

A woman with her eyes closed, wearing a white towel around her waist and a white headband, is sitting in a wooden sauna. The background consists of vertical wooden planks. The text "HOW TO MAXIMIZE THE BENEFITS OF SAUNA FOR DETOXIFICATION" is overlaid in large, bold, black capital letters.

# HOW TO MAXIMIZE THE BENEFITS OF SAUNA FOR DETOXIFICATION

December 12, 2016 (</gpl-blog-source/2016/12/12/how-to-maximize-the-benefits-of-sauna-for-detoxification>)

BY JESSICA BONOVICH RN, BSN



We have been recommending sauna therapy for detoxification to many of our patients who have high levels of various chemicals found in their GPL-TOX (<https://www.greatplainslaboratory.com/gpl-tox/>), Glyphosate (<https://www.greatplainslaboratory.com/glyphosate-test/>), or Metals (<https://www.greatplainslaboratory.com/metals-hair-test>) test results. The fundamental principle that governs detoxification is that heat liberates toxins from fats, which then gets flushed out by the sweat and carried off by the blood to the liver, kidney, and GI tract. Many people are familiar with the Hubbard Protocol ([https://en.wikipedia.org/wiki/Purification\\_Rundown](https://en.wikipedia.org/wiki/Purification_Rundown)) for sauna detoxification, which has been shown to be effective for those with serious toxic load issues, and was even used with success on emergency workers who were exposed to chemicals at the World Trade Center 9/11 disaster site (<http://www.townsendletter.com/Dec2006/chemexp1206.htm>). The Hubbard Protocol is quite intense and requires a great deal of time spent in the sauna on a regular basis. The sauna detoxification protocol that follows is perhaps more reasonable for the average patient and is designed to maximize detoxification without causing undue stress to the patient. Sauna should be started after other metabolic supports have been implemented (such as those indicated by the results of the Organic Acids Test (<https://www.greatplainslaboratory.com/organic-acids-test/>) (OAT) and GPL-SNP1000 (<https://www.greatplainslaboratory.com/gpl-snp1000/>) genetic test.

#### THE CASE FOR SAUNA THERAPY

The use of sauna for liberating toxins from the adipose tissue has been fairly well established as being effective for the treatment of toxicity for many years. The studies that I have read were all published before infrared technology existed. So, it is safe to say that sauna of any sort is likely to benefit patients with toxicity. Infrared technology claims that it is able to cause a more vigorous sweat at lower temperature, which may create a more comfortable experience for the user (less time needed and at a less high temperature). Infrared technology also claims that it can penetrate deep within the tissue for effective elimination. While visceral fat (the fat surrounding the organs) is certainly capable of housing toxins, it is the adipose tissue found in the subcutaneous layer that is viewed as the primary culprit for toxin accumulation. To reach the subcutaneous tissue, you simply need heat. Heat can be generated internally. Consequently, exercise is an excellent way to generate heat and burn the fat housing the toxin to begin with. Many patients are too sick to consider this as an option but patients who can tolerate exercise should be encouraged to do so. Better yet, do both exercise and sauna therapy.



Here is a very thorough article about sauna detoxification (<http://articles.mercola.com/sites/articles/archive/2014/05/04/detoxification-program.aspx>), including an interview with Dr. George Yu, who has worked for many years with Gulf War veterans and 9/11 site workers to help them detox with sauna.

#### **NIACIN FLUSHING**

Heat helps to destabilize lipophilic compounds just enough so that they can become mobilized by the fluids that are simultaneously released during heat exposure. Some compounds can be liberated directly into the sweat while others will be transported by the blood stream into the liver for metabolism and/or conjugation. The vasodilatation that is induced by heat exposure provides an increased blood flow to these organs. Nicotinic acid (niacin or niacinamide) can induce flushing in doses above 50 mg which will subsequently increase blood flow to the liver and kidney. It is often used as a part of detoxification protocol because of what is referred to as rebound lipolysis. High dose niacin is used therapeutically to inhibit free fatty acid release, decrease LDL, and increase HDL. This effect is soon compensated for and free fatty acids return to normal and in some cases above normal. The rebound effect varies from study to study but is generally considered mild. It is the release of free fatty acids that also causes the release of toxins in the body. Practitioners are hoping to achieve a greater degree of toxin release through this rebound effect that niacin can have about two hours after administration.

In addition to the rebound lipolysis and vasodilatation, niacin also inhibits oxidation in the vasculature which is an important factor with detoxification. It is worth exercising caution with niacin in patients with diabetes, history of gout, on blood thinners, and who have MTHFR/methylation gene mutations. The rebound effect is associated with insulin resistance in many studies. Patients who are already diabetic tend to have the greatest difficulty with this. High dose niacin can also cause elevations in uric acid, increased prothrombin time, and decreased platelet counts. It can also cause stress to the methylation pathway because this compound requires methylation to be eliminated. In fact, there are documented cases of hyperhomocysteinemia occurring in patients taking 1000 mg of niacin per day, which is the standard dose for a flush. I typically only recommend niacin as part of the detoxification protocol in patients who have demonstrated their ability to tolerate it or who have minimal risk for methylation pathway disruption.

#### **FURTHER SUPPORTING THE DETOXIFICATION PROCESS**



Heat allows toxins to become reintroduced into circulation and there is an increased potential for oxidative damage. For this reason, I recommend that patients take antioxidants before and after sauna therapy. Liposomal glutathione (<http://www.nbnus.net/shopexd.asp?id=550>) is an obvious choice because it is not only an antioxidant but an important substrate required for conjugation of many toxic compounds by the liver. I recommend a teaspoon before and a teaspoon after sauna treatment. This equates to approximately 400 mg twice a day. I also recommend taking plenty of vitamins E, A, C, D, and K.



