Advanced Clinical Focus: Mental Health and Neurology
Transcript – Class 4 Part 1

0:00
I think we've all experienced some level of anxiety in our lives. It's kind of the response that we have when we get threatened by something in some way. It's a very, very ancient system that's in our body that helps us to deal with a threatening situation and anxiety, that feeling of tension is a byproduct of that. The problem arises when anxiety takes over our lives, when we become anxious in situations where it really affects our performance, or affects our quality of life, or affects our relationships, and that's where we need to address it and attack it a little bit more head on. So let's look at some of the symptoms associated with anxiety.

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Well, first of all, there's excessive and persistent nervousness, worrying, fear, irritability, sleep disturbances, and apprehension. So a lot of these have to do with the activation of what's called the fight or flight response, the activation of the adrenal glands; fear and irritability. Why would you need to sleep or want to sleep if you're being threatened? Oftentimes, excessive and persistent nervousness ensues, so we need to get these things under control when they're running our life, and that's what we're going to talk about here.

1:34
Some of the physical symptoms people experience are sweating. Sweating is a response of the sympathetic nervous system, palpitations, so the heart can be affected in terms of how it's beating, chest pain, fatigue, when it's prolonged headaches. Shortness of breath; our breath, is directly correlated to the activation of our nervous system. So when we're more stressed, when we're more anxious, our breath gets a lot shallower. So that can cause a shortness of breath. Also, muscle tension, oftentimes, people hold a lot of muscle tension up in the neck and in the shoulders, especially when they're anxious, or nervous or anticipating something.

2:22
What are some of the causes of anxiety? Well, there are psychological causes, remember that we always want to think about those two pillars of mental health, the mental, emotional, spiritual, so what is the way that we're actually perceiving the world. What are our psychological faculties, that process what's coming into our nervous system? Most people get anxious going up on a roller coaster on the up; that's sort of the point of it, but it's very short lasting. I bet you if you rode that roller coaster 100 times that anxiousness would be decreased, because our perception of that experience changes somewhat. Medical conditions can cause anxiety. Certain medications can cause anxiety, we saw that certain medications can cause depression, it can also cause anxiety. Alcohol, can affect anxiety, and other psychiatric disorders. So again, we want to think about these two pillars,

the mental, emotional spiritual, how our environment has affected us, what kind of lens we see the world through, and of course, the biochemical side of things, and how that may affect someone's anxiety. A couple of neurotransmitters to be aware of that do have some involvement with anxiety are norepinephrine and serotonin.

3:52
Now to hone in on anxiety in a bit more detail, we have to understand this adrenal cascade, this effect of stimulating the adrenal glands. So as we spoke and covered when we were talking about the molecules of emotion, we have the stimulus that comes into the nervous system. For example, for someone who is just beginning their training as a Marine, they might be quite stimulated and get quite anxious and get a major adrenal release from a combat situation. But for someone who is a trained marine and maybe has been to a number of wars or been on a number of tours, they can have a much different perception of that situation. It'd be the same with a football player, if you put me in a line against another football team and said, try to do your best, I would probably freak out with a 300-pound guy running towards me. But If I was trained to act within that team and to know what to do when a play starts, I would probably be a lot less anxious. So the stimulus plays a very important role here. And then that stimulus can either cause a rest and digest, stop and think situation, an activation of the parasympathetic nervous system, or that fight or flight or flight mode, which is an activation of the sympathetic nervous system, which releases a whole bunch of stress hormones.

5:32
Stress hormones, are released by the adrenal glands, and the adrenal glands can get tired. If I went to the gym and worked out my right bicep every day, at first, it might get a little bit bigger, get a little bit stronger, but eventually, it would start to atrophy, it would start to shrink and shrivel, because I'd be stressing it too much. But it's the same with our internal organs and it's the same with the adrenal glands. The adrenal glands can actually atrophy and shrink over time, and when that happens, they lose their function and we have to work to bring those things back to life so that we can deal with stressful situations a lot more appropriately, and therefore not get as anxious as easily.

6:21
A key aspect in healing the adrenals is balancing blood sugar. We've talked about this multiple times throughout the course and now we're going to discuss a little bit more on how to do that. So we need to observe a low glycemic index, low glycemic load diet. And I'm going to explain a little bit about what the difference between index and load because these terms can get used interchangeably, and they're somewhat different things. So let's first talk about glycemic index.

