

HOW DO WE DIAGNOSE LAMENESS IN YOUR HORSE ?



To help horse owners better understand the [tools we routinely use](#) at VetweRx to evaluate their horse's soundness, the following section of this website reviews a series of actual cases we have treated.

We first discuss your horse's anatomy, using diagrams and actual limb dissections. We then demonstrate our ability to visualize these structures using digital radiography and ultrasound. Finally we examine some traumatic injuries and developmental abnormalities that you may encounter with your horse.

Please note that all of the images were taken on site with our own equipment, and the pathology represents [real cases that we have treated](#). Treatment modalities that we can provide to help your horse are discussed in a separate section of this website – “Treating Your Horse's Lameness”.

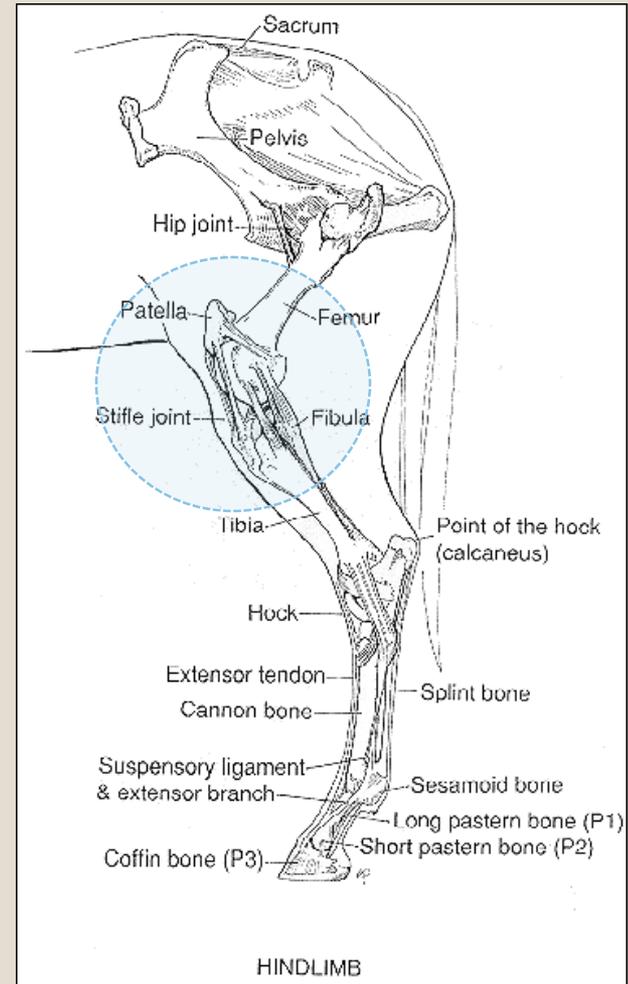
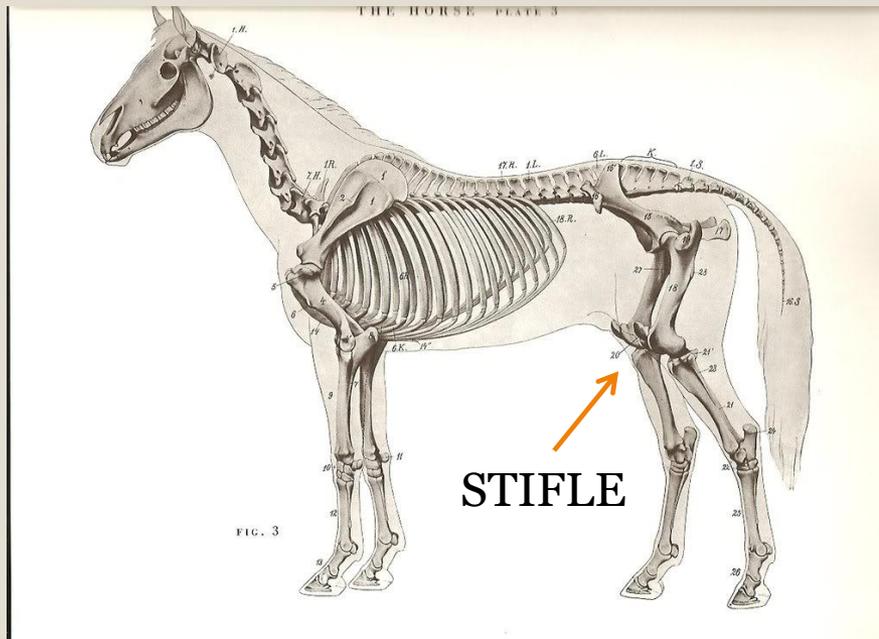
EQUINE STIFLE

