

Latest Additions to Long COVID Recovery Protocol

Analysis by [Dr. Joseph Mercola](#)

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STORY AT-A-GLANCE

- › The Front Line COVID-19 Critical Care Alliance has updated its treatment protocols for long COVID and post-job injuries, adding time-restricted eating (TRE) and photobiomodulation (PBM), using either the sun or near-infrared sauna
- › The primary benefit of TRE for these conditions is its ability to optimize your mitochondrial function, which is key for recovery from any illness or disease. As a general rule, I recommend compressing your eating window to between six and eight hours, and fasting for the remaining 16 to 18 hours each day
- › Near-infrared light triggers production of melatonin in your mitochondria. Melatonin is one of the most important antioxidant molecules in your body. Aside from having direct antioxidant effects, it also stimulates the synthesis of glutathione and other important antioxidants
- › Fifty-three percent of sunlight is near-infrared. Sauna Space also makes near-infrared sauna bulbs that mimic the sun, providing 39% near-infrared light, but no UV
- › You can further optimize your mitochondria by combining PBM with methylene blue. This combination has been shown to provide neuroprotective benefits. It can also address the chronic fatigue that is so common in long COVID and post-job injuries

The video above features the Front Line COVID-19 Critical Care Alliance's (FLCCC) weekly update for October 26, 2022, in which I reviewed the benefits of two of the latest additions to the FLCCC's long COVID recovery protocol,¹ and their post-job recovery protocol:² time-restricted eating (TRE) and photobiomodulation using either the sun or a

near-infrared sauna. Leading the discussion are FLCCC cofounders Dr. Paul Marik and Dr. Pierre Kory.

Time-Restricted Eating (TRE)

The vast majority of people eat across 12 hours or more, which is a recipe for metabolic disaster. Health statistics bear this out. In July 2022, the Journal of the American College of Cardiology³ posted an update on the metabolic fitness or flexibility of the American population.

Metabolic fitness includes things like blood glucose and blood sugar, blood pressure and weight, and metabolic flexibility refers to your body's ability to seamlessly transition between burning fat and carbohydrates as your primary fuel.

In 2016, 12.2% of Americans were considered metabolically fit.⁴ Two years later, in 2018, only 6.8% of U.S. adults had optimal cardiometabolic health.⁵ That was four years ago, so today, that ratio is probably even lower.

I believe at least 95% of Americans are by now metabolically unhealthy, which means some 19 out of 20 people would benefit from TRE, as it's one of the easiest yet most powerful interventions for reducing insulin resistance, restoring metabolic flexibility and losing excess body fat.

As it pertains to long COVID and post-jab recovery, the primary benefit of TRE is its ability to optimize your mitochondrial function, which is key for recovery from any illness or disease.

As a general rule, I recommend compressing your eating window to between six and eight hours, and fasting for the remaining 16 to 18 hours each day. The timing of that eating window is important though.

You want to avoid eating first thing in the morning (wait at least two or three hours) and you want to avoid eating right before bed. Ideally, have your last meal at least three

hours or more before bedtime. So, to give you an example, you could eat all your meals between 10 a.m. and 6 p.m., or 11 a.m. and 5 p.m.

