



S4. Ep5. Cannabis Ingredient Panels

Kara Ware: [\(00:02\)](#)

All right, everyone. Let's do a quick recap. In earlier episodes of the season, we talked about the historical roots for the modern day prejudice towards cannabis, how the endocannabinoid system works and the things that can affect it, the pros and the cons of using cannabis. With all this context and background information in mind, I think we're finally ready to talk about cannabis products and what to consider. It took us long enough when talking to patients about including cannabis in their care plan.

Nathan: [\(00:38\)](#)

Yeah. Whether you plan to recommend cannabis in your practice or not, understanding what separates a safe therapeutic option from a potentially hazardous or recreational one, is a really good idea. In the first place to learn about the products might surprise you. It's probably something you and your patients have done before, which is just read the product label.

Kara Ware: [\(01:03\)](#)

We're big believers in starting with the basics because cannabis is still federally illegal. The responsibility of deciding what goes on a product label is dependent on each individual state. So some labels will tell you more than others, but today we're going to break down the three things to look for the cannabinoid profile, dosing and even some nerdy elements that might surprise you.

I'm Kara Ware, a national board certified health coach and business advisor.

Nathan: [\(01:37\)](#)

And I'm Nathan [Mars 00:01:38], a medical doctor that is also certified in functional medicine.

Kara Ware: [\(01:42\)](#)

The first step in picking a product is of course choosing what goes into that product, the cannabis itself. There are two main species or strains of cannabis primarily used in cannabis products, indica and sativa. You may have heard the old adage, "Indica will leave you into couch, meaning relaxed or even tired. And sativa strains will energize you." Well, maybe this was true at one point, but today the old saying doesn't hold up. In fact, every expert we talked to this season told us not to assume anything based on indica or sativa designations.

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Nathan: [\(02:23\)](#)

You're totally right, Kara. And that's the refrain we've heard over and over again. And just like you shouldn't judge a book by its cover, you shouldn't buy a product based on its "strain" like indica or sativa. Over the past 60 years, cannabis has been cross spread so many times and grown in such a wide range of conditions that trying to classify the therapeutic effects of a product based on the species designations alone, is just plain inaccurate. What we really need to be focused on is the chemical composition of each product, which you might see referred to as chemo bars or chemo types. This is the profile of all active phytocannabinoids and terpenes in the product. And it's considered the most accurate way to understand the product and the effect it might have.

Kara Ware: [\(03:12\)](#)

Right. You can find the cannabinoid chemical profile and the amount of each cannabinoid or terpene on in the product label. So THC and CBD are usually the most abundant cannabinoids in the product just as in the plant. And these are the two bio actives to really focus on. But another thing you might see on the label is TAC and this acronym stands for Total Active Cannabinoids, which lumps all of the cannabinoid compounds together. So aside from THC and CBD, there are hundreds of other compounds in cannabis as we've been talking about this season. And so you might see some of these on the labels as well.

Nathan: [\(03:52\)](#)

So, let's quickly talk about some of these other compounds. So keep an eye out for what I call the second line cannabinoids like CBA, CBG and CBN. These aren't as famous yet, but research is emerging suggesting they may play an important role in the effect of cannabis products. CBG, which I really like, for example, has demonstrated potential therapeutic benefits ranging from appetite stimulation to an anti-inflammatory role in the gut, to reduction in neuroinflammation and increased neuroprotection in mouse models.

Kara Ware: [\(04:30\)](#)

Wow. As with so much of what we share this season, new research is coming out all the time. So check on PubMed or more on these cannabinoids.

On the label, you may also see different terpenes listed as part of the chemical profile. Terpenes are aromatic compounds found in a wide variety of plants, including cannabis. They were popularized in essential oils, but also became topics of recent biomedical research. Early study show that terpenes may be responsible for either the sedating or uplifting effect of cannabis products. When we spoke with Dr. Cody Peterson, the pediatric pharmacist and medical cannabis thought leader, he directed us to a great resource for understanding terpenes and the impact they can have, which we will include in our show notes. So which of the top terpenes our practitioner should learn about and why are they important? Nathan, talk to us about that.



