Juzo

Phlebology

Information and tips about
your venous health
Plus: 3-minute self-test

Freedom in Motion

Innovation with experience

Who are we? That's simple! We are more than 1,100 employees working together across the world. As specialists in compression therapy, we have made it our mission to improve patients' quality of life and provide lasting relief from their symptoms. To achieve this, we are constantly developing new, intelligent products to meet our customers' individual requirements and ensure that treatment is successful. We have been pursuing this goal for over 100 years now and are always looking for new solutions in phlebology, lymphology, scar management and orthopaedics. We are working on something new every day to make the impossible possible and ensure more "Freedom in Motion".

You can find more information about Juzo at
juzo.com/company

Our aspiration your wellbeing

We would like to make your introduction to compression therapy as easy as possible. Therefore we have compiled some useful tips for you in this brochure. What should you be aware of? How do you put the compression garment on properly and how do you look after it? Which accessories make it easier to put on the compression garment? Here, we will try to answer your questions.

You can find more information about phlebology at **juzo.com/phlebology**

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About the veins

Phlebology

The term phlebology refers to the study of disorders that affect the veins (Greek: Phlebos = vein, blood vessel). Based on a survey of the World Health Organisation (WHO), venous disorders rank among the most common diseases worldwide. Venous leg disorders are some of the earliest documented illnesses suffered by mankind. They can vary greatly in severity, and only very few people are completely symptom-free.

Venous disorders may manifest themselves as mild symptoms, such as a feeling of heaviness in the legs. Other affected persons may suffer from pronounced venous dysfunction with severe impairments. Often problems arise, when they could perhaps have been avoided, due to lack of knowledge about the functioning of the body. Venous disorders should always be taken seriously and any early signs, such as spider veins, diagnosed and treated as soon as possible.

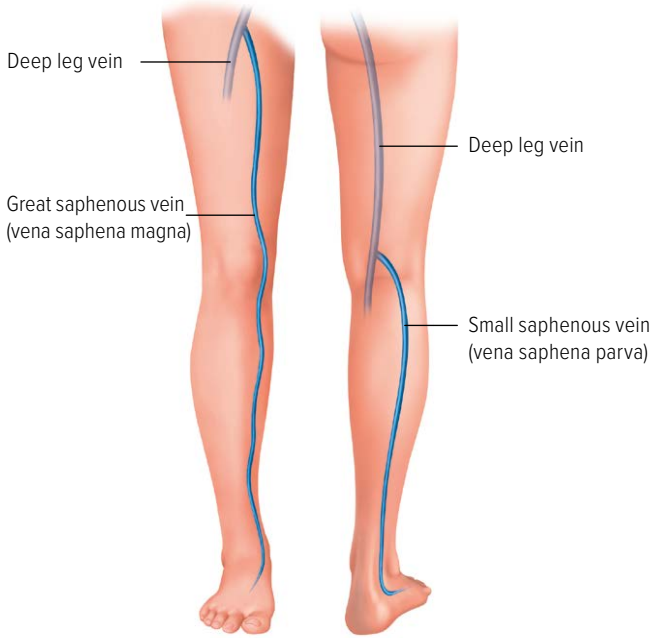
Good to know

- 5 litres of blood are pumped through our bodies every minute
- 65 % of the total quantity of blood in the body is located in the veins
- of the 4.500 litres of blood transported daily out of the legs and back to the heart, 90 % is transported by the deep major veins, and 10 % by the superficial veins
- the most important superficial veins are the great saphenous vein and the small saphenous vein

Leg veins

The blood circulatory system (cardiovascular system) of our body is very complex and we are all aware that the heart plays a fundamental role in it. That the leg veins, in particular, have an extremely demanding task to perform day in, day out, is not known to many people. The veins in the legs must return the blood from the lowest point in the body back to the heart, against gravity and without any breaks – 24 hours a day, throughout our entire life.

The "muscle-vein pump" of the leg muscles, also referred to as the "calf muscle pump", performs the most important function in returning the blood to the heart. Every time we move our legs (e.g. while walking), we tense the muscles in the lower leg which then function like a natural pump, push the blood out of the legs and back up to the heart.



