sharing best evidence

Highlights of a systematic review

What workplace interventions help workers with MSDs, pain and mental health conditions return to work?

Although overall work injury rates are decreasing in most high-income countries, similar improvements in rates of returning to work after a work-related injury have not been seen. It could be that changes in society and work, such as the aging workforce and an increase in precarious employment (e.g. temporary and contract work), are making improvements in return to work (RTW) more challenging. This makes the need for evidence on what makes work-focused RTW effective all the more pressing.

A previous systematic review led by the Institute for Work & Health (IWH) on workplace interventions for workers with musculoskeletal disorders (MSDs) and pain-related conditions found strong evidence that time away from work is significantly reduced by offers of work accommodation and contact between health-care providers and the workplace. It also found moderate evidence that time away from work is reduced by early workplace contact with the injured worker, ergonomic worksite visits, and the presence of a return-to-work coordinator.

Since the publication of this earlier systematic review in 2005, there has been a steady growth in the volume of studies on workplace-based RTW interventions for workers with MSDs and pain-related conditions. More recently, there has also been a substantial growth in the number of studies looking at workplace-based RTW interventions for workers with mental health conditions. As a result, with funding from Australia's Institute for Safety, Compensation and Recovery Research (ISCRR), IWH co-led a team to update and extend the scope of the previous IWH systematic review by asking the following question:

KEY MESSAGES

We recommend implementing return-to-work programs that include health-focused, service coordination and work modification interventions to help reduce lost time for musculoskeletal and pain-related conditions.

We recommend implementing work-focused cognitive behavioural therapy to help reduce the lost time and costs associated with mental health conditions.

We suggest considering graded-activity and work accommodation interventions to help reduce lost time associated with musculoskeletal and pain-related conditions, if applicable to the context.

What workplace-based interventions are effective in helping workers with musculoskeletal, pain-related and/or mental health conditions return to work?

How was the review conducted?

The review team consisted of 18 researchers from Canada, Australia, Europe and the United States; seven of the 18 were from IWH. The team members had backgrounds in epidemiology, ergonomics, kinesiology, physical therapy, psychology, social sciences and information science. The team searched seven databases for studies that could potentially help answer the review question, limiting the search to studies published from January 1990 to April 2015 that were randomized controlled trials, non-randomized controlled trials or cohort studies with a comparison group. The overall search identified 8,898 studies.

After reviewing these studies for their relevance to the review question and for the quality of their research methods, the team ended up with 36 high- and medium-quality studies. Among these, 26 examined RTW interventions for workers with musculoskeletal and pain-related conditions, and 10 focused on interventions for workers with mental health conditions.

The interventions addressed in the 36 studies were grouped within three larger RTW practice/program areas:

1. **Health-focused practices and programs** were designed to facilitate the delivery of health services to injured workers, either in the workplace or in settings linked to the workplace (e.g. visits to health-care providers initiated by the workplace). Interventions included graded activity/exercise, general cognitive behavioural therapy (CBT), work-focused CBT, physician training, work hardening and multi-component health-focused interventions that included a mix of interventions from among those just listed, as well as from interventions such as medical assessments, physiotherapy, occupational therapy and psychological therapy.
2. **Service coordination practices and programs** were designed to better coordinate the delivery of, and access to, services to assist RTW within and involving the workplace, including attempts to improve communication within the workplace or between the workplace and health-care providers. Interventions included developing return-to-work plans, case management, and worker education and training.
3. **Work modification practices and programs** were designed to alter the organization of work or introduce modified working conditions. The intervention included here was workplace accommodation, which referred to modified duties, modified working hours, supernumerary replacements, supervisor training, ergonomic adjustments and other worksite adjustments.

Many RTW programs described in the 36 studies included interventions from at least two of the three practice/program areas. For example, the RTW program studied might have involved graded activity in the workplace (a health-focused practice) in addition to modified working conditions (a work modification practice).

What is a systematic review?

A systematic review is a type of research study. It aims to find an answer to a specific research question using existing scientific studies. Reviewers assess many studies, select relevant studies of sufficient quality, and analyze the results. The review normally includes the following steps:

- determine the review question
- develop a search strategy and search the research literature
- select studies that are relevant to the review question
- assess the quality of the methods in these studies and select studies of sufficient quality
- systematically extract and summarize key elements of the studies
- describe results from individual studies
- combine results and report on the evidence.

The Institute for Work & Health has established a dedicated group to conduct systematic reviews in workplace injury and illness prevention. Our team monitors developments in the international research literature in this field. We rely on feedback from non-research audiences to select timely, relevant topics for review, to help shape the research question and to help frame our findings.

