



A RESEARCH REVIEW<sup>™</sup>  
SPEAKER SERIES

# Goodfellow Symposium 2019:

## What can I do if my patient asks me about help with weight loss?

Making Education Easy

2019

### About the speaker



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Ole is a consultant in endocrinology, diabetes, and general internal medicine at Auckland District Health Board (ADHB) and is also the Service Clinical Director of the Auckland Diabetes Centre. He qualified in medicine from Humboldt University in Berlin and completed his postgraduate training in diabetes and endocrinology at Cardiff University in Wales. He was awarded his MD for work in diabetes and microvascular complications. Dr Schmiedel has worked as a specialist in NZ since 2009, initially in the Hawkes Bay, where he played a key role in the transformation of the secondary diabetes delivery model allowing closer cooperation between different service providers. Ole's main clinical and research interests are in the management of diabetes, obesity and obesity-related complications, as well as lipid disorders and neuroendocrine tumours. He is involved in education, training and service development projects with a strong focus on supporting primary care teams. In addition, he specialises in all areas of endocrinology and consults in private practice at Greenlane Medical Specialists.

This publication is a summary of a presentation by Dr Ole Schmiedel given in Auckland at the 2019 Goodfellow Symposium. The Goodfellow symposium, with over 80 speakers and presenters, is a primary care symposium designed for GPs, urgent care physicians, nurses, nurse practitioners and registrars. Dr Ole Schmiedel's presentation outlined a solution-focused approach to medical weight management, focusing on improvement of obesity-related complications rather than on weight itself. The aim of this session was to provide practical knowledge on how to approach weight management, with several individual cases provided as examples of the various approaches. This presentation was sponsored by Radiant Health.

### How to start the conversation

It is often difficult to raise the subject of obesity. One approach is to start with asking for permission before you start talking about weight. It is essential that the choice of words is carefully considered, for example, it is generally recommended to talk about weight rather than obesity and to avoid shaming words like fat. Consider instead talking about a person "carrying excess weight".<sup>1</sup> It can be helpful to focus on obesity-associated complications when initiating the conversation, guiding the patient carefully and allowing them to approach the subject of obesity themselves. Healthcare providers may be surprised by how concerned people with obesity are about their condition, but often do not address this due to a variety of reasons.<sup>2</sup>

### Improvement of comorbidities the main goal

It is important to remember that obesity is a chronic condition, that has all the hallmarks of disease; it is chronic, progressive, relapsing, and requires a medical approach, and quick fix solutions are generally counterproductive. Improvement of comorbidities is the main aim of weight management, with weight loss of only 5% to 10% shown to make a significant difference: "the first 10% is for your health the rest is cosmetic".<sup>3</sup> Obesity is associated with premature death and over 100 comorbidities, including several cancers, e.g., post-menopausal breast cancer, kidney cancer, bowel cancer and endometrial cancer, the rates of which are reduced after bariatric surgery.<sup>3-5</sup> Moreover, as body mass index (BMI) goes up, particularly above 30 mg/m<sup>2</sup>, there is a steep increase in the risk of mortality.<sup>6</sup> Obesity is also associated with a reduction in quality of life and with a loss of healthy life years.<sup>7</sup> With this in mind, obesity needs to be approached in the same manner as we deal with other chronic diseases, such as diabetes and heart failure.

### Obesity as a chronic condition

Obesity has strong heritability, with up to 40% to 70% shown to be due to genetics.<sup>8</sup> In addition to genetic predisposition, obesogenic environments, the reduction in physical activities of daily living and easy availability of high calorie foods, have contributed to the exponential rise in obesity over the last 40 years.<sup>9</sup> In terms of pathophysiology, once the excess weight has been gained, obesity is maintained and exacerbated by a dysregulation of the gut-brain neuroendocrine feedback loop, involving several hormonal and neuronal pathways, leading to changes in hunger sensation, satiety, and metabolic rate.<sup>10</sup> It has also been shown that intermittent weight loss and regain can lead to worsening of the condition due to hypothalamic structural changes; hence 'weight cycling' can be more detrimental than doing nothing.<sup>11</sup> It is well established that people find it harder to lose weight after each attempt due to this phenomenon. Thus, chronic management with a long-term outlook rather than intermittent management is essential. The focus for a therapeutic approach should be on weight loss maintenance, aiming for at least 1 to 2 years to achieve sustainable benefits.<sup>12</sup>

