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Breaking WEIGHT BIAS

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5.3. Dieting as a weight-control method





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TRAINING CONTENT

5.3. Dieting as a weight-control method

Prevalence of dieting and its effectiveness

Nowadays, it seems that more and more people pursue to control their weight. A recent systematic review and meta-analysis have shown that 42% of adults are trying to lose weight, while 23% are trying to maintain their weight worldwide. The most prevalent way of trying to control weight was shown to be exercising and dieting (Santos et al., 2017). According to a study by Slof-Op 't Landt et al., (2017), fear of weight gain was as high as 73.2-74.3% among women between 16 and 25, whereas dieting was very common during the entire lifespan not only for women but also for a substantial number of men.

Dieting is defined as *“the intentional and sustained restriction of food intake for the purposes of weight loss or weight maintenance”* (Herman and Polivy, 1975; Stice et al., 2005) and there is a widespread belief that the effectiveness of dieting is strongly related to the results regarding weight loss (Tomiya et al., 2013). Contrary to this popular belief, research shows that the majority of diets lead to weight (re)gain in the long term (Heatherton et al., 1997; Mann et al., 2007) and may even lead to binge eating disorder (Tamhane, 2017) or disordered eating (Neumark-Sztainer, 2011).

In fact, weight control depends on many different factors, but dieting seems to take into account only food consumption and calorie restriction. So, many weight loss management interventions have been based on the energy balance equation, which states that when calorie consumption is less than calorie expenditure, a human body can lose weight. However, that does not mean that the energy balance equation can guarantee weight loss or sustainable weight loss, because, as we already mentioned in the previous sub-module (5.2.), energy balance is directly or indirectly affected by the complex interplay of 108 variants (Butland et al., 2007). It is not a coincidence after all, that according to research by Bacon and Aphramor (2011), the failure rate of dieting is a whopping 95% and only 5% of people who diet to lose weight will keep it off for more than five years.

“Dieters who manage to sustain weight loss are the rare exception, rather than the rule. Dieters who gain back more weight than they lost may very well be the norm, rather than an unlucky minority.”

(Mann et al., 2007, p.230)



The side effects of dieting

Dieting has a substantial percentage of failure in terms of weight loss. However, the real problem is the harm to people's physical and mental health due to dieting. Acknowledging the harm that dieting causes could help health care professionals to avoid or/and prevent the perpetuation of dieting-induced symptoms. Some of the most common side effects of dieting are described below:

1. Biology adaptation to energy deprivation

Energy deprivation related to dieting activates compensatory mechanisms in the human body to ensure weight stability (homeostasis). Some of those adaptive mechanisms are the following:

- **Impaired metabolism.** The human body has no idea that calorie reduction is intended to purposefully achieve weight loss. Thus, it activates a well-known survival adaptation which is to slow down metabolism in an attempt to protect itself from this threat. This survival adaptation makes weight regain more likely (Ravussin and Swinburn, 1992; Johanssen et al., 2012).
- **Muscle cannibalisation.** Since there is energy restriction, the body will destroy its own muscles to convert them to carbohydrates and use them as fuel to survive. A study on the contest of Biggest Loser shows that the contestants actually had more lean tissue at the beginning of the competition; even six years later, their muscle mass was still not restored to their baseline levels (Fothergill et al., 2016).
- **Fat overshooting.** Due to the loss of both fat and lean muscle tissue, the body is triggered to gain more weight and store energy in the form of body fat to survive (Dulloo et al., 2012). It is observed that during the weight regain after the end of a diet, there is a metabolic shift that favours lipid storage and could lead to both hypertrophy and hyperplasia of the adipose tissue (MacLean et al., 2015).
- **Increased appetite & no sense of satiety.** The energy balance is controlled by many peptides secreted by the intestines and adipose tissue, which regulate food intake and energy homeostasis by stimulating or reducing activity in the hypothalamus. By weight reduction, the size of adipocyte cells is decreased, whereas their number is not reduced, which implicitly implies the rapid decrease of leptin secretion and a smaller amount of leptin in the systemic circulation. Leptin profoundly inhibits food intake and triggers feelings of fullness, whereas its loss causes an increase in appetite, which can lead to weight gain (Monnier et al., 2020).
- **Feeling more vulnerable to palatable foods.** Restricting intake of palatable foods during dieting may induce “perceived deprivation”, regardless of the state of energy balance (Lowe and Levine, 2005). Perceived deprivation is a term that describes the psychological state of eating less than one wants (Timmerman and Gregg, 2003) which is correlated with “hedonic hunger”, a term that describes individuals’ drive to consume food for pleasure, in absence of energy deficit



(Timmerman and Gregg, 2003; Lowe and Butryn, 2007). When a person experiences hedonic hunger, the presence of *palatable food activates brain reward circuits with the release of dopamine, endocannabinoids, and opiates, which induce a persistent stimulation of hypothalamic hunger signals and inhibition of satiety mediators*, as described by Monteleone et al., (2012). In that case, it would be unwise to suppose that hedonic system-driven hunger is not a “real” hunger and try to convince dieters that they are not hungry in real life (Munter and Hirschmann, 1989). The hedonic hunger can be even more intense when a dieter perceives palatable foods as “forbidden” (Blechert et al., 2014).

- **Weight cycling**: Weight cycling refers to the repeated bouts of weight loss and subsequent regain of body weight which is often associated with dieting. Dieters who regain the lost weight over and over tend to store body fat in the abdominal area, which is one of the main reasons that weight cycling is strongly associated with overall mortality, as well as mortality and morbidity being related to coronary heart disease (Lissner et al., 1991; Blair et al., 1993; Strohacker et al., 2009; Bacon and Aphramor, 2011). The cyclical motion of body weight fluctuations resembles the movement of a yo-yo going up and down and this is why the term “yo-yo dieting” or “yo-yo effect” is widely used to describe this phenomenon (Williamson et al., 1992).

