

## BROWN FAT VERSUS WHITE FAT

Calorie-burning fatty tissue helps to improve the figure – simply by cooling

Excess deposits of Adipose tissue on the hips, abdomen and butt affects many people. The previous methods to get rid of this were usually characterized by the fact that you either reduce your caloric intake or you should significantly increase your exercise habits. Both are usually not fun and often result in short lived success and a return of excess fat because of the yo-yo effect of unsustainable practices conflicting with a normal lifestyle. But now there is a solution - thanks to SlimCOOL, along with scientists from Harvard and many other universities and institutes around the world who are promoting Brown fat in the fight against white fat.

Until a few years ago, science believed that brown fat exists only in infancy or childhood. Now, however, researchers from the Netherlands, Sweden and the USA among others, have found that adults also have brown fat deposits. Why is this so interesting?

Brown adipose tissue, unlike white adipose tissue, has many mitochondria. These are the power-

houses of the cell and they contain relatively high levels of iron, hence the brown colour. But more important than the colour is the effect.

Brown fat provides a means of temperature regulation of the body, especially in babies since it is not yet sufficiently developed during infancy. Brown fat can also be found among adults living at predominantly cooler temperatures.

Researchers have discovered in recent years that brown fat requires a lot of energy to regulate temperature and breaks down white fat as its energy source. So, brown fat helps to break down white fat.

While babies have a lot of brown adipose tissue, adults have significantly less. But slim people have more of it than fuller people. Inter-

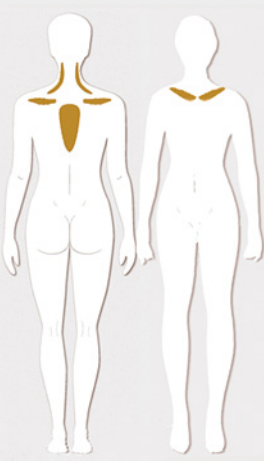
estingly, brown fat percentage also decreases with age.

So how can you manage to get more brown fat? Of course, scientists are trying to do this by using messenger substances, active substances and other chemical compounds, which can then be manufactured in capsules, syringes, patches or other dosage forms. Unfortunately the pharmaceutical solution is often not without side effects. But there is also a very easy and very natural solution. By cooling!

Why? Brown fat is responsible for thermoregulation and is then increasingly activated in the human body when the body is exposed to cool temperatures. This has been shown in various studies. The subjects either stayed in cool rooms, put their limbs in ice water or other rather unpleasant cooling measures.

### THE RIGHT TEMPERATURE

One can simply increase ones brown fat content by: Taking a cold shower for 30 minutes, immersing yourself in ice water, using a cryo chamber or any other means to reduce body temperature. All of these options are pretty uncomfortable, cold and wet.



**FETTGeweBE DES MENSCHLICHEN KÖRPERS**

**WEISSES FETT**

Weißes Fettzellen speichern im menschlichen Körper Energie. Wird davon zuviel zugeführt, entsteht Übergewicht.

**BRAUNES FETT**

Braune Fettzellen sind nur entlang von Schulter und Nacken sowie dem Brustbein und seitlich am oberen Teil der Wirbelsäule vorhanden. Sie enthalten Mitochondrien und sind somit Kraftwerke zur Energieproduktion, in dem sie gespeicherte Energie (im weißem Fett!) in Wärme umwandeln. Durch diesen Prozess wandelt braunes Fett weißes Fett in Energie um und baut dieses dadurch ab.

### WHITE FAT CELL



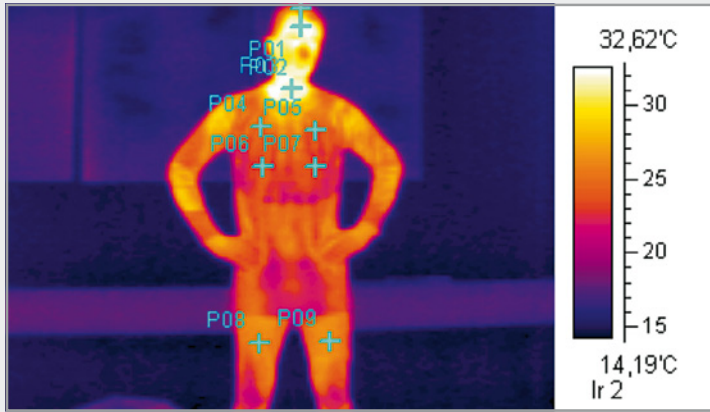
The white fat percentage is so great that everything else we pushed to the edge of the cell.

