Red Light or Near Infrared? Here's How to Choose the Right One for You Transcript

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Why Red and Near Infrared Therapy Works

You know, it seems like everybody either You know, it seems like everybody either has or is talking about buying a red has or is talking about buying a red light therapy unit or a near infrared light therapy unit or a near infrared unit or a red light near infrared unit unit or a red light near infrared unit and it gets so confusing as to number and it gets so confusing as to number one, why would I want one and what would one, why would I want one and what would be the difference between red light and be the difference between red light and near infrared light as far as my health near infrared light as far as my health goes. What I want to do is break that goes. What I want to do is break that down today and get into the specifics of down today and get into the specifics of number one, why would we want to use number one, why would we want to use them? Number two, what's the difference them? Number two, what's the difference between a red and a near infrared unit?

between a red and a near infrared unit? Number three, are they all the same or Number three, are they all the same or are there quality differences between are there quality differences between them? And number four, why would I want them? And number four, why would I want to do this? Why do they work? And this to do this? Why do they work? And this comes from many years of using comes from many years of using photodynamic therapy, so light therapies photodynamic therapy, so light therapies as part of our practice in our patients as part of our practice in our patients with chronic illness and cancer and in with chronic illness and cancer and in more modern times working with clinics more modern times working with clinics that we refer to that very specifically that we refer to that very specifically do photodynamic therapy or light do photodynamic therapy or light therapy. And also direct referrals for therapy.

Red Light vs Near Infrared Wavelengths Explained

And also direct referrals for people to use at-home light therapies in people to use at-home light therapies in a safe but also effective manner. So, a safe but also effective manner. So, let's break down some of the bullet let's break down some of the bullet points around light therapy, red near points around light therapy, red near infrared. Well, obviously, if you look infrared. Well, obviously, if you look at the spectrum and you get to the red at the spectrum and you get to the red end of the spectrum, we still see red end of the spectrum, we still see red with the human eye. You get to infrared with the human eye. You get to infrared and infrared is divided into subparts and infrared is divided into subparts and usually right after red, seeing the and usually right after red, seeing the color and we call it near infrared. And color and we call it near infrared. And so, red is a shorter wavelength, so, red is a shorter wavelength, somewhere in the 6-700 range. And then somewhere in the 6-700 range. And then the longer wavelengths, you get into the longer wavelengths, you get into near infrared, you've got the 7-800 to near infrared, you've got the 7-800 to 15-2500 15-2500 15-2500 nanometer range and we don't see that.

nanometer range and we don't see that. And then you get to mid-infrared and And then you get to mid-infrared and far-infrared, which are for another far-infrared, which are for another video that we'll talk about later. So, video that we'll talk about later. So, when you're looking at a unit, you can when you're looking at a unit, you can get a red light therapy unit, you can get a red light therapy unit, you can get a near-infrared therapy unit, or you get a near-infrared therapy unit, or you can get one that does both. Because they can get one that does both. Because they can have the generators, which can be can have the generators, which can be either laser or LED or other light type either laser or LED or other light type generators, and those either can be set generators, and those either can be set up in an array where there's red next to up in an array where there's red next to near-infrared, or sometimes the diode near-infrared, or sometimes the diode can have both heads inside of it, etc.

can have both heads inside of it, etc. And so, to the first question of would I And so, to the first question of would I want red or would I want near-infrared, want red or would I want near-infrared, most the time you can purchase a unit most the time you can purchase a unit that does both, and you really want that does both, and you really want both. So, if you're going to put money both. So, if you're going to put money into getting a unit, and you don't have into getting a unit, and you don't have a specific need where your doctor's a specific need where your doctor's

prescribed, you know, a particular prescribed, you know, a particular wavelength or something, then it's going wavelength or something, then it's going to cover more to do red and to cover more to do red and near-infrared. So, remember, red are near-infrared. So, remember, red are shorter wavelengths, up in the 670 up to shorter wavelengths, up in the 670 up to 800, near-infrared 700 through 15 to 800, near-infrared 700 through 15 to 2500 nanometers. And they're going to do 2500 nanometers.

