

NOTA: QUESTA NON E' UNA DISPENSA MA UNA RACCOLTA DI MATERIALI ED APPUNTI PER UNA ESPOSIZIONE

INVERTIRE IL RAGIONAMENTO: NON DALLA STATISTICA ALLA PROTESI MA DALLA PROTESI ALL'INIZIO DI TUTTO.: PERCHE'?

DAL MACRO TRAUMA AL MICRO TRAUMA:
MUSCOLI TENDINI OSSA ARTICOLAZIONI

MUSCOLI il concetto di muscoli agonisti antagonisti, la perdita di elasticità come causa di rottura o di fibrotizzazione e di calcificazioni

TENDINI lo stesso meccanismo: la perdita di elasticità come causa di rottura o di fibrotizzazione e di calcificazioni

OSSA il passaggio muscolo-tendine = entesiti

ARTICOLAZIONI

un po' di meccanica: forza=massa accelerazione...pressione=forza su superficie...usura= quantità di materiale consumato in base a cicli noti.

Un po' di anatomia: cartilagine e sua struttura, nutrizione, e osso sottocondrale (fig. 2 fig. 3).

Usura: dall'invecchiamento e dal carico all'usura (fig. 4) al rimodellamento (fig. 5).

fattori: endogeni, esogeni, quantità di moto/ carico/ sollecitazione

endogeni: genetici

esogeni: generali, locali

generali peso,

locali deformità, congruenza, esiti traumatici

ogni articolazione porta in se il numero di cicli che potrà sostenere nella sua vita in condizioni di medio uso

Fattori occupazionali

Alcune occupazioni che richiedono un uso ripetitivo di determinate articolazioni per un lungo periodo di tempo sono associate allo sviluppo di specifiche forme di OA. Ad esempio, è stato dimostrato che sollevare pesi ad intervalli regolari per l'attività lavorativa predispone all'OA dell'anca (139), predisposizione che nasce anche dalla prolungata stazione eretta (140), mentre lavori che richiedono importanti flessioni del ginocchio conferiscono maggiore suscettibilità per l'OA, appunto, del ginocchio (141, 142). Gli addetti alla posa della moquette e dei pavimenti presentano una maggiore incidenza di OA del ginocchio rispetto ai casi controllo (143), ed operai che lavorano nelle costruzioni presentano una maggiore incidenza di OA dell'articolazione acromio-clavicolare (144). Alcune for-

me di OA più rare nella popolazione generale si ritrovano nei lavoratori che sollecitano determinate articolazioni: i lavoratori esposti a vibrazioni presentano una frequenza maggiore di OA del gomito e, in minor misura, del polso (145). I meccanismi biomeccanici che stanno alla base della relazione tra sviluppo dell'OA e stress da "abuso" articolare sono discussi in una review da Buckwalter (146)

Lista 1 malattia professionale INAIL la cui origine lavorativa è di elevata probabilità come per esempio osteoangioneuropatie causata da vibrazioni trasmesse al sistema mano-braccio, le spondilodiscopatie del tratto lombare e l'ernia discale lombare per la movimentazione manuale dei carichi eseguita con continuità durante il turno lavorativo, sindromi da sovraccarico biomeccanico della spalla, alcune sindromi da sovraccarico del gomito e del polso-mano per i microtraumi e posture incongrue a carico degli arti superiori per attività eseguite con ritmi continui e ripetitivi per almeno la metà del turno di lavoro, borsite, la tendinopatia del quadricipite femorale e la meniscopatia degenerativa da microtraumi e posture incongrue a carico del ginocchio, Tunnel Carpale.

ESISTE L'ANCA PERFETTA?

