



**HUMAN MED®**

**The gentle force of water  
for lipoedema treatment.**



**SAFE**

Procedural risks  
are minimised.

**FAST**

Reduced waiting time before  
and during the procedure.

**GENTLE**

The surrounding healthy  
tissue is hardly harmed.

**LOW PAIN**

The procedure is  
minimally invasive.

An information leaflet from  
Human Med AG for lipoedema  
patients about water jet-assisted  
liposuction (WAL).

## Legal Information

### Human Med AG

Wilhelm-Hennemann-Str. 9  
19061 Schwerin  
Germany

Tel.: +49 (0)385 395 70 0  
Fax: +49 (0)385 395 70 29  
info@humanmed.com

For questions about the WAL-Treatment,  
please contact [lipoedem@humanmed.com](mailto:lipoedem@humanmed.com)

We will be glad to help you in any way we can!

### References

- All you need to know about lipoedema, authorised imprint from HUMAN MED® AG from Lymph & Gesundheit (2015)
- Dr med. Josef J. Stutz, Examination of 100 lipoedema-treatments from his own specialist practice
- Dr med. Daniel Münch, Waterjet-assisted liposuction for treatment of lipoedema, Journal für Ästhetische Chirurgie (2017)
- Dr med. T. Witte, Dr med. F.-C. Heck, Circulatory reactions after water-jet assisted liposuction for lipoedema – evaluation of 1000 operations, presentation at Lymphologie Bad Soden (2017)
- Antonio Araco M.D. et al. Comparison of Power Water-Assisted and Traditional Liposuction: A prospective Randomized Trial of Postoperative Pain. Aesth Plast Surg; 31:259–265 (2007)

### Images

- Pages 4, 9, 10, 11: HUMAN MED®
- Pages 6, 7, title: Adobe Stock
- Page 8: Bauerfeind
- Page 11: With kind permission of Ms Eulenberger and Ms Blom

### Legal disclaimer

This leaflet focuses on a surgical method that is available on the market: the water-assisted liposuction procedure (WAL method) from Human Med AG. The material presented here is solely for the purposes of information. The material does not claim to be complete nor to provide a balanced presentation of the information. The text does not in any way substitute for specialist advice by a doctor or pharmacist and it must not be used as the basis for self-diagnosis or to start, modify or end treatment of a medical condition. Always consult a doctor you trust about any health issues or symptoms.

## ● Inhalt

Foreword	4
Disease Lipoedema	5
Diagnosis	5
Symptoms	6
Lipoedema Stages	6
Accompaniments	7
Therapy	8
Conservative Therapy	8
Surgical Therapy	9
Water jet-assisted liposuction (WAL)	9
Benefits	11
Study Results	12
Case Reports	14

# Foreword

DEAR PATIENT,

You have been experiencing the severe symptoms associated with lipoedema, in some cases for many years. Many of you have had to wait over 10 years for the right diagnosis before you were finally able to start treatment.

Along with conservative therapy, suction of the diseased tissue now enables you to take an important step towards achieving a significant and largely sustained improvement in your quality of life.

With our patented water jet-assisted liposuction (WAL) technology we, Human Med AG, have become an established name in the area of liposuction – quality that has been ‘Made in Germany’ for more than 20 years. Over the course of these years, many patients have been successfully treated with the WAL method – using the gentle force of water.

This brochure provides you with easy-to-comprehend information about how WAL works, enabling you to better understand liposuction. We would also like to help you find the right contact for your questions and exploit the full potential of social networking at this regard.

Ultimately, the decision about what treatment method is the best for you depends on the level of trust you place in your treating doctor as well as the level of information related to the benefits of the various liposuction procedures and technologies available on the market.



**Bernd Lindner**  
CEO of Human Med AG

## ● Clinical picture of lipoedema

Lipoedema is a pathological fat distribution disorder of yet unknown cause. It symmetrically affects the legs and in one-third of cases also the arms of women. Feet and hands are not affected. Buttocks and legs appear out of proportion to the upper body. The hip-circumference is at least 1.4 times larger than the waist-circumference. This is a protracted and chronic process over the course of which patients can experience a serious aggravation.