The effectiveness of the interventions within these practice/program areas were evaluated based on three broad RTW outcomes: lost time (e.g. amount of time away from the workplace), work functioning (e.g. health-related lost productivity, functional limitations at work), and costs associated with work disability and time loss (e.g. income replacement). Due to the wide variety of interventions studied, workplace contexts in which they were studied and study designs used, the review team used a best-evidence synthesis approach to determine the level of evidence and develop practical messages with, and for, practitioners (see Table 1).

Table 1: Level of evidence

Level of evidence	Minimum quality* and quantity	Consistency	Strength of message
Strong	3 high quality (H) studies	3 H studies agree; IF more than 3 studies, 3/4 of the H and M studies agree	Recommendation
Moderate	2 H studies OR 2 medium quality (M) studies and 1 H study	2 H studies agree OR 2 M studies and 1 H study agree; IF more than 3 studies, more than 2/3 of the M and H studies agree	Practice consideration
Limited	1 H study OR 2 M studies OR 1 M and 1 H study	1 H (if only one study); OR 2 M studies; OR 1 M and 1 H study; IF there are more than 2 studies, at least 1/2 of the M and H studies agree	Not enough evidence to make recommendation or practice consideration
Mixed	2 H and/or M studies	Findings are contradictory	Not enough evidence to make recommendation or practice consideration
Insufficient	No H studies OR M studies do not meet criteria above		Not enough evidence to make recommendation or practice consideration

* High quality studies scored >85% in the assessment of their quality; medium quality studies scored 50-85%

What were the main findings?

The review found **strong evidence of a positive effect** for:

- combining interventions from at least two of the three practice/program areas to reduce lost time for musculoskeletal and pain-related conditions; and
- work-focused CBT to reduce lost time and costs associated with work disability for mental health conditions.

The review found **strong evidence of no effect** for:

- traditional CBT to reduce lost time for mental health conditions.

The review found **moderate evidence of a positive effect** for:

- graded activity and work accommodations to reduce lost time;
- combining interventions from at least two of the three practice/program areas to improve work functioning and reduce costs associated with work disability for musculoskeletal and pain-related conditions; and
- work-focused CBT to improve work functioning for mental health conditions.

The review found **limited evidence of a positive effect** for:

- work accommodations to help reduce costs associated with work disability; and
- health-focused multi-component interventions to improve work functioning.

The review found **limited evidence of no effect** for:

- work hardening on improving work functioning;
- physician training on reducing lost time; and
- RTW plans on reducing lost time and costs associated with work disability.

The review found **inconsistent evidence** due to different findings in multiple studies to reach conclusions about the effect of:

- work hardening on lost time;
- health-focused multi-component interventions on lost time and costs associated with work disability; and
- graded activity on costs associated with work disability.

Finally, the review found **insufficient evidence** due to too few studies to show the effect of:

- case management interventions on lost time;
- work accommodations on work functioning; and
- worker education, supervisor training and work hardening interventions on costs associated with work disability.

What do these findings mean?

The review team consulted with workplace parties, as well as RTW and health and safety practitioners, to help ensure it created messages based on these findings that were useful and applicable in practice. The key messages are shared here.

Based on strong evidence, the review team makes the following **recommendations**:

- Implement RTW programs that include interventions from at least two of the three practice/program areas—health-focused, service coordination and work modification—to help reduce lost time for MSDs and pain-related conditions.
- Implement work-focused CBT to help reduce the lost time and costs associated with mental health conditions.

Based on moderate evidence, the review team also suggests the following **practice considerations**:

- Consider implementing RTW programs that include health-focused, service coordination and work modification interventions to improve work functioning and reduce costs associated with MSDs and pain-related conditions.
- Consider implementing work-focused CBT to help improve the work functioning of workers with mental health conditions.
- Consider implementing graded-activity programs and work accommodations to reduce lost time associated with work disability, if applicable to the work context.

Conclusion

RTW programs that include interventions from at least two of the three practice/program areas are effective in improving RTW outcomes in workers with musculoskeletal, pain-related or mental health conditions. That is, implementing interventions from across the three practice areas—health-focused, service coordination and work modification—can improve RTW outcomes. This finding aligns with what is called "the Sherbrooke model"—one of the dominant theories in work disability and return to work. This model proposes that multi-disciplinary and multi-faceted interventions that try to address a range of individual and societal factors that influence return to work are likely to be effective.

References and acknowledgements

These findings are based on the study: 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. 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. *Journal of Occupational Rehabilitation*, 2018; 28:1-15; 10.1007/s10926-016-9690-x [Epub 2017 Feb 21]. The full article is open access and available at: www.doi.org/10.1007/s10926-016-9690-x

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For more tools, presentations and articles from IWH on return to work, go to: https://www.iwh.on.ca/workplace-disability-management

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