



AUCKLAND BONE AND JOINT SURGERY

# **Preparing for Periacetabular Osteotomy Surgery**

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## 1. Introduction

Periacetabular osteotomy (PAO) is a surgical treatment for hip dysplasia which preserves and improves the function of the patient's own hip joint rather than replacing it with an artificial one. The goal of the PAO is to reduce or eliminate pain, restore function, and maximize the functional life of the dysplastic hip.

PAO is designed to correct the major mechanical problems in acetabular dysplasia. These problems include excessive pressure of the femoral head on the rim of the acetabulum and instability of the femoral head within the acetabulum.

The ideal PAO patient has minimal damage to cartilage in the interior of the joint. In general, such patients have little or no narrowing of the cartilage space on regular x-rays and can flex their hips to at least 90° with minimal pain.

The surgeon performing a PAO cuts the bone around the acetabulum in order to rotate it into a more stable, horizontal position of coverage over the femoral head. The pressure from the femoral head is now on the central portion of the acetabulum, where the cartilage is designed to accept this pressure. Additional hip procedures are sometimes indicated at the same time as the periacetabular osteotomy. These may include arthrotomy (work inside the joint to repair labral or rim damage) and proximal femoral osteotomy (cutting and realigning the head and upper end of the femur). Between four and twelve months after PAO surgery, most patients undergo screw removal as a brief outpatient procedure.

*EXAMPLE: The x-rays below are taken from a young woman who had PAOs on her dysplastic left and right hips. The left image shows the dysplastic hips pre-PAO, and the right image shows the same hip post-PAO. Notice how the ball is now covered by the socket.*





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After the PAO has healed with return of motion and strength, we encourage the highest level of “reasonable” activity that the hip joint will allow. A corrected dysplastic acetabulum is still at risk for damage by overuse. Though many of our patients are able to jog and even run marathons without a problem, the long-term impact on their joints is not yet known. Dr. Boyle will help you to determine an appropriate level of activity. In general, since dislocation is not a risk after PAO, there are no positional restrictions as there can be after total hip replacement.

Dr. Boyle and his hip preservation colleagues consider failure of PAO to mean lack of improvement in pain, or an increase in hip joint stiffness serious enough to limit your activities. In such situations, a joint-replacing procedure of some type often becomes necessary.

Dr. Boyle has undertaken extensive training in PAO surgery at Boston Children’s Hospital (BCH), one of the highest-volume PAO hospitals in the world. Of the more than 1300 patients who have undergone PAO surgery over the last 20 years at BCH, only around 40 have required a Total Hip Replacement (THR). The patients who have required THR have been the ones who had the most damaged cartilage before their PAO surgery.

Ten years or more after their PAO, more than 90% of patients have little or no pain and well-functioning hips. In patients who, along with their surgeon, select PAO as the treatment of choice, hip pain and function is expected to be greatly improved by the surgery for a minimum of ten years and, hopefully, for a lifetime. In all cases, the decision making process is one of open and honest communication between the surgeon and the patient.

*EXAMPLE: After the acetabulum is rotated, it is held in position with several screws to maintain the improved alignment during bone healing.*





## 2. Preparing for Surgery

**Medications.** It is very important that you tell your surgeon and anaesthetist about all medications you are taking. Be sure to include all herbal remedies, prescription medications, including birth control, as well as over the counter medications. Bring all bottles with you to your pre-operative visit and have them with you on the day of surgery. Be sure to tell your surgeon and anaesthetist if you are allergic to any medications.

**Medications to avoid.** Some medications affect your blood and may cause excessive bleeding during an operation. Therefore, certain medications should not be taken during the two weeks before your surgery. These medications include aspirin, ibuprofen, naproxen, and voltaren as well as some herbal remedies. Many medications may contain one of these ingredients. If you are unsure about whether or not you can take a medication, talk with your surgeon or nurse. You may use paracetamol (Panadol) during the two-week period before your surgery. Stop taking oral contraceptive pills or patch (transdermal) contraception one month prior to your date of surgery, due to the risk of blood clots (DVT).

