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SacroLoc for low back pain
Focusing on the complex anatomy of the sacroiliac joint  Page 16
RESEARCH-BASED TREATMENT EXPERTISE

FAST AND EFFECTIVE RELIEF FROM HEEL PAIN

The use of viscoelastic heel cushions is the most effective acute treatment of chronic heel and ankle pain. Foot orthoses with relief core® technology provide effective support for the treatment of chronic heel and ankle pain. The ErgoPad redux heel guarantees a quick and significant reduction in maximum pain.

* Pfeffer et al.: Foot & Ankle International/Vol. 20, No. 4/April 1999, Orthoses for proximal plantar fasciitis, 1999


Silicone cushions
Comparative treatments

conventional soft cushioning insole
ErgoPad redux heel

ViscoHeel®
ViscoSpot®
GloboTec® Comfort, style Heel
ErgoPad® redux heel
ErgoPad® redux heel 2
Dear readers,

it is always a pleasure for me to present new product innovations to you in Bauerfeind life. But in this issue we have something very special for you – a development that is destined to set new standards in compression therapy! This is because the VenoTrain cocoon, with its integrated skincare substances, is a world first that makes compression therapy much more comfortable for patients. As the very first manufacturer to do so, we have succeeded in using a fiber made from cotton and cellulose for the compression knit. The lipophilic care complex it contains is applied to the skin throughout the six-month wearing period, particularly protecting the dry and sensitive skin of compression stocking wearers against scaliness and itching. And it is precisely these side effects that often lead to low patient compliance. You can find out more about the VenoTrain cocoon from page 24 onward.

We are currently turning our focus to a product development with more than meets the eye: the new generation of SacroLoc. With this pelvic orthosis, we can offer an effective aid for back treatment that relieves strain on the sacroiliac joints. We have made further refinements to our successful product. For example, the new SacroLoc now relieves strain in a more targeted manner and is even more comfortable to wear. From page 16 onward, you will find an impressive case study involving a patient with SI joint problems, a report on a study of the new SacroLoc, and testimonials from physicians.

The wireless light reflection rheography system Bodytronic 200 allows to detect early signs of venous disorders. Up to now the system has been used predominantly as a service of medical retail. From page 40 onward we report, how a healthcare center uses Bodytronic 200.

At the end of this issue (page 54), we introduce a man with whom we have enjoyed some deep discussions over the past few weeks: Dr. Young-Hee Lee, Chief Medical Officer (CMO) of the 2018 Winter Olympics in Pyeongchang, South Korea. At the 2018 games, we will once again be a part of the central medical care system, while our products will help athletes from all nations, either in a preventive capacity or in the event of injury.

I hope you enjoy reading this new issue of Bauerfeind life!

With warm regards,

Prof. Hans B. Bauerfeind
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of disease
Moving, colorful and diverse

These words do not just describe the opening ceremony of the European Youth Olympic Festival (EYOF) in Győr, Hungary, in summer 2017. Approximately 2,500 athletes from 50 countries also provided top-class competition performances that were full of emotion. As part of the services, Bauerfeind distributor LBT Inno treated the athletes with supports, orthoses and medical compression stockings for injuries and instabilities. The most popular products were the GenuTrain knee support for handball players and the MalleoLoc ankle orthosis for judo players and gymnasts. The LordoLoc back orthosis was used by javelin and discus athletes. Fortunately, however, the services of the orthopedic team weren’t needed very often.
Bauerfeind Sports Store opens in Seoul

Bauerfeind’s very first Bauerfeind Sports Store will open in Seoul in December 2017. With just a few weeks to go until the 2018 Winter Olympics, supports, orthoses, and compression stockings from the Bauerfeind sports line can now be purchased in the South Korean capital. In this modern store, located in a shopping mall in the Songpa-gu district, Bauerfeind partner DAWON C&T CO. advises sports enthusiasts and professional athletes alike on available products and sells the best in German-made quality.

Champions for Charity

More than 16,000 spectators, 13 goals, and plenty of fun – this was the score at the end of the “Champions for Charity” benefit football match held on July 3, 2017 in Mainz, whose hosts included basketball superstar and Bauerfeind brand ambassador Dirk Nowitzki. A whole host of prominent sports personalities took to the pitch alongside team captains Dirk Nowitzki and Formula 3 driver Mick Schumacher to honor Formula 1 legend Michael Schumacher and support charitable causes, with proceeds from the event going to projects organized by the Dirk Nowitzki Foundation and the Keep Fighting Initiative. Dirk Nowitzki (shown in the photo wearing the Sports Knee Support) scored two goals for his team, but ultimately could not stop them from narrowly losing 6-7.
A successful comeback for Anna Hahner

More than 13 months after her last marathon, Anna put in an impressive performance at the 44th BMW Berlin Marathon, finishing in 2:28:32. In a strong starting field, this result was enough to secure her fifth woman overall and best European woman. Bauerfeind is also delighted to see this long-distance runner back at her best after a long break due to injury. The company recently extended their sponsorship of the Hahner twins Lisa and Anna for another four years.

Ratschow Memorial Medal awarded

One of the highlights of the 59th Annual Congress of the German Society of Phlebology was the presentation of the Ratschow Memorial Medal to Paolo Prandoni, Ph.D. The Italian professor, who works at the Institute of Medical Semantics at the University of Padua, is primarily known for his research in the field of the epidemiology, diagnosis, and management of thromboembolism. His work focuses in particular on venous thromboembolism (VTE) in cancer patients. The Curatorium Angiologiae Internationalis honored the Italian researcher with the Ratschow Memorial Medal for his life’s work. Since 1969, this prestigious accolade has been awarded annually to particularly deserving scientists from the field of vascular medicine and related disciplines. Bauerfeind has been a patron of the foundation for many years. Pictured, from left: Prof. Dr. Eberhard Rabe, Chairman of the Curatorium Angiologiae Internationalis, prizewinner Paolo Prandoni, M.D., Ph.D., and Dr. Antje Mark, Phlebology Marketing Director.
GenuTrain S knee support

Knitted to order

From January, the GenuTrain S will be available as a custom-made solution in addition to the seven standard sizes already on offer. Patients who need more support for their knee joint due to light to moderate instability are aided during movement by the lateral joint splints of the active support. In order to ensure the anatomically shaped knitted fabric fits perfectly, circumferences are measured at the middle of the knee and five other parts of the leg for the custom-made support, after which the associated distances are defined. If required, the lateral joint splints – which are also shaped to fit the contours of the body – can be further adjusted by the orthotist when the patient collects the support.

VenoTrain look compression stocking

New colors for the glossy stocking

The VenoTrain look compression stocking is now available in the colors caramel, marine, anthracite, and black. This means that the two new shades, marine and anthracite, replace the colors honey and silver. The range of colors has been adapted to cater to our customers’ wishes and to provide the most sought-after shades. Another innovation: The thigh-high stockings will now be supplied with the popular “Sensitive” silicone lace band. Its ultra-thin, continuous silicone coating sticks better to the skin and guarantees a secure fit during movement. The highly elastic, flexible material adapts to the wearer’s thigh circumference. This adjustment will scale down the range of thigh-high stockings for the medical retailer considerably, avoiding the provision of unsuitable products. The slightly transparent VenoTrain look with a fashionably elegant gloss effect is an ideal companion for stylish outfits and a true highlight among state-of-the-art compression stockings.

VenoTrain curaflow flat knit compression

New: Seamless glove and arm sleeve with comfort elbow

There is now a seamless glove in the VenoTrain curaflow flat knit series for treating mild to moderate lymphedema in the fingers and on the back of the hand. This offers greater comfort during treatment for lymphatic patients. The finer knit of the seamless glove also improves the mobility of the fingers compared to the firmer material with seams used for more pronounced edemas. A better fit and greater freedom of movement is also now provided by the VenoTrain curaflow arm sleeve. The new comfort elbow reduces creasing and the feeling of pressure when worn. The elbow zone is anatomically shaped for precisely this purpose and the knitted fabric in the crook of the elbow is softer, without reducing the therapeutic effectiveness of the product. The sleeve is easy to put on, breathable, and regulates heat thanks its high microfiber content. Both the seamless glove and the new arm sleeve are available in compression classes 1 to 3 and, like all VenoTrain curaflow products, in the colors cream, caramel, marine, bordeaux, anthracite, and black.
**GenuPoint patellar tendon support**

**Jumper’s knee study published online**

In a comparative cross-sectional study on patellar tendinopathy, also known as jumper’s knee or patellar tip syndrome, Dr. Hans Zwerver from the University Medical Center Groningen researched the effect of GenuPoint on the patellar tendon. The results showed a clear reduction in pain and a positive proprioceptive influence on test subjects who were already experiencing reduced sensorimotor function. The study *Effect of a patellar strap on the joint position sense of the symptomatic knee in athletes with patellar tendinopathy* has now been published online in the *Journal of Science and Medicine in Sports* [www.jsams.org].

**Consultation handbook for a better quality of care**

**Arguments for quality and price**

A new display ring binder containing information on Bauerfeind products and non-binding price recommendations for the German market gives patients and medical retailers all the most important details about quality and price. The “Consultation handbook for a better quality of care” supports medical retailers in discussing the range of compression stockings, supports, small orthoses, and foot orthoses on offer. The handbook will be displayed on the counter, enabling patients to read about the performance and comfort features of the products, along with the non-binding retail price recommended by Bauerfeind. The consultation pages are visible to retailers and contain details on the specific benefits offered by the individual quality features. The medical aid number and the current situation with regard to basic care and statutory co-payment in Germany are also listed. The purchase price can be broken down with and without prescription in a price field.

**EpiTrain elbow support and EpiPoint elbow orthosis**

**With new strap and pad**

Individual treatment solutions for elbow pain are now made possible by the EpiTrain support, which features a removable forearm strap, and the EpiPoint orthosis, with its new insertable five-point pad. A non-elastic lattice strap is fastened to the knitted fabric of the EpiTrain and can be tightened around the tensed forearm as required. When loaded, it exerts a counter-pressure and boosts the support’s relieving effect on the tendon attachment sites of the elbow muscles. The EpiPoint strap exerts a pain-relieving pressure on the muscle-tendon junction even when the arm is at rest. Its new viscoelastic five-point pad targets several trigger points. This fastened pad is symmetrical: It can be turned one way or the other to relieve the strain in cases of tennis elbow or golfer’s elbow on the right or left side as needed. The cost-neutral updates to both elbow products are being made during continuous production. The new EpiPoint is available in the color titan and the campaign color black.
In just a few months, the 2018 Olympic Games will begin in the South Korean county of Pyeongchang. In addition to Bauerfeind AG’s medical support during the games, which will take place from February 9 to 25, 2018, a global winter campaign is also under way for medical supply retailers.

The face of the global marketing action is ski cross athlete Andrea Limbacher from Austria. Bauerfeind has provided support to the 28-year-old freestyle skier since her severe knee injuries in March 2016 and January 2017, helping her on her journey towards the Winter Olympics in Pyeongchang, South Korea. Promotional material available from October 2017 follows the athlete’s road to recovery. Andrea Limbacher had already been in contact with Bauerfeind before her injuries through her involvement with the Austrian Skiing Association. She then used the medical knee products intensively shortly after her injuries and in the rehabilitation periods, and has continued to make use of Bauerfeind sports products since returning to competitive training. “Andrea is a real fighter and her optimistic outlook complements our work perfectly. We have been providing her with intensive support since her first knee injury and we are delighted that she is back on the skis. We are very pleased to have the opportunity to help her on her journey towards Pyeongchang,” says Pauline Rackow, CEO of Bauerfeind Austria.

