Fit, fat or BOTH?

Obesity among children is up 35% in the past decade.

The Globe and Mail, "Forget about being fat, just be fit" Sept 29, 1998

Obesity

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Oesity: Time for a new approach to an old problem?

Geoff D.C. Ball, PhD Candidate (Nutrition & Metabolism) and RD University of Alberta

It seems as though stories and discussions about overweight and obesity are everywhere these days – in newspapers, on magazines...on television. The messages from research studies echo familiarities: "Children are fatter than ever before," "Teens are fatter than ever before," "Adults are fatter than ever before." Figures in white lab coats stand in front of TV cameras describing how our ever-expanding society eats a nutritionally inadequate diet, exercises infrequently, and places too big a demand on our health care system. Obviously, the solution to the obesity problem requires weight loss. We must eat less and exercise more. Right?

Classification of obesity

Before discussing what should be done regarding the obesity epidemic, it is helpful to define what it actually means to be overweight or obese. A number of criteria have been used over the years to distinguish between obese and non-obese individuals (i.e., percent overweight, "ideal weight", "desirable weight"). The most recent and universally accepted definitions of relative weight status (and subsequent health risk) have been proposed by the International Obesity Task Force (IOTF) for the World Health Organization (WHO). These researchers grouped individuals into three relative weight categories based on body mass index (BMI): (1) underweight, (2) normal range, and (3) overweight (Table 1). Within the overweight category, individuals can be subdivided based on their degree of overweight. Accordingly, all obese people are overweight, but overweight people are not necessarily obese.

Although BMIs are useful for creating guidelines for healthy adults between 18 and 65 years of age, it does not apply to pre-pubertal or breast feeding women. You can calculate your BMI on the Health Canada web site: www.hc-sc.gc.ca/hpb/nutrition. New BMI-based growth charts should be available for use with children and adolescents later this year.

While the BMI classification is sufficient to gauge the prevalence and incidence of overweight and obesity within and between populations, it is inappropriate to judge the physical health of individuals based on this criterion alone. When evaluating the physiological health of individuals, information regarding other variables such as body fat distribution (i.e., waist circumference or waist-to-hip ratio), blood pressure, insulin sensitivity, blood cholesterol and other risk factors can be used to determine whether individuals are experiencing an increased risk of a chronic disease.

Table 1. Classification of overweight in adults using BMI

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI</th>
<th>Risk of obesity co-morbidities</th>
</tr>
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<tbody>
<tr>
<td>Underweight</td>
<td>&lt; 18.5</td>
<td>Low risk of obesity co-morbidities</td>
</tr>
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<td>Normal Range</td>
<td>18.5 – 24.9</td>
<td>Low risk of obesity co-morbidities</td>
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<tr>
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<td>&gt; 24.9</td>
<td>Increased risk of obesity co-morbidities</td>
</tr>
<tr>
<td>Pre-obese</td>
<td>25.0 – 29.9</td>
<td>Moderate risk of obesity co-morbidities</td>
</tr>
<tr>
<td>Obese class I</td>
<td>30.0 – 34.9</td>
<td>Severe risk of obesity co-morbidities</td>
</tr>
<tr>
<td>Obese class II</td>
<td>35.0 – 39.9</td>
<td>Very severe risk of obesity co-morbidities</td>
</tr>
<tr>
<td>Obese class III</td>
<td>&gt; 40.0</td>
<td>Very severe risk of obesity co-morbidities</td>
</tr>
</tbody>
</table>

Five recommendations for achieving positive lifestyle behaviours

1. Eat according to hunger level (i.e., eat when you're hungry and stop when you're full).
2. Move your body not for the purpose of weight loss, but because it feels good.
3. Abandon the scale as an indicator of health.
4. Reduce the stress in your life. Prioritize those tasks that prevent you from making healthy choices.
5. Appreciate that health can come in many different shapes and sizes.

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</table>

Fat and fit

Contrary to the weight-revised paradigm that suggests overweight and obese people are healthy and not at risk for disease, studies have consistently shown that obesity increases the risk for a variety of chronic diseases. In fact, the risk of developing chronic diseases increases with increasing BMI. For example, the risk of developing diabetes, heart disease, and some types of cancer increases with increasing BMI.