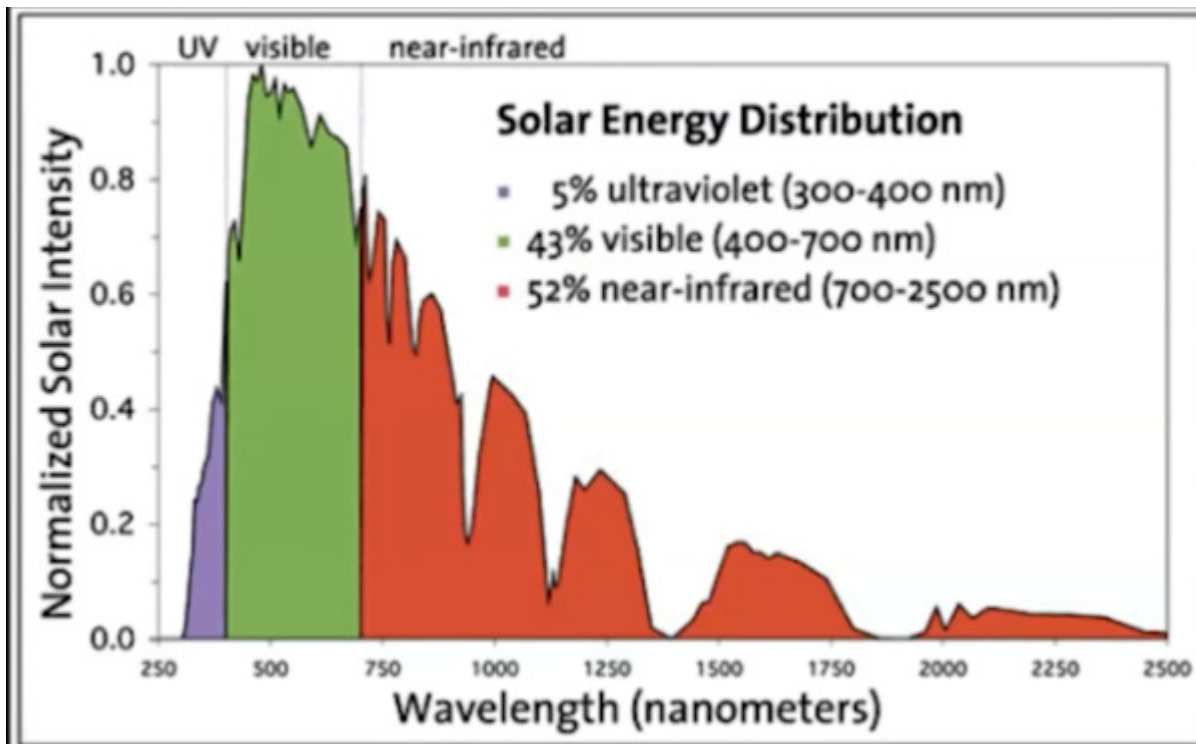
Near-Infrared Exposure and Melatonin

Another important mitochondrial tool is strategic use of near infrared light and its impact on melatonin, which is one of the most important antioxidant molecules in your body. Aside from having direct antioxidant effects, it also stimulates the synthesis of glutathione and other important antioxidants like superoxide dismutase and catalase.

While commonly thought of as something produced only in the pineal gland of your brain, which is produced in response to darkness, it only accounts for 5% of the melatonin in your body. A couple of years ago, Dr. Russel Reiter published a groundbreaking paper explaining that the vast majority, 95%, is actually made within the mitochondria inside your cells,⁶ where it is produced in response to near-infrared light, which could be from the sun or near-infrared sauna bulbs.

Considering melatonin combats oxidative damage, it makes sense that most of it is made in your mitochondria, because that's precisely where a majority of the oxidative damage occurs – in the mitochondrial electron transport chain. So, it's a truly phenomenal system. The key that makes this system work, however, is exposure to near-infrared light. To dive deeper into this topic, see my [interview with Reiter](#).

This is one of the reasons why exposing as much bare skin as possible to the sun for an hour a day is my No. 1 recommendation to optimize your health. And it's free. As you can see in the graph below, 52% of the sun's rays are near-infrared.



Concerning Skin Cancer

As noted by Marik, many shy away from sun exposure as a source of UV and near IR for fear of skin cancer. This is yet another example of medical propaganda. The fact is the sun is a nutrient that will actually decrease your risk of both skin cancer and internal cancers, provided you avoid sun burn.

Another little-known fact is that the fats in your diet can, to a significant degree, dictate how predisposed you are to burning and sun-related skin damage. The key is to limit omega-6 fats in your diet. That means avoiding processed foods, foods cooked in seed oils, and animal foods raised on seed oils and/or grains, such as chicken and pork.

