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# Happy Brain, Healthy Body: Cultivating Vitality to Drive Sustainable Weight Loss

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## **Abstract**

In the United States, nearly 40 percent of adults are overweight, a prevalence that has increased over the past decade. Although Americans spend nearly \$33 billion annually on various weight loss solutions, research indicates that most individuals who diet do not lose weight, and even if they do, nearly all of them gain it back within a year. Achieving and maintaining weight loss requires long-term engagement in positive health behaviors such as a balanced diet and regular physical activity, which is often easier said than done. Frequently omitted from the prevailing paradigm of weight loss is the role of our own psychology. The weight loss industry often flaunts the saying “look good, feel good,” implying that once one achieves a healthy weight, happiness will follow. I posit that we should explore “feeling good” – the experience of vitality – as an input rather than solely an output in the weight loss equation. This paper examines vitality and provides evidence-informed, actionable strategies that can be delivered across various mediums to boost vitality as a means to drive positive health behaviors and sustainable weight loss. While the primary focus of this capstone is a non-clinical, overweight population, a vital experience is beneficial to all.

## **Keywords**

health, weight loss, public health, vitality, physical health, diet

## **Disciplines**

Community Health | Community Health and Preventive Medicine | Health Psychology | Medicine and Health | Preventive Medicine | Primary Care | Public Health Education and Promotion | Social Psychology | Sports Studies

Happy Brain, Healthy Body: Cultivating Vitality to Drive Sustainable Weight Loss

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University of Pennsylvania

A Capstone Project Submitted

In Partial Fulfillment of the Requirements for the Degree of

Master of Applied Positive Psychology

Advisor: Leona Brandwene

August 1, 2019

Happy Brain, Healthy Body: Cultivating Vitality to Drive Sustainable Weight Loss  
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### Abstract

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### Acknowledgements

The day that I received my acceptance letter from Penn, I didn't tell a single soul for a full workday. For those that know me, they'd know that this was an exceedingly long time – when my soul is filled, I often spill over (immediately) to those around me. The road to positive psychology had been a winding one, both personally and professionally. I knew not what lay ahead, but I had high hopes that it'd be an incredible ride. Looking back, this experience has far surpassed my highest expectations and so much of that has to do with the caliber of the MAPP community. My fellow classmates that have redefined the meaning of kinship for me. Their love, zest, and curiosity inspires me each and every day. They replenish my soul and I will forever be grateful for every “growth opportunity” that led me to my MAPPily.

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## Introduction

Our bodies, like those of our earliest ancestors, were designed to store energy. Nearly 66 million years ago, this coveted energy source came from whatever plants or meats we could put into our hungry bellies. When we ate, we nourished our bodies and provided it with the fuel needed to hunt and/or gather the next meal. However, because our existence long predated meteorologists capable of predicting an impending draught or harsh winter, our bodies stored left over energy as fat reserves. As a result, when food was scarce, or we expended significant energy chasing a wildebeest, our bodies would tap into this reserve to give us the needed energetic boost. This was key to our very survival as a species (Power & Schulkin, 2013). However, like the distinctive Smith family nose that dominates the family gene pool for generations, our bodies still carry the design to use what we consume as fuel and to store what's left over. If we still lived the same lifestyle as our ancestors, that likely wouldn't be a problem. However, today the average American moves ten times less than we did a mere hundred years ago and consumes more fuel (Ratey, 2008; Guenther, Lyon, & Appel, 2013). As a result, our bodily reserves grow – and we can see clear evidence of this in the number on the bathroom scale.

For most of us, weight gain can be attributed to a simple imbalance of our caloric intake (i.e., what we eat) and our physical expenditure (i.e., our basal metabolic rate and how much we move; Dahlkoetter, Callahan, & Linton, 1979). Body Mass Index (BMI) is an objective estimate of body fat/overweight used by clinicians in clinical and epidemiological contexts and is estimated by dividing an individual's weight (measured in kilograms) by the square of their height (in meters; Romero-Corral et al., 2008). Although BMI is closely correlated to body fat percentage, it does not distinguish between body fat and lean mass, meaning that individuals

with significant muscle mass may be mistakenly characterized as overweight (Romero-Corral et al., 2008). For the purposes of this capstone, all references to BMI will refer to body fat percentage. In the United States, nearly 40 percent of Americans have a BMI between 25.0 and 29.9 (Fryar, Carroll, & Ogden, 2018), which is considered overweight (BMI < 25 is considered healthy weight; BMI  $\geq$ 30 is considered clinically obese; National Heart, Lung, and Blood Institute, 2013).

For individuals who need to lose weight, the commonly prescribed solution to overweight is to re-balance the equation and *simply move more and eat less*. In terms of the physiological characteristics that we carry from our Paleolithic ancestors, research shows that this equation works (Serdula et al., 1999). Yet, in the United States, the number of adults who are overweight has increased consistently over the past decade (Fryar et al., 2018). This constant increase in overweight is not for lack of trying to address the issue – Americans spend nearly \$33 billion annually on various weight loss solutions such as diet and exercise plans, supplements, and surgery (Tsai & Wadden, 2005; Serdula et al., 1999). Research indicates that most individuals who diet do not lose weight, and even if they do, nearly all of them gain it back within a year (Curioni & Lourenco, 2005). Achieving and maintaining weight loss requires long-term engagement in positive health behaviors such as a balanced diet and regular physical activity (Shick et al., 1998; Hill, Wyann, Phelan, & Wing, 2006).

Frequently omitted from the prevailing paradigm of weight loss is the role of our own psychology. How we think about, feel about, and the source of our motivation to lose weight all play a role in our ability to sustainably engage in positive health behaviors. For example, having fun *during* physical activity has been shown to boost the likelihood that you'll maintain a regular exercise regimen (Kok et al., 2013). Whereas the weight loss industry often flaunts the saying

*look good, feel good*, implying that once one achieves a healthy weight, then happiness will follow; I posit that we should explore *feeling good* as an input of the equation rather than an output that is contingent on an arguably superficial and intangible construct (Featherstone, 2010; Jutel & Buetow, 2007). The type of good feeling I'm referring to specifically goes deeper than happiness or hope. I'm referring to an energy source that makes us feel alive and energetic, propelled to engage with the world around us. In the scientific literature, this experience is referred to as subjective vitality.

Vitality is defined as “the positive feeling of having energy available to the self” (Nix, Ryan, Manly, & Deci, 1999, p. 226). The experience of vitality is utilitarian, with research indicating that vitality can lead us to engage in positive health behaviors (Ryan & Frederick, 1997). However, vitality is arguably autotelic as well, a positive state reflecting well-being that makes life worth living (Ryan & Deci, 2008; Ryan & Frederick, 1997). Existing research has focused on the nature of vitality and what hinders it. Few have examined how vitality can be cultivated, and even less have looked at vitality related to weight loss. However, I believe that by fostering vitality we not only will enhance the likelihood of sustained weight loss, we'll enhance the quality of people's lives as well.