Author:
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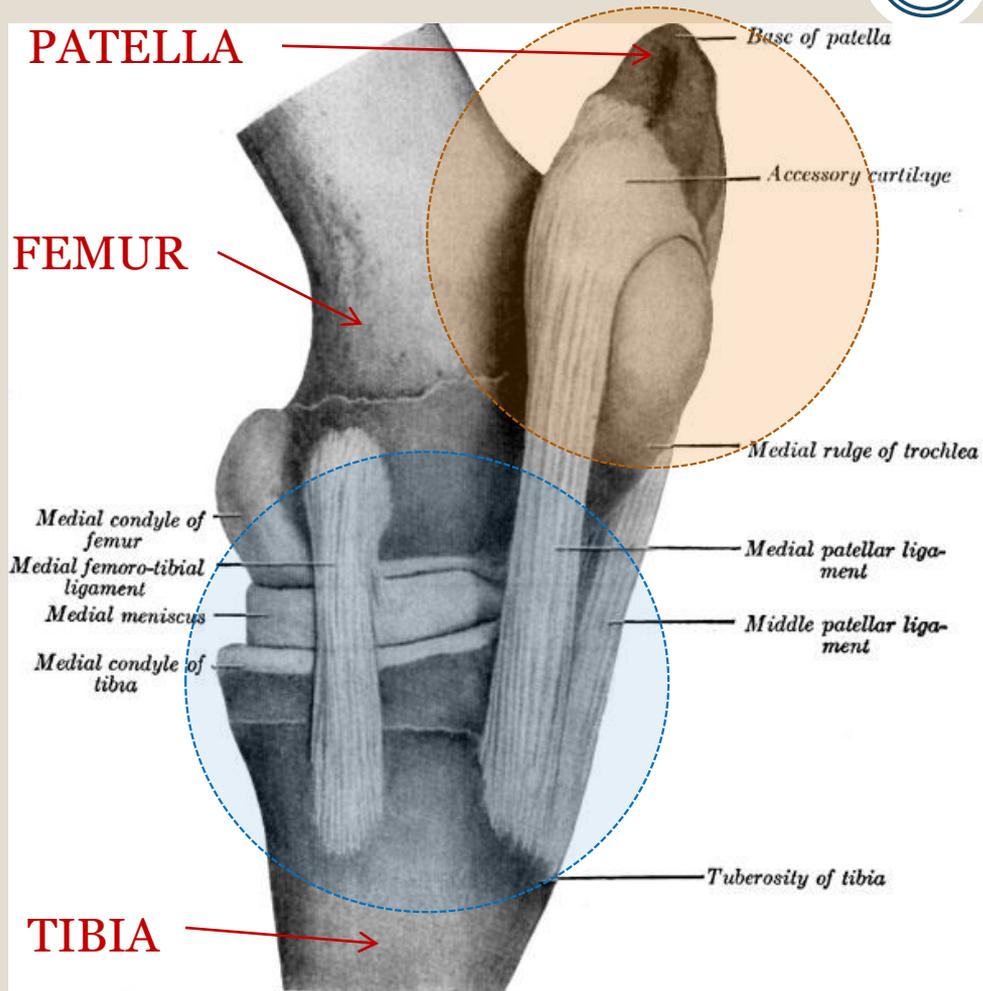


- One of the most complex joints in the body, the stifle has long been a repository for the diagnosis of any cryptic hind end lameness of the horse.
- If a veterinarian could not pinpoint the cause of an upper hind limb lameness, the stifle was always a safe bet, as it was difficult for the veterinarian to be proven wrong.
- The stifle was too massive to be easily radiographed in the field.
- And even if radiographs were available, they were never definitive. There are too many important soft tissue structures like menisci, collateral ligaments and cartilage defects that cannot be visualized with x-rays, but can often be the source of lameness.
- **FORTUNATELY, TIMES HAVE CHANGED !!**