References


Geoff Ball is a PhD Candidate with the Department of Agricultural, Food and Nutritional Science at the University of Alberta. For more information, he can be reached at: 780-492-6207. E-mail: geoffball@ualberta.ca
The Cost of Being Sedentary

According to a recent study (Birmingham et al., 1999), the total direct cost of obesity in Canada in 1997 was estimated to be more than $1.8 billion (range = $829.4 million to $3.5 billion). This cost translates to approximately 3.4% of total health care expenditures for all diseases in Canada. Because of methodological limitations, the authors felt that their estimate was conservative. Birmingham et al. (1999) found similar economic costs have been associated with obesity in countries such as New Zealand, Australia, and France.

Subsequently, Birmingham et al. (1999) suggest that the cost-effectiveness of specific interventions such as diet, exercise, and pharmacotherapy be assessed. To assess costs, such assessments have been done for exercise in Canada. Two reports, prepared for the Canadian Fitness and Lifestyle Research Institute (The Conference Board of Canada, 1996; Wood, 1993), show that annual reduction in treatment costs for diseases associated with obesity due to a 1% increase in physical activity is in the millions of dollars (see Table 1). Wood (1993) estimated that the 1996 health care costs associated with ischemic heart disease would have been 24% lower if 160%, as opposed to 24%, of Canadians had been physically active in 1981. From a public health perspective, experts (e.g., Lau, 1999) suggest that increased energy expenditure (physical activity) in combination with a reduced caloric intake (diet) is the most effective way to deal with the obesity epidemic we are now experiencing in North America.

The Cost of Being Active

While time is the most frequently cited barrier for not being more active, most Albertans and Canadians, financial costs are often stated as a barrier too. In Canada, low-income families identify financial costs as the main reason their children are not more active. As a minimum participation in physical activity, including recreational and sport pursuits, costs a Canadian family approximately $720 per year (see Table 2). Once transportation is taken into account, the cost of physical activity is likely to be higher for the average family. There is no doubt that financial limitations used to be removed if all Canadians are to enjoy an active lifestyle. Similarly, economic benefits will accrue, due to health care savings, if as many Canadians as possible are provided the opportunity to be active. Better yet, it does not cost anything to go for a walk or for children to run around in a park.

Table 1. Annual Reduction in Treatment Costs

<table>
<thead>
<tr>
<th>Disease Category</th>
<th>Cost Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic Heart Disease</td>
<td>10,235,000.00</td>
</tr>
<tr>
<td>Colon Cancer</td>
<td>477,000.00</td>
</tr>
<tr>
<td>Diabetic Mellitus (Type II)</td>
<td>877,000.00</td>
</tr>
</tbody>
</table>


Table 2. The Average Annual Cost of Participation in Physical Activity Per Family

<table>
<thead>
<tr>
<th>CFLRI (1996b)</th>
<th>Cost per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td>792.00*</td>
</tr>
<tr>
<td>Adult</td>
<td>609.00*</td>
</tr>
</tbody>
</table>

Statistics Canada (1996) Family

Canadian Council on Social Development (1997) Child

718.00

707.00

* includes transportation costs

Table 2. The Average Annual Cost of Participation in Physical Activity Per Family

In 1988, more Canadians were inactive (43%) than who smoked (28%) or had hypertension (14%). While smoking and hypertension are perceived to be more deadly, the risk rate for all-cause mortality is almost the same across these behaviors or disorders. That is, almost as many Canadians will die every year from the effect of inactivity as from smoking or having high blood pressure. Similar effects are witnessed for morbidity. Taking into account the enjoyment that often accompanies physical activity, such as developing skill mastery, or viewing the beautiful outdoors while on a bike ride or hiking the scenic mountains, the costs of being active are far less than the costs of being sedentary from both a personal and societal perspective. Thus, we ignore activity at our peril. Siting in front of the television on a regular basis is much more expensive to us than the cost of our monthly cable bill.

References


Second to tobacco smoking, obesity is now a leading cause of illness and early death in the western world. Weight loss is a central preoccupation of modern society, with 40% of adult women and 25% of men currently trying to lose weight.