**Will blood be needed?** All patients lose some blood during PAO surgery due to the rich blood supply to tissues and bones around the hip. Lost blood can be collected in the operating room through a cell saver system, filtered, and can be given back to you through intravenous line (IV) during the surgery if required. However, some patients will also need additional blood transfusions during or after surgery. Donation of blood before your surgery is usually not required.



### 3. Preparing for Hospital Admission

**What to bring to the hospital:** Underwear, loose silky running-type shorts, loose fitting t-shirt, sneakers or slip-on sandals/rubber soled slippers.

**Optional items to bring:** Your own pillow, laptop/tablet, favorite DVDs, hygiene items (soap, shampoo, etc.), mobile phone. Please do not bring large or valuable items or items that plug into the wall such as a hairdryer.

**Visitors:** Family/friends are welcome to visit anytime during hospital visiting hours. Your visitors must wear a visitor's badge which they will receive at the time of your admission or from the hospital reception. If you wish, one person may stay with you overnight. In your room is a reclining chair that may be used for one person to stay overnight with you. Most rooms are single occupancy, however you may rarely have a roommate. You may want to discuss visiting and overnight plans with your family and friends before your hospital admission. Please note: the above information is general information only - please contact your specific hospital directly for visitation rules.

**Eating and Drinking Before Surgery.** For your health and safety, eating and drinking are not allowed for certain periods of time before surgery. It is important for you to strictly follow these directions. The surgery will be cancelled if you do not follow these guidelines. You may not want to eat a large meal the night before. Since your digestive system will slow after surgery, the food from your big meal may make you nauseous when you wake up from the anesthesia.

#### Preparation Guidelines:

- Do not eat any solid food after midnight on the night before surgery. For example, if your surgery is scheduled for Monday, April 10, you must not eat any solid food after midnight on Sunday April 9.
- Do not chew gum or eat candy.
- Do not drink milk, orange juice, or carbonated drinks (soda or tonic). You may sip clear liquids up to three hours before surgery. Clear liquids include apple juice, white grape juice, and water.
- Do not drink anything during the three hours prior to surgery.



## 4. The Day of Admission

**The Day of Surgery.** On the morning of your surgery, you will check in at the Pre-Operative Desk ninety minutes before the time your surgery is scheduled. The nurse or health care assistant will check your pulse and vital signs and ask when you last ate and drank. Then, you and your parent, spouse, or partner will be brought to the Pre-Operative Holding Area (near the Operating Room).

**The Pre-Operative Holding Area.** Here, you will be seen by and speak with a nurse from the Pre-Operative Holding Area, the nurse from your Operating Room, your anaesthetist, and Dr. Boyle. The anaesthetist will place an intravenous (IV) line (a drip).

Dr. Boyle and your nurse will confirm with you the exact operation that you will have and which hip will have the surgery. Dr. Boyle will sign his initials on the operative hip - many people will verify this with you prior to your surgery (this is part of the patient safety guidelines in place at all major hospitals in the world). After your hip has been marked, the anaesthetist will give you medicine through the IV to help you relax.

**The Family Waiting Area.** After you are taken into the Operating Room (OR) by your anaesthesia team, your family/partner is escorted to the Family Waiting Area. They can wait here until they can visit you in the recovery room immediately after your surgery.

Either in the Pre-Op Holding Area or in the Family Waiting Area, your family/partner will meet the Surgical Liaison Nurse. During surgery, the Surgical Liaison Nurse will check with the operating room and give updated information to your family/partner. You may also leave a cell phone number with the Liaison nurse since the duration of surgery is somewhat unpredictable. When your surgery is finished and you are in the recovery room, the Surgical Liaison Nurse will bring a family member to see you.



## 5. The Operating Room

In the operating room, you are covered with warm blankets and given intravenous medication to help you relax before you receive your anaesthesia for the surgery. An epidural pain catheter will be placed for pain relief (an epidural gives continuous medication through tiny tubing that enters a place in your back, near your spinal cord.) Anaesthesia is then given through your IV (your drip). You will breathe oxygen through a mask and you will gently fall asleep.

