

CHAPTER FIVE

These observations would be academic and pointless if our friend never took the first drink, thereby setting the terrible cycle in motion. Therefore, the main problem of the alcoholic centers in his mind, rather than his body. – *Big Book of Alcoholics Anonymous, page 23*

The Mental Obsession

Over the past two chapters/sessions, we explored the science behind the physical allergy part of our disease. We saw how the cycle of insulin resistance and leptin resistance drive the phenomenon of craving, overeating and fat storage. We also saw how the starvation response compels us back into the food – especially after we've been abstinent for a while and have lost some weight.

Over the next two chapters/sessions, we are going to explore the mental obsession: the crazy, incessant food chatter in our heads. We are also going to look at the “strange mental blank spot” described in the Big Book that results in us picking up the food again even when we desperately don't want to. Please remember that the physical allergy and the mental obsession work together. Everything that I am talking about is going on all at the same time. That's what makes this disease so “cunning, baffling and powerful.”

So why do we go back to the food even when we don't want to? The short answer is two-fold: dopamine and the reward circuitry in the brain; combined with how the brain makes decisions

about food. We're going to look at both of these processes in this chapter.

The EFFECT

Men and women drink essentially because they like the EFFECT produced by alcohol. – *Big Book of Alcoholics Anonymous, page 24*

Nature has a well-defined plan for how things work. The goal of the design is the same for all life on the planet: to survive and reproduce. Nature does this by making you feel good – by giving you a chemical REWARD when you do something that increases your likelihood of surviving – like eating. In nature, when something feels good, it **IS** good. Feeling good is nature's way of guiding animals toward behaviors that increase their likelihood of survival and reproduction. Our brains naturally seek pleasure to feel good. We naturally seek that chemical reward.

Any action that produces a chemical reward will be learned and repeated. This learning operates completely outside of our conscious awareness. Science has found that obese people are more sensitive to the impact of the chemical reward of food. We get a bigger chemical reward from food than non-food addicts do. From the perspective of the chemical reward of food, there is no more rewarding food environment than our modern one. We are surrounded by and drowning in opportunities to score a pleasurable chemical reward – to score our fix – to get our EFFECT.



Brain Evolution and Food

Let's take a look at how our brains actually evolved to eat. The parts of our brains that make decisions about eating food developed around 560 million years ago - LONG before humans came into existence. Why is this important? Because it tells us that the parts of our brains responsible for making decisions about food are very old, very primitive AND very nonconscious. That's why we can't logic our way out of our food addiction and overeating.

Logic and conscious, rational thinking have nothing to do with our eating behavior. You THINK you have conscious control over your eating, but your brain is very good at giving you that impression. Remember what we saw in chapters three and four? Our hormones play a significant and nonconscious role in our overeating and bingeing behavior. Our brain's reward system also plays a powerful and nonconscious role as well.



Hunter-Gatherers

Natural selection gradually crafted our brains to seek as much food as possible with as little effort as possible – in other words – get the highest number of calories for the least amount of work. Human brains are ESPECIALLY tuned in to convenience. How many net calories am I going to get from this food and how convenient is it to get? Our brain regions that compute food value and determine our motivations to eat are stuck back in the stone age when we were hunter-gatherers and lived with frequent food scarcity.

Modern day hunter-gatherers like the Hadza in Tanzania live pretty close to the way our brains evolved to live with regard to food and eating. These tribes have been studied extensively to learn how our brains evolved to handle food and eating.

Moderation?

Hunter-gatherers don't understand the idea of moderation or portion control. They work really hard to eat the maximum number of calories possible. They eat everything they can get their hands on. Our brains evolved to seek foods that deliver the most calories per bite. The human brain is extremely preoccupied with calories. We've been wired by evolution to value high-calorie foods above all others. The human brain interprets high-calorie foods as highly desirable.

Humans evolved to prefer certain food qualities or characteristics. We naturally prefer foods that are highly calorie-



dense, fatty, carbohydrate-rich, protein-rich, sweet, salty and meaty (umami). These food properties shape our eating behavior by causing dopamine to spike in our brains (This is our chemical reward). Food triggers dopamine release in our brains, just like drugs of abuse. The more concentrated the foods are (processed, concentrated and refined) the more dopamine they release and the more driven we are to seek out these foods to eat.

The nonconscious parts of our brain perceive certain foods as so valuable that they drive us to seek and eat them, even if we aren't hungry and even in the face of a sincere (and often desperate) desire to eat a healthy diet and lose weight.

If all of this is true, why do hunter-gatherers stay lean? Why don't they become obese? They stay lean because they eat fewer calories overall, period. Their binges, when food is actually available, are balanced by times when they eat very little simply because they can't find enough food (food scarcity). So, what does this all mean? It means that overeating and bingeing are actually GOOD for them. It is a healthy thing to do when possible because it is not always possible. So, for most of human history, our instinctive drives to eat as much food as possible were completely in our best interests. It gave us our best chance at survival.

