HOW DO I KEEP MY LEGS IN GOOD SHAPE?
Practical tips and information for healthy veins
DEAR READER,

Does this sound familiar to you too? Your feet hurt in the evening, your ankles are swollen, and you are plagued by calf cramps in the night. Are you too embarrassed to wear short skirts or trousers due to spider veins?

Venous complaints have developed into a widespread disease. Affected persons often complain of tired and swollen feet, spider veins and varicose veins. Indicators suggest that 1 in every 4 men and 1 in every 2 women are already affected by this.

This brochure will show you ways to keep your legs healthy while taking good care of your veins at the same time.

‘How do I keep my legs in great shape’ is one of a series of informative brochures for patients on such topics as lymphedema and lipedema.

Should any of these brochures interest you, please ask for them in your medical practice or a medical products supply store.

Enjoy reading!

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CONTENTS

P. 6  THE CIRCULATORY SYSTEM
P. 8  THE CALF PUMP
P. 10 WEAKNESS OF THE VEINS
Risk factors
Symptoms
P. 12 VENOUS COMPLAINTS
Varicose veins
Thrombosis
Pulmonary embolism
Ulcus Cruris
P. 14 PREGNANCY
Twice the work for your veins
P. 16 TRAVEL THROMBOSIS
P. 18 THERAPY
Medications
The benefits of compression therapy
Sclerotherapy and stripping
P. 20 COMPRESSION STOCKINGS WITH AND WITHOUT A SEAM
Flat-knitted and circular-knitted fabrics
P. 22 COMPRESSION THERAPY
Compression stockings that will delight you
P. 24 Juzo® PRODUCT FEATURES
P. 26 TIPS FOR HEALTHY AND ATTRACTIVE LEGS
Quick exercises for the legs
P. 28 TECHNICAL TERMS
The heart of an adult person pumps, on average, around five liters of blood per minute through the body. The blood supplies essential nutrients to all parts of the body. The volume pumped can increase fivefold during physical exertion.

The vascular system comprises arteries, veins, capillaries and lymph vessels. The large aorta, arteries and fine capillaries distribute oxygen-enriched blood to the organs and supply the tissue with nutrients. The veins transport the used, oxygen-depleted blood out of the organs and tissues of the human body and back to the right chamber of the heart.

This is all hard work, particularly for the leg veins. They need to transport the blood, against the force of gravity, from the lowest points in the body towards the heart.
Supplying the body with blood is not only taxing to the heart.

Around 7,000 liters of blood need to be pumped through the veins each day. The most important function in this process of returning blood to the heart is performed by the so-called ‘muscle-vein pump’ of the leg muscles.

As we move our legs, the muscles contract. This causes the calf muscle to squeeze the walls of the veins.

**Transport function of the veins**
The venous blood flows upwards against the force of gravity. When this mechanism is impaired, e.g. due to insufficient exercise or illness, it has a negative effect on the backflow of blood. The veins become unable to contract of their own accord, and are then reliant on the core muscles.

The veins contain venous valves that direct the blood flow in the correct direction – towards the heart. The blood will flow towards the heart whenever the valves are open.

When the pressure in the veins increases, for example when you stand up, the valves close. This prevents a backflow of venous blood.

**Veins as a blood reservoir**
Around 75 percent of the total quantity of blood in the human body is located in the veins. That is why the walls of the veins are elastic, which enables the veins to accommodate large quantities of blood. When constantly overstrained, the walls of the veins can become overstretched. This results in accumulation of blood.

There are two venous systems in our legs: a superficial system located directly under the skin within the fatty tissue of the leg, and a deep venous system located between the leg muscles. Of the 7,000 liters of blood transported daily, around 10 percent of the blood in the legs is returned to the heart by the superficial veins, and around 90% by the deep major veins.

The venous valves perform an important role in controlling blood flow. The calf pump: veins and muscles working together.
WEAKNESS OF THE VEINS

Varicose veins are often the first sign of a venous disorder. A large proportion of patients with varicose veins also have parents or grandparents with varicose veins. But even people without this genetic disposition should look out for these physical signs in their body to ensure that venous disorders are recognized early.