Se non esiste l'anca perfetta la quantità di moto e sollecitazioni può fare la differenza tra lo sviluppo o no dell'artrosi

a--Repetitive activity involving recurrent movement of the legs beyond the normal range of motion may cause hip impingement, which has been observed in certain athletes (football, baseball, soccer, tennis, hockey, lacrosse players, dancers, and golfers). Ed il **ju do?**

b--Joint injury, repetitive use, and load bearing at work have been found to be associated with osteoarthritis of the hip.

c--The following activities in the longest held occupation were found to be associated with the risk of osteoarthritis of the hip in both sexes: climbing 15 flights of stairs or more each day (OR = 8.7, 95 percent CI: 1.8, 42.7 in men and OR = 2.5, 95 percent CI: 1.0, 5.9 in women) and lifting weight (of 10 kg or 50 kg) for 10 times or more each week. (!!!!).

d--On the other hand, walking and lifting heavy loads seemed to be major occupational factors for osteoarthritis of the hip.

e--nella corsa è stato dimostrato che la caviglia supporta ad ogni passo 10 volte il peso corporeo.

f-- nel kendo l'impulso è di 15 volte.

g-- ripetuti caricamenti veloci durante uchi komi o randori danno sollecitazioni ancora maggiori.

h--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**."

Trarre la conseguenza: sport = artrosi?

Quelli che ora sono i maestri di riferimento hanno praticato uno "studio matto e disperatissimo" (LEOPARDI) in sedi di pratica meno adeguate (es: tatami vecchi posati su cemento)

A questo si aggiungono le ripetute cadute sul dorso in posizioni di

insufficiente sicurezza su tatami duri. Vi sono poi sollecitazioni croniche Acromion Claveari, a seguito di proiezioni con scarso controllo di Harai Goshi, Tai otshi, Ippon Seoi Nage, Maki Komi, e tante altre.

Epicondiliti, Epitrocleiti, sono l'esito di continui Ippon, Morote, e Eri Seoi, eseguiti per anni normalmente sempre in modo asimmetrico, altri problemi sono alle ANCHE in conseguenza di proiezioni di Hane Goshi, Uchi mata, Tsuru Komi Goshi, ecc, e altre dove è coinvolta questa parte del corpo.

Ci sono anche ulteriori conseguenze nella nostra pratica relative ad Artrite e Artrosi delle dita della mano, delle ginocchia,

nella displasia l'artrosi dipende soprattutto dal carico
nel conflitto l'artrosi dipende soprattutto dal movimento

Hip pain from impingement and dysplasia in patients aged 20–50 years. Workup and role for reconstruction

F Langlais, JC Lambotte, R Lannou, JE Gédouin... - Joint Bone Spine, 2006 - Elsevier

... Symptoms arise with repeated flexion-adduction of the **hip**, as occurs for instance in **judo**. ... develop osteophytes surrounding the femoral head), coxa profunda (in which the medial pole of the head projects medial to the teardrop), and in posterior **hip osteoarthritis**

W Weng, H Wu, M Wu, Y Zhu, Y Qiu, W Wang - European Spine Journal, 2016 - Springer

... Tanaka S, Matsumoto S, Fujii K, et al (2014) Factors related to low back pain in patients with **hip osteoarthritis**. ... Almeida GP, de Souza VL, Sano SS et al (2012) Comparison of **hip** rotation range of motion in **judo** athletes with and without history of low back pain.

PERCIO' CARICARE UKE PER MIGLIAIA DI VOLTE?

Warm up. Always take time to warm up. Research studies show that cold muscles are more prone to injury. Warm up with jumping jacks, or running or walking in place for 3 to 5 minutes.

Cool down and stretch. Stretching at the end of exercise is too often neglected because of busy schedules. Stretching can help reduce muscle soreness and keep muscles long and flexible. Be sure to stretch after each training practice to reduce your risk for injury.

