

Thesis

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Title:

TAEKWON-DO AND IMPACT ON THE HIPS

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* Pictures

* First article on ITF website (and in Taekwon-Do Generation)

I. INTRODUCTION

As GrandMaster Pablo Traijtenberg quoted during the ITF Convention 2017 in Benidorm (Spain), there are many hip injuries amongst Taekwon-Do practitioners all over the world, so I decided to write a thesis about this phenomenon and the possible solutions after research.

Already after my Master grading in 2004 I decided to write an article for the ITF website about my 'resurfacing hip surgery' and the result.

After my article was published on the ITF website and in Taekwon-Do Generation, I was contacted by persons from around the world about the Birmingham 'resurfacing hip' BHR. Previously I didn't know that so many Taekwon-Do practitioners suffer from hip injuries because of various reasons.

After this surgery I could continue practising my beloved martial art Taekwon-Do and could have back my quality of life and an active lifestyle.



Stretching with a BHR

Meanwhile during my contacts with others it became clear to me that there are different hip injuries, due to various causes, not only related to Taekwon-Do.

I'm grateful to all Sabums and Sahyuns sending me their experience. It was very interesting as I discovered a new world during my research .

The difference between practicing Taekwon-Do 40-50 years ago and nowadays is very different.

The 'hard' Korean methods are replaced by a more responsible-scientific medical justified workout. Some karate inspired methods disappeared in time with e.g. higher stances and the sine wave. When reading this document it will be clear this is a very positive evolution.

Also the stretching methods changed (e.g. dynamic stretching after the warming-up and static stretching at the end of the training session).

It is my opinion that during the time, new instructors are evolving in this matter .

Fast but not hard kicks are important, the right angle, feeling comfortable in every movement and stance is the message I want to give through this work.

I hope with this thesis that in the future hip problems due to Taekwon-Do will be over. I quote also :

"To the best of my knowledge, nobody keeps statistics on how many martial artists get their hips replaced, but the list of veterans who've had the surgery done on one or both sides is impressive. Jean Claude Van Damme, Chuck Norris, Bill Wallace, Billy Blanks, Keith Hirabayashi Cooke, Christine Bannon-Rodrigues, Steve 'Nasty' Anderson, Larry Carnahan, Danny Dring, Tom Seabourne and Joe Hess are just the tip of the iceberg."

The old school? I invite you to read this document. I will always be ready to share my experience.

A famous Female world champ wrote :

My first hip problems started in 2007 when I was training for the Worlds in Canada. I was having groin pain and the flexibility.

I returned and met with my surgeon who thankfully was a sports surgeon with a lot of experience.

*I had tears, a bone growth and the left hip was a mess. He said that I would need a new hip soon but to keep it as long as possible.
The first operation cleared the hip out to try to save it for more years.*

The original problem in the left was as a teenager my growth plate in the main femur was growing tilted by 2mm, thus putting the femur head out of line. He said that this

problem would always resulted in a full hip replacement but with the TKD training I did had brought it forward maybe 20 years.

As you know we all trained very hard and I think the impact repeated over and over and **the hard training surfaces gives no cushioning for the joints then breaking down the fluid and cartilage too fast.**

Forcing hard stretching without good warm up/preparation.

I continued to compete and pushing too hard on an already weak joint, resulting in cracking the femur head and it was ready to collapse, so immediate surgery. Which was a huge shock as I was relatively young and was not ready to retire.

The 2nd hip problem started from an injury teaching at the Norwegian summer camp where I was demonstrating **and someone kicked under my hip when I was not ready and I felt the bone hit from the socket.** I left it too long before seeing my surgeon, resulting on 6 weeks crutches to relieve the pressure in the joint, then one surgery to drill holes in the socket and femur head. 6 weeks again on crutches, that did not work so I had to have the right hip fully replaced November 2015

Now I re think training for myself and my students.

Do you not think that it is strange that I know of very few women who have had hip replacements let alone 2 in TKD.

I hope this helps and if you wish to ask any questions please feel free.

Masters with a lot international experience

(1)

Agree sir. I believe Static stretching at the beginning of the class, then expecting the body to **perform at a very high and fast level is definitely a contributing factor.** **As well as hard surfaces for training on like concrete floors.....** I would also like to add that **we never used to cool the body down at the end of the sessions. We would just walk home after training, no stretching or relaxing time. I also think the forced stretching we did with people pulling our legs apart was unnatural for our bodies and I had this done to me on various occasions in a bad way.** I do believe that there is a good way of doing this through PNF stretching where the students relaxes the muscles as they are being stretched by someone else then they add resistance for about 10 seconds then relax and the leg will naturally stretch. However without it being forced. In particular my situation came about due to these kind of exercises over many years, but also after an operation on my meniscus where I stupidly went back to classes the day after my operation as I felt fine. I was on crutches and actually I should have had at least two weeks of total rest. **This made a massive impact on my hip as I started to walk differently as my body compensated for the pain in my knee and therefore I wore away my cartilage.** I hope that helps. I plan to write a complete report on my rehabilitation from the blog that I wrote whilst in recovery. This work is very important that you are doing as many more TKD people will need these operations. Kind regards ...

I believe it would also be helpful to add in the cost of the procedures, **I would also add that there are some countries that will now only do the THR because of some blood poisoning from the resurfacing**. I believe Master X could not get any insurance for the resurfacing which is why he had to go with THR. I chose THR as no one in the south of England does the resurfacing any more and when I enquired in Birmingham from the founder **it was in excess of £18,000**. **Whereas I got the THR for free on our National Health Service. I am also back kicking and performing patterns as before. I even did Moon moo the other day. I am able to kick head height again like I did back in 2014 and that was a massive relief.**

(2)

Dear Master Frank, thank you for your message, this topic is very interesting for all Taekwon-Do practitioners regardless whether they have or haven't had any symptoms of hip injury. My problem started around 2007 but I didn't get a proper diagnosis by an orthopaedic surgeon until 2009, and that's when **I decided to have a hip resurfacing. Then in 2013 I started with similar complaints on the other hip and I knew straight away that it was the same affliction, so I went the same way and now I have both hips resurfaced. I can say that my recovery has been fantastic in terms of flexibility and power.** I think the fact that I started training Taekwon-Do in 1973 when I was 13 (Moo-Duk Kwan in Mexico City) is one of the reasons why later in life I developed the condition (**severe warm-ups and routines as you point out**). Funnily enough I wrote my thesis for VII Degree on this subject: 'TAEKWON-DO AND ITS IMPACT ON THE HIPS - A PARTICIPANTS JOURNEY' and I try to use my experience to guide my students in a way that hopefully will avoid the need of surgery altogether in later life. I include my thesis as I did a lot of research into hip degeneration in Taekwon-Do and I hope it helps someone out there.

(3)

Reading your thesis I see I wouldn't bring anything new to your work. It is very broad and comprehensive. Informative and in my opinion useful to everyone who may face the problems we had.

II. THE MOST DISORDERS in THE HIP due to martial arts

The cause of the hip disorders can be:

A : OSTEOARTHRITIS
B : AVASCULAIR NECROSIS
C : HIP DYSPLASIA

A: Osteoarthritis

What Is Osteoarthritis?

- **Arthritis** means 'joint inflammation'. It causes pain and swelling in the body's joints, such as the **knees** or hips. There are many **types of arthritis**, but **osteoarthritis** is the most common one. Also known as degenerative joint disease or age-related **arthritis**, **osteoarthritis** is more likely to develop as people get older.
- **Osteoarthritis** occurs when inflammation and injury to a joint cause a breaking down of cartilage tissue. In turn, that breakdown causes pain, swelling, and deformity. Cartilage is a firm, rubbery material that covers the ends of bones in normal joints. It is primarily made up of water and proteins. The primary function of cartilage is to reduce friction in the joints and serve as a "shock absorber." The shock-absorbing quality of normal cartilage comes from its ability to change shape when compressed. It can do this because of its high water content. Although cartilage may undergo some repair when damaged, the body does not grow new cartilage after it is injured.

The changes in osteoarthritis usually occur slowly over many years. There are, though, occasional exceptions.

The two main **types of osteoarthritis** are:

- **Primary:** More generalized osteoarthritis that affects the fingers, thumbs, spine, hips, and **knees**.
- **Secondary:** Osteoarthritis that occurs after injury or inflammation in a joint, or as a result of another condition that may affect the composition of the cartilage, such as **hemochromatosis**.

How Does Osteoarthritis Affect the Hip Joint?

Patients who have **osteoarthritis of the hip** sometimes have problems walking. Diagnosis can be difficult at first. That's because pain can appear in different locations, including the groin, thigh, buttocks, or knee. The pain can be stabbing and sharp or it can be a dull ache, and the hip is often stiff.

What Causes Osteoarthritis of the Hip Joint?

The causes of osteoarthritis of the hip are not known. Factors that may contribute include joint injury, increasing age, and being [overweight](#).

In addition, osteoarthritis can sometimes be caused by other factors:

- The joints may not have formed properly.
- There may be genetic (inherited) defects in the cartilage.
- The person may be putting extra stress on his or her joints, either by being [overweight](#) or through activities that involve the hip.

What Are the Symptoms of Osteoarthritis of the Hip?

If you have any of the following symptoms of hip osteoarthritis, you need to talk to your doctor:

- [Joint stiffness](#) that occurs as you are getting out of bed.
- Joint stiffness after you sit for a long time.
- Any pain, swelling, or tenderness in the hip joint.
- A sound or feeling ("crunching") of bone rubbing against bone.
- Inability to move the hip to perform routine activities such as putting on your socks.

How Is Osteoarthritis of the Hip Diagnosed?

There is no single test for [diagnosing osteoarthritis](#), but often it is diagnosed by an abnormal X-ray that shows characteristic features such as narrowing of the joint and spurring of the joint margins. Your doctor will take your medical history and perform a [physical examination](#). This will include a check of how your hip is functioning and may uncover loss of motion.

