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## THE WEIGHT SOLUTION

USE YOUR BRAIN TO ACHIEVE

YOUR OPTIMAL WEIGHT

I am what I ate . . . and I'm frightened.

—BILL COSBY

**R**ebecca, forty-four, couldn't stop herself from eating, especially at night. She thought about food constantly throughout the day. The thoughts haunted her, even though she did not want to have them. Over eight years, she had gained nearly ten pounds per year and was now eighty pounds overweight despite trying many diets and going to multiple weight-loss clinics. She hated how she looked and was thoroughly disgusted with herself. The Atkins diet—very high protein and low carbohydrate—made her irritable and emotional. Diet pills made her anxious. She felt as though she needed a glass—or two or three—of alcohol at night to settle her worries, but the extra calories were certainly not helping her weight problem. She came to our clinics because she was starting to have marital problems, in part because her husband was upset about her weight, and also because she had trouble letting go of hurts, held grudges, and worried incessantly.

Rick, thirty-seven, was growing larger by the year. At five feet eight inches tall, he was over 250 pounds. As a highly successful salesman for a large West Coast liquor company, he was always on the run and attended many fancy dinners and sporting events. His wife was starting to complain about his weight, which made him angry. Why doesn't she just love me the way I am? he thought, even though she married him when he was nearly seventy-five pounds lighter a decade earlier. Growing up, Rick had problems with focus and impulsivity. He barely finished his first year of college when he found a

job in the liquor industry that he loved. Rick brought his son to our clinic for school-related problems, much like the problems Rick had experienced in school. After he saw how much better his son was on treatment, Rick decided to get an evaluation as well.

Cherrie, fifty-two, had been bulimic as a teenager, and the hidden truth for her was that she still had bouts of bingeing and purging, especially during times of stress. Cherrie was chronically thirty pounds overweight and hated how she looked. She would not undress in front of her husband and found that she often picked on him as a way to not have to have sex or be seen naked. Her own thoughts were extremely negative, and she vacillated between being obsessive about her work and housekeeping to being overwhelmed and disorganized. Cherrie grew up in an alcoholic home and had trouble talking about her feelings and trusting others.

She had tried a number of diet programs without success, until the fen-phen craze of the 1990s. On fen-phen, a combination of medications that increased the neurotransmitters serotonin (fenfluramine) and dopamine (phentermine), she did amazingly well, losing the unwanted pounds and feeling more emotionally stable than at any other time in her life. When the fen-phen was pulled from the market because fenfluramine was associated with a deadly illness called pulmonary hypertension, Cherrie relapsed and went back to her emotional roller coaster and lack of success at losing and keeping off weight. Cherrie came to see us on the advice of her sister, whom we were seeing for issues of depression.

Jerry, sixty-two, was baffled by his weight problem. As a child, he was fit, athletic, energetic, and loved being outside in the sun. He was raised in Southern California and made the most of the beach, surfing, and volleyball. In his thirties, still in great shape, he got a new job in the Northwest as a supervisor at Boeing. He loved his job, the new responsibility, and the income, but over time he noticed that particularly in the winter, his mood and energy would lag, and he started to gain weight despite trying to work out. Over time, he retained more of the weight he gained in the winter than what he could manage to lose in the summer. His weight gain and loss was like a yo-yo that was losing steam. He also complained of many more aches and pains. He came to our Northwest clinic to get a handle on his moods and weight.

Connie, twenty-eight, seemed to be constantly eating. She munched on the way to work, at work, on the way home, and late into the night. She found that when she tried to go without eating for a few hours, she felt anxious and nervous. She often felt a sense of dread and was often waiting for something

bad to happen. She frequently complained of an irritable bowel, sore muscles, and headaches. Marijuana helped to calm her down in college, but it also gave her the munchies, so she used it only sporadically. Her weight continued to creep up; when she reached 165 pounds on her five-foot-two-inch frame, she knew something needed to be done. She came to our clinic because her family had complained about her level of anxiety and irritability.

Camille, sixty-four, could not keep on any weight. Two years before seeing us, she had gone through a difficult divorce, and the year before, her mother died. Camille had lost twenty-five pounds during that time and now none of her clothes fit. She had felt as if her whole system was in hyperdrive. She had trouble sleeping, her thoughts seemed to race, she had diarrhea, and both her heart rate and blood pressure were up. She came to our clinics to help calm her mind and body and put back on some weight.

### ONE SIZE DOES *NOT* FIT EVERYONE

Rebecca, Rick, Cherrie, Jerry, Connie, and Camille all struggled with their weight. Yet they all had very different clinical presentations and brain patterns.

**Rebecca was a compulsive overeater.** She couldn't stop thinking about food. Her brain SPECT study showed too much activity in the front part of her brain (in an area called the anterior cingulate gyrus), likely due to low levels of the neurotransmitter serotonin. On a rational weight-loss program plus a regimen of 5-HTP to boost serotonin levels in her brain, she lost weight, felt much happier, was more relaxed, and got along better with her husband.

**Rick was an impulsive overeater.** He also had trouble controlling his behavior. His brain SPECT scan showed too little activity in his prefrontal cortex, likely due to low dopamine levels, so he had trouble supervising his own behavior. Like his son, he was also diagnosed with ADD. On treatment to boost his dopamine levels, he felt more focused and in better control of his impulses. Over the first year, he lost thirty-five pounds and was getting along better with his wife and child.

**Cherrie was an impulsive-compulsive overeater.** Cherrie had features of both impulsivity (the bulimia) and compulsivity (manifested by the repetitive negative thoughts and rigid behavior). Her brain SPECT scan showed areas in her prefrontal cortex that were both overactive and underactive, likely

due to low serotonin and dopamine levels. In my research, I discovered that this pattern is common in children and grandchildren of alcoholics. On treatment to raise both serotonin and dopamine levels, she felt much more emotionally balanced and consistently lost weight.

**Jerry was a SAD or emotional overeater.** He struggled with his mood and weight, but only after he moved to a place where he got little sunlight. He suffered from seasonal affective disorder (SAD), which has been associated with low vitamin D levels, and his brain SPECT study showed increased activity in his emotional or limbic brain and decreased activity in his PFC. On a combination of vitamin D, bright light therapy, and SAME, he did much better, experienced fewer pain symptoms, and returned to his premove weight over a two-year period.

**Connie was an anxious overeater.** She medicated her underlying anxiety with food. Her brain SPECT study showed increased activity in her basal ganglia, an area often associated with anxiety. By calming her anxiety with relaxation techniques and a combination of B<sub>6</sub>, magnesium, and GABA, she stopped the constant grazing, felt more relaxed and more in control of her emotions and behavior. She lost twenty pounds over the next year and noticed a boost in her energy.