6:57
The glycemic index is the speed at which a food is going to convert into blood sugar. So really high up there on the glycemic index is white potatoes, they get into blood sugar like that, they spike it up really quickly, almost as much as white sugar. Now, if we were to kind of pick our meals, we find that yams, another type of, I guess, potato is a lot lower down on the glycemic index, it doesn't raise blood sugars quickly, it's a lot slower burning. That's the glycemic index, sort of the comparison of these two. I might choose to have a yam instead of a white potato to help my blood sugar a little bit better. But then some problems arise if I want to consume the whole bushel of yams, and that's the glycemic load. So the Glycemic Load looks at the quantity of have that carbohydrate. For example, if I have one yam, it might not be such an issue, but if I have four yams, all of that carbohydrate, even though it's a low glycemic index, is going to end up in my bloodstream at some point. It's quite a large load, so we have to make sure that individuals with any mental health issue balance their blood sugar, so that they're even keeled. And let's further this and look at why this is so important.

8:33
So this is sort of the turn of events that occur when someone is hypoglycemic. They eat their white bread, or their white potato or their sugar, it spikes blood sugar, that gets diverted to the liver or the muscle tissue to be stored, or the pancreas releases a huge amount of insulin to bring it back down. Then, once we're in a blood sugar crash known as reactive hypoglycemia, we have an activation of the fight or flight response. The adrenals get stimulated to bring blood sugar back up. We also feel like crap at this point; you're more anxious, which is what we're discussing here. You might get dizzy, headaches, can't think as well, might be shorter tempered. So we really need to work to control this blood sugar rollercoaster, or else anxiety is going to happen often. I've worked with a number of clients where the only thing we've done is fixed up the diet, balanced blood sugar, and their anxiety has gone away. I wouldn't say that happens with everyone, but I have seen it happen. Reactive hypoglycemia can contribute and cause chronic anxiety. There is a wide body of research to show this. So very important to control that blood sugar as a first step.

9:15
Here we have caffeine visiting us again, so its effects can actually mimic those of anxiety. Anyone that I'm working with who has anxiety, coffee comes right out of the diet. Caffeine can stimulate the stress hormone, it's an adrenal stimulant, it releases stress hormones, which brings sugar into the cells and makes us feel more awake and more aware. So we have to get rid of the coffee if we're going to heal those adrenals as well.

10:34
Now, how do we heal the adrenals? There are a number of ways to heal the adrenals, and the key is that we want to engage in eustress and things that help to bring us more into the parasympathetic mode; we want to avoid distress. We

want to maybe work on changing our perceptions. We've talked about cognitive behavioral therapy, which can help with that. Many self-help books can also help with that. Audio books can help with that as well. So changing the way we perceive the world, questioning our negative thoughts, and questioning our preconceived notions. Avoid triggers that might stimulate the adrenal. So bright lights and loud noises can really stimulate the adrenal glands. Making sure you're following sleep hygiene guidelines. We're going to talk about sleep hygiene guidelines in more detail when we cover insomnia. Avoid stimulants like caffeine, sugar, alcohol, anything that's going to stimulate you. Balance work with play. So you got to work hard, you got to play hard, right? Learn to say no. No can be a very powerful word because when you say no, you allow yourself to do what you want to do. Resting is so, so important, we need to get good sleep, we even maybe need to throw in a nap during the day.

12:06
Some other really useful tools for healing the adrenals is heart rate variability. So there are devices that can actually help you measure how much you're in sympathetic mode and how much you're in parasympathetic mode. They look at heart rate variability. Meditation can be very useful, it helps us to calm the mind, get us into that parasympathetic mode. The right type of exercise. So I wouldn't say that one type of exercise is right for everyone. Some people really enjoy yoga. If they're really adrenal fatigue, they might need to do more restorative yoga. Some people like to go for a 20-minute run or a walk, it really depends on the individual. Deep breathing can be really effective. We talked about how in the stress response our breathing gets really shallow, and that creates hormonal responses. Well, we can do the opposite, we can actually consciously control our breathing and that helps to put us more into a parasympathetic mode. Music can be very healing and actually activate certain parts of the brain. So one of the things I love to do during a work day, is if I find my brain fatiguing a little bit, I actually put on some really good music that I like to perk it up again. And it activates some brain cells and gets me going again. But it can also be used to alleviate anxiety. Calm environments are really critical, a place where you can decompress and relax and kind of unwind. Nature can be one of those environments, even the craziest phenomena of nature, a thunderstorm or a waterfall are somewhat relaxing at some level. And socializing can be really helpful as well. So hanging out with people that really nourish you and help you and help build you up.