How Is Osteoarthritis of the Hip Treated?

The main goal of treating osteoarthritis of the hip is to improve the person's mobility (ability to get around) and lifestyle. Part of this goal involves improving the function of the hip and controlling pain. Treatment plans can involve:

- Rest and [joint care](#).
- Use of a cane to take [weight](#) off the affected hip.
- Non drug pain relief techniques to control pain.
- Losing excessive weight.
- [Exercise](#).
- [Medications](#), including [acetaminophen \(Tylenol\)](#), a nonsteroidal anti-inflammatory drug such as [ibuprofen \(Advil\)](#), or a prescription pain medication.
- Surgery.
- Complementary and alternative therapies.

What Is Hip Replacement Surgery?

The hip joint is a ball-and-socket mechanism. The ball is located at the top of the thigh bone (femur). Total [hip replacement surgery](#) replaces the damaged ball with a metal ball. The hip socket is resurfaced using a metal shell and a plastic liner.

What Is Hip Resurfacing?

Hip resurfacing is a surgical option that can provide relief while delaying [hip replacement surgery](#). In hip resurfacing, the diseased hip joint surfaces are removed surgically and substituted with metal. However, the entire femur bone is preserved. That makes future [hip replacement](#) surgeries possible. Rather than removing the ball of the hip socket, the surgeon covers it with a metal cap.

B : Avascular necrosis

(AVN), also called osteonecrosis, aseptic necrosis, or ischemic bone necrosis, is a condition that occurs when there is loss of [blood](#) to the bone. Because bone is living tissue that requires [blood](#), an interruption to the blood supply causes bone to die. If not stopped, this process eventually causes the bone to collapse.

[Avascular necrosis](#) most commonly occurs in the hip. Other common sites are the [shoulder](#), [knees](#), shoulder, and [ankles](#).

Who Gets Avascular Necrosis and What Causes It?

As many as 20,000 people develop AVN each year. Most are between ages 20 and 50. For healthy people, the risk of AVN is small. Most cases are the result of an underlying health problem or injury. Possible causes include:

Dislocation or fracture of the thigh bone (femur). This type of injury can affect the blood supply to the bone, leading to trauma-related avascular necrosis. AVN may develop in 20% or more of people who dislocate a hip.

Chronic corticosteroid use. Long-term use of these [inflammation](#)-fighting drugs, either orally or intravenously, is associated with 35% of all cases of nontraumatic AVN. Although the reason for this is not completely understood, doctors suspect these drugs may interfere with the body's ability to break down fatty substances. These substances collect in the blood vessels -- making them narrower -- and reduce the amount of blood to the bone.

Excessive alcohol use. Much like corticosteroids, excessive alcohol may cause fatty substances to build in the blood vessels and decrease the blood supply to the bones.

In my case a motorcycle accident. In some testimonials send to me by other Taekwon-Do practitioners by receiving a hard kick.

[Blood clots](#), [inflammation](#), and damage to the [arteries](#). All of these can block blood flow to the bones.

Other conditions associated with nontraumatic AVN include:

- [Gaucher's disease](#), an inherited [metabolic disorder](#) in which harmful quantities of a fatty substance accumulate in the organs.
- [Sickle cell disease](#).
- [Pancreatitis](#), inflammation of the [pancreas](#).
- [HIV](#) infection.
- [Radiation therapy](#) or [chemotherapy](#).
- [Autoimmune diseases](#).

- Decompression sickness, a condition that occurs when the body is subjected to a sudden reduction in surrounding pressure, causing the formation of gas bubbles in the blood.

Symptoms of Avascular Necrosis

In its early stages, AVN typically cause no symptoms; however, as the disease progresses it becomes painful. At first, you may experience pain when you put pressure on the affected bone. Then, pain may become more constant. If the disease progresses and the bone and surrounding joint collapse, you may experience severe pain that interferes with your ability to use your joint. The time between the first symptoms and collapse of the bone may range from several months to more than a year.

Treatment for Avascular Necrosis

The goals of treatment for AVN are to improve or ensure function of the affected joint, stop the progression of bone damage, and reduce pain.

The best treatment will depend on a number of factors, including:

- Your age.
- Stage of the disease.
- Location and amount of bone damage.
- Cause of AVN.

If the cause of your avascular necrosis is identified, treatment will include efforts to manage the underlying condition. For example, if AVN is caused by blood clots, your doctor will prescribe [medications](#) to dissolve clots. If inflammation of the arteries is responsible, your doctor may prescribe anti-inflammatory medicines.

If avascular necrosis is caught early, treatment may involve taking medications to relieve pain or limiting the use of the affected area. If your hip, [knee](#), or ankle is affected, crutches may be necessary to take [weight](#) off the damaged joint. Your doctor may also recommend range-of-motion exercises to help keep the affected joint mobile.

While these nonsurgical treatments may slow the progression of avascular necrosis, most people with the condition eventually need surgery.

Surgical options include:

- **Bone grafts**, which involve removing healthy bone from one part of the body and using it to replace the damaged bone
- **Osteotomy**, a procedure that involves cutting the bone and changing its alignment to relieve stress on the bone or joint
- **Total joint replacement**, which involves removing the damaged joint and replacing it with a synthetic joint
- **Core decompression**, a procedure that involves removing part of the inside of the bone to relieve pressure and allow new blood vessels to form
- **Vascularized bone graft**, a procedure that uses the patient's own tissue to rebuild diseased or damaged hip joints; the surgeon first removes the bone with the poor blood supply from the hip and then replaces it with the blood-vessel-rich bone from another site, such as the fibula, the smaller bone located in the lower leg.

- I add a resurfacing hip (Birmingham resurfacing hip, conserve hip ..., putting you in the possibility to continue practising Taekwon-Do.

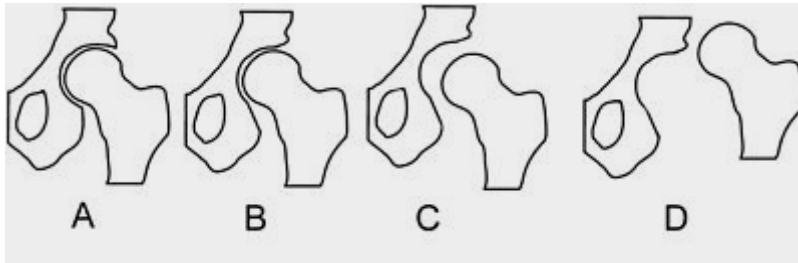
C : Hip dysplasia

Hip dysplasia is a [congenital](#) or developmental deformation or misalignment of the [hip joint](#). It does not typically produce symptoms in children less than a year old.

Screening all babies for the condition by [physical examination](#) is recommended. About 7.5% of [hip replacements](#) are done to treat problems which have arisen from hip dysplasia.

Hip instability which is of meaningful importance occurs in one to two percent of babies born at term.

Signs and symptoms



Types of misalignments of femur head to socket in hip dysplasia.

A: Normal. B: Dysplasia. C: Subluxation. D: Luxation.

Hip dysplasia can range from barely detectable to severely malformed or dislocated. The [congenital](#) form, [teratologic](#) or non-reducible dislocation occurs as part of more complex conditions.

The condition can be bilateral or unilateral:

- If both hip joints are affected one speaks of "bilateral" dysplasia. In this case some diagnostic indicators like asymmetric folds and leg-length inequality do not apply.
- In unilateral dysplasia only one joint shows deformity, the contralateral side may show resulting effects. In the majority of unilateral cases the left hip has the dysplasia.

If the joint is fully dislocated a false acetabulum often forms (often higher up on the pelvis) opposite the dislocated femoral head position.

In acetabular dysplasia the [acetabulum](#) (socket) is too shallow or deformed. The center-edge angle is measured as described by Wiberg. Two forms of femoral dysplasia are [coxa vara](#), in which the [femur head](#) grows at too narrow an angle to the [shaft](#), and [coxa valga](#), in which the angle is too wide.

A rare type, the 'Beukes familial hip dysplasia' is found among [Afrikaners](#) that are members of the Beukes family. The femur head is flat and irregular. People develop osteoarthritis at an early age.

Causes

Hip dysplasia is considered to be a [multifactorial](#) condition. That means that several factors are involved in causing the condition to manifest. Its cause is unknown but it is common in cases of a large fetus or a fetus in a breech position.

Congenital

Some studies suggest a hormonal link. Specifically, the hormone [relaxin](#) has been indicated.

A genetic factor is indicated since the trait runs in families and there is an increased occurrence in some ethnic populations (e.g., [Native Americans](#), Lapps/[Sami people](#)). A locus has been described on [chromosome 13](#). **Beukes familial dysplasia, on the other hand, was found.**

Acquired

As an acquired condition it has often been **linked to traditions of [swaddling](#) infants, use of overly restrictive baby seats, carriers and other methods of transporting babies, or use of a [cradle board](#) which locks the hip joint in an "adducted" position** (pulling the knees together tends to pull the heads of the femur bone out of the sockets or acetabulae) for extended periods. Modern swaddling techniques, such as the 'hip healthy swaddle' have been developed to relieve stress on hip joints caused by traditional swaddling methods.

Further risk factors include [breech birth](#), gender, genetics (family history), and firstborns. In breech position the femoral head tends to get pushed out of the socket. A narrow uterus also facilitates hip joint dislocation during fetal development and birth.

X-Ray Image showing hip dysplasia in a baby

Most countries have standard newborn exams that include a hip joint exam [screening](#) for early detection of hip dysplasia. Sometimes during an exam a "click" or more precisely "clunk" in the hip may be detected (although not all clicks indicate hip dysplasia). When a hip click (**also known as "clicky hips" in the UK**) is detected, the child's hips are tracked with additional screenings to determine if developmental dysplasia of the hip is caused.