WellSpring

Centre

Happyenings

10TH ANNIVERSARY
Alberta Centre for Well-Being

Older Adult Tidbits
The following documents will be released May 12th by the Active Living Coalition for Older Adults in Toronto, ON. Watch your local media for further information.
- Canada's Physical Activity Guide to Healthy Active Living for Older Adults - after May 12th, copies will be available through provinces, territories, and national organizations as well as by calling 1-888-334-9769 or www.activecanada.ca
- “Moving Through the Years” Active Living for Older Adults: A Blueprint for Action
- A Canadian Declaration on Active Living for Older Adults
- The newly revised, colorful “101 Active Living Ideas for Older Adults’ brochure/poster is in. To obtain an order form, please contact the Alberta Centre for Well-Being at 1-800-661-4551.
- Check out the following web sites for further information around older adults: Health in Action: Older Adults Theme Page: www.health-in-action.org/older_adults/
- Senior ACT - Activities For A Geriatric Setting: www.senioract.com/
- Get Active Review: Research Information on Physical Activity
This one-page, two-sided quarterly publication is designed to bring you the facts about physical activity issues.
Volume 1 - 1998
1. Bone Mass in Premenopausal Women
2. Bone Mass in Postmenopausal Women
3. Fibromyalgia and Exercise
4. Pregnancy and Physical Activity
Volume 2 - 1999
1. Exercise Prescription for People with Type 2 DM
2. Cancer Prevention and Physical Activity
3. Cardiovascular Disease
4. TBA
Each volume subscription is $13.55 (incl. GST and $2.50 shipping) or $12.50 (if GST exempt). To order, just send a cheque or money order to the ACFWB.

ACFWB 10th Anniversary Trivia

Trivia Question: What are these people doing at the ACFWB display?
- a) They are buying down on some food cause they’re hungry.
- b) They are playing “scratch & win” lottery.
- c) They are bowing down to former staff member Pamela Seto.
- d) They are competing, a Wellness Check to assess their well being.

See answer below.

Dr. H. A. (Art) Quinney
1999 Active Living Award Recipient

On March 20, Dr. Quinney received a volunteer recognition award at the 1999 Recreation, Parks, Wildlife and Active Living Conference for his outstanding achievements in promoting active living. Whether a leader, teacher or volunteer, Dr. Quinney's dedication to the promotion of active living in Alberta and nationally is unprecedented.

Art has been integral involved with the establishment of the ACFWB, played a role in the growth and development of the Alberta Fitness Leadership Certification Association, Fitness Appraisal Certification and Accreditation Programs, the Blue Water Network, University of Alberta Sport Performance Unit and University of Alberta Fitness Units. Art has been a powerful voice for the active living community through the Active Lifestyle Portfolio and has cultivated a number of active living leaders through his teachings and volunteer positions. Art has volunteered with numerous organizations and programs over the years such as Shape Up Alberta, Alberta Heart Health, Alberta Recreation and Parks Leisure Education Strategy Steering Committee, Sport Science Association of Alberta, Sport Medicine Council of Alberta, ACFWB, Octobefit and Lake Louise Wellness Networking Conference. Dr. Quinney has truly made an outstanding contribution to health and well-being in Alberta.

Art Quinney

Trivia Answer:
d. The Wellness Check was a fun and popular community checklist that assessed the well-being of individuals. During its operation from 1992-96, over 18,000 adults and teens completed the Wellness Check.

Low SES Linked to Being Overweight
Marie-Claude Faquette, PhD, RD
University of Alberta

The body weight of Canadians has been increasing in the last decades. The 1999 National Population Health Survey (NPHS) reported that 30% of the Canadian population was overweight, an increase of 8% from 1991. Overweightness is not distributed equally among socioeconomic groups. Provincial and national surveys have shown that the incidence of overweight drops with an increase in income and education (Table 1). Compared with higher income earners, Canadians living in low-income situations are more likely to be overweight.

While the association between excess weight and low socioeconomic status (SES) is not completely understood, SES and income are powerful determinants of health. Low SES is not only associated with income but also with level of education and living and working conditions. This article will briefly examine the relationship between excess weight and SES from a behavioural perspective by focusing on food habits and physical activity, and from a socio-environmental perspective by focusing on access to food and health services.

In a biomedical model, overweightness is associated with an increased caloric intake. Yet data suggest that many low income individuals experience a food shortage. In 1997, the Edmonton Food Bank (now Food Bank) served 192,067 persons, an average of 526 individuals per day. These recipients reported that they use the Food Bank because their income was insufficient to meet their regular expenses. In addition, 76% of parents reported that they skipped meals with their kids. These results suggest that excess food is not the primary factor contributing to overweightness in low SES groups.

