5-MINUTE

Individual Module Summary

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PATIENT VERSION

Find out which module(s) are most relevant and repeat/review them often.

In this resource are five-minute summaries of each of the eight modules. Together, the eight modules comprise a comprehensive behavioural weight management program and represent a knowledge translation of the 2020 Canadian Obesity in adults clinical practice guidelines - **Psychology and Behavioural Chapter**

Weight Bias and Stigma	Expectations	Calorie Deficit, Diet and Exercise	Values
Wanting	Restraint	Modulators	Resilience

WEIGHT BIAS

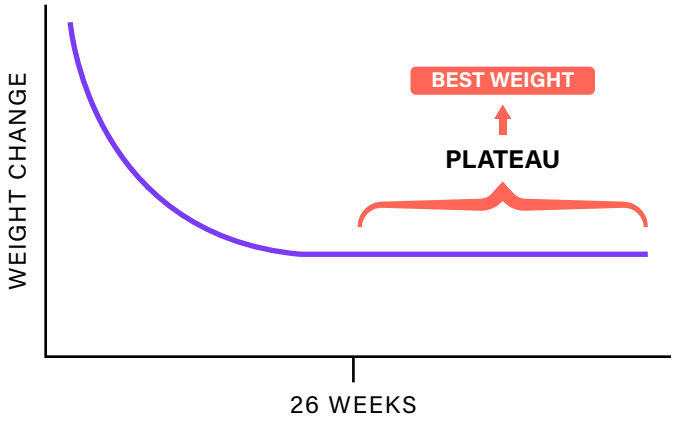
Those who live with excess weight inevitably face negative attitudes and stereotypes related to their appearance from the public, the media, health care practitioners, and even family and friends. There is a common misconception that being overweight or obese is a personal choice and could easily be reversed if one simply chose to eat less and move more. These biases are not only hurtful and damaging but are unfortunately—and inevitably—internalized by a person who is living with excess weight. Internalized weight bias puts one at risk of low self-esteem, learned helplessness and depression. Countering internalized weight bias is necessary, possible, and if done correctly, can improve outcomes and quality of life.

Internalized weight bias can be countered by understanding that overweight/obesity is considered a real, chronic, progressive, brain-centered, medical condition that is environmentally impacted and primarily genetic. Internalized weight bias is also challenged by learning that this real condition is eminently treatable. With this material you will learn how genetics, the environment and learned behaviours impact this condition. You will learn that overweight/obesity is highly heritable and that a majority of the genes that confer risk are expressed in the brain. Risk is based on differences in the three areas of the brain that regulate appetite, metabolism and weight. You will learn that when someone is able to lose weight, the body 'fights back' in response to weight loss, effecting powerful changes that favour weight regain. Weight loss definitively increases appetite and decreases metabolic rate. You will learn why dieting and exercise are inadequate treatments for this condition. Internalized weight bias is further countered by learning that effective long-term treatments exist for overweight and obesity. The three treatments are behavioural intervention, medication and surgery. You will learn how some 30% of individuals clearly respond with long-term success to behavioural treatments alone. It is now common and appropriate that individuals may add medication as an adjunct to a behavioural intervention either immediately or through the course of their treatment. Medication use is considered as long-term treatment and has been demonstrated to significantly improve the likelihood of long-term success. A third component of treatment—surgery—may be considered for patients who qualify and/or for those whom behavioural intervention, plus or minus medication, is not adequate.

So, would you consider that you have been struggling with excess weight not because of a flaw in character or a lack of willpower or motivation, but instead because you have been struggling untreated with a real condition, for which effective and comprehensive treatment now exists?

EXPECTATIONS

You will be asked if you would consider your weight management journey to be a pursuit to discovering your **BEST WEIGHT**. You will be asked to consider discarding the concepts of target weight, ideal weight and goal weight. In their place, **BEST WEIGHT** is defined as the weight one softly lands at when living the healthiest lifestyle they can truly enjoy, at an effort level that can be maintained long term. **BEST WEIGHT** rests on the idea that behaviours adopted to lose weight will need to be continued in order to maintain losses. **BEST WEIGHT** is personal and individual. Everyone discovers their own best individual weight, and response to any treatment is always variable.