While a calorie-seeking brain is an asset when calories are hard to come by, it's a HUGE liability when you're drowning in food – when you live in the kind of 24/7 food-rich environment that we do. This is an evolutionary mismatch; a situation where once useful traits become

harmful when dragged into an unfamiliar environment.

The Hadza hunter-gatherers are much more physically active than we are in the industrialized world. They typically walk around 7 to 10 miles a day in search of food. BUT they burn about the same number of calories a day as a mostly sedentary westerner. Remember, the body is really good at adjusting metabolic rate to conserve energy.

Three Important Food Characteristics

The food our brains evolved to eat have three major characteristics: limited variety, unconcentrated and minimally processed. We evolved to eat only a limited variety of foods. We are now faced with almost 40,000 food items in the typical grocery store. Food variety has a powerful influence on our calorie intake. The more variety we encounter at a meal, the more we eat. Scientists call this the “buffet effect.”



We can eat our fill of one type of food (salty and savory) and feel full and satisfied. BUT when presented with a different kind of food (sweet), we can eat more. This explains why we can eat dessert even after we are stuffed. That's why buffets and potlucks have such binge potential – there are so many different foods available for us to eat.



We also evolved to eat unconcentrated foods. Food was eaten in a MUCH less calorie-dense, less refined and less rewarding state. Modern food is super concentrated. And these concentrated foods are combined together into completely irresistible concoctions like French fries, donuts, cakes and candy.

We evolved to eat food that was only very minimally processed. Our ancestors ate food either raw or they threw it on the fire - no fancy cooking, no fancy processing. Unfortunately, most of the modern food we eat is so processed that it includes numerous ingredients that we can't even pronounce.



Modern Foods

Modern food technology maximizes the rewarding qualities of food making it FAR more seductive to our brains than ever before in human history. We now have extremely calorie-dense, carefully engineered combinations of sugar, fat, salt and starch that would have been inconceivable to our hunter-gatherer ancestors.

Many of these modern foods cause a larger release of our reward chemicals than the human brain evolved to expect.

This may lead to addiction in susceptible people like us because our brains find food WAY more rewarding than non-food addicts. Modern highly palatable foods are calorie-dense, easily digestible and in highly concentrated form. Think ice cream, French fries, candy, chocolate and bacon. Our brain labels these foods as highly rewarding and so valuable that it keeps us eating them even when we don't want to.

Dopamine and the Reward Circuitry

From a science standpoint, what gives us this good feeling? The good feeling we get (our EFFECT) comes from the reward circuit in the brain. This circuit is located in the basal ganglia. Numerous neurotransmitters are involved in this reward pathway. Neurotransmitters are chemical messengers that make things happen in our body. The best known and researched neurotransmitter in the reward system is dopamine, but other neurotransmitters, like endorphins, get released and give us our feelings of pleasure.

The main way the reward circuit works is dopamine is secreted by the ventral tegmental area and moves to the nucleus accumbens. (Don't get hung up on the brain anatomy here, we'll go over it in the session.) From there, the signaling travels up to the prefrontal cortex to make us take action – in other words EAT. At the same time, other pleasure chemicals are released and we get that wonderful feeling. The more alcoholic food we eat, the more dopamine is released. As food addicts, we are constantly flooding our brains with dopamine and other feel-good chemicals.



Progression of the Mental Obsession

Because of the constant flooding of dopamine in our brain caused by our overeating and bingeing, our brain receptors for dopamine downregulate or thin out due to homeostasis. This process involves our brains trying to figure out how to deal with the ocean of dopamine constantly flooding them. Sound familiar? Our bodies are always trying to bring us back into balance.

Due to the thinning out of dopamine receptors in our brains, we get less and less of an effect from our binge foods. This means that we have to eat even more of our alcoholic foods to get any effect - this is the process of tolerance. It works the same for food as it does for heroin. This is why it seems like, after a while, nothing can ever scratch that itch we have.



Life Sucks!

Another reason (in addition to the starvation response) that we can't stay stopped after a period of abstinence is because life, when we are not getting our effect, feels bleak and awful! There is a feeling of "not ok" and of "need more". As the Big Book puts it, we are "restless, irritable and discontent until we can again experience the sense of

ease and comfort which comes at once by..." eating a few bites of alcoholic food. – *Big Book*, page xxviii-xxix

Good News!

Our dopamine receptors will regenerate. Our brains can heal themselves. BUT it takes months (and I mean months – some sources say up to 18 months) without ANY ingestion of our alcoholic foods (no dopamine flooding). Repeated slips into eating alcoholic foods provide the brain with what is called intermittent interval reinforcement. If we give our dopamine reward systems a fix of our alcoholic foods occasionally, our brains will constantly HOUND us to get us to eat again.

When the dopamine receptors have healed and we are eating abstinent foods, we will be getting a normal reward from the brain when we eat. It will be pleasant and enjoyable but we will NOT get that intense dopamine effect that we did when we were active in our disease.

