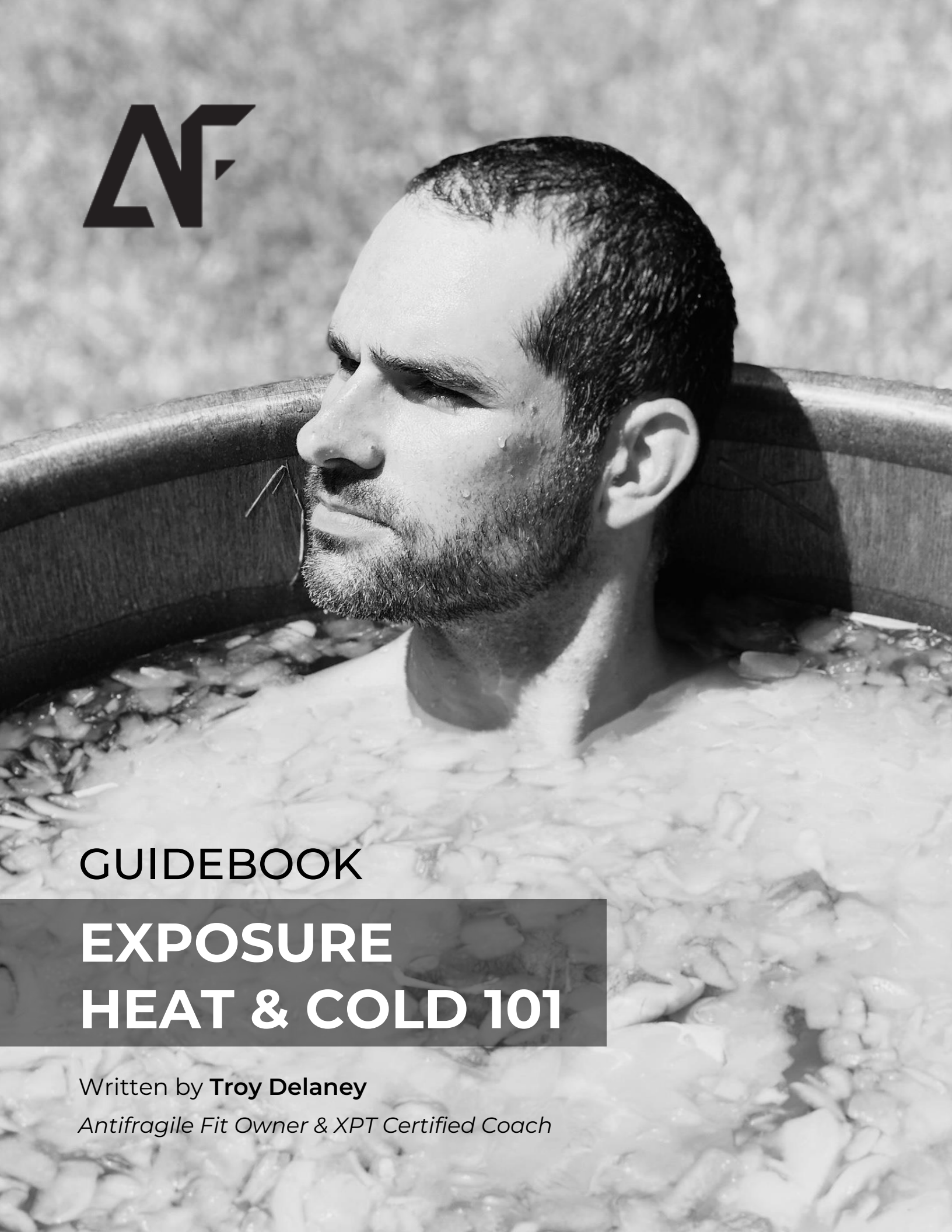

GUIDEBOOK

EXPOSURE HEAT & COLD 101

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AFFILIATE DISCLAIMER: *Troy Delaney has spent many hours compiling everything in this guide. He may receive commissions on some (not all) purchases made through links in this guide at no additional cost to you. Oftentimes, he has negotiated a discount for you. If you find this information useful, please consider using his links and discount codes.*

Welcome to the Antifragile Fit Exposure Guide. This guide is designed as a practical first steps resource for getting started with Exposure work.

