

Clinic / Doctor's Practise: [Klinik / Praxis:]

Patient data: [Patientendaten:]



## Dear patient, dear parents,

during or after surgery, there might occur some loss of blood which has to be compensated by the administering of blood or blood components. In such cases mostly donor blood is used. In specific cases, there is the possibility of using autologous blood/blood plasma (your own blood), as well as the use of other blood-saving measures.

This information is meant to help prepare you for the talk with the doctor. During this talk the doctor will inform you about the advantages and disadvantages of the planned procedure in comparison with alternative methods as well as about the possible risks.

He will answer your questions to reduce your worries and fears. Finally, you may give your consent to the suggested procedure. After the talk you will be given a copy of the completed and signed form.

### VARIOUS KINDS OF BLOOD TRANSFUSION ARTEN DER BLUTTRANSFUSION

Blood consists of blood plasma and blood cells. There are red ones (erythrocytes) which are responsible for the oxygen transport within the body, white ones (leucocytes) and blood platelets (thrombocytes). The coagulation factors (clotting factors) are in the blood plasma.

Not every blood loss has to be balanced by a blood transfusion. Small loss of blood is easily balanced by your body. Increased loss of blood up to half of your blood volume can often be replaced by blood substitutes. Elderly people or people with heart or lung disorders, a lack of oxygen or some coagulation disorder may require a blood/blood components transfusion at an earlier stage. In such a case various possibilities are available: autologous blood/blood plasma donation, wound blood re-transfusion or transfusion of donor blood/blood components.

### AUTOLOGOUS BLOOD DONATION EIGENBLUTSPENDE

4 to 5 weeks prior to surgery, you will donate about 450 to 500 ml blood per session (1 to 3 session in weekly intervals). Your body is able to balance such a loss of blood within the time to the next session. It is advantageous to use your own blood/blood plasma rather than donor blood.

Your drawn blood can be stored up to 5 weeks. In some cases, an erythrocytes concentrate can be extracted during donation by means of a cell separator, which collects the red blood cells and return the plasma. A special type of autologous blood donation is the so-called normovolemic haemodilution. At this, autologous whole-blood will be drawn just before surgery and will be replaced by an infusion solution. During surgery, if required, your blood can be transferred back to you.

In case of specific disorders such as cardiovascular diseases (heart weakness, coronary heart disorder) or infections such as hepatitis B, C or HIV, an autologous blood donation is not possible.

### PLASMAPHORESIS (OWN BLOOD PLASMA COLLECTION) EIGENPLASMA GEWINNUNG (PLASMAPHERESE)

During the plasmaphoresis the blood is immediately separated into blood cells and blood plasma. In such a case, the blood cells will be directly given back into your blood and the extracted blood plasma will be frozen and stored.

The advantage of this procedure is that blood plasma reproduces quickly and blood plasma reserve can be stored up to two years without losing effectivity. In case of autologous blood donation all extracted blood products will be exclusively administered to you.

In case you don't need the extracted blood or plasma it still can't be administered to another person for legal reasons.

### WOUND BLOOD RE-TRANSFUSION WUNDBLUTRÜCKÜBERTRAGUNG

During surgery, the wound blood is collected in a sterile way, processed and the red blood cells will be given back to you (automatic autotransfusion).

The coagulation factors though will be completely removed during the processing, which could possibly lead to blood clotting problems. Since the blood is never extracted and re-transfused without any loss, additional autologous or donor blood transfusion might be requested.

### DONOR BLOOD TRANSFUSION FREMDBLUTTRANSFUSION

During donor blood transfusion certain donor blood particles will be transfused as needed. The donor blood comes from unrelated donors and is checked for possible contagious diseases in the laboratory. In addition, the blood group is defined, since blood transfusion is only possible if donor and recipient have the same blood group. Shortly before blood transfusion, a so-called compatibility testing (crossmatch testing) is done which immediately shows whether there is compatibility between donor and recipient. This is necessary, since during every transfusion antibodies can form, which in subsequent transfusion or in pregnancies might lead to allergic reactions.

