

THE ULTIMATE GUIDE TO

# RED LIGHT THERAPY

The Ultimate  
Guide to Choosing  
a Red/NIR Light  
Therapy Device

A R I W H I T T E N

# The Ultimate Guide to Red and Near-Infrared Light Therapy

**The Ultimate Guide to Choosing a Red/NIR  
Light Therapy Device**

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# The Ultimate Guide to Choosing a Red/NIR Light Therapy Device

When choosing the right near-infrared and red light therapy light device, you want to select a device that's long-lasting, has a great warranty, is well-manufactured, and most importantly, one that offers the correct wavelengths at the right power density over a large area.

Let's cover each of these more in depth. The most important things to look for specifically include the near-infrared and red light therapy devices:

1. **Wavelength:** What wavelengths does the device offer? Do these have health benefits? Are they in the proven ranges of 600-700nm and 780-1070nm, or better, the most researched ranges of 630-680nm and 800-880nm?
2. **Power Density:** How much irradiance/power does the device deliver — what is the power density in mW/cm<sup>2</sup>? (To calculate this, you need to know the total wattage and the treatment area of the light.)
3. **Size of the light and treatment area:** This is critically important – how big of an area will it treat? Is it a small light of less than 12" or a big light that can treat half of your body or your whole body all at once? Think about it: Do you want to hold one of these small devices by hand for 30-60 minutes to do a treatment? Probably not. You'll get tired of using it really fast. So it has to be convenient, and ideally, has to be something that is not only fast, but something that you do while doing other things (if you wish), so you're not sitting there holding a device in different positions for 30-60 minutes.
4. **Warranty:** How long does the warranty last? Will you have time to find out if it works? (Hint: look for at least one year or longer.)
5. **What do you want it for?** Depending on your specific purpose, there are a few different devices you may want to consider. (If you have specialty needs like brain health, or skin health, it will affect the wavelengths you want, the power of the device, and even the type of device.)

# HOW TO CHOOSE THE PERFECT NEAR-INFRARED AND RED LIGHT THERAPY LIGHT DEVICE



## 1 WAVELENGTH

*What wavelengths does the device offer? Do these have health benefits? Are they in the proven ranges of 630-680 nm and 800 to 880nm?*

## 2 POWER DENSITY

*How much irradiance/power does the device deliver—what is the power density in mW/cm<sup>2</sup>?*

## 3 SIZE OF THE LENGTH AND TREATMENT AREA

*This is critically important - how big of an area will it treat? I.e. Is it a small light of less than 12" or a big light that can treat half of your body or your whole body all at once?*

## 4 WARRANTY

*How long does the warranty last? Will you have time to find out if it works?*

## 5 WHAT DO YOU WANT IT FOR?

*Depending on the specific purpose you have in mind to use it for, there are a few different devices you may want to consider.*

I cannot emphasize this enough: When choosing a red light or near-infrared light device, you want to be extremely careful to choose wisely, based on the wavelength and power density levels of the device.

Wavelength and intensity makes all the difference between incredible benefits and *no* benefits.

## You Want Therapeutic Wavelengths that Achieve Real Results

Again, not all wavelengths are equal — nor all devices. Look for wavelengths in the *proven* therapeutic ranges.

Based on the bulk of the research, you want:

- 630-680nm (the optimal healing spectrum of red light)
- 800 to 880nm (the optimal healing spectrum of near-infrared)
- or a combination of both

One thing I do want to mention is this: Earlier, it was mentioned that wavelengths of 600 to 700nm and 780-1070nm have been proven to have the most significant impact upon cytochrome C in the mitochondria, and thus, these are the wavelengths that will provide the most stunning results for anti-aging, arthritis, fat loss, reduced waist circumference, re-growing hair for individuals with hair loss, joint repair, bone repair, cancer recovery and prevention, cognitive enhancement and brain health.

The therapeutic range is only within those specific wavelengths.

I do not recommend devices that specify other wavelengths than the ones I mentioned above (or don't specify any wavelengths at all). If you see a device offering wavelengths in the 700-770nm range, be aware that far fewer studies support health benefits at these wavelengths.

Again, if the company doesn't give you information about the wavelengths in their light devices (or you have to go searching for it), or they are not using optimal wavelengths, I don't recommend it.

Also, when it comes to red vs. near-infrared, be aware that it doesn't have to be one or the other! Some quality devices offer red light wavelengths (630 – 680nm) specifically. Other devices offer the near-infrared ranges of 800-900 specifically. And a number of devices now offer a combination of red light and near-infrared LEDs in the same device. I generally recommend getting a mix of red light and near-infrared for most people and purposes. Unless you know that you *only* want to treat deeper issues (like the brain, for example) and nothing else in your body – in which case, a near-infrared light is best – then a combination of red and near-infrared is ideal most of the time. But again, since they work through the same mechanisms, a pure red or pure near-infrared device can also work great.

## Why Power Density of The Light Matters

Power density is also important because your cells need to receive a certain intensity of red light to benefit.

Remember, to know power density, you simply need to know the wattage of the light and the treatment area (as described in the guide to dosing section).

We want a sizable light that has a power density of **at least 30mW/cm<sup>2</sup>**, and around 100mW/cm<sup>2</sup> from close range (e.g. 6" away). That's what will allow us to get up to the therapeutic levels that are used in the studies – especially for the deeper tissues. Importantly, it also allows you to use the light from further away and treat a much larger area of your body – since light spreads out with more distance – while still getting an effective dose. In contrast, lower wattage lights will need to be right next to your body to get an effective dose, and thus can only treat much smaller areas at once.

A reputable company will give this power density information to you. If the company doesn't give this information, it's likely because they don't want to, because their device is sub-par.