2. Can't stop thinking about food

According to Science Direct definitions, **dietary restraint theory** refers to “*the purposeful restriction of calories leading to the termination of a meal before physiological feedback as suggested satiation*”. Constantly dieting may gradually lead to disconnection from the body's cues and needs. Dieters often experience disconnection from their body's signals, as they struggle to manipulate their real body needs in order to be able to follow the diet rules, which can, in turn, negatively affect their confidence and sense of self-trust (Stroebe, 2008). This can make them feel alert all the time and experience some of the following dysfunctional eating patterns.

- **Distorted perception**: Even the perception of a dieter that they are about to break their food rules can trigger overeating (Urbszat et al., 2002).
- **Anticipation of food restriction & the “last supper” effect**: The anticipation of an oncoming food restriction can make a dieter feel like this is their last chance for them to eat what they truly want and this fear of never being allowed again to eat with freedom can lead to overeating (Keeler et al., 2015).
- **The forbidden fruit phenomenon**: When dieters give in to “temptation” and eat food that is considered “bad” according to their diet, their eating style becomes quick with big food amounts and this makes them experience extreme feelings of guilt and a sense of losing control around food (Tribole and Resch, 2012).



- **Dichotomous thinking:** Food deprivation, or restrictive eating, can make people consider nutritious foods as foods that they “should” eat in order to lose weight. This automatically leads to avoiding eating nutritious food when they are not on a diet until they decide to restrict food again. The eating behavior of a dieter is often dominated by a conflict between two incompatible goals: the goal of eating all the “forbidden” foods as much as possible for as long as they “have that chance” and the goal of losing weight and eating only “healthy foods” (Stroebe, 2008).

3. Impairment of mental health

Biology adaptation to dieting as well as the perceived deprivation that dieters experience, can cause stress (Tomiya et al., 2010). Basic research has found that stress impairs the top-down cognitive functions of the prefrontal cortex (PFC) (Arnsten et al., 2015), and in turn, the lower prefrontal activity can predispose people to overeat and gain weight (Stice and Yokum, 2016). It seems that a stressed brain (due to the feeling of deprivation) acts like a hungry brain, even if there is no actual energy deficit.

Dieting can be an overwhelming state of life, as dieters may find themselves in a continuous effort to manipulate body and environment cues. At the same time, they may perceive the failure of dieting as a personal fault. This perception can induce or reinforce undesirable symptoms, including irritability (Keys et al., 1950), frustration (Holm and Holroyd, 1993), body dissatisfaction (Ogden, 1995), alexithymia (van Strien, 2020), and even depression (Keys et al., 1950; Bryan and Tiggemann, 2001) and isolation (Woolley et al., 2020). Failure of diets can cause low self-esteem which can in turn trigger binge eating (Tamhane, 2017) and disordered eating behaviours (Neumark-Sztainer, 2011; Tamhane, 2017). Moreover, many researchers agree that dieting plays an important role in the onset and maintenance of anorexia nervosa and bulimia nervosa (Crowther, 1992).

Taking all of the aforementioned information into consideration, it is not a surprise that a substantial amount of research shows that repeated dieting can lead to obsession and preoccupation with food, while also distracting individuals from focusing on their overall well-being (Bacon and Aphramor, 2011; Tomiyama et al., 2016; Tylka, 2014; Mann, 2015).

The process of dieting is experienced by many people and especially by those who repetitively diet, like a trap that they get caught in again and again, which seems to have the following stages:



Figure 5.3.1. “A vicious cycle of a dieter” (Kausman R., 2004)

A novel view on dieting

If we take into consideration how many people chose dieting as a “weight loss method”, while at the same time science proves that diets lead not only to weight (re)gain but also to many other negative effects on the mental and physical health of individuals, this creates a reasonable question: why are we still promoting diets?

De Ridder et al., (2014) suggests that people who tend to **identify themselves as a dieter may in this way express their concerns about food consumption** rather than their intention to reduce their actual food intake. An increasing amount of evidence reveals a discrepancy between the actual food intake of dieters and their perception of food restriction (Stice et al., 2007), supporting that even though the amount of food intake has no difference between dieters and non-restrained eaters, dieters experience food-related guilt (De Witt Huberts et al., 2013).

At the same time, dieting maintains the illusion that people can have absolute control of their weight, so if they do not lose weight, it is their responsibility. One of the most basic roots of weight stigma includes the widespread belief that weight control is a matter of personal willpower (Mata and Hertwig, 2018). As a consequence, people



often get trapped in the vicious cycle of dieting because the narrative of personal responsibility promotes dieting as a way to prove to others that they do not have a “lack of will”.

Chronic dieting ultimately disorients people to authentically take care of their health and urges them to insist on how to lose weight instead of how to engage in sustainable, health-promoting behaviors. After all, it has been observed that from a dieter’s point of view, the most immediate and compelling goal of dieting is weight loss (which usually happens), not weight loss maintenance (which usually does not) (Lowe and Levine, 2005). For people who have experienced weight bias and the failure of diets over time, receiving diet prescriptions as the only suggested “solution” for all of their problems can be really overwhelming. As health care professionals, it is of ultimate significance to always take into consideration the personal experiences of each individual separately, in order to help them develop self-regulatory skills and make beneficial decisions about their overall health while respecting their personal autonomy and boundaries.



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