### Prevalence

New Zealand has the third highest rate of obesity in the OECD, only exceeded by the United States and Mexico; in New Zealand, two-thirds of adults are overweight or obese.<sup>13</sup> In 1977, around 10% of the population was obese, but this has now basically tripled, increasing to 32%. Given that the lead-in for many complications is between 10 and 20 years, we know that obesity-related complications will have a significant impact on the New Zealand health system now and in the future. In addition, the rising tide of type 2 diabetes in children, adolescents, and young adults is a concern, as this early presentation, mostly due to obesity, is associated with a more aggressive phenotype, significantly higher rates of complications, higher morbidity and mortality than type 1 diabetes diagnosed at any age group or type 2 diabetes diagnosed in older age groups. While this presents a significant challenge, it can also be considered a significant opportunity for doing something different in primary care.

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## Edmonton obesity stages

Complications associated with obesity affect most organ systems, and include metabolic (e.g., type 2 diabetes, ischaemic heart disease, heart failure, non-alcoholic fatty liver disease, gout, polycystic ovary syndrome), mechanical (e.g., osteoarthritis, venous insufficiency, recurrent lower limb cellulitis, obstructive sleep apnoea, gastro-oesophageal reflux disease), and psychological complications, as well as several cancers.<sup>5,14</sup>

A particularly useful tool for assessing the severity of obesity-related complications is the Edmonton Obesity Staging System.<sup>14</sup> It takes comorbidities, physical, psychological and functional symptoms into account, comprising four evidence-based stages: stage 0 - no obesity-related risk factors, symptoms or limitations, stage 1 mild, stage 2 moderate, stage 3 significant and stage 4 severe.<sup>14</sup> Edmonton obesity stage is a much better predictor of mortality than a purely BMI-based staging, as shown graphically in figure 1.<sup>15</sup>

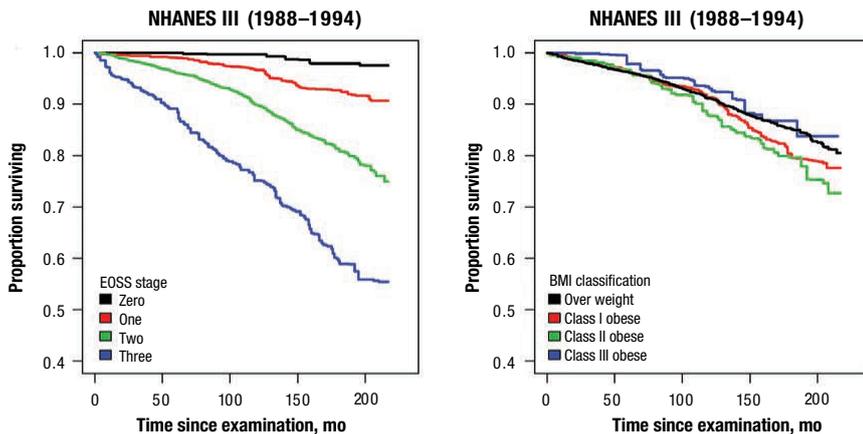


Figure 1. Edmonton staging system can predict mortality better than BMI.<sup>16</sup>

This evidence highlights again the importance of focusing on obesity-related complications when assessing the patient, deciding on the treatment approach, and when prioritizing resources, i.e. the need for bariatric procedures. On the other hand, it has been shown that even a 5% to 10% reduction in body weight can lead to a significant reduction in complications, with the DIRECT trial demonstrating that a successful weight management intervention was associated with a regression of type 2 diabetes in 46% of participants at 1 year,<sup>16</sup> with a subsequent analysis showing this regression was maintained in 36% of participants at 2 years.<sup>17</sup>

## Assessing your patient

Using a medical model for the assessment and treatment of obesity, the clinical evaluation should be as comprehensive as for any other chronic condition. Since obesity assessment needs to take several aspects into account, the initial consultation can be time consuming and may be done in different steps by the multidisciplinary team. To facilitate the process, I suggest using a self-assessment questionnaire before the first clinical encounter.