The intensity of light used also impacts how *long you need to use the device on the body*. **A device with only 1/5<sup>th</sup> the irradiance of another device will take 5 times longer to yield any positive effects.** And it *still* won't be nearly as effective – especially for treating deeper issues like muscles, bones, the brain, glands, organs, tendons, fat cells, etc. – because the lower power light won't penetrate nearly as deep into your tissues as the more powerful light.

**Again, you want to get an LED device with the power capacity of at least 30mW/cm<sup>2</sup> and ideally close to 100mW/cm<sup>2</sup> (from close distance, like 6" away).**

In addition to whether the light has a high enough power density, it's also physically large enough to treat a large enough area of your body all at once. That leads us to the next critical point...

## How Big is the Light and How Much of Your Body Can It Treat at Once

Most near-infrared and red light therapy devices have a very small treatment area capability.

Most handheld devices and red lights sold online as skin improving/anti-aging devices offer about 10mW/cm<sup>2</sup> (and many of them offer far less than even that!) and only treat about a 5-10 square inch area, meaning you'd have to use the device, held right over your right cheek, for example, for around 15-30 minutes, to achieve any benefits for anti-aging. Then you could treat the other cheek for another 15-30 minutes. Then the forehead. Yawn.

And to treat the full body? Impossible! Imagine the length of time it would take to treat the belly, thighs, and derriere. No one has time for multi-hour treatments each day.

**But if you get a device with a high power output that also treats a large area at once, that's where the magic is.**

Higher powered devices, like the lights I recommend, deliver close to 100mW/cm<sup>2</sup> at about 6" from the device and still have effective doses (roughly 20-30mW/cm<sup>2</sup>) even a full 24" away! This is a huge benefit, because now even a smaller light (say 15-20" long) can basically *function* as though it is a full human body-sized light! In other words, a powerful light that's 15" long can be positioned 24" or even 36" away from your body, and since light spreads out the more you move away from the source, that light can now give an effective dose to nearly your *entire front or back of your body* at once! (Note: This way of using it is not ideal for deep tissues – it is ideal specifically for anti-aging and skin health purposes.)

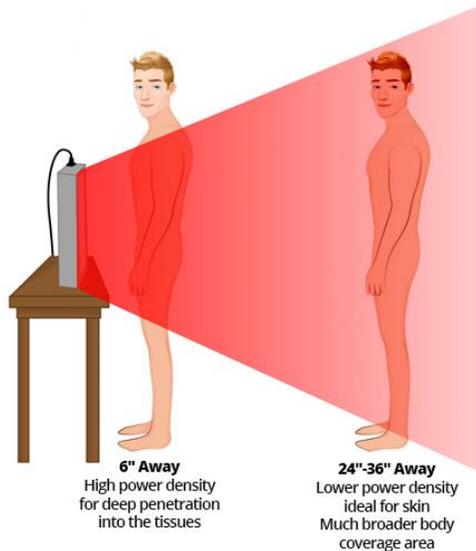
So again, it can basically function the same as a light that is 3 times the physical size (i.e. a light that is the size of your entire body).

Having a high-power light that is also large enough in size allows you to treat large areas of your body at once in just a few minutes. You can **treat an area like the face, the whole torso or legs, or even do multiple parts of the body and effectively, the entire body, in just a few minutes!**

I suggest thinking about long-term goals here and making a wise purchase. Get a device that is powerful, cost-effective, and efficient so you can conveniently do treatments for a large area of your body in just a few minutes.

High-power lights are going to give you far more benefits in far less time, are more effective (especially for deep tissues), and have more flexibility in how you can use them.

I also *strongly* recommend getting a large panel light over a hand-held device. Most people who purchase the small devices end up never using them because it's just too time consuming.



## **What is the Warranty and How Long Will the Device Last?**

This one is very straightforward – buy from a company with a strong warranty who stand by their lights. Otherwise, you'll likely be throwing money away and having to buy a replacement in 6 months to a year.

With a high-quality red/NIR light therapy device from a reputable company, you will have it for many years without any problems whatsoever. And if there is a problem, they'll replace it.

If you're going to spend hundreds of dollars on something, quality is key.

# What is Your Purpose Using Red Light Therapy? (And the Difference Between Red and Near-Infrared Light)

As I mentioned earlier, **red and near-infrared light work through the same physiological mechanisms at the cellular level.**

So then you might wonder, why distinguish between them at all? What differences – if any – exist between red and near-infrared light?

Let's briefly delve into the most significant differences to be aware of, and then at the end of this section, I'll provide a practical summary to help make your decision easier.

There are basically four differences to be aware of:

- 1. Red light is visible to the human eye, while near-infrared is almost entirely invisible.**
  - This isn't significant, other than the fact that you can see that it's working. Some people will get a near-infrared light and think "Is this thing even on? Is it even doing anything?" because it doesn't emit light that is visible to the human eye. So it can be a bit of a shock for some people to turn an LED light "on" and not see any light.
  - Then we have the placebo effect. As with any therapy, part of the effect always comes from the placebo effect. And certainly, one's ability to see and feel something working figures into the placebo effect. So while there is no actual research testing this theory, based on my experience working with people, I believe that it is likely that red light has a superior placebo effect compared with near-infrared light. Again, just because the human eye cannot see the near-infrared light, it immediately causes some people to wonder "Does this thing even do anything – I can't see or feel anything. What the heck did I just buy – a light that doesn't even emit any light?" In other words, some people will have thoughts that create an ANTI-PLACEBO EFFECT, which works against them (and causes them to send me angry emails because they're confused and think that they just bought a non-functional light). To be blunt, part of the reason I suggest a 50-50 mix of red and near-infrared over a pure infrared device (most of the time) is simply to avoid people getting confused and thinking that their light doesn't work.
- 2. Near-infrared (800-880nm) has significantly more power output per LED bulb.** Some estimates are about 30% more power output. So the dose will be higher with near-infrared lamps compared to red lamps of the same wattage, so you get a more potent dose.
- 3. Near-infrared can be more expensive, depending on who you purchase it from.** Certain companies like Joovv charge significantly more money for near-infrared compared to red.
- 4. Near-infrared penetrates a little deeper into the tissues compared to red light (especially through the skull).**
  - This is the much more important difference between red and near-infrared light.
  - Red light from 630-680nm will not penetrate as deeply into the human body, and therefore, is likely superior for treating skin and other superficial issues like combatting hair loss, since more of the light energy stays on the surface tissues.
  - The 800-880nm range (near-infrared) is better suited for penetrating deeper to affect muscles, bones, tendons, ligaments, organs, the brain, and hormone-producing glands. Particularly if you want to treat the brain, research indicates the really only near-infrared will penetrate the skull to deliver light to the brain. So if that is one of objectives, I recommend getting a pure near-infrared light or mixed red and near-infrared light.
  - If you primarily want the light for anti-aging purposes (e.g. wrinkle reduction and combatting cellulite), red light may be a better choice. (Arguably, that is nitpicking because near-infrared