Attractive advertising materials

With its ongoing “Getting back on top” campaign, Bauerfeind wants to inspire people to get up and moving, while helping its customers to get through the winter injury-free. The winter campaign for the medical products starts soon and will run until the end of the Winter season. Various campaign materials are available to order for medical retailers. For example, Bauerfeind quality partners can obtain a stand-up display, decorative banners, cubes, sports bags, counter display stands, and window stickers. Patient brochures are available for medical supply retailers to give to their customers, while online resources will also be available for the entirety of the winter campaign. A separate campaign is being launched staggered for the Bauerfeind Sports Line.

Further information

on the current winter campaign can be obtained from your Bauerfeind field sales associate or from www.bauerfeind.com/partnerportal.
**Prescription notepads for physicians**

“Successful treatment of shoulder pain”

The practical prescription notepads by Bauerfeind are now also available in German for shoulder treatment. The tear-off patient history sheets are filled in during the consultation. Anatomical drawings of the shoulder serve as a visualization aid for recording the diagnosis and individual treatment plan. At the end of the consultation, the patient is given the form to keep for their records.

The back of the form shows helpful exercises and an overview of the shoulder supports and orthoses available from Bauerfeind for therapy. In addition to shoulder treatment, prescription notepads are also available for back, knee, ankle, and hand treatment.

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**LumboTrain back support**

**First study on muscle activation published**

Two randomized, controlled studies investigated the effects of the LumboTrain on the trunk muscles during walking and under static loading. In both studies, study director, PD Dr. med. Christoph Anders from Jena University Hospital, measured an increase in muscle activity and was thus able to refute the notion that wearing a support can cause muscular atrophy. The first study on healthy test subjects has now been published in the open-access journal *Biomechanics Open Library* under the title *Effects of an abdominal belt on trunk muscle activity during treadmill walking*. Bauerfeind is providing a summary of selected results for each of the two studies with the LumboTrain. An English pdf of the white paper can be ordered free of charge from medical.affairs@bauerfeind.com.

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**When the LumboTrain is worn, the EMG indicates increased muscle activity.**

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**IMPORTANT DATES**

**January 2018**

→ January 29 – February 1, 2018
Arab Health, Dubai, arabhealthonline.com

**February 2018**

→ February 16-17, 2018
Trauma Surgery Seminar of the DGUV Association North-West, Hamburg, Germany, dguv.de/landesverbaende (under ‘Events’)

→ February 23-24, 2018
24th Bonn Vein Days, Bonn, Germany, der-niedergelassene-arzt.de/zusatznavi/bonner-venentage

→ February 23-24, 2018
Federal Conference on Surgery, Nuremberg, Germany, bundeskongress-chirurgie.de

**March 2018**

→ March 4-6, 2018
22nd European Vascular Course, Maastricht, the Netherlands, vascular-course.com

**April 2018**

→ April 20-21, 2018
6th Zeulenroda Phlebology Forum, Bio-Seehotel Zeulenroda, Germany

→ April 26-28, 2018
Annual Meeting of the Association of Southern German Orthopedics and Trauma Surgeons, Baden-Baden, Germany, vsou.de

→ April 27-28, 2018
28th Berlin Arthroscopy Course, Berlin, Germany, arthroskopie-berlin.de
Back pain is a common problem in the modern world, with one in every two people suffering from it in developed countries. And this number continues to rise. In 2010, Bauerfeind unveiled an answer to the differential diagnosis of SI joint syndrome in the form of its pelvic orthosis SacroLoc. This narrow orthosis stabilizes the pelvic girdle and relieves pain. Furthermore, it delivers convincing results in scientific study time and again. The SacroLoc gets right to the bottom of the sacroiliac joint’s complex structure and all the problems this entails. This alone is reason enough for Bauerfeind to once again turn its focus to the lower back, with a second generation of the orthosis. The new SacroLoc, with its highly elastic mesh material and patented strap, builds on the innovations of the first generation. The unusual case of one SI joint patient is a perfect illustration of how this orthosis can often produce an immediate effect. There could be only one answer for her indication.
If you were to meet Ingeborg Lepke today, you wouldn’t notice anything unusual about her. She walks briskly with her upper body upright, setting her feet down confidently on the ground. But it’s only been a few months since she was able to walk just like everyone else again. A small step for the world of healthcare represented a giant leap toward a pain-free life for the 56-year-old from Berlin. It’s difficult to imagine what happened to Ingeborg Lepke eighteen years ago – paradoxically, at a time that should have been one of great joy, not prolonged suffering. Eighteen years ago, Ingeborg Lepke’s son was born. That’s when it began. “I could barely take a single step after the birth,” she recalls. The young mother felt a severe pain in her legs, radiating down from her pelvis. Even small steps triggered the pain. And it didn’t get better. Just going about everyday life was a huge challenge. Pain medication wasn’t an option, which meant that this once sporty individual had to give up table tennis and badminton. “The physicians just couldn’t help me,” she says. “Nobody knew what was wrong.”

A relieving grip around the pelvis

How could someone endure constant pain while walking for so long? Ingeborg Lepke resigned herself to her fate... until late 2016. Then, something changed. Ingeborg was at her wits’ end and couldn’t take any more. She visited the Outpatient Rehabilitation Center in Berlin for psychotherapeutic treatment. There, in a facility run by the Helmut Nanz Stiftung, she was sent to Chief Orthopedic Physician Dr. med. Thomas Lang for a consultation. The physician remembers his first impression clearly: “I asked the patient to walk a few steps. Her gait was dragging and unsteady. Essentially, she was incapable of walking.” The orthopedist had a suspicion, which was backed up by the next test he performed: Dr. Lang asked the patient to stand on one leg while facing him. Her face contorted in pain. Then, the physician grasped her around the pelvic girdle. He exerted a compressive action with both hands. Ingeborg Lepke had no idea what had just happened: Her pain was gone!

SI joint dysfunction

For Dr. Lang, the one-legged pose was the final link in a chain of clues: “The prior history and the findings clearly pointed toward dysfunction,” explains the physician. “There was no indication of wear to the joint. The symptoms appeared virtually overnight.”

Ingeborg Lepke's life is back up and running. Her treating physician, Dr. med. Thomas Lang, is also happy with the condition of his SI joint patient.
Intervertebral disk prolapse and the classic “non-specific back pain” were also ruled out due to the patient’s symptoms. Dr. Lang was sure from a very early stage of the diagnosis that was later confirmed: The source of all Ingeborg Lepke’s problems could only be the SI joint region. “Problems with the SI joint are not unusual during pregnancy and childbirth,” says the physician. “The hormonal changes and increase in weight can lead to loosening of the ligaments at the joints, which then triggers pain (see also the interview on p. 20).”

Hotspot in the back
The sacroiliac joint has a special significance in the load distribution of the body. Located at the interface between the spine and the pelvis, it takes on the role of a mediator, distributing the loads from the torso toward the feet and vice versa, with forces from the lower extremities also being directed upwards via the SI joint. A high degree of local ligament stability is required in order for these loads to be transmitted correctly – and in order to keep the jagged structure of this mediator, the SI joint itself, intact. “The complexity of the SI joint is further increased by the flow of information from top to bottom and vice versa,” explains Dr. Lang. “The joints’ environment also carries sensory information for proprioception, which is essential for our sense of balance, among other things,” the physician says. The SI joint – a hotspot in the back that often needs a bit of help.

SacroLoc stabilizes like the orthopedist’s hands
The physician’s grip shed light on the solution: External stabilization around the pelvic girdle, which enabled the SI joint to do its job properly, had been shown to work for Ingeborg Lepke. Based on the patient’s unambiguous reaction when standing on one leg and her medical history, there was no need to use imaging techniques to confirm the differential diagnosis of SI joint syndrome. Pain provocation tests for confirming SI joint syndrome (see box on page 21), which Dr. Lang used on the patient, gave him complete certainty that the correct diagnosis was pelvic girdle instability due to loosening of the ligaments at the sacroiliac joints. But what can provide the same effect as the orthopedist’s grip? SacroLoc and SacroLoc. First of all, Dr. Lang prescribed the tried-and-tested pelvic orthosis to relieve the strain on the patient’s sacroiliac joints, then let her try out the new model in a wearing test, before it had even been launched on the market. The result was just as striking as what happened during the one-legged test: “It was simply unbelievable,” says Ingeborg Lepke. “Suddenly, I was able to walk in a whole different way. The pain disappeared almost completely.”

Even better targeted action with the new SacroLoc
Ingeborg Lepke’s constant companion, the SacroLoc, is once again scrutinized on Dr. Lang’s desk during a checkup appointment. “This is where the pads are incorporated,” he demonstrates, “with their cutouts that are positioned in exactly the right spot over the sacroiliac joints.” He picks up the orthosis to check it over. “A lot of smart ideas have gone into this.” Ingeborg Lepke now benefits from the SacroLoc on a constant basis. Once her pelvis had been stabilized and the pain eliminated, her pelvic and leg muscles could operate freely once more. “Luckily for her,” says the orthopedist, “she has a sporting background. If that weren’t the case, it probably would have been very difficult for her to get her old life back.”

You can really sense that, after years of suffering, Ingeborg has the courage to face life again. Finally, she knows what the problem is. And she has what she needs to combat it: “With the new SacroLoc, I can ride my bike again – especially in the summer, when I get to enjoy the lovely fresh air,” she says. “And I sit better with this one than I did with the first.” Perhaps she will soon be back playing table tennis or hitting the badminton courts. And how about multimodal therapy – is that necessary now? Dr. Lang looks surprised. “Why? She has the orthosis, which is perfect for her indication and leaves her pain-free.”
SI joint treatment with orthoses

“SacroLoc enables us to direct the forces”

Dr. med. Thomas Lang at the Outpatient Rehabilitation Center in Berlin sees the SI joints as the body’s powerhouse. Should the ligaments fail to support the sensitive structure, an external girdle around the pelvis must step in to act as a stabilizer.

The SI joints are force transition points, says Dr. Thomas Lang, specialist in orthopedics, social medicine, and chirotherapy.

**Bauerfeind life:** Is loosening of the ligaments due to pregnancy a typical cause of SI joint problems?

**Dr. Lang:** It is known that high estrogen levels and the increase in weight during pregnancy can cause the ligaments to loosen, which can even lead to hypermobility of the SI joints. Gynecologists are also aware of this. However, the present case is rather atypical due to the monocausality of the SI joint problems. The extreme consequences were also new to me.

The patient suffered from pain while walking for almost twenty years.

**Dr. Lang:** When a patient reports the same symptoms in the same place time and again, during the same movements, I have to take it seriously. There is no such thing as imaginary pain. Not everyone is aware of the role the SI joints play in terms of transferring all sorts of forces and information. At least one quarter of all back complaints are SI joint problems.

What are the red flags that need to be ruled out in a differential diagnosis of SI joint syndrome?

**Dr. Lang:** I have to look carefully at whether there is a relevant structural diagnosis, such as sacroiliitis in association with rheumatic disease, or whether there is a more serious disease of the organs in the lesser pelvis, which can cause pain and functional impairments in the SI joint. I must then check whether there is a real or functional difference in leg length, or pelvic torsion due to a functional impairment of the pelvis. Provocation tests help me not just as a manual therapist, but also during diagnosis (see box on page 21). The most important thing is to listen carefully to what the patient is telling me.

Other primary causes of SI joint discomfort include diseases of the lumbar spine and the hip joint. Problems in the anterior pelvic ring and the pubic symphysis can also be the cause of SI joint syndrome.
Symphysis rupture during childbirth can also lead to problems with the SI joints.

*Fortunately, the pain did not become chronic in the present case.*

**Dr. Lang:** This is astonishing and very fortunate – but it is also an indication that we are dealing with a purely mechanical problem here. The SacroLoc helped us in this aspect too. We know that it works and, in Ms. Lepke’s case, it enabled us to break the vicious circle before chronic problems set in.

