

Sports Injuries Related to Olympic Taekwondo & Practice

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Sports Injuries

There is nothing worse for an athlete, than being forced to pause because of an injury.

Out of all injuries, fractures are comparably harmless. Well, most fractures. While a broken bone heals within 3 to 6 weeks, tendon and nerve injuries cure much slower.

Because injured tendons and nerves don't restrict the training with a plaster, many athletes go back to training too soon, so that their recovery is influenced in a bad manner. One of the most dangerous injuries is nerve-injuries. For example when a nerve gets overstretched, (often happens when the shoulder is dislocated) or when a nerve separates. In some cases the concerned muscles or muscle groups stay paralyzed for years or even forever. Other common sports injuries are ruptures, inflammations, and deformations, joint wear outs etc.

Muscle Contusions

Muscle contusions = damage to a muscle through a direct impact.

An impact to a muscle can cause much more damage than you might expect.

In most contusion cases the muscle is crushed against the bone.

For example when somebody punches or kicks you in the leg, or when you fall on a stone. If contusions are not treated correctly myositis ossificans can result. (Myositis ossificans = when the bone forms with the muscle = NOT GOOD)

So don't underestimate this type of injury.

Muscle Contusions are very common in combat sports.

Description: Muscle Contusions

- Your muscle gets hit and is crushed against the bone.
- This can lead to an intramuscular or and intramuscular injury.
- Intramuscular: Tearing of the muscle within the skin that surrounds it. So the bleeding stays inside the muscle which leads to a higher pressure (fluids can't escape). Loss of function and pain can stay for weeks.
- Intramuscular: When the muscle plus the skin surrounding it tears. It takes longer for the bleeding to stop, so cold therapy is more important than in case one. On the other hand intramuscular contusions usually heal faster, because the fluids can flow away from the injury. Higher possibility of bruises than in case one.

Muscle contusions are divided into 3 grades.

- Grade 1 muscle contusions
nearly a full range of motion. Moderate pain and swelling.
The pain usually goes away within 2 or 3 days.
It is still recommended to consult a sport injury specialist.
- Grade 2 muscle contusions
Limited range of motion. Moderate pain when the muscle is contracted or when pressure is applied.

Rest for at least 5 days. Using sports massage techniques, ultrasound and electrical stimulation can speed up recovery.(massage - if applied correctly)

- Grade 3 muscle contusions
Muscle contractions are very painful.
Bad swelling appears immediately.
In some cases operation will be necessary.

Symptoms: Muscle Contusions

- Pain
- Swelling and/or bruising
- Partial or full loss of the function of the muscle.
(especially when an intramuscular contusion occurred)
- After a few days you can see if you have suffered an intra or inter muscular contusion.
 - If the muscle is still quite swollen up after 3 days, you can suspect an intramuscular contusion.
 - If there is a bruise going away from the spot where the contusion occurred,
you might have suffered an intramuscular contusion.
 - However... you are well advised not to wait that long before you consult your doctor.

Dave's advice: Muscle Contusions

- Consult a sports injury specialist.
It is very important that the correct diagnosis is made.
If heat or massage techniques are applied too early, or if you start working out on a serious intramuscular injury
or a complete rupture, the function of the muscle can get lost forever.
- Apply ice to slow down the bleeding as soon as possible after the contusion.
- Avoid muscle contractions. (avoid exercise)
- A bandage can also help.
- Ask your doctor before you apply massage techniques.

Bone Fractures

The human skeleton is made of 206 bones.

The bones are the hardest material inside our body, give us form and muscles help to move them around, so that we can walk, run, jump and of course do acrobatics.

Our bones are very strong but kind of brittle.

Elder people tend to have brittle bones than younger people.

Newborns on the other hand have bones like wax.

However, if enough force is applied, bones can break. That's a "fracture"

