



National Academy of Sports Medicine

# Mindless to Mindful

BY

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## Introduction

Common weight loss strategies involve a conscious and less-than-desirable effort to reduce portion sizes and eliminate specific food choices, with the purpose of controlling the quantity of food — or calories — consumed. These weight loss strategies and their accompanying changes in behavior are usually defined as a “diet,” a term that has many negative connotations:

- Diets impose rigidity by focusing upon single or specific nutrient(s) or eliminating specific or entire food groups. Some diets require the purchase of special diet foods. Oftentimes diets involve the removal of comfort foods from one’s diet.
- Diets promise rapid results with little effort, but fail to support weight maintenance.
- Diets fail to account for personal needs, tastes, or preferences.
- Diets generally focus upon food intake and largely ignore exercise or activity.
- Diets usually lack the most critical piece – an effective behavioral change process.

Typically diets are initiated with great enthusiasm, motivated by the anticipation of losing weight. In keeping with the promise of many diets, there may be an impressive initial weight loss, but this is often attributed to unhealthy causes (e.g., water loss while on a carbohydrate-restricted diet). However, once the rate of weight loss plateaus, we predictably witness wavering motivation and adherence levels to the point where the dieter may ultimately quit the diet completely.

Welcome to the concept of “psychological reactance,” a phenomenon defining behavioral responses that occur when regulations (i.e., diet) threaten or eliminate specific behavioral freedoms (1). In other words, this reactance occurs when a person feels that their choices or freedoms have been limited or removed. In the diet scenario, undesirable behaviors (e.g., eating comfort foods, chips, cookies) become more appealing because the fear of losing choices or freedom motivates a person to recapture that threatened parameter. Consequently, the person participates in more undesirable behaviors and the diet is blown. This is a common characteristic of many diets and helps explain the “yo-yo” syndrome many experience.

Fortunately, however, there is some hope. Researchers for the National Weight Control Registry (NWCR) have measured long-term weight loss success (defined as losing 10% or more of initial weight) and demonstrated great success when proper strategies are implemented (2). As many as 47 – 49% of research participants maintained their weight-loss successfully over a period of at least one year. This rate only drops to 25 – 27% over a period of at least five years, thus demonstrating that long-term weight loss maintenance is achievable (2, 3, 4). However, as we all know, it involves many factors beyond a simple diet. As an initial start, visit the NWCR website (<http://www.nwcr.ws/>), where they share aggregated data of best practices for long-term weight loss success (2).

#### **Theory to Practice**

*Either reflect or conduct your own mini experiment. Identify a behavior you enjoy (e.g., exercising, enjoying a cup of coffee in the morning, watching your favorite TV show). Now convince yourself that this behavior is undesirable and that you need to avoid it for the next week. If you try to avoid this behavior, you may find yourself resorting to all sorts of distractions and substitutions in a vain attempt to not think about what you are missing. Is your desire for that behavior increasing? Is your willpower to resist waning? Here is psychological reactance in practice.*

While perceived as complicated, successful weight loss can also involve basic strategies, ones that avoid the concept of psychological reactance and deprivation, and are often not even considered. Whereas traditional weight loss practices focus more exclusively upon the components of “calories in” (diet) and “calories out” (activity / exercise), this article will discuss an approach that addresses the impact of environment and how it stimulates our eating behaviors. Research over the past 10 years has demonstrated how important this stimulus is and how it can significantly impact weight loss and weight gain (5).

#### **Being More Mindful**

Strategies for reducing caloric intake often address what we eat during our meals and major snacks, but miss those little pieces of candy, chocolate, or nuts we nibble on here

and there mindlessly throughout the day (where we slip up and don't pay conscious attention to our diet) – usually described as a subconscious, impulsive little bite.