You will learn that almost every successful weight loss takes the shape of the above curve. The reason for this characteristic shape is that, as mentioned, appetite increases and metabolic rate decreases in response to weight loss. The further down from one's highest weight an individual gets, the stronger appetite becomes. As appetite steadily goes up, average calorie intake steadily goes up. In response to weight loss, less significantly, metabolic rate is reduced. Often, at around 26 weeks, calorie intake will have increased to the point where the amount taken in matches the quantity burned. When calorie intake matches calories burned, weight loss stops, defining the characteristic weight loss plateau. You will be invited to consider this point as your potential best weight.

Note that a sustained weight loss of as little as 5-10% results in clinically significant health benefits. These benefits include substantial reductions in deaths from heart disease and stroke, reductions in heart disease risk factors (blood pressure and cholesterol), improvement or remission of diabetes, improvements in conditions such as sleep apnea, fatty liver and osteoarthritis, along with significant improvements in health-related quality of life. Larger percentages of weight loss have been shown to reduce the risk of a series of 11 cancers.

CALORIE DEFICIT, DIET AND EXERCISE

Calorie deficit: At its most basic level, weight gain occurs when calorie intake exceeds calories expended. Conversely, weight loss only occurs when energy intake is less than total calories burned.

Another name for total calories expended is **total energy expenditure (TEE)**. **TEE** comprises the calories needed to 'run' the entire body (~75%), to digest food (10%), and to move (15%). Notable is that **TEE** can be thought of as fixed because exercise is now thought to likely **NOT** substantially increase **TEE**. Weight loss happens only if calorie intake is less than **TEE**, but the math should not be mistaken as simply 'calories in-calories out'. The math changes in predictable ways when, as discussed, the brain detects fat loss and generates increased appetite and decreased metabolic rate to favour weight regain. Weight loss occurs when calorie intake is reduced regardless of the percentages of fat, protein or carbohydrates eaten. Calorie intake, not carbohydrate intake, is the determinant of body fat gain or loss. The calorie content of food is at this point literally the only food property that has ever been convincingly demonstrated to impact body fatness in humans.

Diet: Despite years of searching, no best weight loss diet has been found. You will be asked to consider disregarding the debate about the optimal weight loss diet. Countless studies comparing different diets (e.g. low carbohydrate, ketogenic, low fat, intermittent fasting, Mediterranean) have shown minimal and inconsistent differences in weight loss and health outcomes. The carbohydrate-insulin hypothesis is the theoretical basis for low-carb dieting, ketogenic diet and intermittent fasting. The carbohydrate-insulin hypothesis is considered by the majority of scientists to be invalidated. The only consistent finding among diet comparison trials is that **adherence**—the degree to which participants maintained effort and continued in the 'program'—was most strongly associated with weight loss and improved health. Please consider switching from principles of 'diet' to principles of adherence. Behavioural programs support adherence and adherence leads to success. You will be asked to consider establishing your own 'best' diet: the healthiest eating that is realistic, enjoyable and sustainable. Again, the behaviours and effort level adopted to lose weight will be the behaviours and effort level needed to maintain weight loss, so consider eating in a pattern and effort level that is both enjoyable and sustainable.

In a parallel nutritional program, you will learn about the calorie density in foods and how to estimate portion sizes so that you can make the best assessment of your calorie intake. You will be invited to consider tracking your intake while being made aware that self-monitoring of food and drink intake is not for everyone.

Exercise: Next to quitting smoking, physical activity is the most valuable behaviour available to improve longevity and quality of life, and to reduce the risk of chronic disease. In a parallel physical activity program, you will be encouraged to be active; obstacles to physical activity will be identified, and skills and strategies will be taught and applied to overcome these obstacles. Surprisingly, recent studies show that exercise alone will not promote significant weight loss in most people. In this program, you will learn about the health benefits of exercise, but also the limitations of exercise in establishing a calorie deficit and weight loss. You will learn the very important positive impact of exercise on stress, fatigue and mood. You will learn that exercise may decrease appetite for some people, supporting sustained weight loss. Like best diet, you will be asked to establish your 'best' activity level—the highest level of activity that is enjoyable, reasonable and sustainable.