14:01
We talked about exercise being really important for people who are depressed. Well, it can be really great for people who are stressed as well, or anxious. Again, it's very easily accessible and has a profound impact on physiology. Low to moderate exercise is most effective when done for about 15 to 30 minutes, three times a week or more for about 10 weeks or more. This is a study that looked at jogging, swimming, cycling and walking, and it helps to increase body temperature, brain perfusion, so increasing all the nutrients it's bringing to the

brain, and it helps to impact the adrenal response. So many good benefits of exercise. Really, really great for anxiety.

14:52
What about food allergies? Is there a role to play with anxiety? Well, there seems to be a very strong association between certain foods that people react to, and their level of anxiety. This is one case study that looked at a 41-year-old woman, she had a 15-year history of anxiety attacks. Her symptoms came every two to three weeks or so. She was weak and tired for about one to two days after, and the attack subsided when she avoided dairy, and corn. Dairy and corn are up there as one of the top allergens along with wheat, soy, and even beef and sugar for some people. So making sure that we maybe take out some foods that might be causing an allergic reaction or some type of immune response. When our immune system gets activated, that releases a whole bunch of inflammatory compounds. And we know now what inflammation does to the nervous system, right? So very important to eliminate foods that might be causing an issue. What about in children? Well, food allergy was found to be the cause of nervousness in seven out of eight infants and children in this study. Once they remove those foods, the nervousness went away. So food often has a big role to play.

16:24
What about the microbiome? We've got bacteria living all over us and in us. Well, they found that candida can actually cause anxiety as well. And we're learning more and more about how these bacteria, fungus, yeast, parasites, and viruses that live within us, can actually affect the way we think. And we're going to talk more about that a little bit later on in the course.

16:56
Here are some really key critical nutrients that can help with someone who's anxious; making sure that we cover the wide variety of B vitamins, folic acid, maybe even consider a B complex. We can use magnesium, fish oils, again, to help build the nervous system and maybe 5-HTP to if depression is a component of that.

17:20
There are a variety of herbs that are really helpful for anxiety as well. I remember a while ago, when I was working in the health food store, there was one day I came in and all of the passion flower was sold out. Not only that, but we had orders, like pages of orders for passion flower. And I asked my colleague, I said, what's going on with the passionflower? Why can't I find any? And they said, well, yesterday, an episode of Dr. Oz aired and he mentioned how powerful passionflower is for anxiety and depression. So people just came in and bought it all up. But these herbs are known as nervines, and they help to relax the nervous system. Passionflower, this is actually a picture of passion flower here, it's a beautiful flower. The first time I saw it, I was just blown away. Valerian root, which we have talked about for some of its sedative effects. Lemon balm, which can be infused as a tea, it also is a really nice herb. Grows beautifully in a garden

and has a wonderful aroma. Catnip, which is actually used for cats to rile them up and make them hyper and whatnot. And lavender and hops. Lavender is a great aromatherapy, so you can use these things as essential oils as well. There are some really great formulas out there that have combined all of these herbs, and when these herbs are combined, they actually have a synergistic effect. So you can use herbs in isolation, you can also use them together.

18:57
Finally, for our discussion for anxiety, I just want to bring your attention to how our body position can actually change our hormones in the body. Amy Cuddy is a researcher who's done a lot of work with this, and she's discovered that a few key poses can actually increase testosterone, decrease cortisol, and really affect the nervous system in that way. So there's this one position called Wonder Woman or something with the hands on the hips. Also, if you put your hands behind your head like this, that's a power pose. Open poses, that really open up the body can actually change our hormones. So this is easy, it's free, it's simple. We can advise our clients to literally, if they are nervous for a meeting, or for doing a presentation in front of some people, they can go into the bathroom or go somewhere where no one can see them and just stand in one of the power poses for a few minutes, and it has profound impacts. So that's just another little good tip that can create quite an effect on the nervous system.

20:18
Anorexia nervosa is a condition that can really degrade on an individual's health slowly, but surely, and there are definitely some key underlying factors that might be at play here. Let's start to explore those.