Although most of us feel that we pay attention to everything we eat, the reality is that the average person makes at least 200 daily decisions about food, although they believe they only make about 15 food-related decisions daily (6). Furthermore, if asked to recall the number of nibbles throughout the day or the amount of food eaten, people generally underestimate by 20 – 40% (7 – 9). Not only do people underestimate, they also seem to have limited or selective memories, or are just forgetful. In one study, 31 of people leaving an Italian restaurant could not remember how much bread they ate just five minutes after eating dinner, and worse still, 12% denied eating any bread at all (10). This emphasizes the fact that regardless of intent, many of us still eat too mindlessly.

Research also tells us that we are mindless (lack conscious awareness) with about 100 – 300 calories of nibbles and bites throughout the day and only become mindful (conscious) when surpluses or deficits reach 500 - 1,000 calories (5, 11). For example, if you overdid it today with an extra meal or 1,000 additional calories, you would consciously think about it, or do something about it, today or tomorrow. However, 100 – 300 calories of mindless nibbles each day generally fail to trigger conscious awareness to give us concern. But we should be concerned, because that 100 – 300 kcal daily amounts to 10½ - 31 lbs. (4.8 – 14 Kg) in a year! Mindless nibbles may negate all weight loss exercise efforts, or on the bright side, offer an alternative or additional strategy to target weight loss.

Many Americans stop eating when they are full, whereas in leaner cultures, people tend to stop eating when they are no longer hungry. As illustrated in Table 1, it is estimated that leaner individuals rely more upon internal cues to stop eating (i.e., hunger, satiety), while more obese individuals rely more upon external cues (i.e., clean plate) to stop eating (5). Given this information, should we start giving more thought to the impact of environmental stimuli and even more importantly, should we start to help our clients to become more mindful of their mindless eating behaviors?

Table 1. Key Eating Behaviors

Leaner Individuals	Heavier Individuals
Rely more upon internal cues to stop eating	Rely more upon external cues to stop eating
Generally underestimate food intake by 20%	Generally underestimate food intake by 30 – 40%

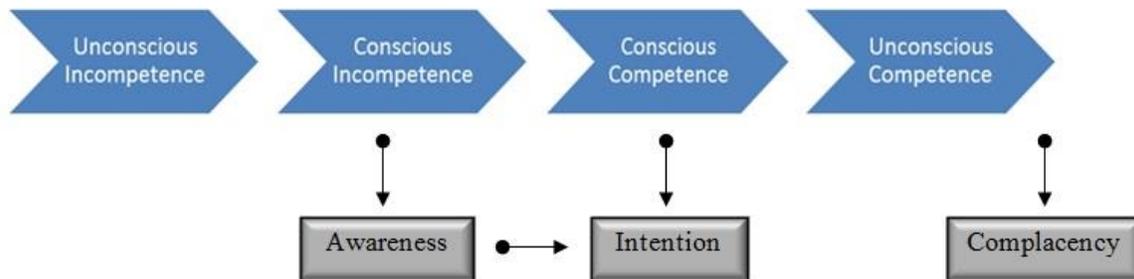
**Reflective Question**

Outside of the obvious external environmental stimuli of portion sizes and visibly seeing food, what external environmental stimuli do you think influence your eating behaviors? Attempt to identify three stimuli.

*Stages of Competency*

Any desire to change behavior requires awareness of the existing behaviors or the lack of desirable behaviors. The Stages of Competence Model, generally attributed to Maslow, helps explain the process of becoming more aware or mindful. As illustrated in Figure 1, Unconscious Incompetence represents the first stage where an individual does not understand or recognize a deficit or problem, or may even deny any need for change. Only once they become aware of their deficit, recognize their incompetence, and see value in making a change will they make attempts to move to the next stage (i.e., intention). Our goal as Health and Fitness Professionals in this stage is to help our clients recognize the power that our environment wields over us.

During the Conscious Incompetence stage, the individual recognizes the deficit and identifies a need for change, but has no means to accomplish this change (i.e., does not know how to change). Efforts to change are usually achieved through trial and error and are often plagued with error. Our clients may make several attempts to change, drawing upon previous experiences and perhaps what they read and hear, but more often than not this leads to frustration rather than success.