This capstone will begin with an introduction into positive psychology, the field that expanded the scope of psychology beyond pathology to the study what makes life worth living, and subsequently branched into the field of positive health (Seligman & Csikszentmihalyi, 2000; Peterson, 2006; Seligman, 2008). Then, we'll delve into the concept of vitality and its theoretical roots in the existing scientific literature and explore areas of opportunity for future research. As mentioned, the purpose of this paper will be to identify research-informed strategies to promote vitality so that individuals can both achieve sustained weight loss and also enhance their quality



of life. The intended audience for these strategies are non-clinical, languishing adults in the United States who are overweight (i.e., BMI between 25 and 29.9). Individuals who are in a languishing state experience low well-being and subjectively feel stagnant or empty, even though they do not have a diagnosable depression (Keyes, 2008). I believe that these research-informed strategies may also be helpful for individuals who may not be overweight but have an unhealthy or disordered relationship with food and physical activity.

### **History of Positive Psychology & Positive Health**

The field of psychology has traditionally focused on the negative aspect of human functioning, orienting around defect and disease. Yet, the field was not always skewed so heavily towards what was going wrong rather than going right. Prior to World War II, psychology was also organized around making lives more productive and fulfilling in addition to treating mental illness (Seligman & Csikszentmihalyi, 2000). In the aftermath of the war, the focus necessitated focus on understanding and treating the high rate of emerging mental health issues (Seligman & Csikszentmihalyi, 2000). The return on this effort was significant, as it addressed and found treatments for the many of the mental health pathologies that would not be available had it not been for that increased focus. The next decade brought the rise of humanistic psychology, the study of both sides of the human experience (Maslow, 1962; Robbins, 2008). This field reignited inquiry into other half of the mental health equation through its emphasis of well-being and fulfilment. Although humanistic psychology was criticized by some psychologists due to a perceived lack of scientific methodology, it succeeded in swinging the pendulum towards the positive side of the human experience and validated the need for robust scientific inquiry in this realm (Seligman & Csikszentmihalyi, 2000). In 1998, Dr. Martin E.P. Seligman (1999), newly elected President of the American Psychological Association (APA), gave an inaugural address

that called for renewed funding and research in the field of positive psychology, the formal study of human flourishing based on the scientific method.

Positive psychology is the study of what makes life worth living and focuses what exists *north of neutral*, a phrase used to describe the positive side of the human experience (Seligman & Csikszentmihalyi, 2000; Peterson, 2006). Positive psychology was founded on the notion that lack of disease puts us in a neutral, rather than flourishing, state (Seligman, 2008). The field is a complement to rather than replacement of, traditional psychology. Positive psychology examines positive aspects of the human experience such as happiness, life satisfaction, and personal strengths, and their relationship to well-being. It has also given rise to theories of well-being, such as Seligman's (2008) PERMA model and Isaac Prilleltensky's (2016) I-COPPE models.

Seligman's PERMA model theorizes that the experience of positive emotion, engagement, relationships, meaning, and achievement contribute to flourishing, while Prilleltensky's (2016) I-COPPE focuses on the domains of life that can be sources of well-being: interpersonal, community, occupational, physical, psychological, and economic. The field has also built upon decades of existing psychological literature using metrics such as Ed Diener's Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) to measure happiness and has examined well-being through the lens of psychological theories, such as Deci & Ryan's self-determination theory (SDT), the prevailing theory of human motivation and optimal functioning (Deci & Ryan, 1980; Ryan & Deci, 2000).

In his inaugural address, to the American Psychological Association, Seligman's (1999) speech served as a call to action around what he deemed a *historical choice*. This choice was to expand the range of psychology to accommodate the full spectrum of the human experience by examining positive aspects of life and how to promote well-being. This speech proved to be a

catalyst for the field. As the field has evolved, journals, professional groups, academic programs, and psychology labs have been founded by psychologists, scholars from other disciplines, and lay people taking an interest in the study. Research in positive psychology has also bridged the gap between research and application, popularizing a number of positive interventions which have been demonstrated to increase well-being and its components (Seligman, 2008; Peterson, 2006; Sin & Lyubomirsky, 2009; Seligman, Rashid & Parks, 2006).

As the field of positive psychology has grown, researchers and practitioners alike have sought to apply its constructs and interventions to other realms of life, including physical health. Ten years after his APA address, Seligman (2008) proposed a new field that would be an integration of psychological and physical health named positive health. At the time, this field was merely a seedling and his announcement a call to action for further exploration. Just as positive psychology was borne out of the notion that well-being didn't simply mean the absence of illness, the field of positive health focuses on the positive experience of health beyond the mere absence of disease (Seligman, 2008). Seligman suggests that the experience of positive health can be fostered through positive subjective and functional health, and can be measured subjectively, objectively, and functionally. He saw the potential benefits for positive health on the individual's psyche and also importantly on their physical health as well. Research emerging from the fields of positive psychology and positive health demonstrates an increasing emphasis on the power of our psychology to influence not just our actions, but our physiology. It is through this lens that vitality has been examined in recent years. Although this capstone is limited to exploring vitality as a means to help an individual achieve and maintain a healthy body weight, an increasing body of evidence suggests that well-being and vitality can have beneficial effects physiologically, reducing risk of morbidity and mortality (Seligman, 2008; Ryan &

Frederick, 1997; Kubzansky & Thurston, 2007).

### **Introduction to Subjective Vitality**

#### **History of Vitality**

Just as positive health symbolizes a shift away from the medical model of disease, the focus of vitality as a means to drive sustainable weight loss represents a shift away from the traditional weight loss paradigm to focus on well-being and engagement in positive health behaviors. Vitality is considered a global indicator of positive health, a reflection of physical and psychological well-being (Ryan & Frederick, 1997). Ryan and Frederick (1997) were one of the first to conceptualize the experience of subjective vitality, a term used to capture the experience of aliveness and energy available to an individual. Over ten years later, Ryan and Deci (2008) advanced this foundation, examining the experience of subjective vitality through their self-determination theory (SDT), a theory studying human motivation and optimal functioning which will be discussed in more depth later in this paper (Deci & Ryan, 1980; Ryan & Deci, 2000). Even today, eleven years after Ryan and Deci published the SDT theory of vitality, exploration of subjective vitality remains limited. Much of the literature involving vitality examines it as a byproduct or a mediator of a relationship between variables rather than a primary focus. Among the few studies that directly examine subjective vitality as defined by Ryan & Frederick, even less have examined the relationship between vitality and health. Even then, the health outcomes that are often studied in relation to vitality are related to medical conditions, such as cardiovascular disease (Kubzansky & Thurston, 2007; Penninx et al., 2000). In 2008, Ryan and Deci called attention to the research bias caused by researchers' tendency to study only what depleted vitality rather than what maintained or cultivated it.

