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Metabolic Syndrome: Can We Prevent this Epidemic?

The Council for Continuing
Pharmaceutical Education (CCPE) tries
to understand this growing problem



Talking with Jocelyn Marquis, MSc, Scientific Advisor, CCPE

Dave was lucky. His wife, who quickly brought him to the hospital, saved him from what could have been a potentially deadly myocardial infarction (MI).

Dave is 56, overweight, lives a highly sedentary lifestyle and suffers from increased lipid levels, along with some mild form of Type 2 diabetes.

Could this MI have been prevented?

The clustering of these factors presents a great challenge for the healthcare system. Indeed, the combination of obesity, diabetes and dyslipidemia, defined as Metabolic Syndrome, may constitute the next pandemic of the civilized world.

With 60% of Canadians overweight, (BMI > 25), obesity is a growing problem (Figure 1). This problem has significantly impacted the US healthcare system, as well as society, by generating an average of \$117 billion a year in direct medical and indirect costs (not factoring in quality of life or increased death rate).

The future seems potentially worse because of the expected diabetes prevalence, which is assumed to rise and double in the next 20 years (Figure 2). Related costs have and will quadruple from 1998 to 2020, reaching \$20 billion a year. The World Health Organization (WHO) projects a 44% increase in deaths related to diabetes. More than 50% of individuals are asymptomatic, living with the disease and not knowing it. As for those with a confirmed diagnosis, the Diabetes In Canada Evaluation (DICE)¹ study showed that long-term glycemic control is observed in only 38% of patients. Sixty-three per cent of these patients also suffer from hypertension and 59% from dyslipidemia. According to the United Kingdom Prospective Diabetes Study (UKPDS),² 59% of deaths in this population are related to cardiovascular diseases.

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And we may only be seeing the tip of the iceberg (Figure 3), as there is low awareness of the problem.

Fifty-eight per cent of baby boomers state that weight issues may have little, if any effect on their cardiac health. Lifestyle modifications, such as exercise and healthy nutrition, have not been adopted by a vast majority of these individuals. Already 21% of individuals aged 45-59 years suffer from various cardiovascular diseases. Clearly, this population will constitute the highest risk in the next few years for cardiac strokes as well as cerebrovascular accidents.

How will our healthcare system, already stretched by a significant waiting list, be able to cope with this situation, especially when the cardiologists, who should take care of such patients, are within the same age group and only a decade from retirement?

Our futures appear to be more hopeless when we look at our children (Figure 1). While unheard of in the 1960s and 1970s, we are now seeing Type 2 diabetes in this age group!

We may be able to change this situation by acting now. The INTERHEART study³ has shown that 90% of MIs are related to five modifiable risk factors, namely ApoB: A1 ratio, obesity, cholesterol, diabetes and hypertension. Effective therapies exist to treat the last three factors and the therapies are supported by well-defined guidelines that should be strictly adhered to. The DICE¹ study shows that 50% of diabetic patients who are followed by their family physicians, have not achieved target glycemia levels as defined in the 1998 Canadian Diabetes guidelines. Maximizing today's aramentarium should help, but newer agents, such as rimonabant and others, could prove to be worthwhile additions. As well, the control of hypertension in diabetes can help to reduce cardiovascular risk by 32%.² Acting on a patient's compliance is the key for successful blood glucose control. Simple intervention, such as routine blood glucose self-monitoring, has been shown to reduce both disease-related morbidity and all-cause mortality as demonstrated by the Retrolective Study: Self-monitoring of blood