VALUES

For those who have lived with excess weight, managing weight long term is a lifelong effort. Experience tells us that individuals are capable of lifelong hard work if it is in the direction of things that are really important to them, or things that they really value. In this module you will learn a really important process called values clarification and reflection.

Values Clarification: The exercise of clarifying values has you ask, "what are the things that are important enough to me in my life that they make me willing to work long term, through difficulty and setbacks? What are the things that I do not want my health and weight to prevent me from doing long into the future?" An example of a clarified value is, "I want to be working in the direction of where my weight and health are least preventing me from being an active, energetic parent, capable of participating in and enjoying key experiences such as travel and activity with my family and friends long into the future. I value independence and activity and sharing in activities and memories with those I love."

Another key value that most will endorse is the value of enjoying a fun, pleasurable life with connections to food, drink, celebration and socialization. Therefore, another clarified value might sound like "I also want to be moving in the direction of where I maintain a loyalty to the things I most enjoy from food, fun, celebration, socialization and special occasions." It is very common to want to maintain a loyalty to both of these values. In fact, the journey to discover one's best weight may also be defined as the process of finding a personal balance that allows for loyalty to both of these values: enjoying life while maintaining a loyalty to health and quality of life. The values, when clarified, generate and support an intrinsic motivation and provide the willingness to maintain a sufficient level of effort long into the future.

Values Reflection: The exercise of values reflection is based on simple learning theory. The exercise sees one ask, "was today in the direction of my values? Were my decisions today around food and activity in the direction of what is most important to me?" When the answer to the above questioning is yes, this reflection is followed by a natural positive feeling. According to simple operant conditioning principles, if a behaviour is followed by positive emotions such as satisfaction, happiness and hopefulness, these emotions serve to reinforce the behaviours and make these behaviours more likely to be repeated. What about if the answers to the above questions are no? "No, my eating and activity today were not aligned with my values." In this case the reflection can initiate a golden learning opportunity and result in future on-track behaviours. A note of caution: for some people, thinking about 'off-track' behaviours creates the risk of self-critical thinking and needs to be recognized. (See resilience module.)

Values are a direction, not a destination. You never achieve values; you hope to be continually working towards them and living them. When considering food and activity decisions, "is this aligned with my values?" can be an important and valuable question. Values serve as an all-important compass that provides you direction and willingness to manage weight long into the future. Values clarification and reflection is very appropriate for a chronic condition like overweight/obesity that requires long-term management.

WANTING

We have already established that calorie intake above calorie expenditure drives weight gain. But what drives excessive calorie intake? You might think the answer is complicated but it isn't.

The answer lies in the middle part of our appetite system, best known as the motivation system. It is from here that **WANTING** is generated. **WANTING** is the subconscious motivational force that drives eating and overeating. This motivation system was built for an environment where calories could be scarce and finding food involved work, and therefore required the motivation to *GO AND GET*. Our prevailing understanding of how and why overweight/obesity happens is that this ancient system has collided with the modern food environment. By modern food environment we mean the ultra-processed, ultra-tasty, sugar-fat-salt filled, supersize-portioned, everywhere, anytime, aggressively advertised, ultra-available, delivered-right-to-your-door food environment.

What is the outcome of this collision? The outcome is called **WANTING** and it comes about through a very straightforward learning process called associative learning, or Pavlovian learning. This is how it happens: When we eat these types of foods, foods that have always conferred survival, they taste great, which signals the motivation system. The motivation system begins to learn to associate the cues around us with this great taste. The motivation system is meant to drive us to do the work to *GO AND GET* food. This is called **WANTING**, elsewhere described as desire, urge, impulse, craving, attention bias or incentive motivation.

Motivational learning means that eventually, after many repeated associations between the food and certain cues, just the cues themselves gain the power to generate **WANTING**. **WANTING** is different from hunger. Going too long without food also triggers **WANTING** but importantly, the **WANTING** that happens without hunger is the **WANTING** that drives the obesity epidemic and excessive calorie intake. **WANTING** resides completely in the subconscious.

WANTING is often described as a wave because of its property of rising, cresting and falling. Again, genetics plays a big role. The vulnerability to this type of learning and the strength of the **WANTING** are considered highly heritable. Stronger learning and stronger **WANTING** are considered key heritable risk factors in weight gain, making weight gain more likely in some than others.

