

Information regarding Dialysis treatment at Dialyse-Ambulatorium, Remisenweg 1, 5020 Salzburg

Dialyse-Ambulatorium will conduct your dialysis treatments pending further notice. Beforehand your diagnosis, the indication for dialysis and possibly dialysis itself were done in other medical facilities. We therefore assume that you have been informed about your disease and dialysis in an adequate manner. Nonetheless we summarized the most important points about the topic for you.

How are dialysis treatments done?

At Dialyse-Ambulatorium the standard treatment is hemodialysis. During the treatment, blood is pumped out of the body's blood circulation continuously via a tube system through a dialysis filter for a defined time frame, cleaned in the filter as well as extracted surplus water and subsequently brought back to the body. The blood drawing and the blood recirculation is either done using a dialysis shunt or, if a shunt is not possible, using a dialysis catheter.

A dialysis shunt is a connection of an artery with a vein, which is placed under the skin and placed operatively. This shunt will be tapped using two needles prior to each treatment. Through the one needle the blood flows through the tube system in the dialysis filter, through the second needle the cleaned blood flows back to the body.

A dialysis catheter is a plastic tube which is introduced to a suitable blood vessel in the body and remains there during its proper functioning. The drawing as well as the recirculation of the blood for the treatment is done using this catheter.

During the dialysis, a part of the blood is always flowing outside of the body in a closed, but exogenous system. To prevent the blood from clotting, a treatment with a drug called Heparin or similar substances needs to be conducted.

The process of dialysis is supervised by especially trained dialysis staff and technical systems of the dialysis machine permanently.

When is dialysis treatment necessary?

A dialysis treatment gets necessary when the kidneys are not capable of detoxing the body and/or discharge sufficient water by themselves. The causes for renal failure can be manifold.

Typical consequences of renal failure can be:

- Nausea, vomiting, fatigue due to uremia
- Respiratory distress and swelling due to wateriness
- Severe lapse of composition of the blood

Dialysis is a very effective treatment for many consequences of renal failure. It can lead to significant stabilization of one's health condition and makes an active life possible.

Which complications and side effects can occur?

Dialysis is a treatment which has been proved over decades and shows a high level of security. Despite all caution unwanted side effects and medical complication may occur. Many of these unwanted incidents are not medical malpractice but a consequence of the medical condition.

Variation of blood pressure: Due to the correction of fluid balance the blood pressure can drop. Dizziness, sweating, cramps, nausea and vomiting up to unconsciousness up to circulatory shock can be consequences. **In very rare cases** heart attack, stroke or organ damage can happen. The risk for dropping blood pressure increases with the extent of fluid input between dialyses. Also, a raise in blood pressure can occur, which can lead to headaches and **in very rare cases** to impaired vision or seizures.

Muscle spasms: Similar to variation in blood pressure, muscle spasms **occasionally** occur due to the necessary correction of the fluid balance and are controllable with the right countermeasures.

Cardiac arrhythmia: In the course of water withdrawal and electrolyte displacement during dialysis as well as the changed situation of blood circulation cardiac arrhythmia can occur, which most of the time does not trigger symptoms. **In rare cases** treatment is necessary, **in very rare cases** electric defibrillation.

Disequilibrium syndrome: Particularly with distinctive uremia it can come to an unproportional quick withdrawal of "toxic substances" from the body during the first dialysis treatments, which can cause nausea, headaches/chest pain, confusion and/or seizures. This can be avoided by adapting the dialysis strategy.

Increased bleeding tendency: During dialysis, blood thinning must be done, whereby the disposition for bruises during and after dialysis especially at the punctation sites is increased. **In very rare cases** bleeding in inner organs can happen. **At the extreme** a bleeding complication can require blood transfusion or surgery. Blood loss can also occur due to coagulation or leaking dialysis sets.

Infections: For conducting dialysis treatments very high hygiene standards need to be kept. Despite that, bacterial and viral infection can occur. At Dialyse-Ambulatorium no patients with attested viral infections like Hepatitis or HIV are treated.

Hypersensitivity reaction: Due to the contact of the blood with the dialysis set or through meds skin reactions can appear. Severe allergic reactions up to anaphylactic shock are **very rare**. A special case is the administering of iron for treatment of anemia within the frame of dialysis treatment. Along this it can come to hypersensitivity reaction including heat sensation, shortness of breath, and tightness of the chest up to a life threatening condition. Since only very low doses are used during dialysis, the risk of an incident is **very low**.

Embolisms: Due to the high safety of devices embolisms through air or blood clots are **extremely rare**. Stroke, cardiac and respiratory arrest can follow.

Decreased blood flow: With the redistribution of the blood the oxygen supply of prior defected organs can decrease and lead to symptoms like angina pectoris.

Things needing special attention

Fluid input between dialyses: The urine output decreases due to renal disease. Therefore fluids remain in the body almost entirely. This stresses the circulation, especially the heart and increases blood pressure. With obvious hyperhydration it can come to wateriness in tissue up to life threatening respiratory distress. For that reason the fluid input between dialysis treatments needs to be controlled. The tolerances differ individually and are well-aligned to your condition. Great attention must be paid to salt intake, since common salt can increase thirst sensation. Be careful with convenience food, they can contain great amount of salt (unnoticed)!

Potassium intake: The excretion of potassium through the kidneys is not working anymore. If the potassium intake through food is not decreased, it comes to a raise of potassium in the blood, which can be a great danger for the functionality of the muscles, especially the heart muscle. A high level of potassium can lead to cardiac arrest and death. Therefore it is important to keep the potassium intake through food to a minimum (stick to diet guidelines).

Intake of phosphor: As the excretion of potassium, the excretion of phosphor through the kidneys comes to a halt. If untreated, the phosphor level in the blood rises which can lead to a significant malfunction of the bone metabolism as well as to arterial malfunction. Therefore it is especially important to keep the input of phosphor via the bowel to a minimum, which can be accomplished with a special diet and the administration of phosphor binders. The most important blood values for bone metabolism will be monitored on a regular basis and discussed with you.

Increased bleeding tendency: Due to the thinning of the blood during dialysis there is an increased bleeding tendency beyond actual dialysis, which usually is harmless. However, no medical procedure that could lead to bleeding should be performed on day of dialysis. With unintended injuries it could come to increased bleeding.

Medication: Medicinal therapies must be adjusted to the dialysis situation by treating physicians. Therefore it is important that you declare all meds you are taking.

Problems with stunts and catheters: If you notice changes in the area of your shunt between dialysis treatments, like swelling or redness or missing buzzing or changes in the catheter area you should contact your primary care physician or the Dialyse-Ambulatorium.

For women in child-bearing age: Even when in chronic dialysis treatment pregnancy can occur. With a pregnancy, dialysis treatments must be increased to approximately 20 hours per week. However, the risk of miscarriage is rather high. Therefore, possibilities of contraception should be checked on individual basis with gynecological counseling.

Impairment after dialysis: Dialysis treatment can individually lead to very different impairment after dialysis. Therefore, everyday activities like performance in traffic, specific work or important decision-making may only be performed to a limited extent.

I have read this information carefully and had the chance to ask and discuss further questions.

With my signature I agree to the treatment at Dialyse-Ambulatorium, as well as the in-house
electronical storage and processing of data.

Name in capital letters

Date

Signature

Physician obtaining informed consent