Before embarking on your Exposure journey, it's important to understand the fundamentals. This not only keeps you safe, but it also ensures you maintain a consistent practice and get the most out of it. It's uncomfortable so I'm sure you want to make the most out of every sauna and cold plunge experience. Before jumping in (literally), please take the time to understand *why* you are doing it and *how* to do it properly.

Who is Troy Delaney?

I'm an XPT, Extreme Performance Training certified coach and have been practicing and teaching others how to use breath and Exposure training since 2019. XPT is an innovative and novel fitness lifestyle system created by waterman Laird Hamilton and volleyball legend Gabby Reese. It is centered around the most basic yet powerful human trait: the ability to adapt. To become a certified coach, I went through a rigorous three-day course that taught science-based principles and safety protocols for exposure work and breathing protocols. I run my blog (troydelaney.com) on optimizing performance and life and my company website, Antifragile Fit, where you can sign up to XPT Workshops.

What Is Exposure Work?

"Deliberate and controlled exposure to temperatures outside the normal ranges experienced in one's environment in order to elicit positive adaptations."

This guidebook will outline some of the many benefits and fundamental principles. While some research information is provided at the end of the guide this is not intended as a deep dive into the research on heat and cold exposure work. That is what our Exposure Clinic is for. It's our hope that this guide will get you started and prompt you to further investigate and experiment with Exposure work.

Exposure work is not just for the purpose s of recovery from training or events. This is a common misconception I see. As you will learn, Exposure work, especially Cold Exposure, is not necessarily the answer immediately post-training or event. Exposing yourself to extremes of temperature is stressful on the body. Immediately placing more stress on top of training or competition stress is not necessarily going to help you recover. But, as you will read, it certainly has its place in optimizing your performance in sport, fitness and life.

Exposure work is a potent state management tool. A tool for managing the condition of your body and mind. By exposing yourself to stress in a controlled manner and environment, your body and mind make adaptations. Just as when you train, you are stimulating adaptations through the careful application of stress.

By the end of this guide you will:

- Have a foundational understanding of the benefits of cold and heat exposure
- Know how to setup your own exposure "facility" at home
- Understand which breath practices to use before, during and after exposure
- Be able to develop a personal exposure program based on your needs and goals

Exposure Workshop
Check here for dates

Exposure work is not new. It has been used in many cultures for centuries.

From the Inipi Ceremony of the Lakota people and Scandinavian Sauna bathing to ancient Roman baths and Celtic Vapour baths to Snow Bathing in eastern Europe, Scandinavian frozen lake bathing and Polar Bear Swimming Clubs that can be found in many countries, exposure work has been used for many purposes; spiritual, health, resilience, community.

One of the oldest surviving medical texts, the Edwin Smith Surgical Papyrus, an ancient Egyptian text created in 1600 BC, includes a number of references to the use of cold as therapy. Hippocrates, recognized as the father of modern medicine is often credited as the first person to document the health benefits of Hydrotherapy.

I certainly didn't create exposure work.

I have simply taken the principles used by various people and cultures and organized those into easy to understand and apply methods for modern-day use to optimize our health and performance.

Our life is typically very comfortable in comparison to other points in our evolution. And it is becoming more so. We (generally-speaking) live in climate-controlled homes, drive climate-controlled cars and work in climate-controlled offices. We are rarely exposed to temperature ranges outside room temperature.

Throughout history, we've not had this luxury. We were 'exposed' to the coldest days in winter and the hottest days in summer. The fact we live in most climates shows we have the capacity to adapt to temperature change. Not only do we adapt, the scientific literature indicates we thrive. Temperature change is a stress, like exercise. Once stimulated, the body adapts to become stronger and makes you harder to kill. Homo sapiens lived in the Arctic 45,000 years ago, 10,000 years earlier than first thought. We've been adapting for a long time!

Although uncontrolled exposure to extreme conditions and stress can be very dangerous, controlled exposure work can help us to become healthier and more resilient as well as help us to perform better and manage stress and pain.

WARNING

Do not do exposure work alone.

Exposure work is NOT to be used if you have pre-existing cardiovascular or circulatory problems unless you have been cleared by a physician.

NEVER perform Exposure work under the influence of alcohol as you greatly increase your risk of DEATH.