Omega-6 seed oils are primarily linoleic acid (LA), a polyunsaturated fat that is highly susceptible to oxidative damage when exposed to a variety of stressors. What's more LA can remain embedded in your cell membranes and tissues for up to seven years, all the while wreaking havoc and causing damage through oxidative stress.

As it pertains to sun exposure, the LA embedded in your cell membranes gets activated by the exposure to the sun, which contributes to skin damage. Once you drastically

reduce or eliminate LA from your diet, your risk of sunburn will be dramatically reduced over time, as will your risk of skin cancer.

General Benefits of Photobiomodulation (PBM)

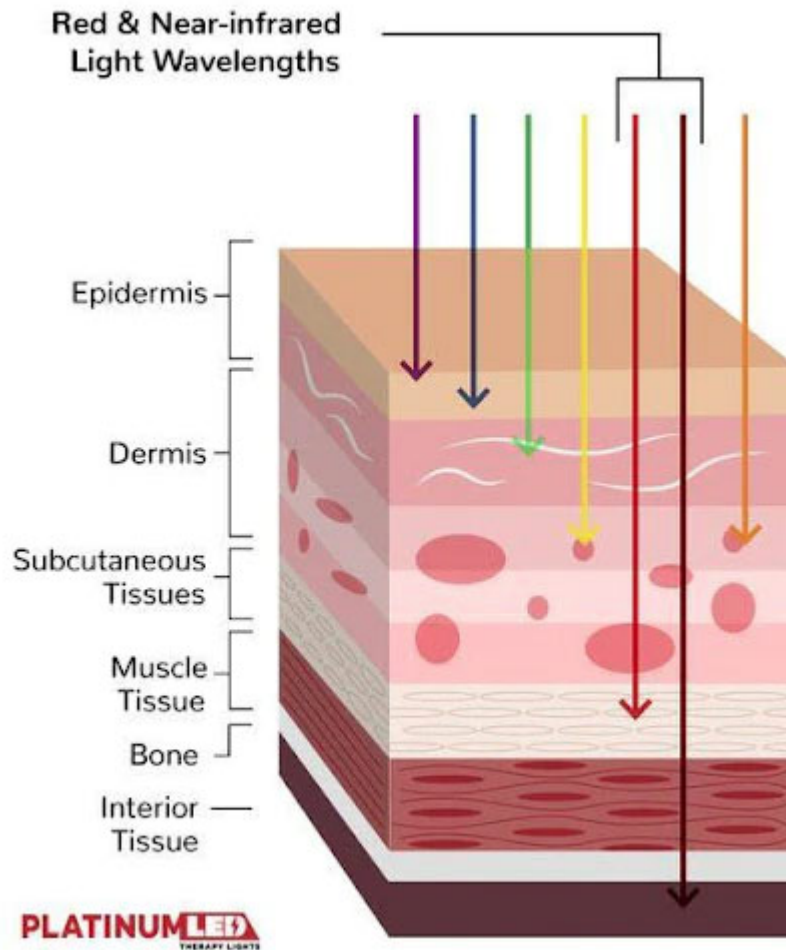
Light in the red and infrared range has several important health benefits, including:

Increasing mitochondrial ATP production	Increasing heat shock proteins, which help proteins maintain their three-dimensional structure and refold misfolded proteins
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Activating cell stress responses	Increasing autophagy
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Reducing inflammation	Speeding up wound healing
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Near-infrared light specifically, which is invisible to the naked eye, can penetrate 5 to 7 inches into your body, into your subcutaneous tissue, muscle tissue, bone and even interior tissues as you can see by the graphic below. This is in stark contrast to far IR that most saunas use, which penetrates less than half an inch.



This is what makes near-infrared saunas so useful, as you can boost melatonin production throughout your entire body, including your organs, thereby detoxing and healing them. In comparison, far-infrared penetrates only 1 to 2 millimeters, yet far-infrared is, unfortunately, what most commercially available electrical saunas use.