Femoroacetabular Impingement

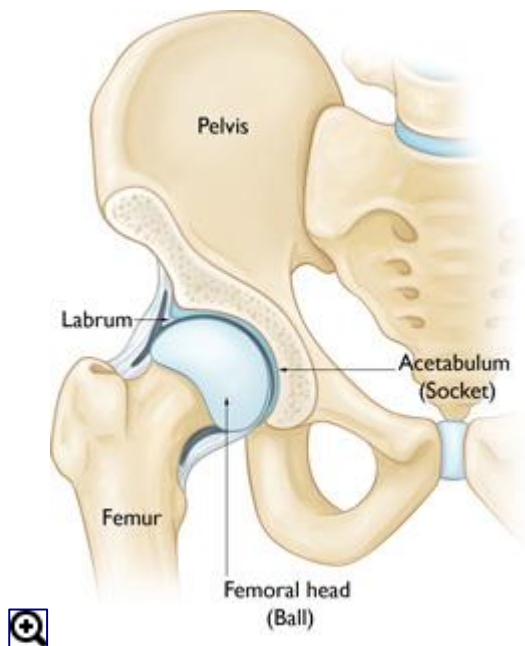
Femoroacetabular impingement (FAI) is a condition in which extra bone grows along one or both of the bones that form the hip joint — giving the bones an irregular shape. Because they do not fit together perfectly, the bones rub against each other during movement. Over time this friction can damage the joint, causing pain and limiting activity.

Anatomy

The hip is a ball-and-socket joint. The socket is formed by the acetabulum, which is part of the large pelvis bone. The ball is the femoral head, which is the upper end of the femur (thighbone).

A slippery tissue called articular cartilage covers the surface of the ball and the socket. It creates a smooth, low friction surface that helps the bones glide easily across each other during movement.

The acetabulum is ringed by strong fibrocartilage called the labrum. The labrum forms a gasket around the socket, creating a tight seal and helping to provide stability to the joint.



In a healthy hip, the femoral head fits perfectly into the acetabulum.

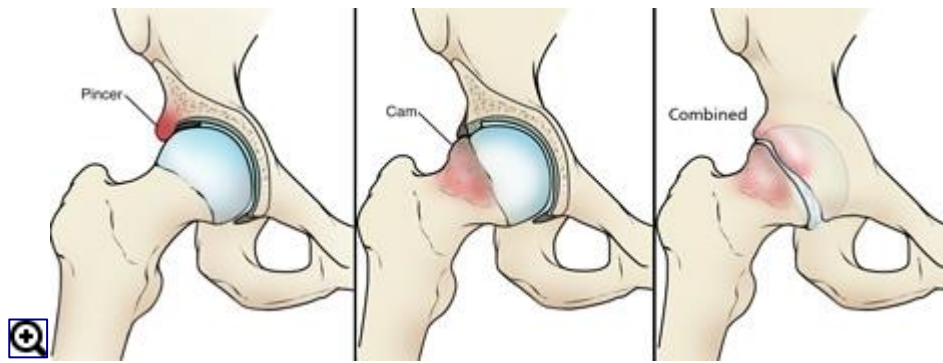
Description

In FAI, bone overgrowth — called bone spurs — develop around the femoral head and/or along the acetabulum. This extra bone causes abnormal **contact** between the hip bones, and prevents them from moving smoothly during activity. Over time, this can result in tears of the labrum and breakdown of articular cartilage (osteoarthritis).

Types of FAI

There are three types of FAI: pincer, cam, and combined impingement.

- **Pincer.** (PINZA) This type of impingement occurs because extra bone extends out over the normal rim of the acetabulum. The labrum can be crushed under the prominent rim of the acetabulum.
- **Cam.** (CAMMA) In cam impingement the femoral head is not round and cannot rotate smoothly inside the acetabulum. A bump forms on the edge of the femoral head that grinds the cartilage inside the acetabulum.
- **Combined.** Combined impingement just means that both the pincer and cam types are present.



(Left) Pincer impingement. (Center) Cam impingement. (Right) Combined impingement.

Cause

FAI occurs because the hip bones do not form normally during the childhood growing years. It is the deformity of a cam bone spur, pincer bone spur, or both, that leads to joint damage and pain. When the hip bones are shaped abnormally, there is little that can be done to prevent FAI.