Two maneuvers commonly employed for diagnosis in neonatal exams are the [Ortolani maneuver](#) and the [Barlow maneuver](#).

The condition can be confirmed by [ultrasound](#) and [X-ray](#). Ultrasound imaging yields better results defining the anatomy until the cartilage is [ossified](#). When the infant is around 3 months old a clear roentgenographic image can be achieved. Unfortunately the time the joint gives a good x-ray image is also the point at which nonsurgical treatment methods cease to give good results. In x-ray imaging dislocation may be indicated if the Shenton's line (an arc drawn from the medial aspect of the [femoral neck](#) through the superior margin of the [obturator foramen](#)) does not result in a smooth arc. However, in infants this line can be unreliable as it depends on the rotation of the hip when the image is taken.

Asymmetrical [gluteal folds](#) and an apparent limb-length inequality can further indicate unilateral hip dysplasia.^[29] Most vexingly, many newborn hips show a certain [ligamentous laxity](#), on the other hand severely malformed joints can appear stable. That is one reason why follow-up exams and developmental monitoring are important. Frequency and methods of routine screenings in children is still in debate however physical examination of newborns followed by appropriate use of hip ultrasound is widely accepted.

The Harris hip score (developed by William H. Harris MD, an orthopedist from Massachusetts) is one way to evaluate hip function following surgery. Other scoring methods are based on patients' evaluation like e.g. the Oxford hip score, HOOS and [WOMAC](#) score. Children's Hospital Oakland Hip Evaluation Scale (CHOES) is a modification of the Harris hip score that is currently being evaluated.

Hip dysplasia can develop in older age. Adolescents and adults with hip dysplasia may present with hip pain and in some cases hip labral tears. X-rays are used to confirm a diagnosis of hip dysplasia. CT scans and MRI scans are occasionally used too.

Terminology

Some sources prefer "developmental dysplasia of the hip" (DDH) to "congenital dislocation of the hip" (CDH), finding the latter term insufficiently flexible in describing the diversity of potential complications.

The use of the word congenital can also imply that the condition already exists at birth. This terminology introduces challenges, because the joint in a newborn is formed from [cartilage](#) and is still [malleable](#), making the onset difficult to ascertain.

The newer term DDH also encompasses [occult](#) dysplasia (e.g. an underdeveloped [joint](#)) without [dislocation](#) and a dislocation developing after the "[newborn](#)" phase.

The term is not used consistently. In pediatric/neonatal orthopedics it is used to describe unstable/dislocatable hips and poorly developed acetabula. For adults it describes hips showing abnormal femur head or acetabular x-rays.

Some sources prefer the term "hip dysplasia" over DDH, considering it to be "simpler and more accurate", partly because of the redundancy created by the use of the terms [developmental](#) and [dysplasia](#). Types of DDH include subluxation, dysplasia, and dislocation. The main types are the result of either laxity of the supporting capsule or an abnormal acetabulum.

Crowe classification

In 1979 Dr. John F. Crowe et al. proposed a classification to define the degree of malformation and dislocation. Grouped from least severe Crowe I dysplasia to most severe Crowe IV. This classification is very useful for studying treatment results.

Rather than using the Wiberg angle because it makes it difficult to quantify the degree of dislocation they used 3 key elements to determine the degree of [subluxation](#): A reference line at the lower rim of the "teardrop", junction between the femoral head and neck of the respective joint and the height of the pelvis (vertical measurement). They studied [anteroposterior](#) pelvic x-rays and drew horizontal lines through the lower rim of a feature called "teardrop". The distance between this line and the middle lines of the junction between femur head and neck gave them a

measure of the degree of femur head subluxation. They further established that a "normal" diameter of the femur head measures 20% of the height of the pelvis. If the middle line of the neck-head junction was more than 10% of the pelvis height above the reference line they considered the joint to be more than 50% dislocated.

The following types resulted:

| Class Description | | Dislocation |
|--------------------------|--|---------------------------|
| Crowe I | Femur and acetabulum show minimal abnormal development. | Less than 50% dislocation |
| Crowe II | The acetabulum shows abnormal development. | 50% to 75% dislocation |
| Crowe III | The acetabula is developed without a roof. A false acetabulum develops opposite the dislocated femur head position. The joint is fully dislocated. | 75% to 100% dislocation |
| Crowe IV | The acetabulum is insufficiently developed. Since the femur is positioned high up on the pelvis this class is also known as "high hip dislocation ". | 100% dislocation |

Treatment

Hip dysplasia presents a nearly perfect equilibrium between the arthritis, movement/mobility problems and pain associated with the developmental malformation, and the arthritis, movement/mobility problems and pain that are, as often as not in moderate to severe cases, inflicted by the treatment itself.

However, given the very real possibility of a limp, constant and/or debilitating pain, complicated treatment and impaired mobility later in life, careful developmental monitoring is indicated and early intervention is often the result. The worst possible consequence of non treatment is developing early arthritis, sometimes even during teenage years. All treatment aims to delay the onset of arthritis, but no treatment is fully successful in avoiding it; and, all available treatments bear the risk of inflicting equivalent damage. Most unfortunately, studies have as yet been unable to find a method of predicting outcomes in either the surgical/orthopedic treatment of the condition in infants and young children, or the surgical treatment of these early treatments' negative outcomes later in life (such as arthritis, avascular necrosis, trochanteric bursitis, and bone spurs of up to 2 cm just medial of the gluteus maximus insertion point on the greater trochanter due to excessive friction).

Hip replacement and osteotomy

Hip dysplasia is often cited as causing [osteoarthritis](#) of the hip at a comparatively young age. Dislocated load bearing surfaces lead to increased and unusual wear. Although there are studies that contradict these findings. (see) Peri-acetabular osteotomy (PAO) surgery can be used to realign the hip joint in some adolescents and adults. Subsequent treatment with total hip [arthroplasty \(hip replacement\)](#) is complicated by a need for revision surgery (replacing the artificial joint) owing to skeletal changes as the body matures, loosening/wear or bone resorption. **[Hip resurfacing](#) is another option for correcting hip dysplasia in adults. It is a type of hip replacement that preserves more bone, and may work for younger hip dysplasia patients.**

[Osteotomies](#) are either used in conjunction with [arthroplasty](#) or by themselves to correct misalignment.

III. EXPERIENCES CAUSING HIP PROBLEMS

ARTICLE 1 - Karate experience

Do Our Training Methods Damage Our Bodies?

We so often hear that martial arts are good for our health and well-being, but is this always the truth? I would say in the main . . . yes.

*However I do feel that there are exceptions. **All too often you hear of the more mature warriors amongst us having hip or knee surgery. Many (not being professional instructors) have to give up practicing all together. So if martial arts are a lifetime study (as is often said) how come the people still practicing over the age of 50 are so few, or such a small percentage.***

HIGHER STANCES

*With Funakoshi's influence diminishing and most of his most knowledgeable students gone, Shotokan began to evolve (or devolve depending on how you look at it) into a forceful system with a heavy emphasis on the physical side. **This led in part to the stances becoming longer and deeper placing more stress on the lower body joints. If you take a look at pictures of Funakoshi demonstrating techniques, he is always in a fairly high stance. Shotokan was mainly derived from Okinawan Shorin Ryu (created by Yasutsune Itosu). If you go to Youtube and search for 'Shorin Ryu kata', you'll see that most of their movements are done in a higher stance than modern (nowadays) Shotokan.***

High kicks (which barely existed in Okinawan Karate) became much more common, putting even more stress on the body (especially hips and knees). Again if you watch Shorin Ryu kata movies on Youtube, you'll see less emphasis on kicks. Furthermore, you won't find side snap kicks anywhere.

*When I first started practicing, we had to keep the back leg straight when performing any technique in a walking stance (gunnun sogi). **This puts pressure on the lower back and hips. Now the back leg is slightly bent, relieving the pressure.** This and many other modifications have greatly improved the way we practice today. In many ways many schools of Shotokan have become much 'softer' in their training (softer as in how the technique is performed, not as in 'taking it easy'). However, many still train the old way and many styles (Japanese &*

Korean) which are derived from Shotokan still bear some of those old hallmarks.

Training can be great for health, but if you are not careful, it can be damaging to your body, especially hips, knees and lower back.

MY CONCLUSION

I can conclude here that after 40 years of Taekwon-Do we had an evolution from lower stances to higher stances and bent the back slightly (SINE WAVE !!) taking away too much pressure on knees and hips !

ARTICLE 2 Thai-Boxer

Pat Pollock is a certified strength and conditioning specialist, personal trainer and [Thai-boxing](#) instructor.



Martial arts training can place more stress on the hips than any other sport. Therefore, it's crucial that all practitioners familiarize themselves with the most common types of hip injuries, as well as the causes, treatments and, most important, strategies for preventing them. Doing so not only will enhance your physical performance in the short term but also will ensure a healthy martial arts career that spans decades.

Dr. Robert Klapper, the clinical chief of orthopedic surgery at [Cedars-Sinai](#) in Los Angeles, is an innovator in the field of joint care. The author of a book titled *Heal Your Hips: How to Prevent Hip Surgery*, he's patented many new surgical instruments designed to perform hip arthroscopy and has successfully treated celebrity athletes such as basketball legend Wilt Chamberlain and former middleweight karate champion [Chuck Norris](#).

"The martial arts are the No.1 cause of injuries to the knee and hip, particularly amongst older athletes such as those in their 30s and 40s," Klapper says. "I am seeing an epidemic of hip replacements, especially in those over 50." He identifies the roundhouse kick as the most common culprit."

“When a person executes these [kicking] movements, particularly with great force, the labrum can be shifted or pulled out of place within the capsule if he does not possess a high level of muscular strength [and] flexibility or if he performs the movement incorrectly,” Klapper says. “This is the single greatest cause of martial arts hip injuries.”