**Camille was on adrenaline overload.** This was causing her to waste away. The chronic intense stress from her divorce and the recent loss of her mother reset her brain and body to an overactive state. Her brain SPECT study showed overall increased activity in the deep centers of her brain, a pattern on SPECT we call the diamond pattern because of the hyperactivity of the different structures we see. On treatments to calm her brain—including a form of psychotherapy called EMDR for people who have been emotionally traumatized, plus phosphatidylserine, B<sub>6</sub>, magnesium, and GABA—she was able to sleep, quiet her mind, and come back to a normal weight.

## WHY MOST WEIGHT-MANAGEMENT APPROACHES DO NOT WORK

Weight-loss pills, clinics, books, programs, and cookbooks are everywhere you look. Why are there so many different approaches to weight loss and weight

management? Why do they generally have such poor results? Why are people constantly searching for the next idea and the next fix? The problem with the whole notion of weight management is that one treatment, one program, or one method is advertised to work for everyone. Based on our brain imaging work with tens of thousands of patients, the premise for most weight-management programs that promote a single path or prescription is ridiculous. First, you need to know about your own individual brain and then target the interventions in a way that fits your own specific needs.

Looking at the descriptions below and taking the brief questionnaire in Appendix B, plus the extended online version at [www.amenclinics.com/cybcyb](http://www.amenclinics.com/cybcyb), you will get an idea about how your own brain works and what specific needs you may have. Then, based on your answers, you will be better able to target the treatment interventions. Of course, you should do this in consultation with your own health-care provider.

### **SUMMARY OF THE AMEN CLINICS: SIX TYPES OF WEIGHT-MANAGEMENT ISSUES**

#### **Type 1: The Compulsive Overeater**

People with this type have trouble shifting their attention and tend to get stuck on thoughts of food or compulsive eating behaviors. They may also get stuck on anxious or depressing thoughts. The basic mechanism of this type is that they tend to get stuck or locked into one course of action. They tend to have trouble seeing options and want to have things their way. They struggle with cognitive inflexibility. This type is also associated with worry, holding grudges, and having problems with oppositional or argumentative behavior. Nighttime-eating syndrome, where people tend to gorge at night and not be hungry early in the day, usually fits this pattern.

The most common brain SPECT finding in this type is increased anterior cingulate gyrus activity, which is most commonly caused by low brain serotonin levels. High-protein diets, diet pills, and stimulants, such as Ritalin, usually make this type worse. Interventions to boost serotonin in the brain are generally the most helpful. From a supplement standpoint (see Appendix C), 5-HTP, L-tryptophan, St. John's wort, and the B vitamin inositol are helpful, as are the serotonin-enhancing medications, such as Prozac, Zoloft, and Lexapro. In fact, 5-HTP has good scientific evidence that it helps with weight loss, and in my experience, I have found that it works best for this type.

### ACTION STEP

#### **Behavioral interventions that boost serotonin to help compulsive overeaters:**

- Exercise to allow more of the serotonin precursor, L-tryptophan, to get into the brain.
- If you get a negative or food-oriented thought in your head more than three times, get up and go do something to distract yourself.
- Make a list of ten things you can do instead of eating so you can distract yourself.
- People with this type always do better with choices, rather than edicts. Do not tell them where you are going to eat or what they are going to eat; give them choices.
- Avoid automatically opposing others or saying no, even to yourself.
- If you have trouble sleeping, try a glass of warm milk with a teaspoon of vanilla and a few drops of stevia.

#### **Type 2: The Impulsive Overeater**

People with this type struggle with impulsivity and trouble controlling their behavior, even though nearly every day they intend to eat well. “I am going to start my diet tomorrow” is their common mantra. This type results from too little activity in the brain’s PFC. The PFC acts as the brain’s supervisor. It helps with executive functions, such as attention span, forethought, impulse control, organization, motivation, and planning. When the PFC is underactive, people complain of being inattentive, distracted, bored, off task, and impulsive. This type is often seen in conjunction with ADD, which is associated with long-standing issues of short attention span, distractibility, disorganization, restlessness, and impulsivity.

Research published in the July 2008 issue of *Pediatrics* found that children and adolescents with ADD who do not currently take medications are at 1.5 times the risk of being overweight than non-ADD children. These individuals are more likely to be impulsive overeaters. On the other hand, those taking medication for ADD had 1.6 times more risk of being underweight compared to children without ADD, which is a side effect of their medication, which decreases appetite.

Impulsive overeaters may also be the result of some form of toxic exposure, a near-drowning accident, a brain injury to the front part of the brain, or a

brain infection, such as chronic fatigue syndrome. The most common brain SPECT finding in this type is decreased activity in the PFC, which is most commonly associated with low brain dopamine levels. High-carbohydrate diets and serotonin-enhancing medications, such as Prozac, Zoloft, or Lexapro, or supplements, such as 5-HTP, usually make this type worse. Interventions to boost dopamine in the brain are generally the most helpful. From a supplement standpoint, green tea and rhodiola are helpful, as are stimulant medications, such as phentermine, Adderall, and Ritalin, which are commonly used to treat ADD.

### **ACTION STEP**

#### **Behavioral interventions that boost dopamine to help impulsive overeaters:**

- Exercise, which helps increase blood flow and dopamine in the brain—especially doing an exercise you love.
- Clear focus—make a list of weight and health goals displayed where you can see it every day.
- Outside supervision—someone you trust checking in with you on a regular basis to help you stay focused.
- Avoid impulsively saying yes to offers for more food or drink and practice saying, “No, thank you, I’m full.”

### **Type 3: The Impulsive-Compulsive Overeater**

People with this type have a combination of both impulsive and compulsive features. The brain SPECT scans tend to show low activity in the PFC (associated with impulsivity, likely due to low dopamine levels) and high activity in the anterior cingulate gyrus (associated with compulsivity and low serotonin levels). This pattern is common in the children or grandchildren of alcoholics. People with this mixed type tend to have done very well emotionally and behaviorally on the fen-phen combination, which raised both dopamine and serotonin in the brain.

Using serotonin or dopamine interventions by themselves usually makes the problem worse. For example, using a serotonin medication or supplement helps to calm the compulsions but makes the impulsivity worse. Using a dopamine medication or supplement helps to lessen the impulsivity but

**ACTION STEP****Behavioral interventions that boost both serotonin and dopamine to help impulsive-compulsive overeaters:**

- Exercise.
- Set goals.
- Avoid automatically opposing others or saying no, even to yourself.
- Avoid impulsively saying yes.
- Have options.
- Distract yourself if you get a thought stuck in your head.

increases the compulsive behaviors. Treatments to raise dopamine and serotonin together, with either a combination of supplements, such as green tea and 5-HTP, or medications, such as Prozac and Ritalin, have worked the best in my experience.

