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BRAIN CHEMICALS,
ADDICTIONS & FOOD CRAVINGS

WELCOME TO MODULE 5

BRAIN CHEMICALS, ADDICTIONS AND FOOD CRAVINGS

Have you ever wondered why we make the choices we do when it comes to food? This is a particularly interesting if not pertinent question when it comes to how and why we continue to choose foods we know are not good for us. Why do we continue to eat foods that we react to or feel terrible for eating? We know we will feel sick afterwards or suffer a headache or eczema flare or have our IBS triggered. We can eat foods that make us gain weight, even when we have a goal to lose weight. So why do we do it? Why do we choose foods that we know make us feel blurgh?

Underpinning our food choices are both energetic and biochemical aspects. We may choose certain foods (our comfort foods) to numb ourselves but we can also have cravings due to shifts in our biochemistry. Understanding a bit more about our biochemistry is a huge support when it comes to dealing with food choices and in this module we will be covering everything you need to know to make sure your biochemistry is working with you and not against you.



COULD YOU HAVE FOOD *Addiction?*

The concept of food addiction medically is hotly debated. Many say it's not a true addiction as you need food for survival. However, in most cases people who struggle with food addiction are not addicted to the more nutrient-dense, life-sustaining foods like quality proteins, wholegrains and legumes, fruits and vegetables. The problem arises with the hyperpalatable foods, rich in sugar, fat and salt. These foods are often quick to digest and have enjoyable qualities of sweetness, saltiness and richness. Experiments in animals and humans show that, for some people, the same reward and pleasure centres of the brain that are triggered by addictive drugs like cocaine and heroin are also activated by food, especially highly palatable foods.

Like addictive drugs, highly palatable foods trigger feel-good brain chemicals such as dopamine.

Once people experience pleasure associated with increased dopamine transmission in the brain's reward pathway from eating certain foods, they quickly feel the need to eat again. We can easily lose a sense of what we need to eat and of how much is enough. We can struggle with regulating our food choices and our quantity in a way that harms our health.

In the average healthy person, eating the odd bit of unhealthy food is rarely a problem (aside from food allergies of course). But when you're eating it regularly, or it becomes a habit or something you're struggling to stop, it can signal a problem.

Understanding FOOD CRAVINGS

A food craving is often defined as an intense desire to eat a particular food or type of food. Most of us have probably experienced a food craving at some point. We might describe ourselves as a chocoholic, or always needing something sweet after dinner. Perhaps you crave salty foods or just really love bread. With food cravings often once the thought of a particular food has entered your mind it becomes all consuming - it's all you want, and you're not satisfied until you get it.

Drivers OF FOOD CRAVINGS

Biochemically food cravings can be driven by many things and for many people there will be a combination of factors at play all at once.

Some of these drivers include. . . .

1. **BLOOD SUGAR FLUCTUATIONS**
- highs and crashes/cravings
2. **INSULIN & LEPTIN RESISTANCE**
3. **REWARD CENTRES IN THE BRAIN**
- dopamine signalling
4. **NEUROTRANSMITTERS**
5. **NUTRITIONAL DEFICIENCIES**
6. **FOOD INTOLERANCES/ALLERGIES**
7. **FOOD ADDITIVES**
8. **LACK OF SLEEP**
9. **UNHAPPY GUT**
- serotonin produced in the gut

EXPLORING YOUR RELATIONSHIP WITH *Food*

Question 1: What do you feel is the quality of your current relationship with food?

Question 2: Are there any foods you are struggling to let go of or feel you could never give up?

Question 3: Does your consumption of food, or certain foods mean you're gaining weight, or finding it difficult to lose weight? If so which foods do you feel this relates to for you?

Question 4: Do you find you eat food regardless of true appetite? Do you notice you actually feel hungry at times or allow yourself to feel hungry? Does this only relate to particular foods or to any food? Explain more. . . .

EXPLORING YOUR RELATIONSHIP WITH *Food*

Question 5: Have you noticed yourself continuing to eat foods which cause unwanted symptoms or make you feel unwell? If so, can you explore this more - which foods have you noticed, how do you feel when you consume these foods, why do you think you continue to consume them etc?

Question 6: Have you ever used certain foods to regulate your mood and/or energy levels? How do you feel when you do this?

Question 7: Are there any foods for which consuming them creates shame/guilt? Why do you think that is?

Question 8: Do you regularly choose addictive foods over more healthful, nutrient-dense foods? Can you describe a time where you have done this and what you were feeling in the moment?