**Figure 1. Stages of Competency**

During the Conscious Competence stage, the individual is now actively learning how to make change (i.e., they are aware, have good intention, and are learning to change). This is where they find us most useful as we provide the knowledge, skills, and abilities to empower that change.

Finally, we reach the stage of Unconscious Competence, where our habits and behaviors have become second nature and we oftentimes can execute the behavior without much thought. While we may regard this stage as success, we need to ensure that we don't enter a potential fifth stage: complacency, where we get lazy and may start becoming mindless once again. It is always helpful to consciously take inventory of all eating behaviors on a timely basis to remain mindful.

### **Environmental Cues**

This section of the article will examine various environmental cues that can stimulate overeating, and will offer some helpful takeaways to consider discussing with your clients.

### **Portion Size**

Portion sizes have increased steadily over the past 30 years. Technological improvements in food production allow food to be mass-produced more economically. In addition, consumers are demanding more value, and there is increased competition. Coincidentally, caloric intakes have increased accordingly (12, 13). An interesting study examined different portion sizes using five-day old (stale) popcorn, described as tasting like Styrofoam®. The study revealed that people consumed 53% more popcorn (173 kcal)

when given larger containers (14). Likewise, in a similar study, individuals eating Chex Mix® in bigger bowls consumed 53% more food and 59% more calories (15).

A simple guideline is to reduce portion sizes by 20% as generally, people do not notice this reduction. However, portion size reductions greater than 30% increase conscious awareness of deprivation and may trigger a psychological reactance effect (5).

“Portion distortion” is everywhere and is often influenced by the size of our eating tools (e.g., plates, cups, bowls, etc.). A study asked experienced bartenders to free pour (using no measuring tools) 1½ ounce (45 mL) shots into two different 11-ounce (325 mL) glasses (high ball – tall and thin, versus tumblers – short and fat). Results demonstrated that when pouring to the tumblers, they over-poured on average by 37%, demonstrating a horizontal-vertical illusion difference (16). For example, compare the length of the two lines in Figure 2a – do they appear to be the same length? Examine the black circles in Figure 2b — do they appear to be the same size? The answer is yes; both lines are equal in length and both black circles are equal in size, but it is a visual distortion that changes our perception.

**Figure 2. Visual Distortion Examples**

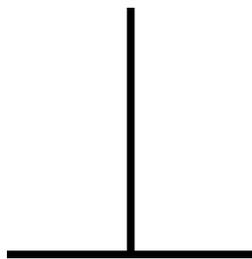


Figure 2a

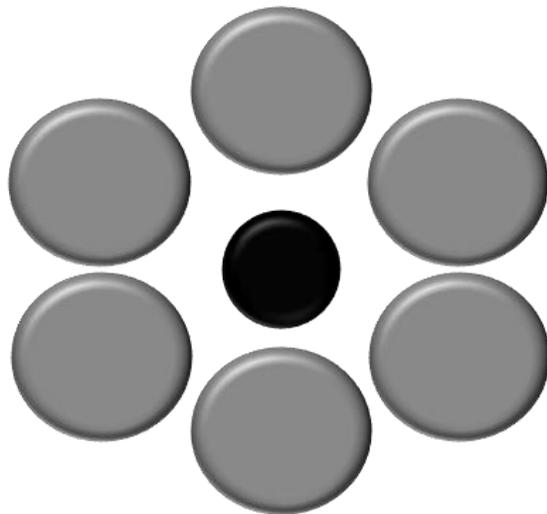
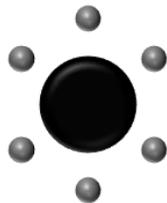


Figure 2b

### Theory to Practice

Although we all aim to increase awareness about portion control, try the following strategies for about a week and then evaluate the efficacy and difficulty of each strategy:

- Aim to reduce your portion at one meal by 20% – did you feel deprived?
- Now repeat this exercise with a 30% reduction – did you feel deprived?
- Try reducing the size of some eating tools and portions for a week (e.g., replace a tumbler with highball glass and use a side plate instead of a full plate, use smaller bowls, split a portion). Was it difficult to switch?