The risk factors that can lead to the onset of venous complaints are:
- Inherited weakness of the veins, or congenital venous anomalies
- Excess weight or obesity
- A lot of sitting or standing
- Nicotine and alcohol consumption
- Hormonal influences (contraceptive pill, pregnancy)
- Heavy lifting or carrying
- Tight clothing
- Hot baths and intensive sunbathing

First symptoms of a venous complaint:
- Heavy, tired or swollen legs
- A burning sensation in the legs
- Tingling, cramps or tension
- A tugging or sharp pain in the calves
- Swelling in the ankle region
- Spider veins

Anyone who notices one or more of these alarm signals should consult their physician immediately. Early treatment can often prevent the complaint from worsening.
VENOUS COMPLAINTS
Complications resulting from disturbed blood flow

Venous disorders are regarded as an ‘endemic disease’ these days. Indicators suggest that 1 in every 4 men and 1 in every 2 women suffer from varicose veins, which are referred to in medicine as varices.

Spider veins
Spider veins are small distended veins in the uppermost layer of the skin, usually on the legs. They may be caused by an obstruction in the venous system, or as result of a genetic disposition.

In the case of obstruction-related spider veins, the small vessels lose their elasticity due to a constantly elevated pressure in the venous system. The veins distend and become visible as a pale red network of veins or red blemishes.

Varicose veins
80% of varicose vein cases involve primary varicosis, which is caused by a hereditary weakness of the vein walls. The disorder appears as knotty, distended veins on the surface of the skin, and usually affects the superficial veins of the leg.

Varicose veins arise due to a disturbance in the balance between the arterial supply and the venous backflow. This results in a slowing of the backflow of blood out of the legs. The pressure in the veins increases and they distend. This damages the walls and valves of the veins, and progressively hinders the backflow of blood. The pressure causes the veins to distend, which then makes them visible on the surface of the skin. The possible causes for secondary varicosis are a displacement or obstruction of the deep veins. It can be triggered by a thrombosis.

Thrombosis
When blood can no longer flow freely in the vascular system, deposits form on the vessel walls. These deposits or blood clots can constrict the vessels, or even block them completely. This results in a thrombosis. A dangerous consequence of a leg vein thrombosis is a pulmonary embolism, which is a blockage of a blood vessel in the lung.

Pulmonary embolism
The cause of a pulmonary embolism is often a blood clot in the deep veins of the leg or pelvis. The blood clot (thrombus) breaks away from the vessel wall and makes its way via the heart to the vessels in the lung. There it gets stuck and reduces or interrupts the blood supply. As a result, the tissue no longer receives an adequate supply of blood and oxygen. A pulmonary embolism can have fatal consequences.

Ulcus Cruris
When the blood supply to the tissue and organs is no longer functioning correctly, waste products are not transported away in adequate quantities. In severe cases, the defective circulation produces ulcers, also known as ‘leg ulceration’ (venous crural ulcers). This condition affects around 3 percent of the population. The ulcers are generally located on the calves, and are frequently inflamed and painful.
How do I keep my legs in good shape?

Pregnancies are very taxing on the venous system. During those nine months, the veins will transport approx. 20 percent more blood in order to supply the unborn child. Venous complaints during pregnancy should always be treated.

The hormones are to blame
The cause of varicose veins during pregnancy is the hormone progesterone. The body produces it in greater quantity to increase the elasticity of the uterine tissue. This also affects the walls of the veins – they too become more elastic and lose their tension. Consequently it becomes more difficult to transport blood back to the heart. As the uterus progressively increases in size, it presses on the veins thereby hindering the venous backflow in the area of the pelvis. This results in an increased risk of developing spider veins or varicose veins. Every second woman suffers from varicose veins during their first pregnancy.

PREGNANCY
Twice the work for your veins

Pregnancies are very taxing on the venous system. During those nine months, the veins will transport approx. 20 percent more blood in order to supply the unborn child. Venous complaints during pregnancy should always be treated.

Preventative measures can help during pregnancy. Pregnant women can avoid venous damage by getting lots of exercise, not sitting or standing for too long, and by performing regular exercises. Cold showers or frequent elevation of the legs can also do wonders.

Medical compression stockings are very useful too. They will help you come to grips with the bothersome secondary symptoms of pregnancy, and also protect you against thrombosis. The blood will flow out of the legs better, and any painful swelling or obstructions will recede.