Description: Bone Fractures

- Structure of a bone
our bones are made up of bone cells, proteins, and minerals like calcium. The strength of a bone depends on its density, size, healthiness and age. The healthier you eat and exercise, the stronger and healthier your bones are.
A healthy and young bone heals much faster after a fracture.
- How do you know a bone is broken?
 - 1) X-ray
 - 2) swelling
 - 3) dull pain when you rest and sharp pain when you move or shake.
 - 4) concussion susceptible
- First aid
Rest - Don't move around
Ice - Releases pain, slows down swelling and bleeding (inside)
Elevation
- Why to consult a doctor.
Sometimes a fracture has to be put back in place before you can get a plaster and the healing process starts officially.
The healing process actually starts right after the injury and in the worst case the doctor has to break the bone apart again to put the parts together straight, if you wait too long before you go to the hospital.
Of course it's very painful when the doctor breaks your bone apart again. The longer you wait the more painful.
If the bone is not put in place by a doctor, you might mess up your limb forever!
8 hours are enough to make it necessary to break a bone apart again.
- Healing process of bone fractures.
Depending on Thickness of the bone, age, calcium & vitamin-D consumption and healthiness, it can take 3 to 8 weeks until a bone fracture heals out. It also takes longer if your body has to recover other injuries or diseases at the same time.
Broken toes often grow together in 14 days or less, while shoulder injuries or leg-bone fractures can take up to a few months. Elder people tend to cure injuries much slower a person with osteoporosis (fragile bones) often have problems long after their fractures. (They also break their bones easier)
- Osteoporosis.
To avoid Osteoporosis, live a healthy lifestyle, drink enough milk (calcium) and eat vitamin D rich food.
Exercise with weights from time to time, which increase the density of your

bones.

Women tend to get osteoporosis faster than men.

Muscle and Tendon Injuries.

Athletes usually suffer a lot of different injuries during their active careers. Most muscle and tendon injuries result from concentric muscle contractions and bad warm up.

Description: Muscle and Tendon Injuries

First of all you have to know that there are 3 different types of muscle contractions. Since one particular type of muscle contraction is responsible for most muscle and tendon injuries in sports this is very important.

- CONCENTRIC MUSCLE CONTRACTIONS:
When the muscle shortens while it contracts. For example when you do a leg curl or a biceps curl.
- ISOMETRIC MUSCLE CONTRACTION:
When you don't move, but the muscle is forced instantly. For example when you do a chin up and stay up without moving.
- EXCENTRIC MUSCLE CONTRACTION:
When you extend a limb while forcing a muscle. For example when you lower a barbell from a biceps curl and only use your biceps to slow down the weight. (Negative Repetition) In many cases exocentric contractions take place, because a weight is too heavy and you just try to put it down as careful as possible.
- Muscle injuries most likely happen with exocentric contractions, because exocentric muscle contractions often happen just because something is too heavy. (Negative repetitions with too much weight etc.)
But this doesn't mean you should never do negative repetitions.
And don't even think of letting a weight fall or move down slower than you move up, because this will lead to even worse joint injuries. By the way...
Negative repetitions are one of the best ways to gain muscle strength and volume.
- Muscle soreness is an injury too, but this kind of injury is not too bad and is NOT only a result of a build up of lactic acid.
When a muscle is sore, it has lots of tiny injuries which usually recover within 72 hours.
Those injuries are spread over the whole muscle and should not hurt until 24

hours after your workout.

Those "tiny soreness injuries" recover very fast and after a good recovery you are even stronger than before.

- If you feel pain during or right after the workout, or if you feel a sharp pain in one particular spot of a muscle, that's most likely not just muscle soreness
- Recovering from a muscle - tendon injury.
 - Don't go back to training until you can move without having pain at all.
 - Use joint supports and/or bandages to keep the muscle warm.
 - Apply ice bags after workouts to avoid infections and swelling.
 - Don't exaggerate.

Dave's advice: Muscle and Tendon Injuries

- To avoid muscle and tendon injuries, warm up and stretch before every workout.
- If you injure yourself, consult a doctor as soon as possible.

Joint and Cartilage Injuries

Joint and Cartilage Injuries cure very slow or never and treatment is very difficult. Joint injuries can be a result of yearlong heavy exercising (wear out effect) or a sudden exocentric movement.

Description: Joint and Cartilage Injuries

- What are joints and what are cartilages:
Joints are the movable points between our bones.
Soft cartilages avoid that the bones touch each other and help our skeleton move around without much friction. Ligaments help to hold the joint - bone structure together and tendons & muscles make the whole thing move.
If I would only care about muscles and sports, I would say the skin is only our insulation...Just kidding...
- After years of heavy exercising our joints and cartilages lose lissomness. Then exercising can become painful because cartilages become brittle and joints infect easier.
The more sudden injuries you suffer during your active career, the earlier you will suffer irreversible joint wear out.
So you should avoid joint infections when you are young, always warm up and stretch before you work out and eat healthy enough. (Ice calms down infections and releases pain after heavy workouts)

- The other type of joint injury is a sudden joint or cartilage injury.
For example when you dislocate your shoulder and a piece of cartilage gets torn out.
Or when a piece of the bone plus cartilage breaks off.
Another example is when you squat too heavy or land hard after a jump, so that the cartilage is damaged.
Those injuries usually need medical care and complicated treatments.
- The best medicine for joint injuries is to avoid them in the first place.
Warm up enough.
Stretch before you work out.
Stop as soon as you feel pain, because pain means STOP
and avoid exocentric and heavy motions!