Venous valves

In the veins there are “gates”, the so-called venous valves, that assist with the transport of blood. When venous blood is flowing in the direction of the heart, these valves are open (Fig. 1). If the blood tries to flow downwards in the direction of the feet, these valves close to prevent backflow (Fig. 2).

Even the smallest changes to a vein, for example when it becomes dilated, can have a negative impact on the functioning of the venous valves so that they will no longer be able to close properly. This can cause the venous blood in the veins to accumulate and only flow slowly. This blood stagnation is initially perceived as “heavy” or “swollen” legs. If these symptoms are left untreated, however, they can lead to further more serious illnesses.

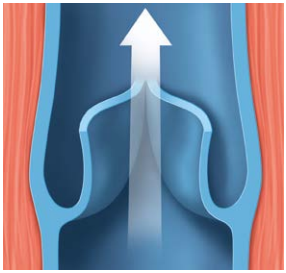


Fig. 1
Open venous valve

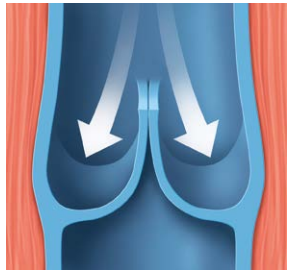


Fig. 2
Closed venous valve

What the risk factors for venous disorders are and how to recognise their symptoms, is discussed on the following page.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Risk factors

There is no one single cause for venous disorders. In most cases they arise as a result of a combination of factors. Venous dysfunction often manifests itself in the beginning as small changes in the leg, for example spider veins or reddening of the skin. Those who listen to their body will notice these symptoms and hopefully avoid a more serious illness.

Generally speaking, you should try to reduce or avoid the following risk factors that can contribute to the onset of venous disorders:

- excess weight
- lack of exercise (frequent sitting and long periods of standing)
- nicotine and alcohol consumption
- hormonal influences (e.g. the contraceptive pill)
- tight clothing
- extreme exposure to heat (excessively hot baths, saunas, intensive sunbathing)
- shoes with high heels

Good to know

Results of the Bonn Vein Study*:

- approx. 90 % of the general adult population exhibit signs of changes to their venous system
- only less than 10 % of the population show no signs of venous insufficiency
- approx. 60 % exhibit at least spider veins as a sign of venous insufficiency

* 2003 Bonn Vein Study of the German Society of Phlebology, 3072 male and female respondents between the age of 18 and 79. The study results are based on the German population.

Venous disorders can, of course, also arise due to factors over which you have little or no influence. It is therefore important to know what you can do to support the health of your veins.

Wesakness of the veins and connective tissue

Vein problems are very often inherited, and some patients will be predisposed to them from birth. In almost all cases the parents and grandparents are found to be afflicted by varicose veins. The vein walls can be too elastic, which makes them weaker and can lead to premature distension of the veins.

Unfortunately, this congenital weakness of the connective tissue can not be corrected, however it is possible to prevent a worsening of the condition using compression stockings.

During the course of our lives and as we age, the connective tissue gradually becomes more lax and the vein walls weaken and “bulge out”. That is why it is ever so important to treat your legs well and to support your veins as much as possible.

Venous insufficiency affects women more frequently than men. That is why you should start looking after the health of your veins from a young age. Wearing shoes with high heels, for example, hinders the movement of the ankle. This adversely affects the muscle pump causing the blood to accumulate.

Hormonal influences such as the contraceptive pill, or the changes to the body during pregnancy, place women at increased risk of venous disorders.

Pregnancy: The body in an exeptional state

During pregnancy, a woman's body has great demands placed on it. Up until the birth of the child, the blood volume in the mother increases by 30 – 40 %. This is very taxing on the veins.

Furthermore, the hormones released in the body soften the connective tissue to prepare the body for the changes to come. This also has the effect of making the vein walls more elastic and they can lose their tension.

The growing uterus also presses on the inferior vena cava. This is the largest vein in the body, which carries blood from the lower limbs, parts of the pelvis, and from the stomach organs. Pressure on this vein impedes the return flow of blood, which increases the risk of spider veins or varicose veins.

Pregnant women are therefore advised to counteract this risk through movement and regular exercise. Many pregnant women complain of "swollen legs", especially in summer. Don't be afraid to take a break now and then and elevate your legs. Your body will thank you for it.