20:32
First of all, anorexia nervosa is defined as a low body weight. The individual has a disturbed body image. So they see themselves a lot larger than they actually are. And that's a constant theme, usually, and they have an intense fear of weight gain. It usually involves food restriction, so limiting calories substantially, maybe even counting calories and being obsessive about making sure that they don't get too many calories. Vomiting is sometimes part of it; technically, the vomiting aspect is called bulimia, and often the two go together. Now a person can have anorexia nervosa without the vomiting and a person can have bulimia, without the anorexia nervosa. So they are exclusive from each other. But they can also be happening at the same time. Purging can be part of the disorder, and excessive exercise. So trying to work off the calories as quickly as possible if they are consuming food, and exercising beyond what they really should for health. Oftentimes, these individuals are doing pretty heavy, intense cardio for maybe two hours a day, maybe even more in some cases. Now, there are various complications associated with anorexia, obviously, one of the biggest issues is because they are restricting so many calories, they're also restricting an abundance of nutrients and they're going to become nutrient deficiency on many different levels. This can initially cause some endocrine disturbances, upsetting the whole hormonal system. Remember that hormones come from somewhere,

right? We need cholesterol to make hormones, and we need fats for good hormonal health, so if we're not getting that in the body, the body shuts down the reproductive process, the body also doesn't really want to bring another life into a world that doesn't have enough calories. There are mechanisms in place in the body that shuts the reproductive system down. Also, as a result is a amenorrhea, so the stopping of the menstrual cycle, and osteoporosis as well, where there's bone degeneration, or the inability to maintain the health of the bone.

23:06
There's something called the female athlete triad, which involves anorexia or calorie restriction, menstrual disturbances and low bone mass, and usually those three things will happen together. It can happen so often together that it's actually been given the name, the female athlete triad. Electrolyte imbalances occur, sodium, potassium, and various minerals, because they're not getting those in the right amount. There could be a state of renal dysfunction where the kidneys start to malfunction, the heart will eventually be affected, and there could be arrhythmias. In more severe cases, it can get to a point where there's congestive heart failure.

23:58
Now what we're going to do is discuss a few nutrients that can help, and really what these nutrients are there to do is to help restore eating patterns that might be more normalized. Now, it's not necessarily a cause and effect, like this nutrient is causing anorexia or can cure anorexia. Usually these are pieces of the complete puzzle. So zinc has played a role. Manifestations of zinc deficiency are very similar to anorexia. So if an individual is highly deficient in zinc, they can actually end up being anorexic. Zinc also causes gastrointestinal dysfunction if it is deficient, so that, in effect causes a impaired absorption of zinc and will cause a cyclical effect. So that kind of like feeds into itself and causes more and more and more problems. Zinc is really important for digestive healing as well. Some general symptoms of zinc deficiency include weight loss, really poor sense of taste and smell, so that also affects the want for an individual to consume food. Nausea can be a result, skin abnormalities, stopping of the menstrual cycle, depression and behavioral changes. Those are all symptoms of a zinc deficiency. And remember, we said no zincy, no thinky; very important for the brain very important for neurological health.

25:41
Let's look at a case study. So this was done on a 13 year old female with anorexia and depression. She took 15 milligrams of zinc, three times a day. After two weeks of doing this, her appetite improved. And then the dosage was increased to 50 milligrams, three times a day. Now, we also have to understand this dosage is way above the RDA, the Recommended Dietary Allowance. And this is how nutritional medicine works, using mega doses for certain periods of time to achieve a specific result. After four months, her weight increased from 69 pounds to 98 pounds, and her appetite and demeanor normalized. 10 months after she

relapsed and she took zinc again and responded to the relapse. So there was clearly a level of zinc sensitivity in this individual where when she was deficient, she would have the symptoms, and when she was sufficient or repleted with the nutrient she was okay. This also goes to show the biochemical perspective and all of this. So oftentimes individuals with anorexia are just brushed off as being mostly mental, emotional, spiritual cases, right? We have to remember those two pillars. Biochemical can play a huge role. So this is also where your role can come in, if you're working with someone with anorexia, yeah, you might not have training to work with body image issues and things like that, but you can definitely support them nutritionally in this situation.

27:31
Let's look at another case study. This one's a 24-year-old female. She has a six-year history of anorexia. She was given 45 milligrams per day of zinc for 12 months. So that's a pretty hefty period of time. Her weight increased from 95 to 120 pounds, and her emotional well-being improved. And beneficial side effect was that menstruation returned. It had been absent for seven years. So again, when there's a amenorrhea, that's a pretty big sign that the body is very, very malnourished. Remember, that reproductive system will shut down so that another life doesn't come into a world where resources aren't available.