probably has most if not all the same benefits.) Whereas if you want to treat deeper tissues like muscle, bone, tendons, glands, or the brain, near-infrared is a better choice. (Keep in mind you can also get lights that have both wavelengths, and that is probably ideal for most people and purposes)

The most significant difference here worth noting is the penetration depth. It's worth figuring out exactly what you intend to use the light for – either more surface treatments or treating deeper tissues.

That said, please keep in mind that both red and near-infrared light have the same effects on cells, and both essentially work for all purposes. Near-infrared will still work great for anti-aging benefits on the skin, and red light will still work for things like fat loss or muscle gain. But if you have specific things that you want to treat, you can choose the light wavelengths that will be best for your individual needs.

In most cases, we're talking about a *slight* edge for one over the other for specific uses. But in some cases (e.g. penetrating the skull), certain wavelengths do have a clear advantage over other wavelengths.

Other than that, the only other distinction is that red light is visible to the human eye while near-infrared is invisible to the human eye.

In fact, for most uses, research has shown that *both* red and near-infrared light can be effective in providing benefits. For example, here is a list of wavelengths proven effective for various conditions, so you can see for yourself that both red and near-infrared are effective:

Condition	Wavelengths shown to benefit condition (in nanometers)
Alzheimer's	627, 670, 800, 810, 1070
Cognitive performance	660, 810, 1064
Depression	630, 650, 810
High blood pressure	660, 780
Eye health	630, 650, 660, 670, 680, 780, 810
Hair growth	630, 650, 830
Exercise performance	630, 640, 660, 670, 810, 850
Arthritis	630, 660, 785, 810, 830, 910
Oral health	630, 640, 650, 660, 670, 685, 780, 790, 810, 830, 850, 900, 940, 980, 1060
Pain	650, 660, 780, 810, 820, 830, 900, 980
Fertility	630, 650, 830
Skin rejuvenation	630, 650, 660, 830, 890
Thyroid health	630, 780, 830

The point of all that is only to illustrate that for pretty much all conditions, both red and near-infrared light have proven to work. So you really don't need to worry too much about the differences between the wavelengths or start thinking "oh no, I don't have the right wavelength for fat loss... skin health" etc. Again, for most things, either red or near-infrared will do the trick!

My general recommendation is that if you want to treat deeper tissues, prioritize near-infrared over red light. The more you want to treat skin issues, prioritize red light. That's a general principle you can use to

tailor your choice of a light to your unique needs keeping in mind that both types of light will work for most purposes.

For most purposes, a large mixed LED panel with a mix of 660nm and 850nm is the best choice.

But for specific issues, you may want to consider other options:

- For skin issues and hair loss, it is possible that red light at 660nm may be the most optimal. (Though near-infrared at 850nm will still have most of the same benefits. It's just a question of what is most optimal.
- If you only want to treat deeper organ, gland, joint, or muscle/tendon issues (and NOT skin issues), then you may want to go with a pure 850nm light device.
- If you only want to treat your brain (e.g. for depression, anxiety, cognitive performance, or neurological disease), then near-infrared is best. (The VieLight Neuro is likely the best option for this specific purpose. See the information on this device in the "Recommended Devices" section later in this book.)
- Again, let me emphasize that for most purposes and for most people, the best choice is a combination of the 660nm and 850nm LEDs in a large LED panel that will treat a large area of the body at once. This option is best because it works for basically any and all purposes you could possibly want it for. A combined near-infrared and red light therapy device offering both 660nm and 850nm will allow you to do anything you want on any given day – whether anti-aging treatments on your skin, or healing an injury or lower back pain, or muscle recovery and fat reduction.

## Do Heat Lamps Work for Red/NIR Light Therapy?

There are some companies who sell red heat lamp incandescent bulb setups as either red/NIR therapy devices or as saunas, or a combination of both – sometimes advertised as a "near-infrared sauna." So I often get the question if these are ideal for red/NIR light therapy.

There are various takes in articles online on this subject, with some LED companies basically saying that they are not effective for red/NIR light therapy, and SaunaSpace (the company that makes these heat lamp saunas) writing a nice rebuttal saying that they are effective.

Here's my take on all this...

These red heat lamp bulbs can work to deliver the benefits of red/NIR light therapy, but there are some challenges with trying to use these devices for red/NIR light therapy:

1. They are not pure red or pure near-infrared light sources as some companies sometimes try to imply (some companies try to imply that these bulbs emit pure red or pure near-infrared light, which is not true) and much of the light emitted is not in the red/NIR spectrum. They actually emit light across a broad spectrum of the spectrum, from red light all the way up through far-infrared. I.e. Instead of an LED panel, where, for example, 200W of light are being emitted right at the specific therapeutic wavelength of 660nm (or 850nm), you have 200W of light that is spread across a big spectrum from roughly 600nm-3500nm+).
  - A. Roughly 14% of the overall irradiance is emitted in the therapeutic band of 600nm-1000nm. And based on that, roughly 1/3<sup>rd</sup> of that is in the part of the spectrum where most red/NIR light research has been done – from 630nm-680nm and 800nm-880nm. Stated differently: About 85% of the light emitted from these bulbs is not in the red/NIR spectrum. So if you have a bulb that is 250W, less than 40W is actually in the red/NIR therapeutic window, and an even smaller amount is in the specific

bands of light commonly used for red/NIR light therapy and that are known to most strongly stimulate mitochondria.