Although research in this area remains somewhat sparse, emerging research on related

concepts such as zest and well-being show potential. In positive psychology, the well-researched character strength of zest is sometimes noted as vitality, yet the concepts, while similar, are distinct. Both zest and vitality are viewed as a reflection of the body and mind and the experience cultivated by fulfillment of our needs. Yet part of the definition of zest is “displaying enthusiasm for any and all activities” (Peterson & Seligman, 2004, p. 209). Vitality as we explore it within this capstone and as defined by Ryan & Deci’s SDT theory does not share this characteristic. We will further examine the definition of vitality as defined within SDT later in this paper (Deci & Ryan, 1980; Ryan & Deci, 2000).

Trends in well-being research could show potential for the future of vitality. In early 2019, researchers led by Dr. Laura Kubzansky at Harvard’s Center for Health and Happiness announced a positive health project to study the relationship between well-being and positive health behaviors (Lee Kum Sheung Center for Health and Happiness, 2019). While an existing body of literature may be lacking, the call to action to investigate the cultivation of vitality and exploration of the closely related topic of well-being demonstrates progress for the further evolution of this concept. In the subsequent sections, we will examine the current research around vitality, explore the relationship between vitality and weight loss, and identify research-informed strategies to build vitality.

### **Defining Vitality**

Vitality is characterized as the subjective experience of aliveness and energy, a reflection of both positive perceived health and physical functionality (Ryan & Fredrick, 1997; Ryan & Deci 2008). The notion of an innate psychic energy has roots in Eastern traditions where it is commonly referred to as *qi* or *chi* in Chinese culture (Chu, 2004, p. 773). The experience is characterized similarly in Eastern and Western cultures, as a positive state of bolstered energy or

vigor that is central to health and well-being (Ryan & Deci, 2008; Ryan & Fredrick, 1997; McNair, Lorr, & Droppleman, 1971). Because vitality is viewed as an energy source it is considered depletable, meaning that activities can enhance or exhaust it (Ryan & Fredrick, 1997). Whereas activities that enhance vitality may feel invigorating, activities that diminish our vitality can be characterized as those that leave us feeling subjectively drained of energy (Ryan & Fredrick 1997).

Vitality is “robustly associated with both behavioral and objective health outcomes” (Ryan & Deci, 2008, p. 703. This important characteristic means that vitality isn’t only a subjective feeling state, but also a state of activation that propels us to engage in positive health behaviors such as eating well and engaging in physical activity. When in a state of vitality, we are more confident, productive, resilient, and experience enhanced well-being (Ryan & Fredrick, 1997; Ryan & Deci, 2008; Bostic, Rubio, & Hood, 2000; Akin, Akin, & Uğur, 2016). Enhanced vitality acts as a protective buffer against psychological risk factors that can harm our well-being such as negative affect, depression, anxiety, and helplessness (Ryan & Frederick, 1997). It should be noted that vitality differs from caloric expenditure and can be enhanced even after strenuous physical activity (Ryan & Deci, 2008). While it is often described as a state of arousal, the origin of the energy source must be seen as controlled and positive, differentiating vitality from common states of negative arousal like anger or anxiety; or uncontrolled energetic states, such as mania, seen in some psychological pathologies (Ryan & Deci, 2008; Ryan & Fredrick 1997).

Well-being is another positive psychology concept that has a positive association with vitality, yet the two constructs are distinct (Ryan & Frederick, 1997). Subjective well-being, as defined by Ed Diener, is a person’s *cognitive and affective evaluation* of their life (Diener, 2000).

Vitality has a narrower scope – considered a reflection of *organismic wellness*, vitality is a significant indicator of well-being (Ryan & Frederick, 1997). As discussed, vitality bolsters subjective well-being and the literature suggests this relationship is bi-directional, meaning that enhanced well-being contributes to increased vitality (Ryan & Frederick, 1997; Nix et al., 1999). Nix et al. (1999) suggest that a similar mechanism – fulfillment of our basic psychological needs – gives rise to both subjective well-being and vitality. As a result, interventions to increase well-being can also increase vitality, and vice versa (Nix et al., 1999). In this next section, we will take a closer look at these mechanisms through the lens of the prevailing theory of human motivation.

Ryan and Deci organized the concept of subjective vitality in their self-determination theory (SDT) framework, giving rise to the SDT model of vitality (Deci & Ryan, 1980; Ryan & Deci, 2000). This model encompasses three hypotheses regarding the nature of vitality maintenance and enhancement (Ryan & Frederick, 1997; Ryan & Deci, 2008). The first hypothesis touches upon energy efficiency, stating that autonomous self-regulation is based on our own *volition* and *self-endorsement* which is less energetically demanding than extrinsically-motivated self-control (Ryan & Deci, 2008; Niemiec, Ryan, Patrick, Deci, & Williams, 2010). This means that having to exert self-regulation that is not perceived as autonomous depletes more energy than the same exact action if you done it of your own volition (Ryan & Deci, 2008). The second hypothesis focuses on how we can cultivate vitality, relying on the SDT theory, stating that subjective vitality is maintained and enhanced as basic psychological needs for autonomy, relatedness, and competence are met (Deci & Ryan, 1991; Ryan, 1995; Ryan & Deci, 2008). The third hypothesis of the SDT model of vitality connects how we live to our experience of vitality, stating the need for a lifestyle guided by intrinsic rather than extrinsic motivation as it

allows for personalized actions that efficiently and effectively fulfill our basic psychological needs (Ryan & Deci, 2008).

First, we'll explore the first hypothesis in greater detail – the notion that autonomous self-regulation is less taxing to the individual than extrinsically-motivated self-control. DeCharms's (1968) perceived locus of control (PLOC) theory provides insight around why the *origin* of our behaviors matters – when we perceive extrinsic factors as the PLOC, the effort to act accordingly energetically taxes us. In a study conducted by Vohs & Heatherton (2000), thirty-nine female chronic dieters were asked to watch an emotional movie. Researchers instructed half of the participants to freely express their emotions while the other half were instructed to suppress emotions and reactions and to be as neutral as possible. Because the act of suppression was an instruction rather than something they were doing by their own volition, participants experienced ego depletion which reduced their ability to self-regulate (Vohs & Heatherton, 2000). Although the experiment was unrelated to food, participants were later offered ice cream and those who were instructed to suppress their emotions ate significantly more ice cream than those who were allowed to express their emotions (Vohs & Heatherton, 2000). When health behavior change is driven by autonomous self-regulation, people experience higher well-being, vitality and engage in pro-health behaviors (Niemic et al., 2010; Ryan & Frederick, 1997). This is because we act in accordance with an intrinsic PLOC, capitalizing on our own volition and self-endorsement to reap the psychological and behavioral benefits (Niemic et al., 2010; Ryan & Frederick, 1997). Williams et al. (1996) conducted a study examining weight loss in fifty-six morbidly obese patients through the course of a 26-week program with a 2-year follow-up. At the follow up, Ryan and Frederick (1997), partnered with the researchers and administered vitality-specific questions that had been outside the researchers' original scope. They found that those who cited



autonomous self-regulation during weight loss intervention experienced more vitality than those who had less autonomous self-regulation (Ryan & Frederick, 1997). We will revisit this study when examining the relationship between these hypotheses and weight loss later in this paper.