On the other hand, food habits and lifestyle practices such as physical inactivity may vary according to income level. Low SES groups have been reported to buy different foods than higher SES groups. Studies have shown that low SES individuals consume more milk, more fats, more potatoes and cereals, less fresh fruit and vegetables, and less high-fibre products such as whole wheat bread. Most of their calories also came from fat. Physical inactivity could also be a factor of weight gain in low SES groups. Persons living in low-income situations, in developed nations, have been shown to be more physically inactive. Even if these studies report an association between food, lifestyle practices and SES level, they have not consistently shown that these factors predict overweightness in low SES groups.

Unfortunately, the origin and motives behind food and lifestyle practices in low SES groups have not been fully explored. For instance, food habits could not only reflect food preferences but also choices based on food prices or food's potential to bring a feeling of fullness. A recent survey showed that 61% of Food Bank users were conscious of the poor quality of their diets, that 56% decided to eat more fruits and vegetables, and that 79% reported they would like to provide more fruits and vegetables to their children. For physical inactivity, one could also speculate that persons on a tight budget have no money or time to engage in physical activities.

Furthermore, psychosocial factors such as feelings of powerlessness, lack of self-esteem, social isolation, and lack of support networks could also influence food and lifestyle habits. More studies are needed to understand the food and lifestyle habits of low SES groups.

Individual factors are only one element in the web of influences on weight. Behavior change of low SES groups will have a limited impact on their weight unless broader socio-environmental factors are also modified. As mentioned previously, low SES persons not only have less disposable income, they also have limited access to Table 1: Percentage overweight individuals in Canadians population according to educational level

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Percentage Overweight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 12 years</td>
<td>24.9%</td>
</tr>
<tr>
<td>12-15 years of education</td>
<td>20.5%</td>
</tr>
<tr>
<td>More than 16 years</td>
<td>17.3%</td>
</tr>
</tbody>
</table>

continued on page 5
Overweightness in Low SES Groups (continued)

many services and products, for instance, reasonably priced quality food, and health services. A study in Nova Scotia showed that food prices in poor neighborhoods were higher than in higher income sub-

divisions. Poor policies around social programs, welfare, health services and the food supply could reduce inequities between the poor and the rich on all levels, including overweightness.

In conclusion, there are no easy solutions to the issue of overweightness in low SES groups. A combination of individual behavior change and socio-environmental change is needed. Such changes could take diverse forms such as programs that ensure sufficient income for all, policies that ensure healthy foods are reasonably priced, and both programs and policies that facilitate safe and inexpensive places to be physically active.

Food Bank

The role of the food bank is to provide emergency food assistance. Food hampers are not meant to meet nutritional requirements. Hampers provide cereal, salt, soup, pasta and sauce, fruits and vegetables, dry breads, and bread. They also take into account the different nutritional needs of family members, i.e. children and infants. Fresh fruits and vegetables are difficult to provide as they will easily and are often initially in poor condition when they are donated. This explains the food bank’s preference for non-perishable foods which can be higher in fat and salt. However, the two top foods on the Food Bank’s wish lists are peanut butter and powdered milk, healthy foods. In some grocery stores $5, $10 or $15 hampers can be purchased. These hampers include beans, soup, pasta, and peanut butter. Donating to the Food Bank does not encourage overweightness; in fact it provides much needed nutrients and energy to Albertans in need.

Lorraine A Watson, RN, PhD
University of Calgary

Understanding Your Hunger in Relation to Weight Management

Hunger, an innate universal human experience, is a positive protective mechanism which motivates individuals to ingest nutrients necessary for survival. Pseudohunger is poorly understood and in western culture it is deemed to be a negative experience that should be avoided. Another confounding factor in understanding hunger is that the terms “appetite” and “hunger” are used interchangeably to describe the same phenomenon. So what can we do? Let us look at specific strategies to control our hunger.

What has all this got to do with weight management? Knowing whether you are experiencing appetite or hunger can be of importance when determining the need to eat. Appetite is based on past experiences with food; this includes taste, texture, and feelings of well-being. Appetite can stimulate or deter hunger sensations. For example, knowing that you are going to a location where you will have an opportunity to eat your favourite food may cause your mouth to water or you to feel a general excitement. This anticipation of eating something that tastes good may override feelings of satiation. Consequently, a person who is faced with the multitude of foods presented at a buffet or family gathering may over indulge.