To prevent venous disorders, pregnant women should wear compression stockings at the first sign of varicose veins, or from the 12th week onwards. This will not make existing varicose veins disappear, however.
TRAVEL THROMBOSIS
The underestimated risk

In a plane, car or train – the legs are cramped and have little freedom of movement. The risk of a travel thrombosis increases, in particular, if you are seated for over 4 hours and unable to adequately stretch or move your legs.

Slow down in blood flow
Travel thrombosis refers to a blood clot that blocks one of the veins in the legs. This ailment affects mainly long haul flights, but can also arise during long car drives or train trips. Travel thromboses are caused by long periods of cramped sitting with the knees bent and insufficient movement. This slows down the blood flow, and as the blood accumulates, a clot can form. If this type of clot blocks the vessels, a thrombosis occurs.

When a thrombosis is present, the affected leg often swells up and becomes painful. The skin may be bluish or red in color. Not everyone will experience these symptoms, but it is possible for vessel damage or even a – potentially deadly – pulmonary embolism to develop. Should this complaint or shortness of breath arise after a long trip, please consult your physician.

Take preventative measures
Wear compression stockings. Compression stockings help the veins transport blood back to the heart. The external pressure relieves the legs. Compression stockings will thereby prevent the legs from swelling during longer periods of travel, and also reduce the risk of a thrombosis.

The ‘travel itinerary’ – support for your veins
Anyone ‘sitting still’ for more than four hours will be at increased risk of developing a thrombosis. The best protection is to compress the veins.

1. When traveling on a plane, walk up and down the aisle and perform foot exercises regularly.
2. On a longer car trip, stretch your legs every two hours.
3. Ensure that you sit properly at all times. Reduce the pressure on the underside of your thighs, e.g. by using foot supports.
4. Leave the shoes behind. Walk barefoot for a short distance.
5. Drink, drink, drink: at least two liters a day – water, tea or fruit juice.
6. Wear Juzo® compression stockings. Your physician or medical products supply can advise you about these.
7. If your physician recommends it, you can take blood-thinning medications to prevent blood clots.
How do I keep my legs in good shape?

Take the first alarm signals of your veins seriously. If you experience pain, swelling or an increasing feeling of tension in the legs, consult your physician. He will decide whether, for example, compression therapy or a surgical procedure is the most suitable option for you.

It is not possible to heal varicose veins using medications, but they are a useful adjunct to other therapeutic measures. When venous complaints exist, compression therapy is a fundamental component of every treatment program.

**VENOUS THERAPY**

The benefits of compression therapy

Early compression therapy can also provide relief to healthy legs. Once a vein becomes distended – a varicose vein – it cannot return to normal and will require lifelong treatment.

Compression stockings are an important aid in medical therapies but can also be used as a preventative measure for standing occupations or to protect against travel thromboses. The external pressure applied by means of compression therapy reduces the diameter of the distended vessels, thereby enabling the venous valves to close again. This improves the blood flow out of the legs, and swelling and painful obstructions will recede. To enable the medical compression stockings to achieve their optimum effect, they should be worn on a regular basis and fit well.

**Sclerotherapy and stripping**

A physician can perform a targeted sealing or sclerosis of small varicose veins. A sclerosing agent is injected into the veins, which induces an artificial inflammation. This seals off the vein.

Surgical treatment becomes necessary when a diseased vein impacts on healthy veins. Larger varicose veins are generally surgically removed (stripping). The physician will tie off (ligate) the perforating veins so that blood can no longer reach the superficial venous system and accumulate there. It is possible, in some cases, for new varicose veins to form even after this operation as the genetic disposition still exists in the affected person.

**Wear stockings regularly**

To ensure lasting therapy success, it is beneficial to wear compression stockings on a regular basis after removal of the varicose veins. Compression stockings can contribute to the long-term success of the operation.

The external pressure produced by compression therapy reduces the diameter of the veins, which allows the venous valves to move closer together.
**COMPRESSION STOCKINGS**

*With and without a seam*

Circular-knitted qualities **without a seam** are predominantly used in venous therapies. Seamless compression stockings are often indistinguishable from normal fine-mesh stockings these days. Naturally they possess the necessary therapeutic properties, and are also comfortable to wear.