The tools in this section will see you learning and over time clarifying: the cues, the places, the times and the settings where you now most commonly—reflexively—experience **WANTING**. What are the cues and settings that have, in your life, been repeatedly associated with tasty or abundant calories? Understanding, recognizing and ultimately managing **WANTING** is the central skill in weight management.

RESTRAINT

This section describes how to develop, as best you can, the capacity to restrain against **WANTING**. This section is about the processes of human decision making. **WANTING**, when it is reflexively triggered, gets shuttled up to the third layer of the appetite system, called the executive system, the conscious part of our brain and the part of the brain where decisions get made. To understand this part of the brain, think of it as being composed of two parts: One, a fast and automatic system of thinking and decision making that focuses on the immediate, and two, a slow, deliberate system of thinking that is able, when assessing choices, to consider the future. To further understand this part of the brain, there is one more key point: the second part—the part that thinks slowly and about the future—is usually asleep. Most decisions are made by the first system, the fast-thinking system, especially decisions around food.

In this section you will develop the skill of using the second part, the sleepy executive, as much as possible at key decision moments regarding eating and drinking (and activity). This skill of restraint goes by many names in the literature, depending on whether you are reading neuroscience or psychology, but we will use the term 'cognitive restraint'. This was described by Rena Wing, the grandmother of behavioural weight management, as the central behavioural attribute of those who sustainably lose weight.

Again, like wanting, the capacity to develop the skill of cognitive-executive restraint is considered a variable trait and is highly heritable. Fortunately, effective behavioural strategies exist to improve restraint skills. Restraint development involves changing thinking. Cognitive-behavioural therapy and acceptance-based therapy play large parts in restraint skill development. The skill of cognitive restraint can be learned and improved on over time and with repetition, much like a muscle builds in strength when working against resistance.

In fact, MRI studies have shown changes in this part of the brain in as early as 12 weeks after beginning to consistently practice these skills!

In this section, you will be invited to discover and ultimately change the autopilot thinking, the automatic 'permission-like' thinking that occurs quickly and automatically in moments of **WANTING**. Then you will learn and practice new 'restraint thinking' patterns that support sustained behavioural change.

MODULATORS

We now know that there is a finite list of modulators that effect the **WANTING** and restraint systems. All of the following states have been shown to both increase the height of the wave of **WANTING** and/or make the executive system sleepier. The short list reads: **stress / fatigue / depression / anxiety, attention-deficit traits, hunger, sedentariness and acute alcohol ingestion.** In some people, any of these can be associated with increased risk of weight gain and increased difficulty with weight loss and therefore should be assessed and addressed individually. All effective weight management strategies should regularly consider these modulators as possible obstacles and targets of intervention.

RESILIENCE

This final section describes the skill of resilience. You will remember from earlier that **adherence**—the degree to which participants are able to maintain the changes they have made—is most strongly associated with weight loss and improved health. The experience of setbacks can negatively affect adherence. In weight management, setbacks are common. Common setbacks you may experience include 1) Off-track eating and drinking days; 2) Moments the scale may show a result not in your favour; and 3) Being exposed to your image in a mirror, photograph or the reflection of a building.

We now understand that adherence is not associated with whether or not these setbacks happen but instead, adherence is associated with how you respond to these inevitable setbacks when they happen. Resilience, or the ability to respond positively to setbacks, is a skill that can be learned and improved upon. Again, like wanting and restraint, the capacity to practice resilience is considered a variable trait and is highly heritable. In this module you are reminded that we have two thinking systems: one that is fast and automatic, and a second that is slow, deliberate and forward thinking. Here, you learn that there exists a library of thoughts in your fast and automatic mind that speak poorly about you as a person and your capacity to succeed in managing your weight. These thoughts are opportunistic and come when you are in the aftermath of a setback. Unchallenged, these thought lead to negative emotions and demotivation. These negative thoughts use your past weight loss efforts and failures as evidence against you. Again, this process involves cognitive-behavioural therapy and the tool of cognitive restructuring. With this module you learn to build, over time, slow, deliberate, fact-based thinking patterns that challenge the automatic, fast, negative thinking. You will learn the proven method to develop and strengthen resilience.

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