It is not known how many people have FAI. Some people may live long, active lives with FAI and never have problems. When symptoms develop, however, it usually indicates that there is damage to the cartilage or labrum and the disease is likely to progress.

Because athletic people may work the hip joint more vigorously, they may begin to experience pain earlier than those who are less active. However, exercise does not cause FAI.

Symptoms

The most common symptoms of FAI include:

- Pain
- Stiffness
- Limping

Pain often occurs in the groin area, although it may occur toward the outside of the hip. Turning, twisting, and squatting may cause a sharp, stabbing pain. Sometimes, the pain is just a dull ache.

Home Remedies

When symptoms first occur, it is helpful to try and identify an activity or something you may have done that could have caused the pain. Sometimes, you can just back off on your activities, let your hip rest, and see if the pain will settle down. Over-the-counter anti-inflammatory medicines, such as ibuprofen and naproxen, may help.

If your symptoms persist, you will need to see a doctor to determine the exact cause of your pain and provide treatment options. The longer painful symptoms go untreated, the more damage FAI can cause in the hip.

Doctor Examination

During your first appointment, your doctor will discuss your general health and your hip symptoms. He or she will also examine your hip.



Impingement test.

Reproduced from Armstrong AD, Hubbard MC, eds: Essentials of Musculoskeletal Care, ed 5. Rosemont, IL, American Academy of Orthopaedic Surgeons, 2015.

Impingement Test

As part of the physical examination, your doctor will likely conduct the impingement test. For this test, your doctor will bring your knee up towards your chest and then rotate it inward towards your opposite shoulder. If this recreates your hip pain, the test result is positive for impingement.

Imaging Tests

Your doctor may order imaging tests to help determine whether you have FAI.

- **X-rays.** These provide good images of bone, and will show whether your hip has abnormally shaped bones of FAI. X-rays can also show signs of arthritis.
- **Computed tomography (CT) scans.** More detailed than a plain x-ray, CT scans help your doctor see the exact abnormal shape of your hip.
- **Magnetic resonance imaging (MRI) scans.** These studies can create better images of soft tissue. They will help your doctor find damage to the labrum and articular cartilage. Injecting dye into the joint during the MRI may make the damage show up more clearly.
- **Local anesthetic.** Your doctor may also inject a numbing medicine into the hip joint as a diagnostic test. If the numbing medicine provides temporary pain relief, it confirms that FAI is the problem.

Treatment

Nonsurgical Treatment

Activity changes. Your doctor may first recommend simply changing your daily routine and avoiding activities that cause symptoms.

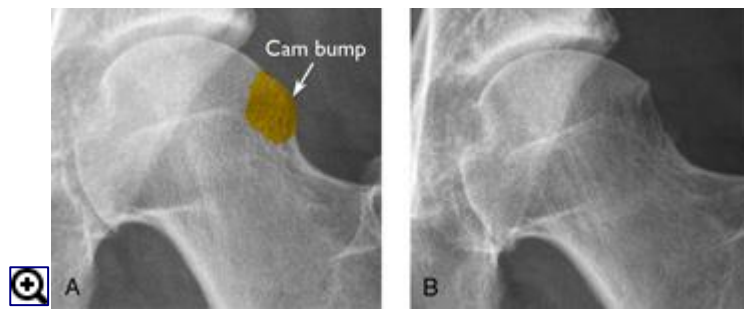
Non-steroidal anti-inflammatory medications. Drugs like ibuprofen can be provided in a prescription-strength form to help reduce pain and inflammation.

Physical therapy. Specific exercises can improve the range of motion in your hip and strengthen the muscles that support the joint. This can relieve some stress on the injured labrum or cartilage.

Surgical Treatment

If tests show joint damage caused by FAI and your pain is not relieved by nonsurgical treatment, your doctor may recommend surgery.