Pushing to levels of harm is stupid. Don't be stupid. The point is to trigger just enough stress to induce a hermetic response. Heat stroke and hypothermia are not cool and are failures for training!

ALWAYS Obey the Golden Rule. If in doubt, get out!

How to Get the Most From This Guide

- Read through this entire document, including the FAQ's.
- Start slowly!
- Progress at you own pace based on your physiology, not the clock>
- Read the Warning on the previous page.

There are far too many variables for the creation of a traditional day by day program as exposure work is very individual in nature.

The best way to get started is to take the principles and guidelines learned from this guide and implement in the best way for you.

Based on my recommendations of where to start, try to do it for 30 days. Tune in to your mind and body and take note of what happens. How do you feel? How has your performance been? Listen to your body and makes changes based on the messages it tells you.

This is the Antifragile Fit approach. Make any tweaks and go again for another 30 days. Test. Re-Test. Tweak. It's no different to what we do with training.

You can focus on cold or heat or both. This may mean turning your shower to cold for the last 10 seconds each morning and slowly increasing the cold exposure over a period of weeks. Or alternating hot and cold exposure in your shower. Or, you may purchase a portable, personal sauna and get in it for 20 minutes after training sessions. Or, you may be someone who prefers to jump straight in, no pun intended, to a chest freezer of done-for-you plunge full of icy cold water.

Regardless, obey the Golden Rule understand the principles, and be ready to make some positive adaptions!

COLD EXPOSURE

What Is It?

Cold Exposure is the deliberate and controlled exposure to cold temperature outside the normal range experienced in one's day to day life to elicit positive adaptations.

It's typically in the range of 32-59°F (0-15°C). It should be at a temperature uncomfortable but safe. The higher the temp, the longer you need to be exposed to reap the benefits. If you're new to cold exposure, start around 54°F, which is the temperature where many of the benefits start.

Getting Set Up For Cold Exposure

The ideal setup is the one that fits your budget and requirements and allows you to remain consistent.

While a purpose-built ice bath will provide the greatest benefits, they come at a cost. The good news is you can get yourself set up for cold exposure relatively simply, cheaply, and effectively.

Below I outline the main methods:

- **SHOWER**
  Self-explanatory. Turn on the cold tap only. Get in. If you live in a warm climate, this is probably not going to work for you.

- **BATHTUB / TUB / ICE BARREL**
  Use your bathtub or any sort of large tub (like the Rubbermaid id Stock Tank) that you can submerge your body in. Ideally, it will enable you to cover your shoulders. Fill it with ice and water. If you want something a little more professional looking, consider the Ice Barrel (get $95 off with code CHILL95). You can even add a chiller to the ice barrel, so you don't have to buy ice anymore.

- **CHEST FREEZER**
  For around $500-$1,000, you can convert a chest freezer into a nice cold plunge. This is what I had for five years. See my Chest Freezer set up article here. If you really want to dig into it, it's worth joining the DIY Chest Freezer & Chiller Cold Plunge Facebook group.

* For reference, I am 5'9" 165lbs and my Chest Freezer is 14.8 cubic feet (70 gallons or 265 liters). This is large enough to be submerged above my shoulders and be able to dunk my head.

- **BUILT-FOR-YOU PROFESSIONAL PLUNGE**
  With the rise in popularity of cold plunge came a mass increase in cold plunge companies. These plunges have chillers and filtration/sanitization systems built in. Prices can vary from $4,000-$25,000. The brand I recommend and own is Plunge. This is the same brand Dr. Andrew Huberman, Dr. Rhonda Patrick and Dr. Kelly Starrett use. It's also the most reasonably priced. You can purchase a Plunge here (use code TROY150 for a discount).

Book a free consult with me if you need some guidance.

When To Use?

I recommend the use of cold exposure at any time EXCEPT immediately after hypertrophy training. Separate your hypertrophy work from cold exposure by up to six hours. Cold showers are fine.

The reason being that exposure to extreme cold post-hypertrophy training can inhibit the body's natural adaptation to the training stimulus.

The Søeberg Principle based on deliberate cold researcher by Dr. Susanna Søeberg is: To enhance the metabolic effects of cold, force your body to reheat on its own or "End with cold."