Nerve Injuries

When a nerve is injured, you might not be able to move the concerned muscle at all. Nerve injuries take very long to cure. Some injuries never cure and the affected muscle or muscle group can stay paralyzed forever.

Description: Nerve Injuries

- Before we start talking about nerve injuries, you have to know what nerves are what they are for:
Nerves transport information from or to the brain.
(similar to the cables from your computer to the printer and to the scanner)
Just like a cable, a nerve has a protection (A ring of tissue)
There are motor nerves and Sensory nerves.
While motor nerves tell your muscles what to do (how to contract etc),
sensory nerves send back information like pain,
pressure, temperature etc. Motor nerves and sensory nerves are close together inside the same ring of tissue.
Just like in the computer - printer example... Computer says print this picture
- Printer says: Sorry no paper...
- What happens when a nerve is injured:
Just like very thin wires, nerves are kind of fragile.
Nerves can be damaged by, overstretching, pulls, cutting, etc.
A nerve can be cut with its tissue (insulation) or without its tissue (insulation).
Of course in both cases information cannot be carried from or to the brain,
but it's much worse if a nerve is broken apart and the nerves insulation
(tissue) is broken apart too.
When nerve fibres are cut, the furthest point of the nerve dies (furthest point from the brain and closest to the muscle).
But the closest end to the brain never dies and after a while, the nerve fibres start growing along the insulation.

Unfortunately the nerve fibres grow very slow (about one cm per month) and the further the nerve injury is from the brain, the longer it takes to heal. (Leg nerve injuries take much longer to heal than shoulder nerve injuries)
If the tissue (insulation) is broken apart too, and the nerve fibres start growing along the tissue, the nerve fibre might grow into a ball where the nerve insulation ends. This is very painful and is called neuronal.

- Nerve injury treatment:

If the nerves cover of tissue is not cut, the only thing you have to do is wait, wait and wait .Feelings might come back after month or years. In the meantime you should not force around the concerned are too much, to keep your joints healthy. In some cases other muscles take over a certain muscles function and the muscle with the injured nerve kind of disappears. (Regardless if the nerve will be reactivated or not after a while).If the insulation is cut too, a doctor will have to uncover the whole nerve, to sew the ends of the nerves insulation together. If there is a dirty wound where the nerve is cut, the doctor will have to wait until the skin, etc is healed and then he will open up to sew the nerves cover together. And now to the worst case: If the ends of the nerve-cover are too far apart when they want to sew them together, (For example after an open wound healed out), they will have to take a piece of nerve tissue from somewhere else to use the cover. Of course they will use a sensory nerve only and you will just lose the feeling where they take away the nerve, and not motor nerve functions. While a nerve is not functional, you have to have therapy, to keep the joint flexible. If a joint is not moved for several months it becomes stiff and if it's forced around too hard with the help of other muscles, this may lead to a permanent joint wear out or injury. Electric muscle stimulation therapies can be used to keep the muscles from degenerating too much. But please don't try doing an EMS-therapy on your own. You can harm your joints trying to put your muscles under electricity. Even after the nerves functions come back, your brain has to learn to control the coming and outgoing information again.

Sports Injury First Aid

The first few reactions after you injure yourself in training are very important. If your first aid treatment is not appropriate, it can take several months until you can go back to normal training. The right first aid treatment is the first step to quick recovery.

Find more injury related topics at [injuries main](#).

Info: Sports Injury First Aid

- For most sports injuries DR. RICE is the perfect first aid.
Especially for sprained ankles, muscle contusions, joint and tendon injuries etc.
DR = Consult a Doctor, but actually R.I.C.E. comes first.
The first few minutes and 72 hours are very important for your recovery.
R.I.C.E. means Rest + Ice + Compression + Elevation.
Basically this will avoid haematomas, reduce swelling and pain and help you recover faster.
 - Rest: Keeps blood pressure and pulse low.
This way you avoid haematomas or that a healing haematoma breaks up again and grows.
 - Ice: Slows down bleeding, avoids infections, avoids swelling and releases pain.
Apply ice for 10 to 15 minutes but don't put your ice bags on the skin directly.
(wrap the bag in drapery - it shouldn't be too cold - you don't want frostbite!)
Wait 30 to 60 minutes before you apply the next ice bag.
The first bag should be applied as soon as possible.
 - Compression: Avoids haematomas and bleeding.
(with bleeding I mean internal bleeding)
 - Elevation to avoid high pressure.
Lie down and / or elevate your leg if you sprained our ankle, injured your knee etc.