While the first hypothesis focuses on energy efficiency, the second hypothesis suggests a positive relationship between vitality and fulfilment of the basic psychological needs of relatedness, competency, and autonomy (Ryan & Deci, 2008). These three needs are central not only to the SDT theory of vitality, but the SDT tenet as a whole which states that they are central to optimal functioning, growth and development, and well-being (Ryan & Deci, 2000; Grow & Ryan, 1995). Niemiec et al. (2010) found that interventions that satisfy these basic psychological needs increased individual's vitality, an interaction mediated by enhanced perceived autonomous self-regulation. Although this particular intervention was based on tobacco cessation, this finding closely aligns with the cited weight loss study by Ryan and Frederick (1997) performed with morbidly obese patients. The inverse has also been shown to occur when we are unable to fulfill our psychological needs. Research has demonstrated that by infringing upon these psychological needs, vitality is reduced (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Ryan and Frederick (2008) describe agency as the mechanism by which vitality is reduced when our basic psychological needs are impeded.

The third hypothesis extends to our lifestyles and the motivators that guide us. As stated in the SDT theory of vitality, individuals who lead lifestyles in alignment with their intrinsic, rather than extrinsic motivations, experience higher subjective vitality as well as other positive benefits, such as enhanced well-being and realization of capability to effect change (Kasser & Ryan, 1996; Ryan & Deci, 2008; Ryan & Frederick, 1997; Elliot & Sheldon, 1997). Research has shown that intrinsic goals are closely associated with an individual's psychological needs of

competency, autonomy, and relatedness (Kasser & Ryan, 1993, 1996; Ryan & Deci 2000). In contrast, extrinsic objectives may be loosely associated with psychological needs, but could also be detrimental to their fulfilment (Ryan, Sheldon, Kasser & Deci, 1996). As a result, when individuals seek out common extrinsic objectives such as money and fame, rather than intrinsic objectives such as relationships or personal development, they are not fulfilling their psychological needs, and as a result report less vitality (Kasser & Deci, 1996).

While this capstone focuses on actionable strategies rooted in positive psychology that we can implement to boost vitality, vitality is the product of a variety of somatic and psychological factors (Ryan & Deci, 2008; Ryan & Frederick, 1997). Lack of sleep, poor diet, lack of exercise, and even indulging in a cigarette can negatively impact our vitality (Rozanski, 2005; Ryan & Deci, 2008). Overweight individuals with no psychological diagnoses may be vulnerable to physical limitations that impede upon their experience of vitality. Somatic factors such as reduced physical functioning can also inhibit the experience of agency and autonomy, which reduces subjective vitality (Ryan & Frederick, 1997). An important distinction must be made that individuals with physical disabilities or inhibited bodily functioning can still experience vitality – it is in their perception of their health status that influences their subjective vitality. If, for example, an individual perceives their state as a challenge to their autonomy or competence, they will experience more reduced subjective vitality than someone who does not (Ryan & Frederick, 1997). Somatic influences on vitality should not be overlooked, but rather considered as a supplement to the proposed strategies. In addition, the psychological benefits reaped from the strategies may bolster the mindset in which we perceive the somatic influences on our physical health, creating opportunity for enhanced vitality.

## **Vitality & Weight Loss**

There is a paucity of research directly examining weight loss and vitality, although the existing literature lends support for the hypothesis that enhanced vitality can lead to sustained engagement in positive health behaviors that lead to weight loss, such as healthy diet and physical activity (Ryan & Frederick, 1997). In addition, there are many concepts within positive psychology such as intrinsic goal setting that may have a positive relationship with vitality and weight loss. Since the purpose of this capstone is to identify research-informed strategies in which to enhance vitality and promote the engagement of positive health behaviors, four concepts within positive psychology have been selected for further exploration that will inform the proposed strategies: goal-setting, relationships, mindfulness, and growth mindset. Before delving into the strategies, we will examine the intersection between vitality and each construct.

Research has linked vitality with positive behavioral and health outcomes due to its positive impact on our mental health and the energetic component that propels us into action (Ryan & Deci, 2008; Neimiec et al., 2010; Penninx et al., 2000). Although few studies focus primarily on vitality and weight loss, these findings show promise to drive not only initial effort in positive health behaviors, but ultimately contribute to sustained engagement that gives way to healthy routines. As mentioned earlier, Ryan and Frederick (1997) that found that morbidly obese patients who reported more autonomous self-regulation during their weight loss program reported enhanced vitality (Ryan & Frederick, 1997). This study is particularly significant because not only did those patients experience increased vitality, they also were more successful at maintaining their weight loss (Ryan & Frederick, 1997). The authors found that subjective vitality had a positive and significant relationship with change in BMI (Ryan & Frederick, 1997).

This can likely be attributed to two notable findings: first, that vitality and intrinsic motivators were significantly related to weight loss maintenance, whereas vitality linked to extrinsic motivators was not; and second, that those that had higher engagement in physical activity reported greater subjective vitality (Ryan & Frederick, 1997). This finding is of particular interest because it suggests that the beneficial relationship between vitality and physical activity is bi-directional. The likely mechanisms behind this align with the findings that acting in accordance with our intrinsic motivators has a positive impact on our vitality (Ryan & Deci, 2008). Similar findings were echoed in Kubzansky and Thurston's (2007) prospective population-based cohort study, which examined over 65 thousand men and women without coronary heart disease (CHD) at baseline. Fifteen years after the baseline interview, Kubzansky and Thurston used hospital records and death certificates to measure incidence of CHD in the study population. They found that participants with overall higher vitality experienced lower rates of CHD, which they attributed increased engagement in physical health. It must be noted that while these findings are promising, further research should be done to replicate the study with an expanded scope that looks at diet as well as physical activity.

### **Vitality & Positive Psychology Constructs**

In the next section, we will examine vitality as it relates to four different areas of positive psychology: intrinsic goal-setting, mindfulness, positive relationships, and growth mindset. A more thorough review of the literature will follow, exploring how vitality can be fostered by building these positive psychology concepts within our lives and how each concept relates to weight loss. Each segment will also propose a research-informed strategy that can be implemented by individuals to drive sustainable weight loss.