**How did you come to use the SacroLoc?**

**Dr. Lang:** Although we are a rehabilitation clinic, so we don’t use quite as many medical aids as other clinics, as an orthopedist I still need to know what’s on offer. The SacroLoc is the only orthosis that has such a small opening and thus takes up little space. Once we’ve narrowed down the problem, we can achieve a great deal with it in a small space. And this has been further improved by the new generation, which is even more lightweight. I’m always pleased to end up with a small, effective aid that really helps to tackle the problem.

**What, in your opinion, is the central point of action of the orthosis?**

**Dr. Lang:** It works on several levels. The orthosis combines mechanical stabilization of the girdle with the proprioceptive effect of the pads, which establishes preliminary muscular tension. The great thing about the SacroLoc is that it does not replace the work of any muscles: It enables their forces to be directed correctly. The ultimate result is the stabilization of the pelvis and the SI joint.

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**Patented tensioning strap system**

**The new generation of SacroLoc**

With original improvements, the latest generation of the SacroLoc pelvic orthosis builds on the innovative quality of its predecessor. It is now more comfortable to wear and more effective than ever before.

The goal is still the same: Once again, the new generation of SacroLoc stabilizes the pelvis and relieves pressure on the sacroiliac joints. The pelvic orthosis acts to relieve strain on the muscles and ligaments. Circular compression helps to keep the pelvis upright and relieve strain on the local ligaments. The even narrower and more discreet shape of the orthosis and its breathable mesh material make it much more comfortable to wear. The new, more elastic mesh material is similar to the fabric of the Spinova range. It adapts to the body better and securely remains in position during movement. The soft edges are especially comfortable when the wearer is sitting down. Practical finger loops on the flat abdominal fastening make it easier to put on and take off. Alongside the new mesh fabric of the SacroLoc, a new sizing system with seven sizes has also been introduced.

**Precise action on the sacroiliac joints**

A patented tensioning strap system with lightweight, non-elastic lattice straps boosts the effect of the new SacroLoc. With the aid of the strap, the two dorsal pads are brought to exactly the right position on the joints, as they can now be adjusted individually.

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**Provocation tests to verify the presence of SI joint syndrome**

A combination of several pain and mobility tests is recommended in order to diagnose sacroiliac dysfunction. If the movement causes pain in the SI joint or movement is restricted, the tests are positive.

**Mennell’s test:** The patient lies on his or her stomach. The physician fixes one of the patient’s SI joints with the palm of their hand. They then use their other hand to lift the patient’s leg.

**Patrick’s test (Figure 4 maneuver):** The patient is supine with one leg bent. The ankle of the bent leg lies on the knee of the outstretched leg. When viewed from above, this looks like a figure 4. The physician presses down on the knee of the bent leg.

**Mark Laslett clinical reasoning model (pain test combination):**

1. **Distraction test (gapping test):** The patient is supine. The physician presses down on the anterior superior iliac spine (ASIS) in the posterolateral direction.
2. **Compression test:** The patient is supine. The physician applies pressure vertically downwards on the upper part of the iliac crest.
3. **Thigh thrust:** The patient is supine. The physician holds one leg in 90° of hip flexion and fixes the sacrum.
4. **Gaenslen’s test on both sides:** The patient is supine. One leg hangs over the edge of the couch, while the other leg is bent and pulled up toward the chest. The physician exerts gentle pressure on the bent knee and simultaneously pushes the knee hanging over the edge of the couch down toward the floor.
5. **Sacral thrust:** The patient lies on his or her stomach. The physician exerts thrusts of vertical, anteriorly directed pressure on the sacrum.
"Even more effective action on ligaments"

Two pioneering studies have shown that the SacroLoc back orthosis exerts biomechanical and neuromuscular effects on the sacroiliac joint\(^1\,^2\). Study director Dr. rer. nat. Freddy Sichting was surprised to discover that the biomechanical effects of the new SacroLoc had been confirmed in a subsequent study – and even went beyond those initially anticipated. But it’s not just the raw data that has excited this human locomotion scientist from TU Chemnitz.

**Bauerfeind life:** While the first study focused on the biomechanical effect of the SacroLoc, the second study was interested in the therapeutic issues. What did you want to find out with the new SacroLoc?

**Dr. Sichting:** Our aim was to confirm the results from the first modelling study using a new model. We created the first pelvic model, with all its SI-joint-related data, using the finite element method based on the anatomical computer tomography data for a healthy young man. At the time, we were all pleasantly surprised by the results (see *Bauerfeind life* 2/15). This time, to further increase the scientific standing of the new SacroLoc, we used new model data. The outcome: The results from the first two

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**Indications for treatment with the SacroLoc orthosis are:**
Disorders of the sacroiliac joints (SI joint syndrome, SI joint arthrosis, SI joint instability), pelvic girdle instability (for example in the case of symphysis rupture or loosening), SI joint blockage (acute and prophylactic), myalgia and tendinopathy in the pelvic region, structural disturbance after spinal fusion at L5-S1 level, and conservative treatment after pelvic fractures.

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**Expert opinions: SI joint therapy with SacroLoc**

*Dr. Antonio Villaminar, orthopedist at Medical Health Center Schio (Vincenza), Italy.*

"The first step in making a differential diagnosis is always to examine the patient to determine the exact location of the pain. In sacroiliac conditions, we are referring to pain that spreads out from the sacroiliac joints (SI joints) and can radiate to the groin and trochanter down to the outside of the leg. The symptoms worsen when standing and walking and may gradually subside. In any case, clinical tests are necessary to differentiate the pain that is not caused by a dysfunction of the sacroiliac joints but originates from neuropathic complaints such as osteoarthrosis of the hip or cruralgia (stemming from the crural nerve). A full examination includes an MRI scan with fat suppression (STIR MRI sequences) to rule out an edema of the bone tissue. A blood test should also be carried out to rule out the possibility of a rheumatic condition or a vitamin D deficiency."
Treating a sacroiliac joint generally involves administering cortisone. Physiotherapy to stimulate and strengthen the pelvic muscles, laser therapy, and orthoses are other treatment measures.

My recommendation for stabilizing the SI joint: Use the SacroLoc multimodally in combination with medication and physiotherapy, especially when the patient has to stand. The SacroLoc has proven more reliable compared to other orthoses and achieved verifiable results. The effectiveness of an orthosis should be backed up by clinical results. SacroLoc has shown better results compared to other products. Patients have a feeling of greater stability, which in turn relieves pain. They primarily feel more stable with the orthosis when the pain increases and when standing.

"The first step in making a differential diagnosis is always to examine the patient to determine the exact location of the pain."

(Dr. Antonio Villaminar)
New: VenoTrain cocoon

Medical compression and effective skin care

Dry, scaly, or even itchy skin is a problem for many vein patients. Now, with the VenoTrain cocoon, Bauerfeind has launched a medical compression stocking with an integrated care complex. This helps to improve the function of the skin barrier over the long term and increase patient compliance. The VenoTrain cocoon will be sold internationally from early 2018.

Patients with progressive venous insufficiency often experience changes to their skin as a result of the disturbance to the venous return flow. The skin appears dry and rough, and may be accompanied by flaking and itchiness. Its dried-out appearance is due to an increase in water vapor permeability in the upper layer of the skin (stratum corneum), which causes the skin to become rougher. Compression therapy may exacerbate these effects or make them more noticeable. For instance, a patient survey conducted in the Vein Center at Ruhr University Bochum showed that 59 percent of compression stocking wearers suffer from dry skin, and 33 percent experienced itchy skin as a result of wearing compression stockings.¹ These side effects are not just extremely uncomfortable for the patients, but also represent a serious risk to patient compliance.

One stocking, two effects: VenoTrain cocoon

Careful skincare is especially important for vein patients in order to improve the barrier function of the skin. The VenoTrain cocoon, the latest product innovation from Bauerfeind, offers not just reliable class 2 compression but also a much easier way for compression stocking wearers to care for their skin: A lipophilic care complex, which is integrated in the stocking, has a continuous effect while it is being worn, gradually improving the condition of the top layer of skin.

New mix of natural fibers

A fiber that has been newly developed for compression textiles, consisting of cotton and cellulose, is used for the knitted fabric. Cellulose is a natural material with a matrix-like structure and natural cavities that store the skincare substances very well. This natural storage ability is used to load the cellulose portion of the fibers with a clinically tested care complex. The fiber rests on the inside of the stocking, ensuring maximum contact with the skin and continuously transmitting the fat-soluble care substances to the skin for the entire wearing time (usually six months). The care complex has a repairing effect, as it restores the protective barrier of the corneal layer (stratum corneum).

¹ The innovative cocoon care threads contain special lipid deposits with high-quality care substances, which are continuously applied to the skin when the stocking is worn.

The innovative cocoon care threads contain special lipid deposits with high-quality care substances, which are continuously applied to the skin when the stocking is worn.
The care ensures that the balance of the skin’s natural moisture content is maintained and the skin is protected against scaliness and itching.

Wash tests passed with flying colors
The VenoTrain cocoon naturally had to undergo extensive testing before it could be launched. An observational study was conducted during the course of the development phase – you can read more about the test patients’ experiences on page 26. The development team paid special attention to the long-lasting care effect of the compression stocking through the continuous delivery of the lipid complex. The concentration of this complex in the fibers was determined by the Thuringian Institute of Textile and Plastics Research. In a functional material test, Bauerfeind showed that after 180 washes – which corresponds to the total number of daily washes for a wear time of six months – 70 percent of the care substances still remained in the special fibers. The VenoTrain cocoon gives patients not just the required therapeutic compression to Bauerfeind’s usual high quality standards, but also an effective way of caring for their skin.

“Innovative fiber structure”
Dr. Hans-Jürgen Thomä, Head of the Phlebology Department, talks about the challenges faced when developing the stocking:

“In developing the VenoTrain cocoon, we have succeeded in incorporating a much higher quantity of care substance in the stocking than was previously possible, thanks to an innovative fiber structure. The challenge lay in finding a substance that had caring properties and was compatible with textile materials. In addition, we had to find a way to incorporate this substance or care complex in such a way that it would not be rinsed out in the wash in a very short amount of time. A cellulose fiber is now used as the carrier of the care complex. The way that it is incorporated into the stocking must ensure a high level of skin contact. Despite this, it must not be destroyed during wearing. This calls for a special level of protection, which is provided by the incorporated cotton fibers. This mix of natural fibers largely prevents the care substances from being washed out, thus guaranteeing the effect of the care complex over long periods of time.”

VenoTrain cocoon
The opaque compression stocking VenoTrain cocoon stimulates circulation and relieves stress on the veins in cases of mild and moderate symptoms, such as spider veins or varicose veins. It is available as a knee-high stocking in compression class 2. The stocking is comfortable to wear thanks to the integrated skincare. VenoTrain cocoon is free of preservatives, perfume-free, and tested in accordance with OEKO-TEX Standard 100 as a guarantee of its safety.

Further information
Request the white paper containing selected study results on the VenoTrain cocoon and the patient brochure for the product by calling the following service number: 0800-001 05 10. Enquirers from Switzerland dial +41 (0) 56 485 82 42, enquirers from Austria +43 (0) 800 44 30 130. www.bauerfeind.de/cocoon.
Patient testimonials about the VenoTrain cocoon

A care effect you can feel

An observational study that was conducted during the course of the development phase on 38 patients with chronic venous insufficiency showed that, for dry skin in particular (corneometry < 15), the VenoTrain cocoon reduced scaly skin and significantly increased the moisture content of the skin. The microcirculation and circulation in the upper layer of the skin was visibly improved and CVI-related edema reduced. The statistical results tell a positive story – but what really shines through is the personal feedback from the test patients.

Like my skin had been regenerated
Jutta Korndörfer, aged 56, office worker for a shoe business
“I have been wearing medical compression stockings for 20 years due to primary lymphedema. However, this has caused the skin on my legs to get drier. It is always scaly and flaky when I take off my stockings in the evening. Without the right sort of skincare, it just wouldn’t work at all. While wearing the VenoTrain cocoon, I could feel the caring effect right from the start. My skin was transformed in the first two weeks of wearing the stockings. The dry skin had peeled off and what remained was smooth and soft – it was like my skin had been regenerated. The caring effect also lasted well. On top of that, I like the way the stockings look. I like to stand out a bit – the bold red and marine blue are my favorites.”

