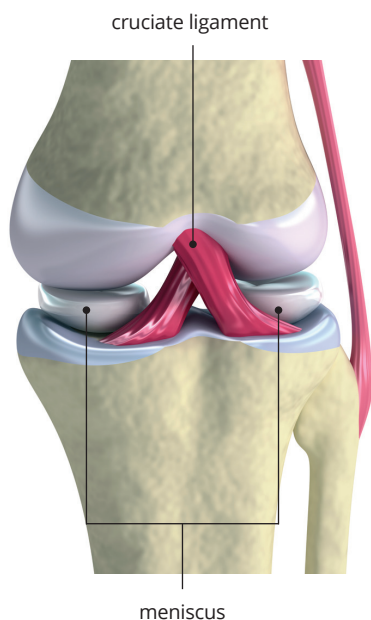


Knee Pain

Among all the joints in the body, the knees are the most easily injured. They are also vulnerable to degenerative wear and tear, inflammatory and infection-related arthritis.



Knee anatomy

Common causes of knee pain

Knee pain is a very common and can occur in different age groups. For youngsters and active athletes, knee pain may arise from sport injuries, causing stress on the joints and soft tissues around the knee joints. It can also cause structural damage, such as ruptured ligaments and torn cartilage. For the middle-aged and the elderly, degenerative changes over the knee joint and cartilage are common.

The common causes of knee injuries include:

- Direct impact on the knee joint when doing sports or from a fall
- Repeated stress or overuse of the soft tissues or muscles of the knee
- Frequent sudden turning, pivoting and stopping, for example, when playing football or skiing
- Awkward landings from a fall or a jump, for example, when playing basketball
- Age-related degeneration

Signs and symptoms

Symptoms vary depending on the type of injuries and conditions:

Ligament injuries:

- Immediate pain on walking or knee bending
- A popping sound on straightening of the knee
- Inability to bear weight by the injured knee

Tendon injuries (tendinitis):

- Swelling in the front of the knee
- Worsening pain when jumping, running, squatting, or walking up and down the stairs
- Inability to completely straighten the knee

Meniscus injuries (meniscus refers to the shock absorber cartilage located between the thigh and leg bones):

- Pain and swelling around the knee joint
- Inability to straighten the knee completely, and with a "locked" sensation

Osteoarthritis (degenerative arthritis):

- Worsening pain when walking or walking up and down the stairs or slope
- Swelling with increased temperature in the knee
- Stiffness (limitations in range) and tightness
- Creaking sounds
- Weak knee muscles

Diagnosis

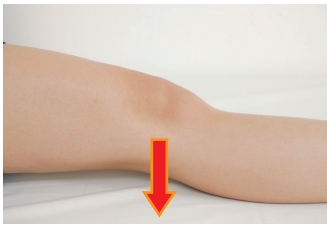
Medical history, the mechanism of injury and area of pain are useful to make a provisional diagnosis. Physiotherapists can conduct some special tests such as a ligament stress test or a stability test in order to confirm whether there is any specific ligament or structure being injured. In addition, X-rays can be conducted to look for any structural problem, and MRI tests may reveal soft tissue trauma and damage.

Treatment options

Conservative treatments

For those who have minor soft tissue strain or are suffering from the early stage of osteoarthritis, anti-inflammatory medication prescribed by the doctor can help control the pain. Physiotherapists can also help reduce pain and inflammation by electrotherapy treatment, ranging from ultrasound, interferential therapy (treatment making use of mid-frequency current), to acupuncture. When the pain is under control, the treatment goal will be to maintain the patient's muscle strength and the range of motion of the knee. Better strength over the knee muscles means better support, which will reduce the direct pressure on knee joints. Knee support and knee braces are sometimes prescribed to give support to the knee as well as to alleviate pain. Knee care and modification to daily activities are also very important, especially for osteoarthritis cases.

Strengthening and stretching exercises are often prescribed by physiotherapists for strengthening the muscles. Patients should seek medical advice, and wait till they have recovered from the acute stage.



Static quadriceps

- Lie down on the back. Tighten the kneecap with a count of 5-10 seconds, then relax.



Hamstring curls

- Face down, bend the knee within a comfortable range, then lower it slowly with control.
- Add ankle weights for further strengthening of hamstring muscles.



Inner range quadriceps

- Lie down on the back. Put a pillow or a towel underneath the knee joint for support.
- Lift the heel with foot flexed and hold for 5-10 seconds, then lower it slowly with control.