Advice: Sports Injury First Aid

- Pain is a signal that tells you to stop.
Pain = Alarm, and you should always listen to your bodies alarms.
Sometimes you can avoid an injury when you listen to your body's signals and stop in time.
- Don't try new skills or risky jumps if you feel tired, weak or dizzy.
- Work out with training partner.
- Bandages, ice bags and a first aid kit should be in reach.
Not that you should always expect to sprain your ankle or rupture a tendon, but you should know where to find an ice bag in case you work out in an empty gym.
I always have bandages and some first aid stuff in my training bag.
- Consult a doctor if you are injured.
Don't trust "How to Cure a Broken Bone" - online tutorials.
- Rest until you are fully recovered.

Plantar Fascists & Heel Spurs

Plantar Fasciitis is a painful inflammation of the plantar fascia (arch tendon of the foot).

It is an overuse injury which gets worse from activities like gymnastics (tumbling), rope skipping, sprinting etc. Heel spurs are bony growths on the heel bone (calcaneus's)

where the arch tendon (plantar fascia) is attached to the heel.

The symptoms are similar but an inflammation can heal faster than a spur.

Heel spurs can be seen on an x-ray picture.

Long term inflammations of the arch tendon can lead to heel spurs.

Description: Plantar Fasciitis & Heel Spurs

- As mentioned above, plantar fasciitis is an inflammation of the arch tendon of the foot.
The pain sometimes also radiates forward towards the ball of the foot.
Plantar Fasciitis and heel spurs are not exactly the same, but very similar. (see text above)
Plantar Fascia: Broad, thick band of tissue on the foot sole
(leads from the heel to the front of the foot)
an inflammation can occur when a part of the tendon ruptures.

Symptoms: Plantar Fasciitis & Heel Spurs

- Heel pain: Pain under the heel where the fascia (arch tendon) is attached to the heel bone (usually on the inside)
- If you adjust your walking style because of the painful inside of the heel, the pain might radiate to the outside.
- When you stand up in the morning, pain might be even worse.
Sleeping with warm but not tight socks might help a bit.
Don't run or rope skip in the morning or in a cold environment.

Who is susceptible: Plantar Fasciitis & Heel Spurs

- People who don't stretch their calf muscles.
The foot sole might become tense if your calves are always tense.
This again can lead to a consistent stress on the arch tendon when you walk or even when you rest.
- Practitioners of sports where you bounce from the balls of your feet: gymnastics, Taekwondo, rope skipping, sprinting, volley ball etc.
- People who train in a cold environment and don't warm up sufficient.
- People with high or low arched feet.

Treatment: Plantar Fasciitis & Heel Spurs

- Like in most inflammation cases, you are recommended to start resting as soon

as possible. Rest until you feel no pain at all.

You can train your thighs and your upper body for a while.

There are taping techniques and supports for plantar fasciitis and heel spurs. (to take off the pressure from the arch tendon when you walk during work or school)

However, taping the foot too firm can worsen the pain.

(consult a professional to teach you how to tape the foot)

- Apply ice to help reduce pain and inflammation.
Keep in mind that working out when the arch tendon is cold can make the injury worse!!!
- Stretch your arch tendon and your calf muscles.
But please....!!! Don't apply ballistic stretches (that's the worst thing you could do)
the reason why the arch tendon becomes inflamed is lack of flexibility.
So stretch, stretch and stretch to prevent plantar fasciitis in the first place. The arch tendon often tightens when you sleep.
There are special shoes which take pressure from the tendon when you rest.
(ask an orthopaedist)
- Anti-inflammatory. (diclofenac etc,... consult your doctor)
- In some cases cortisone injections are necessary. (against the inflammation)
- In the worst case a surgery will be necessary.

Dave's advice: Plantar Fasciitis & Heel Spurs

- Warm up with socks and / or shoes.
- Avoid activities where you jump from the balls of your feet in a cold environment.
- If you feel a little pain, REST!

Achilles Tendonitis

Achilles Tendonitis is the inflammation of the Achilles tendon.

The Achilles tendon is the tendon connecting the calf muscles to the heel bone (calcaneus's).

