

Submission No. 138
(Inquiry into Obesity)

16/09/08



Australian Parliament House of Representatives
Standing Committee on Health and Ageing

Inquiry into Obesity in Australia
Weight Watchers Australasia submission

September 2008

Table of contents

Section	Page
Introduction	3
Contact details	3
Executive summary	4
Obesity in Australia	5
Weight Watchers in Australia	5
Making weight management accessible for all Australians	6
Support for life	6
Why Weight Watchers works – the science behind the program	7
How Weight Watchers works	7
Working with health organisations	8
Current Government approach	9
Recommendations for Government	10
Weight management for people with a chronic disease	10
Patient journey diagram – subsidised weight management program	12
What about children?	13
Conclusion	13
Weight Watchers Scientific Compendium	Appendix A

Introduction

Weight Watchers is the largest provider of weight management services in the world. It was founded 45 years ago by Jean Nidetch in the USA. Jean began inviting friends into her Queens home once a week, to discuss how best to lose weight and motivate one another. Within three months 40 people were squeezing into her modest apartment for a weekly opportunity to talk honestly about their weight problems. Today, that group of friends has grown to millions of women and men around the world who use the products and services of Weight Watchers to lose unwanted kilograms.

Weight Watchers International Inc is now the world's leading provider of weight management services, operating globally in 34 countries through a network of company-owned and franchise operations, from Brazil to New Zealand. An estimated one million people come together every week to help each other meet their weight-loss goals, at Weight Watchers meetings. Weight Watchers holds over 60,000 meetings and other interventions globally each week, where members receive support and learn about healthy eating patterns, behaviour modification and physical activity.

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Executive summary

Weight Watchers welcomes the invitation from the Australian Parliament House of Representatives Standing Committee on Health and Ageing to contribute to the Inquiry into Obesity in Australia.

We acknowledge the Inquiry's Terms of Reference:

- The Committee will inquire into and report on the increasing prevalence of obesity in the Australian population, focusing on future implications for Australia's health system.
- The Committee will recommend what governments, industry, individuals and the broader community can do to prevent and manage the obesity epidemic in children, youth and adults.

In our submission we address further ways we believe the Australian Government can tackle the obesity epidemic.

Weight Watchers is the world's leading provider of weight management solutions and with our scientifically proven approach we have helped millions of Australians lose weight, improve their health, and keep the weight off, over the past 40 years.

We believe the Australian Government should be more actively targeting adults who are already overweight or obese, to assist them to lose weight and improve their health. Childhood obesity should be tackled through a holistic family approach, as children learn many of their habits including eating and their relationship with food and exercise, from their parents.

The Australian Government should be subsidising weight management programs for people with chronic diseases that are directly affected by obesity and overweight, including pre-diabetes, type 2 diabetes, cardiovascular disease, colorectal cancer, asthma, osteoarthritis, sleep apnoea and fertility issues.

We would welcome the opportunity to apply our scientifically and clinically proven approach and extensive experience to the national problem of obesity and the chronic diseases it may cause, working with GPs, other healthcare providers and the Government to tackle this epidemic.

Obesity in Australia

Across Australia, 67 per cent of adult men are now classified as overweight or obese as well as 52 per cent of Australian adult women.¹ The latest figures from the Australian Institute of Health and Welfare (AIHW) show around 7.4 million Australian adults were overweight in 2004-05.²

Two of the top three leading causes of disease and injury in the AIHW Report – heart disease and type 2 diabetes have direct links to overweight and obesity. Many of the top 20 diseases affecting Australians, including breast cancer, osteoarthritis, stroke etc, have some relationship to obesity. The Report also notes that Australians are living longer however, our children – close to one in three are overweight or obese – could be the first generation to have a shorter life span than their parents.

The cost of not acting on the obesity issue is growing dramatically. Figures released last month by Access Economics show that obesity is now costing the Australian economy \$58 billion a year, up from \$21 billion when the study was last conducted in 2005.³

Weight Watchers in Australia

Weight Watchers has helped millions of Australians successfully lose weight and keep it off, and it remains the leading scientifically proven commercial weight loss program⁴. In 2009 Weight Watchers will have been operating in Australia for 40 years. It is accessible right across the country where up to 70,000 people attend meetings each week in 1,500 locations, many in rural and regional areas including from Mackay to Dubbo and remote mining communities in the Cooper Basin in South Australia.

Our mission is to help every Australian live at a healthy weight. To do this we are finding new and innovative ways to reach people to make it easier and more convenient for modern day Australians to lose weight.

One in four women – 27 per cent of all Australian women aged 18 years and over (who consider themselves overweight or about the right weight) have used Weight Watchers to lose weight. The average amount of weight needed to be lost by Weight Watchers members in order to reach their goal weight, within their healthy weight range, in 1999 was 16kg. In less than 10 years 2008 this figure had risen by close to 5kg, to 20.7kg.

Weight Watchers has a unique approach to helping members achieve sustained weight-loss goals and a healthier lifestyle. It is based on the underlying premise of

¹ The Australian Diabetes, Obesity & Lifestyle Study (AusDiab) 2005, Tackling the Australian Epidemic: its causes and outcomes, International Diabetes Institute, Melbourne, Australia

² Australian Institute of Health and Welfare 2008. Australia's health 2008. Cat. no. AUS 99. Canberra: AIHW

³ Access Economics (2008) The growing cost of obesity in 2008: three years on, Report for Diabetes Australia, Canberra

⁴ Tsai AG and Wadden TA, Systematic Review: An Evaluation of Major Commercial Weight-Loss Programs in the United States: Ann Intern Med 2005; 142:56-66

behaviour modification, which helps our members learn how to change their relationship with food and activity.

The Weight Watchers weight-loss plan is developed by credentialed scientists with expertise in weight management. Our weight-loss plans are modified to reflect the most current, proven scientific data and research. Alongside international experts, the Australian and New Zealand Scientific Advisory Board includes medical advisor and obesity expert Dr John Birkbeck, based in NZ, dietitian and nutrition advisor Emma Stirling and exercise physiologists Martha Lourey-Bird and Allan Bolton.

In Australia we are currently taking part in an international multi-centre randomised clinical trial comparing weight loss in participants referred to Weight Watchers meetings and those treated by their GPs, in line with current primary care national guidelines. In addition to weight loss, a number of other indicators of metabolic disease risk will be investigated with a total of 804 subjects being recruited across three countries. The trial is being conducted by the Institute of Obesity Nutrition and Exercise at the University of Sydney, led by Professor Ian Caterson.

Making weight management accessible for all Australians

The Weight Watchers program can be accessed in a number of ways. In recent years the organisation has diversified and created innovative new ways of doing the program in order to make it easier and more convenient for people to lose weight. The program can now be done through community meetings, meetings in the workplace under the At Work program, Online 24 hours a day, At Home or through one on one consultations in new Lifestyle Centres in Myer department stores, currently being trialled. There is also a program specially designed to speak to men.

Weight Watchers is one of the most affordable weight management systems available to Australians, costing less than a good quality pizza, at \$13.83 a week. This price includes access to meetings, essential program information, weekly motivation cards and other support materials, and unlimited access to online tools and support, 24 hours a day. This is less than the cost of a standard GP consultation at almost \$33.

Support for life

Once members have achieved their goal weight within a healthy BMI and undergone the six week maintenance phase of the program, they become a Weight Watchers Lifetime Member. This entitles them free access to Weight Watchers meetings for the rest of their life provided they stay within 2kg of their goal weight. Lifetime members are a source of inspiration to all people trying to lose weight and improve their health.