### **Vitality & Intrinsic Goal-Setting**

As discussed previously, intrinsic goals are deeply embedded in the SDT model of vitality, enabling us to feel vital through the fulfilment of our basic psychological needs and a lifestyle guided by intrinsic goals has been shown to be most efficient in fulfilling these psychological needs (Ryan & Frederick, 1997; Ryan & Deci, 2008). In these lifestyles, individuals not only act according to what intrinsically motivates them, but also create goals in alignment with their values and psychological needs (Kasser & Ryan, 1996). In addition to the intrinsic nature of the goal underpinning why vitality is boosted, we must also look at the process of goal-setting itself in relation to vitality. When we set goals or aspire for a desired future state, we are exercising our own agency and autonomy – both of which have been discussed as essential to subjective vitality (Ryan & Frederick, 1997). Agency is defined by our ability to effect change, while autonomy is the ability to act according to our intrinsic motivators (Ryan & Deci, 2000). By goal-setting, we are creating a vehicle for our hope to drive growth and change, which according to the SDT is one of our inherent tendencies as humans (Ryan & Deci, 2000).

### **Vitality & Mindfulness**

Mindfulness is defined by Jon Kabat-Zinn (1994, p. 4) as “moment-to-moment, non-judgmental awareness, cultivated by paying attention.” Research has shown a positive relationship between trait mindfulness and vitality (Allen & Kiburz, 2012). A potential mechanism contributing to this relationship could be deliberate mindfulness – an experience where we intentionally invest ourselves in our practice – as long as it adheres to our own volition and intrinsic goals. Brown & Ryan (2003) posed the term *mindful* regulation as another counter to self-controlled regulation, demonstrating the close alignment and shared benefits with autonomous self-regulation. The practice of mindfulness provides clarity and focus on the

present and our daily experiences (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007). In a study led by Smith et al. (2008), fifty individuals participated in either an 8-week mind-body or mindfulness-based course and were measured on eight outcomes, one of them being energy. Mindfulness-based interventions led to perceived enhanced energy among participants, a promising indication for vitality. Per Ryan, Huta, and Deci (2008) the enhanced awareness and clarity of thought enables us to lead lives that fulfill our basic psychological needs, aligning with the third hypothesis in the SDT theory of vitality.

### **Vitality & Positive Relationships**

Relationships link directly to vitality by boosting our well-being as well as increasing perceived relatedness, the ability to feel connected to and loved by others (Kasser & Ryan, 1999; Ryan & Frederick, 1997; Ryan & Deci 2008). Positive relationships that promote autonomy can contribute to increased positive affect, subjective well-being and overall life satisfaction (Kasser & Ryan 1999). By creating this perceived positive psychological environment, Ryan and Fredrick note, individuals are able to experience vitality. Relatedness can emerge from life-long friendships as well as momentary high-quality connections with others (Fredrickson, 2013). When we feel connected with others, we are more adaptable and resilient and build self-esteem and competence (Kasser & Ryan, 1999; Baumeister & Leary, 1995; Fredrickson, 2013). The relationship between these two variables is bi-directional, as vitality has a positive relationship with high quality friendships (Akin et al., 2016; Kasser & Ryan, 1999).

### **Vitality & Growth Mindset**

A growth mindset promotes the belief that your basic qualities – intelligence, morals, personality, can be cultivated (Dweck, 2008). Cultivating a growth mindset has been shown to foster self-efficacy, resilience, and hope, turning challenges into opportunities for growth

(Dweck, 2008; Caniëls, Semeijn, & Renders, 2018). Self-efficacy is the belief in ourselves to bring about desired change. This intrinsic belief is a prerequisite to fulfill the basic psychological need of competency (Ryan & Deci, 2000). In order for us to achieve mastery in any aspect of our lives which can enhance vitality, the first step is to believe that you can. Growth mindsets can also be cultivated to apply not only to our mental capabilities but our physical capabilities. Ryan and Frederick (1997) suggest that physical self-efficacy was positively linked with enhanced subjective vitality. The growth mindset runs counter to a fixed mindset, which attributes a permanence to these qualities and undermines self-efficacy and subjective vitality (Dweck, 2008).

### **Actionable Strategies to Build Vitality**

Vitality has a positive association with the four selected positive psychology concepts included in this capstone, goal-setting, growth mindset, mindfulness, and relationships. In this section we will define each, examine the existing literature relating that concept to weight loss, and propose a research-informed strategy that can bolster vitality and in turn, weight loss.

#### **Intrinsically Motivated Goal-Setting**

As humans, our behavior is guided by our own purpose and intentions (Ryan, 1970). When we intentionally set goals, we are able to organize our behaviors to achieve them. However, as discussed earlier in this paper, not all goals are created equal. Intrinsically motivated goals are those that align with the fulfilment of our own psychological needs (Ryan & Deci, 2000; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997). These goals, as opposed to extrinsic goals, are ones that we pursue for their own sake rather than because the environment around us is pressuring us to do so. Intrinsically motivated goals lead us to be active and engaged as we surge ahead in pursuit of a goal.

An important aspect of goal setting is how we frame our goals and the language used to define them. Approach goals are organized around positive outcomes, such as to be more functionally fit (Elliot & Sheldon, 1997). Approach goals are uplifting by nature, emphasizing our intention to foster something that would give us pleasure, joy, or perhaps benefit us. In contrast to approach goals are avoidance goals. Avoidance goals are arranged around something that someone wants to avoid, such as to stop eating junk food. These goals take a more negative approach, focusing on outcomes that may be harmful, hurtful or unpleasant to us.

By framing our goals in a positive lens towards what we'd like to foster, we create approach goals. We can also restructure avoidance goals to create approach goals. For example, you could adjust the avoidance goal (e.g., to stop eating junk food) to the approach framework (e.g., to eat more of my favorite fruits and vegetables). We can increase our intrinsic motivation in pursuit of a goal by looking for opportunities to enhance our needs of relatedness, competency, or autonomy (Ryan & Deci, 2000). For example, we could seek opportunities to meet the farmers of local produce at the weekly market, which would bolster our experience of relatedness as we pursue our goal.

Goals provide the map upon which we can direct our effort and energy, an exercise that bolsters our sense of agency and autonomy (Ryan & Frederick, 1997). Research shows that pursuing approach goals may enhance well-being (Elliot & Sheldon, 1997). This finding contrasts with avoidance goals, which have been shown to be taxing on our perceived sense of vitality, self-esteem, personal control and life satisfaction (Elliot & Sheldon, 1997; Li, 2010). Intrinsic motivation enhances well-being and enhances the likelihood that we will strive for our goals, boosting our chances of being successful (Locke & Latham, 2006).