- B. The company that makes these heat lamp saunas with a canvas tent around it (SaunaSpace) suggests that, because the sauna uses 4 heat lamps (not just 1), these numbers go up significantly and do reach therapeutic levels. This is true, and it is likely the case that these lights can give some benefits of red/NIR light therapy. But this 4-bulb setup is roughly \$1,000 (roughly twice as much as the LED devices that I recommend), or \$3,000 for the sauna version which comes with a canvas tent enclosure to create a heated room.
2. Dosing is a little complicated, because much of the light emitted is outside of the most therapeutic bands (630-680nm and 800-880nm). To demonstrate why, think of this scenario: Let's say you're using an 850nm LED device that has an irradiance of 75mW/cm<sup>2</sup>, and let's say you're using an incandescent bulb that has the same irradiance of 75mW/cm<sup>2</sup>, but that light output is spread across 600-1000nm instead of being concentrated at a known therapeutic wavelength (like 850nm). Is the dosing the same? I don't know if anyone has a definitive answer to that. The power density is the same, but the spread of the light output over different wavelengths is very different. The answer is probably that time should be increased somewhat, but it's hard to know exactly by how much. Also, the fact that there is virtually no scientific research on red/NIR light therapy that uses these types of devices also makes it difficult to draw conclusions about dosing guidelines.
3. The fact that it creates lots of heat makes it difficult to use it in a targeted way on specific deep tissues from close distance (like you can with LED panels) without overheating the tissues and potentially causing burns. Ideally, you don't want a red/NIR light source that emits lots of heat, as it greatly limits how close you can get to it, and therefore makes doing treatments on various areas much more complicated and limited in what you can use it for. For skin treatments, this is not an issue since you're generally using it from further away, but for doing targeted treatments on deep tissues in specific areas, this is a significant factor.
  - A. Side note: For the sake of clarity (since some manufacturers of the bulbs sometimes imply that their bulbs are pure red or pure NIR light), I want to note that the heat is created from the far-infrared rays, not from near-infrared rays. The heat one feels from these devices (i.e. the fact that they get hot and heat up your body and create a sauna environment if you do it in a closed space) is not a result of red and near-infrared light – it's from all the far-infrared rays being emitted. Those create heat, not the same therapeutic benefits of 630-680nm and 800-880nm red/NIR light.
4. Finally, one further potentially complicating factor is that if you're using it as a sauna, the optimal treatment time for sitting in the sauna (and getting hot, sweating, etc.) is generally not the same as the optimal treatment times for red/NIR light therapy. In some cases, depending on how you use it, there can be some overlap. But in general, if you're using it as a sauna to get hot and sweaty, then you're probably not using it in the very precise doses that are optimal for red/NIR light therapy. E.g. Optimal doses for red/NIR light therapy tend to be in the range of 2-10 minutes per area (maybe a little longer if you're relatively far away from the light source), and optimal sauna use times are generally considerably longer than this. But you could potentially get around this issue by rotating your body to a new position (where the light is on a different part of your body) every 5-10 minutes while in the sauna.

Overall, these heat lamp saunas can be used for red/NIR light therapy (especially if you get SaunaSpace's 4-bulb setups), but they do come with a few issues that make red/NIR light therapy a little more complicated.

# Other Types of Light Devices and Treatment Options

In addition, there are other types of light devices one can get.

- **Laser devices.** These can range in price from \$2,500-\$30,000. And as I quoted Hamblin previously, there is no strong evidence that LED devices are inferior to laser devices. The research comparing the two has shown similar outcomes. But there are still some practitioners who believe that lasers are superior in their effectiveness. Laser devices are generally purchased by health practitioners for use in their clinics, and not by regular people. Since this book is intended as a guide for regular people, and because I assume most people don't want to spend thousands of dollars on their red/NIR light device, I am not discussing all the different laser devices available for purchase. If you wish to purchase a laser device, you can find a guide here: <https://www.top5reviewed.com/cold-therapy-lasers/>
- **Hair-loss specific devices.** There are several devices that are marketed specifically for hair loss – e.g. combs and helmets, etc. These devices are generally underpowered and overpriced. For hair issues, I believe the LED devices I recommend are going to be superior.
- **Facial anti-aging devices.** There are also several devices that are intended for facial beauty/anti-aging effects on skin. Some of these devices appear decent, but most are also greatly underpowered and overpriced, and inferior to the LED devices I recommend. There is simply no need for face-specific products. You can just as easily use the LED panels I recommend. Plus, they have the added versatility to be used on many other areas of the body.
- **Joint-specific devices.** There are several devices that are marketed specifically as joint pain alleviators. I've even seen some commercials on TV for one device. These devices are generally also underpowered, and there is so much pseudoscience in the claims some companies make about their product. As with the other body areas above, for joint issues, I also believe the LED devices I recommend are going to be superior.
- **Brain-specific devices.** There is one brain-specific device from a company called VieLight that I do recommend, and is likely the best option for treating the brain. The LED devices I recommend can be used to treat the brain on the forehead, or other areas of your head where you don't have thick hair, but they are limited by the presence of hair in what parts of the head/brain they can deliver light to. There is research showing, however, that treating the brain through the forehead alone can be effective. Having said that, I still think the VieLight Neuro is the best option for the brain specifically. I discuss this device in more detail below.
- **Laser acupuncture and Photopuncture.** Some people – like my friend Kay Aubrey-Chimene of the Photonic Therapy Institute – do something called "photopuncture." This is using targeted high-power red light "torches" specifically on acupuncture points, with the idea that the light travels along the body's energy "meridians." (This is a concept from Chinese Medicine.) Some people have suggested that light can essentially work to rebalance the body's energy/meridian system with light just as well as needles. And the Photonic Therapy Institute has reported great success using these methods. There are several studies that have actually used red/NIR light on meridian/acupuncture points and shown very exciting and positive results.<sup>377</sup> There have been at least 18 studies done on this over the last 20 years on conditions such as headaches and myofascial pain, and most have shown positive effects. The only issue here is that there is a paucity of data comparing treatments on the acupuncture points vs. light treatments not on acupuncture points. That makes it hard to know exactly how much the acupuncture point-targeted aspect of the light treatment is actually a major factor in the effectiveness. Without controlled studies, it's not possible to determine if shining the light on non-acupuncture points would have the same effect. But again, there are positive studies that have used these methods, so I'm interested to see studies that explicitly test what role the focus on acupuncture points is playing in the results. The Photonic Therapy Institute offers a 1-torch and 2-torch light kit (along with instructional materials) for Photopuncture. Based on the