Hunger perceptions are based upon chemical signals received and interpreted by the hypothalamic area of the brain that are indicative of a nutrient deficit. However they are concurrently influenced by one’s physiological, environmental, and emotional contexts as well as that person’s established habits. Thus hunger is a very complex and dynamic phenomenon that is not experienced in the same way in all individuals, nor are hunger sensations consistent within each individual. In addition, the sensation of hunger can be ignored or satisfied by eating. Therefore how one interprets the culmination of all these signals as hunger is very individualistic and a key to understanding hunger. For example, the sensation of rumbling in the stomach is thought to be the common indicator of hunger, however it is not relevant to all individuals. Sensations such as nausea, satiety, irritation, fatigue, headache, or dizziness, etc. may be a misinterpreted indicator of hunger.

Once one determines that they are feeling a need to eat, several factors could be considered which relate to that person’s environment, emotional state, or established eating habits. Studies have found that people tend to eat more in a social context or when experiencing stress. Humans are creatures of habit so they get accustomed to eating certain foods at specific times of the day (e.g., a muffin with coffee during a break). Dieting also adds to the complexity of hunger interpretation. Findings from several studies have indicated that individuals reported no hunger sensations after three days of continuous fasting. However, individuals who were not fasting but were experiencing severe dietary restrictions maintained continuous highly painful hunger sensations.

The findings from a study of 359 healthy Alberta adults help to describe the relationships among these factors. The sample for this study was composed of 366 males and 71 females, whose mean age was 42 years. Almost 47% of the subjects had a Body Mass Index (BMI), an indicator of degree of adiposity, that was greater than normal (BMI 20-25). Findings from this study indicate that those individuals who were overweight did not perceive the sensations of hunger as intensely as those individuals who were of normal weight. This finding has implications for those trying to lose weight, in that these people may not know when they should eat. Another important finding was that overweight individuals struggled more with eating in response to a negative emotional state.

Another interesting finding of this study was that 79% of the sample had completed a post-secondary education program and 64% of the sample had an annual household income greater than $40,000.00. That the sample subjects were well educated and not from a low socio-economic group, findings from this study may lead health care professionals to consider weight management as an issue in higher socio-economic groups as well.

In conclusion, the important aspects of understanding hunger in relation to weight management are:

1. Identify what hunger feelings look like for you.
2. Describe your emotional state when you feel hungry, are you feeling sad, happy, bored, stressed, tired, etc.?
3. Note what time of day it is or how long it has been since you last ate.
4. Be aware of what choices of food you are presented with – do you pack a lunch or plan your meals? do you decide to eat because you are near your favorite restaurant?
5. Do you feel you are eating family or friends if you are eating alone or if you are eating in your car because that is all the time you have to eat. All of the aspects listed above play an important role in your hunger perception.

Dr. Watson is an Associate Professor at the University of Calgary, Faculty of Nursing. Her clinical practice and research focus on weight management in adults with autism and eating patterns and the relationship of these concepts to health promotion and lifestyle change. For further information, contact Lorraine Watson at (403) 220-6018 or E-mail: lwatson@ucalgary.ca

Related Readings:

In a 1995 study, Dr. Stephen Blair and his colleagues found that the heaviest men were not the most likely to die prematurely, but the least fit were regardless of their body mass index.


The need to eat depends on knowing if you are experiencing appetite or hunger.
Trym Gym: Balancing Your Lifestyle for Good Health and Weight Management

Liz Young, RN
University of Calgary

Weight problems are a serious, prevalent and recurring concern for millions of Canadians of all ages and walks of life. On any given day, millions of Canadians are trying to lose weight, usually with inappropriate practices. A multi-billion dollar "weight loss" business flourishes in Canada with many commercial fad diets and gimmicks. Many lose weight initially but tend to regain fairly quickly. The main reason is the focus on weight loss rather than on permanent lifestyle changes.

In 1972, a team of health professionals at the University of Calgary recognized the need to address this problem. Trym Gym, an industry-leading program, provides a supportive environment for clients who are overweight, assisting them to modify their lifestyle in a manner that facilitates long-term weight management and good health. The basic premise is that unhealthy lifestyle and habit patterns that contribute to weight-related problems have been learned and that with appropriate input, education and personal support from staff and fellow participants, these behaviours can be replaced with a healthier lifestyle. Trym Gym utilizes a multi-disciplinary approach, the Transtheoretical Model of change, and an emphasis on active living to encourage a healthier lifestyle behaviour change.