Nathan: [\(05:31\)](#)

Well, as you know, Kara, I'm really excited about terpenes. And one terpene that I love to talk about is beta-caryophyllene. This terpene is found not only in cannabis, but in foods like oregano, cinnamon, black pepper, and has shown some serious ability to reduce inflammation. Obviously research is still limited, but I always like to see the bonus ingredient in CBD formulas. I also like myrcene, this is also seen in basil, lemongrass and hops and has anti-inflammatory and antioxidant properties. Limonene will have a similar effect. So these are good ones to keep an eye out for. Interesting side note, one that I really like is pinene too, the aroma of the pine trees. It's Bronco dilating so that walk in the [inaudible 00:06:16], with a lot of pine trees where you feel like you're breathing better, you may have some scientific basis.

Kara Ware: [\(06:23\)](#)

Yeah. There are dozens of bioactive ingredients in so many medicinal plants, including cannabis. So understanding there are more compounds at play than just THC and CBD is so important.

Nathan: [\(06:38\)](#)

When all of the active phytocannabinoids and endocannabinoids work synergistically it's called the entourage effect. While the jury is out on a universal definition of the entourage effect, it is generally accepted that these compounds work together with our ECS, endocannabinoid system, but more research is needed to determine the exact way bioactive and endogenous molecules work together.

Kara Ware: [\(07:05\)](#)

Understanding the cannabinoid profile of your product is the first step when reading a label. The next important thing to look for are the ratios and dosing of these cannabinoids. You may see products listed in dispensary menus by types or tiers. So tier one products are the highly concentrated THC, tier two is a combination of THC and CBD. And tier three is a high CBD product, which you'll find more of at a medical dispensary.

Nathan: [\(07:38\)](#)

When we talk about ratios, we typically mean the ratio of CBD to THC. That's the nomenclature and the common ones you'll see are 1:1, 5:1 and 10:1. My favorite to recommend is 10 part CBD to one part THC. The relationship between CBD and THC is an interesting one. And according to preliminary research, combining really low doses of CBD with higher amounts of THC can increase the cycle's active effects compared to the THC alone. So low CBD with THC can make high more intense, which a lot of people don't know, I didn't know that until this season. But on the flip side, when you have higher CBD with lower amounts of THC, like the ratios I mentioned 5:1 or 10:1, CBD lessens the psychoactive effects of THC. So this can give you the benefits of both phytocannabinoids with less of the high.



Kara Ware: [\(08:41\)](#)

I didn't know that either though it has been really helpful, and it might sound daunting for practitioners new to recommending cannabis to say THC is okay. But what I'm hearing is when we're looking at therapeutic uses of cannabis, there can be a benefit of coupling low doses of THC with high CBD, and this can help address symptoms without having to be concerned about the side effects like feeling high, for example.

Nathan: [\(09:05\)](#)

That sums it up really well, Kara, and I've seen this clinically as well. So it goes a little bit far when it comes to THC, especially when combined with higher CBD.

Kara Ware: [\(09:18\)](#)

Once you've decided what ratio you want the cannabinoids to be, now you need to know how much. Due to a wide variety of regulations, the labels of cannabis products can be confusing when it comes to dosing.

Nathan: [\(09:31\)](#)

So, the lesson here is be careful, the doses can be tricky at first. When you look at a product, it may list the total amount and most likely will in the product versus the amount in each dose. So get ready for some math, and you're expecting your patients to do this too. So it does get tricky. For example, the label might say 100 milligrams THC, but you need to read this carefully, it probably is saying 100 milligrams of THC in the entire package. If there's 10 pieces per package, that means you can count on each piece containing 10 milligrams, make sure your patients understand this.

Kara Ware: [\(10:10\)](#)

Yeah, this is important to keep in mind, especially because products today are more potent than ever. So, what dose should we be looking for with CBD and THC?

Nathan: [\(10:21\)](#)

For CBD alone, I would recommend starting at around 25 to 50 milligrams for inflammation and stress. If you're also looking to add THC, I typically start with that 10:1 ratio, so 25 milligrams of CBD to 2.5 milligrams of THC. And other practitioners may recommend starting even lower, which is never a bad idea. And the therapeutic dosing of THC can be as low as 0.5 to two milligrams. And it may take a few tries to get the perfect ratio for your patients, so don't be afraid to start low and go slow. I think we've all [inaudible 00:10:57] that functional medicine. This is the perfect advice and I feel like it's my motto too, when it comes to THC and CBD. But really it comes down to personalization, the right amount will be different for different people depending on their presentation and goals, even the ratios I mentioned.