### Pace the Clock

After eating, the presence of food in the stomach and gastrointestinal (GI) track and the entry of food into the blood, trigger neural and hormonal responses that turn off the sensation of hunger. Leptin— a hormone from adipose cells—is released under the influence of the parasympathetic system (active during digestion) and by elevated insulin levels (responding to the presence or anticipation of food) (17). This hormone binds to neuropeptide Y, a known appetite stimulant (increases food intake and storage of fat) and deactivates it to inhibit hunger.

The hormone cholecystokinin (CCK), released from the intestinal cells, initiates digestion by secreting digestive enzymes. It is stimulated by the presence of food in the stomach and also functions to slow down digestion (to ensure efficient digestion and absorption) and suppress further eating.

While CCK responds more rapidly to eating than leptin, it may take approximately 20 minutes after initiating eating for these signals to take effect, which raises the question as to how much damage we can do with food in 20 minutes. On average, fast food is consumed in 11 minutes, lunch in a workplace cafeteria is consumed in 13 minutes, whereas food eaten in a moderately-priced restaurant takes 28 minutes or up to double that amount of time when dining with others (18).

Given this understanding, aim to control your eating pace, but more importantly, strategize to sit with the slowest eater. However, it is also important to recognize the table

“pacesetter” and be mindful of that person. Eating behaviors are often influenced and dictated by the pacesetter, who unknowingly sets the standard for how much food will be consumed and how fast it will be consumed (19). In other words, if this pacesetter eats chips and salsa, he or she will influence others mindlessly to join and potentially eat comparable amounts. Therefore, it is important to identify the slowest eater and mindfully avoid the pacesetter.

### **Build Volume for Fewer Calories**

Volume trumps calories. Dr. Barbara Rolls, inventor of the Volumetrics Diet developed her plan around research that demonstrated that our diet fluctuates more consistently by caloric content than it does by volume (5, 20). Given our inability to mathematically quantify calories in the foods we eat, we have resorted to quantifying food by the amount we consume. Researchers have altered food volumes by adding air and have discovered that people felt satisfied when reaching a feeling of “fullness” based on volume rather than caloric density (i.e., using volume as a marker of satiety rather than caloric amount) (20). Strategize food preparation, food delivery, and eating order to focus upon building volume as a means to control caloric density (e.g., substituting fruits and vegetable snacks for candy; sequencing delivery of side veggies or lean salads before bread). Be careful however with substitutions to avoid the perception that one is being deprived of specific foods (e.g., comfort foods that are sweet, fatty, or salty).

What is the takeaway here? Aim to introduce more food incorporating the cheapest and most calorically-inexpensive ingredients possible, namely air and water\*. For example, by taking a portion of food (e.g., half pound burger) and substituting some of the calorically-dense ingredients (e.g., meat) with less calorically-dense ingredients (e.g., lettuce, tomatoes), that person will achieve comparable levels of fullness with fewer calories.

**Did You Know**

\*When one is hungry, drinking water or calorie-free beverages before a meal is not suggested, as this strategy will ultimately backfire. Hunger is driven in part by blood sugar levels: the lower the level, the greater the sensation of hunger. When hungry, the body anticipates the arrival of food (i.e., we see food, smell food, etc.) and it releases insulin in anticipation of arriving nutrients. However, if tricked by a noncaloric beverage, the circulating insulin lowers blood sugar levels further and exacerbates the sensation of hunger, which may result in a person gorging food later. On the flip side drinking a cold beverage (with ice) help burns more calories as the body needs to expend energy on warming the fluid and correcting for a diluted blood volume - estimated as 1 kcal per fluid ounce (30 mL) (5). Borschmann and colleagues demonstrated that drinking 1 L (33.8 oz.) daily of cool water (22°C / 72°F) on an empty stomach increased metabolism by 17,450 kcal per year, the equivalent to 5 lbs. (2.3 Kg) (21, 22).