The lipophilic, toxic compounds that find their way to the GI tract should ideally be flushed out through fecal elimination. To ensure the greatest possible chance for this to occur, patients should first and foremost be eliminating bowels every day. To prevent the reabsorption of these compounds, bile acid sequesterants and binders can be used and there is evidence to support their use. Bile acid sequesterants are just that - agents that sequester the bile, essentially making it unavailable to bind with other lipids. The prescriptive agent that is most commonly used is called cholestyramine. This agent has a very short half life (6 minutes) and is capable of binding up to 80% of bile in that short time. This short half life also means that taking cholestyramine before sauna will not interfere with the absorption of nutrients at meal time. This is an excellent choice for patients who can tolerate this prescription. Fiber is also capable of binding bile acid, but to a lesser extent. Both soluble and insoluble fibers like lignan, alfalfa, bran, and guar can bind between 10%-30% of bile acids. Cellulose does not effectively bind with bile, so it should not be considered as an option for this particular application. Binders are agents that prevent reabsorption by adhering to the toxin itself. Examples of binding agents are bentonite clay and activated charcoal (<http://www.nbnus.net/shopdisplayproducts.asp?Search=Yes&sppp=10&page=1&Keyword=activated%20charcoal&category=ALL&highprice=0&lowprice=0&allwords=activated%20charcoal&exact=&atleast=&without=&cprice=&searchfields=>).

GI elimination is the only way for the extremely lipophilic, toxic compounds to be eliminated. When doing sauna therapy, any toxic compound in tissue has the potential to be eliminated, so taking these measures to ensure proper elimination via stool is important.

Electrolyte monitoring is an equally important consideration when detoxifying patients. To an extent, the minerals K, Na, Ca, and Mg will be lost during dieresis. Binders used to prevent the absorption





of toxins will also prevent the reabsorption of certain minerals that are in the gut, so a good multi-vitamin/mineral supplement such as Spectrum Mate (<http://www.nbnus.net/shopexd.asp?id=476&bc=no>) should be taken throughout the detoxification process.



#### OTHER FACTORS IMPACTING RESULTS

The degree that a patient is likely to respond to sauna therapy depends on several things. The amount of toxin accumulated in tissue and the ability of the liver to safely mobilize toxins are two major factors. Toxic compounds that are not conjugated are either extremely hydrophilic or extremely lipophilic (to the extent that they cannot be measured in the urine). Some compounds are more toxic when they have been metabolized and others actually become more stable. The more time exposed to heat, the more toxins will be liberated, but the body can only do and handle so much of this at once. For this reason, I recommend that when patients are in crisis, they start sauna therapy very slowly and work their way up in time spent per session and how often they do sessions, as they become more tolerant.

#### WHAT TYPES AND BRANDS OF SAUNA ARE BEST?

As previously mentioned, infrared technology claims to have additional benefits over traditional sauna, but there doesn't seem to be any research directly comparing the two types of saunas. If infrared rays allow for profuse sweating at lower

temperatures than a traditional sauna, then an infrared sauna might provide a more comfortable option (similar results at a lower temperature) for those sensitive to the heat. If you're looking for an infrared or other sauna, it is important to consider brands whose wood is not treated with toxic chemicals that will off-gas while in use or that emit large amounts of electromagnetic (EMF) radiation. Some of the better options for booth-style, wooden saunas are Clearlight (<http://infraredsauna.com/>) and Heavenly Heat (<http://www.heavenlyheatsaunas.com/>). There are also more portable infrared saunas available that have been shown to be effective and Relax Saunas (<http://relaxsaunas.com/>) is a good example.

CLEARLIGHT INFRARED SAUNAS





If you find purchasing a sauna to be cost-prohibitive, the portable versions are less expensive. Another option is to find a spa or health club in your area that has a sauna you may use for a particular fee per session or as part of a membership package. Many integrative healthcare practitioners who are invested in helping their patients detoxify also have saunas in their offices for use.



#### SUMMARY

In summary, patients should be given metabolic supports and be eliminating bowels every day prior to initiating a sauna detoxification program. Heat therapy is effective at removing many toxic compounds from the body and sauna therapy is a passive form of heat therapy. Advise your patients to take antioxidants before and after the heat therapy (liposomal glutathione, if possible). Give binders and bile acid sequesterants prior to heat (sauna) therapy. Make sure that patients remove as much sweat as possible during and immediately after sauna sessions. Monitor your patients' serum electrolytes. Finally, have patients start with sauna therapy slowly and progress toward longer and more frequent (even daily) sessions until complete elimination of the toxin is observed through testing.

#### REFERENCES

Evidence for sauna treatment:

PMID: 20400489 (<https://www.ncbi.nlm.nih.gov/pubmed/20400489>), 2143911 (<https://www.ncbi.nlm.nih.gov/pubmed/?term=PCB+Reduction+and+Clinical+Improvement+by+Detoxification%3A+an+Unexploited+Approach%3F>), 220089658 (<https://www.ncbi.nlm.nih.gov/pubmed/220089658>), 7144634 (<https://www.ncbi.nlm.nih.gov/pubmed/?term=Evaluation+of+a+detoxification+regimen+for+fat+stored+xenobiotics>), 20621793 (<https://www.ncbi.nlm.nih.gov/pubmed/20621793>), term=Human+detoxification+of+perfluorinated+compounds+S.J.+Genuis), 17234251 (<https://www.ncbi.nlm.nih.gov/pubmed/17234251>), 23844383 (<https://www.ncbi.nlm.nih.gov/pubmed/23844383>)