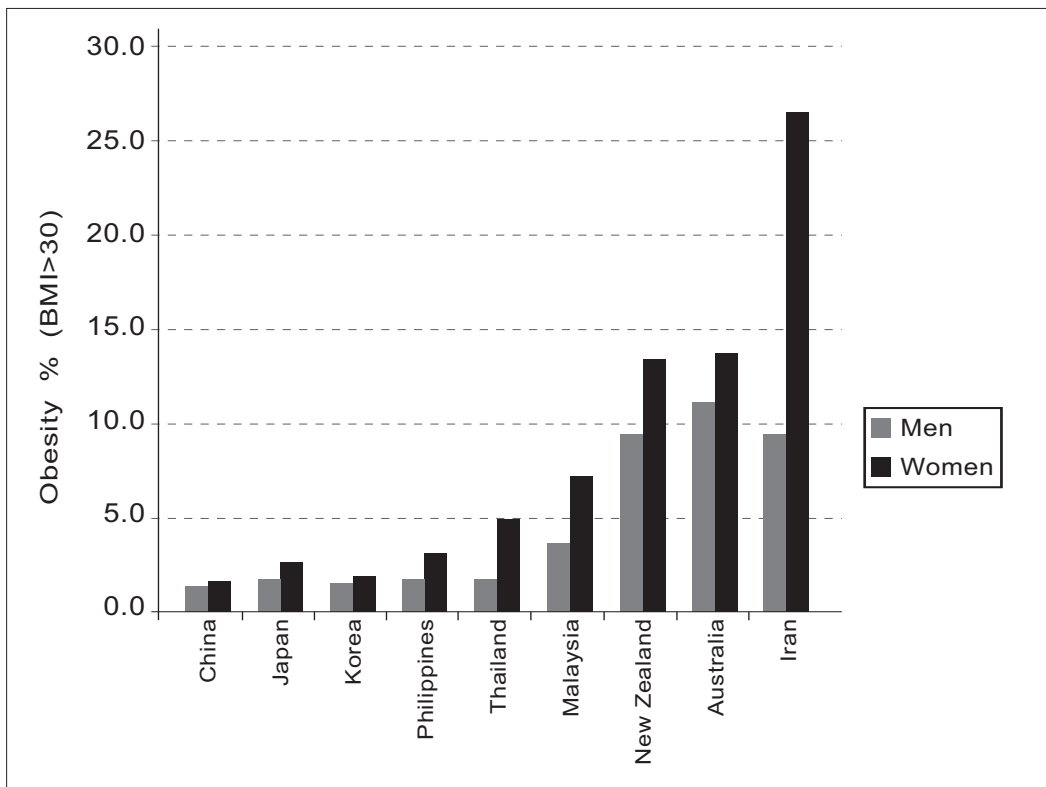


## 4. WHY THE CONCERN?

### 4.1 Prevalence of Obesity

The global burden of overweight (BMI 25.0 – 29.9) and obesity (BMI≥30.0) is estimated at more than 1.1 billion. There is evidence that the risk of obesity related diseases among Asians rises from a lower BMI of 23.0 (James et al. 2002). If this were adopted as a new benchmark for overweight Asians, it would require a major revision of approaches in the Asian sub-regions, where a significant proportion of the 3.6 billion population already has a mean BMI of 23.4. In the Asia Pacific region, the prevalence of obesity in men is between less than 1% in China to about 58% in urban Samoa. In women, obesity prevalence is between less than 2% in China to about 77% in urban Samoa. Available local data on prevalence of obesity reveals that the problem faced in Malaysia is more serious than those reported in other Asian countries (Figure 3).



**Figure 3: Prevalence of obesity in Asia Pacific region.**

*(Source: WHO/IASO/IOTF, 2000)*

In adults, Ismail et al (1995) reported prevalence of overweight and obesity in men were 24.0% and 4.7% while in women were 18.1% and 7.7%, respectively. Among the Malaysian women, ethnic differences were evident, with Indians (16.5%), Malays (8.6%) and Chinese (4.3%). Rural-urban differences are also evident, 5.6% of urban men were obese as compared to 1.8% for rural men while 8.8% urban women were obese as compared to 2.6% of rural women. The National Health Morbidity Survey (1996) reported that in males, 20.1% were overweight and 4.0% obese while in females, 21.4% were overweight and 7.6% obese. It also reported that there is little difference between rural and urban populations and that there are more obese Malays and Indians as compared to Chinese (Lim et al. 2000).

Even among rural communities, the problem of overweight and obesity is also large. In a nationwide study of 4,600 rural villagers throughout Peninsular Malaysia, Khor et al (1999) reported a prevalence of 19.8% overweight amongst men and 28.0% amongst women. The prevalence of obesity was 4.2% amongst men and 11.1% amongst women.