**Type 4: The SAD or Emotional Overeater**

People with this type often eat to medicate underlying feelings of boredom, loneliness, or depression. Their symptoms can range from winter blues to mild chronic sadness (termed dysthymia) to more serious depressions. Other symptoms may include a loss of interest in usually pleasurable activities; decreased libido; periods of crying; feelings of guilt, helplessness, hopelessness, or worthlessness; sleep and appetite changes; low energy levels; suicidal thoughts; and low self-esteem. The SPECT findings that correlate with this type are markedly increased activity in the deep limbic areas of the brain and decreased PFC activity.

When this type occurs in the winter, it is usually in more northern climates, where there is often a deficiency in sunlight and vitamin D levels. Low vitamin D levels have been associated with depression, memory problems, obesity, heart disease, and immune suppression. In recent years, there is an increase in vitamin D deficiencies even in southern and western states in the summer. There are two reasons for this: People are wearing sunscreen more than ever, so they are not being exposed to the sun even when they are outside, and they are spending more and more time indoors on their computers or watching TV. Some researchers believe nearly half of the U.S. population suffers from a vitamin D deficiency. I screen all of my patients for it by order-

ing a 25-hydroxy vitamin D level. To treat SAD or emotional overeaters, check vitamin D levels and correct them when low by taking a vitamin D supplement. Bright light therapy may be helpful to correct vitamin D problems, help with mood states, and help people lose weight.

There is evidence that bright light therapy might also enhance the effectiveness of physical activity for weight loss. In studies, it significantly reduced the binge-eating episodes in people with bulimia and is an effective treatment for SAD. Research studies have also shown it to be more effective than Prozac for these patients. Using bright light therapy in the workplace was effective in improving mood, energy, alertness, and productivity.

### **ACTION STEP**

#### **Behavioral interventions that boost mood to help SAD or emotional overeaters:**

- Exercise to increase blood flow and multiple neurotransmitters in the brain.
- Kill the ANTs (automatic negative thoughts) that steal your happiness.
- Write down five things you are grateful for every day (this has been shown to increase your level of happiness in just three weeks).
- Volunteer to help others, which helps to get you outside of yourself and less focused on your own internal problems.
- Surround yourself with great smells, such as lavender.
- Try melatonin to help you sleep.
- Work to improve your relationships.

Also, make sure to check your DHEA blood levels. DHEA is a master hormone that has been found to be low in many people with depression and obesity. Supplementing with DHEA has good scientific evidence that it is helpful for weight loss in certain patients. Another helpful treatment for emotional overeaters is the natural supplement SAME, in dosages of 400 to 1,600 mg. Be careful with SAME if you have ever experienced a manic episode, and take it early in the day as it has energizing properties and may interfere with sleep. I like the medication Wellbutrin for this type, which has been shown to have weight-reducing properties.

#### **Type 5: The Anxious Overeater**

People with this type tend to use food to medicate underlying feelings of anxiety, tension, nervousness, and fear. They tend to feel uncomfortable in their

own skin. They may be plagued by feelings of panic, fear, and self-doubt, and suffer physical symptoms of anxiety as well, such as muscle tension, nail biting, headaches, abdominal pain, heart palpitations, shortness of breath, and sore muscles. It is as if they have an overload of tension and emotion. People with this type tend to predict the worst and look to the future with fear. They may be excessively shy, easily startled, and freeze in emotionally charged situations. The SPECT finding in this type is increased activity in the basal ganglia, which is commonly caused by low levels of the calming neurotransmitter GABA.

Interventions to boost GABA, by using B<sub>6</sub>, magnesium, and GABA, are generally the most helpful. From a medication standpoint, the anticonvulsant Topamax has strong evidence that it is helpful for weight loss, and in my experience, it is especially helpful for this type. Relaxation therapies can also be helpful to calm this part of the brain.

#### **ACTION STEP**

##### **Behavioral interventions that boost GABA and calm the brain to help anxious overeaters:**

- Exercise.
- Try relaxation exercises, such as:
  - meditation
  - prayer
  - hypnosis
  - deep diaphragmatic breathing exercises
  - hand-warming techniques
- Kill the anxious ANTs.
- For sleep, try self-hypnosis, kava kava, or valerian root.

#### **Type 6: The Adrenaline-Overload Anorexic**

For most people, excess stress leads to weight gain. But some people have trouble keeping a healthy weight on their bodies when they're under a lot of stress. The stress causes them to go into an emotional overload state, and they start to waste away. Typically, these people's thoughts often go too fast, they tend to have trouble sleeping, they may experience diarrhea, and they often complain of memory problems. Their brain SPECT studies show overall increased activity, especially in the deep centers of their brains, similar to what I see with post-traumatic stress syndrome.

Treatments to calm the brain are generally the most helpful, including EMDR—eye movement desensitization and reprocessing (see [www.emdria.org](http://www.emdria.org) for more information)—hypnosis, and cognitive therapy. The supplements phosphatidylserine (PS), B<sub>6</sub>, magnesium, and GABA are also helpful to calm the stress. There are not any current medications I use to help people gain weight. Any medications I prescribe depend on what other factors may be contributing to the current stress.

### **ACTION STEP**

**Behavioral interventions—the same as those recommended for anxious overeaters—that boost GABA and calm the brain to help adrenaline overload anorexics:**

- Exercise.
- Try relaxation exercises, such as:
  - meditation
  - prayer
  - hypnosis
  - deep diaphragmatic breathing
  - hand-warming techniques
- Kill the anxious ANTs.
- For sleep, try self-hypnosis, kava kava, or valerian root.

Knowing your brain type is essential to the Weight Solution and getting the right help for yourself. For any weight solution to be effective, it must be centered on your particular brain, your particular problems, and your particular needs. Any program that gives you a one-size-fits-all approach is destined to fail.

#### **Do You Have More Than One Type?**

Having more than one type is common, and it just means that you may need a combination of interventions. Type 3 Impulsive-Compulsive Overeaters is actually a combination of Type 1 Compulsive Overeater and Type 2 Impulsive Overeater. It is common to have Type 1 mixed with Type 4 SAD or emotional overeater or with Type 5 Anxious Overeater. In those cases, we may mix 5-HTP for Type 1 with SAME for Type 4 or GABA with Type 5. Again, it is always smart

to discuss these options with your health-care provider. If he or she does not know much about natural treatments, consult a naturopath or a physician trained in integrative medicine or natural treatments.