Compression stockings also provide relaxation and relief for heavy and swollen legs. They can be worn for the entire duration of the pregnancy, and you can start wearing them from early pregnancy onwards. This will help you enjoy your pregnancy to the fullest!

Long trips: Difficult times for your legs

If you travel often and for long distances, then you are possibly familiar with the feeling of swollen and heavy legs. This is not only uncomfortable but could actually turn out to be hazardous to your health. A traveller's thrombosis, also referred to as "economy class syndrome", could develop.

Long periods of cramped seating, bent legs, and lack of movement during a trip can get dangerous, especially for those people who belong to particular risk groups.

Fluid can accumulate in the legs and, by applying pressure to the tissue, hinder the return flow of blood. In rare cases, a blood clot – referred to as a thrombus – forms on the wall of the vein and blocks the vessel.

The high-risk groups for a traveller's thrombosis include older or overweight people, people who have already suffered from a thrombosis or embolism, pregnant women, patients with varicose veins or pre-existing venous disorders, and people with an inherited blood clotting defect.

It is advisable for both women and men to wear compression stockings during longer trips to relieve the veins and also prevent the accumulation of fluid. A calf-high stocking can be sufficient to provide relief. You should also get up and move every now and then during the trip as well as drinking very much.

Symptoms

The symptoms that can suggest the presence of a venous disorder can be categorised into internally experienced symptoms, and externally visible symptoms. You can use the signs in the following lists to identify whether you are potentially suffering from a venous disorder.

If you notice one or more of the following signs of venous insufficiency, please consult a physician.

Internally experienced symptoms

You will notice these symptoms especially after longer periods of sitting or standing. As heat can aggravate these symptoms, they will be more noticeable during the summer months than in the colder part of the year:

- tired, heavy or painful legs
- night-time cramps in the calves
- tugging or sharp pain in the calves
- tingling or burning sensations
- tenderness
- feeling of tension

Externally visible symptoms

The following signs are readily noticeable on the legs and can range in severity as follows:

- swelling, in particular in the ankle area and in the feet
- spider veins
- varicose veins
- reddening or other skin discolorations
- dry, thin skin over the affected vein
- ulcus cruris (open leg) in the ankle area

Externally visible symptoms

Internally experienced symptoms

On the following pages we will explain the most common venous disorders. What you can do when you notice the first signs of a disorder is explained in the last section of this brochure.


CASH


love the smell
coffee
the morni

Vein check

3-Minute self test

Take our test to find out your personal level of risk for venous disorders. Read the following statements and mark either the Yes or No response.

	Yes	No
1. Do you have heavy or tired legs in the evening or after long periods of standing, a feeling of tension in the legs, or night-time cramps in the calves?	❑	❑
2. Do venous disorders (e.g. varicose veins) occur frequently in your family?	❑	❑
3. Are you female and have a genetic predisposition to connective tissue weakness (cellulitis)?	❑	❑
4. Are you overweight and over 40 years of age?	❑	❑
5. Does your work require you to sit or stand for long periods of time?	❑	❑
6. Are you more of a homebody type, who doesn't exercise much and enjoys a good feast?	❑	❑
7. Do you have spider veins or varicose veins?	❑	❑
8. Do you take any hormone medications (contraceptive pill, menopause treatment) or are you pregnant?	❑	❑
9. Do you often wear high-heeled shoes or tight clothing?	❑	❑

	Yes	No
10. Are your legs sometimes swollen, in particular in the evening?	❑	❑
11. Have you ever had phlebitis of the leg?	❑	❑
12. Do you currently have any inflammation or painful red areas on the legs?	❑	❑
13. Do you experience any pain in the foot or calf when walking?	❑	❑
14. Does the circumference of your legs differ?	❑	❑
15. Have you ever had an open leg or a thrombosis (blocked vessel)?	❑	❑
16. Have you ever had a pulmonary embolism (blocked vessel in the lungs)?	❑	❑
17. Have you observed any change in your skin at the ankle or in the lower leg, has it become dry or scaly?	❑	❑

Allocation of points for yes answers:

Question 1 = 5 Points
Question 2 = 1 Point
Question 3 = 1 Point
Question 4 = 1 Point
Question 5 = 1 Point
Question 6 = 1 Point
Question 7 = 5 Points
Question 8 = 10 Points
Question 9 = 1 Point
Question 10 = 5 Points
Question 11 = 5 Points
Question 12 = 5 Points
Question 13 = 10 Points
Question 14 = 10 Points
Question 15 = 10 Points
Question 16 = 10 Points
Question 17 = 5 Points

Total:

You will find an evaluation of your responses on the next page.
Please present the results of this self-test to your physician.