Surgical management of hip impingement is successful in approximately 80% of patients at short-term follow-up.



(Left) A cam bump on the femoral head. (Right) After the bump has been shaved down during surgery.

Arthroscopy

Many FAI problems can be treated with arthroscopic surgery. Arthroscopic procedures are done with small incisions and thin instruments. The surgeon uses a small camera, called an arthroscope, to view inside the hip.

During arthroscopy, your doctor can repair or clean out any damage to the labrum and articular cartilage. He or she can correct the FAI by trimming the bony rim of the acetabulum and also shaving down the bump on the femoral head.

Some severe cases may require an open operation with a larger incision to accomplish this.



(Left) During arthroscopy, your surgeon inserts an arthroscope through a small incision about the size of a buttonhole. (Right) Other instruments are inserted through separate incisions to treat the problem.

Long-Term Outcomes

Surgery can successfully reduce symptoms caused by impingement. Correcting the impingement can prevent future damage to the hip joint. However, not all of the damage can be completely fixed by surgery, especially if treatment has been put off and the damage is severe. It is possible that more problems may develop in the future.

While there is a small chance that surgery might not help, it is currently the best way to treat painful FAI.

IN CONCLUSIONE: I MICROTRAUMI RIPETUTI SONO CAUSA DELL'USURA DI TUTTE LE ARTICOLAZIONI CHE PORTA ALL'ARTROSI. IL LORO EFFETTO E' AUMENTATO DAI DISMORFISMI LOCALI, DAL SOVRACCARICO DAL PESO E DALLA FUNZIONE.

PERO' L'EFFETTO BENEFICO DELL'ATTIVITA' FISICA E DELLO SPORT E' DIMOSTRATO IN UNA GRANDE QUANTITA' DI MALATTIE: DAL DIABETE AI TUMORI ALLE

MALATTIE PSICHICHE ED E' RITENUTO COMPENSARE DI GRAN LUNGA GLI
SVANTAGGI/INCONVENIENTI.

CHE COSA DOBBIAMO DIRE AI NOSTRI ALLIEVI ?