Overweight and obesity are also a concern among the older populations in this country. In a study among 945 elderly people, mostly Malays, from major functional groups in Peninsular Malaysia (Zaitun et al. 1999), the prevalence of overweight was 18.2% and obesity was 4.3%. In a later study by Suzana et al. (2003) among 820 elderly Malays from four rural areas of Peninsular Malaysia, the prevalence of overweight and obesity were 24.7% and 11.4%, respectively.

## **4.2 Health Consequences of Obesity**

The health consequences of obesity are many and varied, ranging from an increased risk of premature death to several non-fatal but debilitating complaints that impact on immediate quality of life. Obesity exacerbates numerous health problems, both independently and in association with other diseases (WHO 1998). In particular, it is associated with the development of diabetes mellitus, coronary heart disease, hypertension, obstructive sleep apnoea and osteoarthritis of large and small joints. In comparison, obese individuals showed an increased incidence of certain form of cancers such as gallbladder, biliary passages, breast (postmenopausal), uterus (cervix and endometrium), ovaries, rectal and prostate cancers (Table 5).

## **4.3 Economic Cost of Obesity**

The economic costs of obesity are important issues to health care providers and policy makers alike. The economic costs of obesity have been assessed from several developed countries and range from 2% to 6% (Wolf & Colditz, 1994; Caterson & Broom, 2001) of total health care cost (Table 6). In the USA, the treatment of obesity and its primary co morbidities costs the US health-care system more than USD99 billion each year and consumers also spend in excess of USD33 billion annually on weight-reduction products and services. Moreover, obesity is associated with an increased prevalence of socioeconomic hardship due to a higher rate of disability, early retirement and widespread

discrimination. As a result of industrialisation, urbanisation and economic stability in Malaysia, significant changes in diet and lifestyle have occurred. This has had a dramatic impact on the health of the population as evidenced from the increased prevalence of obesity and chronic non-communicable diseases. Malaysia is thus entering a new era of public health where nutrition-related issues will become ever more prominent.

**Table 5: Health risks associated with obesity**

<b>Greatly increased (RR &gt; 3)</b>	<b>Moderately increased (RR 2-3)</b>	<b>Mildly increased (RR 1-2)</b>
<ul style="list-style-type: none"> <li>• Type 2 diabetes</li> <li>• Gallbladder diseases</li> <li>• Dyslipidaemia</li> <li>• Metabolic Syndrome</li> <li>• Breathlessness</li> <li>• Sleep apnoea</li> </ul>	<ul style="list-style-type: none"> <li>• Coronary heart disease</li> <li>• Cardiac failure</li> <li>• Hypertension</li> <li>• Osteoarthritis (knees and hips)</li> <li>• Hyperuricaemia and gout</li> </ul>	<ul style="list-style-type: none"> <li>• Cancer (breast cancer in postmenopausal women, endometrial cancer, colon cancer)</li> <li>• Reproductive hormone abnormalities</li> <li>• Polycystic ovarian syndrome</li> <li>• Impaired fertility</li> <li>• Low back pain</li> <li>• Increased anaesthetic risk</li> <li>• Foetal defects associated with maternal obesity</li> </ul>

RR = Relative risk

Source: WHO 1998

**Table 6: Economic costs of obesity**

<b>Country / Year</b>	<b>Direct</b>	<b>% Health care expenditure</b>	<b>Indirect</b>
USA 1990* / 1998	\$51.6 billion BMI > 29 kg/m <sup>2</sup>	5.7%	\$47.6 billion
Australia 1989/1990*	AUD 464 million BMI > 30 kg/m <sup>2</sup>	>2%	n.a.
NZ 1996	\$135million	2.5%	n.a.
France 1992*	FF12 billion BMI ≥ 27 kg/m <sup>2</sup>	2%	FF0.57 billion
Netherlands 1981 - 1989*	DFL 1 billion BMI > 25 kg/m <sup>2</sup>	4%	n.a.
Canada 1999	\$1.8 billion BMI > 27 kg/m <sup>2</sup>	2.4%	n.a.
UK 1994	GBP 30 million	n.a.	GBP 165 million
England 1999	GBP 130 million – overweight GBP 15 million – obese	n.a.	n.a.

n.a. not available

Source: \*Wolf & Colditz (1994); Caterson & Broom (2001)

#### 4.4 Health Benefits of Weight Loss

Overweight and obesity are known to be associated with an increased risk of disease and death (Allison et al. 1999; NIH, NHLBI 1998). Randomized controlled trials have shown that weight loss (as modest as 5 to 15% of excess total body weight) reduces the risk factors for at least some diseases, particularly cardiovascular disease, in the short term. Weight loss results in lower blood pressure, lower blood sugar and improved lipid levels (NIH, NHLBI 1998). The benefits of weight loss on health risks in obesity are shown in Table 7.