Tendonitis is the inflammation of a tendon.

Learn about other injuries at [injuries main](#).

Description: Achilles Tendonitis

- Achilles tendonitis is the inflammation of the tendon that connects the calf muscles (gastrocnemius and soleus) to the heel bone. (calcaneus's)
Achilles tendonitis can be caused by running on concrete, training in a cold

environment,

running uphill a lot, practicing gymnastics on a hard floor etc.

Acute Achilles tendonitis is the sudden (one time) inflammation of the Achilles tendon.

Chronic Achilles tendonitis is when inflammations came back all the time. (and you learn to live with it) If not treated correctly, acute tendonitis can lead to chronic tendonitis.

Symptoms: Achilles Tendonitis

- Acute Achilles Tendonitis
 - Pain on the bottom of tendon during or after exercise.
The longer your session the more likely you will feel the pain.
 - Jumping on the balls of your feet, rope skipping etc hurts.
 - Sometimes swelling or redness.
 - You will possibly feel a creaking when you press a finger onto the tendon and slide it up and down.
- Chronic Achilles Tendonitis
 - The Achilles pain goes away once you are warmed up, but comes back after exercise.
 - Especially in the morning when the tendon is cold, standing up can be painful.
 - Lumps in the Achilles tendon less than one inch above the heel.
 - Walking on the balls of your feet, rope skipping etc hurts.

Who is susceptible: Achilles Tendonitis?

- Sprinters
- Gymnastics
- XMA - athletes and trackers
- Dancers (ballet)
- Rope skippers
- Women who usually use high heels and then use flat shoes to run
- People who start running on the balls of their feet and run a long distance right away.
- People with abnormal foot soles. (too flat or too high)
- Fast running on hard ground or cold environment.

Treatment: Achilles Tendonitis

- Rest and cold therapy.
- Consult a doctor:
 - Who might prescribe an anti-inflaming (like diclofenac) or orthotics or help you change your training methods.
 - Might make a MRI or Ultrasound Scan.

- Temporary use of heel pads to take pressure and stretch from the Achilles tendon.
- Sports massage techniques.
- Ultrasound treatment.
- Taping for support or plaster to avoid stress to the tendon at all.
- In the worst case: Surgery followed by at least half year rehabilitation.

Dave's advice: Achilles Tendonitis

- When your Achilles tendon is already inflamed:
 - Don't exercise in a cold environment. (keep the tendon warm and use high socks)
 - Don't work out on hard ground. Don't jump or sprint on concrete.
 - Avoid bouncing on the balls of your feet.
 - Don't stretch your calves dynamic.
 - Don't work out your calf muscles with low reps.
 - Let your Achilles tendonitis heal out totally. (don't go back to training too soon)

Shin Splints & Periostitis

Shin splints are just the name given to the pain on the shin bone. (Front side)
In most cases this pain is caused by an inflammation of the periostium. (Periostitis)
Learn about other injuries at [injuries main](#).

Description: Shin Splints & Periostitis

- As mentioned above "Shin Splints" is only the name given to the pain at the front side of the lower leg.
In most cases shin splints are caused by an inflammation of the periostium.
That's why the actual diagnosis in most cases would be "Periostitis"
The periostium is as a sheath surrounding the bone.
(thin kind of skin protecting the surface of the bone)
Traction forces from the lower leg muscles can cause an inflammation of the periostium of the shin bone (tibia)

Symptoms: Shin Splints & Periostitis

- Pain & tightness on the inside of the shin bone.
It feels like if there would not be enough space for your shin bone.
- Sometimes some swelling can occur.
- Bumps on the front side of the shin bone. (advanced periostitis)
- Pain when you stretch the front side of your lower leg.

- Because of the inflammation the front inside of the shin bone can become a bit red.

Who is susceptible: Shin Splints & Periostitis?

- People with tight calf muscles or bad calf or hamstring flexibility.
- Athletes who sprint and jump on hard ground (concrete) a lot.
- Athletes with bad muscle proportions.
For example people who train the calves a lot but have very weak tibialis (tibialis = thin muscle on the front side of the shin - responsible for pulling up the ankle / toes)

Treatment: Shin Splints & Periostitis

- Consult your doctor.
- Rest as soon as possible.
- Cold therapy reduced pain and inflammation.
Apply ice after training or whenever the shin hurts.
- Using shock absorbing insoles. (for example silicone heel pads)
- Use heat retainers before and during exercise.
The heat causes blood vessels to dilate and increases the flow of blood.
- Exercise your leg muscles especially your tibialis.
(thin muscle on the front side of your shin)
For example: Sit down and extend you legs in front of you.
Pull your toes towards your body until your tibialis are contracted and then extend your ankles.
Always hold the contracted position for a second.
Do up to 50 repetitions. 3 or 5 sets per day.
Stretch both sides of your lower leg. (not only your calves)
Consult your doctor before you start doing exercises like this one.

