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## HOT VS COLD THERAPY – WHEN DO WE USE WHAT?

**O**ne of the most common questions we get asked by patients, is whether they should use heat or ice for their injury or training – and what the difference is between the two. The truth is, that there have been various changes over the years with use and the evidence still isn't always sure.

### INFLAMMATION

Inflammation is the process that happens when tissue damage occurs. It's the process that heals and repairs, and occurs in different stages. Acute inflammation is usually represented by symptoms such as redness, swelling, heat, pain and loss of function. You can influence the inflammatory process during the later stages to enhance recovery with your rehab. This will, for example, help you repair and recover with strong(er) muscles.

There are also forms of 'chronic inflammation', such as rheumatoid arthritis, where the inflammation is unnecessary. Inflammation also occurs as a response to training and performance, which allows for us to adapt and get stronger.

### APPLYING HEAT

Heat tends to be seen as 'pro-inflammatory'. Inflammation itself creates 'heat', and you usually don't want to add more heat to fire. Hence adding heat to an acute injury can often aggravate it, but adding heat to stiff and sore muscles to warm them up can help relieve them.

Often 'inflammation' is seen negatively, but actually something that is 'pro-inflammatory' stimulates the inflammatory process, meaning it can also help it move on to the next stage quicker. Exactly how and when to use this still remains debatable.



### APPLYING ICE

Ice still tends to be the first thing that we think of when an injury occurs. Swelling and pain often limit movement. Hence icing during this time can be helpful, although research shows that elevation and compression are the factors that really impact swelling reduction. Ice will always help with pain management.

Adding ice to stiff muscles, will likely only increase that stiffness, using it directly post training may help symptoms of fatigue but using too much of it post training may reduce desired anabolic effects.

### ICE BATHS & CRYOTHERAPY

Ice baths and cryotherapy are two ways to apply cold to the body. Science has shown good evidence with full body cold exposure and the effect on your immune system, by increasing your brown fat which supports your metabolism and body temperature regulation.

Cryotherapy can also be used as a way to apply cold during an injury, but the evidence suggests that this is often most beneficial during the early stages following injury. When used post-training, it depends on the goals as described below.

### SO WHAT IS THE CONCLUSION?

With an acute injury we probably want to affect some of these acute symptoms to prevent too much effect on movement and reduce pain. However, eventually we

Hot or cold? The answer to inflammation is not a simple one.

also don't want to limit too much of the inflammatory process, as it is needed to heal and get stronger. Potentially heat could then be used during a later stage to enhance further recovery.

For sport and performance – cooling can often be used to limit effects of inflammation post-game and post-performance, when in game mode. This will allow them to continue performing again quicker, as the effects of inflammation may reduce performance (i.e. because of fatigue). In training mode though, when the goal is to increase muscle strength, size and other physical parameters, too much cooling may negatively impact these effects.

The truth is that science is still figuring out the best ways to apply these techniques. One day we may learn how to combine both techniques most effectively.

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