When you are under general anaesthesia, a catheter will be inserted into your bladder. Next, your entire leg and hip area, up to your waist, will be cleaned with an antiseptic solution. After the surgical drapes and towels are placed around the surgical area to keep it sterile, the surgery will be performed.

Depending on the characteristics of your hip problem and the complexity of your surgery, four to six hours may pass from the time you leave your family until you meet them again in the recovery room, though only a portion of this time is spent doing the actual surgery. Once the surgery is completed, the incision will be closed, usually with dissolvable sutures, and a sterile bandage will be applied. Small suction tubes are often used to reduce wound swelling - these are removed the second day after surgery.

You will slowly become more alert as the anaesthesia starts to wear off. Once you are alert, you will be lifted onto your bed, where you will lie on your back, with pillows under your knee on the operative side. At this point, you will be transported to the Post-Anaesthesia Care Unit (PACU).



## 6. Your Hospital Stay

**The Post-Anaesthesia Care Unit (PACU).** You will be transported in your bed directly to the PACU after surgery. You will feel groggy and sleepy. Some patients are so sleepy that they don't really remember the PACU. A nurse will check your vital signs. You will be asked to wiggle your toes. You will have a small mask on that will be blowing a cool oxygen mist until you are completely alert. If you have pain, the nurse will give you medication through your IV line or your epidural catheter. Your IV and urinary catheter will remain in place for several days. The epidural catheter remains in place for one to two days.

**The Inpatient Unit.** You may have two visitors at a time in the PACU. After a stay of two or three hours in the PACU, you will be transported, in your bed, to the inpatient surgical specialties unit for the remainder of your hospital stay. Once you have arrived on the surgical specialty unit, you will meet your nurse and get settled into your room. Your vital signs will be checked every 4 hours. You will be asked to wiggle your fingers and toes to check the warmth and feeling in them. All rooms have a TV and DVD player.

**Turning/Repositioning.** Every few hours, the nurse will help you change positions to help decrease pressure areas on your skin. There should be support under your heels to prevent pressure sores. Most people are in bed for one to two days after the surgery, or until the epidural is removed. Then you will be out of bed with assistance from nurses and/or physiotherapists.

**Eating and Drinking.** The operation, anaesthesia, and medications make your digestive tract slow down for several days, which decreases your thirst and appetite. At first, the nurse will give you water and ice chips. Go very slowly. Remember that your stomach has been empty and will be slow to wake up. Once you are drinking, you can begin taking pain medication by mouth. You will gradually be able to eat regular foods in small amounts. Don't worry if it takes several weeks for your appetite to return to normal. Ask your nurse which foods are best to eat. After you are eating again, you'll need to move your bowels. At first, this can be difficult since you have not been eating regularly. Your nurse may give you a laxative, stool softener, or suppository to help you move your bowels. It is necessary to have a bowel movement before you can go home.

**Showering.** Your initial surgical dressing may or may not be changed prior to going home. You will be able to shower prior to leaving the hospital with a waterproof dressing. The nurse will check the skin and apply a new dressing if needed. Before you are allowed to shower, you will have daily bed sponge baths.

**Pain Medicine.** Every day you will be visited by your anaesthetist, who is a pain treatment specialist. They will ask how you feel - they will use a pain scale of 0-10 to see how comfortable you are. If you are not comfortable, tell your anaesthetist so that changes





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in pain medicine can be made. The amount of pain medicine is based on your weight, age, diagnosis, and type of pain. Some patients worry that pain medication may be habit-forming and may try to limit the use. It is very unlikely that you will form dependence on pain medicines as long as you are taking the medications as prescribed for pain. Pain relief is very important as it helps you to move freely and breathe more deeply after surgery.

**Wound Drainage.** There may be a small plastic drain in place after surgery. If so, this will be removed one or two days after the surgery. This is not painful.