Weight Watchers also has a number of other mechanisms to support people on the program and for others wanting to live a healthier life including the bimonthly Weight Watchers magazine, Australia's number one health and lifestyle magazine which will be going monthly early in 2009, cookbooks and Weight Watchers foods, the ninth largest food brand in supermarkets, with 180 products across 38 grocery categories in all major supermarkets, providing better for you choices.

However, to do the Weight Watchers program no special foods are required.

Why Weight Watchers works – the science behind the program

Weight Watchers works because it is not a diet. The program helps people change their lifestyle and habits and make smarter food choices that are sustainable for life. It is flexible enough to be adapted to meet any personal circumstances.

Studies have found that the Weight Watchers program may also produce a weight loss that may be sufficient to prevent or improve weight-related health complications.⁵

Our approach is comprehensive and holistic, looking at the four components of food, exercise, behaviour and support. Using this formula, members have successfully lost from 5kg to over 90kg on Weight Watchers.

The Weight Watchers program is designed for people to lose weight at a healthy and sustainable rate of between 0.5kg – 1kg per week, as recommended by the Weight Management Council of Australia.

Our program follows good health guidelines and we recommend members enjoy a wide variety of foods from the five food groups to ensure they get all the nutrients they need. Unlike meal replacement weight loss programs and fad diets, our program does not require you to give up foods you like or make impossible choices. The techniques learned at Weight Watchers are sustainable for life and are easily imparted to your family.

A study conducted by independent researchers among Weight Watchers Lifetime Members (members who have achieved a healthy body weight on the program and maintained that weight within 2 kg) confirmed that long-term sustained weight loss is possible for Weight Watchers members. The study showed that more than 70 per cent of Weight Watchers members maintained a loss of at least 5 per cent of initial body weight for two years and about 50 per cent maintained it for five years.⁶

How Weight Watchers works

The Weight Watchers approach is comprehensive and holistic. It teaches people skills that can help them keep the weight off for life. The program is based on four key pillars which are needed to succeed:

- Changing your diet by making smarter food choices
- Behaviour modification
- A supportive environment
- Exercise

On Weight Watchers no special foods are required and no foods are banned. You can eat any food you like, in moderation, while following one of two food plans:

- The **POINTS**[®] Plan: Every kind of food has a **POINTS** value. Members are assigned a daily **POINTS** total and can eat any food – as long as they keep

⁵ Tsai, A, Wadden, T. Ann Int Med 142: 56, 2005

⁶ Lowe, M, Jean, T, Miller-Kovach, K. Int J Obes 28 (Suppl 1): S29, 2004

track of what they have eaten each day and watch their portions. By sticking to their daily *POINTS* total they lose weight.

- The **Core Plan**[™]: Members eat freely from a core list of wholesome, low energy density foods at three meals a day, until satisfied. This means they satisfy their appetite for longer and create a kilojoule deficit, which helps them lose weight.

To provide motivation, mutual support, encouragement and instruction, Weight Watchers organises group meetings in the community or in the workplace. Meetings are led by Weight Watchers leaders, all of who have followed the program themselves so they can readily identify with the challenges members face. Leaders receive formal ongoing training and are provided with set lesson plans on topics covering the four key pillars of the program, which are delivered to members each week. Leaders are part of an ongoing professional development program which includes coaching and evaluation.

We know from research that people who attend Weight Watchers meetings lose three times more weight than those that go it alone⁷ because of the support they receive in those meetings. Each meeting starts with a confidential weigh-in, followed by a motivational session where tips on weight loss and healthy living are exchanged. Members also receive program handbooks and booklets every week of the year.

With overweight and obesity becoming a key factor impacting on the health and productivity of Australian workers, employers are increasingly coming to Weight Watchers to start an At Work program, offering either group meetings or individual consultations to reduce weight-related absenteeism and workplace injury.

The program helps people change the way they think about food and addresses issues such as emotional eating and eating when bored, and gives members strategies to help them overcome these habits.

We encourage realistic goals. If someone has a large amount of weight to lose we recommend they begin with a weight-loss goal of 10 per cent of their total body weight. A weight loss of just 10 per cent can translate into significant health benefits, such as reduced risk of breast cancer, heart disease and reduced need for diabetes medication.

Working with health organisations

Weight Watchers is aligned and has worked with a number of health organisations with a weight-related link including the National Breast Cancer Foundation, Diabetes Australia and IVF Australia.

⁷ Heshka S et al. JAMA.2003;289(14):1792-8

Current Government approach

The rate of obesity in Australia is growing rapidly with over 50 per cent of the population now overweight or obese. The number of overweight or obese Australian adults increased by 45 per cent (5.4 million) between 1999 and 2004-05⁸. At the current rate of growth it is estimated that 70 per cent of Australians will be above their healthy weight range by the year 2010.⁹

Weight Watchers commends the Australian Government for listing obesity prevention as a National Health Priority Area, ranking it alongside many of the diseases for which it is a preventable risk factor - cancer, cardiovascular disease, diabetes, asthma, arthritis and musculoskeletal conditions, and the acknowledgement that "more people are overweight or obese than suffer from several of these existing Health Priority Areas combined."¹⁰

While much progress has been made by Government, the rate of obesity continues to grow and measures need to be expanded as the current model is not coping with the obesity tsunami.

To date the Australian Government has focused on the growing childhood obesity problem and its prevention.

However, we believe the Australian Government needs to focus more on adult obesity and to actively target the millions of people who are already overweight or obese and costing the taxpayer and our economy billions of dollars annually.

The Australian Government is in the process of introducing a new lifestyle modification program subsidy for people who are diagnosed as being at risk of developing type 2 diabetes and who are aged between 40 and 49 years old. We believe the criteria for this subsidy is too narrow.

The burden and prevalence of both obesity and chronic disease in Australia warrants new preventative measures and collaborative partnerships to help address these critical risks to the health of our nation. To tackle obesity we need to look at new public programs that give people the practical tools and support to realise the goal of a healthier nation.

We believe the Government should be subsidising lifestyle modification programs for people with chronic diseases that are directly affected by obesity and overweight, including type 2 diabetes, cardiovascular disease, colorectal cancer and osteoarthritis.

⁸ Australian Social Trends, 2007; Australian Bureau of Statistics, released 07/08/07

⁹ Australasian Society for the Study of Obesity fact sheet "Obesity in Australian Adults: Prevalence Data" The Australian and New Zealand Obesity Society, <http://www.asso.org.au/home/obesityinfo/generalinfo>

¹⁰ The Hon Nicola Roxon MP, Minister for Health and Ageing, Tackling Childhood Obesity in Australia Summit, Sydney 11 December 2007

Latest estimates released by Access Economics show that obesity is costing the Australian economy \$58 billion a year¹¹ while treating just two of the major chronic diseases, to which obesity is a contributing factor, (cardiovascular disease and diabetes), costs a staggering \$6.3 billion per annum¹².

Our approach to childhood obesity is that it should be tackled as a whole of family approach, as children learn their eating habits, good and bad, from their parents.

Recommendations for Government

Weight Watchers believes the Australian Government should tackle adult obesity through a targeted referral program for overweight and obese patients, who have an existing recognised chronic disease. Overweight and obesity would be measured through BMI for women and a combination of BMI and waist measurement for men.