## WEIGHT CONTINUES TO BE A RISING PROBLEM

Our poor eating habits are making us one of the fattest nations on the planet. More than half of American women have a waistline greater than thirty-five inches, while half of their male counterparts measure in at more than forty inches around the belly. Obesity is becoming an epidemic with a devastating impact on our health and our brains. Research from 2005 and 2006 indicates that fully one-third of adult men and more than 35 percent of adult women in the United States are obese. About six million people are considered to have morbid obesity, which is defined as being at least 100 pounds overweight. Obesity is determined by a person's body mass index (BMI), which is a ratio of their weight and height.

### Body Mass Index (BMI) Categories

- Underweight: <18.5
- Normal weight: 18.5–24.9
- Overweight: 25–29.9
- Obese: 30 or higher
- Morbid obesity: 40 or higher

Sources: National Institutes of Health and American Society for Metabolic & Bariatric Surgery

Here are the steps to calculate your BMI: weight in pounds  $\times$  703/height in inches<sup>2</sup>

1. Multiply your weight in pounds times 703.
2. Multiply your height (in inches) times your height (in inches).
3. Divide the number in step 1 by the number in step 2 to get your BMI.

For example: If you weigh 148 pounds and you are five feet six inches tall, the calculation would look like this:

1. 148 pounds  $\times$  703 = 104,044
2. 66  $\times$  66 = 4,356
3. 104,044/4,356 = 23.9 BMI (normal)

Or, if you weigh 260 pounds and you are five feet six inches tall, the calculation would look like this:

1. 260 pounds x 703 = 182,780
2. 66 x 66 = 4,356
3. 182,780/4,356 = 42.0 BMI (morbidly obese)

Morbid obesity is associated with more than thirty medical conditions and diseases, including type 2 diabetes, heart disease, and high blood pressure, as well as brain-related conditions, such as stroke, chronic headaches, sleep apnea, and Alzheimer's disease. These diseases can devastate a person's life. Diabetes is a disease that occurs when blood sugar levels in the body aren't right. The high blood sugar level causes small blood vessels in the body to become fragile and break, which can lead to terrible consequences. I have a friend who is diabetic, and due to the disease, he has lost his sight and has had to have both of his legs amputated. If you have a disease such as diabetes or heart disease, it is even more important for you to eat right in order to prevent or delay progression of the disease. Obesity is also associated with significantly longer hospital stays for comparable conditions. Ultimately, obesity puts you at increased risk for death. A review of several long-term studies on obesity and longevity found that the risk of death rises as weight increases above normal weights.

People who are obese or overweight also have smaller brains than lean people, according to new research in the journal *Human Brain Mapping*. Scientists used brain scans to determine the amount of brain tissue in ninety-four people over the age of seventy. They found that obese individuals had 8 percent less brain tissue and their brains looked sixteen years older than the brains of people at normal weights. Overweight people had 4 percent less brain tissue and their brains appeared eight years older.

The loss of tissue occurred in several important areas of the brain. In obese people, losses affected the frontal lobes, anterior cingulate gyrus, hippocampus, temporal lobes, and basal ganglia. In the overweight crowd, brain loss occurred in the basal ganglia, corona radiata (white matter that speeds communication between different areas of the brain), and parietal lobe. Overall, the loss of brain tissue puts overweight and obese people at increased risk for Alzheimer's disease, dementia, and other brain disorders.

As if we needed more proof that gaining weight is bad for our health, researchers at the University of Pittsburgh used brain imaging to examine the effects of increases in BMI on forty-eight otherwise healthy postmenopausal

women. They found that women whose BMI went up following menopause were more likely to have a reduction in gray matter.

What is even worse is that our kids are becoming overweight or obese at an alarming rate. Studies show that a whopping 34 percent of children and teens are either currently overweight or at risk of becoming overweight, and more than 16 percent of kids ages two to nineteen are obese. Among younger children, obesity is skyrocketing. This is putting our children at greater risk for a variety of diseases and conditions that negatively affect brain function.

If you are overweight or love someone who is overweight, it is important to think of this as a life-threatening problem. Mind-set here is critical. Some anxiety, or brain alarm, is often necessary for people to take the actions needed to be healthy. I think it is also important to treat obesity like a chronic disease, because it is. And we need to think about being on healthy diets for life, not just for a few months to fit into a wedding dress or a suit for a special occasion.

When it comes to the brain, size matters. A smaller brain means reduced brain function, which can affect every aspect of your life—your relationships, your career, and your mood.

### **FAT IS MORE THAN JUST FAT**

I remember the first day of my anatomy dissection lab in medical school like it was yesterday. Some of my fellow students had weak stomachs and had to get the mop. Even before the vomit, there was a smell in the room unlike anything most of us had ever experienced. Some of the students were nervous. I was excited and fascinated. Anatomy and neuroanatomy were my favorite subjects. Irma was the woman who donated her cadaver so that my colleagues and I could become skilled physicians. Irma and I spent many, many hours together. I remember when I cut through her skin how amazed I was to see the bright yellow, greasy layer of fat below. I had no idea at the time that fat was anything more than, well, fat. Since that day in the fall of 1978, fat has taken on a whole new meaning. The fat on your body is not just an energy-storage reservoir; it is a living, biologically active, toxin-storing, hormone-producing factory, and more fat is definitely not better.

Fat produces the hormone leptin, which usually turns off your appetite. Unfortunately, when people are overweight, the brain becomes sensitized to leptin, and it no longer has a positive effect on curbing hunger cravings. Fat cells also produce the hormone adiponectin, which also helps to turn off appetite and increases fat burning. As fat stores increase, adiponectin levels

drop, and the process of burning fat as fuel actually becomes less efficient. In addition, fat cells pump out immune-system chemicals called cytokines, which increase the risk of cardiovascular disease, insulin resistance, and high blood sugar, diabetes, and low-level chronic inflammation.

Inflammation is at the heart of many chronic illnesses. The level of fat on your body, especially abdominal fat, is also directly linked with higher total cholesterol and LDL (bad) cholesterol and lower HDL (good) cholesterol. Together, insulin resistance, high blood sugar, excess abdominal fat, unfavorable cholesterol and triglyceride levels, and high blood pressure constitute the metabolic syndrome, a major risk factor for heart disease, stroke, depression, and Alzheimer's disease.

In recent years, it has been found that fat stores toxic materials, so that the more fat on your body, the more toxins you have. The more animal fat you eat, the more toxins you have as well. Also, fat tends to increase the amount of estrogen in your body, especially if you are male. Fat cells store estrogen. They contain an enzyme that converts several other steroid hormones to estrogen. Having increased estrogen makes it difficult to lose fat. Estrogen binds with a receptor on the surface of fat cells, which promotes the growth and division of fat cells, especially in your butt and thighs.