COULD NUTRITIONAL DEFICIENCIES BE DRIVING YOUR *Cravings?*

Sometimes being low in certain nutrients can contribute to cravings:

PICA- EATING DISORDER *is a condition that causes people to eat non-food items like ice, dirt and sand, hair or chalk etc. It is often linked to anaemia, low iron and low zinc*

SUGAR AND/OR REFINED CARBOHYDRATES *such as bread & pasta has been linked with Chromium & Magnesium deficiencies. Supplementing Chromium has shown reduced hunger levels, food intake and fat levels plus decreased body weight, while Magnesium supplements can support with regulating blood glucose, improving insulin sensitivity and reducing premenstrual sugar cravings.*

SALT DEFICIENCIES *can lead to issues caused by low sodium, electrolyte imbalances & adrenal imbalances*

CHOCOLATE *cravings can be a sign of magnesium deficiencies and possibly chromium*



FOR THE *Chocoholics*

Often when we crave chocolate (as opposed to just something “sweet”) there can be a particular combination of things we’re after. While yes, cocoa is a source of magnesium, and craving chocolate is often linked to magnesium and/or chromium deficiencies it’s very rarely as simple as that.

If we’re being honest with ourselves, I think we all know it’s not the bitter cocoa bean that we are craving. It’s the unique combination of the cocoa with sugar and fat (often dairy milk) that tends to hit the spot. Cocoa is also a source of caffeine, as well as theobromine a compound really similar to caffeine, that has similarly stimulating effects on our brains.

Exploring your desire for chocolate needs to run deeper than “I must need a bit more magnesium”.

COMMON REASONS FOR TURNING TO CHOCOLATE:

- Low Magnesium Levels
- Fatigue
- Adrenaline
- Boredom or Lack of Satisfaction
- Sugar Hit

FOR THE *Chocoholics*

Why do you feel it's specifically chocolate you crave?

What type of chocolate do you go for? What could this mean for you?

How do you feel after consuming it? What's the feeling in your body?

When do you notice the pull to chocolate the most? Why is this?

What steps could you take to begin to re-evaluate and change your relationship with chocolate?

OPIOID-LIKE EFFECTS OF *food*

Have you ever considered the foods you eat could be having an impact on your brain similar to the effect of being on drugs?

This might sound absolutely crazy to some,
but for many others this may ring true!

The digestion of both gluten and cow's milk can produce compounds that have an opioid-like effect in our brain (they can mimic the effect of opiate medications like morphine). These medications are often used for chronic pain and can have the unwanted side effect of being highly addictive.

Casein exorphins (Casomorphins) are formed during our digestion of casein (cow's milk protein).

Gluten exorphins (Gluteomorphins) are formed during our digestion of gliadin (or the main protein in gluten grains). These opioid-like peptides create a similar effect to the body's natural opiates - endorphins (the feel-good chemical we get after exercise). The peptides create feelings of 'spaciness' - intoxication that makes you feel a bit zoned out.

After you eat a bowl of pasta or a milkshake, not only do you feel full, but you feel 'spaced out' or 'high'. This feeling is very addictive.

Just like opiate drugs, gluteomorphins and casomorphins can be highly addictive and removal of them from the diet can create withdrawal symptoms and cravings. This is often why these foods are so hard for people to let go of, even aside from the fact they're in nearly everything when it comes to processed food!

OPIOID-LIKE EFFECTS OF *food*

Question 9: What have you noticed about how your body feels when you consume gluten or dairy containing food?

Question 10: How do you think these foods affect you?

Question 11: Have you ever experienced a 'spaced out', 'numb' or 'high' feeling after them? Describe what you felt.

Question 12: If you have noticed adverse effects, how easy/difficult do you find it to limit or avoid these foods?

FOOD Intolerances

It has long been known that if we are intolerant to something, we may crave that very food. A craving for wheat can mean you are allergic/intolerant to wheat, this is interesting food for thought as wheat protein is one of the most common food allergens. How fascinating that we can end up craving the precise foods that we either: can't tolerate well, are allergic to, or our body is not capable of digesting efficiently.

While science is still understanding why this phenomenon occurs, it's believed we can become addicted to the chemical messengers secreted by immune cells in response to allergens in the body. The foods cause stress, our body produces adrenaline and endorphins, making us feel better. That makes us want to eat more of it, perpetuating the cycle. So even though it's putting a load on our body, we're also getting a little kick out of it.

Question 13: Are there any foods you feel you may not be handling well or react to? Can you reflect on your relationship with these foods and if there is any pull towards them?

Question 14: Have you noticed in yourself or someone else a real desire for certain foods even though they experience a negative reaction on consuming them? Pop down some examples if so.