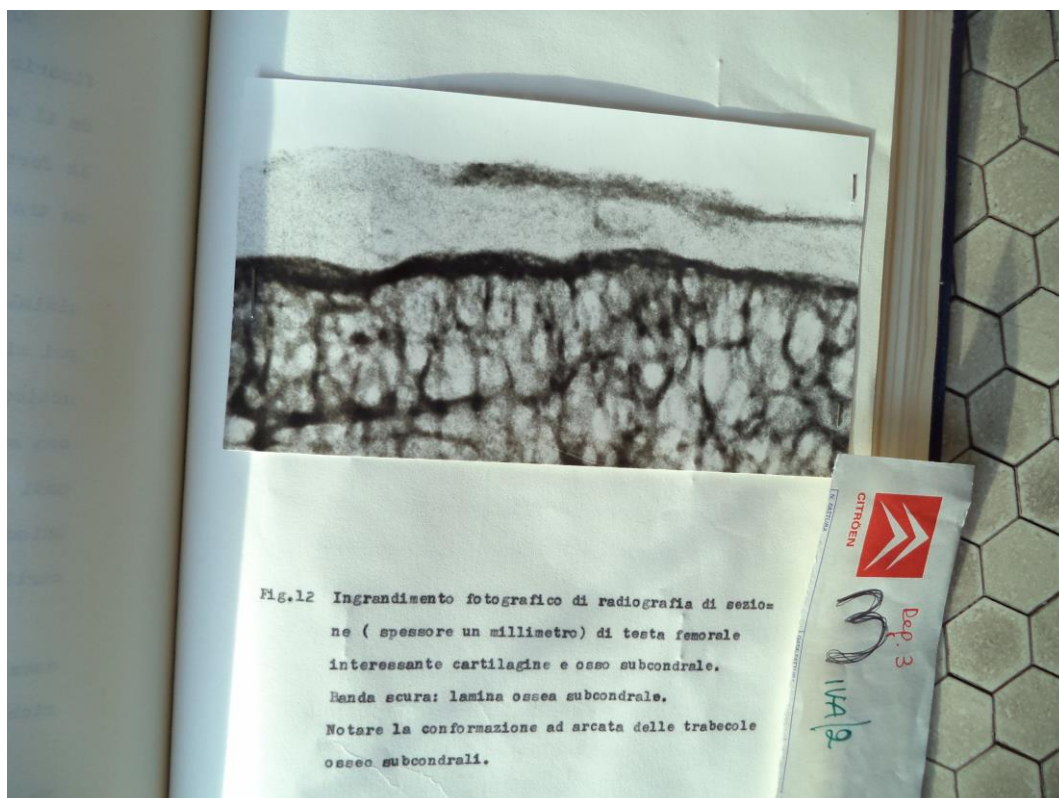
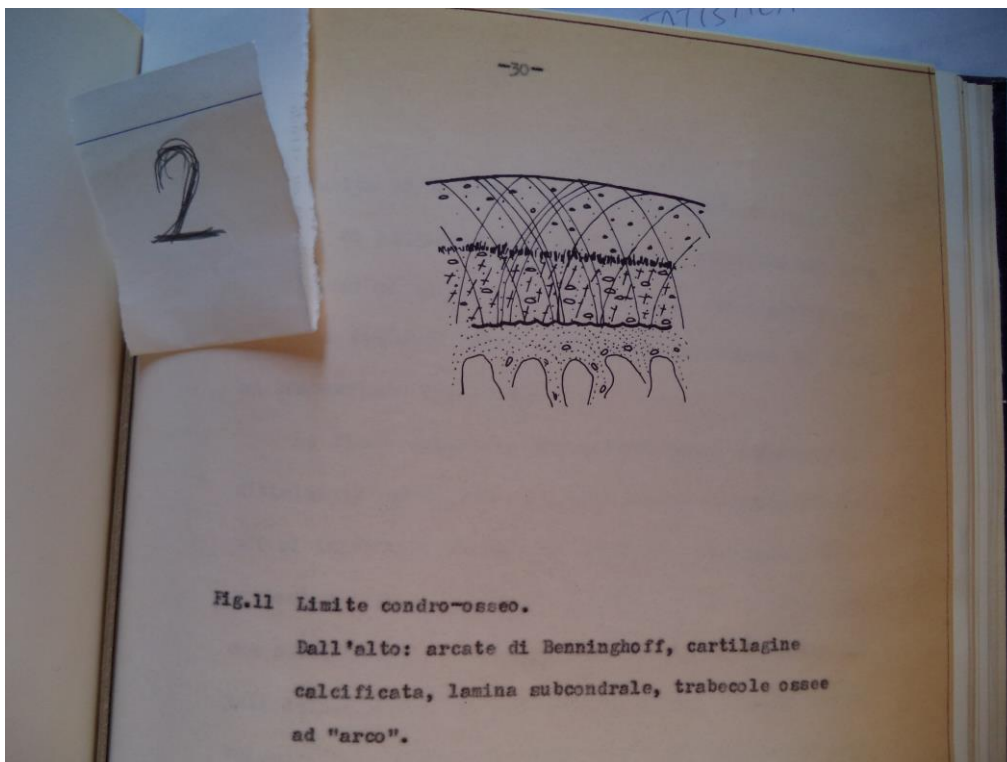




Fig. 20 Fotografia e radiografia (ingrandita) di sezione di testa di femore artrosica.
Nelle zone in cui la cartilagine articolare é erosa si osserva un maggiore sviluppo e ad-
densamento delle trabecole dell'osso subcondrale.



5

Fig.15 Fotografia e radiografia un poco ingrandite di
sezione di testa di femore artrosica.
Esempio di rimodellamento progressivo (esostosi)
Si noti la doppia cartilagine articolare.