Simply setting goals can promote short-term adherence to positive health behaviors



(Kroese, Evers, & De Ridder, 2009). Research shows that intrinsic goals to guide weight loss are more effective than setting extrinsic goals (Vansteenkiste, Simons, Soenens, & Lens, 2004). In a study conducted among 695 college students, students were assigned to learn a dribble-shooting basketball task (Simons, Dewitte, & Lens, 2003). Approximately half of the participants received instructions emphasizing the student's obligation to complete the task, whereas the other half received instructions that emphasized personal and future relevance to that individual. The researchers found that when exercises were framed through the lens of the student's intrinsic goals of health and fitness, they expended more effort, experienced more autonomy, and remained engaged long-term. However, when the exercise was framed in terms of extrinsic goal attainment, there was an adverse impact measured on each of these variables (Simons et al., 2003). In a longitudinal randomized controlled trial that implemented a year-long SDT-based lifestyle intervention for 221 obese (BMI >30) women, researchers looked at SDT-related mediators that influence the relationship between physical activity and weight loss (Silva et al., 2011) They identified a positive relationship between autonomous motivation and exercise which led to long-term weight loss maintenance (Silva et al., 2011). However, when it comes to the way we frame goals, weight loss is commonly driven by both a mix of approach goals (e.g., to eat more salads) and avoidance goals (e.g., to stop late night snacking). Given the positive benefits related to approach goals, there is a compelling case to reframe the traditional avoidance goals that guide the weight loss process.

Although support exists for intrinsically motivated approach goals to assist weight loss, cultural contexts and stigma around weight loss require special attention when goal-setting. People cite a number of reasons for wanting to lose weight, however the primary reason cited across genders and demographics is *health* (O'Brien et al., 2007; Hankey, Leslie, & Lean 2002;

Striegel-Moore, Wilfley, Needham, & Brownell, 1996). While this seems promising as many identify health as an intrinsic motivator, this answer may not accurately reflect the whole reality. Many of these studies rely on interviewing as a means to understand motivators behind weight loss, making these responses vulnerable to social desirability bias – our innate tendency to provide answers that we deem *socially acceptable* rather than what may be the truth (Grimm, 2010). This response is the reflection of sociocultural norms, an echo of public health campaigns seeking to curb the prevalence of obesity. In the western culture, overweight individuals are often typified as unhealthy and unattractive and even prescribed traits such as lazy or stupid (Kwan, 2009). Given the sensitivity and dense cultural context around weight in western culture, we must dig deeper in weight loss to ensure that “health” is anchored in intrinsic motivators and framed as an approach goal.

**Strategy #1: Purposeful goal-setting in action.** The objective of this strategy is to help individuals identify or reshape their personal goals related to weight loss. At the end of this process, individuals will have crafted their own intrinsically motivated, approach-framed goals relevant to weight loss that they can use to guide their efforts. The delivery of this strategy is flexible and could be delivered passively, as if through a journal or video or actively, such as in-person. Individuals should set aside ideally thirty minutes of distraction-free time, the only materials that are needed are a pen and paper.

To start, individuals should take a few deliberate, slow breaths, close their eyes, and envision their future selves. In this vision, their future self has accomplished everything that they’ve set their mind to, including achieving their weight loss goals. Individuals will be asked to imagine a conversation with their future self and prompted to ask three questions: 1) How do I feel physically and mentally at the end of this journey, having accomplished my weight loss

goals?, 2) What am I most proud of having accomplished in this weight loss journey, and 3) What are the best parts about having succeeded losing weight?

These prompts open us to the possibilities of the future and help us to distill what truly motivates us. Individuals will be asked to note down the responses to these questions on the paper and group together those that overlap – these are the motivators that are particularly salient for that individual. Then, the individual will be asked to write their weight loss goals using an approach framework. As each goal is written, they should be connected to the individual's identified motivators. For example, if the goal is "I want to exercise three times a week", they will supplement it with their intrinsic motivators, "because I want to feel happy, healthy, and alive." Once the goal statements are written, individuals will be prompted with a final gut check on the integrity of their goals with the question "if someone told you that you no longer needed to pursue this goal, would you still want to do it?" If the answer is no, they will be prompted to reexamine their motivators and identify those that give them more fulfillment. If the answer is yes, they will be prompted to save the goals. It is suggested that they post the goals in visible places around their house or on their phone to serve as a reminder as they continue along their weight loss journey.

### **Growth Mindset**

Carole Dweck once wrote "the view you adopt for yourself profoundly affects the way you lead your life" (Dweck, 2008, p. 6). Her research on mindsets examines two ways of thinking – one predisposed to growth and curiosity and the other defined by judgement and permanence. A growth mindset promotes the belief that intrinsic qualities can be cultivated through effort (Blackwell, Trzesniewski, & Dweck, 2007). Those that view the world around them with a growth mindset perceive problems as fascinating challenges (O'Rourke, Haimovitz,

Ballwebber, Dweck, & Popović, 2014). Failure is largely omitted from the growth mindset narrative as failures are viewed as opportunities to learn and improve. This mindset contrasts with a fixed mindset, which applies a permanence to our qualities and attributes. Those with a fixed mindset fear challenges due to fear of failure and judgement. When they fail, they interpret the failure as a characterization of their abilities. Dweck's research has shown that mindset can apply not only one's abilities but their beliefs about themselves, making those with fixed mindsets vulnerable to severe self-criticism that undermines self-efficacy (Dweck, 2008; Blackwell et al., 2007; O'Rourke et al., 2014).

Interestingly, people can have growth mindsets in some domains of their lives and fixed mindset in others. While we may be unaware of which mindset we embody in a particular domain, how we act is often indicative of our mindset (Dweck & Leggett, 1988). Research has shown that a growth mindset can be cultivated to replace fixed mindsets. This process differs from the motivational "You can do it!" posters that litter office break rooms – while they may be successful at boosting a temporary growth mindset, fostering a growth mindset requires the development and adaptation of an entirely new perspective. According to Dweck (2008), the first step in this process is to identify whether you have a fixed or growth mindset in particular domains of your life. Then, think about individual people in your life that have fixed and growth mindsets and how they approach challenges and handle setbacks and why they may think a particular way. Finally, she suggests that you envision that you're about to tackle a new challenge and to put yourself in the shoes of a *fixed* mindset and a *growth* mindset. This exercise serves to show that you can indeed shift your mindset and poses that what follows can change your life (Dweck, 2008)

Dweck (2008, p. 15 states “when you enter a new mindset, you enter a new world.” The mindset you embody influences not only your thoughts but subsequent behaviors (Blackwell et al., 2007; O’Rourke et al., 2014). A growth mindset fosters hope, self-efficacy, and resilience by adjusting our perception to new challenges (Blackwell et al., 2007; O’Rourke et al., 2014; Dweck & Leggett, 1988). With a growth mindset, we address problems with curiosity and are open to learning. Since effort is valued as a key ingredient to cultivating abilities and capabilities, individuals work hard, are more creative problem solvers, and utilize all resources available to them (Blackwell et al., 2007). Failure is stripped of its negative connotation and rather viewed as an opportunity to learn and inform our next attempt. Because growth mindset shifts focus away from judgement, individuals are more likely to try something particularly challenging or risky (O’Rourke et al., 2014).

