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Knee Extensor Mechanism (Quadricep Tendon / Patella Tendon) Ruptures

What is the Knee Extensor Mechanism?

The knee extensor mechanism is a crucial part of the knee joint responsible for straightening the leg. It involves a network of structures, including the quadricep muscles in the front of the thigh, the patella (kneecap), and the tendons that connect these muscles and bones. These tendons – the patella tendon (tendon running from kneecap to shin bone) and the quadriceps tendon (tendon running from quadricep muscles to kneecap) – are vital for the proper functioning of the knee during activities like walking, running and jumping

What are Knee Extensor Mechanism Ruptures?

Knee extensor mechanism ruptures, such as patella tendon rupture and quadriceps tendon rupture, occur when one of these tendons tears or completely breaks. These injuries significantly impact the ability to straighten the knee and perform everyday activities

What causes Knee Extensor Mechanism Ruptures

Knee extensor mechanism ruptures can happen due to various reasons, including:

- Fall or direct impact to the front of the knee
- Sudden powerful contraction of the quadriceps muscles i.e. sports, landing from a jump
- Conditions like tendonitis (tendon inflammation) weaken the tendon over time, making it more prone to injury

What are the symptoms associated with Knee Extensor Mechanism Ruptures?

Signs that you might have ruptured your knee extensor mechanism after an injury include:

- Intense pain in the front of the knee
- Swelling and bruising

- Difficulty straightening knee
- Difficulty bearing weight on affected leg
- A visible gap or indentation around the knee

How are Knee Extensor Mechanism Ruptures diagnosed?

If you suspect a rupture of your knee extensor mechanism, it is essential to consult a healthcare professional. Dr Kaihan Yao is an Orthopaedic Surgeon who can help you. A consult with Dr Yao typically involves:

- **Taking a history**: Taking a history enables Dr Yao to better understand your injury
- **Conducting a physical examination**: Dr Yao will check your affected knee, evaluating movement and assessing pain levels
- **Ordering imaging tests**: Dr Yao may organise for X-rays, CT scans or MRIs to rule out other conditions or confirm the diagnosis of a knee extensor mechanism rupture

How are Knee Extensor Mechanism Ruptures treated?

Treatment for a knee extensor mechanism rupture depends on the severity and type of rupture. Dr Yao will work closely with you to identify and implement a personalised treatment strategy that is best for you.

- **Immobilisation**: A splint or brace may be required to keep the knee stable and allow the tendon to heal properly
- **Medications**: Over-the-counter pain relievers or prescription medications can help manage pain and discomfort during the healing process
- **Rest**: Keeping the affected leg elevated and avoid using it can help in reducing swelling and facilitating healing
- **Physiotherapy**: Once the tendon has healed adequately, physiotherapy may be recommended to restore strength, flexibility and range of motion in the knee

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- **Surgery**: In some cases, surgery may be necessary to reattach the tendon to bone using specialised sutures or anchors in order to facilitate proper healing

Conclusion

If you have suffered an injury to your knee or are concerned about a rupture to your knee extensor mechanism, Dr Yao can assist you by establishing an accurate diagnosis, providing you with further information and recommending appropriate treatment options tailored to your needs.

[Note: This patient information sheet is for general understanding and should not replace professional medical advice. Always consult a healthcare provider for accurate diagnosis and treatment.]