STIFLE ANATOMY - orientation

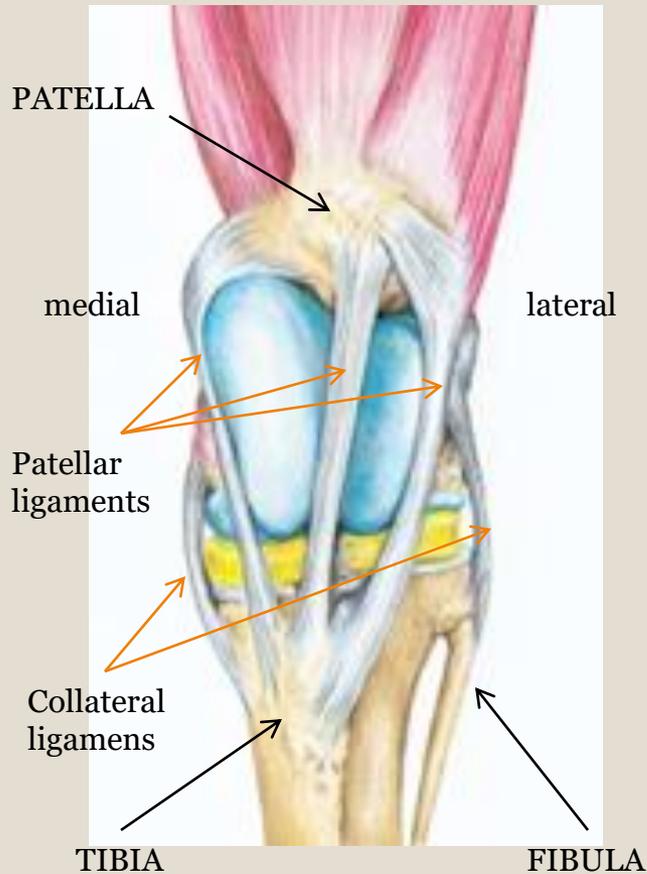


STIFLE ANATOMY - diagram



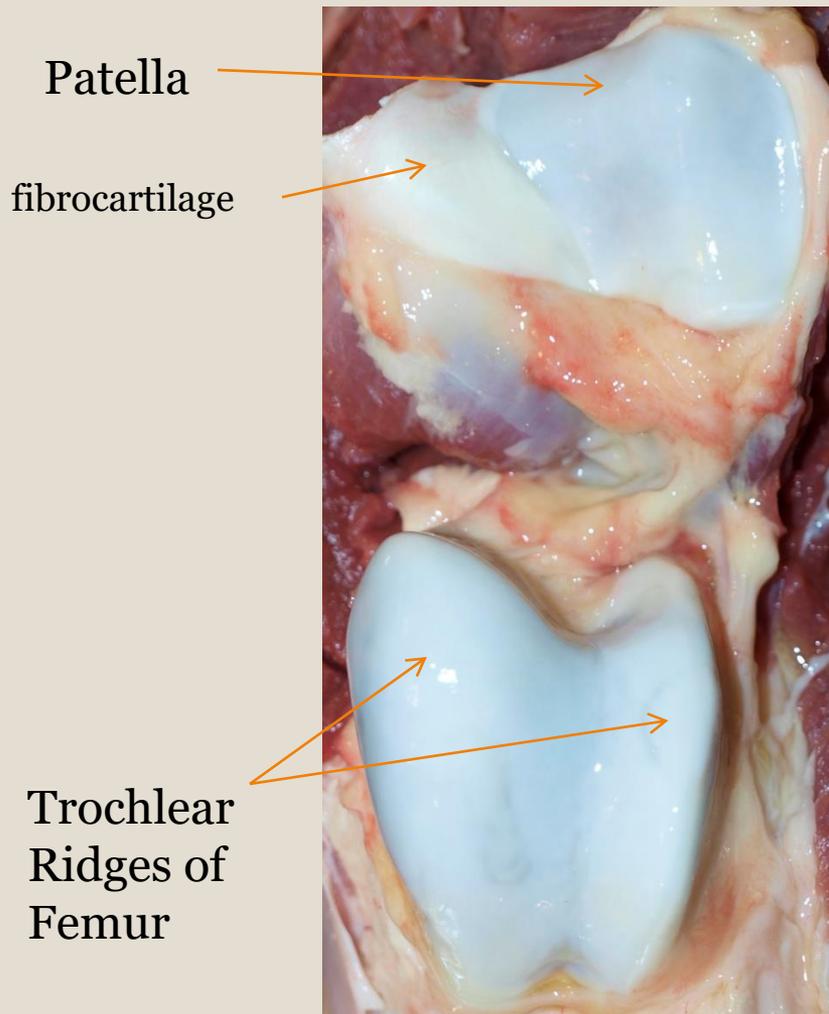
This diagram (lateral or side view of the stifle) shows important soft tissue structures not visible on radiographs. It depicts the medial or inside of the stifle, and shows the medial collateral (femoro-tibial) ligament, the medial meniscus, and two of the patellar ligaments (the horse has three). There are two main joints, the femoropatellar joint shown in orange, and the femorotibial joint shown in blue. The femorotibial joint has medial and lateral compartments that do not communicate in the horse.

STIFLE ANATOMY - diagram



This diagram shows the stifle from the front. The three patellar ligaments are shown attached to the patella (proximal, or top of page), wrapping around the trochlear ridges of the femur, shown in blue (the medial trochlear ridge is larger – on left side of diagram) and attaching distally to the tibia. The collateral ligaments are also shown, with the lateral collateral ligament attaching to the head of the fibula. The medial and lateral menisci are shown in yellow.

STIFLE ANATOMY – gross dissection



ARTICULAR SURFACES OF THE FEMOROPATELLAR JOINT

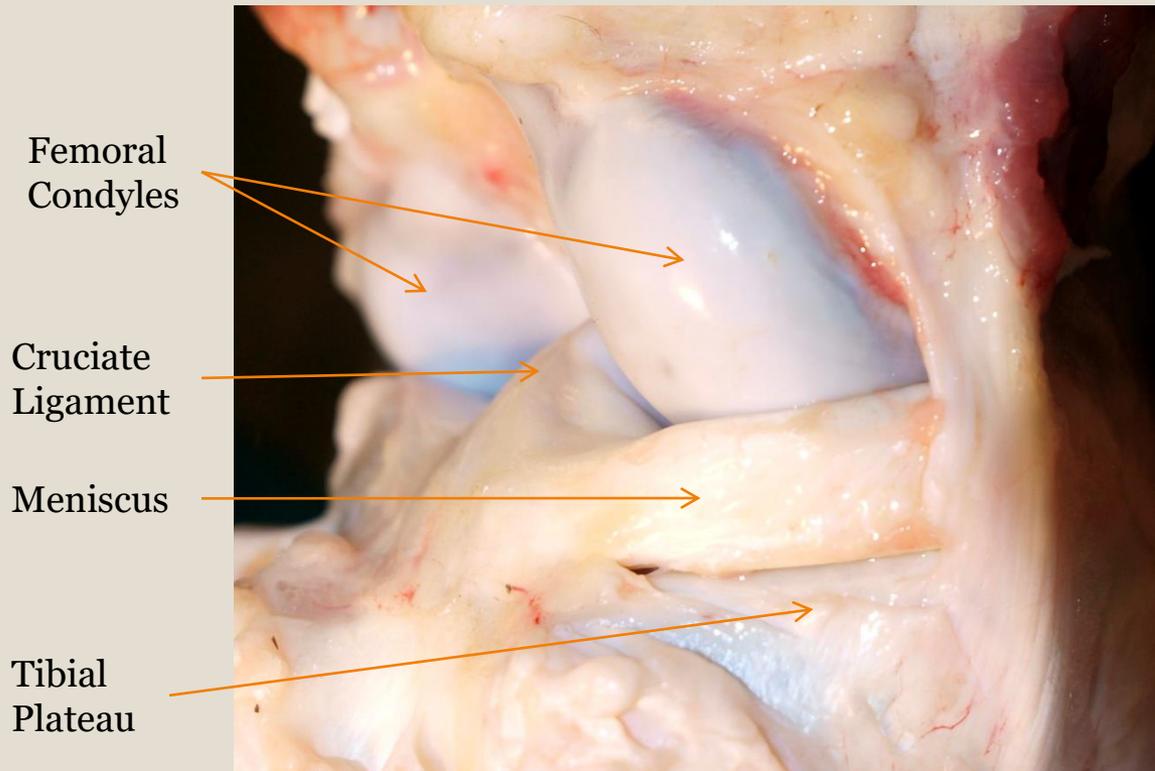
In this dissection, the patellar ligaments have been removed and the patella flipped upwards to reveal the articular (joint) surfaces covered with cartilage. The patella has a fibrocartilagenous portion that wraps around the medial (larger) trochlear ridge of the femur and aids in locking the stifle in place when the horse is standing.