Circular-knitted stockings are used for phlebological indications such as varicosity, chronic venous insufficiency, or post-operatively after varicose vein stripping.

Compression stockings **with a seam** are generally indispensable in the area of lymphology. The flat-knitted stockings (e.g. Juzo® Expert) are knitted stitch by stitch to precisely follow the contours of the body. The fabric is then sewn together with a flat, elastic seam. In conjunction with movement, the stocking produces a high therapeutic pressure that provides optimum compression of the tissue. Flat-knitted stockings are an optimal aid in the treatment of lymph- and lipedema.

Medical compression stockings guarantee correct pressure values and a properly dosed pressure gradient. The pressure values decrease continuously from the ankle section upwards towards the heart, and also towards the tips of the toes. Depending on the particular application, the stockings can be supplied in a wide variety of styles from calf-high stockings right through to pantyhose.

The strength of the pressure can be classified into four compression classes:

- **Class 1 (mild compression):**
  for minor obstructive disorders accompanied by feelings of tiredness or heaviness, for isolated varicose vein formation, or as a preventative measure during pregnancy.

- **Class 2 (moderate compression):**
  for varicose veins, swelling during pregnancy, after varicose vein sclerosis or operations, or for the long-term treatment of healed leg ulcers.

- **Class 3 (strong compression):**
  for varicose veins accompanied by damage to the deep leg veins, after venous crural ulcers have healed, when a severe swelling tendency exists, or for chronic venous insufficiency.

- **Class 4 (very strong compression):**
  for patients with the most severe venous complaints; for severe lymphatic obstruction or elephantiasis.

Exercise regularly to keep your legs in good shape. This will assist your compression therapy greatly.
How do I keep my legs in good shape?  

Juzo® Attractive: The compression stocking that is setting new trends in the area of fine compression stockings. It comes in bright fashionable colors, and is available with knitted-in trendy patterns. The Juzo® Attractive is distinguished by its especially fine knit. Its transparency is comparable to any fine stocking.

Juzo® Hostess®: Thanks to its unique weave, Juzo® Hostess® rates as one of the most transparent compression stockings on the market. The fibers are treated in a special process that makes the stocking permeable to air and moisture. This manufacturing process also guarantees the highest level of durability in the fine compression stockings segment.

Juzo® Soft: Soft, smooth and comfortable to wear – that’s the Juzo® Soft feeling. Thanks to its excellent wearing characteristics and exceptional softness, this compression stocking is especially easy to put on and take off. With a variety of styles and sizes to choose from – either standard sizes or made to measure – this stocking is very popular for venous leg complaints, and for leg compression during travel or sport.

Juzo® Dynamic: This durable compression stocking offers a perfect fit, even during higher levels of physical exertion. This all-rounder in the circular-knitted product range is characterized by its optimum fit and durability. Visually, this compression stocking is distinguished by its tight and unobtrusive weave.

Juzo® Dynamic Cotton Rib: Men require compression stockings that have been tailored to their specific requirements. The newly developed Juzo® Dynamic Cotton Rib, with its attractive ribbed look and stable structure, has been especially designed for men’s legs. The wide top band on these calf-high stockings ensures a crease-free and secure hold.

Juzo® Expert: The flat-knitted Juzo® Expert grade is especially comfortable to wear on account of its softness. Juzo® Expert is available in all four compression classes and therefore suitable for a wide variety of indications in the areas of phlebology, lymphology and scar therapy. Thanks to the special fabric used in these seamed stockings, they are also suitable for treating the extreme body proportions associated with certain severe medical indications.
The elasticity of the compression stocking – in particular in the knee and thigh area – feels good on the skin. Thigh-high stockings are particularly comfortable to wear for patients with larger thighs.

The elastic Juzo® fabric with its special stretch properties adapts optimally to every movement.

The flat seam in the soft elastic Juzo® toe prevents pressure points and constriction from occurring.

The open toe is fitted with a soft, smooth end band that does not restrict the foot.
How do I keep my legs in good shape?

Just a few of these tricks can really make a difference – why not try them out, you will be surprised how easy it is to keep your legs in great shape!

1. Exercise as much as you can, in particular the leg and calf muscles: this strengthens the muscle pump. Why not use the stairs instead of the lift, for example.

