ShapePerfection – A spicy active to shape the body

Various reports reveal that about 85% to 98% of all women over the age of 20 are affected by cellulite. In response to the need for smooth skin and a flawless, slim silhouette, Mibelle Biochemistry has developed ShapePerfection. This active ingredient is based on a unique combination of capsaicin and mustard sprout extract to successfully combat the appearance of cellulite. **By Franziska Wandrey, Christine Meier, Daniel Schmid and Fred Zülli**

An orange peel appearance on skin first appears during puberty, as it is favoured by the female sex hormone oestrogen. The connective tissue in women is loosely structured and vertically arranged, which means body fat in-between bulges forms the characteristic dents.

The main problem zones for orange peel skin are the thighs and buttocks, because larger fat deposits occur there naturally.

So, what can help to address cellulite? Apart from the new 'body positivity' movement, anything that promotes fat burning, collagen production, tissue circulation and lymph flow could be beneficial. This includes exercise, regular deep-tissue massage, a healthy diet, and topical body products with ingredients that stimulate fat burning.

A CLOSER LOOK AT FAT BROWNING

Recently, a novel biochemical mechanism was discovered which increases the fat-burning process. This is known as the 'browning' process.

There are two types of fat tissue, white adipose tissue (WAT) and brown adipose tissue (BAT). WAT is used to store lipids in oil droplets, whereas BAT is programmed to burn fat into heat. Fat burning is achieved by the uncoupling protein 1 (UCP1) which is abundant in the mitochondria of BAT.

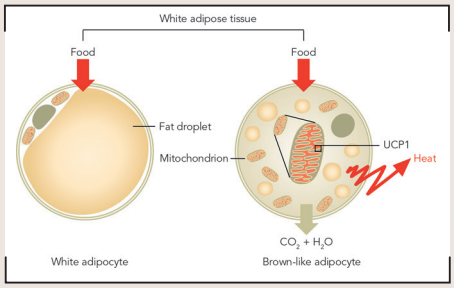

Figure 1: White adipocytes are used for fat storage in the adipose tissue. In response to stimuli such as the cold, white adipocytes can transform into brown-like adipocytes in a process called browning. These brown-like adipocytes express high levels of UCP1 and burn fat deposits into heat

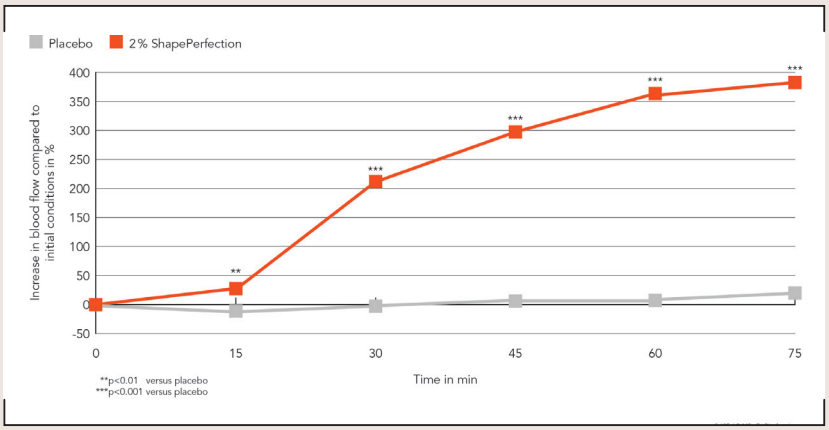

Figure 2: An immediate increase in subcutaneous blood flow is evident following a single application of ShapePerfection on the thigh

Mitochondria contain two membranes and use the electron transport chain to generate a proton gradient at the inner membrane. This gradient is normally used to generate ATP, the universal energy carrier in our cells. In brown adipocytes, UCP1 uncouples the electron transport chain from ATP by forming another channel through which protons leak. Consequently, saturation of ATP will never be established, thus the electron transport chain will constantly continue, ultimately resulting in heat production (see Figure 1).

Therefore, UCP1 turns mitochondria into a heat production machinery, which eliminates fat. This mechanism sounds like an interesting approach to treat weight problems. However, it was thought that BAT only exists in newborns as they are unable to produce body heat through shivering. Only a few

Did you know?

It is widely known that cellulite is exclusive to women – this is due to anatomical reasons. Male and female skin is structured differently. For example, male connective tissue is structured like a tightly-meshed grid and is also covered by thicker skin.

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years ago, researchers found remnants of BAT in adults and discovered ways to transform WAT into BAT, which is known as the browning process.

THE BENEFITS OF MUSTARD SPROUTS

Mibelle Biochemistry discovered that with an extract of organic mustard sprouts, it is possible to transform WAT into BAT and thus to transform fat deposits into heat. When precursors of fat cells were treated with mustard sprout extract, they differentiated into cells with a 125% higher expression of UCP1 compared to untreated cells. Therefore, topically applied mustard sprout extract should instruct the cells in fat deposits to burn the lipids into heat.