**Urinary Catheter.** The catheter allows your urine to drain through a tube and into a plastic bag when you cannot get out of bed. The nurses will measure the amount of urine you produce. When you are comfortable using crutches, the catheter will be removed. This does not hurt, but may feel a little strange. A few hours after the catheter is removed, you must go to the bathroom.

**CPM (Continuous Passive Motion) Machine.** Depending on your surgery, you may have a CPM machine to move your hip gently for you while in bed.

**Potential Surgical Complications.** Any major hip operation involves some risk of complications. Although infrequent, complications include surgical wound infection, injury to major nerves or arteries, and non-union (failure of parts of the pelvic bone to heal following the osteotomy). The experience with this surgery over the past 20 years at BCH where Dr. Boyle trained is less than one percent rate of significant individual complications.

The usual hospital stay is four to six days. This depends on how quickly pain is controlled and how quickly you are able to walk comfortably with crutches.



## 7. Physiotherapy After Surgery

The doctor will let the therapist know when to begin physiotherapy. This is usually the day after your surgery. The physiotherapist will begin with gentle range of motion exercises, moving your leg up and down and side to side. You will be encouraged to try and help do these exercises. Other exercises may include moving your foot up and down and tightening your buttocks and thigh muscle.

The first time out of bed the physiotherapist will assist you into a reclining chair. The next step is to practice walking with parallel bars, then a frame, and then with crutches. You will again be instructed in using the crutches on level surfaces as well as on stairs. After surgery you are allowed to put a little bit of weight through the foot, approximately 1/6 of your body weight (approximately the weight of your leg).

**Equipment.** You will be given crutches at the hospital. Sometimes you will be required to use a walking frame before progressing to crutches. If this is the case, the discharge planner will order one for you before you are discharged. Your physiotherapist will help decide if any other equipment should be ordered for you after your surgery.

You will also be sent home with a wheelchair, this is useful for travelling long distances early in your recovery. All patients will be discharged with a home exercise program; these are the same exercises that were done with you while you were in the hospital. It is important to remember: DO NOT progress your exercises or increase your weight bearing status until Dr. Boyle gives you clearance.



## 8. Going Home

You will be discharged when you can do ALL of the following: sit comfortably, walk well with crutches in the hall and on stairs, use the bathroom (you will not be discharged from the hospital until you have a bowel movement), have good pain control with pain medicine by mouth.

The day before going home, you will receive prescriptions for the pain medicine you will need at home. These prescriptions should ideally be filled before you leave the hospital. The pharmacy will need the original prescription. It is important that if you need a refill, you call prior to running out.

Most patients are in the hospital for four to six days after surgery. For example, if surgery is on a Monday morning, discharge is usually on the following Friday or Saturday morning.

Many patients travel home by plane or car without trouble. Your nurse will give you and your family/partner important instructions on how to manage your diet and medications, how to care for your incision, what problems to watch for, and who to call with questions. Dr. Boyle will tell you when you can expect to go home. Discharge time is usually around 10:00-11:00 a.m. Please arrange in advance for your transportation home.

**Before You Go Home.** Be sure you have filled your prescriptions. Confirm that a follow-up visit with Dr. Boyle has been scheduled. Things needed for your return home: while you are still in the hospital, a case manager will help plan your discharge. S/he will order any equipment you might need including wheelchair or commode/shower chair rental and will also arrange for physiotherapy if needed.



## 9. What to Expect at Home

You will feel tired enough that you may be out of school or work for 4-6 weeks. You may be able to drive after four weeks but you may not drive while you are still taking narcotics for pain. If you have any urgent questions when you return home, call Dr. Boyle's practice on 09-281-6733 or email Dr. Boyle at [mboyle@abjs.co.nz](mailto:mboyle@abjs.co.nz). If you have an emergency that you feel cannot wait, please go to your local emergency department or accident and medical clinic.

