Red Light vs Near Infrared: Which Goes DEEPER Into Your Body? Transcript

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Red Light vs Near Infrared Therapy Explained

Hey Dr. A, I've got this home unit that Hey Dr. A, I've got this home unit that does red light therapy and it has an does red light therapy and it has an option to turn on near infrared therapy.

option to turn on near infrared therapy. Do they do the same thing? Why would I Do they do the same thing? Why would I use one versus the other? Great use one versus the other? Great Hi, I'm Dr. A. I've been researching and Hi, I'm Dr. A. I've been researching and teaching in the integrative and teaching in the integrative and naturopathic community for over 30 years naturopathic community for over 30 years now. I've been seeing patients a very now. I've been seeing patients a very long time and we use this YouTube long time and we use this YouTube channel to answer questions just like channel to answer questions just like this one. So, let's break down this red this one. So, let's break down this red light, near infrared spectrum, and light, near infrared spectrum, and medical use question. So, the first medical use question.

Why Red and Infrared Absorb Through the Skin

So, the first thing that we want to think about is why thing that we want to think about is why would we use therapies that are in the would we use therapies that are in the red end of the spectrum anyway? And the red end of the spectrum anyway? And the important part about that is is that we important part about that is is that we use them because they absorb through the use them because they absorb through the skin. Now, different wavelengths create skin. Now, different wavelengths create the different light names and colors.

the different light names and colors. And so, we have red at the red end of And so, we have red at the red end of the spectrum and then we have near the spectrum and then we have near infrared and then other infrareds that infrared and then other infrareds that we have after that. The entire spectrum we have after that. The entire spectrum from red into the infrared spectrum from red into the infrared spectrum absorb very well through the skin. When absorb very well through the skin. When you get to the other end of the spectrum you get to the other end of the spectrum towards blues, you don't absorb very towards blues, you don't absorb very deep with those. Now, there are deep with those. Now, there are exceptions. So, sometimes you'll see exceptions. So, sometimes you'll see these wrist laser devices and you think, these wrist laser devices and you think, well, they have, you know, yellow or well, they have, you know, yellow or blue or some other thing. It's because blue or some other thing. It's because the lasers are put right here over this the lasers are put right here over this really thin skin where your blood supply really thin skin where your blood supply is right next to the surface. So, let's is right next to the surface. So, let's say you only absorb 1 to 2 mm, maybe up say you only absorb 1 to 2 mm, maybe up to 3 mm depending on the color, it's to 3 mm depending on the color, it's still going to absorb there. So, that's still going to absorb there. So, that's one exception sort of. But, the big one exception sort of.

How Deep Red Light Actually Penetrates

But, the big light pads you might use over your whole light pads you might use over your whole body or on your head or over a joint body or on your head or over a joint that's injured, those are going to tend that's injured, those are going to tend to be red or near infrared as far as to be red or near infrared as far as spectrum that comes out. The next thing spectrum that comes out. The next thing is how deep do they absorb? So, this is is how deep do they absorb? So, this is a difference between red and near a difference between red and near infrared. So, if we look at red light, infrared.

How Deep Near Infrared Reaches in the Body

So, if we look at red light, and every chart has slight differences, and every chart has slight differences, but red light is considered 620 nm to but red light is considered 620 nm to between 700 and 800 nm, and that's going between

700 and 800 nm, and that's going to absorb about 5 mm down to the to absorb about 5 mm down to the subcutaneous area at most parts of your subcutaneous area at most parts of your body, anyway. Near infrared, so if body, anyway. Near infrared, so if there's a near infrared, that means there's a near infrared, that means there's other infrareds, which we'll there's other infrareds, which we'll talk about in a separate video, but near talk about in a separate video, but near infrared goes from 700 to 800 nm up to infrared goes from 700 to 800 nm up to about 25 100 nm, and that absorbs down about 25 100 nm, and that absorbs down to about a centimeter, which depending to about a centimeter, which depending on again where it is, it's going to get on again where it is, it's going to get into the deep subcutaneous or into the into the deep subcutaneous or into the muscle. And this is often why near muscle.

How Light Therapy Activates Your Mitochondria

And this is often why near infrared is used in orthopedic infrared is used in orthopedic applications to get into deeper areas, applications to get into deeper areas, maybe wrapped around a joint that's maybe wrapped around a joint that's sore, something like that. Now, what do sore, something like that. Now, what do they do once they get there? Well, red they do once they get there? Well, red light and near infrared light activate light and near infrared light activate different types of enzymatic systems, different types of enzymatic systems, and a lot of the enzymatic activation is and a lot of the enzymatic activation is aimed at turning on mitochondrial aimed at turning on mitochondrial activity, so that the mitochondria, activity, so that the mitochondria, which create energy for the cell, speed which create energy for the cell, speed up, essentially. Now, what would that do up, essentially. Now, what would that do for me? And so, why did they have me put for me? And so, why did they have me put red light or near infrared on my joint red light or near infrared on my joint that was recovering from an injury?

that was recovering from an injury? Well, when you're recovering from an Well, when you're recovering from an injury, when you've had surgery, when injury, when you've had surgery, when you've had maybe a global metabolic you've had maybe a global metabolic issue, like long COVID or infection or issue, like long COVID or infection or inflammation or whatever, your inflammation or whatever, your mitochondria get a little bit behind, mitochondria get a little bit behind, and they need to recover. Red light and they need to recover. Red light therapy and near infrared therapy can therapy and near infrared therapy can assist the mitochondria in this recovery assist the mitochondria in this recovery process. That's very important to keep process. That's very important to keep in mind. Quick plug here, if you're a in mind. Quick plug here, if you're a healthcare practitioner working with healthcare practitioner working with patients with these issues, I have a CE patients with these issues, I have a CE website, and I do webinars on this topic website, and I do webinars on this topic and others. So, we're going to put a and others. So, we're going to put a link in the description below to the CE link in the description below to the CE website link and the particular webinar website link and the particular webinar of interest. Thank you. So, if you had of interest. Thank you.