“Recognizing the signs of injury is crucial, Klapper says. “Athletes come to me when they are having pain in or around their hips and point to one of three areas: their groin, their side hip area (the pocket) or their buttock. Groin pain means damage to the hip, the pocket means it is bursitis or tendonitis, and the buttock indicates the injury is to the lower spine.”

He recommends that anyone who experiences pain or soreness in that area immediately consult a physician. “Athletes wait too long to seek help for a potential injury because of the no-pain-no-gain ethic of some martial arts,” he says. “Successfully treating your body is about listening to it on a daily basis, not waiting for it to shout.”

*Perhaps more important than recognizing the symptoms is implementing a plan of action that will enable you to prevent them from occurring in the first place. **Klapper endorses the following strategies:***

- *Control your weight and body-fat levels.*
- ***Maintain appropriate strength and flexibility for your activities.***
- ***Avoid running and other hard, repetitive-impact movements.***
- *Engage in balance training such as [tai chi chuan](#), especially if you’re older.*
- *Take a **vitamin C supplement** because it’s the main antioxidant responsible for joint health.*
- *Try recumbent biking and water workouts to improve your conditioning.*

*“Water workouts are of particular benefit not only in preventing hip injuries but in treating them, as well,” Klapper says. **“Warm water, up to about navel height, affords an opportunity for your joints to be almost weightless, and it provides many unique angles and loads of resistance.”***

MY CONCLUSION

The old Korean style: running on hard floors, ‘hard’ movements instead of power through velocity, incorrect kicks (e.g.the difference between turning kick (tollyo chagi) frequently used in competition (injuring the hip) instead of the correct performance 'using the hip') and unhealthy movements should be avoided.

ARTICLE 3 - Consequences

LET’S FACE IT: AS MARTIAL ARTISTS, WE EMBRACE ACTIVITIES THAT ASK A LOT FROM OUR BODIES.

Chances are, you know someone who's asked a little too much from his or her hips and, consequently, is suffering hip pain. Maybe you know someone who's already undergone surgery to deal with the problem. This article explores the hip stories of some prominent practitioners and explores the options for preserving and, if necessary, restoring your hip functionality.

WARNING SIGNS

For many martial artists, it starts like this: you're full of vigor. You rock the bags and own the mats. You live for your next chance to train. And then something new sneaks up on you.

One day, you're forced to acknowledge that you feel minor discomfort in one of your hips. The pain tolerance you've developed **over the years enables you to ignore it, perhaps writing it off as a sign you overstretched or landed badly after your last jump kick.**

But it persists. Sometimes you hardly notice it. When you're adrenalized, you move like your old self, but when you're not, the pain is there. Eventually, you get to a place where there's no denying the obvious. Something's not right, and it's getting worse.

Over time, it gets harder to put on your socks. You start wearing slip-on shoes because tying your laces has become a workout in itself. **Then there's the limping: you don't notice it at first, but everyone else does. One day, your foot catches the edge of the carpet and — boom! — you go down face-first.**

You begin to eat 'anti-inflammatory' as if they were candy, pay visits to the chiropractor, get X-rays. As the pain worsens, you finally make a date with an MRI machine, and minutes later, the doctor delivers the news: your cartilage is gone, your hip is bone on bone. You're now officially a candidate for hip replacement.

WHAT WENT WRONG?

The hip is brilliantly designed to deal with repeated motion and function despite a good deal of wear and tear. The largest ball-and-socket joint in the human body, it fits together in a way that allows a wide range of fluid movement. **For example, when you use your hips to kick a heavy bag, a cushion of cartilage helps prevent friction between your thighbone (femur) and the socket that the head of the femur sits in (acetabulum).**

Your femur (actually, the femoral head), the acetabulum, the cartilage, and all the tendons and muscles connected to them are durable but not indestructible. Hips can — and do — wear out for a number of reasons. Often, a worn-out hip causes so much pain that it requires hip-replacement surgery, in which an artificial femoral head and acetabulum are installed. It's a significant and expensive procedure.

To the best of my knowledge, nobody keeps statistics on how many martial artists get their hips replaced, but the list of veterans who've had the surgery done on one or both sides is impressive. Jean Claude Van Damme, Chuck Norris, Bill Wallace, Billy Blanks, Keith Hironaka, Keith Hironaka, Christine Bannon-Rodrigues, Steve "Nasty" Anderson, Larry Carnahan, Danny Dring, Tom Seabourne and Joe Hess are just the tip of the iceberg. They all got to a place

where a significant decrease in range of motion and flat-out pain necessitated surgery that entailed amputating the femoral head and attaching a new head to the femur, then grinding out a portion of the hip socket and replacing it with an artificial acetabulum.

HIP STORIES 'Brazilian jiu-jitsu'

DC Maxwell is a black belt in Brazilian jiu-jitsu and was one of the original investors in the UFC. Prior to her involvement in BJJ, which started when she was 39, she was a competitive gymnast, racquetball player and fitness trainer. Like so many people who eventually opt for surgery, she said her hip pain came on slowly. It eventually got to a point that made it painful to walk.

"I noticed my hip was really hurting, and it just froze up and I was limping around," she said. "I didn't want surgery because who wants surgery? But eventually, I just needed to walk without pain."

Five years ago, Maxwell had her left hip replaced. The procedure enabled her to resume her BJJ training without the pain she'd lived with for so long. She got her life back.

Smith knew he had problems with his hips when he started tripping over things and, literally, falling on his face. "I was walking one day and fell," he said. "I'm thinking that's nothing, but it started getting worse. I started to trip and fall [frequently] and couldn't catch my balance. There was a really sharp pain that was always going up by my groin and also on the outside of my hip."

Smith also suffered from having legs of unequal lengths, which was likely caused by the degeneration of bone and cartilage, he said. At 50, he underwent his first operation, and his second came eight years later.

"The second surgery was easier because I knew what to expect," said Smith, who's almost 60 years old and able to train as if his joints had never needed repair. He rates his recovery at nearly 100 percent.

AUTHOR'S STORY

I only cried twice over the deterioration and eventual replacement of my own hips. The first time was after I'd driven out of the parking lot of a young doctor of orthopedic medicine in Sacramento, California. It was 1999, I was 39 years old and I'd had been practicing the martial arts for 28 years. The pain in my hips had finally reached a level I could no longer live with. I couldn't put on my socks or tie my shoes. I couldn't ride a bike, sit in the back seat of most cars or walk more than two blocks. Even getting into or out of my car required me to use both hands to move my right leg. Otherwise, it would feel like a knife was being plunged into my hip.

At the conclusion of my meeting with the doctor, he said I should wait until I was older, maybe in my 60s, before considering hip replacement. I said my thanks, paid the fee, hobbled to my car, pulled out of the parking lot and made it half a block before my eyes filled with tears of frustration, pain and fear.

CONCLUSION

Reading all of this I can conclude if there are signs of hip problems NEVER wait until you're 60, meanwhile 'eating anti-inflammatoirs' or undergoing treatments with cortisone.

ARTICLE 4- Karate experience (side kicks - front kick- high kicks)

Kicking and the hips - Joshua Hodges

*Although karate is not science, **there is science behind the movements that we make.** The forces generated by effective techniques can deliver punishing, even lethal, blows. However the forces delivered from techniques performed improperly not only are less effective on opponents, but may cause injury to the practitioner.*

*One phrase that you will hear time and time again in the dojo is “use your hips.” It is very important to rotate from your hips to create powerful kicks, punches, strikes, and blocks. The hip joint can basically be thought of as a ball in a socket. In the above illustration, you can see that the femoral ball projects at an angle to the length of the thigh bone. It fits in the hip socket or acetabulum, which is part of the construction of the pelvis. It is lubricated with synovial fluids inside the joint, which is lined with a smooth cartilage. Because of the ball in socket construction, this joint may articulate in many directions. It may rotate externally or internally. **It may also slightly extend acting as a shock absorber for walking. It may be flexion, drawing the knee up and the thigh closer to the torso, as in mae geri (ab chagi).** It may also be abducted and adducted moving laterally out from the body and back towards the body's centerline as in yoko geri keage.*

*For side snapping kick, he also warns that improper technique could lead to a similar injury when articulating the hip laterally. **Sensei Schmidt stated that the side snap kick can be terribly dangerous if the hip doesn't move first in the direction of the kick.** To do this kick properly and safely, he demonstrates a tilting up of the hip after the leg is chambered, prior to snapping out the kick. He again warns of the femoral head banging into the hip socket if this tilt is not part of the motion of the kick.*

In both instances he warns of the possibility of grinding the bone in the joint. By incorporating the pendulum motion in the front kick, the joint is free to move without obstruction. Similarly, leading with the hip by tilting the hip up in a side kick frees the joint so that no grinding of the bone occurs.

It turns out that karateka's have a high incident of hip injuries. A study conducted by researchers from the University of Bern in Switzerland used MRI images of 97 hips of karate competitors to examine structural changes. They also subjected the participants of the study to range of motion and impingement tests.

Their goal was to look at the effects karate training had on the onset of osteoarthritis, the wearing of the cartilage inside the joint.

The results showed that the age of the fighter did not show a relationship with the results yielding the amount of hip damage. “But the more years of karate training, the more labral lesions and the more cartilage damage was found. And the earlier the athlete started the training, the higher was the prevalence of an increased alpha angle, labral lesions, and cartilage damage,” states Inge Kress, a student from the University of Bern, Switzerland.