Evaluation

Total points: 0 to 1

Congratulations! Your legs are as fit as you are. Thanks to your healthy lifestyle there is no need for you to be concerned about your veins at the present time, unless you notice any unexpected changes in your legs or they suddenly begin to hurt. If you nevertheless want to do something good for your legs, wear compression stockings as a preventative measure.

Total points: 2 to 3

There might be a slightly elevated risk in your case. Pay attention to your lifestyle and avoid any factors that might have a negative impact on you. Any changes in hormone levels in the body, for example when taking a contraceptive or during pregnancy, can impact on the flow properties and clotting ability of the blood. There is no acute risk of venous complaints at present, however you should take measures to prevent them. Before undertaking a long-haul flight, we recommend that you wear Juzo compression stockings as a precautionary measure. Please speak to your physician.

Total points: 4 to 7

Help maintain the health of your legs by leading an active lifestyle and getting adequate exercise. You may have a slightly elevated risk of venous complaints. Phlebitis of the leg is always accompanied by a superficial thrombosis. If you also have spider veins and perhaps even varicose veins, this is a sign of disturbed venous circulation. You can help prevent these symptoms from worsening by getting lots of exercise, eating healthily, and wearing Juzo compression stockings on a regular basis.

Total points: 8 to 9

You need to do something for your veins because your legs are at risk. By doing the right things you can relieve your legs and avoid the development of a pronounced venous disorder. You can make life easier for your legs simply by getting more exercise, not wearing tight clothing and, if necessary, wearing Juzo medical compression stockings. It is essential that you speak to your physician before undertaking a long-haul flight or a long bus or car trip. You are at increased risk of developing a deep vein thrombosis while travelling. When a thrombosis is present, the affected leg often swells up and becomes painful. Not everyone experiences these symptoms, however, should you experience other symptoms such as shortness of breath after a long trip, please consult your physician.

Total points: 10 or more

You should take your symptoms seriously and do something about your venous health. Speak to your physician about your symptoms. He / She will know how you can protect your legs best. Sometimes preventative measures such as increased exercise, a healthy diet and / or wearing Juzo medical compression stockings are sufficient to ensure your symptoms do not worsen. By taking precautions now, you can ensure your legs will be able to carry you for miles tomorrow too! Take this questionnaire with you to your next medical consultation.

A self-test cannot replace a medical consultation or an examination of your veins. If you are experiencing venous health problems, please speak to your physician.

This venous health questionnaire was produced with the assistance of MDPhD Klaus Schrader. He is a specialist in General Medicine and Phlebology at the Vascular Center in Hof (Germany).

Venous disorders

Disorders of the leg veins arise as a result of a disturbance in blood flow and can manifest themselves in a variety of ways: from minor impairments right through to illnesses that can be life-threatening if not recognised.

Spider veins

When the smallest veins in the uppermost layer of the skin distend and take on the appearance of a fine network on the surface of the legs, we refer to these as spider veins. The word “spider” refers to the typical web-like appearance of these superficial venules. In themselves, spider veins on the thighs, calves or ankles are more of a cosmetic issue than an immediate cause for concern. They can, however, also be an indication of weakness of the connective tissue or of a serious venous disorder.

Varicose veins (varives)

Varicose veins usually run in the family. They are caused by an inherited weakness in the vein walls. If you suffer from varicose veins, it is possible to limit or delay their spread through effective treatment measures such as, for example, compression therapy. This condition cannot, unfortunately, be cured by medication, however these can be a valuable supplement to other therapeutic measures.

A varicose vein (varix) refers to a distended vein in which the venous valves have ceased to function properly. As a result, the blood can no longer be optimally transported back to the heart. The blood collects in the legs due to gravity, thereby leading to blood stagnation.

The pressure in the veins increases, which causes the vein walls to stretch and the veins to bulge out. The distended vein becomes tortuous and knotty. It may become visible on the surface of the skin and produce a tangible bulge.

