) and (search* or database* or data-base*)) OR AB ((literature adj3 review*) and (search* or database* or data-base*)) OR TI (("data extraction" or "data source*") and "study selection") OR AB (("data extraction" or "data source*") and "study selection")) OR (TI ("search strategy" and "selection criteria") OR AB ("search strategy" and "selection criteria") OR TI ("data source*" and "data synthesis") OR AB ("data source*" and "data synthesis")) OR (AB medline or pubmed or embase or cochrane) OR (TI (critical or rapid) N2 (review* or overview* or synthes*)) OR (AB (critical* or rapid*) N3 (review* or overview* or synthes*) and (search* or database* or data-base*)) OR (TI (metasynthes* or meta-synthes*) OR AB (metasynthes* or meta-synthes*))

NOT

(((MH "Aged, 80 and Over") OR (MH "Frail Elderly")) OR (MH "Geriatric Assessment") OR (MH "Pediatrics+") OR (TI pediater* or paediatr* peadiatr* or child*)

NOT

(((MH "Animals+") NOT (MH "Human")) OR TI animal*

NOT
(MH "Child+") NOT (MH "Adult")

Appendix 9. Prior knowledge of existing reviews and ASreview settings

Used as prior knowledge to train ASreview for author 1

Relevant

1. de Boer AG, Taskila TK, Tamminga SJ, Feuerstein M, Frings-Dresen MH, Verbeek JH. Interventions to enhance return-to-work for cancer patients. *Cochrane Database Syst Rev*. 2015 Sep 25;2015(9):CD007569. doi: 10.1002/14651858.CD007569.pub3. PMID: 26405010; PMCID: PMC6483290.
2. Xie Y, Hutting N, Bartys S, Johnston V. Interventions to Promote Work-Focused Care by Healthcare Providers for Individuals with Musculoskeletal Conditions a Scoping Review. *J Occup Rehabil*. 2021 Dec;31(4):840-865. doi: 10.1007/s10926-021-09971-w. Epub 2021 Apr 2. PMID: 33811292.

Irrelevant

1. Boström AM, Sommerfeld DK, Stenhols AW, Kiessling A. Capability beliefs on, and use of evidence-based practice among four health professional and student groups in geriatric care: A cross sectional study. *PLoS One*. 2018 Feb 14;13(2):e0192017. doi: 10.1371/journal.pone.0192017. PMID: 29444179; PMCID: PMC5812600.
2. Laver K, Cumming R, Dyer S, Agar M, Anstey KJ, Beattie E, Brodaty H, Broe T, Clemson L, Crotty M, Dietz M, Draper B, Flicker L, Friel M, Heuzenroeder L, Koch S, Kurrle S, Nay R, Pond D, Thompson J, Santalucia Y, Whitehead C, Yates M. Evidence-based occupational therapy for people with dementia and their families: What clinical practice guidelines tell us and implications for practice. *Aust Occup Ther J*. 2017 Feb;64(1):3-10. doi: 10.1111/1440-1630.12309. Epub 2016 Oct 3. PMID: 27699792.

Used as prior knowledge to train ASreview for author 2

Relevant

1. Johnsen TL, Johansen T, Momsen AH, Tveito TH, Nielsen CV, Varsi C, Øyeflaten I. eHealth interventions to facilitate work participation: a scoping review. *JBI Evid Synth*. 2021 Jul 1;19(10):2739-2759. doi: 10.11124/JBISRIR-D-19-00433. PMID: 34224522; PMCID: PMC8528131.
2. Hegewald J, Wegewitz UE, Euler U, van Dijk JL, Adams J, Fishta A, Heinrich P, Seidler A. Interventions to support return to work for people with coronary heart disease. *Cochrane Database Syst Rev*. 2019 Mar 14;3(3):CD010748. doi: 10.1002/14651858.CD010748.pub2. PMID: 30869157; PMCID: PMC6416827.

Irrelevant

1. Read H, Roush S, Downing D. Early Intervention in Mental Health for Adolescents and Young Adults: A Systematic Review. *Am J Occup Ther*. 2018 Sep/Oct;72(5):7205190040p1-7205190040p8. doi: 10.5014/ajot.2018.033118. PMID: 30157008.
2. Kang J, Noh W, Lee Y. Sleep quality among shift-work nurses: A systematic review and meta-analysis. *Appl Nurs Res*. 2020 Apr;52:151227. doi: 10.1016/j.apnr.2019.151227. Epub 2019 Dec 26. PMID: 31902652.

Settings of the algorithm of ASreview

Data extraction technique: TF-IDF

Classifier: Naïve Bayes

Query strategy: Maximum

Balance strategy: Dynamic resampling (Double)