Supporting Breath Work

1. Pre-Cold

A) 3 rounds of:

- 3-5 cycles Cadence of 1010 where 1010 = 1 sec inhale, 0 sec hold, 1 sec exhale, 0 sec hold.
- Each round increase the length of each phase (ex. 4040, 5050, 6060)

B) 3 rounds of:

- 30 sec 'Bounce & Shake': use an even 1010 breathing protocol.
- 10 Squats: inhale down, exhale up
- 5 Dive Bomber Push Ups: 2 breaths per rep. Inhale down, exhale up. Return - inhale down, exhale up.

2. Intra-Cold

While in the ice, perform 10 deep nasal breaths as slowly as possible using an even and rhythmic breathing cycle.

3. Post-Cold

A) 5 rounds of:

- 10 cycles Kapalbathi followed by: 10 exhale breath hold

B) 5-10 cycles:

- Apnea 1210 or your personalized breath assessment down-regulation protocol.

The Benefits

- Release of Norepinephrine + Dopamine
- Activation of Brown Adipose Tissue
- Increased Metabolic Rate
- Increase in Immune Cells
- Increased Mitochondrial Biogenesis
- Mental Resilience + Stress Management
- Environmental Tolerance

1) Release of Norepinephrine and Dopamine

Norepinephrine is a hormone and neurotransmitter. It enhances mood, focus and attention and has positive implications in the treatment of depression and ADHD. It has anti-inflammatory and analgesic properties; reducing pain and improving recovery both from training induced stress and injury. It is a vasoconstrictor (constricts blood vessels) and may contribute to improved body temperature regulation and decrease in arterial wall stiffness as we age.

Dopamine is a neurotransmitter that enhances mood, improves movement (motor control), reduces insulin production in the pancreas, reduces gastrointestinal motility and protects intestinal mucosa, reduces activity of lymphocytes (a form of white blood cell occurring especially in the lymphatic system) in the immune system, inhibits Norepinephrine release and acts as a vasodilator (dilates blood vessels).

2) Stimulation of Brown Adipose Tissue (BAT - Brown Fat)

When exposed to cold, our body naturally wants to heat itself back up. It does this through increasing the metabolism to produce heat - Cold Thermogenesis. There are two types of cold thermogenesis: shivering and non-shivering.

Shivering thermogenesis occurs in the muscles. They contract, increasing metabolism and producing heat. But this means you've been in the cold too long. Get out.

Non-shivering thermogenesis happens in the adipose tissue (fat) and is a process partly regulated by the release of norepinephrine due to the activation of the sympathetic nervous system. Cold-induced norepinephrine release increases the expression of a protein called uncoupling protein 1 (UCP1). This protein produces more mitochondria (the energy producers of the cell) in adipose tissue (fat) which … ramps up metabolism.

This increase in mitochondria causes a browning of the tissue, due to the tissue having more mitochondria per cell, and appearing brown. This brown fat is metabolically active fat - see point 4.

Additionally, brown fat activation can increase insulin sensitivity. The more insulin sensitive you are, the less insulin your pancreas needs to release to normalize blood glucose levels. The opposite, insulin resistance, can lead to Type-2 diabetes.

3) Increased Adiponectin Levels

Adiponectin is a fat-derived plasma protein that has anti-obesity, anti-insulin resistance, and anti-cancer roles. It is downregulated in people with obesity-related disorders. Low levels of adiponectin are associated with the increased prevalence of obesity-linked cardiovascular diseases and several cancers. It's been shown that Adiponectin levels can increase by up to 70% after cold exposure.

4) Increased Metabolic Rate

Through the above mentioned activation of brown fat, metabolic rate can be increased by up to 350% depending on length of exposure and temperature. The Søeberg Principle, based on contrast therapy researcher Dr. Susanna Søeberg is: To enhance the metabolic effects of cold, force your body to reheat on its own. Don't dry off or try to warm up.

5) Increased Mitochondrial Biogenesis

Cold stress activates a gene (PCG -1 a), the master regulator of mitochondrial biogenesis, and in turn increases mitochondrial biogenesis. Mitochondrial biogenesis is the production of more mitochondria in the cell to increase the production of ATP (adenosine triphosphate - an energy carrying molecule) as a response to greater energy expenditure. More mitochondria equals more aerobic capacity.