STIFLE ANATOMY – gross dissection

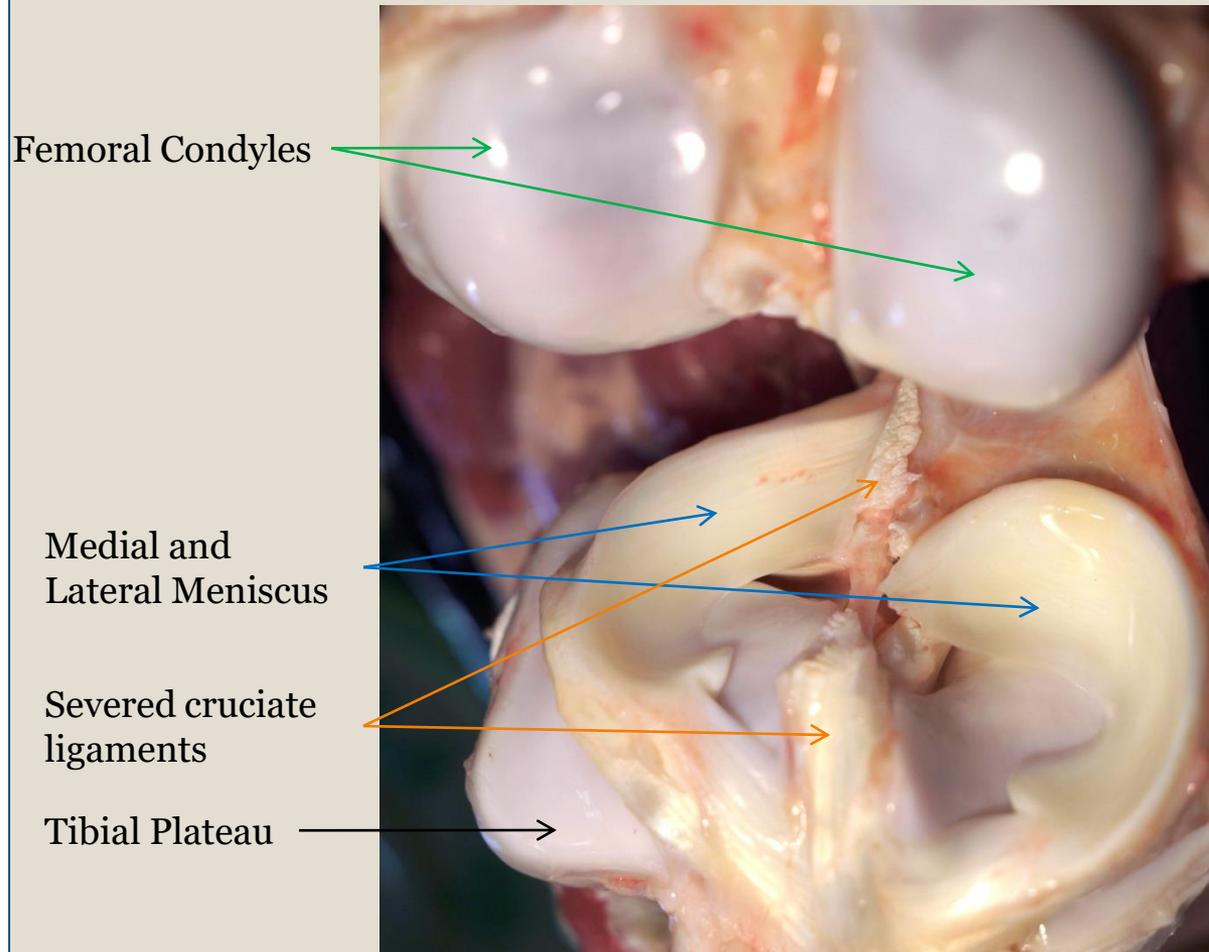


FEMOROTIBIAL JOINT

The femur sits on the flat top of the tibia – the tibial plateau – supported by the two menisci and tied down by the cranial and caudal cruciate ligaments.



