

**A SELECTION OF TEN CURRENT READINGS ON OBESITY  
AVAILABLE AS FULL-TEXT (SOME FREE SOME REQUIRING PAYMENT)**

Selection of readings made by A/Prof Goh Lee Gan

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## PREVALENCE

### Reading 1

Hedley AA, Ogden CL, Johnson CL, Carroll MD, Curtin LR, Flegal KM. Prevalence of overweight and obesity among US children, adolescents, and adults, 1999-2002. *JAMA*. 2004 Jun 16;291(23):2847-50.

URL: <http://jama.ama-assn.org.libproxy1.nus.edu.sg/cgi/reprint/291/23/2847.pdf>

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### ABSTRACT

**CONTEXT:** The prevalence of overweight and obesity has increased markedly in the last 2 decades in the United States.

**OBJECTIVE:** To update the US prevalence estimates of overweight in children and obesity in adults, using the most recent national data of height and weight measurements.

**DESIGN, SETTING, AND PARTICIPANTS:** As part of the National Health and Nutrition Examination Survey (NHANES), a complex multistage probability sample of the US noninstitutionalized civilian population, both height and weight measurements were obtained from 4115 adults and 4018 children in 1999-2000 and from 4390 adults and 4258 children in 2001-2002.

**MAIN OUTCOME MEASURE:** Prevalence of overweight (body mass index [BMI] > or =95th percentile of the sex-specific BMI-for-age growth chart) among children and prevalence of overweight (BMI, 25.0-29.9), obesity (BMI > or =30.0), and extreme obesity (BMI > or =40.0) among adults by sex, age, and racial/ethnic group.

**RESULTS:** Between 1999-2000 and 2001-2002, there were no significant changes among adults in the prevalence of overweight or obesity (64.5% vs 65.7%), obesity (30.5% vs 30.6%), or extreme obesity (4.7% vs 5.1%), or among children aged 6 through 19 years in the prevalence of at risk for overweight or overweight (29.9% vs 31.5%) or overweight (15.0% vs 16.5%). Overall, among adults aged at least 20 years in 1999-2002, 65.1% were overweight or obese, 30.4% were obese, and 4.9% were extremely obese. Among children aged 6 through 19 years in 1999-2002, 31.0% were at risk for overweight or overweight and 16.0% were overweight. The NHANES results indicate continuing disparities by sex and between racial/ethnic groups in the prevalence of overweight and obesity.

**CONCLUSIONS:** There is no indication that the prevalence of obesity among adults and overweight among children is decreasing. The high levels of overweight among children and obesity among adults remain a major public health concern.

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## Reading 2

Stubbs CO, Lee AJ. The obesity epidemic: both energy intake and physical activity contribute. *Med J Aust.* 2004 Nov 1;181(9):489-91.

URL: [http://www.mja.com.au/public/issues/181\\_09\\_011104/stu10428\\_fm.pdf](http://www.mja.com.au/public/issues/181_09_011104/stu10428_fm.pdf) (free full text)

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### ABSTRACT

Recent data from Australia, the United States and Europe show increased self-reported energy intake associated with obesity, in contrast to earlier suggestions that the obesity epidemic has occurred despite minimal or no increase in per capita energy intake from food. The effect of increased energy intake is compounded by sedentary lifestyles. Both physical activity and nutrition must be addressed to reduce the prevalence of obesity and improve the health of Australians.

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## Reading 3

McLennan J. Obesity in children. Tackling a growing problem. *Aust Fam Physician.* 2004 Jan-Feb;33(1-2):33-6.

URL: <http://www.racgp.org.au/afp/downloads/pdf/january2004/20040123mcenna.pdf> (free full text)

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### ABSTRACT

**BACKGROUND:** Childhood and adolescent obesity has increased dramatically over the past 25 years in Australia. Currently over 20% of Australian children are overweight or obese. The National Health and Medical Research Council has recently developed the 'Clinical practice guidelines for the management of overweight and obesity in children and adolescents'.

**OBJECTIVE:** This article discusses the assessment and management of childhood and adolescent overweight and obesity.

**DISCUSSION:** Children and adolescents with a body mass index over the 85th centile for age are classified overweight and those over the 95th centile, obese. Obesity has significant health consequences for children and adolescents, both in the short term and for their adult life. Family involvement is important in management, particularly in primary aged children. A combination of dietary modification, increased physical activity, decreased sedentary activity and behaviour modification is recommended.

