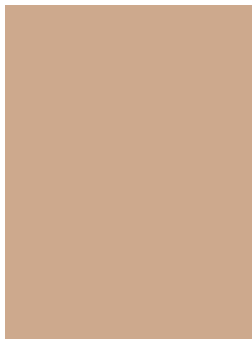


# Ganz (PAO)



Operation for hip dysplasia  
Patient Information



PRIVATHOSPITALET  
MØLHOLM A/S

# Welcome to the private hospital Mølholm

This brochure informs you of the pre- and post-operative procedures of your hip dysplasia correction. It should answer most of your questions regarding admission, the operation itself and your recovery and rehabilitation.

In our experience, patients are spared many worries and surprises when they know in advance what to expect. Please read this brochure carefully. We are happy to answer any further questions you might have.



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# The Disease

Hip dysplasia is a disease which either exists from birth or develops in the first few years of life most commonly in women. Hip dysplasia can be genetic but can also develop as a consequence of other disease in the hip joint, such as congenital hip dysplasia or Legg-Calvé-Perthes syndrome. Hip dysplasia is bilateral (affecting both hips) in approximately 50% of patients.

In most cases, the disease is diagnosed between the ages of 15 and 30, but symptoms can also appear earlier or later in life.

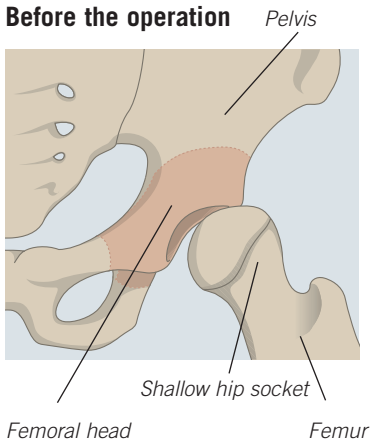
In patients with hip dysplasia, the hip socket is underdeveloped and therefore does not cover the femoral head cor-

rectly. As a consequence most people with hip dysplasia will develop osteoarthritis in the joint over time. Some people have, in addition to an underdeveloped socket, an abnormal angle and rotation of the femoral neck. This means that in rare cases it may be necessary to operate on the femur at the same time.

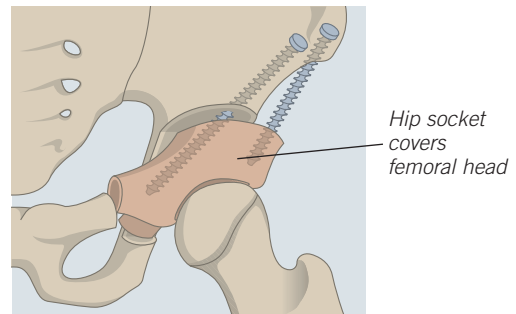
## Symptoms

Early symptoms of hip dysplasia are tiredness/fatigue around the hip area and inability to walk long distances. At the beginning symptoms will only occur occasionally. Later, patients will have pain in the groin and tend to develop a limp.

**Before the operation**



**After the operation**



# Operation for Hip Dysplasia

The purpose of an operation for hip dysplasia (Ganz/PAO procedure) is to reduce your pain and to increase your level of activity. The purpose of the operation is also to prevent or delay the development of osteoarthritis in the hip and therefore postpone the need for a hip replacement.

## **New technique – minimally invasive surgery for hip dysplasia**

The Ganz procedure has previously been considered to be a major operation in which many tendons and muscles had to be cut. However, Kjeld Søballe, Professor and consultant in hip surgery, has developed a new technique for the Ganz procedure, which is performed through a small 7 cm incision in the skin – without cutting tendons and muscles (minimally invasive surgery). This minimal invasive technique has many advantages, for instance shorter operating time (approx. 1 hour) and less loss of blood. We also find that patients heal much faster with the new operation technique since tendons and muscles are not cut, which also means faster rehabilitation, allowing you to return quickly to your normal daily life.

At the privat hospital Mølholm all Ganz procedures are performed using a new form of pain management which gives patients less pain, less nausea and



*7 cm scar 3 months after the operation.*

vomiting, less morphine consumption and a shorter hospital stay.