Good moisture regulation
Gerhold Hannig, aged 63, retired
“I have worn medical compression stockings since my varicose vein stripping 14 years ago. I noticed a better compression effect with the Bauerfeind stockings. They were also very good at regulating my skin’s moisture. After wearing the stockings for one to two weeks, my skin was smoother and not as dry and scaly as before. The skincare provided by the stocking was sufficient – I didn’t need to use any additional care products.”

Top: Jutta Korndörfer wearing the VenoTrain cocoon in her favorite color, red. Bottom: Gerhold Hannig, Peter Döbling and Roland Rost (left to right) also appreciate the caring effect of the compression stocking.
Positive changes in the skin

Roland Rost, aged 73, retired

“I have suffered from varicose veins for seven years and have worn medical compression stockings since the problem began. This new stocking felt very comfortable, and softer than my old one. I have very dry and sensitive skin. Wearing the VenoTrain cocoon has had a very positive effect on the way my skin looks. But I can feel this positive change too. In addition, I really like the look of the stocking. The ribbed structure is a great design feature for us male wearers.”

“Integrated care is ideal”

Peter Döbling, aged 59, freelance commercial agent

“I’ve been wearing compression stockings for five years. I had surgery on my right knee and, funnily enough, my left foot swelled afterwards. But compression stockings enable me to keep it under control. With normal compression stockings, I would always notice some sort of dust when taking them off – initially I had no idea that this was my own skin flaking off. It’s simply ideal for me to have skincare integrated into my stocking. This means I don’t have to apply any extra moisturizing cream to my legs. I also find it easier to put my shoes on when I’m wearing the VenoTrain cocoon.”

Calmer skin

Dr. Martina Zimmermann-Horn, aged 62, dentist

“I have been wearing compression stockings for 35 years because I have varicose veins. I’ve also had surgery on my right leg. My skin doesn’t usually get that dry, but while testing the VenoTrain cocoon I noticed that my skin was calmer. Small areas of redness and skin irritation were less visible, and the veins were less noticeable too. The VenoTrain cocoon is an attractive, soft stocking that is easy to put on. I like the material – it feels more natural than fully synthetic stockings. I prefer the light-colored stocking (silk) for working in my practice. I also like to wear muted colors, such as marine or black, in my free time.”

Study on the VenoTrain cocoon

Action on skin moisture content proven

proDERM in Hamburg is a leading international contract research organization that specializes in, among other things, studies in the fields of dermatology and allergology. Bauerfeind tasked proDERM with testing the effect of medical compression stockings with cosmetic care substances in a clinical study. The study was designed to be randomized, double-blind and exploratory. 100 test subjects were given either the VenoTrain cocoon compression stocking or a control product without any care substances. The test subjects wore the stockings for at least eight hours a day over a period of eight weeks. The study protocol incorporated three visits: Before first wearing the stockings in order to establish the baseline, after four weeks and after eight weeks. An important indicator of healthy skin is skin moisture content, which is determined using corneometry. The results of the study showed that test subjects with dry skin (corneometry < 33) in particular benefited from the new stocking. In this group, there was a statistically significant increase in skin moisture content on day 57 compared to the baseline.

1 Corneometry is the most common method used to determine the hydration of the corneal layer (stratum corneum). It is based on a measurement of the electrical capacity of the skin. The dry corneal layer (stratum corneum) conducts electricity only weakly or not at all. Contact with water changes the properties of the skin: The higher the water content in the epidermis, the higher the electrical conductivity or capacity.
Occupational health management at Opel: Reduction in days of sick leave as a result of orthopedic orthoses

Foot consultations for rapid assistance

At its headquarters in Rüsselsheim (Germany), Opel is working to build up its occupational health management framework and is working with external partners in order to achieve this. Life talked to Dr. med. Anne-Marie Albuszies, head of the on-site medical service, and Wolfgang Giebeler and Patric Konrad from G&M Orthopädie-Technik Oberursel GmbH about the healthcare services offered, such as foot consultations.

“The wellbeing of employees, and consequently occupational health and safety as a whole, are a crucial factor in the success and productivity of our company. Accordingly, the measures that we offer here at Opel as part of our occupational health scheme are very diverse,” explains Dr. med. Anne-Marie Albuszies, head of the on-site medical service at Opel in Rüsselsheim.

“They range from active lunch breaks with guided sports activities through to our campaign on working healthily and safely with a zero blood-alcohol level. They also include health days and the annual Health & Safety Week, where we provide our employees with comprehensive information on topics related to occupational health and safety.”

A great advantage: Mobile healthcare service

A recent initiative has seen the company physicians out and about with their “health-mobile” vehicle around the Opel premises, which cover an area of around two square kilometers. “We wanted to use this vehicle to bring specific healthcare topics into the individual areas of the site and to bridge the large physical distances between the employees and the on-site medical service,” explains Dr. Anne-Marie Albuszies. The health-mobile is used for vaccination appointments, travel medicine consultations, and massages. And Wolfgang Giebeler is on the move with the team too. The director of G&M Orthopädie-Technik Oberursel offers on-site foot consultation sessions in the vehicle. This includes producing and adjusting orthopedic foot orthosis for safety shoes. This is an especially important issue for the on-site physician, as the company health report shows that standing for long periods at the production line increases the risk of musculoskeletal disorders.
Musculoskeletal disorders are responsible for a significant proportion of the sick days taken in the industrial division at Opel. “This is in line with the scale typically expected in the automotive industry,” says Dr. Anne-Marie Albuszies. “Many of these illnesses are due to misalignments of the foot or weaknesses in the foot arches. Problems with the foot statics can work their way upward to cause issues in the spine, meaning that pain in the neck and spine can also be attributed to weak foot arches. With a simple aid such as a foot orthosis, however, we can give our employees real, rapid help in the workplace.”

External partners simplify processes
5,000 of the 15,000 employees at Opel’s site in Rüsselsheim wear safety shoes. Fitting and issuing orthopedic foot orthoses in these shoes falls under the requirements set out by the German trade associations, which must be complied with in order to protect employees. For instance, foot orthoses must be design-tested in combination with the model of safety shoe that is used. Therefore, employees cannot simply use their own privately obtained orthopedic foot orthoses in their safety shoes. There are good reasons for this: If, for example, the safety distance between the toes and the steel cap of the shoe is reduced by an unsuitable foot orthosis, this is dangerous and can lead to severe injuries if something heavy falls on the shoe. Unlike orthoses for private use, the costs of foot orthoses used at work are not reimbursed via the statutory health insurance providers, but via the statutory pension insurance scheme, as long as the employee is insured and liable to pay contributions for at least 15 years. For a first-time request, several detailed forms containing up to seven pages have to be filled out and medical certification obtained. “Even when foot orthoses are prescribed by a patient’s regular physician, the whole process is often complex and drawn-out – employees often give up, which is a shame,” says Dr. Anne-Marie Albuszies. “And my colleagues and I, too, have had to spend large amounts of time filling out requests in the past. With the foot consultation sessions, we now hope to simplify the process with the help of a skilled external partner, so that employees can get the right protective equipment, including appropriate foot orthoses, as quickly as possible.”

A strong back begins in the feet
The Health & Safety Week 2016 was the launching point for the foot consultation sessions at the automotive manufacturer’s premises in Rüsselsheim. “During this week, we led a campaign all about back health in a pilot area where sick leave due to musculoskeletal disorders is especially high. Bauerfeind and G&M Orthopädie-
Depending on the indication and the worker’s needs, Bauerfeind offers three different foot orthoses, which have been design-tested with safety shoes from the leading manufacturers in accordance with the standard DGUV 112-191 (formerly BGR 191). In detail, each tested unit consisting of a shoe and foot orthosis complies with DIN EN 20345 for safety shoes as Personal Protective Equipment (PPE), as well as DIN 61340 for electrostatics.

Orthopedic orthoses for safety shoes in Germany

Design-tested and thus safe

Unlike foot orthoses for private use, those used with safety shoes are subject to specific requirements that must be verified through design testing of both the shoe and orthosis. The three foot orthoses ErgoPad work:h, ErgoPad work:x, and ErgoPad work for safety shoes from Bauerfeind have been tested with a wide range of models from the leading safety shoe manufacturers and thus meet these requirements. The online shoe finder is a quick way to find information about all possible combinations.

The ErgoPad trio for occupational safety

The ErgoPad work:h is especially beneficial to workers with chronic heel and ankle pain or heel spurs, with its self-supporting synthetic core that immediately relieves strain in the painful area. The fan-shaped cutout in the core that surrounds the midfoot alleviates the tensile stress on the aponeurosis and provides relief. This suppresses irritation and inflammation over the long term.

The ErgoPad work:x foot orthosis supports the foot’s natural mobility through its integrated weightflex core: It directs force from the outside to the inside via two pivoting points, thus supporting the foot’s torsional stability and optimizing the wearer’s gait pattern. Moderate longitudinal and transversal arch supports raise the feet, provide stabilization, and reduce unphysiological loads. The third product in the range is the ErgoPad work for safety shoes, a 2-component active core orthosis that provides optimum guidance for the foot from the heel to the toes, thus relieving strain on the foot and the whole body during the working day, especially for those who stand and walk a lot.

Both the ErgoPad work:h and the ErgoPad work:x are prefabricated, partially bonded, and available as an open version. In addition, they are also available with short-leg compensation, a pronation wedge or a supination wedge (with or without longitudinal arch filling).
Customized processes
Building on the success of the Health & Safety Week, G&M Orthopädie-Technik developed a concept for a regular foot consultation at Opel. “We were already doing this for several companies, such as Rolls-Royce, Selgros and Messko, so we have extensive experience in this area,” explains Patric Konrad, head of internal sales and QM at G&M Orthopädie-Technik. “Each of these companies has different needs and its own individual workflows. We must take these into account when we are coordinating our processes for the foot consultation, so we can minimize the work that the companies themselves have to do and make sure our process runs smoothly in the background.” The burden on the businesses is also significantly relieved by the fact that the medical supply retailer provides comprehensive support in submitting requests for reimbursement of costs to the pension insurance scheme or another provider. For the majority of companies, G&M Orthopädie-Technik holds its foot consultation sessions on site as it does for Opel. This has the advantage that employees do not have to travel long distances for an examination.

Design-tested and good for the foot
When it comes to foot orthoses for safety shoes, Wolfgang Giebeler has very specific quality requirements: “Here we need a design-tested product that does more than simply fit well in the shoe – as is the case with the foot orthoses that certain manufacturers offer alongside their shoes. First and foremost, the orthosis must be good for the foot,” explains the qualified orthotist and prosthetist. “In this case, we need foot orthosis blanks that are specially developed for safety shoes, such as those from Bauerfeind. We can work with these and adapt them precisely to the individual needs of each wearer based on our extensive studies of the locomotor apparatus.” Wolfgang Giebeler believes that a foot orthosis for safety shoes should, first and foremost, correct misalignments and provide support that relieves the strain on the foot. “Employees spend more time standing at the production line than they do walking around,” he explains. “In our foot consultation, we also determine whether the person requires a foot orthosis in their private life too – perhaps one with more dynamic properties – and provide appropriate recommendations. This holistic approach ultimately has a noticeable effect on the amount of work lost due to sick leave.”

Database for safety shoes
Bauerfeind’s shoe finder offers practical help in selecting the right combination of safety shoe and orthopedic foot orthosis. The database quickly and easily finds the shoe models that have been design-tested with Bauerfeind foot orthoses. The database is constantly growing and already contains a wide range of models from Albatros, Atlas, BAAK, Elten, Haix, Puma, Steitz Secura and Wohlfahrth.