28:24
Thiamine is also a really important nutrient. A deficiency causes psychiatric symptoms that do resemble anorexia. In one study, 19% of patients were deficient. About 1/5 of people with anorexia tend to be deficient in this nutrient. Now, the danger with thiamine deficiency is that if it persists, it can actually cause permanent nerve damage. And of course, that's directly damaging the nervous system and that cannot be repaired. So we want to be very careful with that. There's actually a name for it, it's called Wernicke's encephalopathy, and that's when people get biochemical lesions in the central nervous system from B vitamin deficiency. If that system isn't fueled, it's a lot more vulnerable to damage.

29:25
Another powerful nutrient is magnesium and a deficiency in magnesium can actually result in anorexia. There was a study, and out of 175 patients hospitalized, 25% of them had a magnesium deficiency. These were patients hospitalized for anorexia. So again, another really critical nutrient that is important for neurological health. Then those that were given magnesium, there was an improvement noted, so it can be useful. We also have to appreciate that pretty much every nutrient is going to have a beneficial effect and most nutrients are going to be deficient in an individual who is suffering from anorexia. There's also a very strong association between omega-3 deficiency and depression, and that can play a role in anorexia as well. So fish oils could be really beneficial.

30:25
Sleep is one of the most restorative states we can be in. We've already talked a little bit about sleep, and now we're going to dive in a little bit deeper. But the term we give to a situation where someone cannot sleep is insomnia. And of course, that's more of an end stage sleep issue. So it is one of the most common complaints that people have when they visit their doctor, not being able to sleep. Over a year about 30% will experience insomnia. So it's quite prevalent, a good portion of the population will have sleep issues at some point throughout the year. And about 10% of people with insomnia, it will be chronic, it will be long lasting. And that can have pretty serious health effects. About 12.5% of the population with insomnia use a drug in the course of a year to help them actually get to sleep. Whether that's anti-psychotics, or benzodiazepines, which are tranquilizers or some antidepressants to help them calm the mind and maybe even calm the body. But as you'll see, there's a lot of other options before we go there.

31:45
Now, sleep is important for so many reasons; it helps to clear out toxins. So we talked about the glymphatic system and guess what the glymphatic system only works when we're in a deep sleep. It clears free radicals from the brain; it sort of mops things up and cleans out the things that can cause damage to the brain. Repair stress from day use of the brain. So the brain needs a rest. They've done studies that where they've done sleep deprivation with people and what happens is when people are sleep deprived, eventually they actually hallucinate, so the brain starts playing tricks on them. Puts daily memories in order; so sleep is really important for sort of filing away what happened during the day, and putting that in a place that you can access later on. If someone's studying for a test or an exam or something, sleep becomes really important. And it's definitely something that a lot of people have a major lack of when they are in school studying various topics. Sleep is very important for memory creation, and very important for growth hormone release. And that's probably why sleep is a lot more important for children and why children and infants sleep much longer. That's a picture actually of my niece, when she was really young, who fell asleep standing up on a table. I mean, kids can just sleep anywhere, it's unbelievable. So babies are sleeping 18 hours a day, because their brain is working so hard, and they're releasing growth hormone and they're growing so quickly. We can even consider in this situation, sleep as an antioxidant because of its incredibly powerful effects on not just the brain, not just the nervous system, but the whole body.

33:45
Now, when it comes to insomnia, a question that I often ask my clients is do you have trouble falling asleep or do you have trouble staying asleep? And sometimes, you're going to get different root causes based on what the issue is. So for sleep onset insomnia, trouble falling asleep, it's often tied to things like anxiety, environmental changes, like moving around a lot, emotional arousal, fear of insomnia, so the fact that someone has experience insomnia could kind of

feed into itself that creates an issue. Phobia of sleep; I've heard people say that their fathers taught them that they'll sleep when they're dead, and that people die in their sleep, so they're scared of sleep. Disruptive environments, so environments that keep you up, whether it's a loud environment or a bright environment. Pain or discomfort, caffeine and alcohol. Those are all the different things that can keep one awake. And of course, anxiety. One of our discussions we already had plays a really big role because anxiety is activating the fight or flight system. And if that's activated, it's telling the body that there's danger and why would the body want to go to sleep, if it's in danger of being killed, essentially.