### **THIRTEEN THINGS ALL OF US SHOULD DO TO MAINTAIN A HEALTHY WEIGHT**

1. Know your type(s).
2. Get a complete physical and focus on having healthy vitamin D, DHEA, and thyroid levels.
3. Know your BMI and caloric need numbers.
4. Know the approximate number of calories you eat a day by keeping a food journal and calorie log and work on getting "high-quality calories in versus high-quality energy out."
5. Exercise four or five times a week, starting with walking fast and light strength training.
6. Optimize your hormone levels.
7. Get great sleep.
8. Use simple stress-management techniques.
9. Stop believing every negative thought that goes through your brain.
10. Use hypnosis to help keep you slim.
11. Take supplements to keep your brain healthy.

12. Using the advice in this book, keep your brain young and active in order to lose ten pounds.
13. Take control of your weight and do not let other people make you fat.

**1. Know your type(s).** From the more than 55,000 scans we have performed at the Amen Clinics, it is clear that not everyone with the same problem, such as obesity or depression, has the same brain pattern. The descriptions above and the questionnaire in Appendix B or at [www.amenclinics.com/cybcyb](http://www.amenclinics.com/cybcyb) will help you know your type or types.

**2. Get a complete physical.** Not the five-minute type, but a real physical where you spend time talking to your doctor about your health. Medical problems, such as being on certain medications or having a low or suboptimal thyroid, vitamin D, DHEA, or testosterone levels, or being depressed or anxious, can seriously sabotage any attempt to lose, maintain, or be at your ideal weight.

**3. Know your BMI and daily caloric need numbers.** This is critical. The basic principle of weight loss or weight gain is about energy balance. The BMI formula is given above. The Harris Benedict Formula is commonly used to help people understand the approximate number of calories a day they need to maintain their current weight. This is a key number for you to understand, because it will serve as a guide to help you lose or gain weight.

To find out your basic calorie needs without any exercise, your resting basal metabolic rate (BMR), fill out the following equation on yourself:

Women:  $655 + (4.35 \times \text{weight in pounds}) + (4.7 \times \text{height in inches}) - (4.7 \times \text{age in years})$

Men:  $66 + (6.23 \times \text{weight in pounds}) + (12.7 \times \text{height in inches}) - (6.8 \times \text{age in years})$

Take that number and multiply it by the appropriate number below.

1.2—if you are sedentary (little or no exercise)

1.375—if you are lightly active (light exercise/sports 1 to 3 days/week)

1.55—if you are moderately active (moderate exercise/sports 3 to 5 days/week)

1.75—if you are very active (hard exercise/sports 6 or 7 days a week)

1.9—if you are extra active (very hard exercise/sports and a physical job or strength training twice a day)

The total is the number of calories a day you need to maintain your current weight. Put this number where you can see it. This number helps to give you control over your health.

**4. Know the approximate number of calories you eat a day by keeping a food journal and calorie log and work on getting “high-quality calories in versus high-quality energy out.”**

People lie to themselves constantly about their food intake. They underestimate the number of calories they eat and subsequently, through ignorance or denial, ruin their brains and their bodies. I am not suggesting you count every calorie for the rest of your life, but I am suggesting that you use your brain to become educated about the calories and nutrition you put in your body, and then take control over them.

New York State recently passed a law making restaurants put the calories of their offerings on the menu. I love it! Why? It allows people to be informed consumers, to use their thoughtful brains rather than just impulsively ordering something because it looks good when their blood sugar and willpower are low. For example, when you look at the calories and fat in a Caesar salad, you realize it is not a healthy choice. Or, take one Cinnabon; it has 730 calories. My daily caloric intake needed to maintain my current weight is about 2,100 calories. If I have one Cinnabon a day, it fills more than 33 percent of my caloric needs with virtually no nutrition. Just knowing this fact will make me reach for a banana.

Likewise, knowing the calorie content of what you eat can help you make small adjustments that will make a big difference. Take having a Venti Peppermint White Chocolate Mocha at Starbucks. If you have them make it with whole milk and whipped cream, it is 700 calories! If you get a tall size of the same drink with nonfat milk and no whipped cream, it is only 320 calories, less than half.

To really know your calorie intake without cheating, keep a food journal where you write down absolutely everything you put in your mouth. Get a small weight scale and measure your portions of food. I can promise you that your idea of a serving will almost certainly vary substantially from what the food manufacturer puts on the label. Some of you may be thinking this is too much work. Yet I promise you it is worth the effort.

In our high school course Making a Good Brain Great, we have a lesson on

**ACTION STEP**

Remember that it is the little decisions about food that you make every day that often determine whether you are fat or trim. See the list of “100 Ways to Leave Your Blubber” for tips on cutting calories at [www.amenclinics.com/cybcyb](http://www.amenclinics.com/cybcyb).

nutrition. We teach the students that people gain weight when they eat more calories than they burn.

Calories in versus calories out.

Calories in = what you eat.

Calories out = level of exercise.

The average male teen burns about 2,500 calories a day, while the average female teen burns about 2,000 calories a day. If you eat more calories than you burn, you gain weight. If you eat fewer calories than you burn, you lose weight. Calories are key.

1 pound (lb) = 3,500 calories (cals)

1 lb weight gain = eat 3,500 cals more than burn

1 lb weight loss = eat 3,500 cals less than burn

For example, if you eat 500 extra cals a day (about one cheeseburger), you will gain a pound a week

You need to know approximately how many calories you eat on a regular basis, otherwise they can seriously get away from you.

***You cannot change what you do not measure.***

In one of the laboratory exercises for the high school course, we have students write down the foods they typically order from their favorite fast-food restaurants and then have them go online to [www.chowbaby.com](http://www.chowbaby.com) to find the nutritional value of those meals. Most students are shocked by what they are putting in their bodies. When my son-in-law Jesse did this exercise (he helped me develop the course and did his master's thesis showing that it is highly effective in helping teens develop pro-social attitudes), he found out that for lunch alone he was eating almost 100 percent of his daily allotted calories. This knowledge encouraged him to make some simple adjustments that have helped him stay within his allotted calories and maintain a healthier weight.

You typically hear doctors talk about “calories in” versus “calories out.” To be brain healthy, we must significantly upgrade this concept and think of “high-quality calories in” versus “high-quality energy out.” For example, having 300 calories from Red Vines licorice or 730 calories from one Cinnabon is not the same as 500 calories from a piece of wild Alaskan Copper River Salmon, grilled veggies, and a sweet potato. I consider Red Vines and Cinnabon antinutrition, while the wild salmon, veggies, and a sweet potato are

nutrition powerhouses. Likewise, “calories out” can come through taking supplements, such as caffeine or ephedra, to rev your metabolism and increase your stress hormones and anxiety and insomnia, or they can come from coordination exercises that burn calories and boost brain function. Aim for “high-quality calories in” versus “high-quality energy out”!