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The foot orthosis protects especially sensitive feet and rapidly relieves pain, especially in the heel and ankle.

With its flexible weightflex core, the foot orthosis supports the foot’s ability to twist and optimizes the gait pattern.

Further information
The shoe finder can be accessed online at all times at www.bauerfeind.de/schuhfinder. Here, a number of downloads are available, including a guide to foot orthosis provision for safety specialists. www.bauerfeind.de/bgm provides comprehensive information on occupational health management.
International case series with Train supports

Global data for sports medicine

Be it recreational or elite sports: The number of sports injuries is increasing worldwide. Most of these concern the spine and the joints. This is one of the typical areas where supports are used. However, despite the large number of cases, there is often a lack of documentation that could enable conclusions to be drawn about treatment and prevention. This is where Bauerfeind’s international case series provides up-to-date data.

In the period from July 2015 to March 2016, 37 treatment centers in nine countries documented 1651 patient cases where Bauerfeind supports and orthoses were prescribed for sporting injuries. In addition to Germany, Austria, and Switzerland, the countries taking part also included Poland, Hungary, and Italy, as well as Canada, the Middle East, and Singapore. This provided an international cross-section of sports medicine practice. The evaluations of the LumboTrain back support, the EpiTrain elbow support, and the GenuTrain knee support showed that these all provided excellent pain relief.

LumboTrain: 50 percent no longer using pain medication at end of treatment

In Germany, Austria, Poland, and Canada, the focus was on back pain. A total of 153 patients were provided with the LumboTrain. The support was prescribed most frequently for pain in the spine (93.8%), followed by instability (4.6%) and inflammation (1.5%). Half of the patients were exercising at the time of treatment. Following acute and chronic back pain, patients felt the most effective treatment was in wearing the LumboTrain exclusively. Their pain reduced continually until the end of treatment and their feeling of stability increased. At the end of treatment, nearly 50% of patients said that they were no longer taking any pain medication. Three quarters of patients could go about their daily lives with no mobility restrictions.

EpiTrain helps nine out of ten patients in everyday life

176 cases of elbow complaints were treated using EpiTrain. The countries participating were Germany, Austria, Poland, Canada, Singapore, and the Middle East. Here, too, the majority of patients were given the support to ease pain. Far fewer wore the support to treat joint instability and joint inflammation. The most frequent diagnosis was humeral epicondylitis. Over 80% of patients rated the pain-relieving effects of the EpiTrain as “good” or “very good.” Over 90% stated that wearing the EpiTrain they could perform nearly all everyday movements with no restrictions. Physicians most frequently prescribed a combination of EpiTrain, physiotherapy, and pain medication.

GenuTrain came out on top

The most frequently prescribed treatment was the GenuTrain. The knee support was used in 620 cases in all nine countries. It was by far the most frequently prescribed treatment for joint pain, followed by joint inflammation and instability of the knee joint. Two thirds of patients were exercising prior to the injury, one third was not taking part in any sporting activities. During multimodal treatment, 74% of patients reported pain relief to be “good” to “very good.” By the end of the treatment, this value increased to almost 80%.

EpiTrain and the parameter “mobility”

Mobility in day-to-day life

More than 90% of patients returned to their everyday mobility levels with virtually no restrictions with the EpiTrain.
Dr. Gary Abraham, a sports physician from Brampton, Canada.

The effectiveness of the GenuTrain was also evident in the decline in patients needing to take pain medication. At the start of treatment, 64% of patients needed pain medication occasionally to up to three times a day. However, by the end of treatment, the situation was reversed and 62% of patients no longer needed any pain medication. In terms of stability, 84% of patients stated that they had a “good” to “very good” feeling of knee stability during treatment with the GenuTrain.

**The treating physician’s perspective**

From Canadian “weekend warriors” to quality-loving Hungarians – two physicians involved in the case series talk about the Train supports and how well-known they are in their countries:

Dr. Gary Abraham, a sports physician in Brampton, Canada, explains that, despite all the treatment successes, knowledge on supports and orthoses is still not very widespread in his huge country. “Many colleagues call me and ask for a recommendation,” says the physician, who has worked in sports medicine for 25 years. He often prescribes EpiTrain and GenuTrain for the typical “weekend warriors”, ambitious amateur athletes who frequently push themselves too far and injure themselves. “The products are effective and have no side effects, which is increasingly important for Canadians,” the sports physician emphasizes. Some insurance providers in the country reimburse the costs up to a certain amount.

Dr. Abraham appreciates the existing studies and the detailed instructions for use that come with Bauerfeind products, which can also be used by the insurance companies to assess the uses of the supports and orthoses. Dr. Zoltán Csiki, a trauma surgeon and sports physician, is head of the outpatient department of the Albert Schweitzer Hospital in Hatvan, Hungary, a town in Greater Budapest with 30,000 inhabitants. “I have been working with Bauerfeind’s Train supports for six years,” the physician explains. “My patients and I are very satisfied with them. My favorites are all part of the GenuTrain product range. I can use these products to optimally treat both athletes and non-athletes.” He further states that even though orthopedic supports are known in Hungary as an evidence-based treatment option, the high quality of Bauerfeind products sets them apart from the rest. The specialist for rehabilitation and osteoarthritis says that this is also a reason why he prefers to prescribe the Train supports. In Hungary, patients must pay around 50 euros for the products, but “they also receive value for money in return,” according to Dr. Csiki. Many of his patients with joint instabilities and ligament injuries therefore wear the Train supports when exercising and in their day-to-day activities.

Dr. Zoltán Csiki, a trauma surgeon and sports physician from Hatvan, Hungary.

**Further information**

Bauerfeind has compiled the summarized evaluations of the case series on the LumboTrain, EpiTrain, GenuTrain and GenuTrain P3 as a PDF file. Please contact the Bauerfeind Field Sales Team or get in touch via e-mail at medical.affairs@bauerfeind.com.
The descent was far from elegant. Backwards, arms and legs extended upward, the man flopped from the horizontal bar onto a heap of foam pieces. It made for an amusing sight. Judges would likely score it little better than a five minus. Be that as it may, what the gymnast had just demonstrated on the apparatus was truly exceptional: Fearlessly, he swung himself high, tensed his powerful biceps, picked up speed for two, three rapid twists, crossed his hands, and raised his narrow legs to the highest point above the bar to gather momentum for the final loop. Whether he’s performing the giant, the straddle Tkachev or the Kovacs somersault, Andreas Toba moves through the exercises on the bar with flair. Were it not for the strain etched on his face with every turn, you could almost believe it was completely effortless. A top score. The two young gymnasts next to the foam pile are applauding too.

“It cracked! I couldn’t hold my leg up any longer.”

There is a relaxed atmosphere in the gymnastics hall at the Olympic training center in Hanover on this early summer evening. Andreas Toba, the German champion of the 2016 artistic all-around gymnastics and an Olympic athlete who has competed in London and Rio, is back to his full training routine. He suffered repeated setbacks due to surgery and complications following his severe knee injury in Rio. Back in the spring, six months after his cruciate ligament was reconstructed and his meniscus operated on, an infection in his knee took him out of action once again. Shortly before that, he had to go under the knife for further work on his meniscus. This unfortunate tale began with the floor exercise in Rio. At the end of his first run, he landed awkwardly on his knee after a jump. “I knew straight away that something was badly injured,” he says of the fatal moment:

“It cracked, and I couldn’t hold my leg up any longer.” The extent of the damage was revealed later in the hospital: A ruptured cruciate ligament and a torn meniscus. Yet somehow, just fifteen minutes after the injury, Andreas Toba hauled himself onto the pommel horse and achieved the best score out of all the German gymnasts on this piece of apparatus, despite the damage to his knee. How he managed this remains a mystery and not just to the 26-year-old himself. “I wanted to help the team,” he says succinctly. Although there was no medal, the “Hero de Janeiro” nonetheless enjoyed a huge amount of public recognition. His selfless efforts for his team were honored by the German television audience, who voted him the winner of the Bambi prize.

Protection with a stabilizing hard-frame orthosis

But it’s not just spectators’ hearts that athletes want to win – their sights are set on competitions too. Long months passed before Andreas Toba could even begin to think about this again. During this phase, a large number of medical aids were used to help treat the injury, in a virtually textbook sequence. While he was still in Rio, the Bauerfeind orthotist on site recommended
The Soﬁ Tec Genu stabilizes and activates at the same time. This was the next treatment step and represented an important combination for returning to training.

The immobilizing GenuLoc knee orthosis. The function of this orthosis was to secure and protect the recently injured knee joint. Two dorsal aluminum bars are incorporated into the supporting material of the orthosis to keep the knee in place, and can be bent to a specific angle – the first measure taken to prevent damaging movements and impacts. With this protection in place, the athlete was able to make the journey home. Then, two weeks after the injury, the cruciate ligament reconstruction was performed along with meniscus suturing. After this surgery, Toba wore the stabilizing SecuTec Genu hard-frame orthosis. In cases of cruciate ligament tears, collateral ligament injuries, and meniscus surgery, the affected knee joint requires external stabilization for a certain amount of time in order to restrict movement in a controlled manner. The SecuTec Genu fulﬁls this function in several ways. It is a lightweight and especially rotation-stable knee orthosis, designed to fit the anatomy of the leg. Flexion and extension can be individually restricted to provide protection. In addition, it can be put on and taken off easily from the front. And it lies flat.

“Without the orthosis, everything would have taken much longer”
For Andreas Toba, the flat design of the SecuTec Genu was the deciding factor in choosing to start training again at the beginning of the year. Any other orthosis would just have got in the way of his legs when practicing his moves on the gymnastics apparatus. The recovering gymnast wore the orthosis from the start of his rehabilitation program right up until he resumed training. “I simply would have been unable to return to training so early without it,” he says. “Everything would have taken much longer.” And there was a psychological beneﬁt too, as he explains: “The cool thing about the orthosis was that I wasn’t worried any more. That is, worried that I could injure my knee again. I knew it was being held in place by the orthosis.” Since the start of the year, Andreas Toba has been training with the Soﬁ Tec Genu soft orthosis. This stabilizes the knee both passively and actively by combining the mechanical protection provided by a hard-frame orthosis and the muscle-activating properties of supports. The Soﬁ Tec Genu thus helps to prevent incorrect movements while promoting safe mobilization. A viscoelastic pad on the kneecap reinforces the positive effect on the sensorimotor function and guarantees a secure fit.
Sports Knee Support as a “final safety measure”

After his landing in the foam pit, Andreas Toba jokes around with the two young gymnasts. Of course, his descent was not misjudged – it was exactly as he intended. The forces that act on the knee during a landing from such a height are completely unwanted right now. Both from the gymnast’s perspective and that of his therapist. Speaking of the therapist: It’s time for a check-up with Dr. med. Andreas Sander-Beuermann in Hanover’s city center. This orthopedist once treated Andreas’s father Marius, who was also a champion artistic gymnast. Today, the physician is pleased with the son’s progress. Of course, he’ll have to keep observing Andreas for some time, but considering the setbacks he has had, in particular a new meniscus tear in February, the healing process is going well. The expert, who has conducted around 4,500 cruciate ligament operations, is also pleased with how the medical aids have performed. Andreas Toba frequently uses the Sports Knee Support as a “final safety measure while training,” as he tells us. Bauerfeind developed this support for sports, using its medical counterpart, the GenuTrain, as the basis. The GenuTrain, in turn, is often Dr. Sander-Beuermann’s top choice for his other patients. “From my own experience, I know that the GenuTrain is simply unmatched in terms of its wearing comfort and proprioceptive properties,” says the physician. (See also interview on p. 37)

“Competitive sports can be just as dangerous as sitting down all day”

From the physician’s office and back to the Olympic training center, Andreas Toba just has time for a short lunch break before it’s time to head off to another piece of apparatus: The physiotherapist’s couch. What may first seem like a pleasant experience soon has the patient whimpering, as the therapist relaxes Andreas Toba’s knee muscles with a series of movements known as the myofascial release technique (MFR), interspersing this with gentler manipulation of the shoulder joint. The shoulder is another body part that is put under a lot of strain by gymnasts: “I push the humeral head backwards so that it can reposition itself. This isn’t an obstruction – the muscles are simply overloaded,” says the physiotherapist. “When you look at it like this, competitive sports can be just as dangerous as sitting down all day.” This is a problem that Andreas Toba seldom has to worry about. But finally, he’s checked off everything on the day’s to-do list. “Everything feels good,” he reports. “I’m already managing to practice lots of elements from my Rio routine on the high bar. At the same time, I’m working on the other pieces of apparatus again too.” The talented gymnast proves just how far he’s come as he stands in front of the pommel horse, his “Rio apparatus.” His muscles relaxed, he steps up to the horse confidently. With just a brief glance, he places his hands on the leather, then swings his legs up into the air. There’s no indication that he is at all worried about knocking his knee on the high edges of the horse. One last swing – and Andreas Toba has safely landed.