In the clinic, I suggest starting with obtaining a thorough medical history with a focus on obesity-related complications, followed by a detailed weight history, taking into account 'weight gain over time', which can be documented in a diagram to visualize weight changes and triggers for weight gain or loss. It is essential to inquire about eating habits and abnormal eating patterns to find drivers for unhealthy eating, as well as any family history of obesity. It is equally important to discuss a patient's support structures, medication they might be taking that can lead to weight gain, and contraindications such as eating disorders (figure 2). Additional questions relate to the patient's motivation for weight loss, individual targets, mood, emotions, and exercise (e.g., how much they do now and how much they think they can do in the future). At the end of the consultation a treatment plan needs to be co-developed and agreed by the patient and the clinician.

After completion of the initial medical assessment, the patient can be referred to the multidisciplinary team, including a dietitian, exercise physiologist, and psychologist if necessary and available. Patients also undergo standard blood tests, including renal and liver function, lipid profile, tests for diabetes and thyroid disease, as well as tests based on the individual patient requirements, such as endocrine investigations, appropriate referral for the assessment of other comorbidities, and an ECG. It is also important to note that complications may arise during and following the loss of a significant amount of weight, such as gallstones, exacerbation of gout, and constipation. Hence, patients need to be monitored and treated accordingly during the weight loss phase.

## Clinical vignettes

The following clinical cases are based on real in-clinic encounters, describing certain pertinent aspects and clinical approaches to case management in the medical obesity clinic.

### Pearl, age 32

Pearl is a 32-year-old female of Pacific heritage, with a BMI of 38 kg/m<sup>2</sup> and Edmonton Obesity Stage 2 (moderate severity). She gained weight during adolescence and managed to lose weight with exercise in the past. She has a strong family history of obesity and has had type 2 diabetes for approximately 3 years. She has menorrhagia, marked acanthosis as a sign of insulin resistance, microalbuminuria and an HbA1c of 10.4 mmol/mol. She has 'what everyone else eats,' including fast foods and sugar-sweetened beverages, can eat copious amounts without feeling full, denies night-time eating, but admits to moderate emotional eating, and craving for sweets. She is motivated to lose weight, does regular exercise, and has no history of depression or anxiety.

Identifying her primary motivation for weight loss and her concerns, we established that improvement of her type 2 diabetes is the driving and motivating factor for her. Based on the knowledge that 5% to 10% weight loss can lead to regression of early onset of type 2 diabetes (duration of fewer than 6 years)<sup>17</sup> she was started on metformin and vildagliptin for her diabetes, and weight loss was achieved with a significant change in her eating habits, guided by dietitian advice. Her motivation to change, improved knowledge and regular support led to a significant reduction in HbA1c to 5.3 mmol/mol, as well as improvement of microalbuminuria, insulin resistance and irregular menstrual periods. However, she only lost a relatively moderate amount of weight. This case emphasizes that weight loss interventions, such as low-calorie diets and changes in eating habits, are very successful for the prevention of and remission of diabetes in patients with recent onset of diabetes.<sup>16, 19, 20</sup>

### Theresa, age 28

Theresa is a 28-year-old New Zealand European female with a BMI of 84 kg/m<sup>2</sup> with currently only limited obesity-related complications. Her Edmonton Obesity Stage is 2, with obesity class 3. She is too heavy for bariatric surgery and needs to lose approximately 60-70kg before the procedure. She has recent onset of type 2 diabetes (HbA1c 5.4 mmol/mol) and obstructive sleep apnoea. She also

## Assess for Obesity Drivers, Complications, and Barriers

Use 4Ms framework to assess Mental, Mechanical, Metabolic, and Monetary drivers, complications, and barriers to weight management.