ARE ADDITIVES FEEDING YOUR *Addiction?*

The food industry has many tricks up its sleeve when it comes to encouraging you to buy more of their products. Certain additives can change our taste perception of that food and contribute to a greater desire to eat more of it.

One such additive is MSG (Monosodium Glutamate, Monosodium L-glutamate, 621/E621)

MSG is used as a flavour enhancer in foods. It works via acting as nerve stimulants and will change how the taste buds taste food. They can make a bland, yucky or even really bad tasting food taste fantastic. It's used a lot in the food industry as it's very inexpensive itself and makes cheap food taste better!

While officially it's generally regarded as safe, there is much debate over just how safe this chemical is, so much so that it is required to be listed on food labels. We have seen many clients with MSG reactions over the years and this coupled with the mixed studies we feel is enough to warrant caution.

Whilst evidence is still conflicting, in some studies MSG has been shown to:

- Potentially lead to overeating (often due to the satisfaction of that savoury flavour)*
- Associated with an increased risk of metabolic disorders, primarily due to animal studies that have linked the additive to insulin resistance, high blood sugar levels, and diabetes.*
- Claims it can lead to brain toxicity by causing excessive glutamate levels in the brain to overstimulate nerve cells, resulting in cell death.*

Keeping in mind most studies showing negative effects are usually using exceptionally high doses, done in labs, rats or fruit flies so cannot be directly extrapolated to humans. It is likely something you need to feel out for yourself.

INGREDIENTS THAT ALWAYS CONTAIN MSG

- *Glutamic Acid (E 620) 2*
- *Glutamate (E 620)*
- *Monosodium Glutamate (E 621)*
- *Monopotassium Glutamate (E 622)*
- *Calcium Glutamate (E 623)*
- *Monoammonium Glutamate (E 624)*
- *Magnesium Glutamate (E 625)*
- *Sodium Glutamate*
- *Yeast Extract*
- *Anything Hydrolised*
- *Any Hydrolised Protein*
- *Calcium Caseinate*
- *Sodium Caseinate*
- *Yeast Food*
- *Yeast Nutrient*
- *Autolyzed Yeast*
- *Gelatin*
- *Textured Protein*
- *Soy Protein Isolate*
- *Whey Protein Isolate*
- *Anything "Protein"*
- *Vetsin*
- *Ajinomoto*

ARE ADDITIVES FEEDING YOUR *Addiction?*

Aspartame and artificial sweeteners can also wreak havoc with our cravings and relationship with food.

It is precisely because they are sweet, that they are known to encourage sugar craving and sugar dependence. We know that through repeated exposure to a particular flavour, it can train our preference for that flavour. The more we consume sweet things (even low calorie) the more we may be drawn to sweet tastes. This can lead to then craving and consuming more sweet things, many of which will not be low calories or “sugar-free.” Other studies have associated artificial sweeteners with increased appetite as well as increased food intake and weight gain.

Here’s how you can correctly identify them on food labels:

- *Aspartame: 951/E951*
- *Aspartame-acesulphame salt 962/E962*
- *Sucralose 955/E955*
- *Acesulfame Potassium (E950), Acesulfame K*
- *Saccharin (954/E954)*

Question 15: Have you noticed any adverse effects with MSG yourself? If so, how does it make you feel?

ARE ADDITIVES FEEDING YOUR *Addiction?*

Question 16: When it comes to foods with MSG in them, what have you noticed in terms of how easy or challenging it is to regulate the amount of these foods you consume?


Question 17: What have you learnt about MSG and artificial sweeteners you didn't know before?

Question 18: Are you aware of potential sources of added MSG or artificial sweeteners in your diet?

PANTRY Challenge

1

Make some space in your week to go through your pantry, fridge & freezer, and read the labels of all of the pre-packaged foods, sauces, stock bases, herb mixes etc. while using your new knowledge of MSG and artificial sweeteners (and the numbers/other names that may be labelled on packaging), see if you can identify if any of your regular purchases contain these foods. List them here.



2

Next time you need to replace one of the items listed above, see if you can find a better alternative while doing your shopping. Often there are cleaner brands for many of the items we stock in our cupboards, fridge, and freezer. It's just about knowing what to look for and seeking out the better options.

MAKE THE SWITCH EASILY AND NATURALLY IN A WAY THAT MAKES SENSE TO YOU. NO NEED FOR GUILT OR OVERWHELM JUST THE WONDERMENT OF A NEW ADVENTURE.

HOW DOES *Stress* AFFECT OUR CRAVINGS?

Have you noticed that when you're feeling stressed, your habits regarding food and your food choices can change? Perhaps you lose your appetite, or find you eat a lot more.