General Benefits of Sauna Therapy

Research has demonstrated sauna use can:

Improve cardiovascular fitness and lower your risk of death from cardiovascular disease, stroke and heart attack

Lower your blood pressure

Lower your risk of dementia

Improve your mood and mental health, and reduce symptoms of depression, in part by sensitizing opioid receptors

Strengthen your immune function

Reduce all-cause mortality

Improve athletic endurance

Reduce inflammation by lowering c-reactive protein, and increasing IL-10 and IL-6 (aka, myokine), and activating Nrf2

Activate and replenish stem cells

Improve fasting glucose and insulin sensitivity

Reduce the stress hormone cortisol⁷

All of these benefits occur in a dose-dependent manner, so the more frequent your sauna use, the more robust your benefits will be. For example, using the sauna two to three times a week has been shown to reduce your risk of cardiac death by about 22% compared to once-a-week use, whereas those who use it seven times a week lower their risk by 63%.

Similarly, those who use it four to seven times a week have a 40% lower all-cause mortality risk than those who use it only once a week. To learn more about these and other health benefits of sauna therapy, see "[The Stunning Health Benefits of Sauna Therapy](#)."

Different Saunas Provide Different Sets of Benefits

Many of the benefits listed above are related to the heat exposure alone, and for heat, it doesn't much matter what type of sauna you use: a traditional thermal Finnish sauna, a far-infrared sauna or a near-infrared one. Although one needs to be careful as many far IR saunas simply do not get hot enough to generate heat shock proteins and detox.

Near-infrared saunas have benefits that you simply cannot get with the others. Below is a simple chart showing the differences in benefits between the three primary types of saunas available in the U.S.

	Detox	Heat Shock Proteins	PBM (Melatonin)	No EMF
Finnish	✓	✓	X	X
Far IR	?	?	X	X
Near IR	✓	✓	✓	✓

As you can see, all will provide detoxification to some degree (although the detox provided by far-infrared is questionable, seeing how it barely penetrates your tissue. Far-infrared saunas also oftentimes cannot get hot enough for efficient detox, which requires you to sweat profusely). Detoxification is something just about every person needs, as we're surrounded by toxins and take them in with both food and water.

“Unstructured proteins tend to aggregate, and these aggregates can then form plaques in your vascular system or brain, contributing to neurodegenerative diseases and cardiovascular problems. Heat shock

proteins serve a really crucial role in keeping these kinds of problems at bay.”

All three will also generate heat shock proteins to some degree. As mentioned earlier, heat shock proteins are important because they refold misfolded proteins and all of us have misfolded proteins.

Unstructured proteins tend to aggregate, and these aggregates can then form plaques in your vascular system or brain, contributing to neurodegenerative diseases and cardiovascular problems, so heat shock proteins serve a really crucial role in keeping these kinds of problems at bay.

Again, there's a question mark by far-infrared, as many far-infrared saunas can't get hot enough. Near-infrared saunas also are nowhere near as hot as the Finnish-style sauna, but they don't need to be, due to the extreme penetration. You'll sweat profusely and activate heat shock proteins even though the air temperature is lower than a Finnish thermal sauna.

You can determine if your sauna is hot enough for you by measuring your temperature with an oral thermometer. It should be around 101 to 103 degrees Fahrenheit as you finish your sauna. You could also weigh yourself before and after the sauna and you should lose between 2 and 4 pounds of water (sweat). This would be one pint to one quart of water.

Next on the list, melatonin production. This can only be achieved in a near-infrared sauna, as melatonin is not produced in response to mere heat or light in the far-infrared range.

The Importance of an EMF-Free Sauna

Lastly, there's the issue of adverse health effects of electromagnetic fields (EMF). I published a book about this in early 2020, called "EMF*D." Virtually no far-infrared saunas on the market are truly EMF-free, even when advertised as such. The reason for

this is because EMFs include both electric and magnetic fields, and most saunas address only one of these.