How Deep Each Wavelength Penetrates Your Body

And they're going to do different things. So, the first thing different things. So, the first thing is, red and near-infrared both penetrate is, red and near-infrared both penetrate the skin. But, red, because it has the skin. But, red, because it has shorter wavelengths, goes more shallow.

shorter wavelengths, goes more shallow. Near-infrared, because it's getting up Near-infrared, because it's getting up further in the wavelengths, again, 800 further in the wavelengths, again, 800 plus, it goes deeper. So, near-infrared plus, it goes deeper. So, near-infrared goes deeper into your tissues. Both of goes deeper into your tissues. Both of them have activation on certain enzymes them have activation on certain enzymes that are in your blood and in your that are in your blood and in your muscles and your fat, everything else.

muscles and your fat, everything else. But, because the near-infrared's going But, because the near-infrared's going to go deeper, it's going to affect a to go deeper, it's going to affect a broader spectrum of parts of you, you broader spectrum of parts of you, you could say. Now, if it's, for some could say. Now, if it's, for some reason, a real thin area of your body, reason, a real thin area of your body, like the back of your hand, where like the back of your hand, where there's literally just skin and tiny there's literally just skin and tiny layer of subcutaneous fat and a lot of layer of subcutaneous fat and a lot of blood flow, or the front of your wrist blood flow, or the front of your wrist here, where your blood vessels are very here, where your blood vessels are very superficial, you will get a lot of red superficial, you will get a lot of red light through those into fairly deep, light through those into fairly deep, relatively speaking. If it's the chest relatively speaking. If it's the chest wall and your thoracic area, where you wall and your thoracic area, where you have your lungs and your heart, etc., have your lungs and your heart, etc., the red light's going to penetrate in, the red light's going to penetrate in, but it's probably going to get down to but it's probably going to get down to the level of your subcutaneous fat, the level of your subcutaneous fat, maybe maybe some superficial muscle, maybe maybe some superficial muscle, depending how big you are. Near depending how big you are. Near infrared's going to go further. So, you infrared's going to go further. So, you might say, "Wouldn't I just use near might say, "Wouldn't I just use near infrared then?" Well, if if you're infrared then?" Well, if if you're forced to pick only one, sure, just use forced to pick only one, sure, just use near infrared. But, the reason cycling near infrared. But, the reason cycling between red and near infrared can be between red and near infrared can be helpful is that they have slightly helpful is that they have slightly different effects. And what we want to different effects. And what we want to keep in mind is it's not just keep in mind is it's not just penetration depth. Even red light that penetration depth. Even red light that doesn't go quite as deep is going to get doesn't go quite as deep is going to get to your superficial capillary network.

to your superficial capillary network. And that capillary network carries a lot And that capillary network carries a lot of blood continuously through. And the of blood continuously through. And the red light is going to affect not only red light is going to affect not only the solid tissues, which might be the solid tissues, which might be superficial muscle, certainly joints and superficial muscle, certainly joints and other stuff, but also the enzymes in other stuff, but also the enzymes in your blood. The enzymes in your blood your blood. The enzymes in your blood then can be activated by the red light, then can be activated by the red light, and they can go and help with and they can go and help with mitochondrial function and other things mitochondrial function and other things downstream. Near infrared's going to get downstream. Near infrared's going to get deeper, and it's going to get into your deeper, and it's going to get into your subcutaneous fat, it's going to get to subcutaneous fat, it's going to get to your muscles usually, etc. And that's your muscles usually, etc. And that's even more blood flow, and also more even more blood flow, and also more direct tissue response. So, if somebody direct tissue response. So, if somebody doesn't have a specific need for a doesn't have a specific need for a specific wavelength, I still generally specific wavelength, I still generally have them do a combination of red and have them do a combination of red and near infrared. We'll talk about how to near infrared. We'll talk about how to do that, but that's why. Now, red light do that, but that's why.

Best Uses for Red Light Therapy

Now, red light is often used, and has been for very is often used, and has been for very long time, for uh superficial and long time, for uh superficial and orthopedic type things, sore joints, orthopedic type things, sore joints, sore muscles, things like that. You see, sore muscles, things like that. You see, nowadays, these pads that are set up to, nowadays, these pads that are set up to, you you go on your shoulder, and it you you go on your shoulder, and it wraps around your shoulder, Or they have wraps around your shoulder, Or they have them, you know, for your wrist, or they them, you know, for your wrist, or they have them for a knee and other parts of have them for a knee and other parts of your body. That kind of makes some your body.

Why Near Infrared Reaches the Brain

That kind of makes some sense. Uh red's very good being a beyond sense. Uh red's very good being a beyond what we talked about before for pain what we talked about before for pain management. And then near infrared, management. And then near infrared, because it goes deeper, sometimes can be because it goes deeper, sometimes can be used for deeper muscle injuries, other used for deeper muscle injuries, other wounds, etc. But also, it's going to get wounds, etc. But also, it's going to get into areas such as the brain. Near into areas such as the brain. Near infrared in certain configurations can infrared in certain configurations can go through your skull and go 3 to 5 cm go through your skull and go 3 to 5 cm in and have very good coverage in your in and have very good coverage in your brain. And we use near infrared brain brain. And we use near infrared brain units for people with memory problems, units for people with memory problems, recovering from surgery, all you all recovering from surgery, all you all sorts of things there. So, near infrared sorts of things there. So, near infrared again, deeper, we use it more on brain again, deeper, we use it more on brain and things like that. And then near and things like that. And then near infrared has a lot of deeper accessory infrared has a lot of deeper accessory stimulation of your mitochondria. So, in stimulation of your mitochondria. So, in other content, we talked about how other content, we talked about how methylene blue goes in through the side methylene blue goes in through the side and kind of stimulates the mitochondrial and kind of stimulates the mitochondrial energy production system. Turns out near energy production system. Turns out near infrared hits that same place and infrared hits that same place and stimulates energy production as well.

stimulates energy production as well.