Donor transfusion is done if there is no or not enough autologous blood available and if there is no other possibility of blood replacement available.

### ALTERNATIVES ALTERNATIVEN

In certain cases, the formation of red blood cells can be stimulated by giving some medicament prior to surgery. That way, blood transfusion can be avoided.

To make up for blood loss, some blood substitutes such as electrolyte solutions or plasma expander can be used. But these can't replace the oxygen transport function of the blood and affect the blood coagulation, which means, they can only be given in limited amounts.

### ADVICE FOR PREPARATION AND AFTERCARE

#### HINWEISE ZUR VORBEREITUNG UND NACHSORGE

Please respect the doctor and medical staff's advice. Unless otherwise specified, please note the following items:

#### Before autologous blood/plasma donation:

**Administration of medicines:** It is important to tell the Doctor which medicines, i.e. injections you have to take regularly (especially anti-clotting remedies, such as Aspirin® [ASS], Marcumar®, Heparin, Plavix®, Xarelto®, Pradaxa®, etc). Your doctor will inform you whether and for which period you should discontinue the medication.

An autologous blood donation is only feasible if there was no febrile intestinal infection within the last month prior to the donation. Also there should not have been any surgery, dental treatment, especially root canal treatment two weeks prior to the donation. No oozing sores and no infection such as a cough or a cold should have been the case the week before the donation, as well. Should one of these mentioned cases apply, inform your doctor and postpone your blood donation.

In most cases the doctor will prescribe to you an iron deficiency product to support blood formation. Please, take the pills as prescribed by your doctor. Do not take them with coffee, tea or milk, as this would negatively affect iron absorption. Should you get stomach pain, contact your doctor.

If possible, drink a copious amount of fluid the day before, but not alcohol. Have breakfast as usual, and take your medicaments as usual unless told differently.

During blood extraction there might be some impairment of wellbeing such as dizziness, nausea or circulation trouble. Contact your doctor immediately for him to take countermeasures.

#### After autologous blood/plasma donation

After blood donation, you should be met by an adult, since your fitness to drive will be impaired. Do not undertake any risk-bearing activities. In general, you should avoid physical exertion and circulation strain such as prolonged standing, copious meals, sunbathing, sauna, alcohol etc. 24 hours after donation.

Two to three days after the blood donation you are advised to drink one or two litres of mineral water, fruit juice or similar beverages and eat meal rich in proteins in order to facilitate blood formation.

Should there be severe dizziness, nausea, attacks of sweating, heart disorders, swelling or redness at the puncture site, contact your doctor or go to the hospital.

#### After a blood donor transfusion

Reactions to blood donor transfusion can appear immediately but also up to two weeks later. Contact your doctor or go to the hospital should there be high temperature, shivering attacks, heart disorders, breathing difficulties, swellings, rashes, itching,

dark dyeing urine, yellow discoloration of the skin or skin pallor.

### POSSIBLE RISKS, COMPLICATIONS AND SIDE EFFECTS

#### RISIKEN, MÖGLICHE KOMPLIKATIONEN UND NEBENWIRKUNGEN

It is well known that every **medical surgery bears risks**. If complications occur, they may require additional measures or treatment and in extreme cases they might be **life-threatening** or lead to permanent damages. Please understand that due to legal reasons we have to mention all risks specific to the surgery, although they relate only to exceptions. Your doctor will explain in more detail the risks which are specific to you during the talk. Nevertheless you can also reject detailed explanation. Should that be the case, skip the chapter on risks and confirm that at the end of the explanation.

#### General risks:

**Haematoma** around the area of the punctured vein can cause hard and painful swelling. These will ease off within days or weeks.

The puncture of the vein can cause **irritation/damaging of blood vessels** and/or **nerves** with possibly **permanent functional limitations**.

**Infections** around the area of the puncture through syringe abscess or necrosis are rare. Swelling, redness and overheating of the skin are signs of an inflammation. In most cases this can easily be treated with antibiotics. Extremely rare is the case of unnoticed contamination of the donated blood with germs. During storage, these germs can proliferate quickly so that there might be a **life-threatening sepsis** or inflammation of the endocardium after transfusion. An intensive medical treatment will then be required.