**Table 7: Benefits of weight loss on health risks in obesity**

<b>Health Risk</b>	<b>Benefits of 10 kg weight loss in a 100 kg subject</b>
Blood Pressure	<ul style="list-style-type: none"> <li>• 10 mmHg reduction systolic BP</li> <li>• 20 mmHg reduction diastolic BP</li> <li>• Weight loss also reduces the need for medication in hypertensive patients</li> </ul>
Lipids	<ul style="list-style-type: none"> <li>• 10% reduction in total Cholesterol</li> <li>• 15% reduction in LDL-cholesterol</li> <li>• 30% reduction in triglycerides</li> <li>• 8% increase in HDL-cholesterol</li> </ul>
Diabetes	<ul style="list-style-type: none"> <li>• &gt;50% reduction in risk of developing DM (Weight loss of 6.8 kg is associated with 58% reduction in incidence of diabetes, at 3 years in the Diabetes Prevention Programme) (Knowler et al. 2002)</li> <li>• 30-50% reduction in Fasting plasma glucose</li> <li>• 15% reduction in HbA1c</li> </ul>
Osteoarthritis	<ul style="list-style-type: none"> <li>• Decrease BMI &gt; 2kg/m<sup>2</sup> associated with more than 50% decreased risk for developing osteoarthritis (Felson et al. 1992)</li> </ul>
Mortality	<ul style="list-style-type: none"> <li>• 20-25% reduction in all-cause mortality</li> <li>• 30-40% reduction in diabetes-related death</li> <li>• 40-50% reduction in obesity-related cancer death</li> </ul>

Source: SIGN (1996); MASO/AMM/MEMS (2004)

## REFERENCES

- Allison DB, Fontaine KR, Manson JE, Stevens J & Van Itallie TB. (1999). Annual deaths attributable to obesity in the United States. *Journal of the American Medical Association*. 282(16):1530-1538.
- Caterson ID & Broom J. (2001). *Obesity*. London: Harcourt Health Communications.
- Felson DT, Zhang Y, Anthony JM, Naimark A & Anderson JJ. (1992). Weight loss reduces the risk for symptomatic knee osteoarthritis in women. The Framingham Study. *Annals of Internal Medicine*. 116(7):535-539.
- Ismail MN, Zawiah H, Chee SS & Ng KK. (1995). Prevalence of obesity and chronic energy deficiency (CED) in adult Malaysians. *Malaysian Journal of Nutrition*. 1:1-9.
- James WPT, Chen C & Inoue S. (2002). Appropriate Asian body mass indices? *Obesity Reviews*; 3(3):139.
- Knowler WC, Barrett-Connor E, Fowler SE, Hamman RF, Lachin JM, Walker EA & Nathan DM. (2002). Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *New England Journal of Medicine*. 346(6):393-403.
- Khor GL, Azmi MY, Tee ES, Kandiah M & Huang MSL. (1999). Prevalence of overweight among Malaysian adults from rural communities. *Asia Pacific Journal of Clinical Nutrition*. 8(4): 272-279.
- Lim TO, Ding LM, Zaki M, Suleiman AB, Fatimah S, Siti S, Tahir A & Maimunah AH. (2000). Distribution of body weight, height and body mass index in a national sample of Malaysian adults. *Medical Journal of Malaysia*. 55(1):108-28.
- MASO/AMM/MEMS. (2004). *Clinical practice guidelines on management of obesity*. Report of the Malaysian Association for the Study of Obesity, Academy of Medicine Malaysia and Malaysian Endocrine and Metabolic Society, Kuala Lumpur.
- NIH, NHLBI. (1998). Clinical guidelines on the identification, evaluation and treatment of overweight and obesity in adults. HHS, PHS; pp. 12-19; 29 - 41.
- SIGN. (1996). *Obesity in Scotland: Integrating prevention with weight management*. Edinburgh: Scottish Intercollegiate Guidelines Network.
- Suzana S, Zuriati I, Afaf Ruhi AF, Suriah AR, Noor Aini MY, Fatimah A & Zaitun Y. (2003). Penilaian multidimensi status pemakanan dan kesihatan di kalangan warga tua Melayu di kawasan luar Bandar. Prosiding Seminar IRPA RMK-7 (Jilid II), Pusat Pengurusan Penyelidikan, Universiti Kebangsaan Malaysia, ms: 169-173. Seminar IRPA RMK-7 held in Century Mahkota Melaka on 17 – 19 Januari 2003.

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Wolf AM & Colditz GA. (1994). The cost of obesity: the US perspective. *Pharmacoeconomics* 5:34-37.

WHO. (1998). *Obesity: Preventing and managing the global epidemic*. Report of a WHO Consultation on Obesity. Geneva: World Health Organisation.

WHO/IOTF/IASO. (2000). *The Asia-Pacific perspective: Redefining obesity and its treatment*. Hong Kong: World Health Organization, International Obesity Task Force, International Association for the Study of Obesity.

Zaitun Y, Khor GL, Tee ES & Mirnalini K. (1999). Prevalence of obesity and other CVD risk factors among elderly in selected rural areas. Abstract in the Proceedings of the 3<sup>rd</sup> MASO Scientific Meeting on Obesity, 28-29 June 1999, Kuala Lumpur.