positive studies, this may very well be worth experimenting with. I recently purchased it to experiment myself and see what kind of effects I notice. I discuss this kit again below in the recommended devices section.

Please note that my general dosing recommendations are for the LED panel devices I recommend, not for specific devices like the Photopuncture device or the VieLight Neuro. For those two devices, I suggest following the dosing guidelines from those two companies.

## My Recommended Lights for Red/NIR Light Therapy

I know all this information can feel overwhelming and confusing. So let me break it down for you very simply, by giving you my top choices for devices in each category from small to large.

You want to get a light device that gives spa-worthy treatment in your own home. While treatments from health professionals and doctors using red/NIR light therapy can cost hundreds of dollars, a wise one-time investment in a high-quality light will allow you to do treatments at home that would cost tens of thousands of dollars if you were to go to an anti-aging clinic or doctor's office for treatment.

By the way, I happen to know of some anti-aging clinics that use the *exact* lights I'm recommending, but charge people \$75-\$150 for a *single session* with the light. Now you know how to accomplish this in the privacy of your own home, at your own convenience, while – after the initial purchase of the light – only costing *cents* to use each day.

Here are my top choices for the light devices I recommend:

### Best Small Red/NIR Light Device

I do not recommend the small devices, as they are extremely underpowered and only irradiate a small portion of your body. So in general, I think it is much wiser to spend a little more and get a much bigger and higher power device.

But if you must get a small device (or you only want to treat a very small part of your body), the only small light that I recommend is this one from Red Light Man. It's a 100 watt light with LEDs split between 610nm, 630nm, 660nm, and 680nm. Or you can get it as solely a 670nm light. I recommend doing the latter, because 670nm will activate cytochrome c oxidase in the mitochondria more effectively than lower wavelengths like 610nm. This light will have a good power density at about 4-5" away from the light, but remember, it's a small light, so light will only hit a small part of your body. (Note: The effective power density of therapeutic light is considerably lowered by the fact that some of the wavelengths – especially 610nm – used in this light are outside the optimal therapeutic wavelengths.)

**To treat larger areas of your body at once – which I strongly recommend doing for time-efficiency and to get greater benefits, especially for general skin anti-aging uses – you'll definitely want to get a larger light.**

**In general, it's best to spend your money (even if you have to save up) on a larger more powerful light rather than rushing to get a small one.**

## Best Medium Sized Red/NIR Light Devices

These lights get into the optimal range for power output and size, so they can treat a large portion of your body at once with a sufficient dose.

These devices generally cost upwards of \$450 and deliver upwards of 120-300 watts of power to large portion of your body (like large muscle groups and a large portion of the torso at once). This is a huge time-saver when compared with treating the same areas with a small device and will lead to better results. Also, since some of the effects of the light are from irradiating the blood and lowering inflammation, the larger lights will treat more of the blood at once and will have better body-wide effects.

My top choices in medium size devices are as follows:

### 1. "Red Rush360" by RedTherapy.co.

- It's 360 watts, and gives a solid power intensity of about 100mW/cm<sup>2</sup> at 6" from the light. (That's actual light output, not the claimed power output.)
- It's 16.3" tall by about 10.6" wide (slightly larger than the other lights in this category).
- It has 120 LEDs (twice as many as the Joovv).
- It comes with a 50-50 split of 660nm and 850nm.
- The price is excellent at \$449. (This is my overall top choice for a light under \$500.)



### 2. The "BIO-300" by Platinum Therapy Lights

- It's 300 watts (more than double the comparably sized Joovv, and almost as much as the Red Rush), and gives a great power intensity of about 100mW/cm<sup>2</sup> at 6" from the light (roughly the same as the RedRush).
- It's 19" tall by about 9" wide (slightly larger than the Joovv, and roughly the same size as the Red Rush, slightly longer just not as wide).
- It has 100 LEDs.
- It's available in the same options as the Joovv light – 660nm, all in 850nm, or a 50-50 split of 660nm and 850nm.

- The prices are excellent:
  - All 660nm = \$449
  - 50-50 split of 660 and 850nm = \$449
  - All 850nm = \$449



### **3. The Joovv Light "Mini" by Joovv (Joovv is the brand that has been around the longest and has a good reputation overall.)**

- It's 120 watts, which is considerably less than the two lights mentioned above. (Note: Their claimed power intensity is 110mW/cm<sup>2</sup> at 6" from the light but this is based on the calculated theoretical numbers on paper, not the actual *measured* light output. I've measured it right next to the Platinum BIO-300 and Red Rush360 and measurements show that it's actually only 74mW/cm<sup>2</sup>. And that is for the 50-50 mix of red and near-infrared. A pure red device would be slightly lower than that, and a pure near-infrared device would be slightly higher.)
- It's 15" tall by about 8" wide (slightly smaller than the other 2 lights)
- It has 60 LEDs, so considerably less coverage area than the other two lights in this category.
- It's available with all in 660nm, all in 850nm, or a 50-50 split of 660nm and 850nm. The 850nm options are more expensive:
  - All 660nm = \$495
  - 50-50 split of 660 and 850nm = \$595
  - All 850nm = \$645



Remember a higher powered light allows you to treat from further away and thus treat a much larger area of your body at one time, while still maintaining an effective dose. Whereas with the lower power lights, you'll have to be much closer to the device and thus can only treat much smaller areas at one time.