How to Choose a Home Light Therapy Device

So, when I'm having people at home get a So, when I'm having people at home get a unit to try out, let's say, and you unit to try out, let's say, and you know, it's not always that you can go to know, it's not always that you can go to a photodynamic therapy center or have a photodynamic therapy center or have the time or whatever. And sometimes we the time or whatever. And sometimes we want you to get therapy going. So, I'll want you to get therapy going. So, I'll have you try a home unit out. How do we have you try a home unit out. How do we set that up so that it's safe and set that up so that it's safe and effective and usable? So, the way that effective and usable? So, the way that we do with home use, I will generally we do with home use, I will generally and now it's there there's so many units and now it's there there's so many units that you can order everywhere online.

that you can order everywhere online. You can get red near infrared combos. You can get red near infrared combos. That's really not a problem. Just look That's really not a problem. Just look for that. You also want to look for one for that. You also want to look for one that has a variable cycle or hertz, h e that has a variable cycle or hertz, h e r t z, hertz setting, which is either r t z, hertz setting, which is either going to be continuous or pulsed. going to be continuous or pulsed. Now, why would I do different ones? Well, if why would I do different ones? Well, if I have, for example, a sore shoulder, I I have, for example, a sore shoulder, I might want to just do continuous red might want to just do continuous red near infrared and kind of literally, you near infrared and kind of literally, you know, kind of marinate or so-called bake know, kind of marinate or so-called bake in the red near infrared effect. If I am in the red near infrared effect. If I am trying to get into deeper tissues, I trying to get into deeper tissues, I might still use red near infrared might still use red near infrared together, but I may cycle it. And the together, but I may cycle it. And the the hertz cycling is essentially how the hertz cycling is essentially how

many pulses per second are we going to many pulses per second are we going to get out of it? And so, if your get out of it? And so, if your controller has ability to choose red or controller has ability to choose red or near infrared or both, that's good.

near infrared or both, that's good. That's what you're looking for. And if That's what you're looking for. And if it has a setting for And sometimes they it has a setting for And sometimes they just say continuous, low pulse, medium just say continuous, low pulse, medium pulse, high pulse, that's fine. Or it pulse, high pulse, that's fine. Or it could say continuous, you know, 1 hertz, could say continuous, you know, 1 hertz, 20 hertz, 40 hertz, or it could be a 20 hertz, 40 hertz, or it could be a whole bunch of other things. Any of whole bunch of other things. Any of that, that's going to be the pulsing.

that, that's going to be the pulsing. Now, you can get home use pads that are Now, you can get home use pads that are fairly inexpensive that do all of that.

fairly inexpensive that do all of that. The other thing that you want to look at The other thing that you want to look at is what is the power output? Because you is what is the power output? Because you can have all that stuff, and then if the can have all that stuff, and then if the generator, the power generator is really generator, the power generator is really weak and low, it might not be getting weak and low, it might not be getting enough power to go anywhere. Now, this enough power to go anywhere. Now, this is not so much in the orthopedic or is not so much in the orthopedic or medical units like I'm talking about, medical units like I'm talking about, although it does happen, but in the although it does happen, but in the cosmetic units such as cosmetic cosmetic units such as cosmetic phototherapy, it is really common to phototherapy, it is really common to have two cosmetic units used for skin, have two cosmetic units used for skin, and they look exactly the same, and one and they look exactly the same, and one costs 10 times as much as the other costs 10 times as much as the other does, and people think, well, this one does, and people think, well, this one company must just be ripping everyone company must just be ripping everyone off. But if you look at it, often what's off. But if you look at it, often what's happening is the one that costs more has happening is the one that costs more has the appropriate amount of power, and the the appropriate amount of power, and the one that costs 10 times less has the one that costs 10 times less has the same bells, whistles, everything, but same bells, whistles, everything, but it's got 10% of the power of the other it's got 10% of the power of the other one. And so, it's not going to do one. And so, it's not going to do anything, even though they look the anything, even though they look the same. So, with the medical pads, whether same. So, with the medical pads, whether it's for orthopedic uses or want to do it's for orthopedic uses or want to do it around your chest, or your head, or it around your chest, or your head, or pelvic organs, or whatever, what we look pelvic organs, or whatever, what we look for. So, we got ability to red near for. So, we got ability to red near infrared, or both. We got the ability to infrared, or both. We got the ability to have a hertz cycling, so pulsation of have a hertz cycling, so pulsation of some type. And then, on the power side, some type. And then, on the power side, usually they list the power by usually they list the power by milliwatts per square centimeter. And milliwatts per square centimeter. And the bottom line is you want the the bottom line is you want the milliwatts per square centimeter to at milliwatts per square centimeter to at least be in the triple digits, so 100 least be in the triple digits, so 100 plus milliwatt per square centimeter.