**5. Exercise four or five times a week.** One of the best exercises is walking fast. Walk like you are late, with periodic one-minute bursts of high-intensity walking or running. Some studies have shown that exercise can be as effective as antidepressant medications. The usual side effects of exercise are more energy and a healthier body. See Chapter 5, “The Exercise Solution,” for more information. Coordination exercises, such as dance or table tennis, are also great for your brain and body.

**6. Optimize your hormone levels.** Much more information on this topic is found in Chapter 7, “The Hormone Solution.” For now, let’s look at three essential weight-management hormones: insulin, leptin, and ghrelin.

Insulin is produced by the pancreas and is considered a storage hormone. It gets stimulated primarily in response to a rise in blood sugar. Its function is to take nutrients from the bloodstream and store them in the body’s cells. Insulin

### **ACTION STEP**

#### **Four tips to keep your insulin levels balanced:**

- Have frequent small meals throughout the day rather than a few large meals. Larger meals tend to cause a greater insulin response.
- Control your carbohydrate intake. The more carbohydrates in a meal, the greater the insulin response.
- Emphasize more low-density carbohydrates and fewer high-density ones. The low-density carbohydrates, such as broccoli, cauliflower, green beans, and carrots, have more fiber and fewer carbohydrates than high-density carbohydrates, such as bread, pasta, rice, and cereals.
- Glucose-balancing agents—such as chromium, alpha-lipoic acid, cinnamon, and ginseng—may help. Chromium is a micronutrient (meaning that the human body doesn’t need very much of it) that enhances the action of insulin and is involved in the metabolism of carbohydrates, fat, and protein. Alpha-lipoic acid is an antioxidant that may lower blood glucose levels.

**ACTION STEP**

Ways to boost leptin levels without causing leptin resistance:

- Improve your sleeping habits.
- Avoid excess sugar and bad fats.
  - Exercise regularly.
  - Take supplements, such as melatonin and omega-3 fatty acids.

Leptin is a hormone produced by fat cells that tells your body it is full. The more fat cells you have on your body, the more leptin you tend to have. Leptin works on the brain's hypothalamus to reduce your appetite when fat stores are high. When fat stores are low, such as after dieting, leptin levels are diminished, which causes a spike in appetite and sabotages weight loss. Leptin has been described as an antistarvation hormone because low levels lead to increased hunger. In the past, leptin was described as an antiobesity hormone, but researchers have since discovered that obese people, who produce large amounts of leptin, are often resistant to its effect in a similar way that some people are resistant to insulin. Leptin resistance may also result from overeating, as the hypothalamus becomes desensitized to its effects so you never know when you are full. Poor sleep also decreases leptin levels, which is interesting because many overweight people suffer from sleep apnea, a condition where people snore loudly, stop breathing frequently during sleep, and are

**ACTION STEP**

To stimulate the secretion of PYY3–36 in your stomach and help keep hunger at bay, eat with the acronym CRON (calorie restricted but optimally nutritious) in mind. For example, eating a 500-calorie spinach-and-salmon salad will keep you feeling full much longer than a 700-calorie cinnamon roll.

increases the uptake of glucose into the liver and muscles for storage as a substance called glycogen, and it also helps store excess glucose in fat cells. Since insulin is a storage hormone and not a mobilizing hormone, it also stops the body from mobilizing and using fat as a fuel source. Too much insulin stops fat burning. To maintain a healthy weight and burn fat adequately, it is important to keep insulin properly balanced.

chronically tired during the day. The lack of oxygen from sleep apnea is likely involved in lowering leptin levels. Poor sleep also impairs melatonin production, which can also lower leptin levels.

Ghrelin is a hormone secreted by the stomach that tells your brain you are hungry. I think of ghrelin as gremlins that force you to eat. In one study, when people were given ghrelin injections and then offered a buffet meal, they ate 30 percent more than they normally would! One of the main reasons it is thought

that people tend to put weight back on after a diet is that ghrelin levels increase during dieting. This results in uncontrolled hunger and subsequent overeating. Naturally reducing ghrelin, keeping the gremlins away, is essential to maintaining a healthy weight. The substance peptide YY3–36 or PYY3–36, which is also produced in the stomach, blunts the effects of ghrelin. PYY3–36 is increased by having frequent small meals.

### ACTION STEP

Pay attention to Chapter 13, “The ANT Solution,” to clean up the ANTs that are stealing your happiness and increasing your waistline.

**7. Get great sleep.** For all of the brain types, being sleep deprived ultimately will make you fat and less intelligent. See Chapter 10 for more information.

**8. Use simple stress-management techniques.** Chronic, unrelenting stress upsets everything in your body, from your weight to your immune system to your memory. See Chapter 11 for more information.

**9. Stop believing every negative thought that goes through your brain.** People with weight issues typically are infested with a lot of ANTs. See Chapter 13 for more information. For many, these negative thinking patterns are one of the primary sources of worry, stress, depression, and anxiety, which often contribute to overeating or erratic eating.

A former professional football player who came to see us as part of a brain imaging study I am conducting on retired NFL athletes was six feet two inches and struggled at a weight of 365 pounds. When I asked him about it, he said, “I have no control over food.” I asked, “Is that really true?” He said, “No, it isn’t really true.” I told him, “By saying or thinking that thought, I have no control over food, you just gave yourself permission to have no control over food and eat whatever you want.”

In the same way, I was recently at dinner with a friend who was morbidly obese and ordered a large plate of nachos smothered in cheese. His wife was trying to get him on a healthy food plan, but he said, “I don’t like any of that rabbit food.” I responded by asking him what he meant. He said, “You know, all those vegetables and fruits.” I told him that his way of thinking was giving himself permission to eat anything he wanted, and was going to kill him. “I don’t like paying taxes,” I said, “but I do it because I know there are consequences if I don’t.” Pay attention to your thoughts. They can help keep you on track toward your goals or completely give you permission to fail.

**10. Use hypnosis to help keep you slim.** When I was an intern at the Walter Reed Army Medical Center in Washington, D.C., one of my favorite teachers was the noted psychologist Harold Wain. He was the president of the American Society for Clinical Hypnosis and the chief of our Consultation-Liaison Service, the group of psychologists and psychiatrists who helped patients on medical wards who had psychiatric issues. Harold was a wonderful teacher. When he would use hypnosis for weight loss, he would help patients take their time to savor their food and drink. To patients in a trance he could describe drinking a cup of coffee in such a seductive way that it made them think drinking was as pleasurable as sex. He pointed out that people typically inhale their food and take little time to actually enjoy it. By using a simple, descriptive hypnotic technique, he could get people to slow down, feel full faster, and really start to enjoy the energy they put into their bodies.