This means that you will be up and walking a few hours after the operation which will have a marked beneficial effect on your rehabilitation and recovery.

Post-operative progress varies from patient to patient. However, it is compulsory for all operated patients to walk on a pair of crutches for 6–8 weeks after the operation and avoid exceeding the load on the operated leg by 30 kilos.

During the first weeks and months you will find that the rehabilitation progresses quickly. This will be followed by a period of less progress which is further slowed down as you reach your end goal. It may take up to one year after the operation before you can begin to do sports etc.

# Preparing for admission and preventing complications

## Nutrition/diet

When you are about to undergo an operation, it is important that your body is well equipped for subsequent healing. Prior to the operation, it is important that you maintain your present weight.

## Exercise

It is important that you stay in good shape and are as physically fit as possible by cycling, walking, swimming or other exercises according to your ability.

## Infections

There must not be any wounds, cuts, scratches or spots in the operating area, and there must not be any large wounds on the rest of your body.

Infections (for example in your teeth or urinary tract) must be treated before the operation. We recommend that all patients with teeth problems have a dental check-up prior to the operation.

## Usual medication

Please bring your usual medication with you to the hospital.

If you are taking medicine containing aspirin you must stop three days before the operation. If you are taking arthritis medication (NSAIDs), for example Confortid, Indomethacin, Felden, Brufen, Ibumetin or Piroxicam, you must stop taking any of these at least five days before the operation.

It is recommended that you avoid taking arthritis medication for the first three months after the operation.

If you are taking blood-thinning medication, please consult the doctor who will tell you how to take the medicine before and after the operation.

It is important that you inform the doctor if you are taking any herbal medicines. Some herbal medicines can have an impact on the operation/ anaesthetic, and it may be necessary to stop taking them prior to the surgery. If you are taking fish oil or garlic capsules, you must stop taking them seven days before the operation.

### **Alcohol**

If your alcohol consumption is above what is recommended by the Danish Health and Medicines Authority, we advise that you stop drinking two months before the operation or as soon as the operation has been scheduled. This will promote bone healing and reduce the risk of infections.

### **Shaving**

Both men and women must remove pubic hair. Do not use a razor. Clippers can be used when admitted to the hospital.

We will send a sponge with disinfecting soap, to use the evening before your operation.

### **Smoking**

Smoking increases the risk of complications and slows down bone healing. For this reason you must stop smoking as soon as the operation is scheduled. The earlier you stop the better.

### **Home environment**

Prior to admission, it is important that you make preparations for returning home after the operation.

This can be done by:

- Removing loose carpets.
- Making space between the furniture.
- Buying food for the first few weeks after your discharge from hospital.
- Making arrangements with family/friends or homecare about helping you after your discharge from hospital.

## Preliminary examination

During the preliminary examination you will talk to:

- The doctor who will operate on your hip
- A nurse from the ward
- Possibly the anaesthetist

X-rays of your hip will be taken and possibly also a blood test, urine sample and an ECG.

Please bring your patient information and medication information sheets.

# Admission

When you are admitted to hospital, please bring your usual medication and sensible footwear which preferably covers your heels. Please also bring loose-fitting clothing for returning home and a pair of crutches.

You will stay in hospital for one or two days.

On the day of admission, you arrive at the ward at the agreed time. There you will be met by a nurse who will

show you to the correct ward, make the necessary preparations before the operation and answer any questions. The surgeon and anaesthetist will come and talk to you and answer any questions.

You will be given pain relief medication before the operation.

We recommend that you drink 1/2 litre sweet juice the evening before the operation.

# Anaesthetic

The anaesthetic is normally spinal.

You will be given sedatives during the operation.

An spinal anaesthesia allows you to stay awake during the operation. You will feel no pain with this form of anaesthetic. Your lower body becomes numb from the belly button down and you will not be able to move your legs.

If you prefer to sleep during surgery you can ask the anaesthetist.

When the operation is over, we will inject pain relief medication into the surgical site. The injection will be supplemented with pain relief tablets.