**Theory to Practice**

A. The next time you eat in a restaurant, rearrange your food ordering procedure and food delivery sequence.

- Order only your first course and aim to make it something that is more volume-based and noncalorically dense (e.g., low kcal salad, side of vegetables). Request that only that food be brought to the table (i.e., avoid breads, chips etc.).
- Clear your table of distractions that could lead to mindless eating.
- Drink a glass of cold low-calorie fluid immediately prior to your food arriving.
- As you are eating this course, decide upon your next course should you so desire, and place your order. Feel free to request a split portion to avoid that clean plate mentality.

B. Preparing a meal at home.

- Seek creative ways to substitute some calorically-dense foods (or the portions of such foods) with foods providing more volume, but without building perception of deprivation.

### **In Sight Equals In Mind**

The power of sight (what we see) can stimulate or suppress appetite, so we need to be mindful of both. America has a clean plate mentality (if we see it, we had better eat it) and this is an issue of concern. In a bottomless soup bowl study (where the bowl automatically refilled as soup was being consumed), those eating from the bottomless bowl consumed more soup (9 oz. or 265 mL versus 15 oz. or 445 mL), thus increasing caloric intake from 155 kcal to 268 kcal or 73% more calories (23). Interestingly, the bottomless bowl group, although consuming 73% more calories, never made mention of feeling full. Both groups, as expected, underestimated the total number of calories eaten (123 kcal for the 9 oz. group; 127 kcal for the 15 oz. group).

However, research also tells us that sometimes what we see can raise our levels of consciousness or awareness as to how much we are eating (becoming mindful) and may help reduce mindless eating. In a chicken wing study, when bones were left in plain sight for people to see how much they ate, they actually consumed 28% less food (24). Considering that our stomach doesn't count (number of wings) and how we consciously or subconsciously forget what we eat, we may need some mindful reminders.

Individuals who preplate their food (i.e., bring all they plan to eat to the table before eating) as opposed to making several trips to the buffet line, eat 14% less food (5). This same author also investigated additional eating behaviors between obese and normal-weight individuals at a Chinese buffet (25). Observations about the two groups revealed: Obese individuals are more likely to sit at tables instead of in booths for greater accessibility to food.

- Obese individuals were more likely to sit facing the buffet (41.7% of the time versus 26.8% in normal-weight individuals).
- Obese people browsed food less often before selecting and serving themselves (33.3% of obese browsed versus 71% of normal-weight individuals).
- Obese individuals opted for bigger plates (98.6% versus 86.3% in normal-weight individuals).
- Obese individuals used forks or spoons and not chopsticks (three times less likely than normal-weight individuals).



- Obese individuals left unfinished food on plates less often (6% versus 10.6% in normal-weight individuals).

The takeaway messages here are numerous, but while we need to be more vigilant about our “clean-plate” mentality, sometimes visibly seeing what we plan to eat or have eaten may give us reason to pause and be more mindful.

### **Theory to Practice**

Reflect upon your normal eating behaviors when you visit a buffet-style restaurant. Select a typical fullness score (0-10) you achieve when you stop eating. For example, if you feel overfull when you stop eating, you may rate this as 10. If you feel comfortably full, you may rate this as 8. Then, the next time you visit a buffet-style restaurant, attempt to preplate all the food you plan to eat first. Try to consciously be aware of your empties as you continue eating. Once you decide to stop eating, identify your fullness score – is there any notable difference this time versus your traditional eating behavior?

### **Out of Sight Equals Out of Mind**

We love a good deal and often buy in bulk given its value. In industrialized nations (e.g., U.S.), this mentality is amplified by abundant wholesale stores and larger vehicles, whereas in nations where individuals walk to purchase groceries or drive smaller cars, buying in bulk is sometimes not an option. Generally, when buying in bulk, we tend to eat more from these larger containers initially (i.e., in the first seven days). Then as we grow tired of the food, the containers become castaways in the refrigerator, freezer, or pantry (26).