6) Mental Resilience

Getting comfortable with being uncomfortable. As mentioned in the intro, most of us live in a comfortable world. We don't experience much discomfort. This is not good thing for our mental health in the long run. We need to be exposed to discomfort to build mental strength. Cold exposure triggers our sympathetic nervous system (flight or freeze). Learning how to control our response has wide-reaching benefits.

7) Environmental Tolerance

Just as living in a comfortable world is bad for our mental health, it's not a good thing for our tolerance to changes in the environment either. If your body is adapted to the comfort of a climate-controlled world, the minute you're exposed to changes in the climate, you'll suffer. Exposure will build your tolerance to a range of climates.

How long should I stay in the ice for?

10 breaths or before if you start shivering or feel you need to get out. **Remember, if in doubt, get out.**

How big does my chest freezer need to be?

Large enough so you can fully immerse yourself.

Do I need to add anything to the water in my chest freezer?

If you want, you can add about half a cup of 35% food grade hydrogen peroxide to the water to prevent, or at least slow down, any bacteria growth. You can use it as often as needed, preferably before each time you use the freezer.

How often should I change the water in my chest freezer?

Every 1-2 weeks depending on usage. Or sooner if you notice water becoming dirty.

How should I clean my chest freezer?

Pull the plug. Allow it to drain. Wipe down all internal walls and floor of the freezer. Refill. The fresh water will take approx. 36-72 hours to get cold again depending on the ambient temperature.

See my video here!

Should I get in the ice after training?

Our recommendation is to wait at least six hours after hypertrophy training before cold exposure. The body's natural and necessary anti-inflammatory process peaks around 1-hour post training. Interrupting this process can result in prolonged inflammation that can delay recovery and reduce adaptations.

What about Whole Body Cryotherapy (WBC)?

There is some research that indicates some benefit from WBC. However, we have found that the temperature is so extreme that the exposure time is minimal and the results reflect that. Additionally, it can be cost-prohibitive.

I have (fill in the blank) medical condition. Is it ok for me to do exposure work?

I'm not a medical practitioner. If you have any concerns about exposure work and your health, please consult a qualified medical practitioner.

Exposure Workshop
Check here for dates

HEAT EXPOSURE

What Is It?

Heat Exposure is the deliberate and controlled exposure to hot temperatures outside the normal range experienced in one's day to day life to elicit positive adaptations.

The temperature ranges vary widely. If you're using any sort of direct water to skin contact, be very careful. Anything above 49°Celsius (120°F) is going to scald.

In respect to a sauna, 176-212°F (80-100°C), 5-20 minute sessions done as often as possible is a good range. The lower the temp, the longer you need to be exposed to reap the benefits.

Getting Set Up For Heat Exposure

The ideal setup is the one that fits your budget and requirements. While a purpose-built sauna will provide the greatest benefits, they come at a cost. The good news is you can get yourself set up for heat exposure relatively simply, cheaply and effectively.

Below I outline the main methods:

- **SHOWER**
  Self-explanatory. Turn it on. Warm. Not scalding hot. Get in.

- **BATHTUB / TUB**
  Fill with warm, not scalding hot, water. Get in. Hot baths have similar sauna benefits at around 104°F.

- **TENT SAUNA**
  The budget, starter version is the portable, personal tent sauna. You can use the incandescent near-infrared sauna like SaunaSpace (use code FIRST10 on my health online store). I haven't used this brand but have heard a lot of great things if you are limited on space.

- **INFRARED SAUNA**
  The Infrared Sauna is the next step. These vary greatly in size, price and quality so shop around. I recommend Clearlight which is the brand I own. Their lifetime warranty is the real deal. Contact me before purchasing so that I can put you in contact with the right person to get you the best deal.

  See my full Clearlight review here.

- **TRADITIONAL / DRY SAUNA**
  The Traditional Sauna is the King (or Queen) of them all. Again, price varies greatly depending on where you are and the size you want. They are typically larger than an infrared sauna. The brand I recommend and own is Plunge brand sauna (you can use discount code TR0Y150).

Book a free consult with me if you need some guidance.

When To Use?

Heat exposure can be used at any time, before or after training.

It can even be used during training, when acclimatization to performance in extreme heat.

If you live in a cold climate, getting into a sauna for around 5 minutes prior to training is a great way to warm your body up.

Additionally, heat exposure post-strength training is an excellent time to take advantage of the hypertrophy benefits.