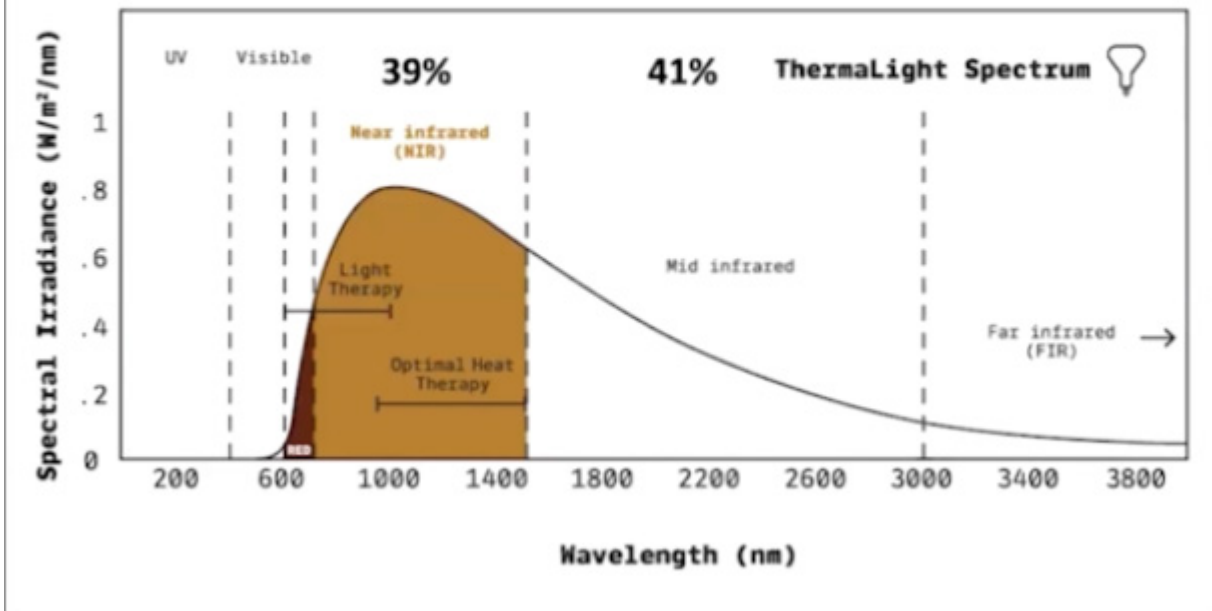
If you're using a wood-burning Finnish sauna, it will of course be EMF-free, but almost no one has that in the U.S. Most Finnish-style saunas sold here use electrical heaters and emit electrical fields. When you're detoxing, you want to be in a parasympathetic environment. When you're exposed to EMFs, it activates your sympathetic nervous system, which impairs your ability to detox properly.

The near-infrared Sauna Space sauna that I use and recommend has no EMFs. And, again, while traditional and some FIR saunas can provide outstanding benefits in detox and heat shock protein generation, neither of them provide the light wavelengths to generate PBM benefits.