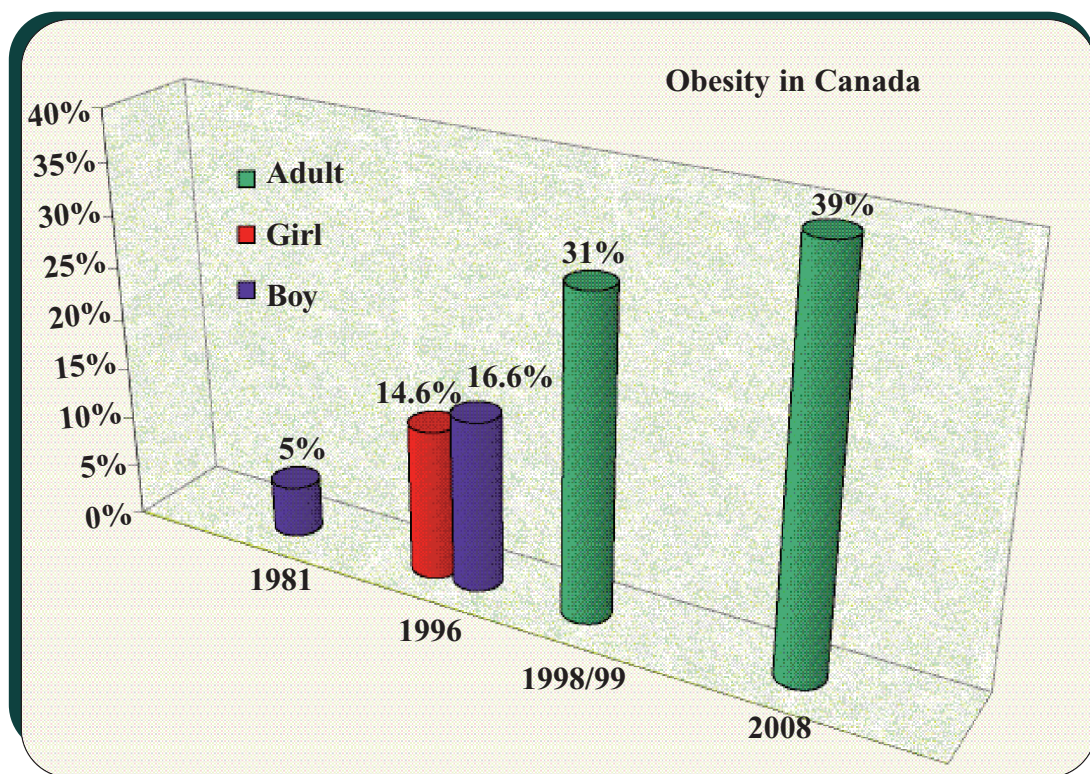


Figure 1. Adapted from *Overweight and Obesity in Canada: A Population Health Perspective*. CPHI/SPC August 2004.

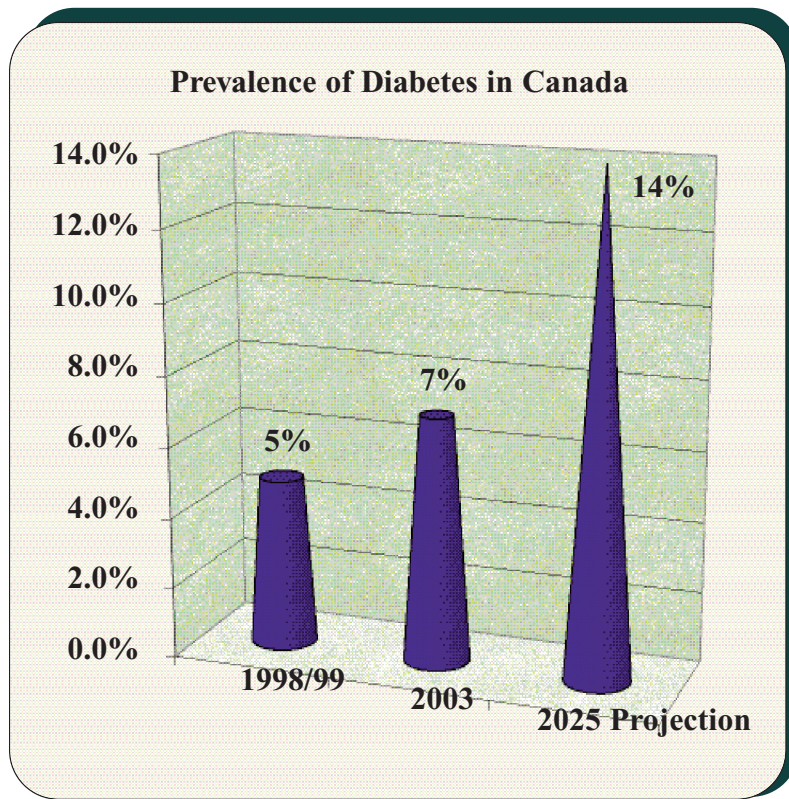


Figure 2. Adapted from CCPE Metabolic Syndrome Course April 2006.