Varicose veins should never be regarded as a purely cosmetic problem. If left untreated, they can cause severe leg complaints and disorders, for example inflammation of the veins or tissue damage. Early recognition can help to avoid such complications.

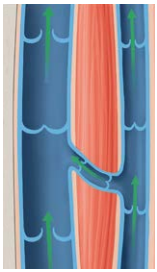

Fig. 1

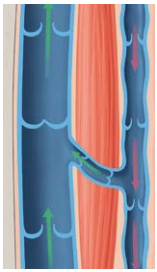

Fig. 2

Fig. 1 **Normal veins**
The venous valves prevent the blood from returning into the legs

Fig. 2 **Varicose veins**
Due to the distension of the vein, backflow of the blood through the venous valves cannot be prevented

Good to know

It is possible to distinguish between two types of varicose veins:

Primary varicosis: Approx. 80 % of all varicose vein disorders. It is caused by a hereditary weakness of the vein walls or an insufficiency of the venous valves.

Secondary varicosis: Usually develops after a deep vein thrombosis. It is the result of many years of strain on the superficial veins due to blood stagnation.

Thrombosis

Thromboses arise as a result of a clotting disorder of the blood. When the blood suddenly clots in the vascular system, a thrombus can form on the vessel wall. This kind of thrombus usually forms in the veins – in particular in the deep leg veins. These deposits constrict the vessels or can even block them completely. The blood can no longer flow optimally through the veins to the heart. This is then referred to as a deep vein thrombosis.

The symptoms can vary widely, and do not have to all occur together. That is why a deep venous thrombosis is not always easy to recognise. Look out for the following warning signs on your legs:

- swelling
- pain on exertion, in particular while walking, standing or sitting
- discoloration or glossiness of the skin (red or blue)
- feeling of tension
- a warm sensation on the affected limb
- sudden appearance of veins on the surface (e.g. a "warning vein" over the shin bone)

When a thrombus forms in the superficial veins, this is usually accompanied by inflammation. One possible symptom of a superficial vein thrombosis is hardening or reddening of the affected area. Tenderness may also arise.

If you suspect the presence of a thrombosis, you should consult a physician immediately! Often a thrombosis will initially not be accompanied by any symptoms at all, and therefore not be recognised in a timely manner. A pulmonary embolism could potentially form.

Pulmonary embilism

A common trigger for a pulmonary embolism is the dislodgement of a deep vein thrombosis. A blood clot breaks loose from the vein wall, either fully or parts of it, and then slowly moves through the bloodstream until it reaches a narrow blood vessel and becomes lodged there. A thrombus can be carried along through the heart and into the lung. The pulmonary arteries branch many times within the lung and become successively smaller in diameter.

As a result the clot gets stuck in one of the narrow arteries and the vessel becomes obstructed. The affected area of the lung can no longer be adequately supplied with blood. If only a small artery in the lung is involved, the person will often experience no symptoms or only minor ones. If the thrombus blocks off a large vessel, however, this can be life-threatening.

Some of the key symptoms of a life-threatening pulmonary embolism are:

- respiratory complaints
- sudden shortness of breath
- bloody discharge
- palpitations
- sudden loss of consciousness

Should you notice one or more of these symptoms, please see your physician immediately!

Ulcus cruris venosum (open leg)

The medical term Ulcus cruris is used to refer to a poorly or sometimes non-healing wound on the lower leg or foot. These very often arise as a result of a long-standing and untreated weakness of the veins.

The skin ulcerations, which are most commonly found above the medial malleolus, form due to constant and persistent congestion of the veins. This puts a continuous strain on the blood vessels which are subjected to strong pressure. The tissue in the affected area is then only poorly supplied with oxygen and, as a consequence, is unable to adequately transport away the waste products. In the end, this imbalance manifests itself on the skin and the underlying tissue. The skin becomes gradually thinner until finally an open, painful wound develops.

> There are a wide variety of methods for treating venous disorders. Your physician will select the most suitable treatment for your condition. You, too, can contribute to the health of your veins, however. To find out more, see page 29.

Treatment

It is important that you consult a physician whenever you notice any changes to your veins. They will offer you comprehensive advice and inform you about suitable treatment methods. We can only explain the most common treatment methods here; your physician will discuss other available procedures with you.

