Module 7 Transcript

Vices, Habits, and Substances

"Even the most fickle are faithful to a few bad habits."
-Mason Cooley

Wake up. Put on coffee. Pour into cup. Lighter out. Smoke, or vape maybe. More coffee. Work. Break. Smoke. Eat. Smoke. More coffee. Happy hour. Beer. Smoke. Another. Home. Night cap. Smoke. Bed.

As a society our relationships with vices is a complicated one, particularly when it comes to legal substances. And as the ever-evolving lenses of biological understanding, cultural approval, and social norms continue to shift, it raises the question: What does it mean to have a drink? Or to take a drag? And what, in the end, are these substances doing to our brains?

Nicotine and alcohol. One a stimulant, the other a depressant. Both inextricably tied to the history of our species and the modern social construct. Both, on a foundational level, used primarily as mood controllers. Alcohol is as old as human civilization itself. In ancient Egypt, China, the Americas, and Mesopotamia, alcoholic beverages were fermented from the local commodity crops. And as empires rose and fell, and generations turned into millennia, these alcoholic drinks remained a constant--a source of culture, of calories, and of social catalyst.

Tobacco enjoyed a millennia-long history of cultivation in the Americas, before spreading to the rest of the world, and by the 1800s was a global economic and social powerhouse. By the 1880s, in fact, "tobacco excise tax accounted for one third of internal revenue collected by the United States government." But what, precisely, does this seemingly innocuous plant

do? We know it's addictive. We know it's dangerous. But what, on a fundamental level, happens to a brain when it comes into contact with that...pungent smoke?

This is nicotine, the primary active ingredient in cigarettes and other tobacco products. Each cigarette provides the user with about one and a half milligrams of nicotine, less than a couple drops, but it's enough. In larger doses, nicotine can be deadly--it even has uses as a pesticide--but in these more controlled doses, its effect is more subtle. Once the smoke from the cigarette enters the lungs, the nicotine is absorbed by the bloodstream and transported to the brain nearly instantaneously.

Nicotine acts as a sort of false neurotransmitter, increasing brain activity and triggering the release of dopamine. Naturally, this creates a pleasurable, calming sensation.

Alcohol works in much the same way. Only, in its case, instead of increasing brain activity, the ethanol molecules in alcohol actually bind to the neurotransmitter GABA, slowing everything down to a crawl. Particularly, it inhibits regions related to rational thought, memory, balance...and yes, it increases endorphins.

So the reason people drink, the reason people smoke, is fairly obvious. It's because they work.

They calm us down or they perk us up. Oftentimes when people in my practice talk to me about their alcohol consumption or their use of tobacco, they are quite nervous to talk to a physician about this. But I understand these substances enter into people's lives for a reason. Alcohol, so commonly is used to help us with social anxiety, or when we're feeling down or blue or can't sleep. It's something that almost immediately calms us down. I also like to hear when people started smoking. So often, it's a period in their life when they were looking for more focus or energy or struggling with their mood. Almost always, alcohol and

nicotine come onboard when people are trying to take care of some aspect of their mental health, even though that might sound counterintuitive given the risks and the effects long term we know of both alcohol and nicotine.

And while the negative effects of both alcohol and tobacco in relation to overall body health are widely, wildly prevalent in both media and social discourse, it's lingering effects on the brain tend to take a back seat. Increases in inflammation, for instance, are linked heavily to both smoking and drinking.

And as the negative effects of these substances continue and grow, and dependency increases, the feel-good effects grow thinner. With smoking, each puff represents less of a hit to the system than the one before it. As nicotine receptors in the brain increase, the craving for each new dosage of the drug increases. This creates a self-fulfilling cycle that most find hard to break through. Likewise, alcohol fosters dependence, and the single Friday night stout no longer has the effect it once had.

The central irony of both alcohol and nicotine comes into play when you realize that they both foster, and exacerbate, the very issues they're meant to treat. Yes, treating an anxious, racing mind with a drink or two can mask these symptoms in the short term. But once the effect wears off--and it will, more quickly than you think--psychological symptoms show up. This sometimes mild, sometimes less mild withdrawal is linked to measurable swings in mood, increased anxiety, and agitation. Sound familiar?

And whereas a lifestyle that completely avoids cigarettes and other nicotine products has received universal endorsement across the medical community, there exists a strange, borderline irresponsible distaste for asking people to teetotal entirely: the paradigm of the responsible, social drinker. But the line for moderate drinking is probably less than you

think. The CDC defines it, on average, as a single drink for women, or two for men, per day. And if you drink the hard stuff, that drink's smaller than you may be picturing.

And then there are other, even more ubiquitous drugs. Consider caffeine, the most widely used modern stimulant. The average adult male consumes over 250 mg of it per day, and the effects on the brain can be tremendous.

While the half-life of caffeine is just 6 hours, consuming caffeine in the afternoon leads to significant interruptions in sleep and the way that your brain cycles through sleep. All to say – that cup of joe or cup of tea in the morning really is having profound effects on your brain throughout the day, not just when you're feeling it's stimulating effects. And lets not forget, caffeine is not just in coffee. You find stimulating molecules and natural caffeine in lots of tea and even dark chocolate. And while this is much less stimulation than what you get in a cup of coffee, if you're struggling with anxiety or energy, looking at the ways your food contains caffeine is a huge and important step. In fact in my clinical practice one of the first things I do with patients after taking their history is understanding their use of caffeine and other natural stimulants, and for most patients really recommending that they get control of these unnatural ways of getting energy and instead swap them out for the types of techniques we're going to talk about in this course.

Speaking about unnatural energy, no discussion on healing the modern brain would be complete without mentioning sugar. Sugar is in almost everything these days. You'd be hard pressed to walk down a grocery aisle and find a packaged food item without added sugar. So let me cut right to the chase – sugar is not brain food. And while the brain is wired to crave sugar, and researchers even categorize sugar as addictive, eating simple carbohydrates, think chips, pastries, soda and other sugary foods actually causes increased inflammation and a greater risk of clinical depression and anxiety. In later modules we'll

cover the specifics of nutritional psychiatry and how to properly nourish your brain for better mental health.

This is the part where you're probably expecting me to give a lecture on hard teetotaling. Instead of laying down hard rules, I encourage mindfulness. Remember, mental fitness is about asking the question: *what can I do to be more content, and have a life I enjoy more?* So, ask yourself: Why do I drink, or, why do I smoke? It's a harder question to answer than it first appears. The obvious first answer is, "Because I like the way it feels." And, fair. Again, the only reason people use drugs of any kind is because they work. But consider this on a deeper level. On a net level, would you feel better if you cut down? Maybe stopped entirely?

Have you thought about taking a break for a while? Or giving yourself and your brain the experience of a life that is free of nicotine or alcohol?

Here's the closest I'll come to a firm prescription. If you're struggling with mood, or you're experiencing brain fog, or you're simply not feeling the best you can, take some time off your substance of choice. By removing the mood controllers for even just a few days, you can begin to understand and better conceptualize the workings of your own brain and the effect of these substances on it. Certainly, as you try and titrate down from using alcohol or nicotine, you're going to encounter some of the effects of going into a chemical withdrawal, but those short term challenges are going to reveal long terms benefits for you, for your brain and most importantly for your overall sense of mental health and mental fitness.