# Operation

The name of the operation is PAO (periacetabular osteotomy), also known as the Ganz procedure, and is offered to patients with hip dysplasia who have not developed severe osteoarthritis in the hip joint. During the operation, the hip socket is loosened from the pelvis so that the hip socket can be rotated and thus make a better coverage for the femoral head.

See also page 4.

For some patients this operation will prevent the development of osteoarthritis, and in any case delay its development. The Ganz procedure preserves the joint, in contrast to inserting an artificial hip.

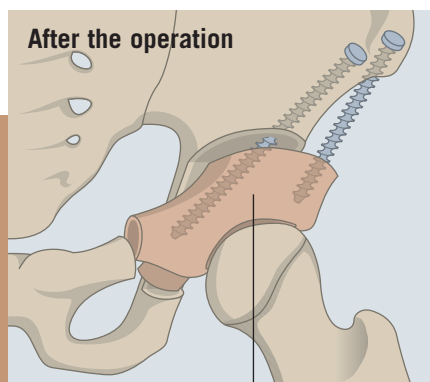
During the operation you will lie on your back. The surgeon will reach your pelvis through an incision of approximately 7 cm, free the hip socket from

the pelvis and rotate it into place. Two screws are then inserted to keep the rotated hip socket in place. The procedure takes approximately one hour.

Before the surgical wound is closed, local anaesthetic is injected into the muscle and joint capsule.

The stitches that are used internally will dissolve by themselves, while the clips in your skin will be removed by your own doctor approximately nine days after the operation. The wound is covered with a small dressing which you can wear in the bath or shower.

**To see a video of the operation, go to [www.soballe.com](http://www.soballe.com)**



*Hip socket covers femoral head*

# After the operation

Immediately after the operation, you will be taken back to your ward where you will be monitored for the next few hours.

You can expect to be able to get out of bed the same evening or early the day after the operation.

You will become gradually more mobile during your hospital stay, so that by the time you are discharged you will be able to walk unaided on a pair of crutches and walk up and down stairs. You will do exercises once or twice each day with our physiotherapists.

## Pain

The Ganz procedure is a major operation and you can expect to have some pain in your hip after surgery. We can control the pain you have while resting, however rehabilitation often causes pain in the hip. The amount of pain varies from person to person. It is therefore important that you tell the staff if you are in pain so that we can give you the best possible treatment.

You can expect some pain for a while and you will need pain relief medication for one or two weeks after discharge from hospital, however this varies from person to person. You can also use an ice pack in addition to pain relief medication.



### **Blood-thinning medication**

You will be given a daily injection of blood-thinning medication. This is to prevent phlebitis/blood clots in your legs. This treatment will last for one or two days.

### **Constipation**

It is normal if your digestion slows down after the operation. This happens partly because pain relief have a constipating effect. During your hospital stay, you will therefore be given a laxative to help your bowels start working again. It is often necessary to keep taking laxatives as long as you are taking pain relief tablets.

### **Nausea**

Some people will experience nausea and vomiting after the operation caused by the anaesthetic, pain relief medication or constipation. It may be necessary to prescribe anti-sickness medication.

### **Anaemia**

Some patients bleed more during operation than normal. In such cases the patient will experience anaemia in the form of tiredness, dizziness, nausea and possibly paleness. If you bleed more during the operation, you might be offered a blood transfusion.

### **Blood transfusion**

Today, blood is screened and tested, which reduces the risk of infection to a minimum. Blood transfusions are optional and only offered if necessary.

### **Problems with urination**

If you have problems with urination straight after the operation, it may, in some cases, be necessary to insert a thin rubber tube (catheter) into your urethra to empty your bladder of urine.

### **X-ray examination**

Before you are discharged, X-rays will be taken of your pelvis and hip to check the results of the operation.



# Rehabilitation

On the same day of your operation, you will be able to sit up on the edge of the bed, stand up and possibly walk a few steps with a walking frame.

