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## The Injury Consequences of Promoting Physical Activity: A Review

- Physical activity is one of the recommended strategies for reducing obesity, a condition that is linked with many health problems including diabetes, some types of cancer, hypertension, osteoarthritis, cardiovascular disease, and mental health problems.
- One of the concerns about increasing physical activity is the risk of injury associated with exercise.
- Previous studies have found that people who had higher levels of physical activity were more likely to be injured.
- Some studies have found that people who were overweight or obese were more likely to be injured compared with people who were of healthy weight. This is of particular concern because physical activity is promoted as a weight loss strategy.

To address these concerns, the BC Injury Research and Prevention Unit conducted a literature review to identify recent research evidence on injuries associated with physical activity.

### Research questions:

1. Are people who increase their physical activity at an increased risk of injury?
2. Are people who are overweight or obese at an increased risk of activity-related injury compared with those who are of healthy weight?

### Methods:

- The search strategy required that the title of the report contain both:
  - 1) terms related to physical activity (e.g., activity, sport, exercise)
  - 2) terms related to promotion (e.g., intervention, prescription, program).
- Five electronic databases were searched for evidence (CINAHL, EMBASE, ERIC, Medline, PsycINFO) and 18,668 unique citations were identified.
- A screening process was conducted using systematic review software (Distiller SR) to identify the studies that met the inclusion criteria for the review.
- A total of 55 unique studies were found. Important characteristics of each study were extracted from the reports and summarized in tables.

\* **Leaders in the production and transfer of injury prevention knowledge and the integration of evidence-based injury prevention practice in the daily lives of British Columbians**

Canadian Physical Activity Guidelines recommend

> 150  
min/week



> 60  
min/day

How many follow these guidelines?

15%



< 10%

<http://www.csep.ca/CMFiles/Guidelines/>

## Limitations:

A number of weaknesses of the studies included in the review limit our ability to be confident in the results and apply them across the entire population of BC and Canada. These include:

- Thousands of studies were identified in which physical activity was promoted, but a very small number of these studies included information about injuries associated with physical activity.
- Few studies included information about whether injury-prevention strategies were used.
- Very few studies included a clear and complete description of the methods used to assess injuries.
- Several studies did not include information about the length of the exercise sessions or the intensity of the prescribed exercises.
- Information about participants' ethnicity and socio-economic status was missing from about half of the studies.

## Future Research:

- Include the measurement of injury, and other potential adverse consequences of physical activity, as part of future research on physical activity promotion.
- Provide a clear definition of injury, and the types of injuries that are reported.
- Use reliable and valid measures of injury, and clearly report methods used for assessing injury.
- Assess injury associated with all types of physical activity, including activity that is not part of the intervention.
- Clearly differentiate between injuries that are sustained while participating in the intervention and injuries that are sustained during physical activity that is not part of the intervention.
- Report rates of injury in terms of the total amount of exposure to physical activity (e.g., number of injuries per 1,000 hours of physical activity).
- Report information about the severity of the injuries.
- Provide information about any injury-prevention strategies that were part of the intervention.
- Report the proportion of participants in each weight category (underweight, healthy weight, overweight, obese) to provide a better description of the sample.
- Assess whether weight influences the risk of injury associated with physical activity within randomized controlled trials of physical activity promotion.
- Assess whether the type of physical activity (e.g., strength training, aerobic exercise, team sports) influences the risk of injury within randomized controlled trials of physical activity promotion.



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A copy of the report entitled “*The Injury Consequences of Promoting Physical Activity: An Evidence Review*” is available at: <http://www.injuryresearch.bc.ca/wp-content/uploads/2013/05/Injury-and-Physical-Activity-FINAL-Report-May24131.pdf>