Researchers also discovered that individuals who consumed snacks that were stored in clear jars (e.g., chocolates) consumed 71% more food versus those who consumed food that was concealed in opaque containers, resulting in 77 more kcal being eaten each day – translating to 8 lbs. (4 Kg) (27). Removing visible foods decreases temptations for mindless snacking (seeing, smelling, or thinking). If snacks are going to be left in plain sight, aim to make them nutritious and healthy.

The takeaway message: If buying in bulk, immediately repackage larger containers into smaller, opaque containers and store all but one container out of sight – this helps curb subconscious eating. Even a small strategy, such as placing a lid on a container or covering it with foil or plastic wrap, will curb mindless munching.

### **Don't Deprive Foods (Comfort Foods): Control Them**

We discussed previously the notion that conscious awareness of food deprivation may trigger psychological reactance, where undesirable behaviors become more appealing. Many food desires and cravings are triggered by thoughts and emotions (feelings) triggered by environmental stimuli (e.g., sight, sound, smell, location, person, temperature). When we have such desires, comfort foods become our prime targets to satisfy that need (5). People seek out comfort foods when they:

- Feel happy (86% of the time).
- Feel the need to celebrate or reward themselves (74% of the time).
- Feel bored (52% of the time).
- Feel depressed (39% of the time).
- Feel lonely (39% of the time).

Although positive moods generally lead to healthier food choices in comparison to negative moods, our goal as Health and Fitness Professionals is to help our clients consciously learn to understand the triggers of their thoughts and emotions that spark a specific food desire (28). Once clients become mindfully aware of their triggers, the next step is to strategize distractions, taking into consideration that thoughts and emotions are generally fleeting (short-lived). An effective distraction therefore is one that satisfies the thought or emotion while simultaneously reducing the likelihood of eating (e.g., calling a friend to vent or leaving a voicemail, expressing thoughts in a journal, playing with a pet, doing an activity). This distraction need not be complicated as its intention is simply to distract a short-lived desire. However, a key to distractions is to recognize that if the desire still persists after the activity (i.e., a few minutes), then the individual should be allowed a small mindful indulgence.

Trade-offs offer effective strategies for controlling mindless eating. Again, to avoid the possibility of psychological reactance, it is important to give people autonomy (ability to choose) their behavioral action, but use consequential persuaders. Essentially, you are not eliminating choices, but instead are giving the client the power to choose from several options, while concurrently making them aware of the consequence of each choice. For example, eating additional calories requires activity to burn those calories, so a 100 kcal snack is equivalent to a 23-minute walk or standing for 52 minutes (29). Present these consequences and let them decide.

- Women: 1 kcal = 20 steps walking (1-minute walking = 4.3 kcal)
- Men: 1 kcal = 17 steps walking (1-minute walking = 5 kcal)

Remember, we only have so much willpower and after time, some desired foods (e.g., fatty, salty, or sweet foods) may become too tempting to resist. This stems from our understanding of human behavior and motivation. Humans don't thrive well when our thoughts and/or feelings are in conflict with each other (e.g., desiring sweets, but refraining because you know they are bad for you).

We are motivated internally to seek conflict resolution and sometimes a small indulgence may be just what is needed to overcome this conflict. "Off-days" have always been debated for their value with behavioral change for weight loss. If having an off- day where some moderate indulges are permitted to resolve conflict, then we, as Health and Fitness Professionals should always be open to considering that option.

### **Control Choices**

Typically, when more food choices and colors are presented, we imagine more enjoyment from the food. By comparison, when the number of food choices is decreased, we often perceive less food enjoyment (5). Putting the same food into multiple bowls can also result in a perception of more choices and result in eating more, by up to 18% (30). A challenge with food choices is that we don't fully comprehend how much we should take or want, so what we do is gauge our decisions by what we think is appropriate. When there is more food—or when we think there is more food—we tend to think that eating more is appropriate, a concept that is called "sensory-specific satiety" (5).