35:12
So for sleep maintenance, for staying asleep, here are some things that might affect that. Depression, environmental changes, again, we see sleep apnea. Sleep apnea is the inability to breathe properly while one is sleeping. Periodic limb movements, hypoglycemia, so you have to remember also that when someone is asleep, that's a long time that they're fasting, right? And for someone who has lots of blood sugar fluctuations, and has lost sensitivity to blood sugar, and can't control that, they might wake up at like 2, 3, or 4 in the morning because they've used up all their blood sugar supply and their body says emergency, emergency, get up, we need energy. And those people usually wake up, and they're very hungry, and they want carbohydrates. Parasomnias, which is unusual behaviour of the nervous system during sleep, pain or discomfort as well. And drugs and alcohol as well can keep someone from maintaining their sleep. Of course, chemicals play a very important role in people's sleep as well.

36:28
Thyroid preparations can affect sleep, contraceptives, so hormones can affect one's sleep. Beta blockers often used for heart issues can affect sleep. The drug marijuana can affect someone's sleep. Alcohol, of course, coffee, tea, and chocolate, which of course have caffeine. And we'll talk about that in a moment.

35:55
So there are a few different types of insomnia. There's transient insomnia, which might last for a day, or a week at a time. There's short term insomnia, which might last for about six months. And then there's chronic insomnia, which would last for six months or more. Here's this chart again. So very important that blood sugar is balanced to prevent insomnia, because we want to be able to metabolize calories throughout the night, so that we can wake up in the morning and be ready to eat again. For people who have blood sugar fluctuations and are on the blood sugar rollercoaster, they continue that roller coaster while they're asleep and if they hit a dip, they wake up hungry, and it wakes them up because their adrenals get stimulated. Also, food allergies can play a role in insomnia, so making sure that any foods that an individual might be sensitive to is out of the diet.

38:01
Now caffeine, of course, is a stimulant. And they've actually done some research to see if people with insomnia metabolize caffeine differently. For those who do have insomnia, caffeine half-life is over two times longer in these individuals. In this particular study, the half-life for an individual who couldn't sleep, who had insomnia due to the half-life of coffee was 11.4 hours. That's pretty substantial. That means it took 11.4 hours to clear half of the caffeine out of their body. Now, whereas the individuals who didn't have an issue, it was 4.8 hours. So we see that different people metabolize caffeine differently. And we actually talk about this in great detail in the detoxification course. But we all have a different way of processing it. So one of the questions I asked my clients is if they're drinking coffee, if so when? And does it keep them up at night? If they consume it a little bit later in the day, even if it doesn't, I like to eliminate it 100%.

39:15
So what helps with sleep promotion? Well, one really important thing to address is sleep hygiene. What do you do before you go to bed and what's your sleeping environment like? Exercise is really important. Progressive relaxation can be helpful. Nighttime glucose levels, so really important to control blood sugar. Melatonin support can be helpful, and there are certain herbs that can be helpful as well. So we're going to explore each one of these.

39:46
First, sleep hygiene, and I give this list to a lot of my clients. We want to dim the lights in the evening and make sure that we're not looking at any screens. So in order for proper melatonin production in the pineal gland, remember, we've talked about this before, we need to have less light, naturally outside the sun goes down, right? Farmers have it all figured out, they go to bed with the sun, and they wake up with the sun. They're going to bed super early and waking up super early. But now with technology and electricity and all that, we can have bright lights until the time we go to bed. So very important to dim the lights and not look at any bright screens right before bed. No smartphones in the bedroom, it's a good rule. No phones at all, or computers or TVs. The room should be very dark, as dark as possible, and quiet. And if you can't get a dark room, an eye mask is always helpful. No electrical devices in the room. As I said earlier, right at the beginning of the course, our brain can actually keep a small light bulb lit with the amount of electrical activity. Our nervous system is the most intricate electrical device on the planet. We don't want any electrical devices influencing this system, we need a consistent schedule. So it's really not helpful if you go to bed, nine o'clock one night, and then 2am another night and then 12 am another night. You want to try to remain on schedule as much as possible. And the bed should only be for sleep, and sex. There shouldn't be any other activities done in the bed, no eating, no game plan, no hanging out, it should only be used for sleep and sex. So you associate the bed with that. Bedtime rituals can also be really helpful. I was working with a client recently. And we were talking about sleep hygiene. And when we did a follow up, she told me that she adopted a ritual. When she was ready to shut down for the day, she would light a little

candle with some essential oils in it and sit there for a moment and close her eyes. And that would sort of bring in the evening and she knew that her workday was over and she can just relax and it's time for bed at that time. So I really liked that ritual.