The multi-disciplinary team, consisting of a registered nurse or other health educator as group leader, a registered dietician and fitness professional, lead a 12-week community-based program that involves two one-hour weekly fitness classes and a weekly educational session in the classroom. These groups are typically mixed, consisting of no more than 20 participants, with ages ranging from 18-85 years. Group presentations and discussions provide opportunities for participants to share common concerns, facilitate mutual support and promote individual success.

Trym Gym combines three components essential to the development of a healthier lifestyle in six complete programs: behaviour change, nutrition, and physical activity.

1. Behaviour Change: Trym Gym emphasizes two strategies to increase individual awareness of their own behaviour patterns.
   - Self-monitoring, where individuals keep records of behaviour patterns, will increase awareness of factors that contribute to being overweight, inactive or sedentary.
   - Application of techniques to change the habits of eating and activity, e.g., goal setting, environmental management, use of positive self-talk, and rewards.

2. Nutrition: An individual meal plan is developed for each participant using Canada's Food Guide. Individual energy needs and preferences are taken into consideration.

3. Physical Activity: People need to be active to lose weight and be healthy. Your body is designed to move and it is surprising how little time it takes. Recent research has shown that significant health benefits can occur from simple living a more active lifestyle and increasing activities of daily living, e.g., taking stairs instead of the elevator, parking farther away from your destination, or starting with a 10-minute walk/s at lunch time.

   For many sedentary and overweight people, who place little value on exercise, active living is a more realistic goal. Trym Gym classes are designed to encourage a more active lifestyle.

A recent study in the Journal of Occupational Health and Environmental Medicine showed that body mass index (BMI) is closely related to employee healthcare costs and time away from work. The study measured the BMI of 3,000 workers and found that healthcare costs were lowest for workers with a BMI of 25-27. For a 5'6" woman, that's equivalent to 155 pounds, or 174 pounds for a man who is 5'10". Workers with a higher BMI used twice as many sick days over a three-year period, averaging 8.5 days versus 3.7 days.

—ACSM's Health & Fitness Journal
Jan/Feb 1999

References:

WellSpring

Between 1988 and 1994, 20% of US children participated in 2 or fewer bouts of vigorous activity per week, and the rate was higher in girls (26%) than in boys (17%). Overall, 26% of US children watched 4 or more hours of television per day and 67% watched at least 2 hours per day. Boys and girls who watch 4 or more hours of television each day had greater body fat (P < .001) and had a greater body mass index (P < .001) than those who watched less than 2 hours per day.

—JAMA
Mar 25, 1998

Trym Gym is not just about weight loss, but behavior change for a healthier lifestyle.
From the Resource Library

by Tracy Clameirs Kitagawa

For more information on the topic of obesity, check out the following sources:
• Handbook of Obesity (1998) edited by George A. Bray, Claude Bouchard and W. B. T. James. Based on the work of internationally renowned scientists, this reference text provides an exhaustive overview of the current state of knowledge regarding obesity. The intended audience of health practitioners, researchers and medical students will appreciate the text's division into four parts: 1. History, definitions and prevalence; 2. Epidemiology; 3. Pathophysiology; and 4. Evaluation, prevention and treatment. Price: $225 US; $10 6th ed. & GST. To order contact: Marcel Dekker Inc., 1-800-228-2186; e-mail: cutters@dekker.com. Also available for loan from the University of Alberta and University of Calgary Libraries.
• "Obesity in Children" (1997) and "Physical Activity for Sedentary Overweight Women" (1998) in The Research File, prepared by the Canadian Fitness and Lifestyle Institute. These one-page fact sheets summarize recent research findings and provide practical tips for practitioners to pass onto their clientele. Contact the resource library for copies; order a series subscription from the CFLRI in Ottawa (613) 223-5528 or visit their website: acbcinfo.ca/cflri.
• Various 1998 issues of the American Journal of Health Promotion highlight research studies related to body fat, weight management, obesity and physical activity. The July/August issue, for example, features an article titled "Children's Television Viewing, Body Fat, and Physical Fitness."
• The National Institute of Nutrition in Ottawa is also a recommended source for information on obesity. They produce resources for educators and consumers and can be reached at (613) 325-3335 (or visit their web site at www.nin.ca). Previous issues of their quarterly newsletter Rapport, as well as the NIN Review (a concise scientific summary of a specific nutrition issue) have featured articles on obesity.
• No obesity resource list is complete without reference to Dr. Steven Blair's work. Currently the director of research and director of epidemiology and clinical applications at the Cooper Institute for Aerobics Research in Dallas, Texas, he has published/edited numerous works on the subject of physical activity and has challenged the BMI measurement standards of overweight and obesity and in turn, the application of these measurements as indicators of fitness. Our library houses some of Dr. Blair's papers and keynote addresses, as well as his practical guidebook to improving one's health through moderate physical activity. He is also featured in a PBS documentary titled Frontline Fat, a one-hour PBS documentary, produced and aired in 1998, examines the environmental, social, and genetic factors related to obesity. Interviews with British and American researchers, medical doctors, public health officials, fashion industry personnel, young girls with weight concerns, and individuals diagnosed as clinically obese, rule for an engaging and thought-provoking presentation. Price: $19.98 US; $16.50 GS for shipping & handling. To order contact PBS at 1-800-328-7777 or: www.pbs.org.