I have personally been using hypnosis in my practice with patients for thirty years. To use it effectively for weight loss, it needs to be used in combination with a responsible weight-management program. There is also significant scientific evidence that suggests that hypnosis can be a powerful aid to weight loss. In one scientific review comparing a series of weight-loss studies with and without hypnosis, it was found that adding hypnosis significantly improved weight loss. The average post-treatment weight loss was 6.0 pounds without hypnosis and 11.83 pounds with hypnosis, nearly double. In a further follow-up period, the mean weight loss was 6.03 pounds without hypnosis and 14.88 pounds with hypnosis. The benefits of hypnosis increased over time.

Hypnosis can help people learn positive eating behaviors and create healthy long-term patterns of food intake. Some common hypnotic suggestions I give to patients include “feel full faster . . . eat more slowly . . . savor and enjoy each bite of your food . . . visualize yourself at your ideal weight and body . . . see the behaviors you need to do to get the body you want.”

In addition, hypnosis has been found to be helpful to decrease stress, anxiety, insomnia, pain, and negative thinking patterns, all conditions that increase the potential for weight gain. Brain imaging studies have also shown that hypnosis boosts overall blood flow to the brain, which, as you will see below, helps to keep the brain young and may help you burn more calories. On our website ([www.amenclinics.com](http://www.amenclinics.com)), you can find a series of hypnosis CDs and downloads that I have created for you.

**11. Take supplements to keep your brain healthy.** Taking nutritional supplements can make a big difference in your efforts to reach your ideal

weight. To all of my patients, I recommend taking a daily multiple vitamin/mineral supplement. Studies have reported that they help prevent chronic illness. In addition, people with weight-management issues often are not eating healthy diets and have vitamin and nutrient deficiencies.

I also recommend fish oil. Increased blood levels of omega-3 fatty acids from fish or fish oil have been recently linked to a lower incidence of obesity. Research results reported in the *British Journal of Nutrition* indicate that overweight and obese people have blood levels of omega-3 fatty acids that are lower than those of people with a healthy weight.

A considerable number of studies already support the benefits of the omega-3 fatty acids for heart, skin, eye, joint, brain, and mood health. In this particular study, researchers recruited 124 people of varying weights: 21 were classified as having a healthy weight, according to their body mass index (BMI); 40 were classed as overweight; and 63 were obese. People who consumed omega-3 supplements were excluded from the study. Blood samples were taken after the subjects fasted for at least ten hours. Researchers reported an inverse relationship between total omega-3 blood levels with BMI, the subjects' waist size, and their hip circumference. The researchers suggested that a diet rich in omega-3 fatty acids or omega-3 supplementation may play an important role in preventing weight gain and improving weight loss when used in combination with a structured weight-loss program.

Results from animal studies suggested that omega-3s may increase the production of heat by burning energy (thermogenesis). Another study suggested a role of omega-3s in boosting the feeling of fullness after a meal, and may help regulate the levels of hunger hormones like ghrelin and leptin, which impact appetite.

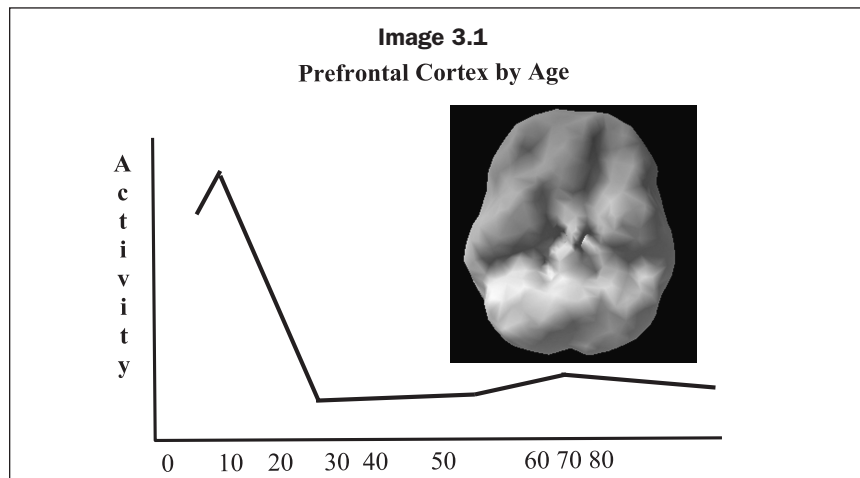
In addition, I recommend a craving supplement containing chromium picolinate, N-acetyl-cysteine, L-glutamine, and vitamin D and DHEA if levels of these are low. (See more about these supplements in Appendix C, "The Supplement Solution," and on our website: [www.amenclinics.com](http://www.amenclinics.com).) Then, depending on your brain type, choose the supplements, if needed or desired, that best fit your brain. See the table at the end of this chapter.

I only consider recommending medication or surgery for weight loss if nothing else is working. People who have mild to moderate weight issues are often able to get a handle on the problem through natural means, but sometimes medications—especially those targeted to your type—or even surgery may be needed to save your life. The medications for each type are listed in the Summary Table of the Six Types of Weight-Management Issues at the end of this chapter. Obesity is a life-threatening problem, and sometimes lifesaving

means are necessary. My friend Anthony Davis, a College Football Hall of Fame running back from USC, had bariatric surgery with great success.

There are several new weight-loss treatments currently being studied. For example, scientists are working on developing drug treatments that target abdominal fat. Another breakthrough technique involves brain surgery to treat obesity. Called deep brain stimulation, it delivers electricity to specific areas of the brain and has proved successful in eliminating or reducing tremors and tics in people with epilepsy, Parkinson's disease, and other neurological conditions. It has also been found to be useful in resistant depression and obsessive-compulsive disorder.

**12. Using the advice in this book, keep your brain young and active in order to lose ten pounds.** The brain uses 20 to 30 percent of the calories you consume each day. It is the major energy consumer in your body. Based on tens of thousands of brain scans that we have performed at the Amen Clinics, we have seen that the brain becomes dramatically less active as we age. In Image 3.1, you can see that the activity of the PFC peaks around age ten and then becomes less and less active. This happens in part because nerve cells are being wrapped with the white fatty substance myelin, which helps them work more efficiently, and brain connections that are not being used are pruned away. But this also happens because later in life there is overall decreased blood flow to the brain, which contributes to aging. This finding has also been reported by other researchers and may be one of the reasons why people need fewer calories with age.



This graph shows increased activity in the prefrontal cortex early in life, but dramatic decreased activity after age ten over the life span.

One way to lose ten pounds is to keep your brain young, healthy, and always challenged. By encouraging a youthful activity pattern and continually learning new things, you will keep your brain active, which will help you better manage your weight. So, learning a language or a musical instrument, playing bridge, or learning a new dance step all contribute to keeping your brain young.