The disease only affects women, often during phases of life associated with hormonal changes such as puberty, but also after pregnancy or during perimenopause. Genetic factors are also suspected to be triggers.

In general, lipoedema has a soft consistency (except in stage III). Pressure with the thumb does not leave any dimples or indentation. Lipoedema does not respond to dieting and the quantity of the pathological fatty-tissue cannot be reduced by exercise or a specific diet.

Particularly important is that there is no conservative causal treatment for lipoedema, but liposuction can achieve long-lasting results with huge gains in quality of life.

## DIAGNOSE

A diagnosis of lipoedema is made by

- **Anamnesis**  
(medical history)
- **Inspection**  
(visual inspection)
- **Palpation**  
(touching)

## SYMPTOMS

- For no apparent reason, pain in the form of a vague feeling of swelling with pain on contact or pressure develops in the leg regions. Fluid retention over the course of the day can make this worse.
- The intensity of the pain does not depend on the quantity of fatty tissue but rather on the fluid retention. This means that even 'thin' lipoedema can cause severe pain.
- There is a pronounced tendency to develop haematomas, another name for bruising or contusions.



*Lipoedema often cannot be differentiated in the initial stage from normal cellulite*

## ●● Lipoedema stages

Depending on the manifestation, lipoedema can be differentiated into 3 stages:

### STAGE I:

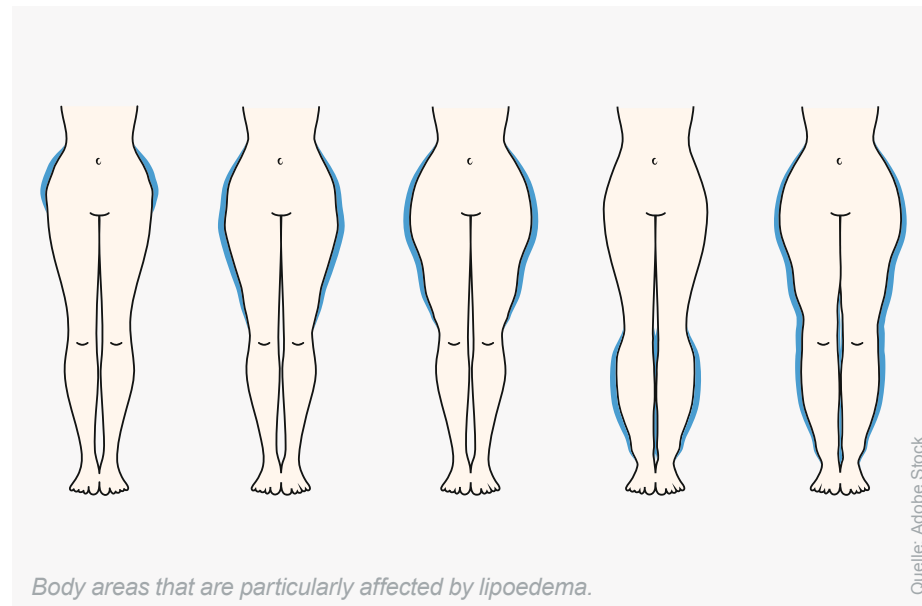
Visible tendency to develop legs with a 'saddlebag-like' shape; the skin is smooth and even. The subcutaneous tissue feels thickened and softened and in some cases feels like polystyrene foam balls.

### STAGE II:

Pronounced 'saddlebag-like' shape of the legs. Indentations on the skin surface with walnut-to-apple-sized nodules. The subcutaneous tissue is thickened.

### STAGE III:

Large deformed lobules of fatty-tissue on the insides of the thighs and knee joints, in some cases bulges of fatty tissue that hang over the ankles, knock-kneed posture with permanent misalignment of the joints. The subcutaneous tissue is severely thickened and hardened.