What do your genes have to do with your jeans?

John C. Spence
ACFEB Senior Research Associate

Recent research by Dr. Claude Bouchard, a world-renowned expert on obesity from Laval University, suggests that obesity (i.e., BMI > 30) is explained, in part, by genetic factors. The most common ways to make this type of assessment in obese humans are to study twins (both and identical and fraternal), individuals within nuclear families, and/or adopted vs. biologic relatives. According to Dr. Bouchard, the heritability of human body fat ranges from 10-30% in adoption studies, 20-50% in nuclear families, and 50-80% in twin studies. Thus, in the case of twin studies, 50-80% of the variation in body mass index (BMI) is explained by the common genetic relationship between the siblings; furthermore, studies of identical twins reared apart, show that regardless of the differences in familial environment, if one twin is overweight or obese the other is likely to be overweight too. The closer, genetically, any two individuals are within a family, the stronger the relationship between their BMIs. So the body fat of a sibling, particularly an identical twin, is more indicative of an individual's BMI than that of their parents. Similarly, the body fat of a spouse is less predictive of an individual's BMI than that of their parents or siblings body fat.

The more obese an individual, the more likely it is that one or more close relatives (i.e., parent or siblings) are obese. The risk of obesity, as defined by the 90th BMI percentile, is about two to three times higher for an individual with a family history of obesity. Those falling in the 95th percentile are three to six times more likely than non-obese individuals, to have obese family members. Along with other work, these findings suggest that morbidity obesity (BMI > 40) has more of a genetic component than overweight.

Dr. Bouchard has no doubt about a genetic component to human body fat. It is not, however, that we have genes that predispose many of us to be obese. Rather, these genes seem to be related to how our bodies respond to excess caloric intake (food consumption) and energy expenditure (physical activity). In other words, people endowed with the fat gene(s) put on more weight than those not endowed when they take in more energy than they expend. Also they lose less weight in times of negative energy intake. While a genetic component of obesity appears to exist, Dr. Bouchard argues that much of the variation in BMI is not explained by genetic factors. Furthermore, he believes that environmental conditions and lifestyle characteristics may explain as much, if not more, of the population variation in BMI.

Bibliography

Don't expect pounds shed in a commercial weight-loss program to stay off - they almost always come back. That's the conclusion of a long line of studies on such diets. For instance, a 1996 study looked at nearly 200 obese dieters who lost an average of 48 pounds on a diet involving formula and preportioned foods. Three years later, only one in eight of them had kept off 75% of the lost weight; just under half managed to keep off at least two pounds. But two out of five gained back more than they had lost. The strongest predictor of maintaining the weight loss: regular exercise. The best predictor of weight regain: frequent television watching.

Calendar of Events

If you would like to post an educational workshop, conference or event, please contact Felicia Taylor, Ph. (780) 437-7802, Fax: (780) 437-2802, E-mail: felicia.taylor@ualberta.ca

1999 - Canada
International Year of Older Persons
Contact the Canada Coordinating Committee for the IYOP
Ph: 613-994-5815
Website: http://www.iyop.cc.ca

Canada Health Day
May 12
Contact Canadian Public Health Association, Ph: 613/977-3799

Catch the Western Wave to Fitness Challenge
May 15-18, Calgary AB
Contact The Canadian Aquatic Leaders Alliance Inc, 125 21st Av, Scarborough ON M1N 3W6, Ph: 416/789-2712, Fax: 416/789-1392, E-mail: catch@timerlog.com