STIFLE ANATOMY – gross dissection

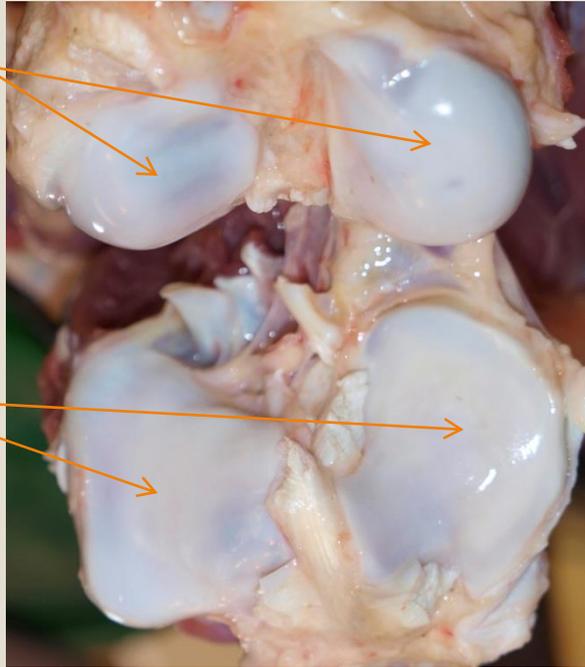


The cruciates have been severed to allow the femur and tibia to be separated and the two menisci to be shown.

STIFLE ANATOMY – gross dissection



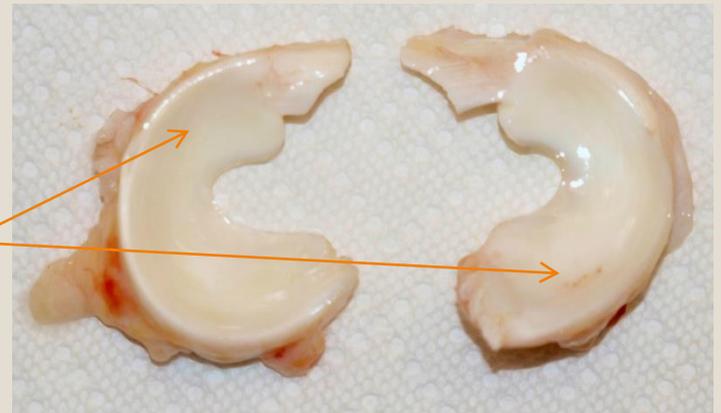
Femoral Condyles



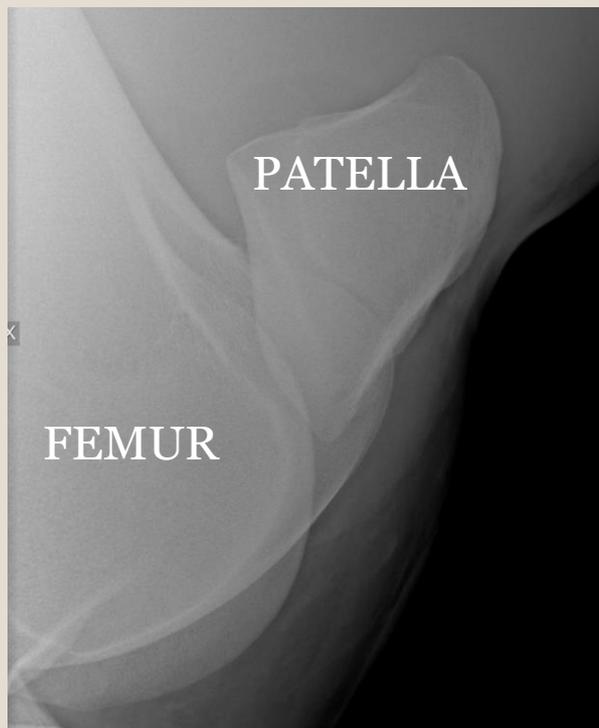
Tibial Plateau

The menisci have been removed, exposing the tibial plateau.