During your hospital stay, you will do rehabilitation exercises with a physiotherapist and the nursing staff. Rehabilitation consists of instruction in the exercise programme and how to resume daily activities, such as getting dressed, sitting up at mealtimes, going to the toilet and getting into the shower or bath and going up and down stairs.

The instructors will make sure that before you are discharged you will be able to independently go through the exercise programme, walk on a pair of crutches and walk up and down stairs taking the operated hip into consideration. You will require rehabilitation after the operation. Our physiotherapists will tell you about your rehabilitation which will take place at a local physiotherapist, starting approximately 6 weeks after the operation.

## Staircases

- The crutches must always follow the operated leg.
- When walking up stairs, always step up with your unoperated leg first.
- When walking down stairs, always step down with your operated leg first.

It is important that you take an active part in your rehabilitation to achieve normal functional ability again.

Before discharge from hospital, the physiotherapist will advise you which aids you require.

**Please bring a pair of crutches from home.**

## What am I allowed to do after the Ganz procedure?

During the first 6–8 weeks after the operation you may put a maximum load of 30 kg on your operated leg. You must therefore use a pair crutches for 6–8 weeks. See the chart on the next page.

Resuming activities after the operation:	When:
<ul style="list-style-type: none"> <li>■ Cycle on an exercise bike at low impact</li> <li>■ Be a passenger in a car</li> <li>■ Sleep on your operated side</li> <li>■ Sleep on the unoperated side, possibly with a folded duvet between your legs</li> <li>■ Sleep on your stomach</li> <li>■ Resume sex life</li> <li>■ Lie on your stomach for a minimum of ½ hour each day</li> <li>■ Do the exercise programme twice a day</li> </ul>	After discharge
<ul style="list-style-type: none"> <li>■ Swim</li> </ul>	After 4 weeks
<ul style="list-style-type: none"> <li>■ Dance</li> <li>■ Crawl</li> <li>■ Squat</li> <li>■ Drive</li> <li>■ Cycle</li> </ul>	After 6–8 weeks
<ul style="list-style-type: none"> <li>■ Ride</li> <li>■ Badminton</li> <li>■ Tennis</li> <li>■ Gymnastics / yoga</li> <li>■ Jump</li> <li>■ Run</li> </ul>	Can try after 3–4 months
<ul style="list-style-type: none"> <li>■ Ski/roller skate/contact sport</li> </ul>	To be agreed individually

# Discharge

The day after your operation we will start planning your discharge. You will be discharged to your hotel where we advise you to stay two to three days before going back home. You need to arrange this yourself. You also need to arrange transport back to your home yourself. Please make sure to arrange transport in the airport. It is important to tell your family when you expect to be discharged, since you will need help

at home in the weeks following your discharge.

## **Sick leave**

You need to allow sick leave of 6–12 weeks from the date of your operation, although this depends on what type of work you do. Some people are on sick leave for up to 4 months.

If you are a student, you need approximately 7-10 days of sick leave.



## After discharge

It is quite normal for your leg to swell after the operation. If your leg swells extensively, contact the hospital or your GP.

You need to make an appointment with your GP to have the metal clips removed approx. nine days after the operation. Your dressing will have to be changed if it becomes loose, wet or saturated.

All surgical wounds seep, but this generally subsides in the first week. The seepage consists of a clear, yellowish liquid which is often slightly mixed with blood – this is completely natural. However, if the liquid becomes thick, cloudy, yellow/greenish and smelly, it may be a sign of infection, often accompanied by increasing redness and heat around the wound. If you also have fever (over 38 degrees) after one week after the operation and increasing pain, please contact our hospital.

We recommend that you use a thin plaster (Micropore) for the first 3 months after the operation so that the scar becomes as neat as possible. Put the plaster over the scar. You can buy Micropore from any pharmacy.

After the operation, some people experience continuing discomfort in the hip in the form of pains or clicking sounds. Discomfort is often localised in the groin region. This can be caused by the labrum, often larger than normal in patients with dysplasia, being trapped in conjunction with movement of the hip. If this is the case, we can perform an arthroscopy and repair the labrum. However, an arthroscopy can only be performed 6–9 months after the operation at the earliest. Clicking sounds often disappear by themselves.