The physician and gymnast during a check-up at the orthopedics practice in Hanover.

With the Sports Knee Support on the pommel horse – as a final safety measure.
A ruptured cruciate ligament paired with a torn meniscus, as was the case for Andreas Toba, is a common injury in gymnastics, as Dr. med. Andreas Sander-Beuermann, specialist in orthopedics and special orthopedic surgery, knows well. From 1985 to 1998, he was the leading physician at the Hanover/Wolfsburg Olympic training center and has been treating Andreas Toba since his childhood. An interview with the physician and the gymnast.

Bauerfeind life: What makes gymnastics so high-risk for the type of injury that Andreas suffered?

Dr. Sander-Beuermann: A lot depends on the associations and judges. What do they want? What do they give the most points for? If lots of twists are desired in the routines, this often leads to distortion of the knee. We see fewer injuries in movements that are more straight-on. I was at the 2007 world championships in Stuttgart, where I saw lots of twists and lots of cruciate ligament injuries.

Andreas Toba: The scoring system is changed every Olympic cycle. We gymnasts have to decide, where is it worth putting in a triple somersault, or a bend? Should I perhaps connect moves with two jumps? This is exactly what I did at the start of my floor exercise in Rio, where I injured myself. The triple somersault scores high points with the judges.

Is the risk of injury the same for all pieces of apparatus?

Dr. Sander-Beuermann: The high pieces of apparatus are the ones that pose the greatest risk. This means the high bar, vault and rings, but also the floor. You always have to think about the landing, wherever it’s being attempted. The risk isn’t as great on the pommel horse and the parallel bars.

Andreas Toba: But there have been some positive developments in the apparatus, such as softer mats. But of course, there are still some athletes who are on the more reckless side, which pushes the risk level up. And of course, there are cool pieces of equipment that can help in the event of an injury.

Do you mean the orthoses and supports that have helped you to return to competitive gymnastics?

Andreas Toba: For me, they sort of acted like an airbag. The fear that I would break something just disappeared. This gave me the courage to do completely different training exercises to what I had been doing before. I initially had concerns when moving from the SecuTec Genu to the SofTec Genu. It didn’t seem as firm. “It’s all been tested,” I was told. “It fits securely. And it’s even better at protecting you in the stadium, because it sits on your knee just a little bit better.” That’s when it clicked for me, and I was happy to practice with it.

What was stronger while you were returning to your gymnastics activities: The fear or the pain?

Andreas Toba: Pain isn’t the problem. As gymnasts, we’re used to that. Once I landed badly and tore the ligaments in both ankle joints – and carried on with my routine. The problem is the mental block – the fear that something will happen. Will the landing be OK? What will happen if you land badly or catch yourself on the apparatus? My physicians and orthotists took this fear away with their medical aids. The knee is stable. I would not have reached this stage so quickly without the orthoses and supports. Now I can stop using them gradually as I build up my strength and coordination. But when I start my floor routines again properly, I can definitely envisage using a support to begin with.

Dr. Sander-Beuermann: The deciding factor is this: The athlete’s head must not be clouded with negative thoughts. He must have absolute faith in his joint before it can function again properly.
Achillodynia

The carrot and stick of the shoe

If before it was the knee, today it’s the Achilles tendon – for many runners, the pain has moved downwards. Excessive strain, an unhealthy diet but also unsuitable footwear are some of the reasons for this problem.

In one of his poems, the German author Joachim Ringelnatz wrote “…but cursing their feet in a Belgian street…” Based loosely on Ringelnatz’s poem, this could refer to a patient with Achilles tendon pain by the name of Lutz Wendler. His physician, Dr. Med. Henning Vollbrecht, an orthopedic specialist, has a practice located on the famous Hamburg Elbchaussee street by the river. Time for a check-up appointment. One glance at the patient’s medical file confirms: Lutz Wendler's began suffering from symptoms at the turn of the year 2013/14. “I remember it exactly as I had just started a new job and unfortunately I was limping.” Lutz Wendler works as the city editor of a Hamburg daily paper. A stressful job, says the sixty-year-old. Exercise is therefore all the more important for Lutz, it helps him find the balance between work and private life: Tennis, swimming, running (including marathons), but most of all he enjoys playing football. The pain in his Achilles tendon suddenly made him aware that he could lose all of this without warning. Although “without warning” is not entirely correct in this case: “It was an incorrect movement whilst playing football, banging my tendon on the shopping cart, sprinting to catch the train”, he recalls.

By a thread

“Lots of micro-tears. Sometimes more, sometimes less. These add up over the years and leave their mark.” Dr. Vollbrecht sits with the ultrasound image in front of him and points to the bright areas. “Here, this is all scarring”, he explains. The physician is pleased nevertheless. “The tendon is eight millimeters thick. That is good for a sportsman. The normal value would be between six and seven millimeters. At the start of treatment it was twelve millimeters due to the traumatization.” At that point Lutz Wendler’s swollen Achilles tendon was hanging by a thread. 80% of it was already ruptured. Constant irritation of the Achilles tendon, including irritation below the human perception threshold, had led to this. Finally, because of the pain, Lutz had to go and see a physician.

Severe side effects caused by antibiotics

Dr. Vollbrecht has some good news. “Nobody runs perfectly. Many cases of achillodynia can be cured,” he says. And some bad news: “This can sometimes take a long time.” We
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should add that problems with the Achilles tendon are complex to treat. This is due to the numerous factors that influence the condition: Excessive strain – this mainly affects runners between 40 and 60 years old. Stress and incorrect positioning of the foot or the pelvis. The wrong diet, a lack of vitamin D or an acid-base imbalance also play their part, as does unsuitable footwear. Apparently, heavily cushioned running shoes with a soft sole, for instance, can trigger an increased “whiplash motion” of the Achilles tendon which leads to additional mechanical strain.1 This kind of running shoe, soft like candy floss, was promoted particularly in the 1990’s as a means of preventing knee problems. In Lutz Wendler’s case another factor played a major role: Ciprofloxacin. This antibiotic belongs to a group of drugs called fluoroquinolones. Lutz Wendler was prescribed the antibiotic because of an infectious illness. The antibiotic can lead to inflammation and rupturing of the tendon even weeks after the patient has taken the drug.

Foot orthoses to reduce shearing forces on the Achilles tendon

Dr. Vollbrecht treats the multifactorial process that is achillodynia with an impressive range of measures. In his view, basic treatment involves a multimodal concept of prescribing physiotherapy, foot orthoses and supports. Prior to this it is necessary to check for possible structure or alignment defects, particularly for uneven pelvis, hip misalignment and leg length differences. In order to “facilitate natural processes”, hyaluronan can be administered to reduce tendon adhesions as well as platelet-rich plasma from the patient’s own blood containing growth factors and micronutrients. The physician regards diet as important: “Unfortunately there is often a tendency towards being acidic. Vegetables, fruit and the Mediterranean diet balance this out.” Can one therapy measure be emphasized in particular? “Foot orthoses and supports are useful tools”, according to Dr. Vollbrecht. Lutz Wendler pulls a TRIactive soft foam foot orthosis out from his shoe. “The product’s different cushioning zones ensure that the foot is guided in a controlled manner,” the physician explains, “as shearing forces can be damaging to the Achilles tendon.”

Independent exercises using the AchilloTrain

In addition to the foot orthoses, the orthopedic specialist had prescribed his patient the AchilloTrain. The active support relieves strain on the Achilles tendon with a pad that surrounds the tendon. The pad provides guidance during movement and the support also features an integral heel wedge which minimizes strain on the calf muscles. The physician recommends the AchilloTrain Pro to be used as part of the ongoing healing process and to prevent further injury. Its winged pad stretches up to the area where the muscle meets the tendon and its frictional nubs massage the area parallel to the Achilles tendon. “This stimulates proprioception and establishes preliminary muscular tension,” says the physician. “Both supports are suitable for use in everyday life and also for home exercises”, the physician notes. Lutz Wendler has worn the supports at work and sometimes whilst playing tennis. “All of the steps I have taken within the last six months with the help of Dr. Vollbrecht have ultimately proved successful. Today I hardly experience any symptoms when running.” Lutz Wendler now runs with harder, more stable shoes. The only thing missing now is playing in a real football match. But maybe he will stick to the lines of Ringelnatz:… where, according to the poem, the man wisely decided to cut his journey short in the end.

Therapeutic measures for Lutz Wendler: fascia roll … and the support AchilloTrain Pro with its pad for proprioceptive refinement.

Vein screening with Bodytronic 200

“A good guide”

Is a mild vein weakness present? What is the venous refill time like six months after varicose vein treatment?

Dr. med. Peter Kunz from the Kirchheim healthcare center (MVZ Kirchheim, Germany) uses the light reflection rheography system Bodytronic 200 to tackle many of his phlebological issues. “Quick, simple, and patient-friendly,” is his summary of the technology.

“Doctor, my legs are always so swollen in the evenings. Is it my veins?” This is the question that many patients ask when they come to Dr. Peter Kunz’s vein consultation sessions in the town of Kirchheim unter Teck in Baden-Württemberg. The specialist in surgery and vascular surgery has been working at the town’s healthcare center, which has recently been certified as a “center of expertise for veins” by the German Society of Phlebology and the German Association of Phlebologists, since 2010. “After collecting the patient’s history and performing a clinical examination, I will then often turn to light reflection rheography (LRR) as the first port of call for examination with medical apparatus. This allows me and the patient to get an initial idea of the general vein function in the legs. The measurement quickly provides a simple guide and is easy to integrate into my practical procedures,” says the specialist.

The device comes to the patient

MVZ Kirchheim has already been performing LRR measurements for a long time, and Bauerfeind’s Bodytronic 200 has been in use at the clinic for around three years now. “We really appreciate that the measurement system is so compact, and wireless too thanks to the Bluetooth connection. In contrast to our earlier apparatus, nothing gets dragged along the floor,” says Dr. Kunz. Once he has finished collecting the patient’s history and examining them, a medical assistant performs the LRR measurement. “Our Bodytronic 200 is mounted on a small trolley. This means that the device can come to where the patient is. We save a lot of time because the patient does not need to move around, or undress and dress again multiple times.” And there’s also a positive side effect: “Once I’ve finished explaining the measurement and waiting for my colleague, the patient will have already been sitting in the correct position for several minutes. The relaxed practice atmosphere is very helpful for the measurement.”

Dr. Kunz stresses that it is important for the system’s measuring sensors to be positioned correctly. “If the sensor sits right on a spider vein or perforating vein, this can result in a more dramatic reading.” If the values obtained are unusual, the sensors should therefore be repositioned and the measurement repeated. The vein surgeon notes that one positive factor in this examination method is that the patient is actively involved in taking the measurement.