In a study using M&Ms®, researchers compared the effects of providing participants with a choice of seven colors versus 10 colors, and while each color tastes the same, those individuals with more choices ate 43 more M&Ms® (99 versus 56 in total) (31). In the same study, the researchers also examined the effect of mixing jelly bean colors together (i.e., offering containers with colors mixed together versus containers where colors were individually separated). Individuals eating from the mixed container ate 92% more pieces (23 pieces versus 12) (31).

The takeaway message here is that by controlling the number of food choices we have, we may subconsciously develop a perception of less enjoyment from the food and may actually eat less.

### Theory to Practice

Conduct this two-part mini experiment with your friends or family.

1. Purchase a particular brand of candy (e.g., M&Ms® of the same color) and place 100 pieces into a container. Monitor snacking behaviors with these candies for a few days (i.e., how quickly they are consumed). Estimate an average consumption rate (e.g., pieces per day or per hour). Next, repeat the same test using the same bowl, but this time only place 25 pieces into the bowl. Monitor snacking behaviors and estimate and calculate a consumption rate. Notice any difference?
2. Select a snack with individual pieces of different colors, regardless of whether they taste the same or not. Using 20 pieces for each color mix them together into one bowl and monitor consumption patterns. Next, repeat the process, but this time, separate each individual color. Notice any difference?

### De-convenience Convenience Foods – Create "Pause Points"

The idea behind making convenience food less of a convenience is to make snacking a hassle and not a habit. This can be accomplished by making snacks less accessible and creating "pause points," where one has a moment in time to consciously contemplate the consequences of their snacking and avoid mindless eating. In one study chocolates were placed on the desk (in a corner), in a drawer, and then on a file cabinet 6' (1.85 m) away

in random order (32). The study results demonstrated that when chocolates were easily accessible (i.e., placed on the desk), an average of nine chocolates per day were eaten. By comparison, only six and four were eaten per day when the chocolates were placed in the drawer and on the filing cabinet respectively.

A classic and often-cited study looked at eating behaviors when conscious cues were utilized to help control eating. In the first study, participants were served tubes of regular Pringles® potato chips and allowed to eat to their content (33). However, in some tubes the researchers placed a red chip at every seventh or fourteenth interval (segmenting) and observed how many chips were consumed. Interestingly, in the tubes without a red chip, individuals ate 45 chips, whereas they ate 24 and 20 chips when the red chip was placed at every fourteenth and seventh interval respectively. The same study yielded the same results when it was repeated with a red chip placed at the fifth and tenth interval: 35 chips eaten in the control container compared with 16 and 14 chips for the tenth and fifth chip intervals respectively (33). More importantly, those eating from the red chip tubes were better able to estimate how many chips they had eaten. Segmenting packages appears to effectively reduce food consumption by helping to:

- Call attention to and encourage better monitoring of eating
- Control portion sizes
- Break automated eating sequences by introducing a pause

Takeaway points from this section include:

- Moving snack foods outside of a six foot radius where an individual has to physically move to access the food
- Giving a person time to structure an opportunity for a "pause point" where he or she can contemplate consequences (e.g., that 100 kcal snack will require 20 minutes of walking)
- Likewise, implementing strategies whereby eaters are given conscious "pause points" to think about how much they are eating may also help curb mindless eating behaviors.

### **Expectation Assimilation**

Be aware of what is called “Expectation Assimilation,” which refers to the expectations that the environment may have upon current and immediate eating behaviors (5). In a wine study using the same wine, but labeled either as a new wine from California (known for good wines) or from North Dakota (not known for good wine), participants were served the same food from the same servers, in the exact same environment. However, those drinking the California wine consumed 1 % more calories, dined for 10 minutes longer, enjoyed their experience more, and indicated the food tasted better (34). The findings of this study appear to be one where our expectations of the eating experience may influence choices and quantities before we even eat.