## Outpatient check-up

Please make arrangement with your GP or the specialist that referred you for an X-ray 6 weeks after the operation. The X-ray has to be send by email to Dr. Søballe for check-up. Dr. Søballe will contact you afterwards.

# Complications

All operations carry a risk of complications, which we of course try to avoid in every way.

## Inflammation

The operation is performed in a special, ultra-clean operating theatre. Prophylactic antibiotics are administered during and after surgery, 4 times in total during the first day. We have not yet seen a patient who has undergone the Ganz procedure developed infection in the wound (out of more than 1000 operations).

## Phlebitis

The risk of phlebitis in the legs is less than 1%. To prevent phlebitis you will be given an injection of blood-thinning medication during the first one to two days after the operation. It is important that you do the exercises and get out of bed on the same day you had your operation.

## Impact on the cutaneous nerve

During surgery, a thin cutaneous nerve is exposed. This nerve is responsible for sensation on the outside of the thigh. Normally, this nerve will be pulled and after surgery most patients have a reduced sense of feeling numbness on the outside of the thigh. Usually the sense of feeling comes back, but it can take up to one year. This will not cause discomfort in the long term even if the sense of feeling is not restored completely.

## Impact on the nerve that supplies the muscles in the leg

During surgery, we come close to two major nerves supplying the leg muscles. There is a minimal risk of damage to these nerves.



### **Impact on blood vessels**

During surgery, we come close to the major vessels in the groin area but the risk of damaging these vessels is minimal.

### **Bleeding during the operation**

There is only a slight risk of major bleeding but some people may require a blood transfusion after the operation. Should a blood transfusion be necessary, the doctor will have discussed the issue with you beforehand.

### **Cystitis**

After surgery there is a small risk that you will develop cystitis. This will be treated with antibiotics.

### **Difference in leg length**

Although the hip socket is rotated over the femoral head, the operation does not normally result in a difference in leg length. However, but a slight difference may sometimes develop.

### **Headache**

If the operation is performed under spinal anaesthesia, headaches can occur in rare cases. Headaches usually disappear after a few days.



# Contact the Hip Surgery Team

**You are always welcome to contact members of our staff if you have any questions.**

## **Hip Surgery Team Privathospitalet Mølholm A/S**

Professor, consultant, Dr. Kjeld Søballe

Nurses Bente Jensen and Susan Lundtoft  
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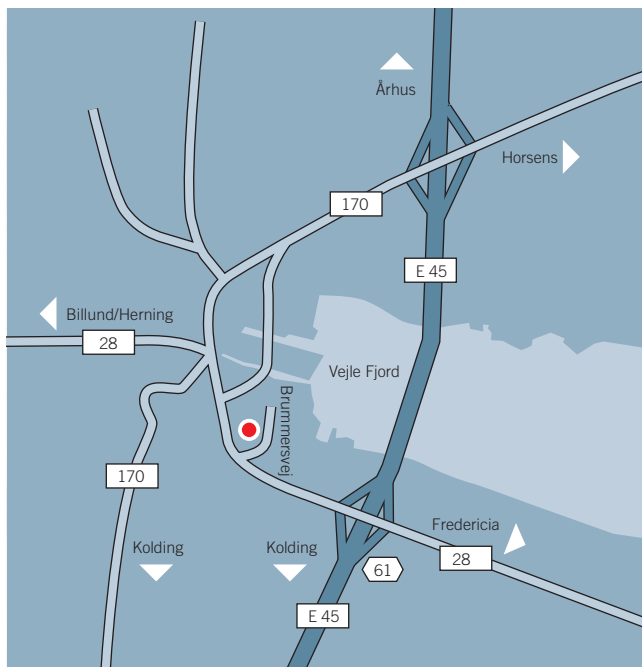
Websites:

[www.molholm.dk](http://www.molholm.dk)

[www.soballe.com](http://www.soballe.com)

(Here you can also watch a  
video of the operation)

**Please bring this brochure with you when you are admitted to hospital and  
for your outpatient check-ups.**



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