Some of the results:

- *15 percent of the hips examined showed normal cartilage, 78 percent had degenerated cartilage, and seven percent had full thickness defects.*
- *The mean alpha angle of 64.3 degrees was found in the hips of the karate fighters. Any angle greater than 55 degrees is considered abnormal.*
- *Forty-eight out of the 97 hips had a degenerated labrum, 33 had a torn labrum and only 16 were normal.*
- *The MRIs found herniation pits, cysts, and myocoid degeneration, thus indicating much stress in the hip joint.*

*Higher kicks also lead to a greater chance of impingement inside the hip joint. Not everyone’s hips and ligaments are developed to perform high kicks. Dr. Ochiai states: “Listening to one’s body is important. Some people’s hips are just not designed for high kicks (FAI), and you can stretch all you want, but a bony impingement will remain.” In the same video, Sensei Schmidt also reminds the viewer that Funikoshi Sensei only advocated lower level kicks. **It is always better to perform a lower level kick correctly than to throw a high kick without proper mechanics.***

So what of the study that basically says the longer you participate in karate the more of a risk you run in wrecking your hips? Dr. Ochiai puts it in perspective:

“As with ANY strenuous activity, there are risks and benefits. While I see some martial artists with hip labral tears and FAI, it is a small proportion compared to soccer, lacrosse, football, baseball, and basketball. I would be hesitant to make a direct comparison, as martial arts is one of the few sports that one can maintain at a relatively high level even as one gets significantly older (so is the karate causing the hip arthritis, or is it just that more people can be active in karate than professional football?).”

With the seriousness of this type of injury, it is all the more important that you pay proper attention to your body dynamics, your alignment, and posture. Use your hips, but use them properly. Listen to your body, and don’t put off going to the doctor if something feels out of whack. Ibuprofen and icepacks are great, but if they are becoming a routine part of training, it might be time to seek medical advice.

Joshua Hodges

CONCLUSION

I will never forget Gen. Choi using the words "HIP HOLIDAYS" and "It is very important to rotate from your hips to create powerful kicks, punches, strikes, and blocks in a correct way. As quoted : the side snap kick can be terribly dangerous if the hip doesn't move first in the direction of the kick. It is always better to perform a lower level kick correctly then to throw a high kick without proper mechanics.

ARTICLE 5 - Preventing injuries Karate experience ... abductors and adductors

Preventing Injury: Muscle Imbalance

When I (sic the author) first quit training karate, in 1994, a big reason was persistent pain in my hips, on the outside edge. It fell right into the range of not-debilitating-enough-to-keep-me-from-doing-normal-life stuff but painful-enough-to-interfere-with-training. I actually went to a sports medicine clinic to get checked out, but their help got me exactly nowhere.

A decade of inactivity calmed down the pain, but I have to admit I was kind of nervous about getting back into training - would the injury recur, would I be able to continue, would I be limited in my kicking, etc.

*Luckily, one of the first resources I tapped into for information when I got back into training was Thomas Kurz. **One fundamental practice of his flexibility routine is strengthening the hip adductors (your groin muscles - the muscles that pull your legs towards each other) in order to improve their flexibility (muscles that are weak in a particular position will tighten up, so if your adductors are weak while lengthened they'll tighten, while if they're strong in that position they won't, and you'll have greater range of motion).***

I was doing Kurz's exercises in order to be able to kick higher, but a side effect was that my hips felt better than they had in years. Over the past five years I've made very gradual increases in my own range of motion (I tend to get lazy about the workouts, and I took another year off recently) and I'm not sure I'll ever do a full split, but my kicks are higher than they ever were before and my hip pain hasn't even flickered back.

What's the connection? I can't prove anything, but think about your hip for a minute. It's a ball and socket joint. The head of your femur fits into your hip like a baseball bat fitting into a cup. The socket is lined with cartilage - if it was all bone, then moving would involve two bones rubbing against one another, and that's not comfortable for anybody.

Now what happens to that ball and socket joint when you have muscles pulling on those bones? Imagine someone with very **strong abductors** (the muscles that pull your legs apart, on the outside of your hip) and very **weak adductors** (which describes me 20 years ago). Now think of your femur. It's going to have a very strong force pulling it to the outside of the hip socket - away from your groin - and a relatively weak force pulling it back in towards the midline of your body.

What's going to happen? Your femur is going to be pinched against the outside of the hip socket and grind against the soft tissue there. Think that's comfortable? Think again. What's going to happen to that cartilage and stuff over the long term, with that bone jammed up against the outside edge of the socket all the time?

Luckily, the **solution** is fairly simple - strengthen your adductors. The straddle to stand will work, although there are plenty of other options (sumo deadlifts, for example). **Strong adductors will make your footwork quicker, give you better dynamic flexibility (which means higher kicks), all while situating your femur correctly in your hip socket so you don't get hip pain.** Add direct adductor work to your routine about twice a week and you'll see some rapid improvements. I'm currently doing 3-4 sets of 3-5 reps of straddle to stands on Valslides, once or twice a week.

CONCLUSION

One fundamental practice of his flexibility routine is strengthening the hip adductors (your groin muscles - the muscles that pull your legs towards each other) in order to improve their flexibility AND abductors (the muscles that pull your legs apart, on the outside of your hip)should be in HARMONY! Later on in this document I will point out responsible stretching in this matter.

ARTICLE 6 - performing a responsible tollyo chagi

HIP AND KNEE LOADING OF KARATE PLAYERS PERFORMING TRAINING AND COMPETITION STYLE VERSIONS OF A ROUNDHOUSE KICK

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The main purpose of this study was to examine hip and knee joint loading during the performance of the common roundhouse kicking technique in both a training mode and in a competition mode. 15 black belt karate players performed roundhouse kicks in two different ways, basic kick and competition kick.

Motion and force data were collected with a VICON motion analysis system and two Kistler force plates. 3D joint motions and joint moments about the hip and knee of both the support leg and kicking leg for all kicks were calculated. The maximum moments were more varied between kick types for the kicking

leg but the joint angles were similar in most cases. Joint loading comparable to the literature was found for joint previously examined but several high joint moments at extremes of motion were found in the supporting leg.

METHODS: Following ethical approval 15 black belt karate players (10 men and 5 women, mean * SD; age: 24.4 & 8.1 years, height: 1.7 k 0.1 m, mass: 73 & 1.31 kg and years training: 11 k 8.2 years) with no injuries to their knees or hips volunteered for this study. They were from different karate schools or styles (Shotokan, Shitoryu and Wadoryu). They all train and compete under the overall karate name but they use different strategies and philosophies of training to get speed, balance and strength to reach the target.

After a personal warm up each karate player performed roundhouse kicks in two different ways, basic kick and competition kick. For both kicks the players stayed stationary and kicked to the air at a point of their choosing with the only constraint being that they kept their supporting foot on the force plates. The basic kick was as executed as in standard **training in their style with 'speed and power'** and the **competition kick was also with 'speed and power' but with their own greater** emphasis on speed of execution as they would in competition. Motion and force data were collected with a nine T20 camera VICON motion analysis system (VICON, Oxford Metrics Group, UK) set to 250Hz and two 0.6x0.4 m Kistler Type 9281 EA force plates (Kistler Instruments **AG**, Winterthur, Switzerland) set to 1000Hz. Twenty-one 14mm retro reflective markers were put on the players bodies 5 on the foot (1 on the Toe, 2 on the Medial and Lateral sides of foot, 2 on the Medial and lateral sides of ankle), 2 on the knee joint (Medial and lateral sides of knee joint, 1 on the thigh, these 8*2=16 markers on both legs and 5 on the pelvis (2 on the bony protrusion of the right and left anterior super iliac, Dimple created by the right and left posterior super iliac and 1 on the left iliac). Data were reconstructed and processed in VICON Nexus and then exported to Visual3D (C-motion, Germantown, MD, USA) to calculate 3D joint motion and joint moments about the hip and knee of both the support leg and kicking leg for all kicks. Maximum joint angle, maximum joint moment and joint moment at maximum joint angle were calculated and pooled across all 15 karate players. The X axis is flexion-extension, Y axis is abduction-adduction and Z axis is internal-external rotation.

RESULTS:

The means and standard deviations of the maximum joint angle for the knee and hip of the kicking leg and support leg between the basic version and the competition version were generally similar, apart from the support leg knee flexion-extension and the kicking leg knee internal-external rotation. The maximum moments were more varied between kick types for the kicking leg. The kicking leg hip moments about all 3 axes were different with the competition kick having lower abduction-adduction but higher flexion-extension and internal-external rotation. The kicking leg knee maximum moment for extension-flexion was nearly double in the competition version than the basic version, 101 N.m versus 58.8 N.m. It should be noted that the support leg knee moments in abduction-adduction were close to 100 N.m. Joint moment at maximum joint angle were generally much lower than the maximum moments apart from, kicking leg hip abduction-adduction for competition kicks and support hip internal rotation for the competition and basic kicks, and left

support knee internal-external rotation for the basic kick. The absolute values for the support leg hip at maximum angle were high for flexion extension and abduction-adduction.

DISCUSSION: *The main purpose of this study was to examine hip and knee joint loading.*

During the performance of the common roundhouse kicking technique with the expectation that the competition kick would produce greater loading on the joints and at more extreme angles.

This was only partly supported by the results as the maximum joint angles were greater in some cases for the basic kick and in others for the competition kick.

The maximum moments were more often greater for the competition kick compared to the basic kick than vice versa. In part this lack of a clear change across all variables can be down to subtle changes in the way the kick is performed when moving from one to the other with the competition version usually not just being a faster version of the basic kick. It can be seen from the moments of the kicking leg that in the basic kick the hip moments are similar for all three axes. In the competition version there are greater hip flexion and internal rotation moments and less abduction moment as in order to reduce total execution time the emphasis is on getting a straighter line to the target with little early hip abduction and suddenly trying to rotate the leg internally to get the foot into position. This often results in around kick that kicks more up rather than round.