National Intramural Recreation Conference
May 14-15, Hamilton ON
Hosted by the Canadian Intramural Recreation Association (CIRA)
Contact Ph: 905/575-2683, Fax: 905/575-2266, E-mail: harteras@nathawk.on.ca

Research to Action Forum
May 15-17, Hamilton ON
Working together for the integration of Canadians with Disabilities. Contact Atlantic Health Promotion Research Centre, Dalhousie University, Rm. 5200 Donson Building, 901 University Avenue, Halifax, NS B3H 3J5, Ph: 902/494-2240, Fax: 902/494-3594, E-mail: Francisco.Veintimilla@dal.ca

National Forum on Physical Activity and Disability
Jun 3-5, Ottawa ON
Contact Chris Bonni, Active Alliance for Canadians with a Disability, 1101 Prince of Wales Dr. St. Catharines ON L2N 7C7, Ph: 613/773-8710 or 1-800-771-0641, Fax: 613/773-2588, E-mail: disability.alliance@pm.net, activityline.ca

Public Health in the New Millennium
June 6-9, Winnipeg MB
Contact the Canadian Public Health Association, 600-1955 Cailing Avenue, Ottawa, ON K1Z 8R3, Ph: 613/725-7399, Fax: 613/725-2962, E-mail: hugh@chp.ca

National Healthcare Leadership Conference and Exhibition
June 6-9, Quebec City ON
Revisiting our Services, Reinventing our Health Care: the largest national gathering of healthcare decision-makers in Canada. Contact Anne Schilke, Baker Associates, 11659 72 Ave., Edmonton, AB T6C 3R9, Ph: 780/436-0483, Fax: 780/437-5984, E-mail: schilke@bakers.ca

Alberta Senior Games
Jul 25-28, Olds/Windsor AB
Contact Jean Frederick, Ph: 403/283-1161

Health Promotion 99
School 59
Aug 16-20, Saskatoon SK
From Principles to Practice: Exploration of fundamental processes like the mapping of links from determinants to health outcomes, and how to choose appropriate strategies for action and planning evaluation of actions. Contact Prairie Region Health Promotion Research Centre, University of Saskatchewan, Health Sciences Building, 107 Wiggins Road, Saskatoon, SK S7N 5E5, Ph: 306/966-7979, Fax: 306/966-7970, E-mail: sprp@sasku.sk.ca

Canadian Association on Gerontology Conference
November 4-7, Ottawa ON
The dawn of a new era in aging: challenges for researchers. Contact the Canadian Association on Gerontology, Ph: 613/728-9347, Fax: 613/728-8916, E-mail: capage@magi.com, Web: www.capage.ca

2000 - Canada
Beyond 2000: Healthy Tomorrows for Children and Youth
June 14-16, Ottawa ON
Hosted by the Canadian Paediatric Society and the Canadian Institute of Child Health, together with the Canadian Academy of Child Psychiatry. To link prevention and health promotion with care and treatment, and provide an opportunity for research dissemination. Contact the Canadian Paediatric Society, 100-2101 Walden Drive, Ottawa, ON K1G 4C8, Ph: 613/526-9337, Fax: 613/526-3355, E-mail: beyond2000@cpps.ca

2001 - Canada
17th World Congress of Geography
July 1-6, Vancouver BC
Contact: Dr. Gloria Garen, Chair 2001 World Congress Organizing Committee, Ph: 604/291-5602, Fax: 604/291-5606, E-mail: geography@twc.ca, Web: www.humlib.ualberta.ca

1999 - International

National Wellness Conference
July 12-13, Stevens Point, Wisconsin
Contact National Wellness Institute, P.O. Box 827, Stevens Point, Wisconsin 54481-0827, Ph: 715/342-2069, Fax: 715/342-2970, E-mail: msw@wellnessinst.org

Community Building: Weaving the Fabric of Resilient Communities
July 25-28, Spokane, Washington
Contact: Horace Dooly, Ph: 206/755-1111, Fax: 206/504-5107, E-mail: info@travelnewsletter.com, Web: www.comm-design.org

5th World Congress on Physical Activity, Aging & Sports
Aug 12-14, Orlando, Florida
 Held in conjunction with the 1999 International Conference on Aging and Physical Activity.
Web: www.humanmetrics.com

Alberta Centre for Well-Being

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