Straight leg raises

- Lie down on the back. Lift the whole leg up in a straight line and with foot flexed. Hold for 5-10 seconds, then lower it slowly with control.



Mini-squat exercise

- Lean against the wall. Slowly bend down both knees into a shallow squat. Knees should be "on the same line" as the feet. Hold for 5-10 seconds and slowly straighten the knees.

Surgical treatment

Patients who have severe structural damage such as anterior cruciate ligament (ACL) rupture, meniscus tear or are in the later stage of osteoarthritis, surgical intervention may be required for repairing and reconstructing the knee structure. Common surgical options include ACL reconstruction, arthroscopic meniscus repair and debridement. For cases with severe degeneration of knee joints, total knee replacement may be considered to correct the joint alignment and restore the function of the knee joints. Intensive physiotherapy treatment is needed for rehabilitation and better recovery after the operation.

Prevention of knee pain and daily care

For athletes and people active in sports, adequate stretching and warm up are very important before activities. Active muscle training for lower limbs and core muscles can help reduce stress and pressure on the knee joints. To minimize the chance of ligament or muscle injury, specially made adhesive tapes wrapping around the knee joints could be used to give extra support to the soft tissues during vigorous contact sports, such as rugby and football. While there is no stopping the ageing process, the elderly persons and people with knee pain should pay attention to the following advice to protect the knee joints:

- Avoid walking up and down the stairs and the slopes. Take the elevator or escalator if there is any
- Avoid doing full squats and kneeling
- Wear proper footwear that can maintain good alignment on hip, knee and ankle joints
- Keep body weight under control as being overweight can apply more pressure on the knee joints
- Avoid carrying heavy objects when walking

Compiled by:
Physiotherapy Department,
Matilda International Hospital

References:
UpToDate website

The materials contained here are for general health information only, and are not intended to replace the advice of a doctor. Matilda International Hospital and Matilda Medical Centres will not be liable for any decisions the reader makes based on this material.

To make a physiotherapy appointment,
please call 2849 0760 or email physio@matilda.org.

Scan the QR code to obtain
information of our medical
centre or clinic downtown

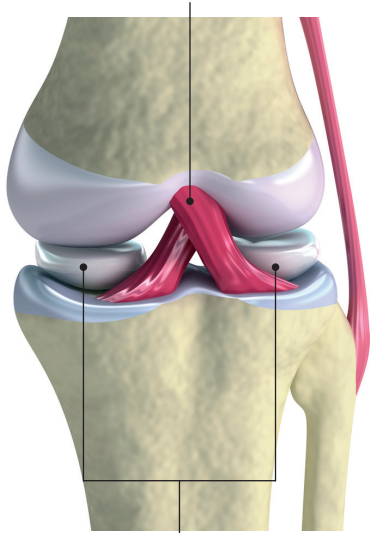


膝關節痛

膝蓋是身體最易受傷的關節。常見的膝蓋受傷包括退化性磨損和撕裂、發炎及感染造成的關節炎。



十字韌帶



半月板

膝關節構造

膝關節痛的常見成因

膝關節痛十分普遍，任何人不論年幼老少均可能有膝關節痛的問題。年青人和運動員的膝關節痛大多與運動創傷有關，令膝關節和軟組織受壓，繼而造成膝蓋關節的結構性損傷，如韌帶或軟骨撕裂。中年人士和長者的膝關節痛症則大多由關節和軟骨退化引起。

常見的膝關節受傷成因包括：

- 運動或跌倒時，膝關節直接受到碰撞
- 膝關節的軟組織或肌肉重覆受壓或勞損
- 做運動，如踢足球、滑雪時，重覆急轉或急停等
- 做運動，如打籃球時，跌倒或跳下而著地不良
- 隨著年紀增長，關節退化