CONCLUSION:

*The players generally had ranges of motion that were not excessive or abnormal and had produced well controlled kicks with expected variations between the type do kicking technique. However, there were high moments at maximal joint angles around a few joint axes, especially in the hips and the support leg knee and maximum moments in the support leg about the knee and hip that are higher than those seen in other **sporting actions such as cutting and landing that are seen as risky with regard to injury.** Consideration that it is the supporting leg's knee and hip that may be more at risk from chronic abuse is something that needs bringing to the attention of coaches and athletes especially at the hip as they tend to focus on the kicking leg.*

MY CONCLUSION

Avoid HARD 'powerful' kicks and prefer fast kicks (speed over mass) performed in a right way, with the right technique. A wrongly performed tollyo chagi (turning kick or roundhouse kick) can damage your hip and knees.

IV. EVOLUTION ITF Taekwon-Do IN TIME

When I started practising Taekwon-Do in the seventies and seeing what changed until today there is an enormous difference :

- The old 'Korean school' training methods.
- Few or almost non responsible (non-medical justified) stretching.
- Practising and competing on a hard floor and in cold circumstances.
- Irresponsible kicking techniques + hard, powerful kicks in the air.
- No knowledge about static – dynamic, functional stretching.
- Wrongly executed stances.
- No sine wave.

These were also the remarks, complaints that ITF Taekwon-Do Instructors and Masters (40-60 years of age) with hip replacements send me.

V. PREVENTING INJURIES - STRETCHING METHODS

Starting with a bad example sitting cross-legged = Jean Claude Van Damme was stretched in this position by his coach in Brussels, who jumped on his legs during stretching!

Also the Koreans practiced this way.

A responsible (medical justified) stretching method is necessary.

TYPES OF STRETCHING (see pictures enclosed)

STATIC STRETCHES

- STATIC
- PASSIVE
- ACTIVE
- PNF
- ISOMETRIC

DYNAMIC STRETCHES

- BALLISTIC
- DYNAMIC
- ACTIVE ISOLATED STRETCHING

STRETCH BEFORE and AFTER EXERCISE

The question often arises "**should I stretch before or after exercise?**" This is not an either/or situation. **BOTH ARE ESSENTIAL.**

Stretching after exercise has a totally different purpose than stretching before exercise. The two are not the same.

The purpose of stretching before exercising is to help **preventing injuries**. Stretching does this by lengthening the muscles and tendons, which in turn increases our reach of movements. This ensures that we are able to move freely without restriction or injury occurring .

However, **stretching after exercise has a different role**. Its purpose is primarily to aid in the repair and recovery of the muscles and tendons. By lengthening the muscles and tendons, stretching helps to prevent tight muscles and delayed muscles soreness that usually accompanies strenuous exercise.

After exercise our stretching should be done as a cooling-down. The cool-down will vary depending on the duration and intensity of the exercise

undertaken, but will usually consist of five to ten minutes of very light physical activity and be followed by five to ten minutes of static stretching exercises.

STRETCH ALL MAJOR MUSCLES AND THEIR OPPOSING MUSCLE GROUPS !

REDUCED FATIGUE

Fatigue is a major problem for everyone, especially those who exercise . It results in a decrease in both physical and mental performance .

Increased flexibility through stretching can help prevent the effects of fatigue by taking pressure off the working muscles (the agonist). For every muscle in the body there is an opposite or opposing muscle (the antagonist). If the opposing muscles are more flexible the working muscles do not have to exert as much force against the opposing muscles. Therefore each movement of the working muscles actually takes less effort.

VI. DIFFERENCES IN TREATMENT FOR HIP DISEASE BETWEEN MEN AND WOMEN

I also add with gratitude a part of the thesis of Master Janitzio Moreno, England :

“There are several explanations about the differences between men and women when it comes to treatment of hip injuries.

Generally, women tend to have a wider pelvis than men and female hips are more prone to have problems with the socket -or acetabulum- that is either too shallow or too deep. Men usually have more issues with the femoral (thigh bone) side of the joint, with a femoral head and neck that is too large or oddly shaped.

According to orthopaedic surgeon Dr G. Klingenstein of Virtua Voorhees general medical and surgical hospital in New Jersey, men and women experience hip pain in very different ways.

Most men experience pain in front of the hip or groin. Women, on the other hand, may also have more deep pelvic pain, or pain that radiates to the pelvic floor. So in short, there are definitely distinct bone structure patterns that can be labeled ‘female’ or ‘male.

Another factor that research has recently found, is that women are more vulnerable to the effects of osteoporosis, or weakening of the bones due to menopausal effects.

This is a major point when it comes to assess and treat bone related injuries to women over the age of 40, and is one of the main reasons why nowadays hip resurfacing is not recommended for women as statistics show that 1 in 10 procedures in women failed after only 7 years.

Generally, the use of metal-on-metal hip bearings is controversial in women of childbearing age and in patients with metal sensitivities regardless of gender.

We can conclude this chapter pointing out that men and women who suffer the same type of hip injuries as a direct result of Taekwon-Do training have a very good chance to recover and carry on at fairly the same level as before, but differences in anatomical and biomechanical factors such as pelvic structure, muscular strength and hormonal variations are important points when it comes to treatment.”

I can add that indeed the hip structure is different. In case of a resurfacing hip in the Dutch medical environment was decided to ban resurfacing hips as in few cases 'metal particles' were found after blood tests in female blood.

My surgeon was however very clear. This was extremely exceptional and negligible.....

Clear to me that in the medical world there still are believers or non-believers in the case of resurfacing hip replacement.

VII. TREATMENT OPTIONS

FIRST : Prevention (See VIII)

- Medication (The last option in my opinion).
- Exercises - swimming - correct stretching.
- BHR (resurfacing hip).
- CLASSICAL HIP replacement.

VIII. PREVENTION & CONCLUSION

- Evolution in our ITF seems positive. I have the impression there are more and more open and well educated instructors.
- Still some training methods should change .
- Hard style kicking has to change and reset to velocity. Also the sine wave and natural movements are important. As GrandMaster Marano always says "You have to be comfortable"
- Avoid using heavy bags to kick !
- I can conclude also that after practicing 40 years of ITF Taekwon-Do I have seen an evolution from lower stances to higher stances and bending the back leg slightly (SINE WAVE !!) taking away too much pressure on knees and hips.
- The old Korean training methods, with e.g. running on hard floors should be banned. Correct kicks should be executed (like we know e.g. the difference in tollyo chagi in competitive (injuring the hip) or correct performance 'using the hip', turning = turning kick).
- Unhealthy movements should be avoided .
- If there are any signs of hip problems NEVER wait until you are 60! meanwhile '**eating** anti-inflammations ' or undergoing treatments with cortisone.
- I will never forget the words of Gen. Choi, saying " HIP HOLIDAYS "and "It is very important to rotate from your hips to create powerful kicks, punches, strikes, and blocks in a correct way. As quoted : the side snap kick can be terribly dangerous if the hip doesn't move first in the direction of the kick. It is always better to perform a lower level kick correctly then to throw a high kick without proper mechanics.
- Avoid executing HARD powerful kicks and prefer fast kicks (velocity over mass) performed in a correct way. A wrongly performed dollyo dhagi (called roundhouse kick in some articles) can damage your hip and knees.

- Correct stretching as stated previously! First "dynamic" (after warming-up) and do static stretching at the end of the training session.
- And in case of surgery choose the "time- buying" system as the resurfacing hip is called. I already won 17 years now

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- Dr. Robert Klapper (the clinical chief of orthopaedic surgery at Cedars -Sinai in Los Angeles)
- Examination thesis for VII Degree Janitzio Moreno
- My article in Taekwon-Do Generation (see annex)

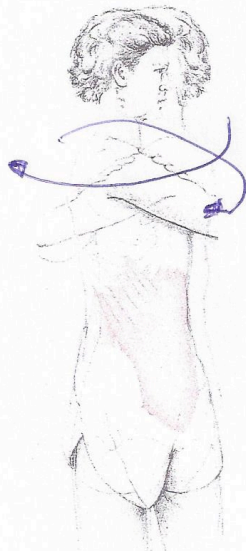


Figure 3.6:
An example of ballistic stretching

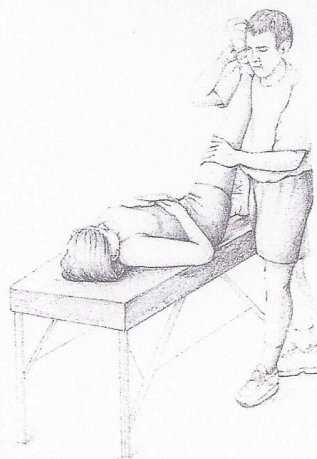


Figure 3.4: An example of PNF stretching.

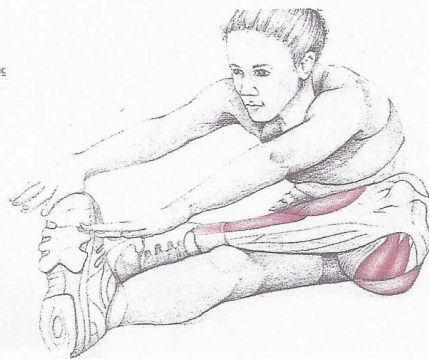
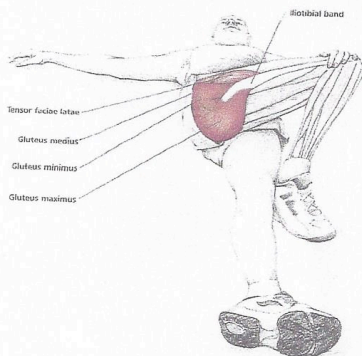


Figure 3.7: An example of active isolated stretching.

051: LYING CROSS-OVER KNEE PULL-DOWN STRETCH

2



Technique

Lie on your back and cross one leg over the other. Bring your foot up to your opposite knee and with your opposite arm pull your raised knee towards the ground.