These are all great options. (Of course, I suggest the lights that offer higher power and are simultaneously lower cost, so options #1 and #2 are the clear winners here.)

Now, if you want a large light to treat the whole front or whole back of your body at once with high power density, I would strongly recommend considering the larger and more powerful half-body units.

## **Best Half Body Red/NIR Light Devices**

These units generally cost upwards of \$700 to \$2,500, with a couple great options of large, high power effective lights for under \$1,000.

There are much more expensive options available and full body devices like tanning beds that can treat basically every inch of your body at once, but these are far more expensive and unnecessary for most people. There are a lot more expensive "luxury" red light options for those that want them, but in my opinion, there is really no need to go beyond the lights in this category. This is the category that provides all you need to get great results at a very reasonable price. In my opinion, these half body devices are a fraction of the price, and essentially offer the same benefits.

Several of the devices in this category are much higher power (relative to the medium-sized lights), from about 300 watts on the low end to 600 watts.

This is a great thing, especially when combined with being able to shine light on a much larger area of your body at once, because this will dramatically increase the overall number of photons hitting your body and the dose you receive. Thus, the effects are stronger, and the benefits are greater – especially if you want to treat deeper tissues in larger areas of your body, for organ health, muscle gain, and fat loss, etc. And you can do less treatment time per session.

Plus, if you want to treat deep tissues in large areas of your body at once, it's very time-efficient with sessions of just a few minutes, whereas with smaller devices, it can be more time consuming by having to treat multiple areas.

So if you're looking for a large high power device to do full body treatments, this is ideal.

Here are the large high power devices I recommend:

### **1. The BIO-600 by Platinum Therapy Lights:**

- It's 600 watts (about double the power output of the comparably sized lights from the other manufacturers mentioned below) and gives a solid power intensity of over 100mW/cm<sup>2</sup> at 6" from the light. (This is the same power density as the medium-sized lights from Red Rush and Platinum, but here you get it with a larger light that covers more of your body at once. So you can do full-body treatments from closer distances.)
- It's 36" tall by about 8" wide (essentially the same dimensions as the Joovv "Original" mentioned below).
- You can also get this in all the same options as the Joovv Original Light – either in 660nm, all in 850nm, or a 50-50 split of 660nm and 850nm.
- The prices are wonderful:
  - All 660nm = \$749
  - 50-50 split of 660 and 850nm = \$749
  - All 850nm = \$749

### **2. The "Joovv Original Light" by Joovv:**

- It's 300 watts (about half the power output of the option mentioned above), and gives a power intensity of over 70mW/cm<sup>2</sup> at 6" from the light. (Note: Again, the actual measured power density is significantly lower than what is claimed.)
- It's roughly the same dimensions as the Platinum BIO-600.
- You can also get this in all the same options as the Platinum light – either in 660nm, all in 850nm, or a 50-50 split of 660nm and 850nm.
- The prices are considerably higher (about \$50-\$340 more, depending on the specific light wavelengths you want):
  - All 660nm = \$795
  - 50-50 split of 660 and 850nm = \$995
  - All 850nm = \$1,095

### **3. The "Combo Bodylight 2.0" by Red Light Man:**

- It's 300 watts (half the power output of the comparably sized Platinum light and about the same as the Joovv light).
- It's 4 feet long, so about a foot longer than the other lights.
- It uses red and near-infrared light at the wavelengths of 620nm, 670nm, 760nm and 830nm.
- You can also get this in all the same options as the Platinum light – either in 660nm, all in 850nm, or a 50-50 split of 660nm and 850nm.

- The price is \$750
- Is a nice light, but from my perspective, has two drawbacks:
  - It's not as high power as other options in this category (in particular the Platinum light).
  - Part of the light spectrum is at 760nm, which is not an ideal choice in my opinion, as research generally indicates that the wavelengths from 700nm-780nm are less effective. (That's why very few studies ever use these wavelengths.)
  - Overall, it can still be effective.

Note: With a larger light (around 36-48" long) that is this powerful, you can effectively treat the entire front or back of your body – even the deeper tissues – at once. So if that is something you'd like to do, this is a great investment in your health.

## **Full Body Red/NIR Light Therapy Options**

There is also the option of doing a light setup that will shine on the full front or back of your body from head to toe.

- Joovv has a selection of high quality LEDs in very large sizes that cover the whole length of the body. Prices range from \$2,195-\$3,995. It comes with the same options of either pure 660nm, pure 850nm, or a 50-50 mix of the two.
- My personal favorite setup is simply two of the Red Rush360s or Platinum BIO-300s (or one BIO-600 combined with a BIO-300 or RedRush360). I lay them on their side on the ground and then I lay down next to them and treat one full side of my body all at once in a laying position instead of a standing position (which I prefer anyway, because I find it more relaxing to use it in laying down compared to standing up). In contrast to the \$2,400-\$3,000 light setup mentioned above, this light setup can cost less than \$1,000. So it's a way to get a full body treatment at less than half the cost.

## **Deluxe Red/NIR Light Therapy Options**

There are also a couple options for super high-end tanning bed-style red light therapy units.

