



ADVOCATE'S GATEWAY

Occupational Health Clinics for Ontario Workers Inc. (OHCOW), Sudbury, Ontario

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Body Mass Index (BMI)

What is BMI?

BMI is a measurement that is calculated from a person's weight and height. It is used by health professionals to help identify possible weight problems for adults. BMI is an inexpensive and reliable indicator of obesity

for people but is not a diagnostic tool. One important thing to remember is that BMI is calculated from an individual's weight which includes both muscle and fat. Therefore, some individuals may have a high BMI but not have a high percentage of body fat.

How to Calculate BMI?

Metric Formula:
Weight (kg) / [Height (m)]²

Example: 56kg / [1.63m]² =
21.1 BMI (Normal)

Standard Formula:

Weight (lbs) / [height (inches)]² x 703

Example: 175lbs / [66 inches]² x 703 =
28.2 BMI (Overweight)

Health Effects of Elevated BMI

Anyone who is considered to be overweight (BMI 25.0 – 29.9) or obese (BMI >29.9) is at high risk of developing adverse health conditions.

BMI	Weight Status
< 18.5	Underweight
18.5 - 24.9	Normal
25.0 - 29.9	Overweight
>29.9	Obese

Considerations should be made towards developing both healthy eating habits as well as a regular fitness regime. In doing so, losing as little as 10% of your body weight can help lower the chances of developing seri-

ous health conditions (National Heart Lung and Blood Institute, 2007).

Musculoskeletal Disorders Associated with Elevated BMI

The three main risk factors associated with the development of a musculoskeletal disorder (MSD) include force, repetition, and posture. However, there is an association between people with high BMI and the prevalence for low back pain (LBP), knee pain (osteoarthritis), carpal tunnel syndrome (CTS), and plantar fasciitis.

Osteoarthritis

Osteoarthritis within the knee is the breakdown of cartilage. Over time, cartilage may wear away entirely, causing the bones to rub together. Osteoarthritis can affect any joint but usually affects weight bearing joints such as the hips, knees, hands, and spine (The Arthritis Society, 2007). Excess weight can place extra stress on these joints, ultimately speeding up the process of developing osteoarthritis. Tsuritani and colleagues (2002) showed that obesity tended to impair well-being through pain in the legs, therefore resulting in difficulty with daily movements. A study by Aoyagi et al. (2002) indicated that BMI was positively associated with joint pain in the legs, and that the greater the BMI, the greater the chance of developing osteoarthritis. Several studies have indicated that there was an association between BMI and the prevalence of knee pain (osteoarthritis) (Segal et al., 2005; Jinks et al., 2006; and Ghroubi et al., 2007).

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Back Pain

Low back pain (LBP) is a common problem in today's society. Depending on the severity, this pain can restrict activities of daily living and interfere with normal working function.

Adverse Health Effects

- High Blood Pressure (Hypertension)
- Cholesterol Problems
- High Blood Sugar
- Type 2 Diabetes
- Coronary Heart Disease
- Stroke
- Gallbladder Disease
- Arthritis
- Breathing Problems
- Certain Types of Cancer
- Knee Pain (Osteoarthritis)
- Low Back Pain
- Carpal Tunnel Syndrome (CTS)
- Plantar Fasciitis

BMI CONTINUED

"According to the World Health Organization, obesity has reached epidemic proportions globally, with more than one BILLION adults being overweight."

Obesity, being one of the causes for low back pain can trigger a wide range of different types of pain (dull, mild, annoying, persistent, severe, disabling, etc). Increased weight associated with obesity causes increased weight on the spine and pressure on the discs often causing back pain (Men's Health: Low Back Pain., 2006). Studies over the years have indicated an association between the occurrence of LBP and obesity. For example, a study done by Han (1997) illustrated that women who were overweight had a significantly increased likelihood of developing low back pain. Leboeuf-Yde and colleagues (1999) indicated that obesity played a major part in causing LBP in both men and women. Other studies have shown that there is a greater risk of developing LBP due to increased amounts of weight placed on the spine from being overweight. A study by Bener and colleagues (2003) indicated that there was a 56.1% risk in males and a 73.8% risk in females of developing LBP, caused by higher BMI levels.

Carpal Tunnel Syndrome (CTS)

CTS occurs when the median nerve, which runs from the forearm into the hand, becomes compressed at the wrist (The National Institute of Neurological Disorders and Stroke, 2007). Compression may occur due to inflammation of surrounding tendons, bending at the wrist due to workplace postures, or by other daily lifestyle choices which may contribute to the compression of this nerve. People who are overweight place a lot of strain on their body. This excess weight contributes to a lot of compression within the body. Over time, it can be shown that a greater body mass appears to reduce nerve flow into the hand, resulting in a greater risk of developing CTS (Mayo Clinic, 2006). In 1994, Werner indicated that individuals who had been classified as obese (BMI greater than 29) were two and a half times more likely to be diagnosed with carpal tunnel syndrome than individuals with a BMI less than 20 (within normal range). Three years later a study came out which showed that 43% of obese women and 32% of obese men were more likely to be diagnosed with CTS compared to 21% of slender women and 0% of slender men (Mohgtaderi et al., 1997). More recently, a study confirmed BMI as an independent risk factor for CTS in both genders (Boz et al., 2004).