Nathan: [\(11:14\)](#)

I had a patient, I find this interesting, Kara, that came to of me. I was in the spectrum trying to help the child not be as nervous and not as anxious, and the person I just told him to go to a medical dispensary and really didn't spell out the ratios that she got. And when I looked at the ratio, even though I didn't prescribe this and I currently am not prescribing or recommending THC as such, this young man was on a very high dose of THC compared to his CBD, it was almost a reversed ratio. And so the mom kind of gave me the symptoms of the patient had been stoned all day. And so what I did, I just reversed and I made sure we had a much lower dose of THC and a much higher dose of CBD. And all of a sudden that high effect was gone and his speech and his behavior improved. So me just knowing about these ratios and changing things up or telling her how to approach the dispensary was really influential for his outcome.

Kara Ware: [\(12:17\)](#)

That is the perfect example of why care about familiarizing yourself with cannabis therapeutics, even if you don't intend to recommend it. You might come across patients who are hoping you can help safely include cannabis in their care, that's a perfect example.

If you want to keep reading about this, Dr. Cody Peterson again, gave me a great resource out of Canada, because they are thought leaders in integrating cannabis as medicine. So we have a PDF which provides basic therapeutic application recommendations for exactly what we're talking about, dosage and titration. So be sure to check out the show notes.

All right, you're nearly ready to get to the exciting part, choosing a product. But before we get to that, there are a few other interesting things on the label you might want to check out.

Nathan: [\(13:11\)](#)

Well, Kara, the nerd in me, if the rest of you are like that and you always want to know more, you may want to consider what extraction methodology was used to create your product. Basically, how does the manufacturer get the good stuff out of the plant and leave the other stuff behind? Since CBD and THC are fat solvable, you can't just use water to extract it, you have to use something else. That something else could be ethanol or alcohol, but it also could mean stuff like butane, propane or hexane. And there's nothing inherently wrong with using these chemicals, as long as the final product doesn't contain large amounts of them. But if you have the option, I'd look for a product that uses supercritical CO2 extraction instead.

Kara Ware: [\(13:58\)](#)

Supercritical CO2 extraction sounds like rocket science. Oh my gosh. So how is supercritical CO2 extraction better than the other method besides the sounding?



Nathan: [\(14:16\)](#)

I am not a rocket scientist, but I can talk like one if need be. But I can tell you that supercritical CO2 extraction is when they take CO2 gas and turn it into a liquid and use that to extract that soluble compound. Then when they're done, the liquid CO2 is allowed to turn back into gas, leaving behind a virtual residue less extraction. And supercritical CO2 extraction is also used to make certain [inaudible 00:14:42]. It's super cool technique, but it does tend to be a little pricier.

Kara Ware: [\(14:47\)](#)

Right. Yeah. And oftentimes a label will tell you the extraction method and the certificate of analysis will tell you if the product was tested for residual solvents.

Nathan: [\(14:59\)](#)

Okay. The last thing to keep in mind before you get to pick a product is to check for allergens, particularly with edible products.

Kara Ware: [\(15:08\)](#)

Cannabis products are not exempt from common allergens like coconut oil, corn starch or even artificial colorings, for example. And if a patient is vegan, then you want to make sure they check and see if gelatin is used. And if it is indeed plant based.

Wow, who knew reading a tiny label would include so many different aspects?

Nathan: [\(15:54\)](#)

It's crazy, Kara, but it's so important. A lot of labels out there aren't very detailed or consistent, which can really make understanding the product and what effect it may have even harder. So as practitioners, it's important to understand each of these aspects when recommending cannabis for your patients.

Kara Ware: [\(16:12\)](#)

Absolutely. So now that we understand, we need to pick a product based off the full chemical profile, instead of just the strain, because that is now deemed folklore and to look out for tricky dosing or bad extraction methods, we can finally get to the fun stuff. So drum roll please, actually buy a product. Again, it's taken us long enough, but we had to understand all of this that we've built up over this season to be able to safely get to this point.

Nathan: [\(16:48\)](#)

You can't go stamping toward the product, you can't. You really need to understand, especially as a clinician and as a patient, what we're talking about when we recommend products. So tune in next week to learn about different products and what the process of using a dispensary is really like.