Dave's advice: Shin Splints & Periostitis

- Train your tibialis from time to time. Even if you don't suffer shin pain.
- Avoid sprinting and jumping on concrete.
- Stretch your legs every day.

Jumpers Knee

Jumpers Knee (patellar tendinopathy - patellar tendonitis).

First of all you have to know that patella tendinopathy (jumper's knee) is the degeneration

of the patellar tendon. Tendinopathy stands for the degeneration of a tendon.

Tendonitis is the inflammation of a tendon and does not perfectly fit to this article.

As the two things often go hand in hand I mentioned both in the headline. So patellar tendinopathy, also know as "jumpers knee" is the degeneration (plus sometimes the inflammation or partial rupture) of the patellar ligament which connects the knee cap (patella) with the big shin bone (tibia).

Find more injury related topics at [injuries main](#).

Description: Jumpers Knee

- The patellar tendon connects the knee cap with the shin bone. This tendon is usually very strong and helps the quadriceps to extend the leg. (the hamstring bends, the quadriceps extends) So when you jump, it's the quadriceps and your patellar tendon doing most of the work. (getting most of the stress) (the rest comes from the calves - by extending you ankles) When you land after a jump, again it's the quadriceps and the patellar tendon which get stressed most. Especially people who practice sports involving a lot of jumping and direction changing (like Taekwondo, volleyball, basketball etc.) Are in a high risk of jumpers knees. As a result of repeated strain, micro-tears or collagen degeneration may occur.

Symptoms: Jumpers Knee

- Pain under and on the knee cap.
- After exercising your knee might feel stiff.
- When you contract your quadriceps or do a one-legged squat, the area under the knee cap hurts.
- Calf weakness can be present.
- Weak legs.
- Bad balance.

Who is susceptible: Jumpers Knee?

- People who practice sports involving a lot of jumping and landing or fast direction changing.
- Especially Taekwondo and XMA if practiced on hard ground.

Treatment: Jumpers Knee

- Grade 1: When the knee only hurts after training
 - You can continue with your routine, but should apply cold therapy (ice) to the knee (point of pain) after workouts.
 - Use a knee support. (to support the tendon and keep the knee warm during training)

- Exercises to strength quadriceps and patella tendon. For example slow leg extension with or without weights.
(more than 20 repetitions per set... no heavy weights)
- Consult a sports injury specialist and / or therapist. What he can do:
 - Anti-inflammatory medication.
 - Ultrasound or laser treatment.
 - Massage techniques.
 - Rehab program.
- Grade 2: Pain before and after training (reduces when warmed up)
 - Change your routine to reduce the load on the tendon.
 - Stop jumping or sprinting activities and replace them with steady running or swimming / running in water if necessary.
 - Consult a sports injury specialist and / or therapist.
- Grade 3: Too much pain for training. (can't concentrate on your training because of the pain)
 - Stop your current routine. You can swim and cycle instead.
 - Consult your doctor.
 - Massage techniques.
 - Start a rehabilitation program. Stretching, strengthening etc.
- Grade 4: Pain during the whole day.
 - Rest 2 to 3 month.
 - Consult your doctor.
 - Massage techniques.
 - Start rehabilitation immediately.
 - If the knee does not respond to anything, surgery may be necessary.
 - Excision of the affected area of the tendon or lateral release where small cuts are made at the sides of the patellar tendon. This takes off pressure. (please don't try this at home)
Of course a surgery should be your last choice. After a surgery it will take you at least 6 month or a year until you can go back to normal training.
Long rest time, intensive rehabilitation and strengthening program etc. etc. etc.

Dave's advice: Jumpers Knee

- Warm up and stretch before you work out.
- Work with weights from time to time.
If you work with weights to regenerate you degenerated patellar tendon, you should work with 20 repetitions or more. If you only do 5 repetitions or less per set, you will probably make your jumper's knee even worse.

Anterior Cruciate Ligament Injury

An anterior cruciate ligament injury is a sports injury that often occurs from an impact to the knee or when you twist your leg. For example when you get kicked in the knee from the side.