This could be done by subsidising the cost of attending a 12 week accredited weight management program to assist in weight loss and behaviour modification.

The Australian General Practice Network (AGPN) and Weight Management Council of Australia have proposed such a program, which Weight Watchers endorses.

It would complement the range of initiatives announced under the COAG National Reform Agenda - human capital, to prevent type 2 diabetes and for people newly diagnosed with type 2 diabetes and chronic disease.

By subsidising a 12 week weight-loss program the Government would allow people to successfully start losing weight and change their behaviour around food and exercise, which can lead to longer term behaviour modification and weight loss. After 12 weeks patients could choose to continue with a program at their own cost.

Weight management for people with a chronic disease

This initiative involves program delivery and fund holding arrangements at the local level through Divisions of General Practice¹³. The model allows Divisions to develop local level service agreements with accredited providers of weight management programs based on local need and weight management program availability. Accreditation could be done by an independent review board and include representatives from Government, AGPN, Weight Management Council of Australia and consumer groups.

To receive accreditation a weight management program should cover the mandatory components of diet, behaviour modification, exercise and have a support element.

Divisions provide funding to providers to cover program costs on the basis that eligible patients complete weight management programs in accordance with a GP

¹¹ Access Economics (2008) The growing cost of obesity in 2008: three years on, Report for Diabetes Australia, Canberra

¹² 2005 Australian Health Ministers' Conference, National Chronic Disease Strategy, 2000-01 figures

¹³ Australian General Practice Network and Weight Management Council of Australia Joint funding proposal to address obesity, 2007; all costs and figures are as at 2007

referral and GP Management Plan. Patients would return to their GP at the end of a 12 week program, or during the program, to assess their health outcomes.

A 12 week program is long enough for people to successfully start losing weight and change their behaviour around food and exercise. In many cases it is also long enough for people to lose 10 per cent of their body weight which can lead to substantial improvements in health.

Under this proposal, the total program cost per patient is \$200. Of this amount, the program proposes providing funding of \$170, with the remaining \$30 being a patient co-contribution. The amount of \$200 is based on the discounted rate for patient enrolment in a typical 12-week weight management program. In our experience, participants are much more committed and successful when they make a personal financial contribution.

At present, enrolments in weight management programs are around 225,000 per year. From this total, 46 per cent are overweight patients and around 34 per cent are obese patients. The Australian Institute of Health and Welfare estimates that in 2004-05, 77 per cent of Australians had at least one long term chronic disease. Applying both these factors, it is estimated that there are around 79,695 overweight and 58,905 obese patients who suffer a chronic disease currently enrolled in a weight management program.

The weight management industry estimates that this proposal will result in an increase in enrolments of overweight/obese patients with a chronic disease by 40 per cent. This represents an additional 31,878 annual enrolments of overweight patients and an additional 23,562 annual enrolments of obese patients.

Based on these estimates, the annual gross cost to Government to provide funding of \$200 per patient eligible to participate in an accredited weight management program (ie approximately 111,573 overweight and 82,467 obese Australians) is estimated to be \$33.3 million.

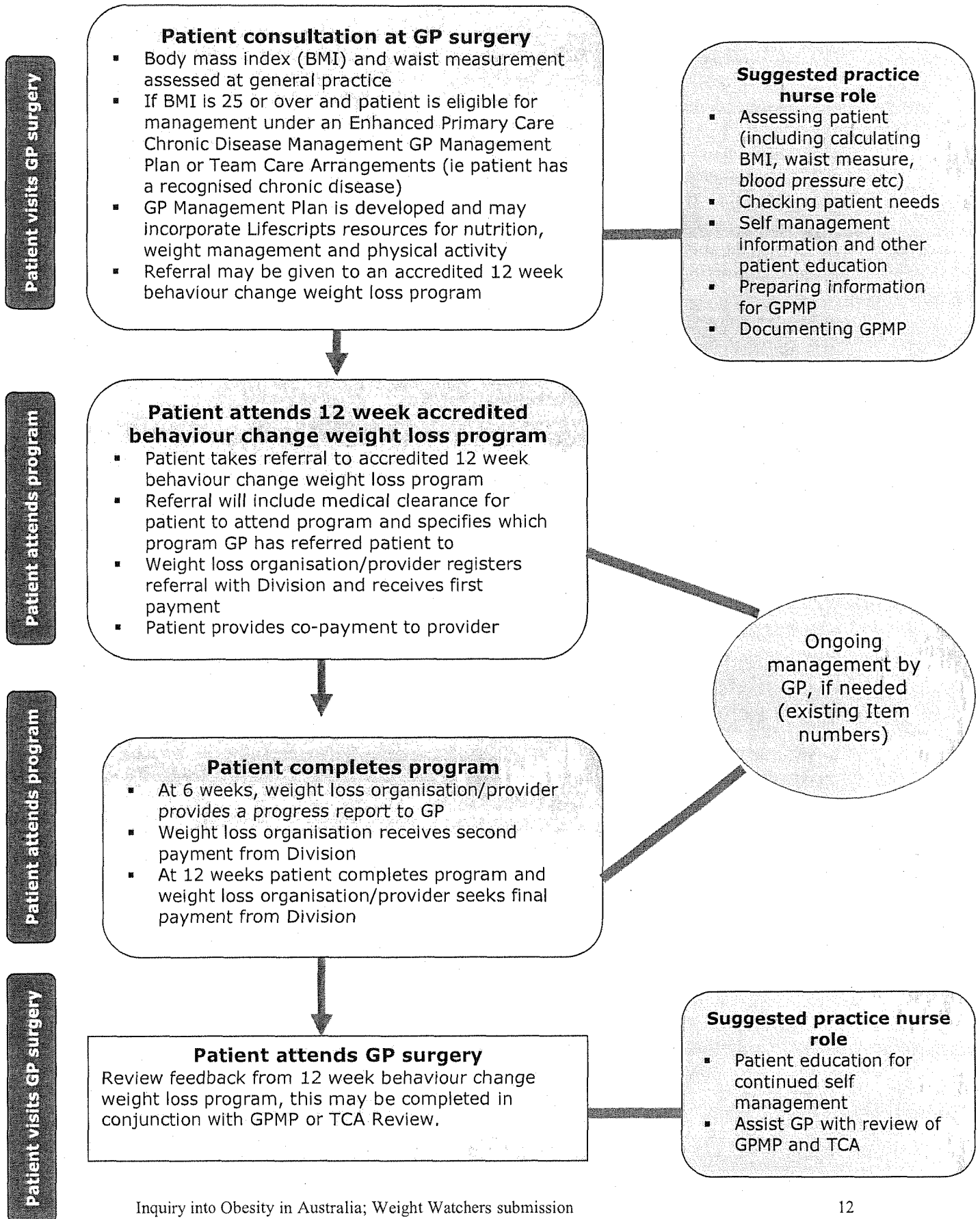
In addition, this proposal seeks funding of \$5.3 million to deliver the program through the Divisions of General Practice network as well as to facilitate the development of a comprehensive training and education program for general practitioners and practice nurses to encourage program uptake and referral of chronic disease patients to accredited weight management programs.

The total funding needed for this proposal is \$38.6 million.¹⁴

A progress chart of how this referral program would work for patients can be seen on page 12. Further details on how the GP process would work can be supplied.

¹⁴ All costs and figures are as at 2007

Patient journey - subsidised weight management program



What about children?