The only time I'd caution against heat exposure is if you've been training in a very hot environment.

Supporting Breath Work

1. Pre-HEAT

A) 5-10 cycles:

- Cadence 1010 where 1010 = 1 sec inhale, 0 sec hold, 1 sec exhale, 0 sec hold

B) 5-10 cycles:

- Cadence 1111

* The goal here is to slow things down to prepare for the heat stress.

C) Movement:

- Using a PNF protocol (4480)
- 4 second inhale
- 4 second hold & contract
- 8 second exhale & relax
- Work the following positions for 2-minutes:
- Pike Hold, Pigeon (each side), Spinal Twist (each side)

2. Intra-Heat

Slow everything down. Focus on slow, even breaths. You can utilize either of the pre-heat exposure breath protocols to do this. Cadence 1010 or Cadence 1111.

3. Post-Heat

A) 5-10 cycles:

- Cadence 1010

B) 5-10 cycles:

- Apnea 1210 or your personalized breath assessment down regulation protocol

The Benefits

- Improved Endurance
- Enhanced Muscle Hypertrophy+ Soft Tissue Injury Recover
- Improved Cardiovascular Health
- Improved Brain Function
- Enhanced Longevity
- Protective Buffer Against Rhabdomyolysis
- Mental Resilience + Stress Management
- Environmental Tolerance

1) Improved Endurance

Controlled exposure to heat increases blood plasma volume resulting in increased blood flow to the heart, skeletal muscle and skin as well as increased red blood cell (RBC) count.

- Increased blood flow to the heart results in less cardiovascular strain for the same level of work.
- Better skeletal muscle blood flow reduces dependence and usage of local glycogen stores.
- Improved blood flow to the skin is a result of heat exposure activating the Sympathetic Nervous System. This increases sweat rate and cooling efficiency.
- Increased RBC count leads to better oxygen delivery to the muscles. It is thought that this increase in RBC's is due to the release of Erythropoietin (EPO) in response to the rise in blood plasma volume.

2) Enhanced Muscle Hypertrophy

Muscle hypertrophy is a balancing act between protein degradation and protein synthesis. Put simply, when you have a net increase in protein synthesis, along with loading your muscles (lifting weights!), you will get muscle hypertrophy.

Controlled exposure to heat, and subsequent heat acclimatization, reduces protein degradation through the release of heat shock proteins and growth hormone, and improved insulin sensitivity.

These processes also have positive effects on recovery from soft-tissue injury.

3) Improved Cardiovascular Health

While more research is needed, it is believed that due to the increased blood plasma volume, vasodilation and increased red blood cell count triggered by controlled heat exposure, cardiovascular health can be improved. One study on 2,315 middle-aged Finnish men showed an all-cause mortality risk reduction of 24% when sauna bathing was used 2-3 times per week and a 40% reduction in all-cause mortality risk with 4-7 sauna sessions per week. Another study showed reductions in blood pressure and improved arterial compliance (the ability of arteries to contract and relax passively in response to pressure changes).

4) Improved Brain Function

Controlled heat exposure activates the Sympathetic Nervous System and HPA Axis (hypothalamic pituitary adrenal axis - our central stress response system) resulting in the release of Norepinephrine and Prolactin. It also increases your capacity to store Norepinephrine for later release.

As outlined in the cold exposure section, Norepinephrine is a hormone and neurotransmitter. It enhances mood, focus and attention and has positive implications in the treatment of depression and ADHD.

Prolactin is involved in the process of myelination. Myelin increases the efficiency of electrical activity in the brain and assists in nerve cell damage repair. In other words, myelin helps your brain work faster!

Controlled heat exposure also increases the release of brain derived neurotrophic factor (BDNF) when combined with exercise. BDNF increases the growth of new brain cells, increases the survival of existing cells, improves learning/retention, decreases depression and anxiety from early-life stressful events and improves muscle repair.

It also increases dynorphin levels. Dynorphin is a peptide released by the body in response to intense exercise, eating spicy food AND extreme heat exposure. It's part of that uncomfortable feeling you get during a really hard training session. But, the greater the discomfort, the bigger the endorphin high afterward. This is due to the release of dynorphin creating an increased sensitivity to endorphins.

5) Enhanced Longevity

Due to the increase in Heat Shock Proteins, heat exposure can increase longevity.

