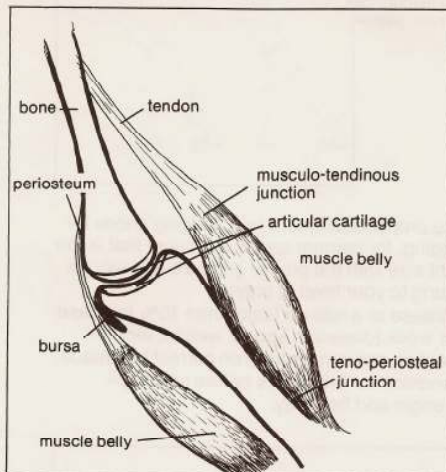


ANATOMY



DESCRIPTION

Overuse syndromes refer to injuries sustained from repeated action (such as long-distance jogging) as opposed to acute injuries, which occur in an instant (such as a sprained ankle).

Overuse injuries occur to:

1. Muscle-tendon attachments to bone (e.g. 'tennis elbow').
2. The periosteum cartilage, which is the covering of the bone (e.g. shin splints).
3. The tendon (e.g. Achilles Tendonitis).
4. The bursae (e.g. bursitis in the shoulder).
5. The bone (e.g. stress fractures).

When stress in the form of exercise is applied to your body, your body adapts by thickening and strengthening the various tissues involved. Hence, muscles get stronger, firmer and sometimes larger, tendons get stronger and bone density can increase.

However, if exercise is applied in such a way that adaptation cannot occur, the excessive overload can cause microscopic injuries, leading to inflammation, which is the body's response to injury. Signs of inflammation include:

1. Swelling (which may be unnoticeable).
2. Warmth to the touch.
3. Redness.
4. Tenderness.
5. Impaired function of the part.

All of these signs may be present but not noticeable in the beginning stages. Often the first sign may be stiffness or soreness (especially in the morning) which may disappear with warm-up.

Continued use may cause continued damage and the pain will last through and past warm-up and may be even worse after activity is finished.

Often, there are 4 stages:

1. Discomfort that disappears during warm-up.
2. Discomfort that may disappear during warm-up but reappears at the end of the activity.
3. Discomfort that gets worse during the activity.
4. Pain or discomfort all the time.

If the injury can be identified and treated in stage 1, activity may continue as long as the injury doesn't worsen.

If the injury can be identified and treated at stage 2, activity may continue at a modified pain-free level. Treatment must continue until completely healed.

If the injury is allowed to progress to stage 3, activity must cease until the supervising doctor feels that treatment and identification of the cause allows the person to return to activity completely symptom free or, if a competitive athlete, and depending on the individual circumstances, possibly stage 1.

CAUSES

Include one or more of the following:

- lack of appropriate muscle strength
- muscle imbalance
- inflexibility
- malalignment (e.g. foot, patella, tibial torsion)
- training errors
- faulty technique
- incorrect equipment and surface.

By far the most common cause of overuse injury is training errors. And the most common error is 'too much, too soon'.