As the largest provider of weight-loss services in the world, Weight Watchers is committed to helping discover safe, lasting solutions to help our nation's children and youth. With our science-based approach and talent for translating medical recommendations into practical advice that works in the real world, Weight Watchers is uniquely qualified to tackle this issue.

Weight Watchers acknowledges that childhood obesity is a complex issue, however we believe that parents have tremendous power to create a lifestyle and environment that helps children maintain a healthy weight long-term. Parents who engage the entire family improve the chances of long-term weight loss success for all family members.¹⁵

While the Weight Watchers approach has been developed and extensively studied in adults, it has not been rigorously evaluated in children. No other popular weight-loss methods have. Weight Watchers acknowledges that children are not little adults and they have unique needs, including sufficient nutrients for growth and development. Weight Watchers does not encourage children to join its program and no child under the age of 10 years can become a member. Following an extensive review of the literature and consultation with our international scientific advisory board in 2003, Weight Watchers joined forces with the Pediatric Health Alliance in Florida to pilot a family based intervention program for children with obesity. This pilot has resulted in our family focused recommendations on weight loss for both overweight and obese children via their families, along with the publication of *Healthy Parent Healthy Child*, our successful parent's handbook.

Conclusion

We recommend the Government look at new solutions to stem the growing tide of overweight and obesity in Australia, including partnering with organisations which have proven weight management expertise, including commercial entities. Collaborative partnerships should be established, creating links with primary healthcare providers such as GPs and through representative bodies like the AGPN, and other healthcare providers. These partners should be accredited organisations which have community ties and incorporate all the four principles of diet/food choices, behaviour modification, support and exercise.

¹⁵ Epstein LH, Valoski A, Wing RR, McCurley J. Ten-year outcomes of behavioural family-based treatment for childhood obesity. *Health Psychol.* 1994;13:371-2

WEIGHT WATCHERS INTERNATIONAL, INC. SCIENTIFIC COMPENDIUM

Last Updated: April 2008

Weight Watchers International Original Research – Previously Published

- Maintenance of Weight Goal among Weight Watchers Lifetime Members
G Christakis, K Miller-Kovach *Nutrition Today* 1996; 31(1): 29-31.

In 1993, Weight Watchers International conducted a survey of its Lifetime Members to ascertain maintenance of weight loss after 1-to-12 years. The survey was conducted by telephone with a random national sample of 1200 people and relied on self-reported weights. Among Lifetime Members, the average weight loss achieved to become Lifetime Members was 28.8 pounds; two-thirds (67%) reported continued maintenance of their original weight loss within 5 pounds. The percent of Lifetime Members maintaining their weight loss ranged from 97% for those who had achieved the loss one year prior to 37% for those who had completed the weight loss 5-12 years prior to the survey. This data challenged the often-cited statistic of a "95% failure rate" for weight loss programs

- Improved Psychological Well-Being, Quality of Life, and Health Practices in Moderately Overweight Women Participating in a 12-Week Structured Weight Loss Program
JM Rippe, JM Price, SA Hess, et al. *Obesity Research* 1998; 6(3): 208-218.

This single-center, randomized prospective trial demonstrated that among a group of moderately overweight women, 12 weeks of participation in the Weight Watchers program resulted in statistically significant improvements in weight loss, fat loss, activity levels, and several quality of life indices. The researchers concluded that Weight Watchers is effective for weight loss and yields significant health and psychological benefits.

- Weight Maintenance among Weight Watchers Lifetime Members
K Miller-Kovach, M Winick, A Holochuck, *The FASEB Journal*, 1998; 12(5): A863.

In a 1997, Weight Watchers International conducted a survey of its Lifetime Members to ascertain maintenance of weight loss. The survey included a method to verify self-reported weights. A highly significant correlation ($r=.97$) was found between self-reported and measured weight. Among Lifetime Members, over half (52%) are at their original weight goal – that is, they've kept the weight off – 2 years after completing the weight-loss program and more than one-third (37%) have done so after 5 years. The belief that everyone regains their weight (and more) after completing a weight-loss program is not true – at least for those completing the weight-loss phase of the Weight Watchers program.

- An Initial Evaluation of a Commercial Weight Loss Program: Short-Term Effects on Weight, Eating Behavior and Mood
M Lowe, K Miller-Kovach, N Frye, S Phelan, *J Am Dietet Assoc* 1998; 98(9):A-13.

This randomized prospective trial demonstrated that, compared to individuals assigned to lose weight through a self-help method, those participating in the Weight Watchers program for 4 weeks showed statistically significant improvements in weight loss, psychological vitality, and eating behavior. Moreover, the superior outcomes shown by Weight Watchers participants on measures of vitality and eating behavior were evident even when the extent of weight loss was controlled.

- An Initial Evaluation of a Commercial Weight Loss Program: Short-Term Effects on Weight, Eating Behavior and Mood
M Lowe, K Miller-Kovach, N Frye, S Phelan *Obesity Research* 1999; 7(1):51-59.

This randomized prospective trial demonstrated that, compared to individuals assigned to lose weight through a self-help method, those participating in the Weight Watchers program for 4 weeks showed

statistically significant improvements in weight loss, psychological vitality, and eating behavior. Moreover, the superior outcomes shown by Weight Watchers participants on measures of vitality and eating behavior were evident even when the extent of weight loss was controlled.

- Structured Commercial Weight Loss Program Improves Homocysteine Levels Compared to Self-Help Weight Loss
S Heshka, F Greenway, K Miller-Kovach, F X Pi-Sunyer. *The FASEB Journal*, 1999; 13(4): A269.

Elevated homocysteine levels have been linked with risk of coronary heart disease and are known to be affected by the nutritional quality of the diet. This study compared changes in serum homocysteine levels among two groups of obese patients after 12 weeks. One group was attempting to lose weight on their own; the other was participating in the Weight Watchers program. The change in homocysteine levels among the Weight Watchers group showed a significant improvement when compared with the self-help dieters. This improvement was not related to weight loss but was significantly related to the weight loss program, suggesting that those in the Weight Watchers group increased, and those in the Self-Help group decreased, their dietary intakes of those nutrients that positively influence homocysteine levels.

- The Psychological Ramifications of Weight Management
K Miller-Kovach, M Hermann, M Winick. *Journal of Women's Health* 1999; 8(4): 1-5.

A review of the medical and scientific literature that refutes the commonly held belief that weight loss induces a deterioration in psychological well-being and leads to disordered eating.

- Self-Help Weight Loss Versus a Structured Commercial Program after 26 Weeks: a randomized controlled study
S Heshka, F Greenway, JW Anderson, RL Atkinson, JO Hill, S Phinney, K Miller-Kovach, X. Pi-Sunyer. *Obesity Research* 1999; 7(S1): 19S.

Interim results from this multicenter, randomized, parallel-group, 2 year trial indicate that, after 6 months, body weight, body mass index, waist circumference and fat mass all decreased significantly more in participants assigned to the Weight Watchers group (all $p < .001$). Fifty-three percent of the Weight Watchers group lost at least 5% of their initial body weight; the comparable number for the self-help group was 15%.

- Weight-Loss Maintenance One to Five Years Following Successful Completion of a Commercial Weight Loss Program
MR Lowe, K Miller-Kovach, S Phelan. *Obesity Research* 1999; 7(S1): 43S.

Based on corrected weights from a national telephone survey of Lifetime Members, weight regain ranged between 31.5 and 76.5%. At 5 years, 19.4% were within 5 pounds of their original weight goal, 42.6% maintained a loss of 5% or more, and 70.3% were below their initial weight.