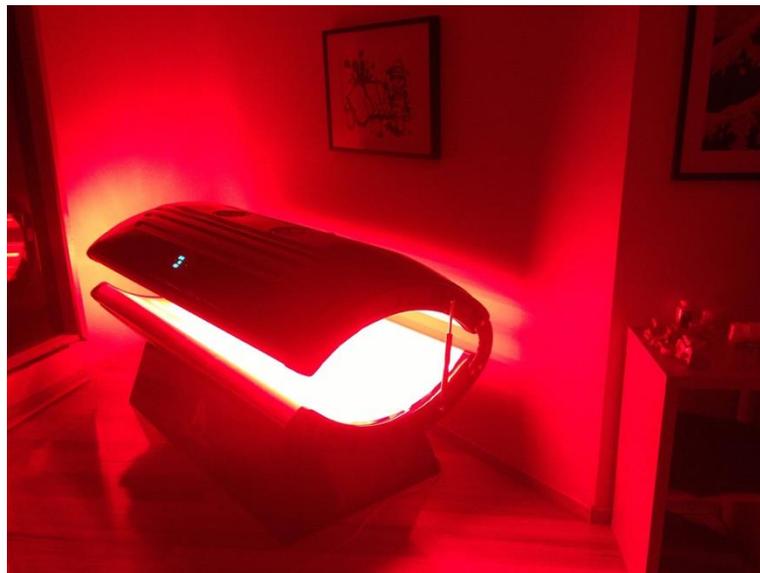
These are generally priced in excess of \$15,000 with one well-known brand selling their unit for upwards of \$100,000!

I put these here in case you're interested in very high-end devices (and you're doing well enough financially to entertain such purchases), but to be honest, I really do not think such devices are necessary. I do not believe that the benefits of these devices will be vastly superior to the other far cheaper lights I recommend.

The main benefit here is being able to treat your entire body (front and back, from head to toe) all at once while in a laying position. And perhaps also that you have a pretty cool looking device in your home to impress friends (which may be a real consideration for some people.)

Below I have listed possible whole body options:

- Mitogen Red Light Bed. This consists of 10,000 LEDs that are a mix of 660nm and 850nm light (the same wavelengths as the RedRush, Platinum light and Joovv. The power output is 15mW/cm<sup>2</sup>. Treatment times will generally be about 10-25 minutes.



A Full Body Red Light LED Tanning Bed by Mitogen Energy Medicine

- NovoThor (a well-known manufacturer of laser devices) also offers a full-body tanning bed-style LED device. This one is a mix of 630nm, 660nm, and 850nm. It has a power density of 17mW/cm<sup>2</sup>. And it costs over \$100k. This is most likely an option either for extremely wealthy people or a professional gym/spa/medical setting.



Note: These devices have relatively low power densities (below 20mW/cm<sup>2</sup>) – probably because if they had high power densities and treated your entire body at once, it would quickly lead to too large of doses. Treatment times might have to be cut off at 30 or 60 seconds if that were the case. Also, research suggests that lower power densities are better for skin anti-aging effects, and I suspect they were likely wanting to optimize skin benefits and overall systemic effects through irradiating the bloodstream. In my opinion, these power densities are more ideal for skin anti-aging, but not necessarily for treating deep tissues.

**To be clear, I am in NO WAY implying or suggesting that you need to purchase these ultra-expensive devices.**

Nor am I even suggesting that they are the most optimal way of doing red/NIR light therapy. While I have heard positive things about these light beds, I believe you can get all the benefits of red and near-infrared light therapy with the previously recommended LED lights, which are a tiny fraction of the price of these tanning bed-style units.

I mention these purely for the sake of presenting all the options on the market, but again, this is not to be interpreted as me implying that you should purchase these luxury red/NIR devices. I believe that you can get all the benefits of red/NIR light therapy with the far less expensive LED panels recommended above.

## **Sauna + Red/NIR Light Therapy Options**

There are a few sauna brands make far-infrared saunas that also add near-infrared light into their sauna. This allows you to get all the benefits of near-infrared light discussed in this book while also getting the benefits of the sauna heat (sweating, detoxification, mitochondrial benefits, etc.).

These are a great option, provided you have the money for it, as they are considerably more expensive than the pure red/NIR devices.

If you want something in this category, Sunlighten saunas make the top of the line, in my opinion. Their mPulse sauna line has both far-infrared and near-infrared built in to the unit. They have 1-4 person sauna options. With this type of premium sauna, you can get far-infrared + near-infrared saunas and enjoy all the benefits of both near-infrared therapy and a traditional far-infrared sauna.

ClearLight Saunas also offers an excellent line with both far-infrared and near-infrared that are extremely high quality.

SaunaSpace manufactures the previously mentioned heat lamp saunas that use 4 incandescent heat lamp bulbs. These will have both far-infrared and near-infrared and red light. They come with a canvas tent (as opposed to a wooden room), and thus are considerably less expensive than the wooden saunas made by Sunlighten and Clearlight. You can get their "Pocket Sauna" [here](#):

For those who can afford it, this is an excellent option. It's also convenient as it allows you to get your near-infrared treatment while doing a sauna session.

## **Photopuncture**

Some people have suggested that "photopuncture" (light on acupuncture points) can essentially work to rebalance the body's energy/meridian system (a concept from Traditional Chinese Medicine) with light just as needles are purported to work in acupuncture. There are several studies that have actually used red/NIR light on meridian/acupuncture points and have shown very exciting and positive results – mainly on conditions such as headaches and myofascial pain.<sup>378</sup> As I mentioned previously, the only issue here is the lack of data comparing treatments on the acupuncture points vs. light treatments not on acupuncture points, which makes it hard to know exactly how much the acupuncture point-targeted aspect is affecting the result. But again, there are positive studies and Kay Aubrey-Chimene (the owner of The Photonic Therapy Institute) has reported a lot of amazing success in her treatment of horses using this system. The Photonic Therapy Institute offers a 1-torch and 2-torch light kit (along with instructional materials) for Photopuncture. It is possible that this form of light therapy could be superior to standard treatments, but as of now, without controlled studies directly testing the extent to which light on the acupuncture points specifically is a key factor in the treatment success, it's hard for me to draw conclusions.