Description: Anterior Cruciate Ligament Injury

- The knee is stabilized by 2 collateral ligaments and 2 cruciate ligaments. The collateral ligaments are on the sides of the knee and the cruciate ligaments are inside the knee (X shape) and connect the femur with the tibia. The 2 crossed ligaments inside the knee joint are the anterior cruciate ligament (ACL) and the posterior cruciate ligament (PCL). Those 2 ligaments are essential for the stability of the knee joint. The ACL prevents that the tibia is shifted forward beyond the femur and can be injured if you twist your knee or suffer an impact from the side. Usually from the outside. In martial arts this can occur from: A kick in the knee, a bad twist or a bad landing.

Symptoms: Anterior Cruciate Ligament Injury

- You might feel / hear a pop when the injury occurs.
- Especially at the beginning an anterior cruciate ligament injury is very painful.
- Swelling & Inflammation.
- Knee can not be extended totally. (see anterior drawer test - where you extend your leg against a resistance)
- Tenderness at the medial side of the joint - also indicates a meniscal damage.

Who is susceptible: Anterior Cruciate Ligament Injury?

- Full contact martial artists.
- Tricksters and extreme martial artists.
- Football or rugby players. (often get hit from the side)
- Wrestlers (especially when you get thrown sideways)

Treatment: Anterior Cruciate Ligament Injury

- Apply ice and a compression bandage shortly after the injury.
- A doctor will tell you how bad your ACL injury is. (consulting a doctor is necessary)
He will prescribe a rehabilitation program, inflammation medication or surgery.
In older, less active people, surgery is not advised.
ACL Surgery Procedure: Fix the rupture or use a part of a ligament from somewhere else in your body to fix the anterior cruciate ligament if the ligament is already too short or too stiff to be connected again. Recovery time after an ACL surgery: Between 5 and 9 months

Dave's advice: Anterior Cruciate Ligament Injury

- Consult a sports injury specialist as soon as possible after the injury.
- Warm up sufficient and use mats to learn acrobatic jumps.
- Use knee supports if you recently had an anterior cruciate ligament injury and don't go back to risky techniques and exercises too soon.

The Osgood Schlatter Syndrome

The Osgood schlatter syndrome, also called Osgood schlatter disease, is a knee condition that often affects young teenagers when they are in a growth spurt and especially when they are into sports like soccer, gymnastics or Taekwondo. Its symptoms are knee pain and a swollen up area below the kneecap. The Osgood schlatter syndrome was named after its discoverer Osgood-Schlatter.

Description: The Osgood Schlatter Syndrome

- The Osgood schlatter syndrome, also known as tubercle traumatic apophysitis or Osgood schlatter disease, is a painful inflammation of the growth plate at the top of the shin bone (area between shin bone and knee cap).
- The pain is caused by stress on the tendon that attaches the upper thigh muscle (quadriceps) to the shin bone.
- The Osgood schlatter syndrome can be diagnosed through physical examination, x-ray and ultrasound scan.

Symptoms: The Osgood Schlatter Syndrome

- Knee pain
- Pain when you extend your knee or when you do a full squat.
- Knee pain when you run or when you walk up the stairs.
- The pain eases with rest
- The area below the kneecap is swollen up. In some cases the skin in this area is red too.
- Occasionally, the quadriceps muscles can lose strength and bulk.
- Test: When you extend your knee and relax your leg muscles, move the knee cap to one side slightly. Then contract your quadriceps slowly. Pain can be a sign => Osgood Schlatter Syndrome.

Treatment: The Osgood Schlatter Syndrome

- In most cases the Osgood schlatter syndrome resolves by itself within less than a year.
But when your growth spurt is very long, the knee may stay uncomfortable for up to 3 years.
- In some cases, the force of the tightened tendon coming from the kneecap can break parts from the shin bone. The result is a larger than normal bump between the knee cap and the shin bone. Another possible complication of the Osgood schlatter syndrome is an altered position of the kneecap.
- Following Osgood schlatter treatments are possible.
 - Avoid activities that make the knee pain worse.
 - Stretching and strengthening exercises for the quadriceps, hamstring and calf muscles.
 - Frequent use of ice packs to reduce the swelling.
 - Rest, rest rest and rest to ease the symptoms.
 - Physiotherapy.
 - Painkillers and anti inflammation pills.
 - In some extreme cases, surgery is necessary when the growth spurt stops.

Dave's advice: The Osgood Schlatter Syndrome

- Avoid all activities that worsen the Osgood schlatter symptoms and consult a doctor as soon as possible.
- If your doctor suggests you to do stretching exercises, DO THEM always.