plus milliwatt per square centimeter. You don't want something that's coming You don't want something that's coming out in single or double digits, which out in single or double digits, which sometimes you don't see that that much sometimes you don't see that that much anymore, but sometimes you will. So, anymore, but sometimes you will.

Red Light Therapy for Lung and Post-Viral Recovery

So, look at the milliwatts per per square look at the milliwatts per per square centimeter output, and you don't you centimeter output, and you don't you don't want it below a three-digit don't want it below a three-digit number, so 100 plus, and then you're number, so 100 plus, and then you're going to be getting enough power. Now, going to be getting enough power. Now, although I've used for orthopedic things although I've used for orthopedic things red near infrared for forever, a long red near infrared for forever, a long time, it's a old old therapy, and I've time, it's a old old therapy, and I've used it for other things to help with used it for other things to help with mitochondrial recovery and stuff, one of mitochondrial recovery and stuff, one of the things that sped up our our home use the

things that sped up our our home use with patients was actually during COVID, with patients was actually during COVID, when we had people on lockdown, or when we had people on lockdown, or people couldn't get to the clinic, or people couldn't get to the clinic, or whatever was the in- interference, and whatever was the in- interference, and there started to come out some studies there started to come out some studies and some papers about red near infrared and some papers about red near infrared therapy for the lung and heart therapy for the lung and heart inflammation of acute COVID, and then inflammation of acute COVID, and then and then post-COVID. And if we couldn't and then post-COVID. And if we couldn't get to the patient, I would give them get to the patient, I would give them the specifications, and say get a pad the specifications, and say get a pad that's big enough, you know, for your that's big enough, you know, for your chest size. And if it's long enough to chest size. And if it's long enough to wrap around, that's great, or you can wrap around, that's great, or you can just lay on it on one side, and then let just lay on it on one side, and then let and put on top on the other side. Now, and put on top on the other side. Now, obviously, you would want to have either obviously, you would want to have either no clothes, or a very very light no clothes, or a very very light something, because the light has to get something, because the light has to get through it, right? But it does work. And through it, right? But it does work. And what they showed in the hospital what they showed in the hospital experiments, where they had people put a experiments, where they had people put a vest on, so they couldn't tell if it was vest on, so they couldn't tell if it was turned on or not, and they took people turned on or not, and they took people in the hospital with very bad COVID in the hospital with very bad COVID symptoms, and half got the treatment symptoms, and half got the treatment with it turned on, half put the vest on with it turned on, half put the vest on and it wasn't turned on. The group who and it wasn't turned on. The group who got the treatment had lower amounts of got the treatment had lower amounts of inflammatory cytokine markers and had inflammatory cytokine markers and had better outcomes and had more propensity better outcomes and had more propensity for getting out of the hospital with bad for getting out of the hospital with bad COVID, especially with the earlier COVID, especially with the earlier variants. So, we started doing this with variants. So, we started doing this with people at home when they would complain people at home when they would complain of not healing as quick as they were or of not healing as quick as they were or they would say, "Well, I'm sort of they would say, "Well, I'm sort of better, but I've still got a cough or better, but I've still got a cough or I've still got, you know, I've still got, you know, chest symptoms, etc. or pelvic symptoms.

chest symptoms, etc. or pelvic symptoms. We'd have them do that. We'd have them We'd have them do that. We'd have them start with 5 or 10 minutes two, three start with 5 or 10 minutes two, three times a day, work up to maybe 15 or 20 times a day, work up to maybe 15 or 20 minutes two, three times a day. It was minutes two, three times a day. It was very, very helpful and it basically very, very helpful and it basically matched what they were doing in the matched what they were doing in the hospital studies. So, I hope this hospital studies. So, I hope this answers the questions that we've gone answers the questions that we've gone over on red near infrared home units, over on red near infrared home units, all that stuff. Obviously, before you do all that stuff. Obviously, before you do any new medical type of therapy, please any new medical type of therapy, please check with a health care provider, make check with a health care provider, make sure it's okay for you, but this should sure it's okay for you, but this should answer those questions. I'm Dr. A. I use answer those questions. I'm Dr. A. I use the channel to answer questions, mostly.

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