Plantar Fasciitis

Plantar Fasciitis is an inflammatory condition caused by excessive wear to the plantar fascia of the foot. This condition is generally associated with long periods of weight bearing. People who are obese, experience greater weight gain,

work in jobs that require a lot of walking on hard surfaces, and/or are inactive throughout their daily lives, are all at a higher risk of developing plantar fasciitis (The Merck Manual, 2003). A study conducted by (Sadat-Ali, M., et al. (1998), stated that obesity was a cause and initiator of heel pain and plantar fasciitis. It also suggested that improper footwear was one of the causes which aggravated the condition Riddle and colleagues (2003) indicated that people whose BMI was greater than 30 and spent the majority of their workday on their feet, were at an increased risk of developing plantar fasciitis. Recently, Irving and colleagues (2006) indicated that increased weight in a non athletic population, increased age, decreased ankle dorsiflexion, and prolonged standing all demonstrated evidence of an association with chronic plantar heel pain.

Conclusion

According to the World Health Organization obesity has reached epidemic proportions globally, with more than 1 billion adults being overweight. These results demonstrate the need for comprehensive and widespread educational interventions in order to inform others of the serious health effect associated from being overweight.

A large number of people will undergo some form of treatment to attempt to reduce their weight, usually either in an attempt to improve their health, or to improve their lifestyle. Recommended treatment for being overweight includes a modified or controlled diet in conjunction with increased exercise between 3-5 times per week for approximately 30-45 minutes per day.

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TOOLS FOR PREVENTION

OHCOW Sudbury has recently produced a number of informative DVDs that are a must-have for organizations concerned with the specific issues of health and safety. The prices we charge is to recover only the costs for reproduction and shipping of the DVD's.

Please contact OHCOW Sudbury if you are interested in any of the following DVD titles:
(705) 523-2330 or (800) 461-7120
email: sudbury@ohcow.on.ca

Current DVD titles include:

- Minimal Lift Program [Useful for health care settings (i.e. nursing homes, etc)] \$10.00
- Reminder Cards for the Lift Program - 20¢ each
- Repetitive Strain Injury (RSI) Day 2006 — \$10.00
- Repetitive Strain Injury (RSI) Day 2007 — \$10.00
- International Conference:
Occupational Lung Diseases: Up Close \$25.00 (+ shipping)

WHY DO THIS NEWSLETTER....?

In our catchment area, we are hearing from many advocates that they are feeling isolated. In providing this newsletter OHCOW is striving to reduce this isolation, and enhance communication networks amongst advocates and OHCOW. It is

hoped that OHCOW can provide more support to each advocate by providing up-to-date information on current health and safety topics.

OHCOW — WHO WE ARE? HOW & WHO CAN WE HELP?

OHCOW is a valuable occupational health related resource that is available to your members at no cost. The Occupational Health Clinics for Ontario Workers (OHCOW) were established in 1989 and are funded by the Workplace Safety and Insurance Board (WSIB). There are clinics in Hamilton, Toronto, Sarnia, Windsor and Sudbury. Staffed by a multi-disciplinary team of specially trained occupa-

tional health doctors, occupational health nurses, occupational hygienists, ergonomists, researchers, and administrators, each OHCOW clinic provides comprehensive occupational health services and information. Our mandate is the prevention of occupational illnesses and injuries. We do this through the identification of the causes which have led to illnesses and injuries. This also provides us with a window into the workplace.

In order to carry out our work we partner with, among others, pub-

lic health officials; universities; the Ministry of Labour; the Ministry of Health; the Workplace Safety and Insurance Board (WSIB); and organizations such as cancer coalitions. OHCOW works with medical and nursing schools to, provide occupational education to medical and nursing students. We also work with unions holding clinics for workers about illnesses which they think might be work related. In short, we have the experience, the knowledge and the credibility to assist you.

We're on the web!
<http://www.ohcow.on.ca/clinics/sudbury/>

OHCOW SUDBURY WEBSITE

Did you know that OHCOW Sudbury updates its website on a monthly basis? Each month features a new article written by an OHCOW staff member on current issues within occupational health and safety.

The website also contains information regarding past case studies, research projects, staff biogra-

phies, games & tests, past articles on health and safety issues, and information on education seminars that OHCOW offers.

Check it out!!!

<http://www.ohcow.on.ca/clinics/sudbury>

WHAT DO YOU THINK?

We welcome feedback for generating topics that would be of interest to advocates. Please forward any question or suggested topics to be covered in future issues either by e-mail, phone or fax by using the contact information below. ■

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Occupational Health
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 des travailleurs (ses)
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