If stress is from a big to-do list or busyness, it can leave us feeling pressured and time-poor meaning we lean towards convenience and quick foods, takeaway and often caffeine or sugar to keep us going and in momentum. . . but then we might have trouble switching off and getting good sleep. We might turn to alcohol to wind down and need more stimulants the next day due to added fatigue.

It's been well documented that chronic stress is related to an increase in food cravings and has been proven to:

- *Change our dietary habits – As mentioned above we tend to go for comfort food, quick options and caffeine to function (especially if we're not sleeping well). People will often use alcohol to switch off as well – this affects our nutritional intake/availability*
- *Impact our hunger signalling*
- *Deplete magnesium (increased need during stress)*
- *Reduce alkaline minerals*
- *Increase Cortisol – affects blood glucose levels and can lead to insulin resistance (sweet cravings)*



HOW DOES *Stress* AFFECT OUR CRAVINGS?

Now that we've touched on the changes stress can have on your body and it's cravings, take the time to reflect on the following questions.

What do you notice in your body when you're under stress?

How frequently would you say you feel stressed or feel your body experiences stress and how do you feel this frequency impacts your food choices?

What impact does stress have on your appetite? Can you describe any changes in your digestion or how food feels in your body when you're under stress?

What impact do you notice stress has on any food cravings or your food choices? How does this make you feel, physically as well as emotionally?

COULD YOUR *Cravings* BE A GOOD THING?

Have you ever tried to justify a food craving you've experienced by saying "there must be something in it I need"? Is there any merit to the idea that we crave something because we really need it or the nutrients it contains? If there is, then how on earth are we supposed to know if it's a true sign we need something within that food versus an imbalance/trigger?

It's important to remember that not all food cravings are misdirected. The challenging part is knowing when our body is sharing its inherited wisdom with us vs the cravings we can experience when we are out of balance. Once you have been addressing your health for a while and have replenished nutritional deficiencies, stabilised blood sugar and insulin resistance, repaired damaged gut lining, restored digestive function then you are going to be a much better judge of your cravings. When your body is in a balanced state we can learn to trust ourselves a little better.

A good gauge is a calm knowing, not a desperation, for a certain food or food group. Often thinking about how you will feel after you eat it can also be a good guideline - if you know you will feel sick after it, it's unlikely to be from a true need. You might feel like you're craving a steak, or feeling you want to eat a lot more green vegetables, or wanting to add lemon to your salads or greens etc. It might be an inner knowing that a certain food is working for you right now and you feel drawn to it. Ultimately it should leave a settled, nourished feeling, and not come from a place of compulsion or urgency.

If you're ever unsure, try to delay where possible, and if hungry eat something with some quality protein and fat and see if the pull is still there later.



WHAT ARE YOUR CRAVINGS TELLING *You?*

Question 19: What is your relationship with your food cravings and ability to decipher their messages? Do you trust your body and the signals it sends you regarding certain foods?

Question 20: When have you felt a craving you knew to be a sign from your body of something you needed?

Question 21: How did this compare to any cravings you have experienced that you know have not been true in relation to your body's need?

UNDERSTANDING
YOUR
Drivers = YOUR
FIRST STEP IN
BECOMING
FREE OF
Cravings

The more we can understand the WHY behind our food choices and food cravings the better equipped we will be to begin to change it. If we understand the cause behind something, we can address it, bringing lasting change.

The first step is awareness. When we can understand and observe without judgement then it empowers us. It empowers us to make the changes needed and to not feel like a victim to our food choices. Try to look for your patterns and triggers. Is lack of sleep or stress a big factor for you? Do you feel there could be an opioid-like or food intolerance type of reaction creating a pull towards certain foods?

The more we can explore this with an open mind, the more insight we can gather without adding to a sense of guilt and shame.

GETTING TO KNOW YOUR *Drivers*

Reflecting on all you have learnt so far, what do you feel is contributing to your food cravings currently?

Are there any potential drivers of cravings you feel may need further investigation? If so, which do you feel stand out as needing to be explored further?

What have you learnt about the biochemical drivers of food cravings you didn't know before?

How has this new knowledge changed things for you?

Where do you feel you need more support?

What are some steps you can take to make changes and seek the support you need?

“The sooner we can start to support ourselves, the better it’s going to be for our health. One of the most important things we can do to support ourselves is try to understand why we do the things we do. The more you can understand and observe without harshness or judgement, the more power you have.”

Sandi Cooper



WHERE TO NEXT?

Write down the biggest realisation you had as a result of this module.

MODULE 5 - CHECKLIST

- Watch the Module 5 Webinar
- Complete the Module 5 workbook
- Complete the Pantry Challenge