It also triggers the release of longevity gene FOX03 (the master gene regulator). It turns on genes that resist stress, repair DNA, kill tumor cells and perform antioxidant functions. How much heat exposure increases longevity depends greatly on frequency and conditions of exposure. This appears to be a rare case of more is better.

6) Protective Buffer Against Rhabdomyolysis

Rhabdomyolysis is a condition where the muscles breakdown, often due to intense exercise. A byproduct of that muscle breakdown, myoglobin, is released into the bloodstream causing kidney failure.

A heat shock protein - HSP32, has been shown to rapidly degrade myoglobin before it becomes toxic to the kidneys. Further, HSP32 has been shown to protect rats from Rhabdomyolysis. It's hypothesized that when you are heat acclimated the higher level of HSP32 will protect your kidneys from the myoglobin and thus provide a protective buffer against Rhabdomyolysis.

7) Mental Resilience

Getting comfortable with being uncomfortable.

As mentioned in the introduction, most of us live in a very comfortable world. We don't experience much discomfort. This is not a good thing for our mental health.

We need to be exposed to discomfort, we need to be challenged, in order to build mental strength and resilience.

8) Environmental Tolerance

Just as living in a comfortable world is bad for our mental health, it's not a good thing for our tolerance to changes in the environment either.

If your body is adapted to the comfort of a climate-controlled world, the minute you are exposed to changes in that climate, you will suffer. Exposure work, heat and cold, will increase your tolerance to a wide range of climates.

9) Increase Growth Hormone (up to 16X)

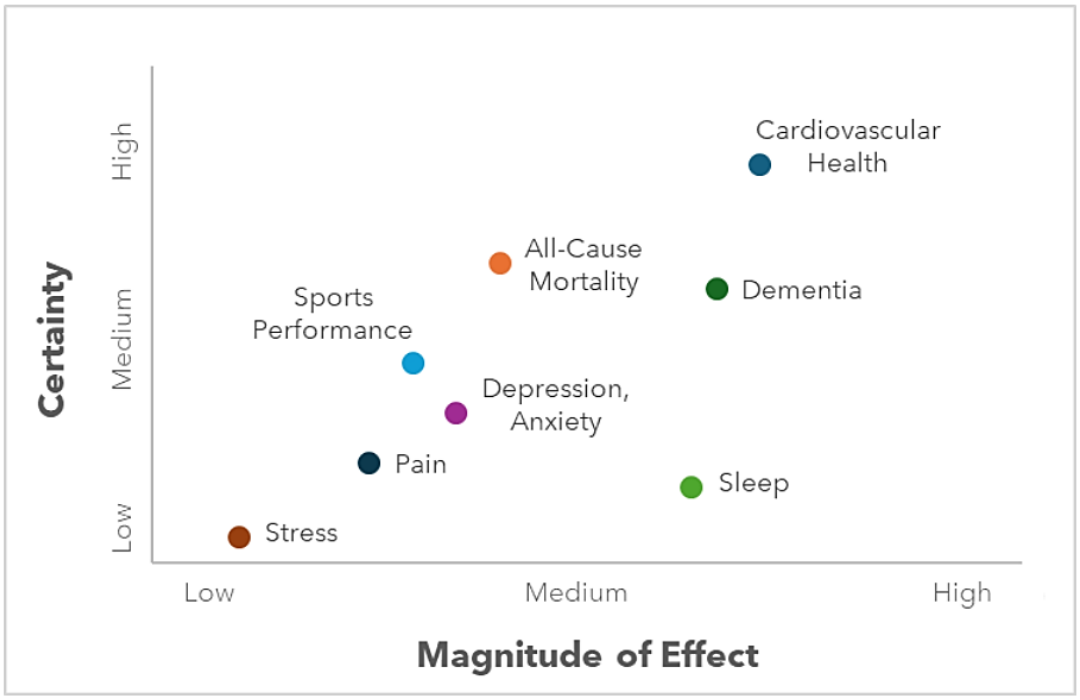
Peer-reviewed research says the following protocol works well to increase growth hormone: 30 minutes in sauna, then cool off outside sauna for 5 minutes, then 30 minutes more in the sauna, then cool off. A few hours (or more) later in the day, you repeat that for a total of four 30-minute sessions of sauna in one day. Holy cow!