**Your Appetite.** Your appetite will be decreased after surgery. Try eating small meals and frequent snacks every two to three hours. Constipation is a problem after surgery because of side effects of pain medicine and changes in diet and activity. You may need a stool softener and/or laxative. These can be obtained over the counter if one is not prescribed as part of your discharge medications.

**Pain and Discomfort.** You will have post-operative pain after you go home. Take the pain medicine as prescribed by your doctor. If you no longer have pain, you do not need to take the pain medication. Most patients have a significant decrease in pain 2-3 weeks following surgery. Benign twinges, pops, and clicks are often experienced around the hip for several weeks following surgery.

**Caring for Your Incision.** Check your incision for signs of infection which include increased redness, swelling or tenderness around the incision, yellow or green fluid coming from the skin, an unusual smell, or a fever higher than 38 degrees (by mouth). If you notice any of these signs of infection, call the Dr. Boyle's practice on 09-281-6733 or go to your local emergency department or accident and medical clinic.

Please remove the dressing after two weeks. At that point, the incision should be well healed and no longer needs to be covered. The incision will be have small strips of tape called Steri-Strips. These strips will fall off on their own – you can leave these in place until they do. Wound problems are rare. Temporary numbness or tingling in the skin of the thigh is normal for several months after PAO, but this gradually improves.

**Follow-Up Care.** You may need anticoagulation medicine for six to eight weeks following surgery. Dr. Boyle will discuss your particular regimen with you. Follow-up visits with Dr. Boyle usually occur at one month, two months, six months, one year, and two years after surgery. Additional long-term follow-up visits are scheduled according to patient need.

**Returning to Work or School.** Talk to Dr. Boyle about when you may return to school or work. If you work in an office-based job with minimal walking, you will need 4-6 weeks off work. If you work in a heavy manual job, you will need 3-4 months off work. If you are a student you will need to arrange for a tutor at home for four to six weeks or until you are strong enough to return to school.



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**Your Activity Level.** Your strength will return gradually after surgery. Do not increase your activity level until Dr. Boyle tells you to. Try to walk everyday with crutches, but only the amount that feels comfortable for you.



## 10. Your Hip Joint – How it Works

*This section will provide further information on your hip joint anatomy, dysplasia diagnosis and treatment options.*

The hip joint is a simple ball-in-socket structure. The ball-shaped **femoral head** rotates inside a cup-shaped socket called the **acetabulum**. Usually this joint works smoothly, with little friction or wear. The well-fitting surfaces of the femoral head and acetabulum which face each other are each lined with a layer of **articular cartilage** and lubricated by a thin film of **synovial fluid** which reduces friction inside the normal hip to less than 1/10 that of an ice cube gliding on ice. The **labrum** is a rim of **fibrous cartilage** which lines the outer edge of the acetabulum. It serves to stabilise and cushion the hip joint.

In some people, the hip becomes painful, stiff, weak, unstable, or maybe even a combination of these symptoms. “Arthritis” is often suggested as the cause of these hip symptoms, just as it is for aches and pains in the knee, shoulder, ankle, or finger joints. Arthritis is a non-specific term used to describe inflammation of a joint. There are 2 types of arthritis:

1. Inflammatory arthritis; such as rheumatoid arthritis (RA).
2. Mechanical arthritis; such as osteoarthritis (OA).

To prevent progressive destruction of the joint from inflammatory arthritis, medication can be used to treat the inflammation. With mechanical arthritis (OA), surgical procedures are often the best way to correct the underlying mechanical problems.

**Hip Dysplasia**, sometimes referred to as **DDH (Developmental Dysplasia of the Hip)**, is a relatively common abnormality in the shape of the hip joint. This abnormality originates at birth or in early childhood. DDH is the most common developmental hip deformity causing symptoms in adults. In its most frequent form, hip dysplasia consists of a shallow acetabulum (hip socket). The shallowness of the acetabulum causes the head of the femur to exert excessive pressure on the rim of the acetabulum. If left untreated, this excess rim pressure can lead to pain and injury to the cartilage and/or bone which may result in osteoarthritis.