For me, this is when the "mental obsession" is the trickiest. I've healed my reward system and I am eating abstintently. But then – WHAM – I am metaphorically punched in the face by life. Something happens with my job, my spouse, my kids, whatever. I feel awful! So now what do I do? The only thing my brain knows to do to make itself feel better is to eat my alcoholic foods. It is always the first suggestion my brain makes to me whenever I feel any discomfort.



A Little into the Weeds

Technically, dopamine itself does not produce our feelings of pleasure. Euphoric neurotransmitters called endorphins are secreted at the same time as dopamine and they cause our feelings of pleasure by activating our body's natural opiate receptors. They relieve stress and create a feeling of wellbeing (that ahhhhhh feeling).

Most researchers believe that dopamine is the chemical that teaches our brain what feels good – how to get that good chemical feeling. Dopamine helps our brain to learn that bingeing on our alcoholic foods makes us feel really good. Dopamine helps our brain connect the dots between eating our alcoholic foods and feeling pleasure and relief. This learning operates completely outside of our conscious awareness.

The more concentrated our binge foods are, the more dopamine they release along with the other feel-good chemicals. Our brains learn that overeating and bingeing on these foods makes us feel really good. Unfortunately, unlike our hunter-gatherer ancestors, using good feelings, or pleasure, as a way to guide human behavior doesn't work very well in the modern world. Our brains are pleasure-seeking missiles and modern foods are really, really, REALLY good at giving us that pleasure.

The "Decision" to Overeat or Binge

The striatum in the basal ganglia (again, don't get hung up on anatomy) is the ACTUAL decision-maker with regard to eating behavior. This primitive,

nonconscious part of our brains makes the decision that we are going to eat despite our conscious desire not to. Remember, this brain technology is 560 million years old.

Our striatum is deep in the middle of our brains. It is the decision-maker. All of the other nonconscious regions of our brain are constantly whispering to the striatum to get what they want: I'm hot, cool me down; I'm cold, heat me up; I'm thirsty, drink something; I'm horny, get me sex; I'm hungry, eat something. The striatum always says "no" to these whispers by default. BUT, when the whispers become a shout – then the striatum will decide to do the behavior. The striatum makes the decision and then sends signals to the prefrontal cortex to make it all happen. So, we only become consciously aware of the decision to eat AFTER it has already been made. Our prefrontal cortex starts to make the justifications and rationalizations of why we're going to eat even though we don't want to and it gets busy getting us our binge foods. All of this decision-making about food and eating is done below our level of conscious awareness.

So how does this decision-maker make us eat against our better judgment? Remember, the striatum always says "no" to all the different brain regions whispering to it automatically and by default. BUT, when the whispers become a shout – then the striatum pulls the trigger and decides to activate the behavior.



Whispers to a Shout

So how do these whispers become a shout? The striatum takes cues from three sources to make a decision: internal information, external information and previous experience. Here's my understanding of how it works for our eating behavior:

1. First, there's the leptin resistance which leads our brain to believe we're starving, that we don't have enough fat stores on our body for our survival. That's one whisper (from an internal source).
2. Then, because of our insulin resistance, our lipostat is set to a higher level of fat, so our brains want us to eat to keep that level of fat. That's another whisper (another internal source).
3. Then our thinned-out dopamine receptors lower our dopamine levels and make us feel awful and that everything is NOT ok. The brain knows from experience that eating alcoholic foods will relieve this feeling. That's another whisper (this time from a personal experience source).
4. Then, if we've lost a little bit of weight, now our brain starts to panic. It has a dire emergency on its hands. That's another internal source whisper and probably a very loud one.
5. Now all together, these whispers are yelling really loudly. Take all this and then add in the external food cues in our environment –

the candy dishes, the drive-thrus, the boxes & bags in the cupboard and all the food porn commercials.... all of these are external source whispers.

6. All of the whispers from all of these sources result in a very loud shout causing the striatum to pull the trigger on the decision to eat, sending that decision up to your conscious, thinking prefrontal cortex part of your brain – and before you know it, you are eating McDonald's fries and a pint of ice cream in your car in a random parking lot.
7. Because this decision went through our conscious prefrontal cortex, we believe that our binge was our conscious choice – that WE made the conscious decision to binge – but we didn't. We were only following orders.

Conclusion

I woke up. This had to be stopped. I saw I could not take so much as one drink. I was through forever. -Shortly afterward I came home drunk. – There had been no fight. Where had been my high resolve? I simply didn't know. It hadn't even come to mind. Someone had pushed a drink my way and I had taken it. Was I crazy? – *Big Book of Alcoholics Anonymous, page 5*

I believe the striatum decision-making process is the biological explanation of our “strange mental blind spot.” This is why it is so freaking important to set yourself up



for success. If you are trying to stop the overeating, bingeing process AFTER the decision to eat has been made by your striatum, then you will lose – but only 100% of the time.

***** During the workshop session, we will go over strategies to help us with our mental obsession and strange mental blank spot. *****