**Allergic reactions** such as redness of the skin, itching, wheal building, swelling, high temperature, shivering attacks and also nausea, low blood pressure, unrest and rapid heartbeat may occur after administering blood products. There might also occur an allergic reaction to the local anaesthetic of plasters. In most cases they ease off without treatment. Serious reactions, e.g. breathing difficulties, cramps, rapid heartbeat or **life-threatening circulatory collapse** are rare. In such cases, there might occur permanent damage to organs such as brain damage, paralysis or kidney failure requiring constant dialysis.

Due to quick administering of large amounts of blood there might occur an overload of the heart including accumulation of water, pulmonary oedema up to **total heart failure**. This would only be the case if there is an already existing weakness of the heart.

#### Specific risks of autologous blood/plasma donation:

During blood extraction some **circulatory disorder** may occur. In rare cases there may be a drop in blood pressure up to a circulatory collapse, possibly with heart rhythm disorder and a lack of oxygen in the organs or a heart attack.

Due to administered substances during the automatic separation of the blood you may feel some tingling in your fingers and face and some tiredness may occur.

#### Specific risks of wound blood re-transfusion:

Since during the automatic auto transfusion the coagulation factors are washed out, some **disorder of coagulation** may occur, if large amounts of wound blood are re-transfused.

#### Specific risks of donor blood/particles transfusion:

Although nowadays blood products are checked by doing elaborate tests, **transmittal/communication of a disease** cannot be ruled out completely. In rare cases there might be infection with e.g. hepatitis and even more seldom HIV, BSE or other dangerous – some unknown – germs. After the blood transfusion it may

be advisable to undergo a check-up after some weeks to totally exclude infection with HIV or hepatitis germs.

**Blood group incompatible transfusion** can be life-threatening. In case of extreme blood loss or in an emergency it may become necessary to transfuse blood or blood particles, which are not completely compatible with the recipient's blood group.

The transfusion of donor blood cells can cause a **formation of antibodies** in the recipient. In rare cases this may lead to high temperature, shivering attacks, itching, rashes, drop blood pressure and breathing difficulties. In very rare cases it may lead to a destruction of the red blood cells, followed by anaemia and yellow tinge of the skin up to **kidney failure**. Antibodies can also cause **dangerous disorder in the blood coagulation** followed by internal bleeding.

These **antibodies** could also lead to **serious complications** during your next **pregnancy** or if you receive **donor blood**. For this reason, especially if a blood type-incompatible transfusion has already taken place, an examination in a lab will be undertaken two to four months after in order to check whether any antibodies have formed.

If incompatible thrombocyte concentrate has been administered, an **Anti-D-prophylaxis** can also be undertaken in order to suppress the formation of antibodies.

With immunocompromised patients and with blood relations there might occur an **immune response** against the recipient – a so-called Graft-versus-host-reaction – during the transfusion of white blood cells. This can manifest itself in rashes, blistering, high temperature, diarrhoea and damaging of the liver.

In very rare cases antibodies in the donor plasma can cause a **lung oedema** (TRALI) with the risk of **acute lung failure**.

After a transfusion a deterioration in the kidney function may occur, also an increased risks of infection or heart attack have been observed. An increased **risk of** certain **tumours (lymphoma)** is suspected.

If transfusion containing red blood cells is necessary more often, then there might be **some deposit of iron** (due to the infused iron) which can cause **damage to organs** especially to the pancreas, liver and kidneys.

After a transfusion **thrombosis** might occur and lead to an **acute embolism** (vessel occlusion).

A transfusion of several blood bags can lead to a **disorder of coagulation** and thereby increase the risk of bleeding resp. after-bleeding.

If certain answers are preselected, please correct them if anything has changed.)