The severity of DDH varies widely. In the mildest types of dysplasia, the hip is normal in outside appearance, is very close to normal on x-ray, and may not cause any symptoms until the patient is 30 years of age or older. In the most severe form of dysplasia, termed “developmental dislocation”, the femoral head of the infant or child actually lies outside the acetabulum but under the muscles of the buttock and thigh.

Specific risk factors for DDH include the following: family history of DDH, female (girls tend to have looser ligaments than boys), first-born child, large birth weight, breech



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position. At least 80% of OA in the hip occurs because of a developmental abnormality such as DDH, and DDH is the most common developmental hip deformity causing osteoarthritis.

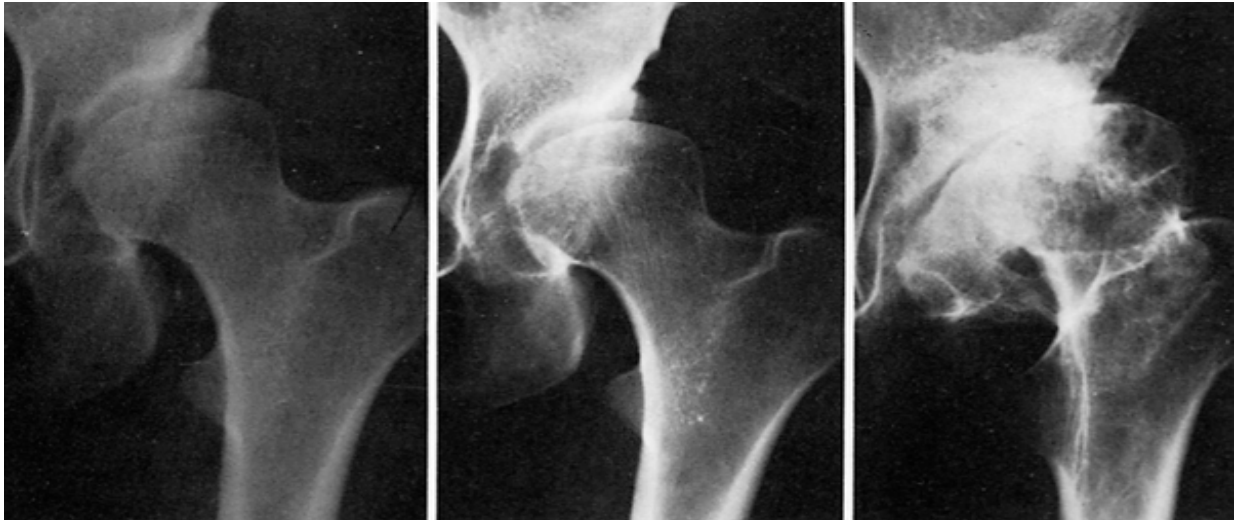
Some other causes of OA in the hip include Perthes disease, avascular necrosis, slipped capital femoral epiphysis (SCFE), and other impingement patterns. Often, these potentially damaging deformities do not cause symptoms. If they remain undiagnosed and untreated over the course of years, this may lead to OA that otherwise could have been prevented.



## 11. Osteoarthritis of the Hip

Many mechanical abnormalities in the hip can be treated if they are diagnosed correctly and fixed early enough with joint preservation surgery. Every year in New Zealand, over 7,500 hip joints must be replaced with artificial hips because joint damage has progressed too far to allow the joints to be preserved.

### Stages of Arthritis Due to Hip Dysplasia



The images above show the progress of arthritis in an untreated dysplastic hip. The image on the left shows a hip joint in the early stages of arthritis. Notice the reduced joint space. The middle image shows the progression of arthritis with further decreased joint space. The white areas are representative of sclerosis which is the hardening of the bone in response to damage. The far right image shows severe arthritis with increased sclerosis and the development of osteophytes (bone spurs). A realignment osteotomy such as a PAO would help this patient in the early and middle stages. However, with the cartilage destroyed as seen in the far right picture a total hip replacement is the only surgical option.