OIL-BASED ACTIVE INGREDIENT

Cellulite is not only the result of increased subcutaneous adipose tissue but also a consequence of weakened connective tissue and local microcirculation impairment. At the onset of cellulite development, the capillary network in the dermis and adipose tissue start to break down. This leads to the accumulation of fluids and suboptimal supply of oxygen. The metabolism of fibroblast cells in the dermis is disturbed, resulting in dermal thinning and weakened connective tissue which facilitates the protrusion of adipose tissue.

An oil combining the organic mustard sprout extract and the active component of chili peppers, capsaicin, (ShapePerfection) was tested for enhancement of subcutaneous blood flow. Capsaicin activates the release of the calcitonin gene-related peptide messenger, which is a potent vasodilator.

The mustard sprout extract contains the glucosinolate sinalbin, which is known to induce a feeling of warmth

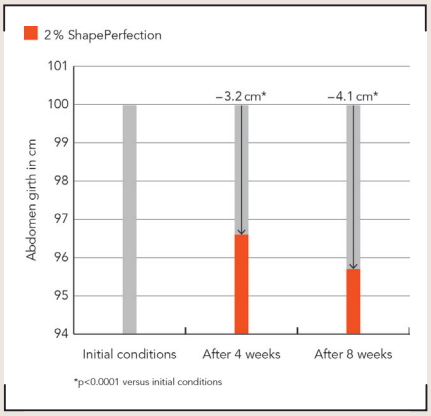

Figure 3: Decrease in abdomen girth after treatment with 2% ShapePerfection

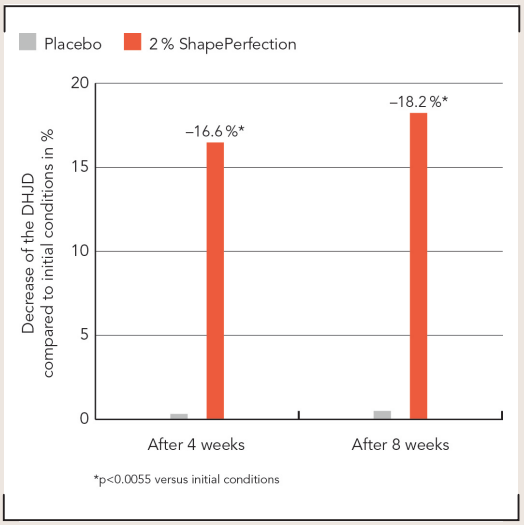

Figure 4: Decrease of the dermis-hypodermis junction distance (DHJD) after treatment with 2% ShapePerfection or the corresponding placebo cream

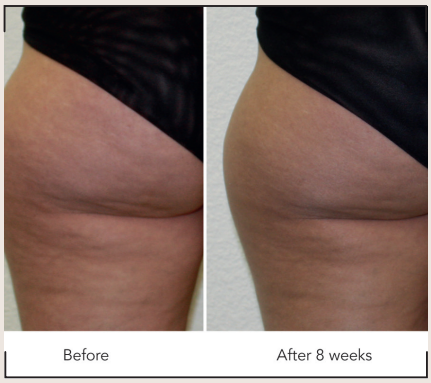

Figure 5: Pictures of the thigh taken before (left side) and after eight weeks of treatment with 2% ShapePerfection

after topical application. In combination, both components should have a synergistic effect on improving the microcirculation in the skin.

This hypothesis was tested in a placebo-controlled clinical study with 21 women, aged between 23 and 54 years. The women applied a cream with 2% ShapePerfection on the thigh and the blood microcirculation in the skin was measured using the laser doppler technique immediately after application for 75 minutes. Compared to the placebo, microcirculation was increased by 212% after 30 minutes and by 354% after 60 minutes subsequent to the application (see Figure 2).

These results show that ShapePerfection can increase the blood flow in the skin after just one application. Importantly, while blood flow was increased, the skin did not show increased redness.

PROVEN EFFECTIVE

In a placebo-controlled clinical trial, 18 women, aged between 21 and 54 years, who displayed cellulite, applied a cream with 2% ShapePerfection twice daily over a period of eight weeks.

Measurements were done before the first product application and again after four and eight weeks. The circumference of the upper arms, waist and abdomen was measured, and the degree of cellulite on the thighs was analysed with ultrasonographic measurements. Abdomen and waist girth were found to be reduced by 4.1% (see Figure 3) and 3.7%, respectively. Upper arm girth was reduced by 0.9cm on average after eight weeks. Analysis of the ultrasonographic pictures showed a decrease in the dermis-hypodermis junction distance and thus a clear reduction in cellulite degree (see Figure 4).

The reduction of the appearance of cellulite on the thighs and buttocks was also visible in pictures taken of the volunteers before and after treatment (see Figure 5).

ShapePerfection, a combination of a subcutaneous blood flow stimulator and a novel way to burn fat, has proven to visibly reduce cellulite and to effectively shape buttocks, hips, waist and arms. This and other active ingredients from Mibelle Biochemistry are available in South Africa from Carst & Walker. ▪

Carst & Walker – carst.co.za
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