## Questions about Your Medical History

Please fill in the following questionnaire carefully before your information talk. **Please tick the applicable box!** It goes without saying that your information will be treated confidentially. The information you provide will help the physician to better assess the risks of treatment in your particular case, to advise you on the complications that could occur, and to take any steps needed to prevent complications and side effects.

**Have you had an infectious disease in the last four weeks** (e.g. cold, diarrhoea, fever, vomiting)?

yes  no

Hatten Sie in den letzten vier Wochen eine **Infektionskrankheit** (z. B. Erkältung, Durchfall, Fieber, Erbrechen)?

**Have you had dental or maxillary (jaw) treatment in the last week?**

yes  no

Hatten Sie in der letzten Woche eine **Zahn- oder Kieferbehandlung**?

**Do you have an emergency card or a blood-group card?**

yes  no

If so, please bring it with you.

Haben Sie einen **Notfallausweis** oder einen **Blutgruppen-Pass**? Wenn ja, bitte mitbringen.

**Has a transfusion of blood or blood components ever been necessary?**

yes  no

War jemals eine **Übertragung von Blut/Blutbestandteilen** notwendig?

If so, were there any complications?

yes  no

Wenn ja, kam es dabei zu Komplikationen?

**Are you pregnant?**  not certain nicht sicher

yes  no

Besteht eine Schwangerschaft?

**Have you ever been pregnant?**

yes  no

Waren Sie schon einmal schwanger?

If so, how many times?

Wenn ja wie oft?

**Have you ever had a miscarriage?**

yes  no

Hatten Sie schon einmal eine **Fehlgeburt**?

If so, how many?

Wenn ja wie oft?

**Have you ever had a transplant?**

yes  no

Wurde schon einmal eine **Transplantation** durchgeführt?

**Have you ever had antibodies against foreign blood groups?**

yes  no

Wurden Antikörper gegen fremde Blutgruppenmerkmale festgestellt?

**Do you regularly require blood thinning medications (anticoagulants) or have you taken any or have any been injected during the past 8 days?**

yes  no

Aspirin® (ASS),  Heparin,  Marcumar®,  Plavix®,  Ticlopidin,  Clopidogrel,  Pradaxa®.

Benötigen Sie regelmäßig blutgerinnungshemmende Mittel oder haben Sie in der letzten Zeit (bis vor 8 Tagen) welche eingenommen bzw. gespritzt?  Aspirin® (ASS),  Heparin,  Marcumar®,  Plavix®,  Ticlopidin,  Clopidogrel,  Pradaxa®.

Any other:

Sonstiges:

When did you take the last dose? \_\_\_\_\_  
Wann war die letzte Einnahme?

**Do you take any other medications?**  yes  no

Nehmen Sie andere Medikamente ein?

If so, which ones: \_\_\_\_\_  
Wenn ja, bitte auflisten:

(Please include non-prescription medications, herbal and other natural remedies, vitamins, etc.)  
(Auch rezeptfreie Medikamente, natürliche oder pflanzliche Heilmittel, Vitamine, etc.)

**Do you have or have you ever had any of the following diseases:**

Liegen oder lagen nachstehende Erkrankungen vor:

**Blood diseases / blood clotting disorders?**  yes  no

increased tendency to bleed (e.g. frequent nose-bleeds, increased bleeding after surgery, minor wounds or dental treatment, stronger or longer menstrual bleeding),  tendency to bruise (frequent bruising possibly for no particular reason).

**Bluterkrankung/Bluterkrankung?**  Erhöhte Blutungsneigung (z.B. häufiges Nasenbluten, verstärkte Nachblutung nach Operationen, bei kleinen Verletzungen oder Zahnarztbehandlung, verstärkte oder verlängerte Regelblutung),  Neigung zu Blutergüssen (häufig blaue Flecken auch ohne besonderen Anlass).

**Do you have a congenital or acquired immune defect?**  yes  no

Leiden Sie an einer angeborenen oder erworbenen Immunschwäche?

**Allergies / Oversensitivity?**  yes  no

Medications,  foods,  contrast media,  iodine,  sticking plaster,  latex (e.g. rubber gloves, balloons)  pollen (grass, trees),  anaesthetics,  metals (itching caused by metal spectacles frames, jewellery, jeans buttons).