Muscles being stretched

Primary muscles: Gluteus medius and minimus.
Secondary muscle: Tensor fasciae latae.

Sports that benefit from this stretch

Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice-skating, Roller-skating, In-line skating, Martial arts, Running, Triathlon, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Walking, Race walking.

Sports injury where stretch may be useful

Lower back, muscle strain, Lower back ligament sprain, Iliotibial band syndrome.

Additional information for performing this stretch correctly

Keep your shoulders on the ground and concentrate on pulling your raised knee to the ground, not up towards your chest.

3

Right leg, posterolateral view.

Right leg, posterolateral view.

Technique
Lie on your stomach and bend one leg under your stomach. Lean towards the ground.

Muscles being stretched
Primary muscle: Piriformis.
Secondary muscles: Gemellus superior and inferior, Obturator internus and externus, Quadratus femoris.

Sports that benefit from this stretch
Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice skating, Roller-skating, Inline skating, Martial arts, Running, Track, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Walking, Race walking.

Sports injury where stretch may be useful
Piriformis syndrome, Snapping hip syndrome, Trochanteric bursitis.

Common problems and additional information for performing this stretch correctly
This position can be a little hard to get into, so make sure you are well supported and use your hands for balance.

4

056: STANDING ROTATIONAL HIP STRETCH

Right leg, posterolateral view.

Right leg, posterolateral view.

053: STANDING LEG TUCK HIP STRETCH

Technique
Sit on a chair with one leg tucked under the other. Lean forward.

Muscles being stretched
Primary muscles: Piriformis, Gemellus superior and inferior, Obturator internus and externus, Quadratus femoris.
Secondary muscles: Adductor longus, Adductor magnus, Adductor brevis, Gracilis, Biceps femoris, Semitendinosus.

Sports that benefit from this stretch
Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice skating, Roller-skating, Inline skating, Martial arts, Running, Track, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Walking, Race walking.

Sports injury where stretch may be useful
Piriformis syndrome, Snapping hip syndrome, Trochanteric bursitis.

Common problems and additional information for performing this stretch correctly
This position can be a little hard to get into, so make sure you are well supported and use your hands for balance.

5

055: SITTING ROTATIONAL HIP STRETCH

Right leg, posterolateral view.

Right leg, posterolateral view.

Technique
Sit with one leg crossed and your other leg behind your buttocks. Lean your whole body towards the leg that is behind your buttocks.

Muscles being stretched
Primary muscle: Pectineus.
Secondary muscles: Adductor longus, brevis and magnus, Gracilis.

Sports that benefit from this stretch
Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice skating, Roller-skating, Inline skating, Martial arts, Running, Track, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Walking, Race walking.

Sports injury where stretch may be useful
Groin strain, Tendinitis of the adductor muscles, Snapping hip syndrome, Trochanteric bursitis.

Additional information for performing this stretch correctly
The more you lean your whole body towards the leg that is behind your buttocks, the more you will feel.

Complementary stretch
057.

6

057: SITTING FEET-TOGETHER REACH FORWARD STRETCH

Right leg, posterolateral view.

Right leg, posterolateral view.

Technique
Sit with the soles of your feet together and keep your back straight. Then gently lean forward.

Muscles being stretched
Primary muscles: Piriformis, Gemellus superior and inferior, Obturator internus and externus, Quadratus femoris.
Secondary muscle: Gluteus maximus.

Sports that benefit from this stretch
Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice skating, Roller-skating, Inline skating, Martial arts, Rowing, Canoeing, Kayaking, Running, Track, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Walking, Race walking.

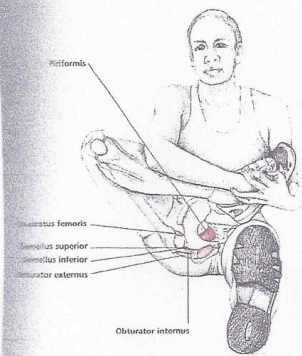
Sports injury where stretch may be useful
Piriformis syndrome, Groin strain, Tendinitis of the adductor muscles, Snapping hip syndrome, Trochanteric bursitis.

Common problems and additional information for performing this stretch correctly
Make the emphasis of this stretch keeping your back straight, rather than trying to lean too far forward.

Complementary stretch
057.

060: SITTING FOOT-TO-CHEST BUTTOCKS STRETCH

7



Technique
Sit with one leg straight and hold onto your other ankle. Pull it directly towards your chest.

Muscles being stretched
Primary muscle: Piriformis.
Secondary muscles: Semellus superior and inferior. Obturator internus and externus. Quadratus femoris.

Sports that benefit from this stretch
Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice skating, Roller-skating, Inline skating, Martial arts, Running, Track, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Walking, Race walking.

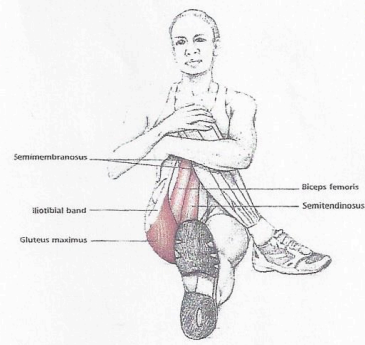
Sports injury where stretch may be useful
Piriformis syndrome, Snapping hip syndrome, Trochanteric bursitis.

Common problems and additional information for performing this stretch correctly
Use your hands and arms to regulate the intensity of this stretch. The closer you pull your foot to your chest, the more intense the stretch.

Complementary stretch

059: SITTING KNEE-TO-CHEST BUTTOCKS STRETCH

8



Technique
Sit with one leg straight and the other leg crossed over your knee. Pull the raised knee towards the opposite shoulder while keeping your back straight and your shoulders facing forward.

Muscles being stretched
Primary muscle: Gluteus maximus. Semitendinosus. Biceps femoris.
Secondary muscles: Semimembranosus. Semitendinosus. Biceps femoris.

Sports that benefit from this stretch
Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice skating, Roller-skating, Inline skating, Martial arts, Running, Track, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Walking, Race walking.

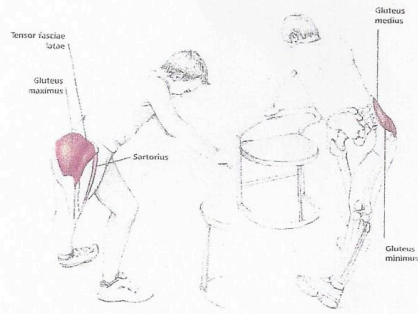
Sports injury where stretch may be useful
Lower back muscle strain, Lower back ligament sprain, Hamstring strain, Iliotibial band syndrome.

Common problems and additional information for performing this stretch correctly
Keeping your back straight and your shoulders facing forward will ensure that your buttocks receive the maximum benefit from this stretch. Resist the temptation to rotate your shoulders towards your knee.

Complementary stretch

091: STANDING LEG-UNDER ABDUCTOR STRETCH

9



Technique
While standing, lean forward and hold onto a chair or bench to help with balance. Cross one foot behind the other and slide that foot away from your body, keeping your leg straight. Slowly bend your front leg to lower your body.

Muscles being stretched
Primary muscles: Tensor fasciae latae, Gluteus medius and minimus.
Secondary muscle: Sartorius.

Sports that benefit from this stretch
Basketball, Netball, Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey.

Complementary stretch
090.

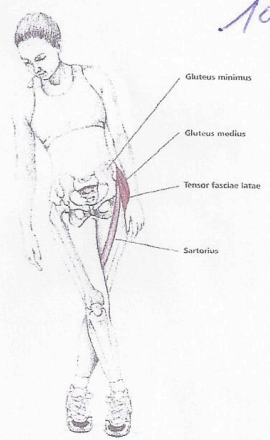
Inline skating, Martial arts, Running, Track, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Surfing, Walking, Race walking, Wrestling.

Sports injury where stretch may be useful
Trochanteric bursitis, Iliotibial band syndrome.

Additional information for performing this stretch correctly
Regulate the intensity of the stretch by using your bent leg to lower your body.

090: STANDING LEG CROSS ABDUCTOR STRETCH

10



Technique
Stand upright and cross one foot behind the other. Lean towards the foot that is behind the other.

Muscles being stretched
Primary muscles: Tensor fasciae latae, Gluteus medius and minimus.
Secondary muscle: Sartorius.

Sports that benefit from this stretch
Basketball, Netball, Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice skating, Roller-skating.

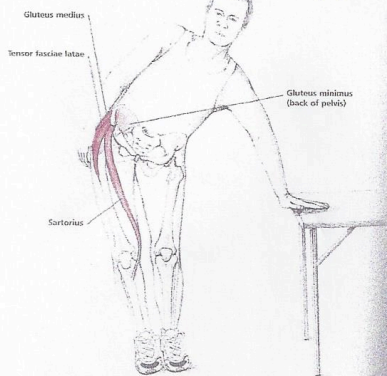
Complementary stretch

Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Surfing, Walking, Race walking, Wrestling.

Sports injury where stretch may be useful
Trochanteric bursitis, Iliotibial band syndrome.

Additional information for performing this stretch correctly
It need be, hold onto something for balance. This will allow you to concentrate on the stretch, instead of worrying about falling over.

089: STANDING HIP-OUT ABDUCTOR STRETCH



Technique

Stand upright beside a wall or table with both feet together. Lean your upper body towards the wall and push your hips away from the wall. Keep your outside leg straight and your inside leg slightly bent.

Muscles being stretched

Primary muscles: Tensor fasciae latae, Gluteus medius and minimus.
Secondary muscle: Sartorius.

Sports that benefit from this stretch

Basketball, Netball, Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice-skating, Roller-skating, In-line skating, Martial arts, Running, Track.

