Martial Arts Research and Studies (M.A.R.S.)

Academic Research, Studies and Reports in the field of Martial Arts.

Question & Answer:

Overload injuries of the knie.

Viam Inveniam Aut Faciam

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Abstract:

Intorduction: Anterior Knee pain are a cluster of painfull musculoskeletal problems that involve the anterior aspect of the knee. One of these problems is the Jumpers knee or patella tendinopathy. Since martial arts involve high demands on the musculoskeletal structure of the knee region, patellar tendinopathy are common in martial arts and other sports. This overuse injury can lead to serious limitations and challenges for athlete, trainer, and professional heath careers. **Aim**: To give a brief overview of the possible non-invasive and non-surgical therapies. **Study design**: Quick narrative review of literature. **Results and conclusion**: Tendinitis and tendinosis are to utterly different medical problems. Current noninvasive therapeutic interventions if tendinitis are (relative) rest, optimal load distribution, cryotherapy, and possible anti-inflammatory drugs. In case of tendinosis, exercise therapy and eccentric training, stretching, and stability training are reconmended. Anti-inflammatory drugs and medication are less effective. Other possibile treatments are deep tissue techniques, taping, bracing and extra corporal shockwave therapy but evidence is less. Return-to-sport not recommended in case of tendinitis. In case of tendinosis Return-to-sport can be done in strict alertness regarding loads and load distribution and has to be done with care.

Keywords: Anterior Knee pain, Jumpers knee. Martial Arts. Rehabilitation. Eccentric training. Return to sport.

QUESTION:

Can I/my athlete participate in sports and train (in martial arts) with an sore knee tendon due to overload. specifically a jumper's knee, during the painful phase?

BACKGROUND:

A jumper's knee refers to an issue at the front of the knee, specifically the patellar tendon, which runs from the lower part of the kneecap (patella) to the upper part of the shinbone (tibia). The knee and its structures endure extreme stress and load in many sports, particularly in martial arts and combat sports. Quick and powerful movements with frequent changes in direction and intensity place high stress on the entire knee system, including bones, muscles, tendons, and ligaments.

When these systems and structures become overloaded, they may weaken (tendinosis) or become inflamed (tendinitis). While these are distinct issues, the terms are often mistakenly used interchangeably. Tendinosis and tendinitis can occur separately, coexist, or one may cause or exacerbate the other. Various tendon issues (tendinopathy) can arise in this region. A jumper's knee specifically affects the patellar tendon (patellar tendinopathy). The Quadriceps tendon tendinopathy occurs at the upper part of the.

kneecap, while a jumpers knee effects the lower part. A runner's knee affects the iliotibial band on the lateral side of the knee, far from the kneecap. Additionally, other ligamentousstructures, such as the medial retinaculum, lateral retinaculum, patellofemoral ligament, patellomeniscal ligament, and patellotibial ligament, can also become overloaded, leading to complaints around the sides of the kneecap.

Although these are distinct structures located close together, their development mechanisms are often similar.Typically, such complaints are localized on or around the kneecap. Cartilage or meniscus issues, on the other hand, tend to cause discomfort deep within the knee or in the joint space. Other types of injuries that can cause anterior knee pain are: Patellofemoral pain syndrome and chondromalacia patellae, plica syndrome, Osgood Schlatter's disease, Patellar instability an stress fractures and Patellofemoral osteoarthritis.

The symptoms of tendinitis and tendinosis can be similar, ranging from sharp, stabbing pain to deep, dull pain, a warm sensation, pain during exertion, and tenderness. Distinguishing between tendinitis and tendinosis can be challenging.

CAUSES:

The causes of tendinitis or tendinosis can vary. Acute overload (engaging in more sports and contact hours, more frequent sports, or more intensive sports than usual) can stress the tissue beyond its capacity, leading to inflammation (tendinitis) or weakening (tendinosis). Chronic overload (long-term overload, which may not immediately be perceived as such) can also cause inflammation and weakening.

Acute overload is often associated with tendinitis, while chronic overload is more commonly linked to tendinosis. However, both can occur independently or in combination. Overload often if not always results from excessive (sometimes relative) stress on the tissue. This may have several contributing factors, such as weakening of the affected structure itself (muscle, tendon, or ligament) or weaknesses of specific structures or muscles elsewhere in the body, which indirectly or directly lead to the overload of other structures, such as the knee joint in this case.

TENDINITIS:

Inflammation or tendinitis generally progresses through three phases:

Acute inflammatory phase: Characterized by significant pain, swelling, redness, and warmth. Sports activities are generally inadvisable as they can worsen symptoms. Symptoms vary but often include relief from light, ultra-low-intensity movements and increased pain during inactivity. Intense pain may occur at night.

Proliferative phase (reduced inflammation): Some activity may be resumed cautiously, guided by symptoms. Return-to-sport is possible under professional supervision. Intensive exercises are discouraged.

Remodelling phase (minimal inflammation): Pain occurs only during intense activities. This is the phase where tissue strengthening can occur. Anti-inflammatory treatments are ineffective here. Exercise regimens are similar to those for tendinosis.

TENDINOSIS:

Tendinosis involves no inflammation (tendinitis) and does not progress in phases as a tendinitis but rather across a continuous spectrum and process of degeneration. It results from a weakening of the tissue's internal structure, in this case, the patellar tendon, though it can affect many tissues. Common examples include tennis elbow, golfer's elbow, Achilles tendon issues, and more.

TREATMENT AND APPROACH:

Seek professional advice from a doctor, sports physician, or physiotherapist if symptoms occur. Mismanagement can exacerbate the problem.

Tendinitis: Intense sports are strongly discouraged. Consider anti-inflammatory medication under medical advice. Employ the P.O.L.I.C.E. principle (Protection, Optimal Load, Ice, Compression, Elevation) with relative rest and cryotherapy.

Tendinosis: Professional guidance is necessary to strengthen affected structures. Gradual intensity increases

are recommended, avoiding inflammation from excessive progression.

RETURN-TO-SPORT:

Returning to sports is possible with tendinosis, provided overstrain is avoided. Reintroduce activities at a low intensity, focusing on technical, low-impact training. Sparring is discouraged until symptoms subside.

CONCLUSION:

Tendinitis (inflammation) and tendinosis (weakening) are distinct features, but can co-occur. During acute inflammation, sports should be avoided, and the P.O.L.I.C.E. principle followed. Chronic overstrain requires load adjustments and gradual progression. Underlying issues (e.g., weak or shortened muscles, stability problems) must be addressed to prevent recurrence. Temporary use of braces or taping is possible but should accompany other therapies.

Seek professional advice from a doctor, sports physician, or physiotherapist if symptoms occur. Mismanagement can exacerbate the problem.

ANSWER TO QUESTION:

Q: Can I/my athlete participate in sports and train (in martial arts) with an overload knee tendon, specifically a jumper's knee, during the painful phase?

A: Based on your question we only have a limited amount of information and our answer should be viewed within this limitation. Yes, one can return to sport during or after overload injuries, but only if the condition is not in the inflammatory phase, as this could worsen the issue. Optimal load management is crucial, avoiding overstrain at all times. Combine with curative and preventive therapies. Always consult a healthcare professional such as a doctor, sports physician, or physiotherapist for advice.

DISCLAIMER

This information is purely informational. In case of complaints, contact a professional such as a doctor, sports physician, or physiotherapist.

Conflict of interest

No conflicts of interest are present.

Founding

There was no founding for this work.

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