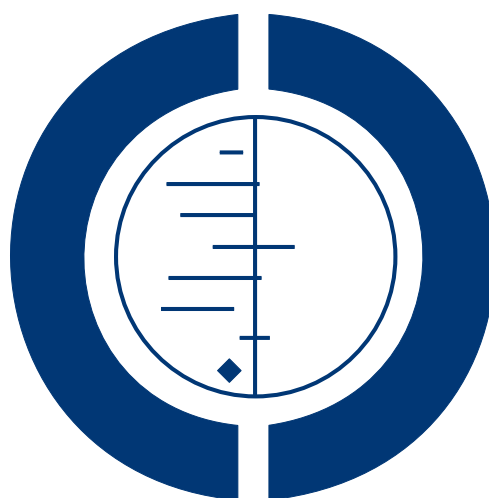


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[Intervention Review]

Pre-employment examinations for preventing injury, disease and sick leave in workers

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ABSTRACT

Background

Many employers and other stakeholders believe that health examinations of job applicants prevent occupational diseases and sickness absence. This is an update of the original Cochrane review ([Mahmud 2010](#)).

Objectives

To evaluate the effectiveness of pre-employment examinations of job applicants in preventing occupational injury, disease and sick leave compared to no intervention or alternative interventions.

Search methods

We searched CENTRAL (the Cochrane Library), MEDLINE, EMBASE, CINAHL, PsycINFO and PEDro (up to 31 March 2015). We did not impose any restrictions on date, language or publication type.

Selection criteria

We included randomised controlled trials (RCTs), controlled before-after (CBA) studies, and interrupted time-series (ITS) studies of health examinations to prevent occupational diseases and injuries in job applicants in comparison to no intervention or alternative interventions.

Data collection and analysis

All five review authors independently selected studies from the updated search for inclusion. We retrieved two new studies with the updated search from 1 April 2008 to 31 March 2015, resulting in a total of eleven studies.

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Main results

We included two RCTs, seven CBA studies and two ITS studies. Nine studies with 7820 participants evaluated the screening process of pre-employment examinations as a whole, and two studies with 2164 participants evaluated the measures to mitigate the risks found following the screening process. The studies were too heterogeneous for statistical pooling of results. We rated the quality of the evidence for all outcomes as very low quality. The two new CBA studies both used historical controls and both had a high risk of bias.

Of those studies that evaluated the screening process, there is very low quality evidence based on one RCT that a general examination for light duty work may not reduce the risk for sick leave (mean difference (MD) -0.09, 95% confidence interval (CI) -0.47 to 0.29). For army recruits, there is very low quality evidence based on one CBA study that there is a positive effect on fitness for duty after 12 months follow-up (odds ratio (OR) 0.40, 95% CI 0.19 to 0.85).

We found inconsistent evidence of an effect of job-focused pre-employment examinations on the risk of musculoskeletal injuries in comparison with general or no pre-employment examination based on one RCT with high risk of bias, and four CBA studies. There is very low quality evidence based on one ITS study that incorporation of a bronchial challenge test may decrease occupational asthma (trend change -2.6, 95% CI -3.6 to -1.5) compared to a general pre-employment examination with lung function tests.

Pre-employment examinations may also result in a rejection of the applicant for the new job. In six studies, the rates of rejecting job applicants increased because of the studied examinations, on average, from 2% to 35%, but not in one study.

There is very low quality evidence based on two CBA studies that risk mitigation among applicants considered not fit for work at the pre-employment examination may result in a similar risk of work-related musculoskeletal injury during follow-up compared to workers considered fit for work at the health examination.

Authors' conclusions

There is very low quality evidence that a general examination for light duty work may not reduce the risk for sick leave, but may have a positive effect on fitness for duty for army recruits after 12 months follow-up.

There is inconsistent evidence of an effect of job-focused pre-employment examinations on the risk of musculoskeletal injuries in comparison with general or no pre-employment examination. There is very low quality evidence that incorporation of a bronchial challenge test may decrease occupational asthma compared to a general pre-employment examination with lung function tests. Pre-employment examinations may result in an increase of rejecting job applicants in six out of seven studies.

Risk mitigation based on the result of pre-employment examinations may be effective in reducing an increased risk for occupational injuries based on very low quality evidence. This evidence supports the current policy to restrict pre-employment examinations to only job-specific examinations. Better quality evaluation studies on pre-employment examinations are necessary, including the evaluation of the benefits of risk mitigation, given the effect on health and on the financial situation for those employees who do not pass the pre-employment examination.

PLAIN LANGUAGE SUMMARY

Health examination of people before they start work at a new job to prevent injuries, disease and sick leave

What is the purpose of health examinations before people start work at a new job?

The aim of pre-employment examinations is to find people who may have a higher risk for occupational disease, injury or sick leave if they are given the job. By not employing job applicants with higher health risks, it may be possible to prevent disease or injury. These possible health benefits come at the cost of the applicants not having a job. Other prevention strategies are to fix the problems found at the examination by changing work tasks or by physical fitness training.

How has this been studied?

We conducted a systematic search for studies that had been published up to 31 March 2015. We found eleven studies, including 7820 people that evaluated the whole process of health examinations, including rejection of applicants with higher risks of occupational disease, injury or sick leave.

What did the research find out?

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One of the included studies found that a general examination did not reduce sick leave among light duty workers compared to no intervention. However, another study found that army recruits were more fit for duty 12 months after a health examination. Results were inconsistent in five studies that compared job-focused pre-employment examinations with no health examination or with a general health examination. Pre-employment examinations may also result in the rejection of a job applicant. In six studies the rates of rejecting job applicants because of health examinations increased, on average, from 2% to 35%, but not in one study. Two of the included 11 studies (including 2164 people) compared job applicants that were considered fit during the health examination to those who received particular recommendations to address health-related issues based on the health examination. Both studies reported no difference in musculoskeletal injury rates between groups during follow-up. This means that job applicants were able to take care of the health problems identified during their health examinations.

Quality of the evidence

We rated all studied comparisons providing very low quality evidence.

Conclusions

Health examinations that focus on health risks of particular jobs may be effective. Adequately dealing with potential health risks by changing work tasks or physical fitness training may also be effective. We need more and better quality evaluation studies. Not allowing people to work in certain jobs may have effects on their health. It also costs them money. Future research should assess both.