## 12. Treatments for Hip Dysplasia

**Non-Surgical Treatment.** These treatments include physiotherapy (to strengthen muscles), activity restriction, and possibly weight loss. Although useful as a part of surgical interventions, non-operative measures to treat the symptoms of dysplasia do not treat the underlying mechanical problems.

**Surgical Treatment.** Surgical treatment before excessive damage has occurred is always more successful. Once cartilage is lost, it cannot be replaced. The goal of surgery is to slow or stop the progression of cartilage loss.

### Surgical Options:

- **Arthroscopy.** This technique involves two to three small incisions which allow a camera and tiny instruments to be inserted into the hip joint. Arthroscopy alone cannot correct the major problem of acetabular dysplasia, however it can be useful in repairing labral tears or treating impingement.
- **Arthrotomy.** This is a procedure in which the capsule surrounding the hip joint is opened. Some minor problems of the labrum and femoral head can be treated with this procedure. This is sometimes performed at the same time as the PAO.
- **Osteoplasty.** This involves shaving down bone on the femoral head or acetabulum that may be causing impingement.
- **Periacetabular osteotomy (PAO).** The primary surgical correction of hip dysplasia. Only realignment operations like PAO can correct the underlying mechanical problem and abnormal orientation of the acetabulum.
- **Total hip replacement.** Replacement of an arthritic joint with an artificial joint. If performed in active young patients, the artificial joint is likely to wear out with time and require additional surgery.



## 13. Osteotomy Compared to Hip Replacement

Fifty years ago, particularly in Europe, hip osteotomy was often used as a treatment for certain adult hip problems. With the first successful total hip replacement (THR) by Charnley in England in the 1960's, osteotomy was abandoned by many surgeons. THR gave excellent early results in eliminating pain and restoring motion in patients with osteoarthritis of the hip.

The most common failure in THR is the loosening of the artificial hip at its bond to the patient's own bone. If this occurs, the person may require another THR. Surgery to replace a failed THR with another THR is called revision replacement, and it is technically much more challenging for the surgeon than the first replacement. In addition, the revision replacement typically involves much more extensive healing period than the first hip replacement.

In the past twenty years, there has been a growing interest in adult hip osteotomy as a means for preserving hip joints with certain mechanical problems rather than treating them with replacement. Long-term follow-up results of THR have shown an increasing incidence of certain worrisome problems, especially in young, active patients.

Hip replacements in general are much less stable than the patient's own hip. They are more prone to infection. Because artificial hip replacements involve the insertion of a large foreign body inside the patient, some patients experience usually benign but troublesome responses to metal ions in organs far from the hip.

Osteotomy and other joint preserving procedures are not an inferior second choice to THR, although the recovery for the PAO patient is typically longer than after a primary THR. With PAO, living tissue with its healing capabilities and physical sensation allows hip function that is more normal than with a typical hip replacement. The usual hip replacement patient is warned regarding range of motion and activities that lead to premature failure of the artificial joint. PAO patients have no range of motion restrictions or precautions, although we do recommend that after PAO people approach high-impact activities with caution.



## 14. Frequently Asked Questions

- **When can I drive?**

You may start driving four weeks after surgery or when your right leg is able to respond quickly enough to move from the accelerator pedal to the brake. If you drive a manual and had a left PAO, make sure pressing down on the clutch doesn't give you pain in your left hip. Before you start driving on the roads, practice slowly in an empty parking lot. Do not drive while you are still taking strong medicine (eg. Morphine) for your pain.

- **When can I lie on my operative side?**

Generally, you may lie on your operative side three weeks after surgery or when you are comfortable. Use a pillow between your knees. Initially, most people are comfortable on their back or on their non-operative side. Do not sleep on your stomach for at least four weeks.

- **How long will I be out of work/school?**

For school or office and sedentary labour, you can expect to be out of work for about four weeks. You will probably not be able to return to work that requires a lot of standing, walking, kneeling, or climbing for a minimum of four months.