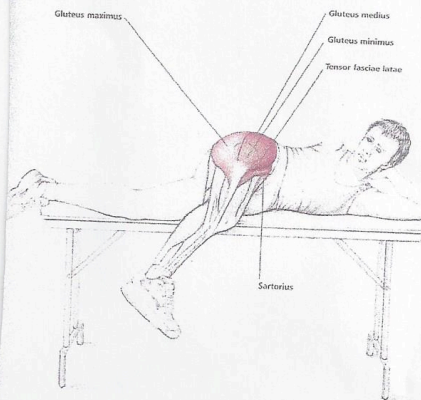
Cross-country, American football, Soccer, Rugby, Snow skiing, Water skiing, Surfing, Walking, Race walking, Wrestling.

Sports injury where stretch may be useful
Trochanteric bursitis, Iliotibial band syndrome.

Common problems and additional information for performing this stretch correctly
It is important not to bend forward and stretch. Keep your body upright and concentrate on pushing your hips away from the object you're leaning on.

Complementary stretch
092.

092: LYING LEG HANG ABDUCTOR STRETCH



Technique

Lie on a bench on your side. Allow the top leg to fall forward and off the side of the bench.

Muscles being stretched

Primary muscles: Tensor fasciae latae, Gluteus medius and minimus.
Secondary muscles: Sartorius, Gluteus maximus.

Sports that benefit from this stretch

Basketball, Netball, Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice-skating, Roller-skating, In-line skating, Martial arts, Running, Track.

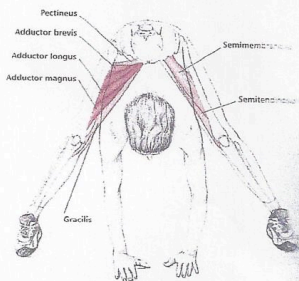
Soccer, Rugby, Snow skiing, Water skiing, Surfing, Walking, Race walking, Wrestling.

Sports injury where stretch may be useful
Trochanteric bursitis, Iliotibial band syndrome.

Common problems and additional information for performing this stretch correctly
Try not to let your leg fall too far forward and use the weight of your leg to do the stretching for you.

Complementary stretch
089.

088: STANDING WIDE LEG ADDUCTOR STRETCH



Technique

Stand with your feet wide apart and your toes facing forward. Lean forward and reach towards your feet.

Muscles being stretched

Primary muscles: Adductor longus, brevis and magnus.
Secondary muscles: Gracilis, Pectineus, Semimembranosus, Semitendinosus.

Sports that benefit from this stretch

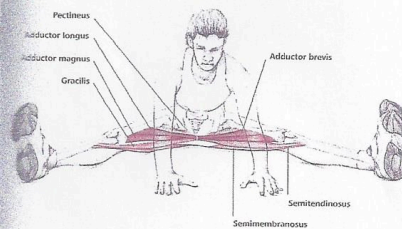
Basketball, Netball, Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice-skating, Roller-skating, In-line skating, Martial arts, Running, Track, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Surfing, Walking, Race walking, Wrestling.

Sports injury where stretch may be useful

Avulsion fracture in the pelvic area, Groin strain, Osteitis pubis, Piriformis syndrome, Tendinitis of the adductor muscles, Trochanteric bursitis, Hamstring strain.

Common problems and additional information for performing this stretch correctly
This position puts a lot of stress on the lower back muscles and the knees. Avoid this stretch if you have lower back pain or knee pain.

091: SITTING WIDE LEG ADDUCTOR STRETCH



Technique

Sit on the floor with your legs straight and wide apart. Keep your back straight and lean forward.

Muscles being stretched

Primary muscles: Adductor longus, brevis and magnus.
Secondary muscles: Gracilis, Pectineus, Semimembranosus, Semitendinosus.

Sports that benefit from this stretch

Basketball, Netball, Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice-skating, Roller-skating, In-line skating, Martial arts, Running, Track, Cross-country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Surfing, Walking, Race walking, Wrestling.

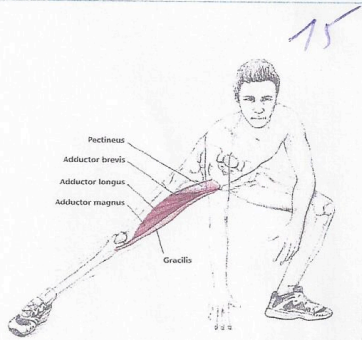
Sports injury where stretch may be useful

Avulsion fracture in the pelvic area, Groin strain, Osteitis pubis, Piriformis syndrome, Tendinitis of the adductor muscles, Trochanteric bursitis, Hamstring strain.

Additional information for performing this stretch correctly
To increase the intensity of this stretch, move your legs further apart.

Complementary stretch
088.

15
90° SQUATTING LEG-OUT ADDUCTOR STRETCH



Technique

Stand with your feet wide apart. Keep one leg straight and toes facing forward while bending the other leg and turning your toes out to the side. Lower your groin towards the ground and rest your hands on the bent knee or the ground.

Muscles being stretched

Primary muscles: Adductor longus, brevis and magnus.
Secondary muscles: Gracilis, Pectineus.

Sports that benefit from this stretch

Basketball, Netball, Cycling, Hiking, Backpacking, Mountaineering, Orienteering, Ice hockey, Field hockey, Ice skating, Roller skating, Inline skating, Martial arts, Running, Track, Cross country, American football (gridiron), Soccer, Rugby, Snow skiing, Water skiing, Surfing, Walking, Jogging, walking, Wrestling.

Sports injury where stretch may be useful

Avulsion fracture in the pelvic area, Groin strain, Osteitis pubis, Piriformis syndrome, Tendinitis of the adductor muscles, Trochanteric bursitis.

Additional information for performing this stretch correctly

Increase the intensity of this stretch by lowering yourself towards the ground.

Complementary stretch



Master Frank Vanberghen – Pioneer – Technical director ITF- Belgium – Chair Revisory-Disciplinary committee AETF-member Communication committee ITF

With this article I want to reach all ITF practitioners having **hip** problems, helping them continuing practicing Taekwon-Do.

In 1997 due to a motorcycle accident I had an hip injury. I was 5° degree at that time. A vein in the hip was touched and this caused “avascular necrosis” : because the blood did no longer reach the bone, it started to mortify. Walking and practicing Taekwon-Do became painful.

In 2001 it became very difficult for me to walk, even 100 meters was too long. The “classical” doctors were giving me some painkillers, saying : “ wait until you’re 60 and then we will perform an operation, giving you a classical hip replacement. Just rest and stop practicing sports.”

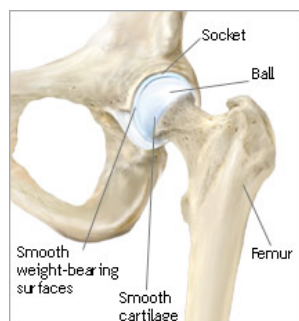
As Taekwon-Do was my whole life I made some research on the internet about new systems. I found a system called “BHR” or “Birmingham resurfacing hip”. Finding a surgeon with the necessary skills was the next step, as the system was very new at the time. I found an orthopedic surgeon (Dr. Govaers in Dendermonde – Belgium), who had the skills and who wanted to learn more about the system.

In 2001 (age 48) the operation “total hip replacement” was done .
New life... ITF again after 3 months!
In October 2004 I became 7° degree. I believe nobody saw that I had an artificial hip.

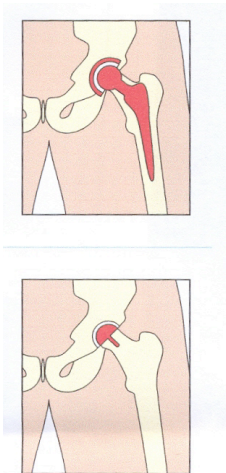
Meantime I met a lot of people with similar hip problems.
Master James Tjin-a-Ton from the Netherlands has the same hip replacement.
In Belgium we have 2 black belts (instructors) having a BHR, without facing any problems.
Master Sutherland from Scotland told me in Scotland a person with 2(!) of these replacements is very active again in TKD.

The cause of the hip replacement can be osteoarthritis, inflammatory arthritis, avascular necrosis and hip dysplasia.

The BIRMINGHAM HIP was introduced in 1997 and has been **unchanged** since that time. All the other metal-on-metal resurfacings available worldwide today were introduced after the BIRMINGHAM HIP and are based in part on the BIRMINGHAM HIP design. Resurfacing surgery spares bone instead of replacing it and it’s giving back your active lifestyle. Whether your passion is sports, work or family activities, arthritis hip pain shouldn’t stop you. For thousands of younger, active patients with hip pain, the BHR hip has restored them to their active lives while allowing them to keep more of their original bone.



Resurfacing spares bone instead of replacing it



2

Difference between a classical hip replacement (1) and a Birmingham resurfacing hip (2).

Other athletes having a BHR :

Floyd Landis “After winning the 2006 Tour de France, Floyd finally got relieved from his severe hip pain with the BHR Hip”

Cory Foulk “An endurance triathlete, Cory didn’t want to give in to his severe hip pain and give up his 30-year competitive lifestyle. He found out he didn’t have to. »

Peter Webb “The pain relief and return to activity that BHR Hips provided inspired Peter to train for and complete the 2005 London Marathon. «

Steve Beuerlein “Former NFL Quarterback, Steve Beuerlein has his life back thanks to the BIRMINGHAM HIP Resurfacing.”

Bob Arnot “Dr. Bob Arnot is back riding bikes and enjoying life since he opted to have both hips resurfaced.”

Scott Tinley “Two-time Ironman World Champion Scott Tinley is back surfing thanks to the pain relief provided by BHR.”

In the beginning the BHR was known as “a time buying system”.

Today my surgeon Dr. Govaers showed me some statistics It is not impossible having a BHR for a lifetime .

Feel free to contact me if you have any questions,

Master Frank Vanberghen

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Obtaining 7th degree



Stretching with a BHR