The takeaway message here is to explore with your clients when and where they find themselves overeating or choosing more calorically-dense foods. While we often look internally to hunger and appetite, the reality is that overeating or choosing higher-calorie foods may have nothing whatsoever to do with them, but could be influenced almost entirely by an external factor.

### **Halo Effect**

As “healthy” foods continue to garner more attention and popularity, we need to be cautious not to lose sight of the fact that healthy does not necessarily mean fewer calories. A study compared 250 individuals who ate at McDonalds® (MCD) versus 250 individuals who ate Subway® (SUB). Although researchers identified that the MCD eaters ate more calories, it was the people who ate at SUB that underestimated the total calories they believed they consumed by a larger margin (25% underestimated at MCD versus 34 % underestimated at SUB) (35). It appeared that the “apparently” healthy restaurant gave eaters a false sense of confidence in what they were eating. The eaters at SUB believed that all their choices were healthy whereas at MCD, the diners were more realistic knowing that the food was less healthy. This phenomenon is called the “Halo Effect” and is an effective strategy used by manufacturers to lure unknowing consumers to purchase more of their products. Subway for example advertises how their six inch subs contain fewer calories than a Big Mac® or Whopper®, but if you read the fine print, it tells you that that estimation excludes cheese and condiments. Removing cheese and special sauce

from a Big Mac® lowers its caloric total by almost 200 kcal to about a 260 kcal sandwich, almost the same as a six inch Subway sandwich.

The takeaway is to read the fine print – don't be fooled by “healthy marketing” where, because food appears healthy, it must contain less calories.

### **Theory to Practice**

Select five combination foods (e.g., pizza, macaroni and cheese, sub sandwich) you believe to be healthy and estimate the number of calories per serving or per item.

Repeat the same procedure with five foods you think are unhealthy.

1. Compare estimated to actual calories listed on the package or for the food item.  
How accurate were you when you compare the healthy versus unhealthy foods?
2. Estimate your margin of error for the healthy and unhealthy foods?

### **Know your Dietary Danger Spots**

Many of us are unaware of our dietary danger spots—those times where we tend to exhibit poor dietary behaviors, whether it is because of our food choices, portion sizes, or the rate at which we eat the food. Taking time to become more aware of problematic eating environments can certainly help an individual to strategize ways to improve their behaviors. Table 2 provides simple strategies a person could implement to take control of these danger zones.

**Table 2. Dietary Danger Zones**

<b>Desk / Dash Diners *</b>	<b>Meal Stuffers *</b>	<b>Snack Grazer *</b>	<b>Party Binger *</b>	<b>Restaurant Ravensgers *</b>
Stop to eat	Pre-plate	De-convenience convenient foods	Move away from the food	Use rule of two (drink, appetizer or dessert)
Create food trade-offs	Slow down Use ½, ¼, ¼ approach (½ veg, ¼ protein, ¼ starch)	Distract before snacking	Eat healthy snacks beforehand	Order to share
Make food less accessible		Find healthy substitutes for the six C's (chips, cookies, chocolate, candy, cake, ice cream)	Choose two items on plate	Sit with the slowest eater
Chew gum	Use smaller plates / glasses		Set down plates/drinks – out of sight	Strategize eating plan for the first 20 minutes
Brownbag healthier choices	Offer less variety	Use plates – don't eat from package	Preplan activities – talking, etc.	
	Don't clean plate (leave empties in sight)	Eat at a table	Arrive fashionably late (less food)	
	Sub healthy options (fruit for dessert)			

\* Amended from Wansink, B. (2006) *Mindless Eating*

**Summary**

In closing, this article presents information that demonstrates the effects of environmental stimuli on eating behaviors. Whereas traditional weight loss models focus more exclusively on the parameters of diet and exercise, an additional, complementary and effective consideration for Health and Fitness Professionals is to include a variety of strategies to control environmental stimuli. Realistically, it is unlikely that you can

implement multiple strategies concurrently, so it is suggested to create a checklist and identifying the most problematic items as you complete your investigative discussions with your client. In time, as new behaviors and controls take root, you can implement more ideas.

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