Clearly visualized measurement result

While Dr. Kunz delegates the task of conducting the measurement itself, he reserves the duty of explaining the results. Ultimately, he says, the measurement results should always be viewed in conjunction with the patient’s reported symptoms and the clinical findings. “When explaining the values, the graphical display is of course a huge help. I can use the curve to show the patient exactly how the measurement went...”
“It is important to explain the measurement result precisely too,” says Dr. Peter Kunz.

and explain what the values mean,” says the 46-year-old. On the one hand, this helps to put patients at ease where no abnormalities have been found – “they can see that it’s not just the physician’s subjective opinion, but is underpinned by a real measured value.”

On the other hand, in patients who really do have weak veins, it encourages them to take the step of wearing compression stockings or, if indicated, to undergo varicose vein surgery.

“For patients with mild venous insufficiency or light swelling who have not yet received compression therapy, I recommend that they give the stockings a try for a few days. The patients themselves must discern what compression can do for them, and to what extent. In more severe cases, however, I am very firm and I tell them: ‘You have to wear the stocking – no discussion!’ The LRR result is one of the indicators I use to make my decision.” If Dr. Kunz believes that the findings are potentially health-threatening, he generally carries out further examination using duplex sonography. “This is usually done in a separate appointment, and the patient can experiment with the compression stocking up until that time. Depending on the sonographic findings, we then offer surgery in order to eliminate the problem at its root.”

The simple, rapid measurement that can be reproduced as many times as needed make Bodytronic 200 an attractive option for long-term assessments too, says the specialist. The software enables him to create a display of the patient’s progress across several temporally independent measurements. “This is not a routine procedure for us, but it can be interesting to measure a patient before a scheduled varicose vein operation and then measure them again after the healing stage is complete, perhaps six months or so after surgery. Of course, we hope for a much better result the second time around,” the physician adds. “And we also use Bodytronic 200 for long-term observation after deep vein thrombosis in the legs, for example. Although the LRR only measures the blood return in the superficial veins, chronic overloading of the deep venous system in the leg can have an impact on these superficial veins.”

Ideal for the physician’s office

Even though Bodytronic 200 has primarily been used by medical supply retailers up until now, the mobile, wireless system also makes it ideal for the physician’s office, Dr. Kunz believes: “It is quick and easy to use and the measurement task can be delegated. Patients react very positively to the measurement, and the system provides me with a guideline value for both legs. Here at the MVZ, we have opted for a comprehensive care-free package, and simply hire the system.”

Further information

on the Bodytronic 200 measurement system can be found online at www.bauerfeind.de/bodytronic-200

1 The manufacturer recommends taking a repeat measurement no sooner than 30 minutes after the first one.
Orthopedic treatment with Bodytronic 600

“A logical decision”

Colorful, modern, digitally oriented – the Q33 Store at Kurfürstendamm in Berlin represents a new generation of medical supply retailers. Since opening in 2014, the OrthoPed branch has used the Bodytronic 600 body scanner and uses it as a matter of course when measuring for compression stockings, as well as for supports and orthoses in certain cases.

“We want the customer to be actively involved in their healthcare journey. We want them to understand why it is good and important for them to wear a certain product. Bodytronic 600 helps us to achieve this,” explains Volker Cicha, managing director of Ortho-Ped in Berlin. With the digital body scanner, we can measure the legs from the feet right up to the hips. The measurement system is used both in our original store and in the second Ortho-Ped branch, the Q33 Store. “It’s a must-have,” as Volker Cicha says. “It allows us to keep ahead of the competition and position ourselves as a modern medical supply retailer. Equipping the Q33 Store with digital measurement technology from Bauerfeind was an important but also logical decision.”

Bodytronic 600 is primarily used at Ortho-Ped to take measurements for compression stockings and supports for patients with knee and ankle injuries. If it is likely that none of the standard sizes will work for a patient’s leg, the system can also be used to measure the patient for knee orthoses.

“This can happen, for example, if someone has very narrow calves compared to their thighs,” explains the managing director. Customers are measured in a contact-free procedure and provided with individual care at the “most exclusive medical supply retailer in Berlin’s Ku’damm” – as the Q33 Store calls itself.

Measured in 60 seconds

The customer stands on a measurement platform that revolves slowly and uniformly to be measured. A digital three-dimensional
“Digital measurement technology from Bauerfeind allows us to keep ahead of the competition and position ourselves as a modern medical supply retailer.”

(Volker Cicha)

Bodytronic 600 automatically records all the relevant dimensions and takes into account a large number of product-specific measuring points for the knee or ankle joint. This saves time during the measurement and creates a data set that can be used for more than one treatment.

“I can measure a customer in 60 seconds. Along with explaining the measuring process, the whole thing takes maybe three minutes. This is of course a huge benefit for older patients who are unable to stand up for long periods. Even the 80-year-old women come to us because they know that we use digital measurement here. But athletes are excited by this technology too,” says Volker Cicha. For the employees at the medical supply retailer, work is now more pleasant and goes more quickly. “We can invest the time that we save in providing a more detailed consultation. It’s a win-win situation,” says Steffi Hartmann, sports scientist and branch manager at the Q33 Store.

Order directly

The measurement data is transmitted via the interface to the Bauerfeind online shop, so that the compression stocking, support, or orthosis can be chosen directly. Then, features such as the color or style can be determined. The system recommends either a standard size or a custom-made solution based on the recorded data. An order can then be placed.

A standard size is recommended for 55% of the support measurements conducted in the Q33 store. If one of these is ordered by 3pm, it can be delivered the next day anywhere in Germany. This is a big plus, says Steffi Hartmann. “Customers always like to get what they need quickly, and with Bauerfeind the desired product is in our store the very next day.”

The size recommendation displays all the relevant dimensions and serves as a guide for the experts at the medical retailer. “Ultimately, we decide what the best treatment option is for the customer,” says Steffi Hartmann. This combination of digital technology and specialist expertise is the key to better quality care.

Bodytronic part of initial training

A total of 20 employees from the areas of orthopedics, sports science, and physiotherapy work at Ortho-Ped. “All of our new starters first go through the measurement process with Bodytronic 600 themselves. They are measured and are given a sample to wear. Only someone who understands how the system functions and what medical principles the products are based on can provide quality advice and the perfect treatment solutions,” explains Volker Cicha. “We want to deliver quality to our customers. >>>

Installing Bodytronic 600 in both of his Ortho-Ped branches was “a must” for Volker Cicha.

For supports and orthoses, such as the SecuTec Genu (bottom), patella markers are also set for the measurement (top).
We achieve this through the accuracy of our measurements – the system always measures with the same high precision. We also make use of Bodytronic 600’s options for documentation. Each measurement, product configuration, and provision is saved in a personal area in the online shop and can be used for repeat orders or new treatment options. It is now also possible to use a USB reader to enter personal master data from statutory and private health insurance cards into the system. This saves even more time in day-to-day business, helps to reduce input errors, and ensures that documentation is complete. All put together, the data provides a virtually complete picture of the patient’s treatment options. “The system offers valuable support in follow-up treatment, for example when switching from a restrictive orthosis to a support. But customers also like to know which product they bought last time,” explains Volker Cicha. Many of Ortho-Ped’s business processes are digitalized, and Bodytronic 600 integrates into these seamlessly. For the managing director, therefore, it is important to be able to rely on this technology. But if a problem arises at short notice, he uses the Bauerfeind Measurement Technology support service. “I’ve already had a situation where the patient was standing on the platform while I was on the phone with customer service. A solution was found quickly and my patient was satisfied.”

An enhanced experience with digital measuring
The result of a measurement with Bodytronic 600 is not just the measurement data sheet to help choose the right product, but also the graphical visualization. After the measuring process, the customer has the opportunity to look at the 360-degree view of their body on the computer screen. This is an exciting experience for many of them. “Some people come to us specially because they have seen our promotional film on our website or on Facebook. Others discover our digital measurement service by chance and are immediately interested,” says Steffi Hartmann. For example, pregnant women who come in to get measured for stockings enjoy seeing their growing bump on the 3D image. This makes the measurement process a special experience for customers and helps them to better understand and accept their treatment and recommended products. “We then take the customer over to the screen and show them everything. This means that they can really trust what we say. It enables me to explain the benefits of a support or orthosis much better and check that it fits correctly,” says Volker Cicha.

“We want to deliver quality to our customers. We achieve this through the accuracy of our measurements.”

(Volker Cicha)

At the Q33 Store, the best possible medical care is the top priority. “But the customer also gets a chance to interact with the process in a positive manner and, rather than being seen as a ‘sick’ patient, they feel more like someone who is simply being health-conscious – that’s our goal.” Patients and physicians alike value this approach, says the managing director. This is also reflected in the low rate of complaints. “We don’t get complaints about products more than once a month. I always attribute this to the excellent fit that we are able to provide. We often hear that our products simply sit better on the body. And this also makes it more likely that customers will come back to us when they need a new product,” says Volker Cicha. “We want to win customers over with quality and nothing else. That is the only route to long-term success. And with Bodytronic 600 it’s definitely within our grasp.”

Supports and orthoses in Bodytronic 600

The measurement data can be used for treatment with knee and ankle supports. Available in standard and custom-made solutions for GenuTrain, GenuTrain P3, GenuTrain S Pro, and MalleoTrain. Available in standard solutions for GenuTrain A3, GenuTrain S, MalleoTrain S/ S open heel, MalleoTrain Plus, and AchilloTrain/ AchilloTrain Pro. Measurements can also be taken for the knee orthoses SecuTec Genu, SofTec Genu, and SofTec OA. Since May 2017, it has also been possible to use the measuring system to create an exact 3D model of the torso for heights between 110 and 210 centimeters, since the scanner is now height adjustable. The 3D models of the torso provide support in producing and making adjustments to back orthotic aids as needed.

† The USB reader supports the standard German eGK electronic health card and KVK health insurance card.
GenuTrain

Comfort sizes prove to be very popular with customers

In October 2016, Bauerfeind extended the GenuTrain sizing system by five Comfort sizes. This means that patients with conical leg shapes can now also benefit from perfectly fitting knee supports without any waiting times, explains Lauren Calderone from the Canadian medical supply retailer Kintec. As much as one quarter of her GenuTrain customers needs standard sizes with the extended thigh measurements.

The Comfort sizes are particularly popular with patients who have a larger thigh circumference and are looking for a comfortable option that fits accurately. The medical supply retailer’s initial experiences with this range confirm just that. “We introduced the Comfort sizes to our program in May 2017, and they already account for 25 per cent of our GenuTrain sales,” says Lauren Calderone, who manages the Vancouver branch of the Canadian medical supply retailer Kintec. “Bauerfeind found a brilliant solution for this niche that we hadn’t been able to fill with standard sizes before.”

With patient measurements found more frequently between the eight standard sizes, this makes day-to-day care much easier. “Customers who we have treated with Comfort sizes are primarily patients with more pronounced thigh muscles, compared to their calf muscles,” Lauren Calderone goes on to say. “They may also be patients who have a lot of soft tissue in the area of the thigh.”

Quick tailor-made care

In the branch manager’s opinion, if a support doesn’t fit properly, and custom-made treatment is too expensive or time-consuming, a lot of customers would tend to decide against knee supports. “Not many of these would have left on the same day with a knee support before Comfort sizes were introduced,” emphasizes Lauren Calderone. “Now we are able to treat customers with the GenuTrain who would have shied away from a custom-made solution for money or time reasons – despite the medical benefits.”

The GenuTrain standard size system

The GenuTrain knee support is available in eight standard and five Comfort sizes. They cover circumferences from 35 to 62 centimeters at the thigh, and from 25 to 49 centimeters at the lower leg. Compared with the standard sizes 3 to 7, the thigh circumference of the Comfort sizes 3C to 7C is extended by three centimeters. The dimensions of the lower leg remain the same. The standard and Comfort sizes are available with optional silicone coating on the inside of the top edge of the thigh. This will provide an enhanced grip and ensures that the support fits securely during movement.

