ENTITLEMENT ELIGIBILITY GUIDELINES

# INTERNAL DERANGEMENT KNEE

**MPC** 01341
**ICD-9** 717

## DEFINITION

Internal derangement of the knee (IDK), for the purposes of VAC, is a chronic disorder of the knee due to a torn, ruptured or deranged meniscus of the knee, or a partial or complete cruciate rupture, with or without injury to the capsular ligament of the knee, resulting in ongoing or intermittent signs and symptoms such as pain, instability, or abnormal mobility of that knee.

## DIAGNOSTIC STANDARD

Diagnosis by a qualified medical practitioner is required. In many cases, arthroscopic investigation or an MRI could be diagnostic and, if conducted, reports should be provided.

## ANATOMY AND PHYSIOLOGY

Internal derangement of the knee is a mechanical disorder of the knee which interferes with normal joint motion and/or mobility. A fragment of soft tissue or bone that suddenly becomes interposed between the articular surfaces is the classic cause of internal derangement. The misplaced fragment can be radiolucent or radiopaque. The most frequent cause of locking is entrapment of the radiolucent meniscus.

The most common IDK is the torn meniscus.

There are two principal cartilaginous structures in the knee joint - the articular cartilage and the menisci. The articular cartilage envelopes the bony ends of the tibia, femur and patella in contact with the joint. The menisci play a vital role in providing joint stability, impact absorption, and lubrication. Both of these structures can be acutely damaged by trauma or chronically damaged by cumulative joint trauma (see paper on Cumulative Joint Trauma in the Development of Osteoarthrosis/ Osteoarthritis). Injury to the menisci generally results from traction, compression, torque forces, or a combination of all three.

The cruciate ligaments are most important in ensuring normal knee function. Damage

to these ligaments contributes to significant impairment and disability. The anteriorcruciate ligament (ACL) is the more critical and is the most frequently involved in injury.

The complex interplay between instability, torn menisci, athletic activities, muscle control, and cumulative joint trauma ultimately leads to a degenerative change in the knee. It is often unclear what mechanism caused the disability, e.g. the original injury, repeated locking, instability, high athletic demands, powerful muscular contractions, repeated trauma or altered mechanics.

Osteochondritis dissecans of the femoral condyle is one of the most common conditions which generate radiopaque osteocartilaginous loose bodies. It is three times more common in men than in women. Osteochondritis dissecans of the patella, in some cases, appears to be due to a tangential or shear fracture secondary to subluxation. Persons with intra-articular loose bodies of the knee will develop degenerative arthritis. Time until presentation of arthritis is dependent, in part, on activity level, insofar as the more active the person, the earlier the onset of arthritis.

## CLINICAL FEATURES

The essential features of IDK are as follows:

1. The appearance of locking and/or recurrent locking of the knee as a result of the reflex “pseudoparalysis” of the hamstring and quadriceps muscles at the time of locking, causing the knee to buckle during weight-bearing, i.e. sometimes in locking, a person’s knee may give way because both the extensors and flexors of the knee have failed.

2. Sudden loss of motion, usually of full extension.

3. Sudden loss of function of the knee, often associated with a minor injury.

4. Possible restoration of the knee to normal function by manipulation.

5. Subjective complaint of “something moving around in the knee”.

## PENSION CONSIDERATIONS

## A. CAUSES AND/OR AGGRAVATION

**THE TIMELINES CITED BELOW ARE NOT BINDING. EACH CASE SHOULD BE ADJUDICATED ON THE EVIDENCE PROVIDED AND ITS OWN MERITS.**

1. Specific trauma to the knee prior to clinical onset or aggravation

*For specific trauma to cause or aggravate IDK*, the following should be evident*:*
Pain, swelling, or altered mobility, or any other pertinent sign or symptom*,* should occur in the joint within 24 hours of the injury*; and*
These acute symptoms and signs should generally last several days following their onset except where medical intervention* for the trauma to that joint has occurred.

**Medical intervention includes but is not limited to physician-recommended medication; immobilization of the joint or limb by splinting, sling or similar mechanisms; injection of corticosteroids or local anesthetics into the joint; aspiration of the joint; surgery to the joint.

The majority of cases of acute internal derangement will be obvious within a few days. Pain is almost always present; swelling may or may not be clinically obvious to the medical practitioner.

*Specific trauma means* as follows:
Direct physical injury, such as a hit, blow, knock, or a penetrating injury which may occur from a projectile such as a bullet or shrapnel, **or**
A twisting or wrenching injury which involves excessive stretching or straining of the capsule or ligaments in the knee joint and results in abnormal mobility and instability of the joint, indicated by periodic giving way or locking up of the joint. Twisting injuries to the knee most commonly occur during sporting activities.

*Specific trauma* does not include cumulative joint trauma in the absence of a specific injury.

Specific trauma could result in the following:
- meniscal tear
- osteochondritis dissecans
- ligamentous instability - this includes partial or complete tear of the anterior and/or posterior cruciate ligaments

2. Inability to obtain appropriate clinical management

## B. MEDICAL CONDITIONS WHICH ARE TO BE INCLUDED IN ENTITLEMENT/ASSESSMENT

All intra-articular pathology of the knee and soft tissue disorders in the area of the knee will be included, such as:

- osteoarthritis of knee
- chondromalacia patella
- patello-femoral syndrome
- patello-femoral OA
- loose body of the knee joint
- Baker's cyst
- relaxed ligaments of knee (anterior and posterior cruciate only)
- necrosis sequestrum
- synovial plica syndrome
- recurrent lateral dislocation of patella
- prepatellar bursitis
- suprapatellar bursitis
- medial and lateral collateral ligamentous sprain

## C. COMMON MEDICAL CONDITIONS WHICH MAY RESULT IN WHOLE OR IN PART FROM INTERNAL DERANGEMENT OF THE KNEE AND/OR ITS TREATMENT

## REFERENCES FOR INTERNAL DERANGEMENT KNEE


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