42:17
Epsom salt baths are really great to do before bed, they really relax the body, relax the muscles, warm up the body if you're living in a cold environment. And just making that time is really important for just shutting down the nervous system. Exercise is great for sleep, again, if we could take exercise and put it in a capsule, it would be the top selling drug on the planet, right? There are just so many benefits associated with exercise. It helps improve our general well-being; we talked about its release of endorphins from exercise, and really helps with sleep quality. The optimal time to exercise if you want to work with the hormones of the body, especially for someone with insomnia, is the morning because that's when the highest cortisol is released. And exercise releases cortisol as well, so you want to maybe work with those hormones. If you're working out like right before bed, you're releasing cortisol when cortisol should be really low. So I usually don't encourage people to work out in the evening. Mornings are the best, if that's possible and workable with their schedule. Progressive relaxation can also be really, really helpful, and I'll coach some of my clients on how to do that. And basically, it's the act of slowly contracting and relaxing every part of your body until like the whole body is relaxed, and that can be really helpful as well to get into the sleep state.

43:55
As I mentioned, glucose levels are really important. We need to balance them during the day so they're stable throughout the night. And very critical for that is the low glycemic index, low glycemic load diet. Stress hormones will release when we're at the bottom of the roller coaster and the brain, which is doing a lot of work at night, different work but a lot of work regenerating, needs reliable energy.

44:27
So melatonin could be helpful, it's probably one of the most researched nutraceuticals out there for sleep. Most clinical trials show a beneficial effect. It can actually be useful to help discontinue some of the tranquilizers known as benzodiazepines. Now when we make melatonin in our brain, optimally from shutting down the lights and getting into our sleep zone, we make about 0.3 milligrams, it's our physiological dose. When we're supplementing with melatonin, we want to get as close to that as possible, but get a therapeutic effect. So pharmacological doses come in dosages of about 2 to 5 milligrams. Usually, I start people off around 1 milligram for a couple nights. See if that works. If it doesn't, then we increase a little bit. And then eventually, we want to decrease and dial it back.

45:34
As always, I'm always looking to go upstream. You know, what's the root cause? If melatonin works in an individual, well, why are they not making enough melatonin? Is it because they don't have enough serotonin? Is it because they're not eating enough protein? Is it because they're not liberating those amino acids from the protein? We have to consider all these things. But what I think about is sleep hygiene. I think about the cofactors, vitamin B6, vitamin B3 and magnesium which are necessary for making melatonin. And if so, I might have to go to 5-HTP as well. And 5-HTP has been shown to increase REM sleep by about 25%. There's quite a bit of research on 5-HTP, so it can actually be used for mood during the day and it can actually be used to help you induce sleep as well in the evening hours. The way you dose it is about 100 to 300 milligrams 30 to 45 minutes before bed. And you want to begin at the lowest dose possible and slowly work your way up for therapeutic effect. For using vitamin B3, vitamin B3 has been shown to help with REM sleep as well. It might increase serotonin, that might be the mechanism by which it does that, and it's a good therapy to try when you've tried lots of other things and they don't seem to work. You can try doing about 1 to 3 grams per day, right before bed, about a half an hour before bed. You can spread out the dose throughout the day as well and then have one of the doses before bed.

47:18
Magnesium is really important for sleep as well. And you can try about 300 to 500 milligrams throughout the day. Having about 100 to 200 milligrams of that right before bed as well. Magnesium I found with my clients has been tremendously helpful. It's one of the best supplements for sleep, and then there are, again, a variety of botanicals to choose from. We've seen some of these before. Valerian, passionflower, hops, skullcap and chamomile can be very helpful for sleep induction as well. Just to show you one study here, valerian and its sedative effect, taken about 30 to 60 minutes before bed can be very helpful for inducing a state of relaxation and sleep. And dosages can vary quite greatly depending on the preparation and the person who's using it. Valerian is a really, really smelly herb. So I would recommend you don't make a tea out of it. You want to basically have it in a capsule or in a tincture form.