### The 4Ms of Obesity

Mental	Mechanical	Metabolic	Monetary
Cognition	Sleep Apnoea	Type 2 Diabetes	Education
Depression	Osteoarthritis	Dyslipidemia	Employment
Attention Deficit	Chronic Pain	Hypertension	Income
Addiction	Reflux Disease	Gout	Disability
Psychosis	Incontinence	Fatty Liver	Insurance
Eating Disorder	Thrombosis	Gallstones	Benefits
Trauma	Intertrigo	PCOS	Bariatric Supplies
Insomnia	Plantar Fasciitis	Cancer	Weight Loss Programs

Figure 2. Assess for obesity drivers, complications and barriers.<sup>18</sup>



has iron and vitamin D deficiency. She experienced previous pregnancy complications and has ongoing problems with menorrhagia. Her weight problem is longstanding, she gained significantly during her pregnancy, and obesity has had an impact on her quality of life. She has significant eating problems including constant cravings, night-time eating, a history of binge eating and not feeling full after meals.

These two cases of a young woman with significant weight problems may appear similar at first, yet the two vignettes are very different, requiring different treatment approaches. In the first, the aim is to improve diabetes, in the second case, significant weight loss to be eligible for bariatric surgery. In Theresa's context, diet alone is unlikely to work, she is too heavy to exercise safely, and she needs all aspects of medical weight management to prepare her for surgery, which in her case is the only long-term successful treatment modality.

She was referred for a multidisciplinary team approach; low-calorie diet with meal replacements was initiated, supported by phentermine (Duromine), metformin, orlistat, and other weight management medications. A psychologist taught the Beck Diet Plan and stress management techniques. She is currently being prepared for bariatric surgery.

Weight management medications are considered safe based on her medical history and are required to deal with hunger and cravings and have been initiated with a clear intent for a foreseeable period. It is essential to be open and honest about what can and what cannot be achieved with medication and to use medication within a supportive and comprehensive multidisciplinary team setting. We were clear from the start that in her context the only long-term treatment is bariatric surgery, preferably Roux-en-Y gastric bypass. It is vitally important to note that all patients need to be followed up medically (GP or specialist) and by a dietitian, after surgery, as obesity is a chronic disease, weight regain can occur after surgery, and nutritional deficiencies and metabolic complication are a significant risk after bariatric procedures.<sup>10</sup>

## Medications

One of the oldest and most widely used weight loss medications is phentermine (Duromine), which is a sympathomimetic appetite suppressant and does have side effects that the prescriber needs to know about. It is my usual practice to start phentermine at a low dose, 15mg daily or 15mg every alternative day. This approach has been described in a 2017 issue of Research review<sup>21</sup> and reflects a dose titration that is part of the combined weight management medication (Qsymia), where phentermine is given at 3.75mg, 7.5mg, and 15mg, titrated over several weeks. In this context cardiovascular safety and diabetes outcome data are available for up to 2 years. Much of the evidence for long-term use of phentermine comes from these studies of a combination drug of phentermine and topiramate not available in New Zealand.

Based on well-established evidence, experience, and international guidelines, I generally recommend to start any medical weight management with a dietary approach, reserving weight loss medication for weight loss maintenance, taking into account that the medication has to be given for a more extended period under medical supervision and as part of regular multidisciplinary team process and review. There is evidence that after a weight loss of approximately 10% the hunger sensation increases by up to 30% and the resting metabolic rate decreases. Furthermore, it has been shown that hormones that control food intake and satiety remain altered for up to 2 years after weight loss.<sup>12</sup> This will make any sustained weight loss difficult, and explains the frequent weight regain after diet-only interventions, and supports the need for long-term management, aiming for approximately 10% to 15% weight loss in most cases.

In terms of phentermine dosing, phentermine can be given as continuous or intermittent treatment and should be discontinued if the target of 5% weight loss after 12 weeks has not been achieved. It is important to note that phentermine is not recommended in children and the elderly and is contraindicated in pregnancy. Phentermine is to be avoided in patients with cardiovascular disease or significant emotional problems (such as anxiety). The USA Endocrine Society guidelines provide an excellent summary of medications that can cause weight gain and may be changed or substituted, and a clinical approach to the use of weight loss medications.<sup>10</sup>

The other weight loss medication available in Europe, the UK and the USA is the combination of bupropion and naltrexone,<sup>22</sup> which was found to be safe and effective by the US FDA and the European Medicines Agency. There are up to 2 years' safety data for this combination,<sup>23</sup> and a cardiovascular outcome trial is ongoing. This medication is not licensed in New Zealand for weight management, and there is clear guidance when considering prescribing medicine in an unapproved way.

