Return to Work and Occupational Illness and Injury Rehabilitation: A Snapshot Review

Purpose of research
This evidence review was undertaken to examine the link between returning to work (RTW) and recovery with a specific focus on the speed and extent of recovery. The review concentrated on major work-related injuries and conditions including musculoskeletal and psychological disorders.

Research conclusions
- There is little evidence regarding the effectiveness of RTW programs in improving recovery.
- This was particularly the case for certain injury groups such as psychological disorders, and also particularly the case in the Australian context.
- There is evidence that certain interventions to support RTW are effective for certain conditions, for example, building resilience and accommodates in the workplace.
- There is substantially more literature about the effectiveness of RTW programs in clients with musculoskeletal disorders compared to those with psychological disorders.
- Very little is known about the determinants of successful RTW in persons with mental health problems.

Issues addressed
The review summarised published research literature regarding the effectiveness of RTW interventions on health and well-being and the rate of recovery for those with major work-related injuries and conditions, including musculoskeletal and psychological disorders.

Research findings
- Literature suggests that early intervention with timely, appropriate and adequate RTW programs, that are based on a good understanding of the injury outcomes and potential risks, are paramount to achieving a rapid recovery to good health.
- Evidence suggests that, for work-related musculoskeletal injuries, early mobilisation associated with RTW programs can prevent or mitigate the negative consequences of injury and facilitate a return to normal activity.
- For other work-related conditions, such as mental health and psychological disorders, the evidence was less clear. However, there was some suggestion that well-designed RTW programs for this group would be of some benefit in reducing overall time off work and associated problems.
- There was very little literature found which addressed this issue in the Australian context, suggesting a need for further research.

Methods
A systematic review of relevant health and social science databases, as well as relevant articles.

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Accompanying documents to this report
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Executive Summary

Workplace-related injuries and illnesses impact on an individual’s health, their families, and the community. Getting back to work as soon as possible after an injury or illness is in everyone’s best interest and there is good evidence of the beneficial health effects of returning to work, suggesting that earlier re-employment may be associated with better health outcomes compared with delayed re-employment.

Given this evidence base, Return to Work (RTW) programs are implemented widely in Australia and elsewhere and are generally designed to successfully integrate workers back into the workforce and as soon as possible. However, there is little understanding about how effective RTW programs are in terms of improved recovery (i.e., speeding up recovery from injury/illness and the extent of injury/illness), regardless of the type of injury.

This review was undertaken to examine the evidence regarding the link between returning to work with a specific focus on the speed of recovery in the context of RTW activities. The review addresses the main theme of the effectiveness of RTW interventions on health and well-being and speed of recovery as related to major work-related injuries and conditions.

With regard to the overall benefits of work and re-employment, evidence was found to support concrete health benefits, particularly associated with i) improvements to general health and well-being, and ii) improvements to psychological and social well-being. Moreover, the findings suggested that prompt intervention with timely, appropriate and adequate RTW programs that are based on a good understanding of injury outcomes and potential risks is paramount to achieve high impact in health benefits and speed of recovery.

In terms of the direct influence of RTW initiatives on speed of recovery, the evidence suggested that, for work-related musculoskeletal injuries, early mobilisation associated with RTW programs can prevent or mitigate the negative consequences of injury and promote quick and accelerated recovery and resumption of normal activities. For other work-related conditions, such as mental health and psychological disorders, the evidence was less clear. However, there was some suggestion that well-designed RTW programs for this group would be of some benefit in reducing overall time off work and therefore other negative impacts.

In summary, the evidence suggests that RTW is an important component of the recovery process which leads to better health outcomes; there is a relationship between RTW and speed of recovery and that there are likely benefits of improved RTW on speed of recovery. However, there are still large gaps in our knowledge of the effectiveness on RTW programs in speeding up recovery and improving rehabilitation, particularly for some injury groups. A definitive understanding of these associations would be a positive step to enhance existing RTW policies, practices and systems and promote appropriate and effective return to work messages.
Background

Injuries and illnesses sustained in the workplace are a major global source of ill health and disability. Worldwide, an estimated two million men and women die each year as a result of work-related injuries or illnesses and a further 268 million non-fatal workplace injuries result in time off work. It is also estimated that there are 160 million new cases of work-related illness each year. Further, eight percent of the global burden of disease from depression is currently attributed to occupational risks (International Labour Organisation, cited in World Health Organisation [WHO], 2010).