- **How long will I be on crutches?**

Dr. Boyle will use your x-ray findings to determine how quickly you can get off crutches. Usually, you'll wean from two crutches to one crutch or a cane by two months after surgery. Some patients are on crutches longer; some less.

- **I live out of Auckland. Can someone close to home undertake my post-operative follow-ups?**

If you live far from Auckland and are unable to travel to Auckland for your follow-up visits, you can work with Dr. Boyle to arrange a post-operative treatment plan in which you see your local orthopaedic surgeon for your follow-up visits. However, you should plan on returning to Auckland for at least one subsequent visit. It is your responsibility to make arrangements with a local orthopaedic surgeon before surgery. Please bring this information with you to your pre op visit.



- **Will my children have the same problem?**

There is evidence that suggests an increase in the likelihood of hip dysplasia in children whose parents or siblings also have hip dysplasia. Dr. Boyle recommends that your children be checked for hip dysplasia – this can be arranged through your GP.

- **How do I get home from the hospital?**

In planning your trip home from the hospital, remember that you will experience some post-operative pain and discomfort. You will need to keep your hip at certain angles (i.e. you cannot flex it past 90 degrees). However, many patients travel home by plane or car without difficulty.

- **What kind of physiotherapy will I need?**

You will meet with a physiotherapist in hospital who will give you exercises to do at home. Your physiotherapy will consist of range of motion and isometric exercises as well as gentle strengthening. Your therapy will progress according to the amount of healing shown on your x-rays, although early in your recovery you will not require a great deal of physiotherapy. Physiotherapy in hospital will teach you functional skills like how to get in and out of bed and how to walk with crutches.

- **Can I do isometric exercises?**

Some Isometric exercises are acceptable. The physiotherapist will go over your exercises before you go home. You should not progress with your exercises until you are seen by Dr. Boyle at your first post-operative visit. If you are seen locally, you should stay in close contact with Dr. Boyle, so he can provide you some direction. Usually, four to six weeks after surgery, pool exercises are a great addition to your physiotherapy. Your physiotherapist will discuss these exercises with you.

- **When can I shower?**

You will shower before you are discharged home from hospital, with a waterproof dressing on. This waterproof dressing may be removed 14 days after surgery, leaving the steri-strips to fall off on their own. You will also be discharged with a shower chair to use.

- **What will the scar be like?**

Your scar will be along the front and side of your hip and 8-15 cm long. The shape of the scar depends on each individual case. The scar usually blends in nicely with the normal crease where your hip bends. It is important to keep high level SPF over the incision for one year when going out into the sun.



- **When the screws are removed, do you use the same incision or a new one?**

When Dr. Boyle removes the screws, he will use the same incision as when he put in the screws, although he will only use a very small section of this incision.

- **Do you recommend anything for reducing the appearance of the scar?**

Putting vitamin E or any lotion on the site of your surgery once or twice a day after incision is healed may help minimise the appearance of the scar. It's mainly the massaging in of the lotion that helps.

- **When can I play sports?**

Dr. Boyle will determine when you can return to sports. Usually, you can begin playing sports about six months after your surgery.

- **Will the screws set off metal detectors in airports?**

The screws inserted during your PAO surgery usually do not set off airport metal detectors since the screws are covered with muscle.

- **What should I do to prepare at home?**

Before you leave home for your surgery, try to eliminate any obstacles that might make crutch walking difficult in your home. You may want to sleep on the same floor as the bathroom. A hospital bed is not necessary and you will be safe to go up and down stairs.

- **Will I be in a cast?**

After your PAO, you will not be placed in a cast. You will only have a bandage covering the site of your surgical incision and you will be on crutches.

- **How long will I be in the hospital?**

After PAO surgery, the average length of stay in the hospital is four to six days.



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## **15. Important Contact Information**

If you have any questions when you return home, please call Dr. Boyle's practice during office hours on 09-281-6733. If you have an emergency that you feel cannot wait, please go to your local emergency department or accident and medical clinic.