## ●● Attendant symptoms

There is a wide range of attendant symptoms, particularly the psychological stress due to misdiagnoses, the lack of acceptance in society, failed diets, eating disorders, fatigue, significant restrictions in mobility and more. All of these reasons make lipoedema an endurance test.

Just as serious are the secondary orthopaedic disorders: The knock-kneed posture mentioned above leads to incorrect loading of the joints. This in turn can lead to osteoarthritis.

The enlarged buttocks and unnatural curvature of the spine often develop back pain. This means that affected patients are often incapable of working. The chafing of the skin on the insides of the legs is another painful complication of lipoedema.

This is accompanied by regular, often long-term use of pain medication that has just as many negative side effects.

## ● The Therapy

### THE TRADITIONAL THERAPY

An improvement in the pain symptoms and a reduction in the water retention can, in many cases, be achieved by complex decongestive therapy (CDT). This therapy includes manual lymphatic drainage (MLD), compression and movement therapy and skin care.

The decongestive phase with daily MLD can, depending on the severity, last 3-4 weeks and is usually carried out in a specialist lymphology clinic.

It is used primarily to relieve pain. An important part of conservative therapy is compression using flat-knit compression stockings.

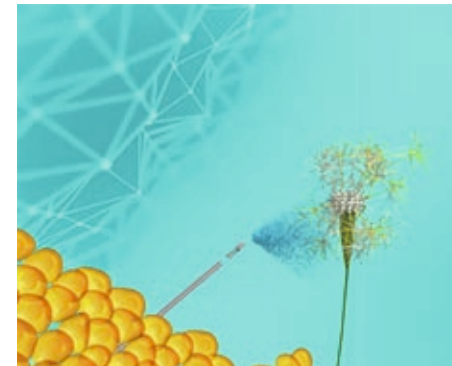
CDT can lead to a reduction in water retention and also alleviate the pain. However, this treatment must be performed for the rest of the person's life, otherwise the lipoedema can reappear.



Source: With the kind permission of Bauerfeind

### THE SURGICAL THERAPY

The pathological fatty tissue associated with lipoedema can be permanently removed with surgery. This is done using liposuction, the removal of fat using suction. Liposuction has become one of the most commonly performed cosmetic procedures around the world and has also proven successful particularly for lipoedema patients. There are a number of different procedures used. The focus in this leaflet is the surgical procedure using gentle and effective waterjet-assisted liposuction technology.



### WATER JET-ASSISTED LIPOSUCTION (WAL)

With conventional liposuction procedures, the subcutaneous fatty-tissue is filled with a large volume of tumescent solution as preparation for surgery. This leads to the body's contours becoming indistinct because the body is 'pumped up'. The process is different for water jet-assisted liposuction: Before the procedure only a small amount of local anaesthetic is injected into the body. Pre-infiltration with tumescent solution and the associated waiting time is not needed with the WAL procedure.

The gentle and selective force of the water jet during liposuction: unlike conventional liposuction procedures with water jet-assisted liposuction, the fatty-tissue is detached and suctioned up at the same time. It works with a fan-shaped, fine waterjet with minimal force applied and few side effects. This is a particularly gentle and low-pain procedure.

Bruising and damage to the sensitive nerves that lie directly beneath the skin are comparatively rare with the use of the waterjet. Like tree roots that have been flushed free, the tissue strands under the skin that are important for tightening the skin are also left largely intact.

Because irrigation and suctioning the fat cells out is done at the same time, the treating doctor has direct control over the shape of the body and the volume of fluid that is applied and removed again throughout the entire procedure. This means that, unlike conventional tumescence procedures, the negative effect of irrigation fluid that remains in the patient's body is considerably reduced.