Sits perfectly on the upper and lower leg.

Comfort size: an additional three centimeters in circumference.
Colorful hustle and bustle on Federation Square. Tradition meets modernity in the surrounding buildings.
On the move down under
Summer in Melbourne

For the sixth time, Melbourne has been named the world’s most liveable city by British magazine “The Economist.” This makes it the perfect backdrop for the World Meeting of the International Union of Phlebology (IUP), which will be held in the Australian metropolis from February 3-8, 2018. life went to take a look around in advance.

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With 4.25 million inhabitants, Melbourne is the second largest city in Australia and is no less impressive than its big sister Sydney. Federation Square is the cultural heart of the city. Here, you can sit with a cup of coffee and watch the hustle and bustle all around. A thrilling contrast is created by the juxtaposition of the shining window facades on the modern high-rise office buildings and the charming historical buildings of former days, such as Flinders Street station, which was built in 1854.

In Melbourne, you can find art and culture on every corner. All around Federation Square, there are museums, art galleries, and exhibition centers to be discovered. In addition, this large city is host to all manner of music events and live concerts every day, with something for everyone from pop and rock through to jazz and classical music. The influence of immigrants to Melbourne, from China, Great Britain, Greece, Italy, Serbia, Croatia, and Spain, is most evident in the food and drink that the city has to offer. Visitors will find a large range of international dishes at the Queen Victoria Market, which was opened in 1878. Here, culinary enthusiasts can buy fresh fish, spices from all over the world, fine wines, and Australian delicacies such as the meat pie (puff pastry filled with ground meat). In the kitchens on the edge of the market, delicious offerings from many of the stalls are served up to diners. Alongside food of all kinds, handicrafts and souvenirs are also sold in this historical building.

**Off to the seaside**

Roughly ten kilometers south of Melbourne’s center you will find the suburb of Brighton, which is surrounded by Port Phillip Bay. Here is where the famous “bathing boxes” can be found – 80 brightly colored wooden beach huts that also date back to Victorian times. In the late 19th century, Brighton Beach was the number one bathing spot in Melbourne. As a result, many of these small huts were put up in order to create cabins where people could get changed. What’s unusual about these little wooden huts is that they are identical in shape and structure – and they are even arranged in a perfectly straight line. They differ only in their paint and patterns – which adorn the huts in all the colors imaginable. The huts are now protected monuments that are privately owned and passed down from generation to generation.

In addition to the cute beach huts, which are certainly worth a photo, Brighton Beach has lots more to offer. Whether you fancy a long walk in the white sand with views of the Melbourne skyline, a picnic on the beach, or kitesurfing on the open water, anything is possible here. The local recreation area of Brighton Beach is a 20-minute train journey from the center of Melbourne.
Green scenery

Royal Botanic Gardens

In the Royal Botanic Gardens, visitors can find a green oasis right in the middle of the city. The gardens are home to roses, palm trees, cacti, and 14 other “collections” of a wide range of plant families. Guides tell stories about the plants on organized tours. Birdwood Avenue, Melbourne, Victoria, 3004, www.rbg.vic.gov.au

Magnificent

MoVida Bar de Tapas

MoVida opened in 2003 in Hosier Lane, a cobbled street whose houses are adorned with brightly colored graffiti. Here you will find a fusion of Spanish and Australian cuisine – and the best tapas in the city. 1 Hosier Lane, Melbourne, Victoria, 3000, movida.com.au

Break time

Ponyfish Island Café

Possibly the prettiest spot for a café in Melbourne – Ponyfish Island is situated in the middle of the Yarra River, right under the Yarra Pedestrian Bridge. Here you can grab a coffee or a cold drink and take in the Melbourne skyline. Southbank Pedestrian Bridge, Southgate VIC 3000, Australia, ponyfish.com.au

Shopping

Australian Centre for the Moving Image

The film center on Federation Square provides a fascinating insight into the world of moving pictures with workshops, discussions, and exhibitions. Film festivals are held regularly, with screenings of Australian and international classics. Flinders Street and Swanston Street, Federation Square, Melbourne, Victoria, 3000, www.acmi.net.au

View

Eureka Skydeck 88

Standing 280 meters high, the Eureka Skydeck is the tallest viewing platform in the southern hemisphere. Here, visitors can enjoy having the city of Melbourne at their feet, thanks to the glass floor of “The Edge,” a glass box that extends out from the main structure. 7 Riverside Quay, Southbank VIC 3006, www.eurekaskydeck.com.au
Health is more than just the absence of disease

Jeanette Huber is Associate Director of the Future Institute in Frankfurt (Germany), one of the most influential think-tanks in European trend research and futurology. life talked to her about health as a megatrend.

**Bauerfeind life:** From what we eat to how we exercise, and how we choose to work and spend our free time, health is a megatrend that touches virtually every area of our lives. What are the developments that can be seen in this area?

**Jeanette Huber:** We are seeing two major developments. First of all, health is becoming more and more individual. One person may take “healthy” to mean drinking lots of water, while another may equate it with a meat-free diet, and yet another person may believe that a vegan diet is the only option. Our understanding of health is becoming increasingly individual and more authentic. This means that everyone gets to decide for themselves what “being healthy” means to them, to a certain extent. As a result, health is more than just simply the absence of disease. Instead, people are now placing far more value on personal “health happiness” – a place where they feel good about their health. For example, there are people with chronic conditions who are nonetheless “health-happy,” because they have learned to live with and manage their symptoms, while others in the same situation may feel that they are very ill.

And the second major development?

**Jeanette Huber:** This is the increasing digitalization that we are seeing, coupled with a greater degree of self-determination. More and more people are collecting and managing data using health and fitness apps. This raises their awareness of their own body and provides motivation, for instance because it can also be fun to run with colleagues and then compare data. Generally speaking, modern technology plays a huge role for people as far as their health is concerned. 52 percent of Germans have great confidence in the technical advancements in the field of medicine. Medical supply retailers can also benefit from this level of confidence, for instance in their use of modern measurement technology.

**Practically speaking, what effect is digitalization having on the healthcare system?**

One example is that there is now a kind of mobile ECG for smartphones, which has been designed with laypeople in mind. This enables patients with heart issues to document acute health problems and thus collect their health data at exactly the right moment. The physician can then look at this data later on. This has led to a new kind of relationship developing between the physician and the patient. Most healthcare professionals find this unusual, as hierarchical top-down relationships are the norm in the healthcare sector. Digitalization is turning the healthcare sector into a network that brings people together in a world away from roles, functions, and hierarchies, in a mobile fashion and in real time. Patients, physicians, insurers, the pharmaceutical industry, and medical supply retailers – all these parties can now communicate with each other directly. This opens up new opportunities.

**What opportunities and challenges do you see in the relationship between medical supply retailers and patients?**

**Jeanette Huber:** Today’s healthcare customers look up information online. Medical retailers have to take patients seriously when they come to them with a collection of medical information they found on Google, and they have to help their customers to sort this information into correct and incorrect, important and unimportant, so that it all makes sense. This more personal and more intensive communication is a contemporary way of building customer loyalty. The health data that many people collect themselves can also be used to achieve greater proximity to customers. However, this requires healthcare providers to keep abreast of all these health and fitness apps too and know how they work. All in all, the trend toward greater individual responsibility for one’s health opens up new potential...

Can you explain this in more detail?

**Jeanette Huber:** Not only are the patients of today and tomorrow more informed, with a greater commitment to tracking their health – they also have new expectations and demands. Many people do not want to just be cured – they want to live more health-

“All in all, the trend toward greater individual responsibility for one’s health opens up new potential.”

*(Jeanette Huber)*

...ily as a whole so that they can fully realize their health potential. This changes the role of healthcare providers: To put it somewhat provocatively, they are no longer just handy-men who repair something when it is broken. Now, they are becoming coaches who guide their customers on the path toward a greater quality of life – perhaps by advising them on how to eat more healthily, recommending relaxation techniques such as yoga or media-

**Being health-conscious is of course a good thing, but can it be done to excess?**

**Jeanette Huber:** Yes, absolutely. We call these people “health optimizers.” They see their body as a construction site where there is always something to improve. They want...
to be healthier, more attractive, and fitter in mind and body than everyone else. And these people, especially when they are older, demand unusual skills from the healthcare professionals they come into contact with. It often falls to these professionals to try and counter their patients’ excessive demands for unattainable performance levels and help them to understand the natural limits of biology. An excessive obsession with keeping healthy needs to be counterbalanced by a healthcare culture that takes a relaxed approach to the aging process and promotes a natural path. This will then allow us to close the circle of “health happiness.”

“The healthcare professionals who make time for their customers and patients, and really listen to them and understand them, will have hit on the very best marketing tool.”

(Jeanette Huber)

What do you think is the most urgent task in our healthcare systems?

Jeanette Huber: Our healthcare system, with all its specializations and branches, has become completely impenetrable for a large number of people. This, along with the increase in empowered patients who are more interested in their own health, has led to calls for greater transparency. 39 percent1 of Germans want technical tools that enable them to manage and transfer their health data at any time, wherever they are. However, there is another need that is even more pronounced: 84 percent1 of Germans think it is important for the healthcare of tomorrow to have more humanity and empathy. This is not just a huge challenge for physicians and hospitals, but also an opportunity, because it means that the healthcare professionals who make time for their customers and patients, and really listen to them and understand them, will have hit on the very best marketing tool.

1 Philips health study, 2015

Jeanette Huber sees herself as a trendsetter and benevolent provocateur.
With numerous subsidiaries and distributors around the world, Bauerfeind has a strong global presence. It employs modern logistics solutions to ensure that its high-quality products, which are manufactured exclusively in Germany, always reach its trading partners quickly. In total, around 2,000 employees worldwide work for the success of the company and with patient well-being in mind.

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Great Excitement in South Korea

Less than one hundred days remain until the opening ceremony of the Olympic Winter Games in PyeongChang, South Korea. Young-Hee Lee, M.D., Ph.D., Chief Medical Officer (CMO) of the Olympic Winter Games, is already in full swing preparing for the event. “In normal life” the 60-year-old is president and CEO of the Yonsei University Wonju Health System and President of the Wonju Severance Christian Hospital. The CMO will be in charge of both medical care and doping control during the games. As a member of the IOC Medical Commission Games Group, he will act as a link between the IOC Medical Commission and the medical services on duty. “The Olympic Games are the largest sports festival in the world and the athletes are the most important players. We must therefore ensure that we offer premium quality medical service so that the athletes can give their very best,” the experienced physician says. Many Koreans are eagerly awaiting the first Winter Games in South Korea, according to the CMO. He is also unable to hide his enthusiasm: “As a passionate skier I am very excited to have the largest winter event in the world come to our region. I am sure that this will be the best winter of my life.”

Dr. Young-Hee Lee, Chief Medical Officer of the 2018 Winter Olympics.

Doctoral program 2017

Sponsorship prize for up-and-coming scientists

Since 2008, Bauerfeind has used its doctoral prize to promote young academics who have scientific interest in the fields of phlebology, lymphology, and related disciplines. At the 59th annual meeting of the German Phlebology Society (DGP) in Stuttgart, the prizewinner for 2017 was announced. Matthias Westermann will be supported in his doctoral studies on the “Clinical manifestation and subjective pathology of varicose veins and/or CVI in dependence on mobility impairments in the ankle or foot region.” The 31-year-old will be supervised by Prof. Dr. Stefanie Reich-Schupke at Ruhr University Bochum. For more information on the doctoral prize, visit bauerfeind.com/doktorandenprogramm.

Prizewinner Matthias Westermann (center) with his doctoral supervisor Prof. Dr. Stefanie Reich-Schupke, and Dr. Hans-Jürgen Thomä, Head of the Phlebology Department, Bauerfeind AG.
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