2. Elevate your legs – if possible for 30 minutes a day. It’s best if you can also elevate your legs during the night; a general rule of thumb is 10 cm above the heart.

3. Do not fold your legs over one another – this can constrict the veins at the back of the knee, thereby restricting blood circulation. Our tip: cross your ankles when seated.

4. Wear comfortable shoes, ideally with flat heels, and avoid tight clothing and underwear. These can restrict your circulation, and the pumping action of your diaphragm.

5. Do some form of sport – swimming, hiking or bike riding, in particular, are good for your veins. Whenever you have the opportunity (e.g. when standing in a queue at a register), stand alternately on your heels and toes. This stimulates your muscles – and therefore the transport of venous blood.

6. Maintain a healthy diet – every pound of excess weight puts additional strain on the legs and veins. Ensure that you get adequate fiber, e.g. vegetables, fruit and wholegrain products.

7. Avoid the heat and keep your legs cool. Avoid heat accumulation when bathing or during heat applications like fango, mudbaths or saunas. Cold showers can help in summer, as they promote the backflow of blood out of the legs.

**Quick exercises for the legs**

1. Whenever you get the opportunity when standing, rock back and forth on your toes – 20 times alternating with the heel.

2. Swing your leg in a figure of eight motion, alternating between the left and right leg (10 times each).

3. March on the spot and swing your arms. Try to lift your knees up to the height of your belt (20 times).

4. When seated, flex and extend the ankles and roll the soles of your feet (20 times).
How do I keep my legs in good shape?

Chronic Venous Insufficiency (CVI) Damage to the skin or subdermis resulting from varicose vein complaints or a leg vein thrombosis.

Compression An important therapy component for venous disorders. The pressure that a well-fitted compression bandage or compression stocking exerts on the tissue restores dilated veins to their original size. The external pressure enables the venous valves to close better again, and the backflow of blood is accelerated and improved. It also prevents fluid infiltrating through the venous walls into the tissue (= edema).

Compression stockings These come in different styles and materials. Thanks to the special method used to manufacture them, compression stockings are able to exert a uniform pressure on the tissue. The fit of the compression stockings needs to be individually checked for every patient to ensure optimum functioning and best possible support for the impaired venous function.

Diuretics Medications that promote increased water loss (a diuretic effect).

Edema A swelling in the tissue.

Edema protective agent ‘Vessel sealing’ medications that are intended to prevent water accumulation in the tissue.

Lipedema Symmetrical swelling due to fat deposits. Usually on the hips, thighs or upper arms.

Lymphedema Fluid accumulation in the tissue as a result of impaired lymph drainage. The affected region is severely swollen.

Muscle pump The ability of a muscle to dispose of and transport away used blood in the direction of the heart. The calf muscle pump operates under difficult conditions because the path back to the heart is longest here.

Perforating veins Veins connecting the superficial and deep venous system.

Phlebitis Inflammation of a vein.

Phlebologist A vein specialist.

Pulmonary embolism Blockage of a blood vessel in the lung – usually by a blood clot. The clot frequently forms in the deep veins of the leg or pelvis and makes its way to the lung via the right chamber of the heart.

If you suffer from venous complaints, we recommend you seek advice from your physician.
**Recurrence**  A relapse.

**Reticular varice**  A network of varicose veins.

**Saphenous veins**  The main veins in the superficial venous system.

**Sclerosis**  Chemical destruction of varicose veins.

**Side branch varicosities**  Varicose veins of the side branches of the venous trunks.

**Spider veins**  Very fine clusters of veins located in the skin that often have a blue-red shimmery appearance. So-called starburst varices can be particularly evident during pregnancy. They are not just a cosmetic problem, because spider veins, either occurring on their own or in conjunction with other varicose veins, are an indication of weakness of the veins.

**Thrombosis**  Blockage of a deep vein by a blood clot.

**Ulcus Cruris/Crural ulcer**  Ulcer of the lower leg, an open leg wound.

**Valvular insufficiency**  Inadequate valve closure in the veins or in the heart.

**Varices**  Varicose veins.

**Varicose veins**  Knotty, distended veins visible on the surface of the skin. This disorder most often affects the superficial veins in the leg area.

**Varicosis**  Varicose vein complaint.

**Venous valves**  These ensure that the venous blood can only flow in the direction of the heart, and prevent the return of used blood.