Although there is a surprising lack of research studying the effect of growth mindset on weight loss in the scientific literature, there are many ways in which growth mindset factors into the weight loss equation and could potentially bolster adherence to positive health behaviors. This is especially important as the weight loss journey is likely to be a domain regarded with a fixed mindset. Earlier in this paper, we discussed negative characteristics that are often attributed to overweight individuals. The association of these attributes – that being overweight means someone is *lazy*, for example – can imbue a fixed mindset on overweight individuals and their perceived capabilities, hindering weight loss efforts. Research also demonstrates that weight loss is not only difficult, it is rarely maintained (Curioni & Lourenco, 2005). In this case, the literature may fuel the presence of a fixed mindset as individuals view overweight as a state of permanence. Cultivating a growth mindset in these scenarios would increase the likelihood that individuals will not only take on the challenge of weight loss with enthusiasm and determination

but put in the effort to sustain long-term weight loss. In addition, because adherence to positive health behaviors can be difficult and progress non-linear, a growth mindset can help individuals creatively problem solve and prevail through unexpected setbacks.

**Strategy #2: Growth mindset in action.** The objective of this strategy is to enable individuals to recognize thoughts and feelings associated with both growth and fixed mindsets and then practice a growth mindset in their weight loss journey. At the end of this process, individuals will experience how it can feel to shift mindsets and identify which mindset they embody when it comes to weight loss. The delivery of this strategy is flexible and could be delivered passively, as if through a journal or video or actively, such as in-person. Individuals should set aside ideally thirty minutes of distraction-free time, the only materials that are needed are a pen and paper.

Individuals will be given a scenario to imagine. In this scenario, they apply for a job. This initial scenario is intentionally unrelated to weight loss because it provides a safe, neutral environment in which to explore each mindset. Only after individuals have familiarized themselves with the thought processes associated with each mindset and feel comfortable navigating the shift from fixed to growth mindset is it recommended that they tackle a weight loss scenario. The scenario is posed as follows:

This job is your job, one that you've envisioned for your entire career. After refreshing your resume, you nervously submit their application to the job posting. The job posting states that interviews will be held the following week. A week goes by without call.

Then, another week goes by in silence. You begin to doubt yourself.

Individuals will be prompted to jot down the thoughts that flood their mind as they await a response from the company. They will be asked to detail reasons why they haven't heard back

and what judgements they would make about themselves as a result of the company's silence. Then, individuals will be asked to apply a growth mindset, to flip the narrative on its head. What happens when you decide not to doubt yourself? What can you learn from this experience? By having individuals toggle between a fixed mindset and a growth mindset, they're able to experience both – even when the triggering event is the exact same thing. After the exercise, a reflection will be posed, asking individuals to reflect not only on their thoughts but how those thoughts made them subjectively feel. Did they feel drained or defeated when exercising a fixed mindset? How did this subjective experience shift as they switched to a growth mindset? This exercise is one of empowerment to demonstrate that mindset matters and that we can challenge the narration in our heads and ultimately, how we act and feel.

### **Mindfulness**

Mindfulness is the practice of paying attention to the present moment on purpose and without judgement (Kabat-Zinn, 1994, p. 4). This experience balances awareness of the thoughts and feelings passing through us at a given moment while suspending our innate tendency to label or criticize (Hölzel et al., 2011). Mindfulness enables us to build a buffer between event and the reaction it triggers within us. Our capacity to be mindful can be built through regular practice, just like a muscle. Meditation is one of the most common ways to practice mindfulness and while it is not the only way to practice, it is the most studied methodology in the scientific literature (Mantzios & Wilson, 2015).

Mindfulness has been shown to have positive impact on the individual, boosting our subjective well-being, creativity, charisma, and physical health (Turner, Barling, & Zacharatos, 2002). Within the brain, mindfulness changes both form and function, thickening gray matter and sharpening attention and focus (Tang, Hölzel, & Posner, 2015). As a result of this enhanced

attention, we're able to create space to tune in to ourselves and our personal needs (Hölzel et al., 2011). On a subjective level, mindfulness leads to decreased feelings of anxiety and depression, and an enhanced feeling of well-being and healthier relationships with the self and others (Turner et al., 2002). Research has also demonstrated benefits on an interpersonal level, improving conflict-resolution and compassion for others (Valk et al., 2017).

Much of the research examining the relationship of mindfulness and weight loss views it as beneficial to improved eating behaviors. Mindfulness has shown to decrease binge eating, depressive symptoms, and increased both emotional regulation and motivation to practice healthy eating behaviors (Mantzios & Wilson, 2015). Mantzios & Wilson (2015) state that mindfulness directs our attention to the food we consume and reduces emotional triggers that often lead to binge eating or unhealthy indulgence. By practicing mindfulness, an increased awareness is cultivated that can be then applied to when we eat and what we eat. This allows us to tune in to true hunger versus eating out of habit, which is supported by the literature that mindfulness decreases impulsivity (Peters, Erisman, Upton, Baer, & Roemer, 2011). In a study led by Mantzios and Wilson (2014), the researchers sought to enhance mindfulness and self-compassion through food diaries, asking 136 students in the experimental group to detail concrete observations about how they were eating. In comparison to the control group that was asked to postulate on why they were eating, this experimental group increased mindfulness and self-compassion, decreased avoidance and negative thinking and were more successful in weight loss (Mantzios & Wilson, 2014).

Mindfulness in combination with engaging in positive health behaviors may contribute to sustained weight loss as well, although less research exists to support this claim. Mindfulness



practices integrated with physical activity, such as yoga and tai chi have been shown to increase awareness that leads to sustained engagement (Kennedy & Resnick, 2015).

**Strategy #3: Mindfulness in action.** The objective of this strategy is to create a safe space for an individual to practice mindfulness outside the traditional approach of meditation. At the end of this process, individuals will have practiced mindfulness and be equipped with an easily accessible practice that can be repeated or used in supplement with other mindfulness practices. The guidelines for this strategy can be provided across multiple mediums and adherence can be tailored to an individual's particular preferences or needs. Individuals should set aside ideally thirty minutes of distraction-free time, no materials are needed for this exercise but ready access to a safe outdoor space is preferred.

The mindful walking intervention is presented like this:

Take a walk for a minimum of one mile (15 to 20 minutes in duration). As you prepare for the walk, choose one of the following senses to focus on throughout the duration of the walk: sight, sound, touch, smell, or taste. Choose which one feels most natural to you during that time. It is okay to switch the chosen sense at the beginning of the walk, however, try to focus on only one for the majority of the walk. For example, if you choose sound, you may focus on the sound of children laughing as they assemble for school or the rustle of the wind through the trees. If you choose touch, you may focus on the gentle rhythm of your feet on the pavement and swing of your leg as you take the next step. If you lose focus on your chosen sense, gently guide your attention back to the sense without criticism or judgement.