症狀

膝蓋受傷的位置不同，所出現的症狀亦有所分別：

韌帶受傷

- 走路或屈曲膝蓋時，感到痛楚
- 伸直膝蓋時，出現「劈啪」的聲音
- 受傷的膝蓋難以負重

筋腱受傷（腱炎）

- 膝蓋前端腫脹
- 跳動、跑步、蹲下或上落樓梯時痛楚加劇
- 不能把膝關節完全伸直

半月板受傷（半月板是指位於大腿骨及小腿骨之間有吸震作用的軟骨）

- 關節出現痛楚和腫脹
- 不能把膝蓋完全伸直，有被卡住的感覺

退化性關節炎

- 走路、上落樓梯和斜坡時，痛楚加劇
- 關節發熱和腫脹
- 膝關節僵硬繃緊，難以伸直
- 發生「咯吱」的聲音
- 大腿肌肉乏力

診斷方法

醫護人員可從病歷及了解患者受傷和痛楚的位置，作出初步的診斷。物理治療師亦可作一些特別測試，如韌帶鬆緊和穩定性測試，以評估患者的韌帶或膝關節結構是否受損。此外，X光亦有助檢測膝關節結構的問題，至於磁力共振則有助檢查軟組織有否受傷。

治療方法

保守性治療

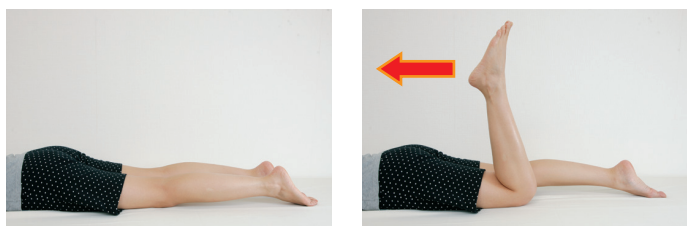
患有輕微軟組織創傷或早期退化性關節炎的病人可服用醫生處方的消炎藥物，以減輕痛楚。物理治療也可幫助病人舒緩痛楚和發炎的症狀，常用的療法包括超聲波、干擾波（以中頻波作治療）和針灸。痛楚舒緩後，治療重點可轉為保持肌肉的力量和關節的活動範圍，並提升膝部以上肌肉的力量，幫助舒緩膝關節受壓的情況。另外，配戴護膝亦可為膝部提供支撐，減輕痛楚。患者（特別是患上退化性關節炎的病人）或需調節生活習慣，以保持膝關節健康。

物理治療師會建議患者做一些膝蓋關節的康復練習。不過，練習前，患者應尋求醫學意見，並待痛楚舒緩後，才開始練習。



四頭肌靜態伸展

- 躺下，並收緊膝蓋肌肉五至十秒，然後放鬆。



脛繩肌強化

- 俯臥，小腿向後彎曲，再慢慢將小腿放下，彎曲的幅度以舒適為佳。
- 可在足踝位置稍為負重，以進一步強化脛繩肌。



內側四頭股練習

- 躺下，並在膝關節下放置枕頭或毛巾，以承托大腿。
- 把腳跟提起，維持五至十秒，再慢慢放下。



直膝提腿

- 躺下，並把腿成一直線提升，維持五至十秒，然後慢慢放下。



半蹲練習

- 背靠牆壁，慢慢微微曲膝。膝蓋須與腳掌保持垂直，維持五至十秒，然後慢慢伸直膝蓋。

手術治療

患有嚴重膝關節結構性創傷的病人，如前十字韌帶斷裂、半月板磨損或後期退化膝關節炎等，或需動手術修復及重建膝部結構。

常見的膝部手術包括前十字韌帶重建手術、內窺鏡半月板修補手術和關節鏡清創手術。若膝關節已嚴重退化，則可考慮接受全膝關節置換手術，以修正關節位置和修復膝關節功能。手術後，患者須接受密集的物理治療，直至完全康復。

預防方法及日常護理

運動員或經常運動的人士應在運動前做足伸展和熱身運動，如多做針對下肢和核心肌肉的訓練，以舒緩膝關節所承受的壓力。進行劇烈運動（如欖球和足球）前，則可在膝關節位置配戴特製的黏貼膠帶，為軟組織提供支撐，從而減低韌帶或肌肉的受傷機會。雖然膝關節會隨年月退化，然而長者和膝關節痛患者應留意下列建議，以維持膝關節健康：

- 避免上落樓梯和斜坡，多用扶手電梯或升降機
- 避免完全蹲下或跪下
- 穿著合適的鞋子，避免臀部、膝部或踝部關節過分受壓
- 控制體重，因身體過重會令膝關節過度受壓
- 走路時避免攜帶重物

撰寫：
明德國際醫院物理治療部
參考資料：
UpToDate 網站

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請致電 2849 0760 或電郵 physio@matilda.org。

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查閱醫院位於市區的
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