Menisci

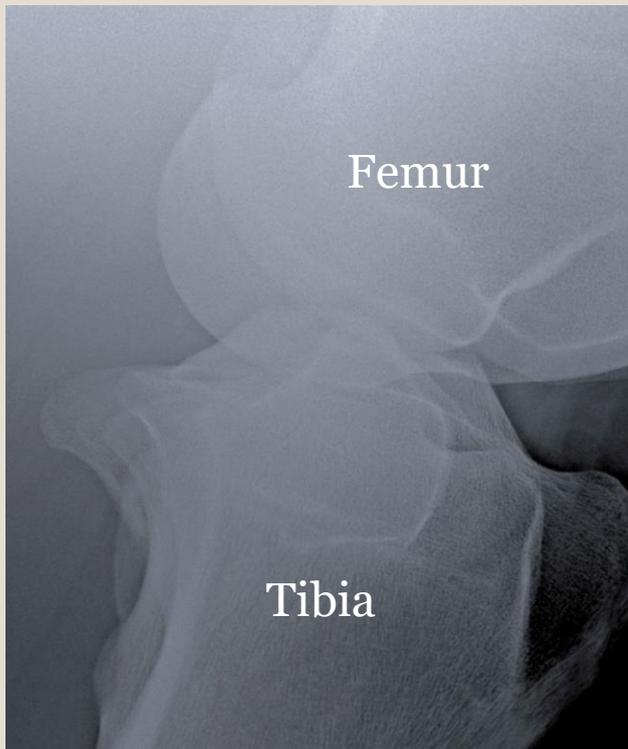


STIFLE ANATOMY - radiograph



The Equine Stifle corresponds to the human knee. The radiograph at left (credit VetweRx) is a lateral view of the stifle, showing the knee cap, or patella, and the femur. As the leg moves, the patella rides up and down the trochlear ridges of the femur in the Femoropatellar joint. The head of the horse is to the right.

STIFLE ANATOMY - radiograph



Femur

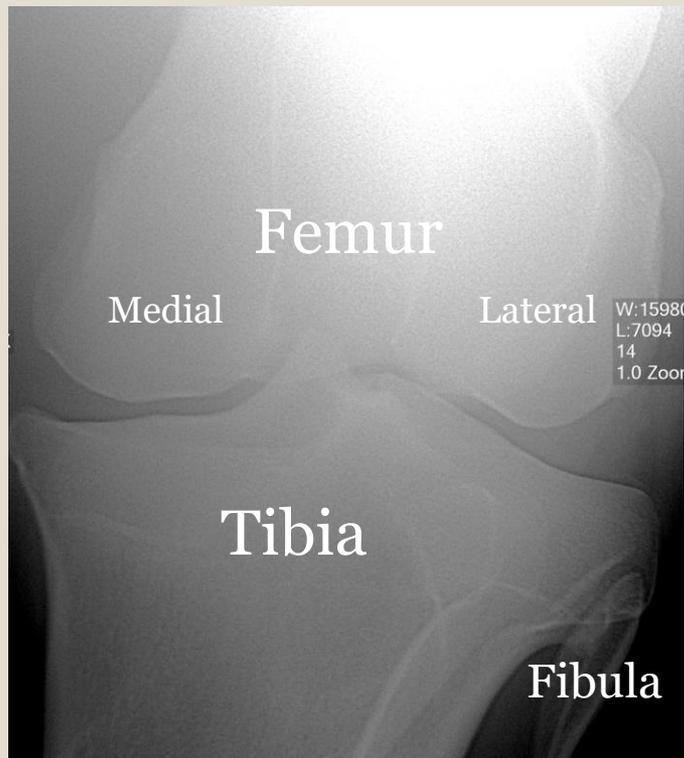
Tibia

Lateral view of the equine Stifle showing the femorotibial joint.

The head of the horse is to the right.

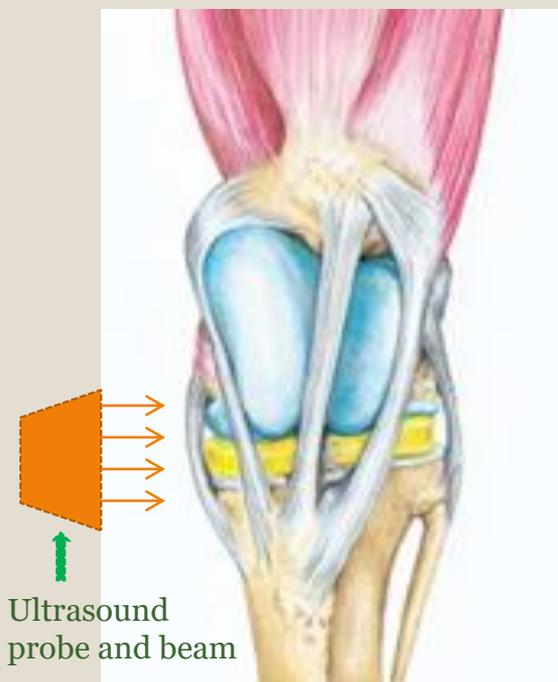
Radiograph credit VetweRx.

STIFLE ANATOMY - radiograph

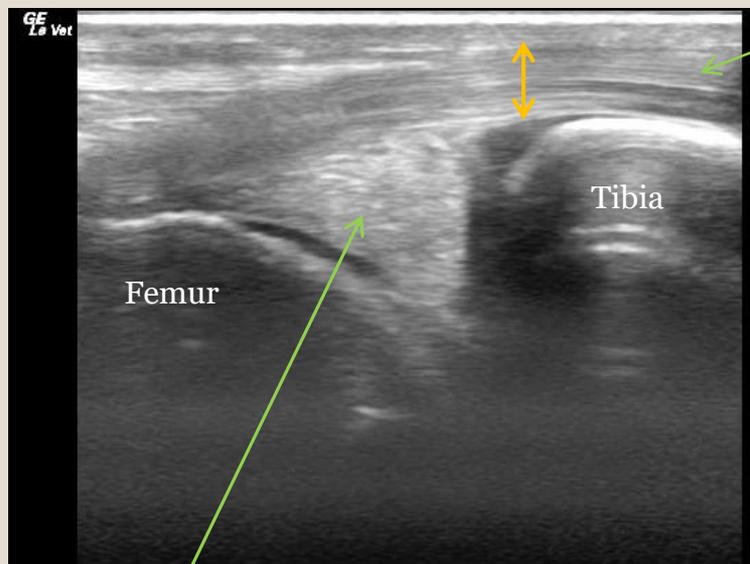


Anterior Posterior (front to back) view of the equine stifle (radiograph credit VetweRx). The medial and lateral condyles of the femur rest on the tibial plateau, separated by the menisci – soft tissue structures not visible on radiographs. The fibula is a small bone on the lateral (outside) aspect of the tibia, and is also present in humans.