## **Relationships**

Spanning the entire existence of the *homo sapiens*, our survival depended on our

community. For our earliest ancestors, isolation was effectively a death sentence because we relied on our neighbors to fulfill our basic needs. Today, we may be able to meet our material basic needs without relying on our neighbor, but it's our relationships with those around us that fulfill our psychosocial needs of intimacy, affection, and companionship (Akin et al., 2016; Furman & Buhrmester, 1992). In fact, relationships are viewed as so essential to well-being that Chris Peterson (2006) summed up the entire field of positive psychology as *other people matter*. It was Peterson's belief – which has been echoed by many experts in the field of positive psychology – that relationships are central to human well-being (Seligman, 2011; Peterson, 2006; Baumeister & Leary, 1995). Abraham Maslow (1962), who is considered to be the father of modern psychology, determined that the need to experience love and belonging with others is a requirement to achieve self-transcendence, preceded only by physiological and safety needs. Baumeister & Leary (1995) proposed the belongingness hypothesis, which states that humans have an innate need for quality interpersonal relationships, achievable by regular, positive interactions based on mutual concern for the other's well-being.

We benefit from friendships that span decades to spontaneous connections forged with the barista making our morning coffee (Dutton & Heaphy, 2003; Vacharkulksemsuk & Fredrickson, 2012). But what characteristics define these positive interactions and set them apart from the not-so-positive? Berndt (2002), Thien and Razak (2013) characterize positive relationships by pro-social behavior, loyalty, intimacy, and few conflicts. Dutton and Heaphy (2003) liken a positive connection between two people as a healthy blood vessel. Due to the strength of the connection, the tissues connected by the vessel are “flexible, strong, and resilient”, creating an opportunity for mutual growth and support (Dutton & Heaphy, 2003, p. 263). In relationships, the quality of these connections we have with others supersedes the

number of connections, in alignment with the common phrase *quality over quantity* (Kasser & Ryan, 1999; Akin et al., 2016; Hartup & Stevens, 1999). It's easy to contrast our subjective experience of a positive relationship with one that falls into the life-depleting category. Positive relationships reduce loneliness, social isolation, and risk of depression, all of which are linked with reduced subjective health status – a key component of vitality (Killeen, 1998; Holmén & Furukawa, 2002). This is especially notable as loneliness has been identified as a public health problem, with some considering it an epidemic among non-clinical populations (Cacioppo & Cacioppo, 2018).

Positive relationships elevate us in many ways and are considered essential for flourishing (Fredrickson, 2006). These types of connections help us to grow and adjust, supporting the development of self-confidence and social competence. They also enhance our quality of life, boosting our positive affect, subjective well-being and overall life satisfaction (Seligman, 2011). People who feel strongly connected with others are more likely to be resilient in response to challenges as well. In his book *Flourish: A Visionary New Understanding of Happiness and Well-being*, Seligman (2011) notes that individuals who have a friend they could call in the early hours of the morning to talk about their troubles were likely to live longer.

Positive relationships help us to grease the wheel when it comes to weight loss. First, by acting as a protective buffer against social isolation, loneliness and negative affect, relationships minimize powerful barriers to engaging in and sustaining positive health behaviors (Umberson & Karas Montez, 2010). This aligns with common sense – negative affect tends to make us small and emotionally cut off, less willing to try new experiences or opportunities (Fredrickson, 2001). Loneliness and social isolation when experienced can be crippling and have been shown to lead

to overall ego depletion and loss of vitality, making us less likely to engage in positive health behaviors (Baumeister, Bratslavsky, Muraven & Tice, 1998).

The benefit of relationships to weight loss isn't just in what it reduces but what it fosters. Barbara Fredrickson's (2001) broaden-and-build theory highlights the benefit of positive affect to propel us into action, making us more likely to engage in positive health behaviors. The benefits of positive relationships on our mental health and well-being create an environment ripe for habit building and sustained engagement in healthy eating or a new fitness regimen. Relationships not only elevate our quality of life, they can play a key role in weight loss as well. From a utilitarian standpoint, relationships can be leveraged to keep us accountable. For example, individuals may establish accountability for a particular health regimen by sharing goals with friends or teaming up with a buddy for regular workouts. Even virtual support networks have been shown to be effective for building encouragement and motivation for individuals posting about their weight loss journey (Hwang et al., 2010).

**Strategy #4: Relationships in action.** The objective of this strategy is to boost our interactions with the many individuals whom we come into contact daily. At the end of this process, individuals will have a bolstered sense of community and a new avenue in which to forge connections. The guidelines for this strategy can be provided across multiple mediums and adherence can be tailored to an individual's particular preferences or needs. It is encouraged that individuals incorporate this activity into their daily routine in an environment that they feel most comfortable, such as at work or in their community. It is recommended that individuals continue with this activity for at least fifteen minutes, or until they feel comfortable.

This exercise asks individuals to simply acknowledge the people around them. Whether the exchange is friendly nod of acknowledgement or a good morning greeting, individuals will

be tasked with simply engaging with those around them. Notably, this exercise should extend beyond those individuals we know to also include acquaintances and strangers, assuming the appropriate environment. In this exercise, we are extending ourselves to create micro-connections that may have been missed opportunities had we not opened our attention to the world around us. At the conclusion of the exercise, individuals are asked to reflect about their experience. How did they feel when engaged in this activity? How did others respond? Did they notice any shifts in their mood or attitudes later in the day as a result of this activity? In addition to reflection, individuals are also encouraged to jot down notes regarding their subjective experience before, during, and after the exercise.

### **Conclusion**

This capstone examined the hypothesis that vitality can provide a new avenue to weight loss through the promotion of positive health behaviors. In our traditional weight loss paradigm that excludes the influence of our psychology, the scientific literature shows potential around vitality as a means by which to lose weight. Many concepts in positive psychology offer avenues in which we can enhance vitality and engagement in positive health behaviors. This paper focused on four: intrinsically motivated goals, growth mindset, mindfulness, and relationships. This list is by no means intended to be exhaustive. Rather, it should serve as a foundation or starting point for further scientific research and exploration of avenues that can contribute to weight loss. Many of the opportunities within this area have yet to be realized simply due to the fact that limited research exists in this arena. However, as discussed regarding the trends of research, I expect that tide is turning.

Just as Martin Seligman (Seligman, 2008) led the call to action for increased focus on positive health, I pose that this capstone should be viewed as the first step on a shift away from

our tired and failing approach to weight loss. The field of positive psychology has shown us what good can come from fostering what is inherently good within each one of us. This approach should also be applied to one of our most prominent public health epidemics. The literature review in this capstone can be applied across multiple settings and the research-informed strategies tailored to individuals or select populations. Whether implemented in public health interventions or a commercial weight loss program the integrity of the strategies should remain as long as the underlying components of vitality are maintained and fostered. Individuals may even find benefit in applying the strategies on their own, external to a formal program. By putting these strategies into action and continuing to explore ways in which vitality can bolster weight loss, this novel approach could redefine the way we address weight loss for good.

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