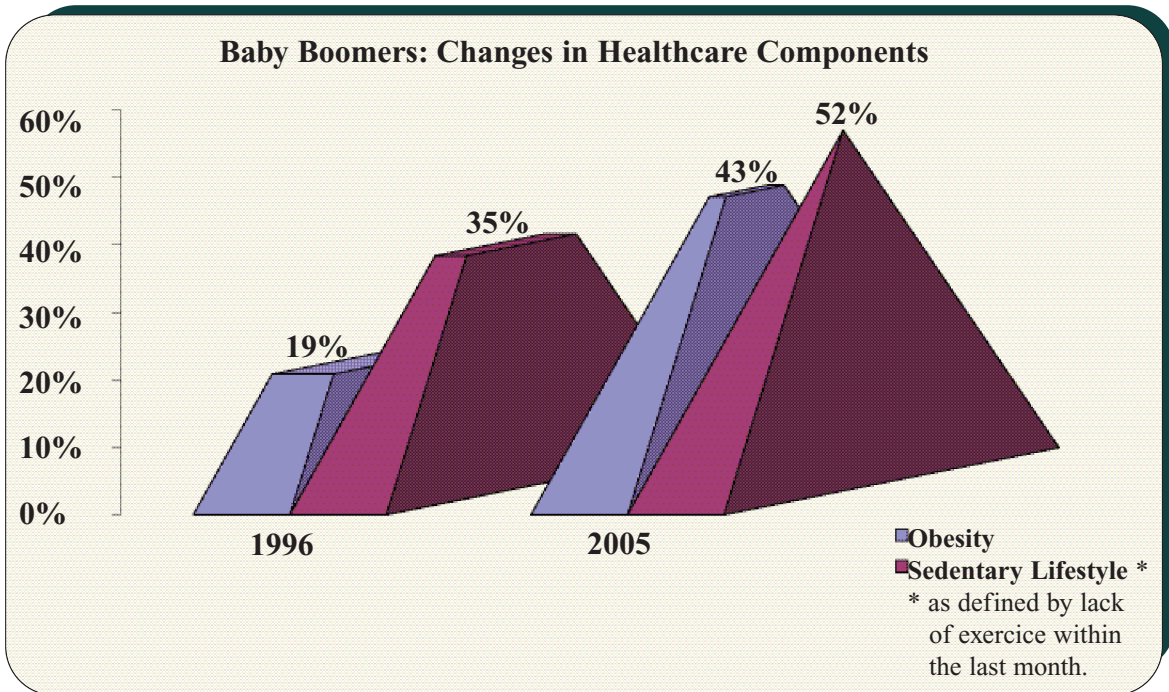


Figure 3. Enquête sur la santé cardiaque des Canadiens et des Canadiennes, 1996 et 2005. Fondation Canadienne des Maladies du Coeur.

glucose and Outcome in people with Type 2 diabetes (ROSSO).⁴ Development of anti-obesity agents are well in place, but it has become clear that lifestyle intervention, as well as medications, all need to lead to greater weight loss.⁵

Clearly, the pharmaceutical community's role in tackling the various components of Metabolic Syndrome will prove multi-factorial and may require more implication and a partnership that could be different from the traditional approach. In doing so, CCPE has created not only a new course but, a holistic approach to learning about Metabolic Syndrome. With web and audio complements and a new look, this new course should rapidly become a highly valuable asset to anyone involved in this field. As well, it will be valuable in dealing with the various related components of Metabolic Syndrome, such as cardiology, endocrinology and obesity.

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