**Allergie/Überempfindlichkeit?**  Medikamente,  Lebensmittel,  Kontrastmittel,  Jod,  Pflaster,  Latex (z.B. Gummihandschuhe, Luftballon),  Pollen (Gräser, Bäume),  Betäubungsmittel,  Metalle (z. B. Juckreiz durch Metallbrillengestell, Modeschmuck oder Hosennieten).

Any other: \_\_\_\_\_  
Sonstiges:

**Heart, circulatory or blood vessel diseases?**  yes  no

Heart attack,  chest pain and/or tightness (angina pectoris),  heart defect,  irregular heart rhythm,  inflammation of heart muscle,  heart valve disease,  shortness of breath while climbing stairs,  heart surgery (possibly with insertion of an artificial heart valve, pacemaker, defibrillator),  high blood pressure,  low blood pressure,  stroke,  thrombosis,  embolism.

**Herz-/Kreislauf-/Gefäß-Erkrankungen?**  Herzinfarkt,  Angina pectoris (Schmerzen im Brustkorb, Brustenge),  Herzfehler,  Herzrhythmusstörungen,  Herzmuskulenzündung,  Herzklappenerkrankung,  Luftnot beim Treppensteigen,  Herzoperation (ggf. mit Einsatz einer künstlichen Herzklappe, Herzschrittmacher, Defibrillator),  hoher Blutdruck,  niedriger Blutdruck,  Schlaganfall,  Thrombose,  Embolie.

Any other: \_\_\_\_\_  
Sonstiges:

**Diseases of the respiratory tract (breathing passages) or lungs?**  yes  no

Asthma,  chronic bronchitis,  emphysema.

**Erkrankung der Atemwege/Lungen?**  Asthma,  chronische Bronchitis,  Lungenemphysem.

Any other: \_\_\_\_\_  
Sonstiges:

**Metabolic diseases?**  yes  no

Diabetes (sugar sickness),  gout.

**Stoffwechsel-Erkrankungen?**  Diabetes (Zuckerkrankheit),  Gicht.

Any other: \_\_\_\_\_  
Sonstiges:

**Thyroid diseases?**  yes  no

Underactive thyroid,  overactive thyroid,  swellings,  thyroid swelling (goitre).

**Schilddrüsenerkrankungen?**  Unterfunktion,  Überfunktion,  Knoten,  Kropf.

Any other: \_\_\_\_\_  
Sonstiges:

**Kidney diseases?**  yes  no

Kidney insufficiency,  kidney inflammation.

**Nierenerkrankungen?**  Nierenfunktionsstörung (Niereninsuffizienz),  Nierentzündung.

Any other: \_\_\_\_\_  
Sonstiges:

**Contagious diseases?**  yes  no

Hepatitis,  tuberculosis,  HIV.

**Infektionskrankheiten?**  Hepatitis,  Tuberkulose,  HIV.

Any other: \_\_\_\_\_  
Sonstiges:

**Do you have a malignant tumour (cancer)?**  yes  no

Leiden Sie an einer Tumorerkrankung (Krebs)?

**Have you ever been diagnosed with a tumour?**  yes  no

Wurde schon einmal eine Tumorerkrankung diagnostiziert?

**Any other acute or chronic diseases / illnesses?**  yes  no

**Nicht aufgeführte akute oder chronische Erkrankungen?**

Please describe:

Bitte kurz beschreiben:

**Do you smoke?**  yes  no

If so, what and how much daily: \_\_\_\_\_  
Rauchen Sie? Wenn ja, was und wie viel täglich:

**Do you drink alcohol regularly?**  yes  no

If so, what and how much: \_\_\_\_\_  
Trinken Sie regelmäßig Alkohol? Wenn ja, was und wie viel:

**Do you take or have you ever taken drugs?**  yes  no

If so, which ones: \_\_\_\_\_  
Nehmen oder nahmen Sie früher Drogen? Wenn ja, welche:

