



# MORE PERFORMANCE WITHOUT DOPING.

## ① AIR-CONDITIONING CHANNEL®

The Air-Conditioning Channel® in the chest area is part of the climate channel system. Physiological studies have shown that the chest area is an optimal zone for quick and effective venting and cooling. Exchanging fresh air over a system of channels cools the chest area without spreading a “cold” sensation throughout the body. The constant air movement along the Air-Conditioning Channel® also effectively draws moisture away from the sweat zones.

## ② 3D BIONIC SPHERE® SYSTEM IN THE CHEST AREA

The 3D Bionic Sphere® System on the chest provides cooling without the risk of overcooling.

## ③ AIR GUIDE®

Air Guides® work like spacers and borders along the Air-Conditioning Channel®. The Air-Conditioning Channel® must be combined with the Air Guides® for winter use. The Air Guides® maintain space between heavy winter upper body garments and a pack, whilst ensuring a highly effective quantity and flow of fresh air through the Air-Conditioning Channel®.

## ④ AIRCOMPLEX-ZONE AT THE UPPER ABDOMEN

At the solar plexus, directly under the 12th thoracic vertebrae, important nerve fibres receive signals that influence one's entire well-being. The Energy Accumulator® Evo protects this sensitive area with special channels. Warm air enclosed there insulates optimally in the cold. The system's structure processes excess sweat from physical activity and ensures appropriate cooling of the core.

## ⑤ ISO-PAD

In winter, targeted insulation of individual body parts guards against ambient coldness can prevent the body from freezing. This is why ISO Pads over the hipbones and the more subtle ISO-Pads on the buttocks retain body heat that is necessary to guarantee interior organ functionality.

## ⑥ INSULATIONPADS ON THE UPPER THIGH

Assist in the retention of heat in the thighs. Under-cooled muscles are susceptible to injury, and highly under-cooled muscles can feel numb. Even more dangerous is when the cooling slows the muscle reaction time, leading to the increased threat of muscle injuries and risk of accidents. This increase can be as much as 60% in the case of skiing, for example. InsulationPads reduce such risks. Shaped like waves, their protection lies over a large surface of the most superficial thigh muscle, thereby retaining the necessary heat next to the body to maintain muscle performance.

## ⑦ INNERLAP AIRCONDITIONING ZONE®

In terms of muscle performance, the inner thigh is less reactive to cold. We all instinctively know this: when our hands are cold, we put them between our thighs to warm them up, helping us re-establish our overall sense of warmth more quickly. The Innerlap AirConditioning Zone® has been placed in this area. It is a finely knit fabric mesh with zero insulation. Cooling therefore occurs initially through the exchange of air. As soon as sweat has started to evaporate, the cooling process steps it up a notch since the activation system lies directly next to the skin.

## ⑧ EXPANSIONKNEE

Protects from the cold, even when the knee is bent.

# \ DECISION LAYER \ ENERGY ACCUMULATOR® EVO

## 9 ISO-SHOULDER

The wavelike structure of the ISO-Pads lies over the shoulders, keeping the body warm and guarding against chills. Conventional baselayers let a lot of warmth escape in this area because the weight of the jacket and a backpack compresses any insulation material, thus losing any of their value.

## 10 SWEAT TRAPS®

Designed for large underarm areas to prevent dripping and to cool more effectively.

## 11 EXPANSION RIBS®

The Expansion Ribs® that form the elbow cushion work similarly to the knee area, but are finer. The knitted fabric folds apart based on the accordion principle, insuring that winter cold doesn't cool down the elbows. Even when sharply bent, the insulating effect is maintained through warm air stored in the interior. The flexibility of the Expansion Ribs® and the elasticity of the yarn allow a frictionless freedom of movement. Even sports with continuous arm movement, such as Nordic Walking, produce no symptoms of musculature exhaustion from the movement of the Expansion-Ribs.

## 12 3D BIONIC SPHERE® SYSTEM ON THE BACK

The 3D Bionic Sphere® System on the back provides cooling without the risk of overcooling.

## 13 3D BIONIC SPHERE® SYSTEM AT THE TAILBONE

The sweat of the lower back area is conducted through the 3D Bionic Sphere® System to the tailbone for evaporation. The Sweat Traps® on the lower back are targeted specifically at catching sweat flowing toward the buttocks. This first phase, which often leads to friction sores, is interrupted before it can even begin.

## 14 AIRCONDITIONINGSPOT

Cools the knee without chilling.

## 15 ISO-CALFPAD

Calf muscles can cool down quickly, particularly after short breaks and even if the body is still warm. This can lead to a risk of injury. The ISO-CalfPad retains the body's warmth. To that end, the knitted fabric's wavelike structure lies over the skin, forming channels for storing air in a manner similar to the ISO-Shoulder. The warmer air retained in these channels definitively delays the cool-down of the calf musculature and adjusts to the body's overall perception of warmth.

## X-BIONIC® PARTIALKOMPRESSION®

During sport activities body warmth is created. In extreme situations up to 1,200 watts worth. Up to 90% of this is released by the athlete from the skin to maintain a body temperature of 37°C. X-BIONIC® Partialkompression® applies targeted pressure on 1 mm-wide ridges. Left and right of the ridge is a compression-free area where compression could have a negative effect on blood circulation to the skin. In this way the blood flow through veins and capillaries remain unimpeded.

The results are revolutionary:

- Reduced muscle oscillations
- Improved muscle uptake of oxygen and nutrients
- Faster recovery

### + COOLING MECHANISM

Partialkompression® uses the skin as a surface for cooling and, thus, can take advantage of the body's personal micro-climate for optimising performance.

### VASCULAR-OPTIMISING X-BIONIC® PARTIALKOMPRESSION®

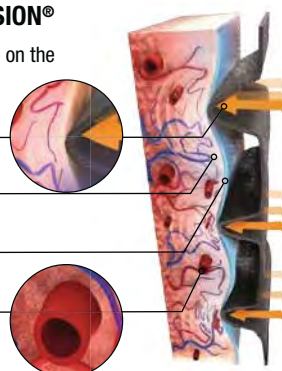
Applies targeted pressure on the higher ridges.

Pressure on the ridges.

Skin

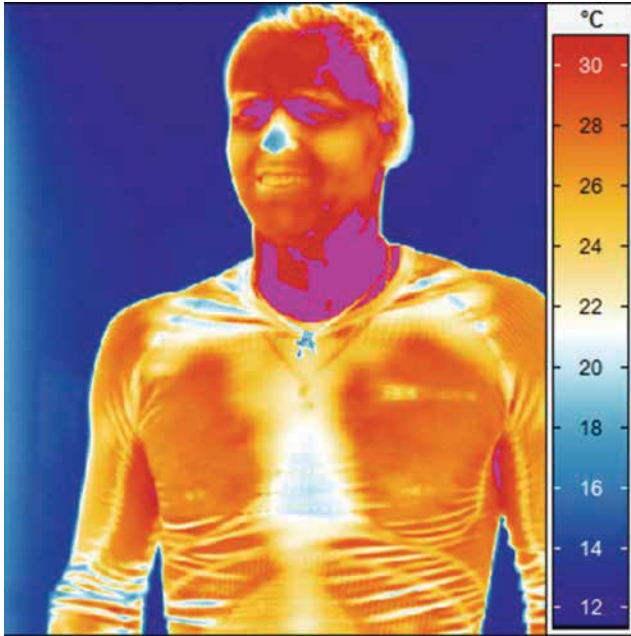
Cooling film of sweat

Open capillary



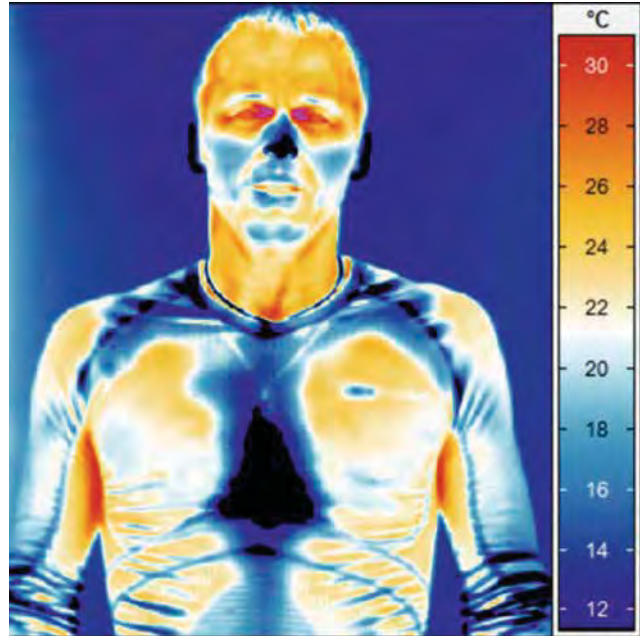
Scientific illustration





Before the 3-minute test:

X-BIONIC® releases excess body heat (red) and cools you with the 3D Bionic SPHERE® System in the cold-sensitive chest (blue).



After the the 3-minute test:

X-BIONIC® releases body heat in a targeted manner only in the underarms (red) and protects the body surface from cooling down (blue).

# MINUS 50 °C PROVES THE DIFFERENCE.

In High-Tech labs, scientists simulate the lowest temperatures. X-BIONIC® utilises such laboratories for its production that is uncompromising in its scientific demands. We aren't satisfied until the body heat camera shows perfect functionality of our products in the transition from normal to super low temperatures. That proves that even minus 50 degrees Celsius doesn't have to be so scary - if you are protected by X-BIONIC®.

# \ DECISION LAYER \



The InfraTec body heat camera VarioCAM® high resolution doesn't lie. It proves whether the athlete interface functions or not in extreme temperature variations and extreme cold. The thermographic image, left, shows the athlete before the cold test. X-BIONIC® masters the task presented to effectively keep the body cool. In the yellow areas of the image you can see excess warmth being released to the ambient air. In the image, right, the conditions have totally changed. The cold chamber simulates freezing temperatures. Here, X-BIONIC® releases only a small amount of very targeted warmth. The body, which holds onto its warmth, remains protected from the cold.

X-BIONIC® protects the body through a fully integrated system of effective components. The 3D Bionic Sphere® System insulates with tunnels and channels. The AirComPlex-Zone protects the solar plexus from freezing. ISO-Pads warm the hips and gluteals, the ISO-Shoulder protects the shoulders, and the Expansion Ribs®, the knees and elbows. With its construction based on the accordion principle it doesn't stretch out and thin when the joint is flexed. Cold chambers and thermographic cameras reveal every weakness of athletic apparel at minus 50 degrees Celsius. But X-BIONIC® Interfaces don't have any weaknesses. That of course is asserted by other manufacturers about their products. But we can actually prove it.