I got her 2-torch kit to experiment with it, and while I'm not yet sold on the concept of "photopuncture" (I want to see more controlled research first), I have to say that I enjoy using it for very targeted treatments on specific small areas (e.g. tendons and muscles) because you can dig the tip of the light right into the target tissue and get deep penetration in a very precise way on a specific small area. For that purpose, it works extremely well.

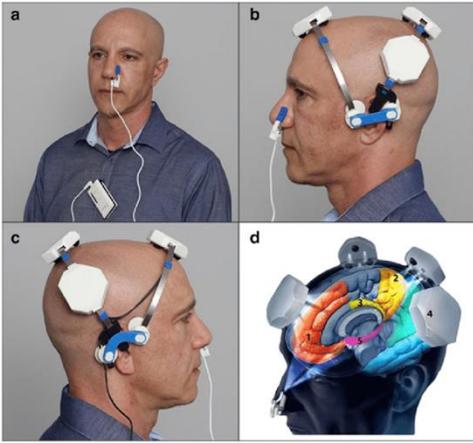
If you're interested in experimenting with "photopuncture," (or using the torches in the way I described how I use them), you can get her 1-torch or 2-torch Photopuncture Kit [here](#):

## **Top Light for Use on the Brain**

If you're using light on the brain specifically – for either a brain health issue or to improve mood or cognitive function – it's important to get a light with near-infrared, not just red light. Research has shown that near-infrared is more effective in penetrating the skull than red light (which has minimal to no penetration of the skull), so this is ideal for the brain.

The LED panel lights I recommend like the Red Rush360 and Platinum Lights have near-infrared (either pure near-infrared or mixed near-infrared with red), and are powerful enough to be used on the forehead and will likely be effective in penetrating the skull with some light.

Nevertheless, if your main goal is to treat the brain, the best option is the VieLight Neuro, which has multiple contact points on the head (that can be worked into contact the scalp to allow light to penetrate through the hair) and will likely have the best results for brain-specific issues. (Note: This device is designed specifically to be worn on the head and thus, won't work well at all to treat other areas of the body.)



Please note that they also sell intranasal devices that claim to target the brain, but Michael Hamblin, PhD does not believe these devices actually do reach the brain directly<sup>379</sup>, therefore, I do not advocate those devices. Yet they do have some positive research. Hamblin believes that they don't work by directly irradiating the brain, but that they work through irradiating the blood through the capillaries, which indirectly affects the brain (and other systems of the body). Assuming he is correct, it really does not make sense to use these low-power intranasal devices to treat the blood – it would be much better to use a high power (and much larger) LED device for that purpose.

Having said that, the VieLight Neuro has the head unit which likely *does* effectively target the brain. And the VieLight Neuro may very well be the best product for treating the brain specifically. We don't know for sure, as there are no studies comparing it directly to LED lights, but there is research supporting the use of this product in treating dementia.<sup>380</sup>

### Other options:

- Photopuncture Kit from The Photonic Therapy Institute. <https://www.photonictherapyinstitute.com/light-store/>
- REDjuvenator – <https://catalyticcolor.com/redjuvenator-light-therapy/> (Unclear information on wattage and power density of lights.)
- GembaRed – <https://gembared.com/> (A small, low-power 45W panel.)

### Animal treatment devices:

- Photopuncture Kit. <https://www.photonictherapyinstitute.com/light-store/>
- RevitaVet Wraps. LED wraps to lay on your animal. <https://photonictherapyinstitute.com/product-category/revitavet-wraps/>
- LED wraps to lay on your animal, and many light therapy accessories for dogs and horses. <http://equinelighttherapy.com/welcome-equine-canine-light-therapy>

## Comparing the Top Red/NIR Devices

If all these stats are overwhelming for you, let me map it all out very simply. Below you can see all the lights I just mentioned **in descending order of their power output**, along with their size, price, and warranty:

<b>Device</b>	<b>Power Output</b>	<b>Size</b>	<b>Price</b>	<b>Warranty</b>
<b>Red Light Man “Red Light Device”</b>	100 watts	7" x 7"	\$219	1 year
<b>Joovv Mini</b>	120 watts	15" x 9"	\$495-\$645	2 year
<b>Joovv Original</b>	300 watts	37.5" x 8.25"	\$795-\$1,095	2 year
<b>Red Light Man Body Light 2.0</b>	300 watts	45" x 7"	\$750	1 year
<b>Platinum BIO300</b>	300 watts	19" x 9"	\$489	5 year
<b>RedTherapyCo Red Rush360</b>	360 watts	16.3" x 10.6"	\$449	2 year
<b>Platinum BIO600</b>	600 watts	36" x 8"	\$789	5 year
<b>Joovv Max</b>	960 watts	53" x 16"	\$2,395-\$2,995	2 year
<b>My personal setup: BIO600 + RedRush 360</b>	960 watts	50.3" long width from 8-10.6"	\$1,198	2 year on the Red Rush360

*Note: I was able to arrange discount codes with some of the manufacturers. Pricing above is before discount. Info on these discounts are in the next section.*

# References

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- <sup>377</sup> Baxter, D. et al. (2008). Clinical Effectiveness of Laser Acupuncture: A Systematic Review. *Journal of Acupuncture and Meridian Studies*. Volume 1, Issue 2, December 2008, Pages 65-82
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- <sup>379</sup> Cohen, J, Selfhacked, (2017) [Interview With Dr Michael Hamblin: Harvard Professor and Infrared Therapy Expert](#)
- <sup>380</sup> Saltmarche, AE, et al. (2017) [Significant Improvement in Cognition in Mild to Moderately Severe Dementia Cases Treated with Transcranial Plus Intranasal Photobiomodulation: Case Series Report](#)