Rectus Femoris Tendon Rupture

A rectus femoris rupture is the full or partial rupture of the upper part of the thin muscle

that goes from the front side of the hip to the knee.

The main causes of rectus femoris ruptures are explosive kicking techniques.

Learn about other injuries at [injuries main](#).

Description: Rectus Femoris Tendon Rupture

- The rectus femoris is the muscle that goes from the front side of the hip to knee.
Between vastus medialis and vastus lateralis.
This muscle is used to lift the leg straight in front of you and to extend the knee.
(a quadriceps muscle). The upper end of the rectus femoris can rupture or get inflamed from over usage training with bad warm up or overstretching.

- A partial rupture can lead to an inflammation even if the injury is almost healed out.
Partial or bad function of the rectus femoris muscle can lead to problems or inflammations of other hip / groin muscles or the joint.
To avoid this, it's recommended to strengthen and stretch the rectus femoris and the quadriceps.

Symptoms: Rectus Femoris Tendon Rupture

- Sharp pain at the front of the hip and/or in the groin area.
Especially when you lift your leg fast.
- Sometimes swelling and/or bruising occur.
- Pain when pressure is applied.
- And if it is a total rupture you won't even be able to lift the leg in front of you slightly. No running or jumping is possible. Even walking hurts.

Who is susceptible: Rectus Femoris Tendon Rupture?

- Practitioners of sports involving a lot of explosive leg techniques:
Martial artists, TKD, dancers, trickers etc.
- People who don't warm up enough or work out in a cold environment.
- Athletes with bad flexibility or weak leg muscles.

Treatment: Rectus Femoris Tendon Rupture

- DR.RICE - Consult a doctor to find out how bad the rupture is.
Rest is the most important part. If you don't rest enough, a partial rupture can lead to a total rupture. Apply Ice to reduce pain and inflammation, Compress and Elevate. (well... the elevation part is a bit complicated here)
Anti-inflammants like diclofenac may be prescribed to reduce inflammation.
- It is very important to use sports massage techniques after the acute phase.
You can massage the rectus femoris muscle with one hand before and after training sessions.

- Full rehabilitation program: Strengthen, stretch and massage. Consult your doctor for more info.
- Ultrasound or Laser treatments.
- In the worst case operation will be necessary (if the muscle has torn completely)
after an operation you will not be able to train properly for at least 6 month.

Dave's advice: Rectus Femoris Tendon Rupture

- Strengthen and stretch your rectus femoris muscles and you quadriceps. See weight training and stretching.
- Warm up sufficient and keep your muscles warm during training. (Bandage etc.)
Train in a war environment. (especially if you recently suffered a rectus femoris rupture)
- Avoid explosive martial arts kicks and jumps if your muscles are not warm enough.
- To avoid a rectus femoris tendon ruptures in the first place, strengthen and stretch you hip always.

Hip Bursitis

In this lesson you will learn what hip bursitis is, how it occurs, about symptoms and treatments. Hip bursitis is when the outer bursa (fluid filled sac) becomes inflamed because of a direct blow or an impact. Find more sport injury related topics at [injuries main](#).

Description: Hip Bursitis

- On the outside of the hip are two bursas.
Bursas are small fluid-filled sacs located between movable parts of the body especially at joints.
In the illustration above you can see a muscle connecting the pelvis (hip bone) with the femur (thigh bone).
Pretty close to the thigh bone you can find the two bursas I am talking about.
The outer one can become inflamed from a direct blow or impact.

Symptoms: Hip Bursitis

- Pain on the outside of the hip which becomes worse when you run.
(can become even worse when don't run at a flat surface)
- Pain when pressure is applied.
- Swelling on the outside of the hip.
- When you sleep, the pain might radiate down the thigh.

- Pain when you lift up the leg sideways.
(for example when you do a sidekick)

Treatment: Hip Bursitis

- The best would be to rest until there is no pain at all.
- Apply ice to the outside of the hip to calm down the inflammation and to release pain.
- Run only on flat and even ground. (no cross country runs - no free running)
- Don't practice acrobatics or throwing techniques.
- Consult a doctor.

Dave's advice: Hip Bursitis

- When you have hip bursitis, avoid falling on your hip.
- If you don't take enough rest, the pain might stay for weeks or even month.
A doctor might even have to stick a needle into the bursa to drain off fluid (aspirate it) or give you a steroid injection.
In the worst case surgery will be necessary.