If you do this protocol, I recommend infrequent use (once per week or less).

In order to get maximum Growth Hormone release, use the sauna in a semi-fasted state (having not ingested food for 2 to 3 hours prior). Lower blood glucose levels encourage Growth Hormone release.

Summary of Benefits

The figure below from Dr. Peter Attia highlights the benefits of sauna use, ranked by magnitude of effect and certainty of evidence. Magnitude and certainty for each benefit are assessed relative to the magnitude and certainty for other benefits of sauna use.



Protocols

The table below lists the optimal sauna use protocols per Dr. Peter Attia. Hot baths around 104°F can have similar benefits to sauna.

	Dry Sauna	Steam Sauna*	Infrared Sauna*†
Temperature	80-100°C/176-212°F	38-49°C/100-120°F	38-49°C/100-120°F
Duration	20-30 minutes	10-20 minutes	20-30 minutes
Timing	For **sleep** benefit: Use 1-2 hours prior to bedtime. For **sports performance** benefit: Use following exercise to optimize recovery. For **cardiovascular** benefit: Pair closely with exercise for optimal benefit or use without accompanying exercise at any time of day.		
Frequency	Once per day, 4-7 days per week.		

*Recommendations for steam and infrared sauna use are based on safety rather than effectiveness, as few studies have been conducted using steam and infrared saunas.

†The temperature and duration recommendations for infrared saunas vary depending on the model being used.

How long should I stay in the sauna for?

When you feel like you are getting claustrophobic, that you can't breathe fully or that you feel you need to get out. **Remember, if in doubt, get out.**

What sauna should I use?

Whichever fits your budget and needs. I started many years ago with a Clearlight Infared sauna, then upgraded to a Plunge brand traditional sauna.

Does a steam room have the same effect as a sauna?

No. You can't crank a steam room as hot as a sauna as the steam will burn you. It is also a much damper heat (higher humidity). This humidity inhibits the body's thermoregulatory response, sweating, and it can create a claustrophobic feeling much quicker. On the other hand, hot baths around 104°F can have similar benefits.

Should I get in the sauna post-training?

If you've been training in a hot environment, it's probably not a good idea to add more heat stress. However, apart from that, I'm not aware of any negative effects from post-training heat exposure. Just make sure you hydrate adequately.

I have (fill in the blank) medical condition. Is it ok for me to do exposure work?

I'm not a medical practitioner. If you have any concerns about exposure work and your health, please consult a qualified medical practitioner.

Exposure Workshop
Check here for dates

When to combine heat and cold?

It is best to become adapted to the heat and cold separately before doing both consecutively. If you do contrast therapy, it is more difficult to become adapted to either. This is not to say there aren't benefits to contrast therapy, it just means that it's important to know why you are doing it. If you want to become heat and/or cold adapted, do them at separate times. If you're looking to recover from physical training or exercise, contrast is a great way to do this because it facilitates blood and lymph flow.

XPT's standard contrast protocol is 15-20 minutes of sauna followed by 3-5 minutes of cold for two to three rounds.

Should I end with heat or cold?

This really comes down to personal preference UNLESS your goal is fat loss. The Søeberg Principle based on deliberate cold researcher by Dr. Susanna Søeberg is: To enhance the metabolic effects of cold, force your body to reheat on its own or "End with cold."

- Fire & Ice Contrast Therapy (Sauna-Cold) Private Facebook Group - This group is dedicated to those that want to improve and optimize their health and well-being through cold and heat exposure.
- "The Science & Health Benefits of Deliberate Heat Exposure" (Huberman Lab clip)
- “Using Deliberate Cold Exposure for Health and Performance" (Huberman Lab clip)
- “Sauna Benefits Deep Dive and Optimal Use” (Dr. Rhonda Patrick & MedCram)
- Additional Articles and Videos from Troy Delaney
    - How to Build a Chest Freezer Ice Bath
    - Upgrades to My Chest Freezer Ice Bath
    - How to Properly Clean a Chest Freezer Cold Plunge, Step-by-Step
    - How to Enhance the Benefits of Cold Thermogenesis
    - My Review of the Jacuzzi Clearlight Sanctuary Y Infrared Sauna
    - How to Hack Your Sauna Experience for Increased Benefits