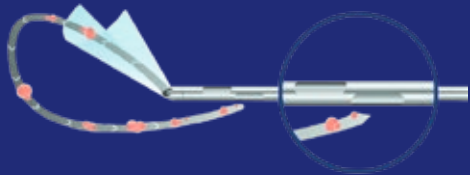
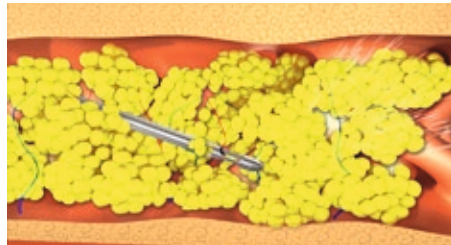
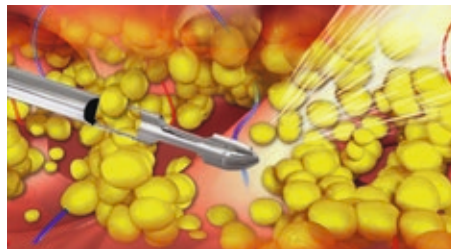


Fig.: The principle of WAL: at the front end of the cannula a fan shaped waterjet is emitted that detaches the fatty tissue, which is then directly suctioned up through the suction openings behind the water jet opening.



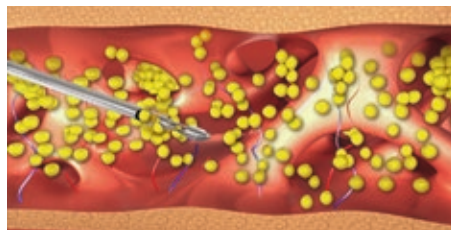
### STEP 1

Infiltration with the help of the water-jet is carried out with no waiting time.



### STEP 2

Immediately after infiltration, the characteristic irrigation/suction procedure of WAL starts.



### STEP 3

The result: a significant reduction in the number of fat cells.

## ● The Benefits

### OF THE WAL PROCEDURE AT A GLANCE

- Thanks to the gentle procedure the surrounding healthy tissue gets hardly damaged.
- Because of less blood loss, fewer hematomas and swelling the result is less pain after surgery.
- General anesthesia is not absolutely necessary. Less local anaesthetic is required since it can be dosed more precisely.

**The end result: a more gentle surgery procedure and shorter convalescence time for the patients.**

- Treatment can be carried out with greater safety and minimized risks, since pre-infiltration with tumescence can be entirely omitted.
- Due to the elimination of the tumescence pre-infiltration, the procedure is performed with almost unchanged body contours. This leads to a reduced need for post corrections.
- As there is no waiting time between the tumescence pre-infiltration and the start of the procedure, the duration of surgery is reduced.
- Simultaneous irrigation and suction will further reduce the duration of surgery and enable an easier cannula guidance.

**The end result: an effective treatment procedure for satisfied patients.**

More information about the WAL procedure and the technology used at [www.humanmed.com](http://www.humanmed.com) or YouTube: <https://youtu.be/ERSnNEXsj08>



Getting hands on with WAL at a patient event

## ●● Study results

IN AN ASSESSMENT OF THE WAL PROCEDURE IN 1.000 PATIENTS (FROM 2012 TO 2018) THAT LOOKED AT POSTOPERATIVE CIRCULATORY REACTIONS, DR. WITTE AND DR. HECK FROM MÜHLHEIM AN DER RUHR FOUND FOLLOWING RESULTS:

- When suctioning volumes between 800 and 13,500 ml per session, on average slight to moderate circulatory reactions were observed.

This result is significant, particularly regarding the limit of 4000 ml that was often promoted in the past for high-volume liposuction. In the hospital these operations are carried out as per day-cause surgery with an overnight stay and can be considered safe on the basis of the study results. More than 90 % of the patients would have the surgery again in the same constellation.

Another study by **Dr. Münch** investigated the **safety and efficacy of the WAL procedure in the treatment of lipoedema**. A total of 141 patients were treated with the WAL method. The results:

In all cases a significant reduction in the fatty layer and an improvement in the proportions were achieved.