It is not possible to cure venous disorders using medications alone. Medicines can, however, be a useful supplement to these treatments.

Compression therapy

Compression therapy is an important building block and often the first choice in the treatment of venous disorders. While compression cannot reverse pre-existing spider veins or varicose veins, it can prevent these conditions from worsening. Consistent compression therapy is essential in the more advanced stages of these disorders.

Compression stockings exert an optimal pressure distribution that gradually decreases from bottom to top. This supports the return flow of blood, as the external pressure on the distended vessels reduces the diameter of the veins and improves the efficiency of the muscle-vein pump. This helps the valves in the veins to close better, thereby reducing blood stagnation in the legs, or even preventing it entirely if the venous valves are still intact. The blood flow to the heart is improved as a result.

Compression can also support the treatment of severe conditions. It can alleviate the symptoms of a thrombosis, and reduce the frequency and severity of chronic venous failure.

If your occupation requires you to stand or sit a lot, compression stockings can have a very beneficial effect on your legs as well as protect them against venous disorders. They provide noticeable relief to the legs.

Your physician will prescribe the right compression class for your needs, as there are different compression strengths (from light to strong compression) available depending on the severity of the symptoms and the particular application. When undergoing compression therapy, it is very important to wear the stockings consistently and to ensure they fit perfectly. Your medical products supplier will therefore measure up your legs to determine the appropriate size for you, or arrange for the manufacture of a made-to-measure stocking.

Appearance is also very important, of course. Modern compression stockings not only support your legs but also look fantastic and are comfortable to wear – both for women and men!

There are many options available, from calf-high stockings through to pantyhose. They are also available in a large selection of colours so that you can match them perfectly to your outfits.

> You will be prescribed compression therapy after vein treatment to support the healing process and to ensure better functioning of the veins.

Destruction of Varicose Veins (Sclerotherapy)

Sclerotherapy is recommended for gently removing spider veins or small varicose veins. This treatment method is considered to be very safe and has few side effects, but it usually requires several sessions.

A sclerosing agent is injected into the distended vein in a targeted manner. This irritates the vein wall and induces an artificial inflammation of the vein, which in turn causes the vein walls to stick together and seal shut. The body then eliminates the vein in a matter of weeks leaving no scar. As the predisposition to varicose veins still remains, it is necessary to repeat the sclerotherapy treatment every one to two years.

Stripping

Larger varicose veins are usually treated surgically. The most common method used is stripping.

Stripping involves tying off the vein in such a way that the blood can no longer flow from the deep vein to the superficial venous system and will stagnate there. The vein is then cut through below the varicose vein. The defective section is removed from the leg through an incision in the groin area with the aid of a vein hook. Healthy vein segments are normally retained in the leg.

Further varicose veins may form at a later time, but these are usually less severe than before the operation.

What you can do yourself

There are many things that you can do to positively support your veins and their health, and to prevent venous disorders. Most of these require minimal effort but can make quite a difference.

Did you know? Your body is designed to walk 30 km a day. How many kilometres do you actually do? No one expects you to walk a half marathon every day, of course. But even smaller walks can contribute to your health.

In addition to reducing or avoiding these risks, you should also take active measures as well:

Why not take the stairs instead of the lift every now and then, or the bicycle instead of the car.

Forms of exercise that improve your endurance, for example swimming, bike riding, walking or jogging are ideal for strengthening your muscle pumps. Your body will thank you for it!

Try to avoid folding your legs over one another because this can constrict the veins at the back of the knee, thereby restricting blood circulation. Instead, when seated cross your feet only.

A healthy diet is essential. Every excess kilogram puts further strain on your body, in particular your legs and veins. Make sure your dietary fibre intake is sufficient, and cut down on sugar and fat. You should ideally also avoid alcohol and nicotine consumption.

Modern vein therapy

Reliable care – versatile and trendsetting

Venous disorders are widespread in modern society. We do what we can to help alleviate discomfort and prevent conditions from worsening. Our compression stockings offer support for “heavy” legs, and allow patients to enjoy freedom in motion again.

Phlebology

Fine Art
The fine and stylish companions

World in Motion
The intense and reliable companions

Active Day
The versatile and sporty companions

Presented by:

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