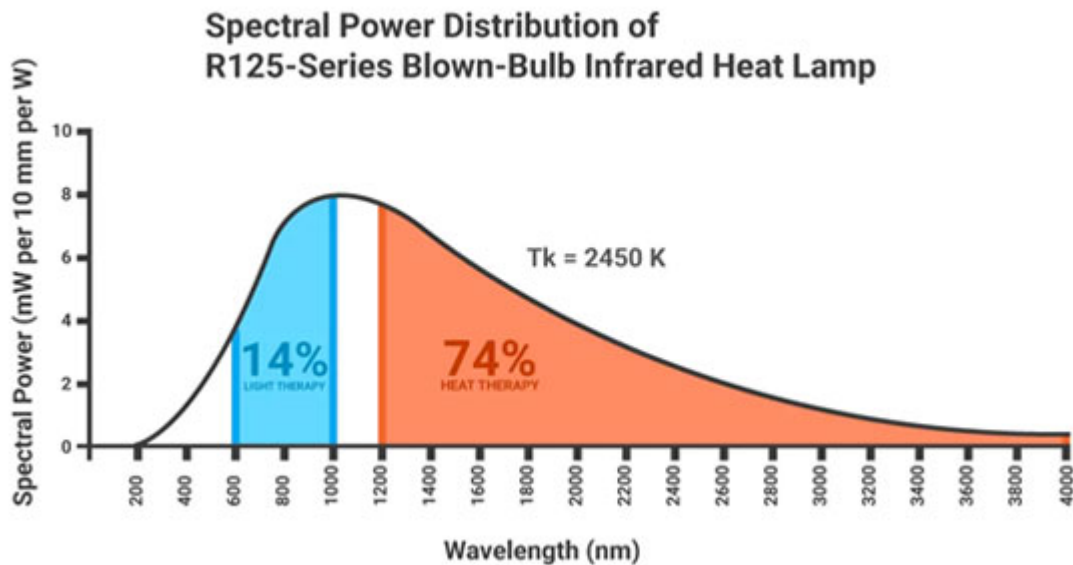
What Make Sauna Space's Bulbs so Unique

Sauna Space uses incandescent heat lamps (shown in the photo further below) that produce the majority of the heat as mid-infrared, plus a significant percentage of near- and mid-infrared frequencies that provide PBM benefits. The spectral distribution of these bulbs is shown in the following graph.

Sauna Space IR Bulbs



As mentioned, 53% of sunlight is near-infrared, and the Sauna Space bulbs mimic sunlight with 39% of the light being in the near-infrared range. (They do not have any UV light, however, so you will not make vitamin D. The bulbs only mimic sunlight in terms of their infrared distribution.) This is vastly superior to the average red heat lamp (graph below), in which only 14% is near-infrared.



In "[Near-Infrared Sauna Therapy – A Key Biohack for Health](#)," I provide instructions for how you can create your own near-infrared sauna using the Sauna Space near-infrared bulbs.

Sauna Space is the only company that I know of that makes these kinds of bulbs, so they've really cornered the market, at least for now. Using these, you'll be able to make the absolute best, most effective sauna there is, as you're getting both the standard sauna benefits and the PBM benefits, and none of the EMF hazards.



Optimizing Photobiomodulation With Methylene Blue

If you want to further optimize your mitochondria, you can combine PBM (the near-infrared light) with methylene blue. A 2020 paper⁸ in *Translational Neurodegeneration* reviews the benefits of this combination, specifically as it refers to neuroprotection. I believe this combination can also be very valuable in the treatment of long COVID and in post-job recovery, many symptoms of which are neurological in character.

In 1890, the German physician Dr. Paul Ehrlich published a study showing methylene blue could effectively treat malaria. Interestingly, many of the most useful drugs for COVID are antimalarial and antiparasitic drugs such as hydroxychloroquine. Well, methylene blue is the parent molecule to chloroquine.

Methylene blue can be particularly useful for addressing the fatigue that is so common in long COVID. You can learn more in "[The Surprising Health Benefits of Methylene Blue](#)," in which I interview Francisco Gonzalez-Lima, Ph.D., who has spent many years studying this drug.

In closing, you can find the latest, updated protocols for long COVID⁹ and post-job injuries¹⁰ on the FLCCC's website. These protocols are continually updated as the team learns more.

Sources and References

- ^{1, 9} [FLCCC Alliance, I-RECOVER Long COVID Treatment](#)
- ^{2, 10} [FLCCC Alliance, I-RECOVER Post-Vaccine Treatment Protocol](#)
- ³ [Journal of the American College of Cardiology July 2022; 80\(2\): 138-151](#)
- ^{4, 5} [Metab Syndr Relat Disord February 2019; 17\(1\): 46-52](#)
- ⁶ [Physiology February 5, 2020](#)
- ⁷ [YouTube The Science & Health Benefits of Deliberate Heat Exposure | Huberman Lab Podcast #69](#)
- ⁸ [Translational Neurodegeneration 2020; 9: 19](#)