**13. Take control of your weight and do not let other people make you fat.** My heritage is Lebanese. Like many cultures, Lebanese gatherings are often centered around and focused on food—usually tasty, high-calorie foods such as baklava, butter cookies, and rice fried in butter topped with tomatoes, green beans, and lamb. Too often, well-meaning, sweet people sabotage your efforts to maintain a healthy weight. “Eat this . . . try that . . . this is so amazing, you need to try just a bite . . . you are too skinny, eat more . . . here, have more or we will have to throw it away.” Your own lack of focus, anxiety, and desire to please others allows these people to contribute to your early demise.

I see these interactions nearly everywhere I go. We were in Subway for lunch on a recent vacation and the store had run out of the little toys that come with the children’s meal for our five-year-old. The clerk asked me if he could replace it with a cookie. I said, “No. Let’s do an apple.”

I was once at a store with a friend who asked me if I wanted an ice cream cone. I told her, “No.”

She said, “Are you sure?”

“As sure as I can be,” I replied.

When she came back, she had an ice cream cone for me.

“What part of *no* did you not understand?”

“The ice cream was on sale. I would get two cones for five dollars,” she said innocently.

“Toss it or give it to the poor,” I replied with a smile. “I get to have control over what goes into my body.”

She didn’t believe I would turn it down, but never disrespected my wishes again when it came to food.

Other people, at home, at parties, or in restaurants, often sabotage our efforts at health. Most of the times the behavior is innocent. Some of the time, it is because they feel uncomfortable being overweight and they would like you to join them. It is critical, if you want to be healthy, for you to be in control. Here are five ways to deal with people who, unknowingly or not, try to make you fat:

1. Be focused on your health goals. Before you go to a restaurant, party, or family gathering, know the approximate number of calories you want to spend on yourself.
2. Practice saying no, nicely at first: “No, thank you, I am full.”
3. If the other person persists, add a little more detail: “No, thank you, I am on a special program, and it is really working for me.”
4. If the other person is still persistent, pause, look them in the eye, and smile. Say something like, “Why do you want me to eat more than I want to?” That usually gets their attention. I was recently at the house of a friend who was very persistent. She asked me six times if I wanted something to eat. When I finally smiled and said, “Why do you want me to eat more than I want to?” she replied, “I am sorry, I just wanted to help.” She then realized she was not being helpful, but irritating, and stopped.
5. Be persistent. We train other people how to treat us. When we just give in to their offers for food—so that they can feel helpful and important, or so we do not feel anxious—we train them to invade our health. When we are firm and kind, most people get the message and respect our wishes. Additionally, it may give you an opportunity to tell them about the exciting new information you are learning in this book.

### IS FAT CONTAGIOUS?

A study published in the *New England Journal of Medicine* shows that one of the strongest associations in the spread of obesity is whom you spend time with. It is not a new virus that has been discovered, but the social and behavioral influence of your friends. The study was conducted using information gathered from more than twelve thousand people who had participated in a multigenerational heart study collected from 1971 to 2003. The study showed that if a subject had a friend who became obese, he had a 57 percent higher chance of becoming obese himself. That went up to a 171 percent higher chance if both friends identified each other as very close friends. Friendship was apparently the strongest correlation, and it didn't matter how far away geographically the friends were. Distance did not have a notable influence on the results. Sibling influence was also ranked high, with a 40 percent greater chance of becoming obese if another sibling was obese.

The study highlights the social network effect on health issues and makes an important point: Our health is heavily influenced by many factors, not the least of which are the role models around us. Whom you spend time with

matters to the health of your brain and your body. This powerful influence works both ways, it seems, as the study's authors also stated that the same network effect showed up between friends who were *losing* weight. Health-conscious friends improve their health and their friends' health as well. By taking the information in this book seriously, you can influence your whole network of friends and family.

If you lead the way to better health in your circle of friends, your friends may also benefit. The author of the study said, "People are connected, and so their health is connected."

SUMMARY TABLE OF THE SIX TYPES OF WEIGHT-MANAGEMENT ISSUES				
Type	Symptoms	Brain Findings/ Neurotransmitter Issue	Supplements	Medications
1: Compulsive Overeaters	Overfocused on food, worrying, have trouble letting go of hurts	Increased AC (anterior cingulate)/low serotonin	5-HTP, St. John's wort, inositol	SSRIs, such as Prozac, Zoloft, or Lexapro
2: Impulsive Overeaters	Impulsive, bored, easily distracted	Low PFC (prefrontal cortex)/low dopamine	Green tea, rhodiola, ashwagandha	Phentermine, or stimulants such as Adderall or Ritalin
3: Impulsive-Compulsive Overeaters	Combination of types 1 and 2	High AC plus low PFC/low serotonin and dopamine	5-HTP plus green tea and rhodiola	SSRI plus phentermine or stimulant
4: SAD or Emotional Overeaters	Sad or depressed mood, gets the winter blues, has carbohydrate cravings, loses interest, sleeps a lot, has low energy	High limbic activity/low PFC; check vitamin D and DHEA levels	SAME, vitamin D or DHEA if needed	Wellbutrin
5: Anxious Overeaters	Is anxious, tense, nervous; predicts the worst; eats to calm	High basal ganglia/low GABA levels	GABA, B <sub>6</sub> , magnesium	Topamax
6: Adrenaline-Overload Anorexics	High stress, system overload, can't sleep, diarrhea, fast thoughts	Overall increased activity in emotional brain/low-GABA, high-stress hormones	GABA, B <sub>6</sub> , magnesium, and phosphatidylserine (PS)	Depends on other needs

## The Weight Solution

### Weight Boosters

Thoughtless eating

Low vitamin D level

Compulsive eating

SAD eating

Anxious eating

Adrenaline overload

Only one diet tried

Low thyroid

Ignorance/lying to self  
on calories consumed

Low blood sugar, which  
leads to impulsivity

Insomnia or low sleep

Negative thinking, i.e.,  
"I have no control"

Sluggish brain

Lack of exercise

Being unaware of calorie content

Hormonal imbalances

Chronic stress

### Weight Trimmers

Restricted and optimally nutritious  
calories

Adequate vitamin D

Thought-stopping techniques

Finding healthier ways to be happy

Deep relaxation

Dealing with emotional issues

Tailoring the plan to your type

Optimal thyroid

Knowledge and honesty

Consistent blood sugar

Adequate sleep, at least seven  
hours/night

Honest, optimistic thinking,  
i.e., "I do have control"

Active brain

Physical activity at least four or five  
times a week

Counting calories

Balanced hormones

Stress-management techniques

See [www.amenclinics.com/cybcyb](http://www.amenclinics.com/cybcyb) for "100 Ways to Leave Your Blubber."