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## MANAGING RISK FACTORS

### Reading 4

Nelson MR. Managing 'metabolic syndrome' and multiple risk factors. *Aust Fam Physician*. 2004 Apr;33(4):201-5.

URL: <http://www.racgp.org.au/afp/downloads/pdf/april2004/20040413nelson.pdf> (free full text)

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#### ABSTRACT

**BACKGROUND:** Risk factors tend to cluster and are shared across common diseases seen in general practice. The 'metabolic syndrome' is a cluster of fasting hyperglycaemia, abdominal adiposity, dyslipidaemia and hypertension. This syndrome is associated with both insulin resistance and behaviourally modifiable risk factors such as smoking, physical activity and unhealthy diet.

**OBJECTIVE:** This article aims to provide pragmatic guidance on conditions that are lifestyle based and present as a number of disease states that require multiple interventions. Management of comorbidity and multiple risk factors is discussed using a case vignette.

**DISCUSSION:** Metabolic disease states have common bases and their management is directed toward identifying all the risk factors, establishing absolute risk and intervening sequentially.

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## INTERVENTION PROGRAMMES

### Reading 5

Read A, Ramwell H, Storer H, Webber J. A primary care intervention programme for obesity and coronary heart disease risk factor reduction. *Br J Gen Pract*. 2004 Apr;54(501):272-8.

URL: <http://juno.ingentaselect.com/vl=3450113/cl=45/nw=1/rpsv/www/rcgp/09601643/contp1-1.htm> (payment required)

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#### ABSTRACT

**BACKGROUND:** Obesity is a growing problem, with its associated morbidity, mortality, and economic costs. Treatment options and the availability of resources are limited and inconsistent. **AIM:** To implement and evaluate a primary care dietitian-run weight management programme.

**DESIGN OF STUDY:** Pilot intervention study.

**SETTING:** Three health centres in the north locality of Nottingham City Primary Care Trust.

**METHOD:** Two hundred and sixteen individuals, with a body mass index (BMI) > 30 kg/m<sup>2</sup> and coronary heart disease risk factors, were recruited to attend education and support groups. Changes in BMI, waist circumference, percentage body fat, blood pressure, blood lipids, glycated haemoglobin (HbA1c), and assessment of psychological wellbeing using the "short form" (SF-36) general health questionnaire, were conducted at 0, 3, and 12 months.

**RESULTS:** One hundred and thirty patients completed the 3-month phase, and 75 completed the follow-up 9-month phase. Four per cent of patients entering the programme achieved a 10% weight loss, and 13% achieved a weight loss between 5 and 10%. Those continuing to attend achieved a mean weight loss of 2.9% (mean = 3.1 kg, ranging from a loss of 23.6 kg to a gain of 3.8 kg, P < 0.001) at 3 months, which was maintained at 12 months. Waist circumference, percentage body fat, systolic blood pressure, total cholesterol, HbA1c (in those with diabetes) (P < 0.001), and triglycerides (P = 0.004) showed reduction. Psychological wellbeing improved in seven of the nine categories of the SF-36.

**CONCLUSION:** Those who continued to attend the programme showed significant reduction in weight and other clinical parameters at 3 months, and this was maintained at 1 year with less intensive support. An attrition rate of approximately 66% by 12 months demonstrated that, in spite of intensive dietetic resources, patient retention and follow-up of progress was difficult.

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### Reading 6

Proietto J, Baur LA. Management of obesity. *Med J Aust.* 2004 May 3;180(9):474-80.

URL: [http://www.mja.com.au/public/issues/180\\_09\\_030504/pro10445\\_fm.pdf](http://www.mja.com.au/public/issues/180_09_030504/pro10445_fm.pdf) (free full text)

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#### ABSTRACT

Obesity has reached epidemic proportions in Australia, with 67.5% of men, 52.1% of women and 19%-23% of children and adolescents being overweight or obese. Genetically predisposed individuals are especially vulnerable to developing obesity in the highly obesogenic environment of 21st century Australia. Obesity causes or contributes to many comorbidities, including type 2 diabetes, hypertension, dyslipidaemia, sleep apnoea, non-alcoholic steatohepatitis, orthopaedic problems and polycystic ovary syndrome. Management in the individual requires their complete co-operation and should be tailored to individual needs and complications. Management of obesity in children should consider the family context and involve the parents. All treatment strategies must involve lifestyle modification, with a reduction of energy intake and an increase in physical activity. Some patients may also require the assistance of drug therapy or bariatric surgery.