International figures demonstrate the burden of workplace injuries and illnesses. In the USA in 2011, approximately 3.5 per 100,000 employed people suffered a workplace injury, with younger male workers being over-involved in workplace injuries (Bureau of Labor Statistics, 2012). In Australia, of the 12 million Australians who worked some time between July 2009 and June 2010, 5.3% experienced at least one work-related injury or illness. The overall work-related injury rate for this period was 53 per 1,000 employed persons (57 per 1,000 employed men and 51 per 1,000 employed women) (Australian Bureau of Statistics [ABS], 2011).

In Australia, it is foreseen that the ageing of the population and resultant skills shortage will pose a challenge to employers. Moreover, occupational injuries result in reduced and considerable economic losses to employers as well as physical, mental, and financial losses to workers (Wales et al. 2010). In March 2009, the Australian Safety and Compensation Council (now Safe Work Australia) estimated the total economic cost of occupational injury and illness for Australia for the 2005–06 financial year to be $57.5 billion, equating to 5.6% of Australian Gross Domestic Product (GDP) (RACP, 2010). A further concern arises from existing workers' and motor accident compensation schemes, where a noticeable proportion of claims would result in permanent disability.

Work disability, as defined by Young et al. (2005), “is the result of a condition that causes a worker to miss at least one day of work and includes time off work as well as any ongoing work limitations. Conditions resulting in work disability may be either traumatic or non-traumatic in etiology.” In recent years, a new paradigm of disability has emerged that considers disability as a natural and normal part of the human experience. There is also convincing evidence that, as separation from work due to disabling injuries extends, the burden of indemnity payments, medico-legal expenses, and employee substitution costs also increase considerably. Moreover, there is good evidence that, as time off work due to work disability increases, the less likely the injured worker will ever return to work (Krause et al., 1998). These factors have brought a greater responsibility for Return to Work (RTW) programs to help injured workers return to work as soon as is safely possible, no matter if the injury was work-related or not (Clayton, 2005).

It is also known that despite the noticeable sums of money spent on occupational health recovery, those with compensable occupational injuries can have poorer
health outcomes compared to those with similar non-work-related conditions. According to the Royal Australasian College of Physicians (RACP, 2010), in about ten percent of claims the claimant will withdraw from the workforce for long periods or permanently, and remain on at least one disability benefit long term. It is this minority of workers with long-term disabilities which accounts for the majority of workers' compensation costs (Krause et al., 1998). These issues raise some doubts as to the effectiveness of existing RTW systems in successfully preventing long-term work disability, promoting appropriately timed return to work and ensuring a speedy recovery. WorkSafe Victoria currently have a range of RTW interventions such as workshops and training for employers, RTW coordinators and employees, incentive schemes for employers, and web-based information. However, it is important to learn more about the factors associated with successful return to work and speedy recovery in order to achieve significant gains in RTW programs.

**Health Benefits of Work and Reemployment**

There is a well-documented association between working and re-employment, the improvement of one’s general health and well-being, and psychological and social metrics (Rueda, Chambers, Wilson, et al., 2012; RACP, 2010). There are noted health benefits associated with work and reemployment, including:

- Improvements to general health and wellbeing:
  - Self-reported health and physical health
  - Self-esteem and self-satisfaction
- Psychological and social (psychosocial) well-being:
  - Reduced psychological distress and minor psychiatric morbidity, e.g. less depressive symptoms and better mental health
  - Less financial worries and greater access to social contact and time structure
  - Higher commitment to the labour market
  - Better non-vocational functioning (symptoms, substance abuse, hospitalizations, self-esteem, quality of life)
  - Better mood and leisure

Further, the negative effects of unemployment on health have been well documented (RACP, 2010). Long term disability and not working are highly likely to be associated with:

- Increased risk of death, especially from heart disease, lung cancer and suicide;
- Poorer physical health, including heart disease, high blood pressure and chest infections;
- Poorer mental health and wellbeing; and
- Increased long term illness, and higher rates of medical attendance and hospital admission.
In terms of psychosocial impacts, work disability is highly linked with:

- Depression;
- Erosion of work skills and loss of opportunity occasioned by absenteeism;
- Decreased income and social status;
- Loss of social support networks;
- Decreased confidence and sense of self-efficacy; and
- Propensity toward the ‘medicalisation’ of disabilities.