How to Use a Home Red Light Device

So, if you had as the questioner was asking a home unit as the questioner was asking a home unit or if even you go into a clinic and they or if even you go into a clinic and they have a unit, what would I do with those?

have a unit, what would I do with those? Well, often in the clinical setting Well, often in the clinical setting you'll have a map, let's say, or some you'll have a map, let's say, or some other device that is either going to other device that is either going to modulate between those two, so it's modulate between those two, so it's going to have red on and then near going to have red on and then near infrared, or it might do both at the infrared, or it might do both at the same time depending on how the light same time depending on how the light diodes are set up or the lasers are set diodes are set up or the lasers are set up. If you have something at home like up. If you have something at home like the person in the question and it has a the person in the question and it has a red near infrared cycle, then that's red near infrared cycle, then that's probably the easiest thing to do is just probably the easiest thing to do is just cycle it. But let's say you're using it cycle it. But let's say you're using it and you are trying to get to a deeper and you are trying to get to a deeper organ, right? Now, during COVID there organ, right? Now, during COVID there was some research around this with the was some research around this with the pneumonitis that people would get with pneumonitis that people would get with the earlier versions of COVID. People the earlier versions of COVID. People still get it. And they did research still get it. And they did research where they made like

a vest that had red where they made like a vest that had red light near infrared therapy and it light near infrared therapy and it actually improved the outcomes getting actually improved the outcomes getting people out of the hospital and stuff.

people out of the hospital and stuff. So, during COVID we were having people, So, during COVID we were having people, especially when people are locked down, especially when people are locked down, get these red light pads that had red get these red light pads that had red near infrared and then we would normally near infrared and then we would normally have them if it didn't cycle, we just have them if it didn't cycle, we just have them do it on near infrared because have them do it on near infrared because that's going to go deeper. Remember the that's going to go deeper. Remember the big difference in red near infrared, not big difference in red near infrared, not so much the enzymes it turns on but how so much the enzymes it turns on but how deep it goes. So, red goes in it's great deep it goes. So, red goes in it's great for like a joint or some other thing.

for like a joint or some other thing. But if you're trying to get to your But if you're trying to get to your lungs or your abdomen or your lungs or your abdomen or your reproductive organs or maybe you hurt a reproductive organs or maybe you hurt a thigh muscle, your big heavy duty thigh muscle, your big heavy duty muscle, near infrared's going to get muscle, near infrared's going to get deeper. So, that's the big thing is how deeper. So, that's the big thing is how deep do we want to go? Now, I've also deep do we want to go?

When to Choose Red Only vs Near Infrared

Now, I've also had a different version of this question had a different version of this question which is I have a home unit but it only which is I have a home unit but it only is in the red spectrum, okay? And so is in the red spectrum, okay? And so it's only in that lower nanometer red it's only in that lower nanometer red spectrum. Well, it's still going to get spectrum. Well, it's still going to get in even if you're using it over a bigger in even if you're using it over a bigger body area, but the way that it's going body area, but the way that it's going to work is through getting down to the to work is through getting down to the subcutaneous circulation. And so, if you subcutaneous circulation. And so, if you think about it, you have, you know, your think about it, you have, you know, your outer layer of skin there in the outer layer of skin there in the epidermis, which is largely they call it epidermis, which is largely they call it keratinized. And then you get down to keratinized. And then you get down to the the dermis, and then you get down to the area below the dermis and the sub area below the dermis and the sub cutaneous, where you've got blood flow cutaneous, where you've got blood flow up through and including the lower up through and including the lower dermal layers, not into the keratinized dermal layers, not into the keratinized outer layer. So, that means that even if outer layer. So, that means that even if you have a red light and no near you have a red light and no near infrared, you're going to absorb through infrared, you're going to absorb through those upper layers into the blood flow those upper layers into the blood flow area, and then the blood flow in that area, and then the blood flow in that area is you're going to affect the area is you're going to affect the plasma and the form blood components and plasma and the form blood components and the tissues locally around there. So, the tissues locally around there. So, you're still going to get some benefit, you're still going to get some benefit, but if you try to get to deeper tissues, but if you try to get to deeper tissues, the biggest difference if you do have the biggest difference if you do have one that kicks between red and near one that kicks between red and near infrared, deeper tissues are going to be infrared, deeper tissues are going to be more affected by our friend near more affected by our friend near infrared if you have it. Well, I hope infrared if you have it. Well, I hope this answered that question about the this answered that question about the differences between red and near differences between red and near infrared. It's better to do red than infrared. It's better to do red than nothing at all, especially for pain, nothing at all, especially for pain, mitochondrial recovery, energy, all that mitochondrial recovery, energy, all that stuff. But, if you have the option of stuff. But, if you have the option of red near infrared and you can cycle red near infrared and you can cycle between the two, that's really great.

between the two, that's really great. And then if you're going for a deep area And then if you're going for a deep area like your lungs, abdominal, pelvic like your lungs, abdominal, pelvic organs, or big muscles, and you can do organs, or big muscles, and you can do near infrared, that's really preferable near infrared, that's really preferable to get to the mitochondrial beds in to get to the mitochondrial beds in those cells. All right, I'm Dr. A. Thank those cells. All right, I'm Dr. A. Thank you for subscribing. If you haven't, you for subscribing. If you haven't, please do subscribe, like, share, do please do subscribe, like, share, do notifications, all that. We'll put some notifications, all

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