- Self-Help Weight Loss Versus a Structured Commercial Program after One Year: a randomized controlled study
S Heshka, RL Atkinson, SD Phinney, F Greenway, JO Hill, K Miller-Kovach, X. Pi-Sunyer. *FASEB Journal* 2000; 4(Addendum).

Interim results from this multicenter, randomized, parallel-group, 2 year trial indicate that, after 1 year, body weight continued to be significantly greater in participants assigned to the Weight Watchers group (all p is less than .001). Twenty-two percent of the Weight Watchers group lost at least 10% of their initial body weight; the comparable number for the self-help group was 11%.

- Self-Help Weight Loss Versus a Structured Commercial Program after 26 Weeks: a randomized controlled study
S Heshka, F Greenway, JW Anderson, RL Atkinson, JO Hill, S Phinney, K Miller-Kovach, X. Pi-Sunyer. *American Journal of Medicine* 2000; 109 (9): 282-287.

Six months into this multicenter, randomized, parallel-group, 2 year trial, body weight, body mass index, waist circumference and fat mass all decreased significantly more in participants assigned to the Weight Watchers group (all $p < .001$). Serum homocysteine levels improved in the Weight Watchers group compared to the self-help ($p = .018$) as well.

- Two-Year Randomized Controlled Study of Self-Help Weight Loss vs A Structured Commercial Program
S Heshka, JW Anderson, RL Atkinson, F Greenway, JO Hill, S Phinney, K Miller-Kovach, X. Pi-Sunyer. *The FASEB Journal* 2001; 15(4): A623.

At the ½, 1, and 2 year follow-ups, participants assigned to the Weight Watchers intervention maintained a greater weight loss than those assigned to the self-help group ($p < 0.001$ for each follow-up) in this multicenter, randomized, parallel-group, 2 year trial. In the Weight Watchers group, weight lost and maintained during the final 18 months was related to self-reported attendance at Weight Watchers meetings. Those who reported attending >77% of the meetings maintained a mean weight loss in excess of 5% of initial body weight.

- Weight-Loss Maintenance One to Five Years Following Successful Completion of a Commercial Weight Loss Program
MR Lowe, K Miller-Kovach, S Phelan. *International Journal of Obesity* 2001; 25: 325-331.

Based on corrected weights from a national telephone survey of Lifetime Members, weight regain ranged between 31.5 and 76.5%. At 5 years, 19.4% were within 5 pounds of their original weight goal, 42.6% maintained a loss of 5% or more, and 70.3% were below their initial weight.

- Self-Help Weight Loss Versus a Structured Commercial Program: a 2-year randomized controlled trial
S Heshka, JW Anderson, RL Atkinson, F Greenway, JO Hill, S Phinney, K Miller-Kovach, X. Pi-Sunyer. *Obesity Research* 2001; 9(S3): 86S.

In this multicenter, randomized, parallel-group, 2 year trial, body weight, waist circumference and fat mass all decreased significantly more in participants assigned to the Weight Watchers group. Among those assigned to Weight Watchers, there were weight-associated decreases in fasting insulin, glucose, total cholesterol, triglycerides, and blood pressure along with increases in HDL cholesterol and HDL:TC ratio.

- Biological Indices from a 2-Year Randomized Controlled Trial of Weight Loss with Self-Help vs A Structured Commercial Program
K Miller-Kovach, S Heshka, JW Anderson, RL Atkinson, F Greenway, JO Hill, S Phinney, X. Pi-Sunyer. *The American Journal of Clinical Nutrition* 2002; 75(2S): 382S.

In addition to losing and maintaining significantly greater weight losses, regression analyses of systolic blood pressure, diastolic blood pressure, and glucose revealed that slopes tended to be significantly steeper in the Weight Watchers group, indicating greater improvement in health indices per unit weight loss, than the self-help group.

Weight Watchers International Original Research – Recently Published

- Weight Loss with Self-help Compared with a Structured Commercial Program: a randomized controlled trial

Appendix A

S Heshka, F Greenway, JW Anderson, RL Atkinson, FL Greenway, JO Hill, S Phinney, RL Kolotkin, K Miller-Kovach, X. Pi-Sunyer. *Journal of the American Medical Association* 2003; 289 (14): 1792-1798.

This multicenter, randomized, parallel-group, 2 year trial evaluated two weight-loss methods – Weight Watchers and self-help. After both 1 and 2 years, body weight, body mass index, waist circumference were decreased significantly more in participants assigned to the Weight Watchers group (all $p < .001$). Positive changes in several biologic indices paralleled weight loss. In the Weight Watchers group, regular meeting attendance was significantly correlated with both weight loss and weight-loss maintenance.

- Long-Term Follow-Up Assessment of Successful Dieters in a Commercial Weight-Loss Program
MR Lowe, J Thaw, K Miller-Kovach. *International Journal of Obesity* 2004; 28 (Suppl 1): S29.

Based on adjusted weights from a national telephone survey of Lifetime Members, weight regain at one, two, and five years was 20.3%, 34.2%, and 51.9%. An average of 71.6% of participants maintained a loss of 5% or more. These findings suggest that the method by which weight is lost may have an impact on weight maintenance and that the prognosis for weight maintenance is better than generally reported.

- Does a 16-week Weight Watchers Treatment Program Improve Food Habits in Obese Children?
M Laffrenzen, M Korner, M Nilsson, M Staffan, S Hellstrom. *International Journal of Obesity* 2004; 28 (Suppl 1): S196.

A Food Frequency Questionnaire was used to assess food habits before and following a 16-week treatment program in 22 obese Swedish children. Findings included significant increases in fruit intake and decreases in fat spread and sugar-sweetened products. There was no significant change in the intake of vegetables, potatoes, cereals, milk, meat, fish, egg and sausage.

- One-Year Follow-Up of Two Group Treatments for Children with Obesity
M Staffan, C Arfwidsson, K Elmberg, S Hellstrom, M Korner, M Nilsson, S Regber. *International Journal of Obesity* 2004; 28 (Suppl 1): S198.

A total of 55 obese Swedish children enrolled in either a 16-week physical training program or a pediatric-adapted Weight Watchers program. After 16 weeks, the Weight Watchers group were significantly slimmer than the physical training group. After one year, there were no significant differences in the groups, although drop-out rates in the physical training group were problematic. Compliance was significantly better in the Weight Watchers group.

- Do Obese Adolescents have Anorectic Body Size Ideals?
S Regber, C Arfwidsson, M Staffan, C Ronnback. *International Journal of Obesity* 2004; 28 (Suppl 1): S201.

A total of 34 obese Swedish children enrolled in either a 16-week a pediatric-adapted Weight Watchers program completed a 7-point questionnaire prior to treatment. The findings were that the children had realistic perceptions about their current body size and realistic expectations of body size outcome after treatment.

- Lower Hunger and Desire to Eat during 12 Weeks on a Modified Weight Watchers diet with Special Emphasis on Low-Glycemic Index Foods
F Bellisle, AM Dalix, MA DeAssis, E Kupek, JM Oppert, A Basdevant, U Gerwig. *Obesity Reviews* 2005; 6 (Suppl 1): 154. – and –

- Weight and Biological Changes after 12 Weeks on Moderately Restrictive Diets with or Without Special Attention to the Glycemic Index of Foods
F Bellisle, AM Dalix, MA DeAssis, E Kupek, JM Oppert, A Basdevant, U Gerwig. *Obesity Reviews* 2005; 6 (Suppl 1): 157.

A total of 65 overweight women enrolled in a 12-week study analyzing the **POINTS**[®] Food System compared to the same diet modified to encourage the regular selection of foods with a low-glycemic index (low GI). An average 5% weight loss was achieved and insulin levels, blood lipids, systolic and diastolic blood pressure, and body fat levels were significantly improved in both groups. The study found that adding a recommendation to specifically include low-GI foods as an adjunct to the Weight Watchers **POINTS**[®] plan does not increase the amount of weight lost nor improve any of the health measures (e.g., blood pressure, blood insulin and lipid levels) compared to those instructed to follow the established Weight Watchers **POINTS**[®] plan alone. The study did find that the **POINTS**[®] plan with emphasis on low-GI foods decreased hunger and desire to eat.

- Changes in Cardiovascular Risk Markers, including LDL Particle Size, from a Comprehensive Weight-Loss Program
L Zukley, J Lowndes, R Melton, V Nguyen, R Emerson, B Lebaron, M Paul, P Lopez, R Carpenter, C Greenstone, T Angelopoulos, J Rippe. *Obesity Research* 2005; 13 (Suppl): A82.

Thirty-one overweight subjects in a 12-week study of the Weight Watchers program had significant reductions in body weight, BMI, waist circumference, and LDL Particle Size Å. These changes may lower the risk of cardiovascular disease.

- Cardiovascular Fitness with a Comprehensive Weight-Loss Program vs Exercise Alone: A Randomized Intervention
J Lowndes, L Zukley, J Fiutem, R Melton, V Nguyen, R Emerson, B Lebaron, M Paul, P Lopez, R Carpenter, C Greenstone, T Angelopoulos, J Rippe. *Obesity Research* 2005; 13 (Suppl): A138.

Fifty-eight overweight subjects were randomized to one of two weight –loss interventions: Weight Watchers (WW) or Exercise Only (EO). After 12 weeks, the WW group had significant improvements in body weight and fitness levels (as measured by VO₂max). The EO group neither lost weight nor improved fitness levels. It is hypothesized that better compliance to the comprehensive WW method may account for the results.

- A Comprehensive Weight-Loss Program vs Exercise Alone: The Effects on Metabolic Syndrome Risk Factors during a Randomized Intervention
P Lopez, J Lowndes, L Zukley, R Melton, V Nguyen, R Emerson, B Lebaron, M Paul, R Carpenter, C Greenstone, T Angelopoulos, J Rippe. *Obesity Research* 2005; 13 (Suppl): A196.

Fifty-eight overweight subjects were randomized to one of two weight –loss interventions: Weight Watchers (WW) or Exercise Only (EO). After 12 weeks, the WW group had significant improvements in waist circumference, systolic and diastolic blood pressure, and triglyceride values. The EO group had a significant reduction in blood pressure and a significant increase in fasting glucose levels. Neither group had a change in HDL levels. The reduction in waist circumference in the WW group is of particular value, indicating a loss of abdominal fat that is considered to be central to the development of metabolic syndrome.

- Changes in Adiposity Following a Comprehensive Weight-Loss Program
M Paul, P Lopez, J Lowndes, L Zukley, R Melton, V Nguyen, R Emerson, B Lebaron, R Carpenter, C Greenstone, T Angelopoulos, J Rippe. *Obesity Research* 2005; 13 (Suppl): A196.

Appendix A

Thirty overweight subjects enrolled in a study to evaluate the Weight Watchers program. After 12 weeks, the WW group had significant reduced body weight (4.9%), BMI, waist circumference, and body fat percentage (8.0%). There was also a significant reduction in lean body mass (2.9 kg).

- Reducing the Risk of Diabetes: the effects of a commercial lifestyle modification weight-loss program on glucose tolerance and insulin sensitivity
J Lowndes, L Zukley, P Lopez, M Paul, T Angelopoulos, J Rippe. *FASEB* 2006; 20(4): A585.

Thirteen nondiabetic subjects were followed for 24-weeks while participating in the Weight Watchers program. Significant improvements in fasting insulin and glucose, AUCg and HOMA were found, affirming that the Weight Watchers method may be of significant value in the prevention of diabetes.

- Preservation of Fat-Free Mass with a Comprehensive Weight-Loss Program
L Zukley, J Lowndes, V Nguyen, R Melton, T Angelopoulos, J Rippe. *Medicine and Science in Sports and Exercise* 2006; 38(5): S461.

Thirty-three overweight and obese individuals (mean age 41.1 ± 5.8 years) were randomized to either Weight Watchers (WW) or an Exercise (EO) program for weight reduction. After both 12- and 24-weeks, only the WW group was successful at creating a significant weight loss while preserving fat-free mass; the EO group preserved fat-free mass but not achieve a significant weight loss. Maintaining fat-free mass is important during weight loss as it helps to sustain the loss by preserving the metabolic rate and also yields multiple health benefits.

- Regular Attendance Enhances Results in a Comprehensive Weight-Loss Program
L Zukley, J Lowndes, V Nguyen, T Angelopoulos, J Rippe. *Diabetes* 2006; 55(Suppl 1): A518.

Attendance at Weight Watchers meetings for a 24-week period was tracked among 40 individuals participating in a randomized clinical trial. Significant correlations were found between attendance and decreases in body weight ($r=.476$, $p=0.002$), BMI ($r=.492$, $p=0.001$) and waist circumference ($r=.455$, $p=0.003$). These findings show that regular attendance plays a significant role in weight-loss success.

- A Commercially Available Program for Weight-Loss Results in Improvements in Insulin Resistance in Overweight and Obese Individuals
L Zukley, J Lowndes, V Nguyen, T Angelopoulos, J Rippe. *Diabetes* 2006; 55(Suppl 1): A518.

Attendance at Weight Watchers meetings for a 24-week period was tracked among 40 individuals participating in a randomized clinical trial. Significant correlations were found between attendance and decreases in body weight ($r=.476$, $p=0.002$), BMI ($r=.492$, $p=0.001$) and waist circumference ($r=.455$, $p=0.003$). These findings show that regular attendance plays a significant role in weight-loss success.

- A Commercially Available Program for Weight-Loss Results in Improvements in Insulin Resistance in Overweight and Obese Individuals
L Zukley, J Lowndes, J Rippe. *Endo* 2006; 147: 675.

Eighty non-diabetic were randomly assigned into one of two groups for weight loss -- exercise (E) or Weight Watchers (WW). After 24 weeks, weight, fasting glucose, and HOMA were significantly reduced in WW but not in E group, showing that this weight-loss method achieved significant weight loss coupled with significant improvements in insulin resistance.

- A Comprehensive Weight-Loss Program vs. Exercise Alone: The Effects on Waist Circumference and Triglycerides during a Randomized Interventional Trial.
J Lowndes, L Zukley, B Lebaron, M Paul, N Meade, R Alvarado, R Carpenter, C Greenstone, TJ Angelopoulos, JM Rippe. *Obesity* 2006; 14(Suppl): A181.

Eighty overweight and obese subjects were randomized to one of two weight-loss interventions: Weight Watchers (WW) or Exercise Only (EO) for 12 weeks. While both groups showed significant decreases in

triglyceride levels, the WW group also showed a significant decrease in weight and waist circumference. These additional changes may also lower the risk of developing Coronary Heart Disease.

- Regular Meeting Attendance as Part of a Comprehensive Weight-Loss Program Decreases Insulin Resistance and Body Weight.
L Zukley, V Nguyen, A Summers, M Paul, J Brosnahan, R Alvarado, J Lowndes, N Meade, D Knapp, TJ Angelopoulos, JM Rippe. *Obesity* 2006; 14(Suppl): A252.

Attendance at Weight Watchers meetings for a 24-week period was tracked among 42 overweight and obese individuals participating in a randomized clinical trial. Individuals who attended the highest percentage of weekly meetings had significantly greater weight loss and decreases in waist circumference compared to those who attended infrequently. Greater improvements were also found in fasting glucose, fasting insulin ($p=0.05$) and insulin resistance ($p=0.02$). These findings demonstrate that regular attendance plays a significant role in weight-loss success.

- A Comprehensive Weight-Loss Program vs. Exercise Alone: The Effects on Glucose Tolerance and Insulin Sensitivity during a Randomized Interventional Trial.
V Nguyen, L Zukley, J Lowndes, M Paul, TJ Angelopoulos, R Alvarado, D Knapp, N Meade, R Carpenter, J Fiutem, JM Rippe. *Obesity* 2006; 14(Suppl): A181.

One hundred nine non-diabetic overweight and obese subjects were randomized to one of two weight – loss interventions: Weight Watchers (WW) or Exercise Only (EO). After 12 weeks, the WW group had a significant improvement in glucose area under the curve ($p<0.05$) that was not observed in the EO group suggesting greater improvement in glucose tolerance.

- Portion Control, Low Energy Density, and Low Glycemic Index Diets Yield Comparable Glycemic Index and Glycemic Load Values When Provided as Part of a Comprehensive Weight-Loss Program.
J Brosnahan, A Summers, V Nguyen, L Zuckley, J Lowndes, N Meade, TJ Angelopoulos, JM Rippe. *Obesity* 2006; 14 (Suppl): A181.

A total of 42 overweight adults enrolled in a 12-week comprehensive weight-loss intervention were randomized at the start to one of three diets: 1) a food plan emphasizing portion control (PC); 2) a food plan focused on choosing foods with a low energy density (ED); and 3) a food plan based on a low glycemic index pyramid (GI). The researchers found no significant differences between diet groups for weight loss, calories consumed, macronutrient composition, or GI. These findings suggest that a variety of food plans based on making healthy, lower calorie food choices have a low glycemic index.

- Food Plans Based on Energy Density or Glycemic Index Have Same Effect on Hunger and Satiety When Used in Comprehensive Weight Loss Program.
A Summers, J Brosnahan, V Nguyen, L Zuckley, J Lowndes, TJ Angelopoulos, JM Rippe. *Obesity* 2006; 14(Suppl): A183.

A total of 60 overweight adults enrolled in a 6 week comprehensive weight-loss program were randomized at the beginning to two different diets: one focused on foods with a low energy density (ED) and another based on foods with a low-glycemic index (low GI). The study found no significant differences between diet groups for weight loss, total calories consumed or feelings of hunger and satiety.

- Parent-Focused Intervention Shows Promise in Treating Excess Weight in Children
K Miller-Kovach, C Horning, RWilde, J Hartman. *Obesity* 2006; 14(Suppl): A155.

33-week data on 54 children was provided from a pilot program that offers a family-based, comprehensive weight management program. The researchers found that the average %-tile of BMI-for-Age was 97.0 ± 3.0 at the time the program was started and 95.8 ± 5.0 at 33 weeks. 23 of the children with

excess weight reduced their BMI-for-Age, while 3 stayed the same and 6 increased. The average %-tile change in BMI-for-Age was +1.1 in those who gained and -2.0 in children that lost weight.

- Economic Evaluation of Weight Watchers in the Prevention of Obesity
P Trueman, S Flack. (Abstract). *Clinical Excellence*, Birmingham, December 2006.

An economic model was used to determine the cost-effectiveness of the Weight Watchers program. The findings showed Weight Watchers to have similar cost-effectiveness to other interventions (e.g. such as counselling or school based interventions) already provided by the National Health Service(NHS) and to offer a cost effective means of providing weight management services.

- Effect of an Ad Lib Low Energy Density Diet vs. a Low Glycemic Index Diet on Cardiovascular Risk Factors as Part of a Comprehensive Weight-loss Program
V Nguyen, L Zukley, J Brosnahan, A Summer, J Lowndes, TJ Angelopoulos, JM Rippe.
Obesity Reviews 2006; 7(Suppl 2): 260-261.

Forty obese adults enrolled in a 12 week comprehensive weight-loss program (Weight Watchers) were randomized to one of two different diets: one focused on foods with a low energy density (ED) and another based on foods with a low-glycemic index (low GI) Both groups showed significant decreases ($p < 0.05$) in body weight, body fat waist circumference, cholesterol, HDL, insulin and HOMA insulin resistance. Additionally, there were no significant differences in any of the variables evaluated between both groups, indicating that both diets are equally effective at reducing cardiovascular risk when integrated into the Weight Watchers program.

- Evaluation of Referral to Weight Watchers
J Poulter and P Hunt. *International Journal of Obesity* 2007; 31 (Suppl 1): S110.

In 2004 and 2005, 155 people from regions in England were referred by their physicians to attend Weight Watchers meetings for 10-13 weeks. Most of the patients (87.5%) that were referred to Weight Watchers attended meetings. After 12 weeks, the average weight loss was 10 pounds and more than one-third of the patients lost 5% or more of their initial body weight (considered to be a medically significant achievement). Greater weight loss was seen in patients who regularly attended meetings.

- Parents as Change-agents: Pilot Program Shows Positive Impact on Childhood Overweight
C Horning, K Miller-Kovach, R Wilde, J Hartman. *The FASEB Journal* 2007; 21(5): A301.

46-week data on 52 children was provided from a pilot program that offers a family based, comprehensive weight management program for overweight children. The researchers found that 19 children had a BMI-for-Age <85th% tile. Of the 33 children with a BMI-for-Age \geq 85th% tile, twenty-three children decreased their BMI z-score ($p = 0.003$), 2 stayed the same and 8 increased. The findings suggest that the parent-focused pilot program appears to have a positive affect on children's weight.

- Evaluation of Weight-loss Diets on Glycemic Index, Glycemic Load, Body Mass Index and Insulin Resistance
V Nguyen, L Zukley, J Brosnahan, A Summers, J Lowndes, T J Angelopoulos, JM Rippe. *The FASEB Journal* 2007; 21(5): A694.

Eighty-one overweight adults enrolled in a comprehensive weight-loss program (Weight Watchers) were randomized to two different diets: one focused on foods with a low energy density (ED) and another focused on portion control (PC). Both groups showed comparable significant decreases in caloric intake along with significant improvements in body mass index and waist circumference. While GI was lower in the ED group (40.15 ± 8.64 ; $p \leq 0.05$) than the PC (47.26 ± 7.72), both were low (i.e., $GI < 55$). These findings suggest that dietary interventions not based on GI or GL can improve glucose handling and result in reliable weight loss.

- Motivational Effects of 12-Week Moderately Restrictive Diets With or Without Special Attention to the Glycemic Index of Foods
F Bellisle, AM Dalix, MA De Assis, E Kupek, U Gerwig, G Slama, JM Oppert. *Br J Nutr* 2007; Apr;97(4): 790-8.