### BROWN FAT CELL

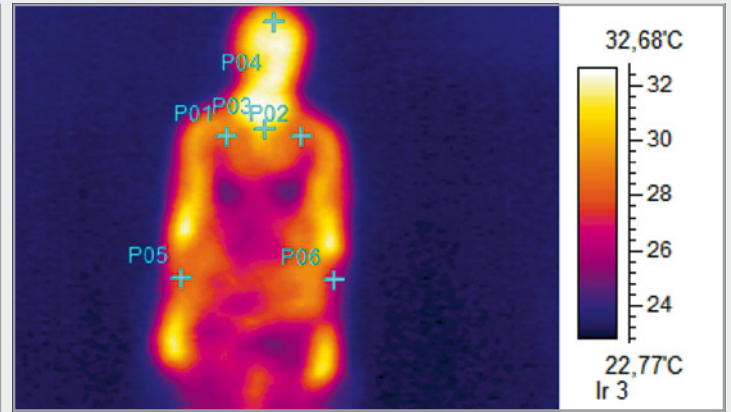


Mitochondria generate energy, are rich in iron, and make the cell appear brown in the picture.

# Infrared thermal images of the COOLINE SX3 material in vivo



Temperature: 22-26°C



Temperature: 25-28°C

In recent studies, international researchers along with the team at pervormance international have found that brown fat activation need not be so extreme, while the same level of fat-loss effect is still guaranteed.

The skin temperature was still around 26-28 °C on average. In the area of the body regions where brown fat is localized, e.g. above the clavicles, the temperature was only slightly (0.5-2 °C) below the normal skin temperature.

## COOLING EFFECT CONFIRMED

So it does not have to be an ice bath! Even at moderate cooling temperatures, brown fat can be activated.

You do not need to be shivering or chilled to form brown fat. This was also demonstrated by pervormance international. We found this especially in the subjects who formed more brown fat (BAT+) at less cool temperatures, where the brown fat itself compensated for

the difference in temperature. Specifically, the skin temperature in the area of the clavicle (supraclavicular area) was a clear indication of the formation of brown adipose tissue (BAT).

Meanwhile, numerous studies show that especially in people with higher BAT activity with moderate cooling temperatures, the formation of brown fat and an effective degradation of white fat can be effected. In order to make this finding very pleasant in the application, all that is required is a dry cooling system that achieves a temperature range indicated in the tests in order to achieve the desired goals.

## POSITIVE RESULTS

This is the reason we have developed the SlimCool range at pervormance international.

The 3D fleece COOLINE SX3 used in these completely new innovative cooling textiles is completely

dry to the outside in a short time despite activation with water. Secondly, because of its unique three-dimensional mesh structure on the skin, it achieves exactly the temperatures required by pervormance international and other scientists to achieve the activation of brown fat and the breakdown of white fat.

In investigations with infrared thermal images, it was shown that the skin temperature when using the 3-D fleece COOLINE SX3 a body surface temperature between 24 to 28°C was achieved. This is exactly the range found to be optimal to BAT activation, both in studies by pervormance international and, further scientific research.

The temperature of the COOLINE SX3 material itself is usually in the range of 14 to 18 °C. For light pre-cooling it can also be placed in the refrigerator for a short time at 8 to 10° C. (See instructions for details)

Therefore, the COOLINE SX3 fleece is ideal for use in the activation and formation of brown fat.

## COOLINE SX3 WORKS

Based on our test results and the results in the studies, a large-scale cooling of the upper body is suitable for forming brown fat. Therefore, it is advisable to cool at the area of the upper body, in the area of the clavicles, the upper back towards the shoulders and on the neck, as is easily achievable with a SlimCOOL T-shirt and scarf. Thus, the formation of brown fat can be activated and this in turn leads to fat loss.

From our tests and studies, it also makes sense to directly cool the places where there is white fat that you want to get rid of. So, for example on the stomach, on the legs, or on the buttocks. Again, the body area is usually sufficient, for example, combining the Slimcool Chaps with the SlimCool waist belt.

**Try it!**

Sources: Cold but not sympathomimetic activates human brown adipose tissue in vivo, A.Cypess et al, Harvard Medical School, USA, 2013 . Brown adipose tissue is linked to a distinct thermoregulatory response to mild cold in people, M. Chondronikola, USA , 2016. The 4 Hour Body, Tim Ferriss, USA, 2015. Healing with the Power of Nature, Prof. Dr. med. Andreas Michalsen, 2017. Practical testing proves effectiveness, Dr. Karin Kunzi-Rapp MD, publication in preparation, 2018.



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