STIFLE ANATOMY - ultrasound



Ultrasound
probe and beam



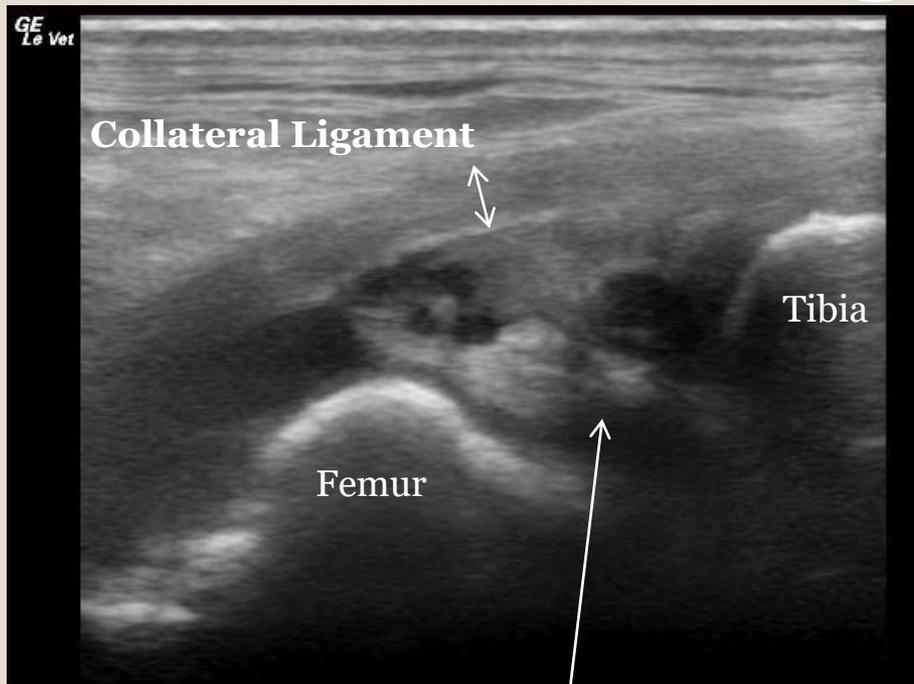
Medial meniscus in
cross section

Fibers of Medial
Collateral Ligament

Ultrasound
image of the
medial meniscus
and the overlying
medial collateral
ligament in a
normal horse.
(credit VetweRx)

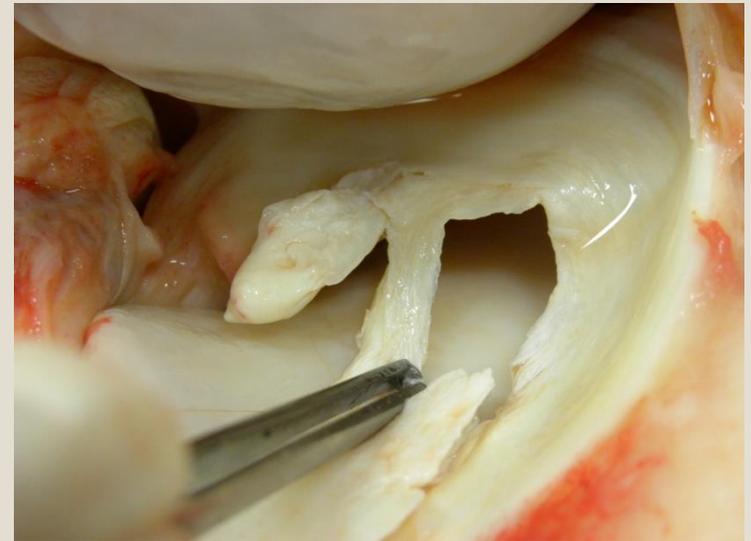
CASE #1

Torn Medial Meniscus



TORN MEDIAL MENISCUS

Ultrasound image at left (credit VetweRx).
Torn meniscus seen at surgery, below.