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### Reading 7

Stern L, Iqbal N, Seshadri P, Chicano KL, Daily DA, McGrory J, Williams M, Gracely EJ, Samaha FF. The effects of low-carbohydrate versus conventional weight loss diets in severely obese adults: one-year follow-up of a randomized trial. *Ann Intern Med.* 2004 May 18;140(10):778-85.

URL: <http://jama.ama-assn.org.libproxy1.nus.edu.sg/cgi/reprint/293/1/43> (free full text)

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#### ABSTRACT

**BACKGROUND:** A previous paper reported the 6-month comparison of weight loss and metabolic changes in obese adults randomly assigned to either a low-carbohydrate diet or a conventional weight loss diet.

**OBJECTIVE:** To review the 1-year outcomes between these diets.

**DESIGN:** Randomized trial.

**SETTING:** Philadelphia Veterans Affairs Medical Center.

**PARTICIPANTS:** 132 obese adults with a body mass index of 35 kg/m<sup>2</sup> or greater; 83% had diabetes or the metabolic syndrome.

**INTERVENTION:** Participants received counseling to either restrict carbohydrate intake to <30 g per day (low-carbohydrate diet) or to restrict caloric intake by 500 calories per day with <30% of calories from fat (conventional diet).

**MEASUREMENTS:** Changes in weight, lipid levels, glycemic control, and insulin sensitivity.

**RESULTS:** By 1 year, mean (+/-SD) weight change for persons on the low-carbohydrate diet was -5.1 +/- 8.7 kg compared with -3.1 +/- 8.4 kg for persons on the conventional diet. Differences between groups were not significant (-1.9 kg [95% CI, -4.9 to 1.0 kg]; P = 0.20). For persons on the low-carbohydrate diet, triglyceride levels decreased more (P = 0.044) and high-density lipoprotein cholesterol levels decreased less (P = 0.025). As

seen in the small group of persons with diabetes ( $n = 54$ ) and after adjustment for covariates, hemoglobin A1c levels improved more for persons on the low-carbohydrate diet. These more favorable metabolic responses to a low-carbohydrate diet remained significant after adjustment for weight loss differences. Changes in other lipids or insulin sensitivity did not differ between groups.

**LIMITATIONS:** These findings are limited by a high dropout rate (34%) and by suboptimal dietary adherence of the enrolled persons.

**CONCLUSION:** Participants on a low-carbohydrate diet had more favorable overall outcomes at 1 year than did those on a conventional diet. Weight loss was similar between groups, but effects on atherogenic dyslipidemia and glycemic control were still more favorable with a low-carbohydrate diet after adjustment for differences in weight loss.

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## Reading 8

Dansinger ML, Gleason JA, Griffith JL, Selker HP, Schaefer EJ.

Comparison of the Atkins, Ornish, Weight Watchers, and Zone diets for weight loss and heart disease risk reduction: a randomized trial. *JAMA*. 2005 Jan 5;293(1):43-53.

URL: <http://jama.ama-assn.org.libproxy1.nus.edu.sg/cgi/reprint/293/1/43> (payment required)

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### ABSTRACT

**CONTEXT:** The scarcity of data addressing the health effects of popular diets is an important public health concern, especially since patients and physicians are interested in using popular diets as individualized eating strategies for disease prevention.

**OBJECTIVE:** To assess adherence rates and the effectiveness of 4 popular diets (Atkins, Zone, Weight Watchers, and Ornish) for weight loss and cardiac risk factor reduction.

**DESIGN, SETTING, AND PARTICIPANTS:** A single-center randomized trial at an academic medical center in Boston, Mass, of overweight or obese (body mass index: mean, 35; range, 27-42) adults aged 22 to 72 years with known hypertension, dyslipidemia, or fasting hyperglycemia. Participants were enrolled starting July 18, 2000, and randomized to 4 popular diet groups until January 24, 2002.

**INTERVENTION:** A total of 160 participants were randomly assigned to either Atkins (carbohydrate restriction,  $n=40$ ), Zone (macronutrient balance,  $n=40$ ), Weight Watchers (calorie restriction,  $n=40$ ), or Ornish (fat restriction,  $n=40$ ) diet groups. After 2 months of maximum effort, participants selected their own levels of dietary adherence.

**MAIN OUTCOME MEASURES:** One-year changes in baseline weight and cardiac risk factors, and self-selected dietary adherence rates per self-report.

**RESULTS:** Assuming no change from baseline for participants who discontinued the study, mean (SD) weight loss at 1 year was 2.1 (4.8) kg for Atkins (21 [53%] of 40 participants completed,  $P = .009$ ), 3.2 (6.0) kg for Zone (26 [65%] of 40 completed,  $P = .002$ ), 3.0 (4.9) kg for Weight Watchers (26 [65%] of 40 completed,  $P < .001$ ), and 3.3 (7.3) kg for Ornish (20 [50%] of 40 completed,  $P = .007$ ). Greater effects were observed in study completers. Each diet significantly reduced the low-density lipoprotein/high-density lipoprotein (HDL) cholesterol ratio by approximately 10% (all  $P < .05$ ), with no significant effects on blood pressure or glucose at 1 year. Amount of weight loss was associated with self-reported dietary adherence level ( $r = 0.60$ ;  $P < .001$ ) but not with diet type ( $r = 0.07$ ;  $P = .40$ ). For each diet, decreasing levels of total/HDL cholesterol, C-reactive protein, and insulin were significantly associated with weight loss (mean  $r = 0.36$ , 0.37, and 0.39, respectively) with no significant difference between diets ( $P = .48$ ,  $P = .57$ ,  $P = .31$ , respectively).

**CONCLUSIONS:** Each popular diet modestly reduced body weight and several cardiac risk factors at 1 year. Overall dietary adherence rates were low, although increased adherence was associated with greater weight loss and cardiac risk factor reductions for each diet group.

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## EVALUATION OF INTERVENTION PROGRAMMES

### Reading 9

Tsai AG, Wadden TA. Systematic review: an evaluation of major commercial weight loss programs in the United States. *Ann Intern Med.* 2005 Jan 4;142(1):56-66.

URL: <http://www.annals.org.libproxy1.nus.edu.sg/cgi/reprint/142/1/56.pdf> (free full text)

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#### ABSTRACT

**BACKGROUND:** Each year millions of Americans enroll in commercial and self-help weight loss programs. Health care providers and their obese patients know little about these programs because of the absence of systematic reviews.

**PURPOSE:** To describe the components, costs, and efficacy of the major commercial and organized self-help weight loss programs in the United States that provide structured in-person or online counseling.

**DATA SOURCES:** Review of company Web sites, telephone discussion with company representatives, and search of the MEDLINE database.

**STUDY SELECTION:** Randomized trials at least 12 weeks in duration that enrolled only adults and assessed interventions as they are usually provided to the public, or case series that met these criteria, stated the number of enrollees, and included a follow-up evaluation that lasted 1 year or longer.

**DATA EXTRACTION:** Data were extracted on study design, attrition, weight loss, duration of follow-up, and maintenance of weight loss.

**DATA SYNTHESIS:** We found studies of eDiets.com, Health Management Resources, Take Off Pounds Sensibly, OPTIFAST, and Weight Watchers. Of 3 randomized, controlled trials of Weight Watchers, the largest reported a loss of 3.2% of initial weight at 2 years. One randomized trial and several case series of medically supervised very-low-calorie diet programs found that patients who completed treatment lost approximately 15% to 25% of initial weight. These programs were associated with high costs, high attrition rates, and a high probability of regaining 50% or more of lost weight in 1 to 2 years. Commercial interventions available over the Internet and organized self-help programs produced minimal weight loss.

**LIMITATIONS:** Because many studies did not control for high attrition rates, the reported results are probably a best-case scenario.

**CONCLUSIONS:** With the exception of 1 trial of Weight Watchers, the evidence to support the use of the major commercial and self-help weight loss programs is suboptimal. Controlled trials are needed to assess the efficacy and cost-effectiveness of these interventions.

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### Reading 10

Wake MA, McCallum Z. Secondary prevention of overweight in primary school children: what place for general practice? *Med J Aust.* 2004 Jul 19;181(2):82-4.

URL: [http://www.mja.com.au/public/issues/181\\_02\\_190704/wak10144\\_fm.pdf](http://www.mja.com.au/public/issues/181_02_190704/wak10144_fm.pdf) (free full text)

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#### ABSTRACT

At least a quarter of primary school children in Australia are overweight or obese; the long-term impacts are likely to include chronic morbidity and loss of life-years. Universal preventive strategies have so far had limited effectiveness, while secondary and tertiary referral services would be overwhelmed if they attempted to systematically manage a problem with such high prevalence. Primary care services could play an important role in secondary prevention of overweight and mild obesity in children. While reports of child obesity research have burgeoned since 1995, effectiveness trials of primary care interventions in primary-school-aged children have been neglected. Randomised controlled trials of a primary care approach, although challenging, are essential to determine whether it does more good than harm.

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