- In the follow-up a clear improvement was identified for all symptom parameters examined (like pain, feeling of tension and restrictions in mobility while walking), that is from 6.1 to 3.1 on a 10-point scale.
- In more than one-third of the patients traditional therapies were no longer necessary, could be reduced or were not considered effective.

The analysis by **Dr. Araco** comparing the WAL method with conventional liposuction (not limited to lipoedema) revealed clear benefits regarding the **absence of pain**.

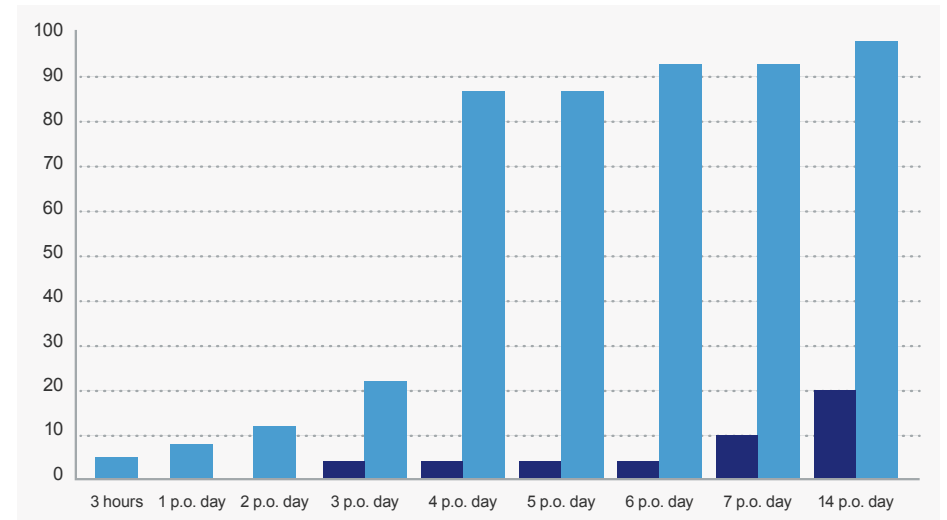


Fig.: Less pain and bruising than a conventional liposuction procedure: the image shows the percentage of pain-free patients, starting from 3 hours to 14 days after surgery

### A STUDY BY DR. STUTZ WITH 100 PATIENTS IN HIS LIPOEDEMA CLINIC YIELDED THE FOLLOWING RESULTS:

#### • Eating disorders:

74 % of patients had chronic eating disorders and 16 % even had anorexia nervosa.

#### • Physical pain:

On a scale from 0 (no pain) to 10 (intolerable pain), 80 % of patients reported a pain intensity of 5 and more and for 11 % (one in 9 patients) the pain was even described as intolerable.

#### • Psychological pain:

A total of 40 % of the women examined described the intensity of the psychological pain as being between 9 and 10 (on a scale from 0 to 10).

## ●● Case reports

### FIRST CASE REPORT

Since puberty I have suffered from a mismatch in my proportions, I wore size 36 tops and size 44 pants. Intense exercise and numerous diets did not make any difference, instead making the top and bottom of my body look even more out of proportion, and I also experienced pain with any pressure. In 2017 I learnt about the disease in a newspaper article, read up on the subject and made an appointment with specialists such as a vascular surgeon, a lymphologist and a dermatologist. I was finally diagnosed as having 'just' stage 1 lipoedema in my legs and already starting on the arms. The fear that the disease would progress and I would be powerless to do anything meant that I quickly decided to have liposuction, especially as conservative therapy using flat-knit compression stockings and regular manual lymphatic drainage did not give me any relief from the symptoms. I was lucky that my health insurance company – after a bit of to-ing and fro-ing, a personal expert opinion by the medical service of the health insurance company and evidence that I couldn't exercise more or eat any more healthily – finally bore the costs for the four planned liposuction procedures.