CASE #2

OCD OF THE TROCHLEAR RIDGE FEMOROPATELLAR JOINT



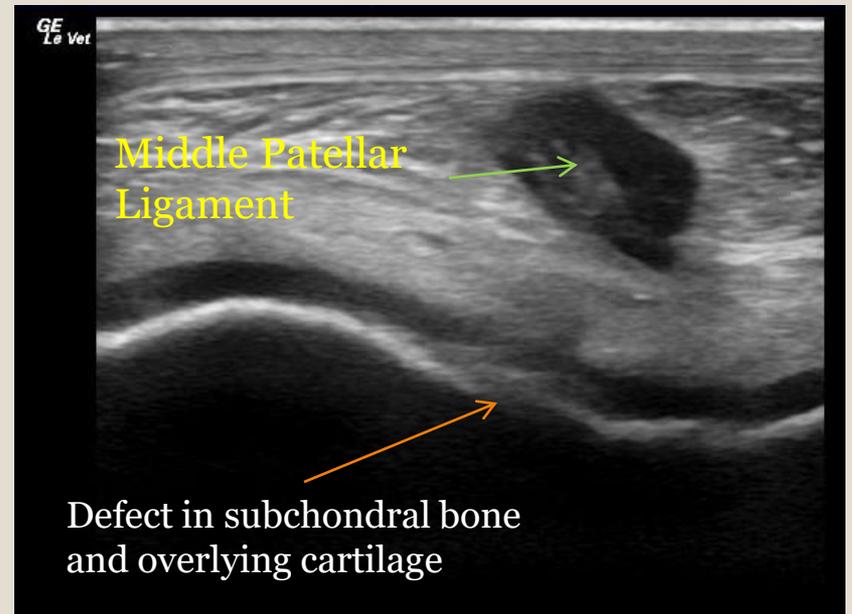
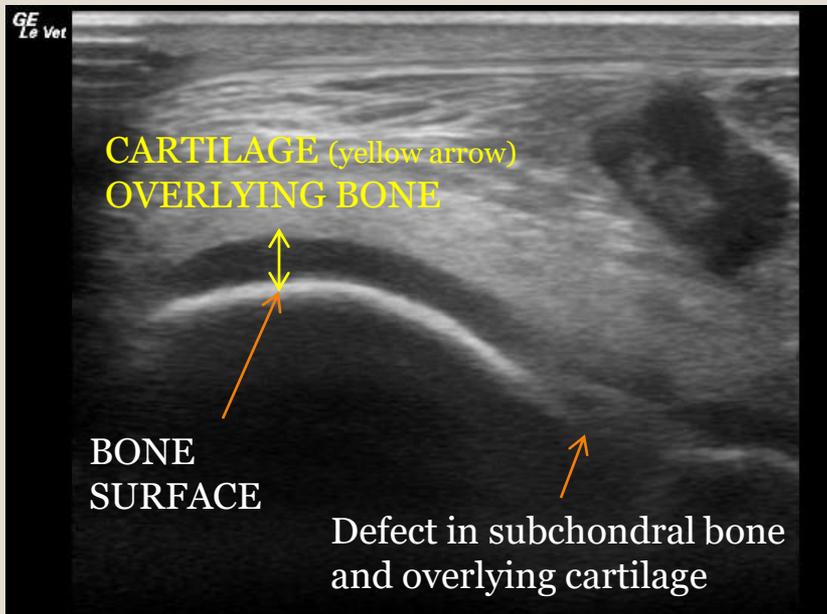
OCD (osteochondritis dissecans) is an abnormality in bone growth (endochondral ossification) affecting young horses. The cartilage is poorly affixed to the underlying bone and is readily peeled away. At left is a large lesion on the medial trochlear ridge of a weanling quarter horse. The cartilage has been removed, showing the abnormal subchondral bone. This photo was taken at necropsy. An ultrasound of this horse's stifle is shown on the following slide.

CASE #2

OCD OF THE TROCHLEAR RIDGE FEMOROPATELLAR JOINT

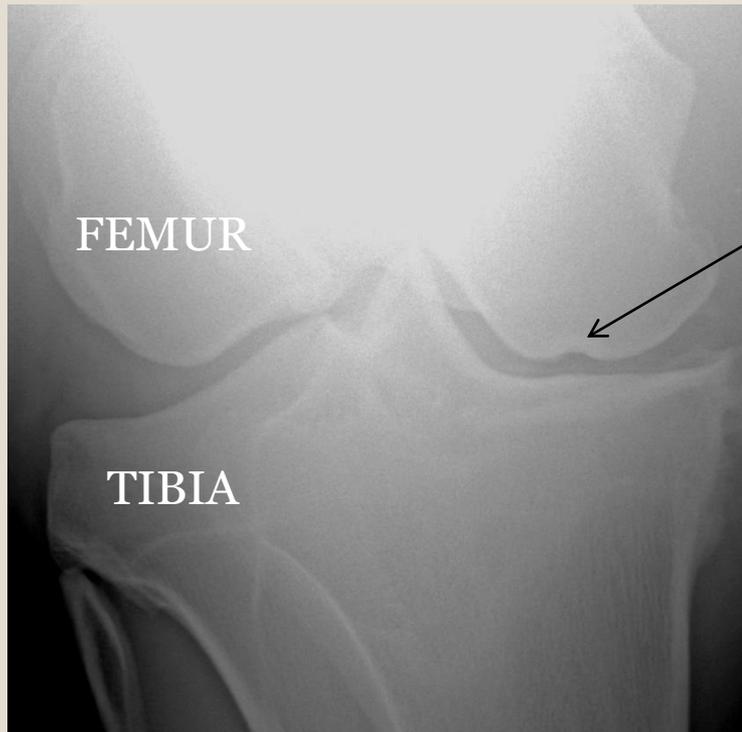


Cartilage, invisible on radiographs, can be readily seen on ultrasound. Defects in the cartilage and underlying bone are evident in the ultrasound images below (credit VetweRx).



CASE #3

OCD OF FEMORAL CONDYLE FEMOROTIBIAL JOINT



FEMUR

TIBIA

OCD
lesion

Radiograph of a horse with OCD of the medial femoral condyle on the left (credit VetweRx). OCD lesion seen at surgery, below.