One of the key issues in returning to work is that long-term unemployment and its consequences can be extremely difficult to break (RACP, 2011). The RACP points out that the longer someone is off work, the less likely they become ever to return to work. They cite findings of Johnson and Fry (2002) that suggest if a person is off work for 20 days, the chance of returning to work is 70%, but if a person is off for work for 70 days, the chance of ever getting back to work is 35%.

A good understanding of the benefits of return to work is yet to achieve a widespread acceptance in Australia. The RACP (2010) reported that between 2005 and 2009: sustainable RTW rates following occupational illness or injury declined; and, there was an increase in requests for sickness certificates and disability support pensions driven by people with common, treatable health problems along with an increase in these people being permanently certified as unfit for work.

**Research Questions**

It is clear that getting back to work at an appropriate time after an injury is vital for health and wellbeing and that in general, work-related disability, unemployment and being away from work for a long time have a negative impact on health and wellbeing (RACP, 2010). Given this evidence, RTW programs are implemented widely in Australia and elsewhere, and are generally designed to integrate workers back into the workforce as soon as is safely possible. However, there is currently limited understanding about how effective RTW programs are in terms of improving the speed of recovery from injury and illness.

WorkSafe’s Strategy 2017 aspires for more successful RTW rates through introducing numerous projects that directly aim at improving RTW outcomes, and investing noticeable resources into statewide RTW campaigns. In order to further support this strategy this Snapshot Evidence Review was conducted for WorkSafe to understand the link between returning to work and recovery, with a specific focus on the speed of recovery. This information will be used to assist WorkSafe to promote and implement more effective RTW programs and activities in Victoria.

**Method**

This report is a review of literature from a systematic search of relevant databases addressing the issues of appropriately timed RTW and is not exhaustive. The review
process entailed three major steps: (1) a search of relevant health and social science databases; (2) selection of relevant articles; and (3) synthesis of the findings.

Databases consulted were: ScienceDirect, Scopus, Ingentaconnect, Tandfonline, PubMed/Medline, PsychInfo, Cochrane Library, and EMBASE. Other literature was sourced through Google Scholar. Search terms included combinations of: workplace injury, health, recovery, rehabilitation, return to work, health outcomes. In total, 17,419 articles published from 2000 onwards were found from which 98 articles were selected for more detailed review. Article selection was based on relevance to the topic. In order to take the specific features of the Australian occupational rehabilitation system into account, the findings were categorised under separate Australian and international evidence categories when enough evidence existed.

Return to Work and Recovery from Occupational Injury and Illness

RTW is the cornerstone of the occupational rehabilitation system in Australia. The system attempts to promptly intervene with appropriate, adequate and timely services based on the injured workers’ needs, and aims at maintaining employees in, or returning them swiftly and safely to, suitable employment.

The underpinning justifications for RTW interventions are:

- Safety at work should be distinguished from health and well-being, and full recovery of health is not a requirement before injured workers can safely resume their pre-injury jobs (Waddell and Burton 2006); and
- The concept of 'hurt versus harm'; that is, “the assumption that 'hurt' is pain experienced during recovery and that hurt does not necessarily impede recovery and, indeed, can improve it” (Therapeutic RTW) (MacEachen et al. 2006).

It is therefore important to understand the influence of RTW interventions on health recovery as related to major work-related conditions and injuries – this is discussed in the following section.

Influence of RTW Interventions on Health Recovery

There are many resulting injuries and illnesses associated with work-related incidents, however, the most common appear to be musculoskeletal injuries, psychological and stress-related illness and diseases of the nervous system. Each grouping of injury and illness has distinct sequelae and therefore relationships to RTW and recovery.

Much of the research addressing the benefits of RTW interventions following musculoskeletal injuries employ (randomised) controlled trial designs and assess pain, disability and health measures for samples of returned-to-work injured workers and non-returned-to-work injured workers through follow-up studies. As these
measures generally simultaneously assess both groups at the study intervals, the extent and speed of recovery are fully correlated. Thus the findings of the review on the speed of recovery of injured workers only is discussed. It should also be noted that the findings of the Australian and the international research into the topic are presented collectively, due to little Australian research.

**Musculoskeletal Injuries**

A large percentage of workplace injuries result in musculoskeletal disorders which are often a result of poor manual handling and lifting techniques. Musculoskeletal disorders are injuries or disorders of the muscles, nerves, tendons, joints, cartilage or spinal discs (Westgaard & Winkel, 2011). People who suffer from these types of injuries often experience severe muscle pain that makes simple movements difficult and painful, and the most common type of musculoskeletal injury is to the back and neck.

Most of the literature addresses the management of back pain, particularly preventing prolonged disability and it is noted that physical inactivity and persistent disability, and prolonged absence from work are biopsychosocial factors that may lead to the development of chronic lower back pain, including worsening musculoskeletal complaints, especially amongst older workers (Donceel et al., 1999).

Overall, the literature suggests that early mobilisation associated with RTW – including ‘work hardening’, returning to modified work, staying active and resuming normal activities quickly – can prevent or mitigate these changes, result in quicker and greater pain and functional improvements, ensure maintenance of activity, resumption of normal activities quickly and accelerate recovery (Cooper et al., 1997; Sutcliff, 2002; Low et al., 2006; Howard et al., 2009).

Sutcliff (2002), for example investigated the possibility of using work as therapy and found that timely RTW following lower back injury and pain often results in less depressive symptoms, increased motivation, and better medical outcomes. In addition, Loisel et al. (1997) reported that patients who had received clinical care after an early RTW as a result of back pain, returned to work 2.41 times faster than those off-work. More recently, Faber et al. (2006) reported that RTW at 3 months following lower back pain had a positive impact on pain, functional limitations and quality of life.

Carpal tunnel syndrome is another common work-related musculoskeletal disorder that can usually be corrected with surgery, with a high success in returning to previous work roles. Wyatt and Veale (2008) showed significant improvements in functional assessments following RTW rehabilitation programs and argued that co-ordinated, early rehabilitation programs accelerate health recovery of patients with carpal tunnel syndrome.

Some research recommends caution regarding the benefits of work, re-employment and recovery. Waddell and Burton (2006) suggest that there is inconclusive evidence
of the benefits of early RTW especially regarding the therapeutic influences of RTW on the health recovery of patients with musculoskeletal diseases and cardio-respiratory illnesses. They recommend an in-depth examination of the potential risks during the development of RTW rehabilitation programs.

**Mental and psychological disorders**

With increases in workload demands, the number of work-related stress, mental health and psychological disorders has increased rapidly over the last few decades. Other causes of psychological disorders may be post-traumatic stress, conflicts in the workplace, lack of clear direction, and work dissatisfaction. The associated costs are considerable in terms of absenteeism, loss of productivity, worker satisfaction, health care consumption, and wider impact on family and social function. While depression is the most likely outcome, there is a range of other outcomes of work-related stress including ‘burn out’, alcohol abuse, unexplained physical symptoms, chronic fatigue and repetitive strain injury (Tennant, 2001).

There are high costs associated with mental health problems in the workplace and it is acknowledged that the beneficial effects of work outweigh the risks of work and are greater than the harmful effects of long-term worklessness (Briand et al., 2007). However, very little is known about the determinants of successful RTW for employees with mental health problems.

Little research has been undertaken addressing the design and evaluation of RTW rehabilitation programs for workers with mental health disorders compared with programs concerning workers with musculoskeletal injuries. One of the major issues, as discussed by Saint Arnaud, Saint Jean and Damasse (2006) is understanding the source of the mental health issue. Saint Arnaud and her colleagues developed a model defining aspects that facilitate vulnerable workers’ work integration and showed that there is a dynamic interaction between individual characteristics and life events outside of work, as well as work events and RTW processes and practices that encourage or impede successful RTW. All of these factors can affect a person’s mental health and capacity to work and create difficulty in developing effective RTW interventions for workers with mental health issues.

Overall, the evidence available suggests that a major consequence of long-term sick leave associated with mental health problems is an increase in psychological distress and negative impacts on leisure activities, sleep and well-being. In contrast, timely return to work can result in significant improvements on all psychological dimensions (Thomas et al., 2003; Floderus et al., 2005).

A number of studies have examined supervisory behaviour as a predictor of return to work in workers absent from work due to mental health problems and found that positive supervisory behaviour is associated with fewer workdays lost, better job accommodation, and is predictive of a quicker rate of return to full time work, especially amongst non-depressed employees (Gates, 1993; Janssen, 2003; Nieuwenhuijsen et al., 2004). Other studies failed to find a positive effect of
supervisory behaviour on return to work rates of workers absent due to chronic back pain (e.g., Jensen & Bodin, 1998), however, these were not related to mental health issues.

Other injuries or illnesses
While there are many other common work-related injuries and illnesses, the effect of RTW on health recovery and speed of recovery is rarely examined. No significant findings were found in the literature.

Summary
In sum, the majority of evidence suggests that timely, supportive, co-ordinated and appropriate RTW rehabilitation and programs are generally beneficial and likely to improve pain, functionality and quality of life amongst injured workers (especially those with musculoskeletal injuries), and result in improved health and quicker recovery. There is also evidence suggesting that potential benefits of RTW may be negated if the process is not managed well or evidence-based. The influence of RTW programs for workers affected by other injuries or illnesses is less clear. Moreover, almost no Australian studies were found addressing this issue, thus warranting further research to provide a more definitive understanding of the benefit of RTW on overall health and speed of recovery.

Conclusions
Recent research has shown that getting back to work at an appropriate time after an injury is vital for health and psychological wellbeing, improved financial status, and higher commitment to the labour market and non-vocational functioning. In contrast, work-related disability, unemployment and being away from work for a long time have a negative impact on mortality and morbidity, mental health and wellbeing, income, and social support networks.

Given this evidence, RTW and rehabilitation programs are implemented widely in Australia and elsewhere, and are generally designed to integrate workers back into the workforce as soon as is safely possible. However, there is currently a limited understanding about how effective RTW programs are in terms of improving the speed of recovery from injury and illness.

This review sought to establish if the evidence supports current RTW practices in speeding up recovery from injury/illness. This information is important to assist the development and implementation of more effective RTW programs and activities in Victoria.

There was a distinct lack of literature (especially Australian literature) that specifically addressed the link between returning to work and the speed of recovery. Of the studies included in this evidence review there appeared to be a high correlation between improved outcomes and speed of recovery. Examination of the literature addressing common occupational illness and injury categories revealed that the
RTW and recovery issues surrounding a range of types of injuries and injury groups are different, and should be taken into account when investigating the likely benefits of RTW programs. These findings warrant further research aimed at examining the effectiveness of system-based and integrated approaches, taking into account the links between speed of recovery and outcomes, in order to enhance existing RTW policies, practices and systems.

Overall, the findings of this review suggest that prompt intervention with timely, appropriate and adequate return to work that is based on an understanding of the injury outcomes and potential risks is paramount to achieve high impact in terms of overall health benefits and speed of recovery.

With regard to work-related musculoskeletal injuries, particularly back injuries and associated pain, the evidence suggests that early mobilisation associated with RTW including ‘work hardening’, returning to modified work in the first instance, staying active and resuming normal activities as quickly as possible, can prevent or mitigate the negative consequences of injury and promote quick and accelerated recovery and resumption of normal activities.

With regard to mental health and psychological disorders, the evidence is limited regarding the benefits of RTW, in terms of overall health and well being as well as speed of recovery. Notwithstanding, there is some evidence that long-term time off work is associated with psychological stress and negative impacts on other psychological dimensions, and therefore it is likely that well-designed RTW programs for workers with mental health and psychological disorders will be of some benefit. There was some suggestion that RTW programs that incorporated positive supervision and job accommodation result in shorter time off work. This, however, requires more research to understand effectiveness.

In conclusion, there are a number of gaps in our knowledge of the effectiveness of RTW programs in speeding up recovery and improving rehabilitation, particularly for specific injury groups and understanding the complex relationships between RTW programs and messages, improved outcomes and speed of recovery. There are likely overall benefits of providing well-designed and evidence-based RTW and rehabilitation programs in assisting workers to return to work as early and safely as possible and in terms of overall health and wellbeing and speed of recovery, regardless of the cause or nature of the injury. However, it is important to keep in mind that each grouping of injury and illness has distinct relationships to RTW and recovery and should be taken into account in the design of elements of RTW programs, and that more research is required to understand these relationships.

A definitive understanding of the links between RTW and speed of recovery would be a positive step to enhance existing RTW policies, practices and systems and promote appropriate and effective return to work messages.
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Nieuwenhuijzen, K., Verbeek, J., de Boer, A., Blonk, R., & van Dijk, F. (2004). Supervisory behaviour as a predictor of return to work in employees absent from work due to mental health problems. *Occupational and Environmental Medicine, 61*, 817-823