Together with my preferred doctor not far from me, we prepared a 'battle plan': Every three months the procedures were to be carried out on my arms and legs under general anaesthesia using waterjet-assisted liposuction. I coped astonishingly well with the operations and was able to 'waddle' about the corridors again the next day and work again after a week. Within a year and a half, I not only lost about 25 litres of fat but all my symptoms disappeared. My body finally fits me, I can play any type of sport and I don't have to use compression treatment and lymphatic drainage. Since starting the procedures I have lost a further ten kilos, developed muscles and have finally reached my goal – feeling happy inside my own body.

(N. Feldle, 29 years old)



Photo with kind permission of Ms N. Feldle

### SECOND CASE REPORT

When I was 13 years old, my torso started to develop differently to the rest of my body. My hips and legs became very fat! This became even more pronounced due to pregnancy and became extreme during menopause. Countless diets and visits to doctors achieved nothing. By changing my diet in 2012 I lost 30 kg. It was only in 2014 when I was finally diagnosed with lipoedema, something I had never even heard of. On the same day I applied for reimbursement of the costs by my health insurance provider. After one and half years of unsuccessful campaigning, I went before the courts and won! My health insurance provider had to pay for all the operations I needed. It proved to be extremely difficult to find a good doctor who really could perform this surgery. A lot of time was spent comparing the expertise of the doctors who offered this surgery. I still weighed 130 kg when I had the first operation and even as a lay person it was clear that this weight was the biggest risk I faced. I often heard in the early stages that I had to lose 30 kg first, otherwise the surgery couldn't be performed. Then I found a doctor who did not ask me to lose even more weight, and the anaesthetist also did not require this of me. What a blessing after five decades to have a doctor that did not put any pressure on me, who knew that this diseased fat could not be lost by diets or exercise but only by surgery. I then had surgery using the WAL method. As the doctor explained to me, it is a gentle surgical method that is manageable and appropriate for patients, particularly given the very clear findings. In 5 operations a total of 28.6 litres of diseased fat and more than 2 kg of tissue was removed from my legs. Since the first operation I have been free of pain and since the second operation I can walk without sticks, which I needed for 7 years. For many years, my life played out within the four walls of my home. Since the operations everything has completely changed! I am out the whole day and only rarely will you find me at home. At 67 years of age I have, in the truest sense, been given a new lease on life! In November 2017 I founded LilyPut, a self-help group in Northern Swabia for those affected by lipoedema and lymphoedema. We are a very active group and see our goal as supporting one another with information that makes our daily lives with this disease more tolerable. In summary, I can say that the decision to have the operations was the best decision I have ever made because with the freedom from the pain I got my quality of life and pleasure in life back! I am very happy and very grateful!

(M. Biesenbach, 67 years)





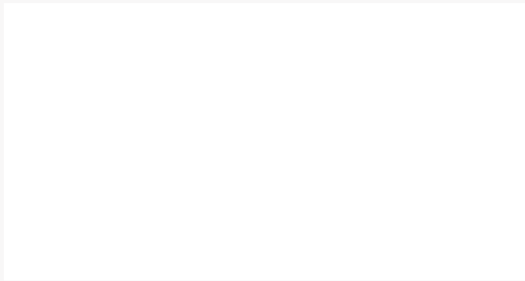
# HUMAN MED®

## ● The leader in water-jet technology

As an innovator in water jet technology, Human Med AG is the leader and the world's largest manufacturer of WAL-based medical devices for aesthetics. Based on many years of success in the areas of general surgery, urology and neurosurgery, in 2004 Human Med AG applied itself to aesthetics and regenerative medicine.

For your questions about the WAL procedure,  
please contact [lipoedem@humanmed.com](mailto:lipoedem@humanmed.com)

Your doctor is pleased to be at your disposal for further discussion



### **Human Med AG**

Wilhelm-Hennemann-Str. 9  
19061 Schwerin  
Germany

Tel.: +49 (0)385 395 70 0  
Fax: +49 (0)385 395 70 29  
[info@humanmed.com](mailto:info@humanmed.com)  
[www.humanmed.com](http://www.humanmed.com)