Ninety-six women enrolled in a 12 week comprehensive weight-loss program (Weight Watchers) were randomized so that one group (n=45) followed the regular Weight Watchers program while the second group (n=51) followed a modified program encouraging low GI foods. No significant differences were seen between groups with regards to attrition, weight loss, decreases in waist and hip circumferences and other biochemical measures. The low GI group did consistently rate feelings of hunger and desire to eat lower than the traditional program with group differences being especially large in the afternoon. These subjective benefits may be helpful in adherence to a weight-loss program over the long-term and require further investigation.

- Evaluation of a Popular, Online, Weight-Loss Product
L Zukley, V Nguyen, A Summers, J Brosnahan, J Lowndes, T Angelopoulos, J Rippe. *Obesity* 2007; 15 (Suppl 9): A221.

Thirty one participants with home-based computer access and skills were instructed to use Weight Watchers Online for 24 weeks to evaluate the effectiveness of an online weight-loss subscription product. Significant improvements were seen in weight (180.70 ± 26.55 vs 170.15 lbs), BMI (30.60 ± 2.30 vs 28.90 ± 2.48), percent body fat (44.74 ± 4.94 vs 41.16 ± 6.84) and fat mass (80.77 ± 15.14 vs 70.25 ± 16.62 lbs, all $p < 6.84$). In addition, a significant relationship was observed between the total number of online interactions and change in weight ($r = -0.412$, $p = 0.021$) and in regard to the number of days with at least one online interaction ($r = -0.410$, $p = 0.022$). These findings suggest that an online, subscription-based, weight program can produce significant results and the more often the online program is used, the greater the weight loss.

- Using Online Tools in Conjunction with a Comprehensive, Group-Based Weight Loss Plan Enhances Outcomes
V Nguen, A Summer, J Brosnahan, L Zukley, J Lowndes, T Angelopoulos, J Rippe. *Obesity* 2007; 15 (Suppl 9): A221.

Eighty-nine adults with home-based computer access and skills were randomized to two groups. One group ($n = 65$) attended weekly meetings and followed the Weight Watchers program and the second group ($n = 24$) did the same in addition to using web-based tools (e Tools). After 24 weeks the group using eTools had significantly greater changes in weight (-10.09 ± 10.32 lbs vs -15.23 ± 10.56 , $p < 0.05$) and BMI (1.65 ± 1.67 vs -2.60 ± 1.72 , $p < 0.05$) compared to the group only following the Weight Watchers program. The number of days using the online tools ($r = -0.425$, $p = 0.039$) was related to change in weight. These findings suggest that the addition of on-line tools to a comprehensive, group-based, weight-loss plan increases weight-loss success.

- Weight-Loss Maintenance 1, 2 and 5 Years after Successful Completion of a Weight-Loss Programme
MR Lowe, TVE Kral, K Miller Kovach. *British Journal of Nutrition* 2007; 28:1-6.

Weight-loss maintenance after successful completion of a commercial weight-loss program was assessed in 699 lifetime members of the Weight Watchers program. One, two and five years after successful completion of the program, 79.8%, 71.0% and 50% of participants maintained at least 5% of their weight loss. These findings provide further evidence that maintenance of weight loss for those who successfully lose weight is more beneficial than data from clinical populations suggest.

Weight Watchers International Supported Research

- Plasma fibrinogen levels are associated with obesity and other markers of inflammation
Lowndes J, Zukley L, Melton R, Nguyen V, Carpenter R, Greenstone L, Angelopoulos TJ, Rippe JM. *FASEB Journal* 2005; A987.
- Association of Serum C-Reactive Protein with Cariorespiratory Fitness in Middle-Aged, Sedentary, Overweight/Obese Adults.
Yount B, Dube TJ, Zukley L, Fiutem JJ, LeBaron B, Lowndes J, Sivo S, Angelopoulos TJ, Rippe J. *Obesity Research* 2004; 12S: A213.
- The relationship of hs_CRP to Metabolic Syndrome Diagnostic Criteria and Cardiovascular Risk Factors
Dube TJ, Yount B, LeBaron B, Lowndes J, Zukley L., Sivo S, Angelopoulos TJ, Rippe J. *Obesity Research* 2004; 12S: A212.
- Does BMI or Waist Circumference correlate better with Risk Factors Associated with Obesity?
Lowndes J, Dube TJ, Yount B, Zukley L, Sivo S, LeBaron B, Angelopoulos TJ, Rippe JM. *Obesity Research* 2004; 12S: A212.
- Medical Training Residency in the Management of Obesity
RF Kushner, WC McGaghie, L Pendarvis. *Academic Medicine* 2000; 75 (5): 550.

Weight Watchers has also supported research conducted under the auspices of the International Life Sciences Institute's North American Committee on Diet & Obesity. Publications as an outcome of this project include:

- Does Weight Loss Maintenance Become Easier Over Time?
ML Klem, RR Wing, W Lang, MT McGuire, et al. *Obesity Research* 2000; 8 (6): 438-444.

Participants in the National Weight Control Registry report that, the longer their weight loss is maintained, the lower the effort required maintaining the loss and the greater the pleasure derived from it.

- A Descriptive Study of Individuals Successful at Long-Term Maintenance of Substantial Weight Loss
ML Klem, RR Wing, MT McGuire, et al. *Am J Clin Nutr* 1998.

The National Weight Control Registry collects data about people who have successfully maintained substantial weight losses. Among registrants, about half report using formal weight-loss programs (including Weight Watchers). Weight loss was attributed overwhelmingly to a combination of diet and exercise with 77% of the registrants reporting a "triggering event" that preceded the successful weight loss. To maintain the loss, registrants report continuation of a low fat diet and physical activity. Nearly all registrants indicate that weight loss lead to improved levels of energy, general mood, physical mobility, physical health, and self-confidence. Overall, they also report that it was harder to lose the weight than it is to maintain the loss.

- Behavioral Strategies of Individuals who have Maintained Long-Term Weight Losses
MT McGuire, RR Wing, ML Klem, JO Hill. *Obes Res* 1999; 7(4): 334-41.

A randomized telephone survey technique was used to evaluate behaviors used by individuals who are successful at long-term weight loss. Behavioral strategies that were unique to the maintainers included controlling dietary fat intake, higher levels of physical activity, and greater frequency of self-weighing (i.e., at least once a week).

- The Prevalence of Weight Loss Maintenance among American Adults
MT McGuire, RR Wing, JO Hill. *Int J Obes Relat Metab Disord* 1999; 23(12): 1314-19.

Appendix A

A random telephone survey was conducted to determine the prevalence of sustained weight loss among the general population. Weight loss was quite common among those surveyed with 54% of the total sample and 62% of the sample who were overweight reporting having lost at least 10% of their maximum body weight at some point. Among the weight losers, 47-49% had maintained the loss for at least a year. The findings contradict the popular belief that few people succeed in long-term weight loss maintenance.

- The Behavioral Characteristics of Individuals who Lose Weight Unintentionally
MT McGuire, RR Wing, ML Klem, JO Hill. *Obes Res* 1999; 7(5): 485-90.

Unintentional weight losers drank more, were more likely to smoke, less physically active and less concerned about their eating habits than people whose weight loss was intentional, suggesting that people whose weight loss was unintentional may exhibit behaviors associated with negative health outcomes. These findings are significant because most studies that look at the health impact of weight loss do not differentiate as to whether the loss was intentional or unintentional.