Overall, consider mutually beneficial medications (such as phentermine and SGLT2 inhibitors), as well as medications with dual benefits (topiramate for migraines and weight management).

Medications should be selected based on contraindications and possible side effects. Furthermore, use tools that support adherence and proper compliance, be aware of the stopping rules and remember to document carefully and adhere to the consenting process if using medications for weight loss maintenance longer term. Practice within the available guidance and evidence and ask for help and refer accordingly. Always avoid a medication-only weight loss approach and practice within a multidisciplinary team adhering to the ethical standards for medical practice and be aware of the history of weight loss medications and their potential for abuse.

## Alan, age 58

Alan is a 58-year-old male with a BMI of 42 kg/m<sup>2</sup> and Edmonton Obesity Stage 3. He has multiple obesity-associated complications, including ischemic heart disease with previous non-ST-elevation myocardial infarction and percutaneous coronary intervention, type 2 diabetes for over 8 years, dyslipidemia, gout, non-alcoholic fatty liver disease, obstructive sleep apnea, and knee and back problems due to his weight. He is on multiple medications for these conditions. He was fit, lean, and active until age 35 when he stopped playing sport, and his weight increased to 110kg. He managed to lose 20kg with heavy exercise, regained the weight over a couple of years, and subsequently had several attempts of weight loss and weight regain. He has a family history of type 2 diabetes and obesity. He also has low total testosterone, a common finding in men with obesity.

Key aspects in this vignette include late-onset weight gain, recurrent weight cycling, significant cardiovascular complications and characteristics of metabolic syndrome. To improve his health, Alan aims to lose 5% to 10% of his starting weight and to reduce his cardiovascular risk. To achieve this, we focus on ideal diabetes management with medication that has established cardiovascular benefits and is associated with weight loss.<sup>24</sup> He started on an SGLT2 inhibitor (dapagliflozin 10mg once daily) and the GLP1 agonist exenatide long-acting release 2mg weekly. These medications are available in New Zealand but are not currently funded by Pharmac. He also received treatment for low testosterone, aiming for low normal free testosterone. His treatment for obstructive sleep apnea (CPAP) and his cardiovascular medication were continued. He agreed to intermittent fasting, 3 days per week with meal replacements using a moderate carbohydrate reduced Mediterranean diet on the remaining days. He did not require any additional weight loss medications, which would have been contraindicated in his context. Currently, his HbA1c is 43 mmol/mol, his low-density lipoprotein (LDL) cholesterol is 1.9 and his blood pressure is well controlled. He managed to lose 8% of his starting weight, and this has been maintained for over 12 months. He will continue focusing on improving his obesity-related complications.

## Mary, age 67

Mary is a 67-year-old female with a BMI of 48 kg/m<sup>2</sup>, Edmonton Obesity Stage 3. She has numerous obesity-associated complications, including type 2 diabetes for approximately 4 years, dyslipidemia, vitamin D deficiency, post-menopausal intermittent vaginal bleeding, peripheral edema, worsening lower back pain, peripheral neuropathy, and balance problems. Mary started gaining weight at the age of 12 years, after which she had frequent weight cycling, never managing to lose weight for more than 6-12 months. She does not want bariatric surgery as she is afraid of the procedure, having seen a relative who had problems after surgery. She has a significant degree of emotional eating, cravings and admits to evening and late-night eating.

The salient points in this vignette are multiple medical conditions, clinical findings that require further evaluation and a lifelong history of weight problems. A thorough history and examination formed the basis for a successful weight management plan, but also led to the realization that the neuropathy was too severe for the duration of diabetes, and the clinical examination was not consistent with peripheral diabetic polyneuropathy.

Based on this evaluation the patient underwent an MRI scan of her spine, which revealed a para-spinal lesion leading to nerve compression symptoms, and a pelvic ultrasound showed endometrial lesions. This highlights the need for a holistic approach, thorough clinical history and examination in the medical obesity clinic, and the awareness that the prevalence of malignancies is increased in patients with longstanding obesity.

We aimed to achieve rapid weight loss to prepare her for spinal surgery, using complete meal replacements for 4 weeks. Postoperatively, we continued with intermittent fasting and used bupropion to reduce her emotional eating. She managed to lose 20% of her body weight with meal replacements pre-surgery, regained some of the weight after surgery, and is currently still 8% lighter than her starting weight.



## Martin, age 39

Martin is a 39-year-old man with a BMI of 31 kg/m<sup>2</sup>, and an Edmonton obesity stage of 1. He has pre diabetes, he drinks alcohol, his ferritin is raised, and he has mild fatty liver disease. He gained weight in his 30s with a job change and has mostly central obesity. He was lean in childhood and adolescence. He has a family history of alcohol abuse, type 2 diabetes and ischemic heart disease, he has emotional eating and has good family support.

Key aspects for this patient include late-onset weight gain and family history factors. The aim of his treatment is 10% weight loss. Intermittent fasting or a low-carb diet would work in this patient and Duromine at intermittent dosing is an option, after reduction of alcohol use.

## Diets

Regarding diets, there is not one diet or nutritional approach that is right for every person wanting to lose weight. In general, the best diet is the one that fits into a person's lifestyle and can be adhered to in the long term. However, based on available evidence, the healthiest diets for cardiovascular benefits are the DASH and the Mediterranean style diet.<sup>25</sup>

For rapid weight loss, meal replacements and a low-calorie diet can be used. These should be implemented alongside counseling and dietitian advice, as well as monitoring of electrolytes. This is a short-term approach that is not usually sustainable, hence it should be used for specific settings (e.g., before surgery). When used to treat certain conditions such as recent-onset type 2 diabetes, the transition phase to regular eating is the most critical aspect of this approach. Several patients prefer a low carbohydrate diet which can give good initial results in patients with impaired glucose tolerance and diabetes; however, since it is difficult to sustain, most studies show no long-term benefit over other dietary measures. The main concern with low-carbohydrate diets is not the reduction in carbohydrates, but the substitution with saturated fats, which has been shown to worsen dyslipidemia and to increase cardiovascular risks.<sup>26</sup> Nevertheless, dietary research is complex and there are several large observational studies with conflicting outcomes, and it is important to be mindful when interpreting available evidence. Hence, a plant-based low carbohydrate diet with enough mono- and polyunsaturated fats is a treatment approach that can be supported.<sup>27,28</sup> Ketogenic diets are generally not recommended in the medical obesity clinic as they are associated with several problems and are difficult to sustain.<sup>29</sup> Intermittent fasting has been studied widely and is a safe and practical approach,

which fits with a busy lifestyle, using meal replacement products, or specific religious dietary concepts.

Exercise is essential in the weight loss maintenance phase but can be detrimental in the early weight loss phase when it can lead to increased hunger and fatigue. It is equally important to note that a safe social context, supportive family and work environments, sufficient, restful sleep and psychological wellbeing are essential for sustained weight loss success. It is advised to revisit the past medical history for psychological trauma or other determinants of health if the anticipated weight loss is not achieved.<sup>30</sup>

## CONCLUSION

In summary, successful medical weight management requires an understanding of obesity as a disease with several co-morbidities, driven by genetic predisposition and exacerbating environmental factors, presenting with a wide inter-individual variation and several specific phenotypes.

The management relies upon a patient-centered multidisciplinary approach, including lifestyle, pharmacotherapy, and bariatric surgery, where appropriate (figure 3).<sup>31</sup> Applying this approach to medical weight management can be successful, sustainable and highly rewarding for the patient and their whanau.

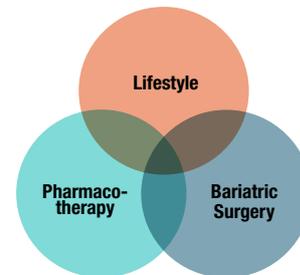


Figure 3. A combination of therapies is generally required for effective obesity management.<sup>31</sup>

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