

PATELLA STABILISATION - SURGERY



The Patella (kneecap) runs within the (trochlear) groove at the bottom of the Femur (thighbone) and tracks in a straight line under the pull of the Quadriceps muscle on the front of the thigh. Through its attachment to the front of the Tibia (shin bone) in an area known as the Tibial Crest, the patellar mechanism allows stable extension of the knee when standing and during movement. In order for the mechanism to function, the bony components need to be appropriately aligned from the hip down and the groove needs to be of sufficient depth to allow the supporting soft tissues to

maintain the alignment. The majority of pets with patellar instability have a number of factors which have influenced its development during their growth. This can include developmental deformity of the tibia and femur, hip problems, poor development of the trochlear groove and abnormalities of soft tissue supporting structures around the knee.



If the patellar mechanism is unstable or badly aligned then the knee cannot be fixed in position and bear weight and either a continuous or more commonly intermittent (hopping or skipping) lameness results. Abnormal tracking will also lead to wear and tear resulting in arthritis. In smaller dogs with patellar instability the patella usually tracks abnormally on the inside of the knee (medial patellar luxation) whilst in larger breeds it can move either to the inside or outside (lateral patellar luxation). Affected individuals can frequently develop the problem in both hind limbs. Surgery is usually needed to realign and stabilise the mechanism in clinically affected dogs and a number of procedures can be used alone or in combination depending on individual case severity.



Surgical stabilisation

Surgery is usually successful resulting in significant improvement in limb function. The majority of operated dogs without established chronic arthritic change regain almost full function allowing a return to a variety of normal activities. A degree of osteoarthritis (OA) can develop with time but surgery can be expected to significantly reduce the extent and impact on the individual. Patellar instability is a progressive problem which worsens if not corrected and early surgery is recommended. There is a small risk that surgical re-stabilisation (a second surgery) will be necessary in severe cases and in those who develop the condition whilst very young.

Tibial Crest Transposition: The bony attachment site for the patellar tendon is moved surgically to improve alignment and tracking. It is fixed in position usually using pins and wire.

Trochlear Groove Deepening: The groove is deepened to retain the aligned patella securely in place during tracking. The lining cartilage of the joint is protected as far as possible.

Soft Tissue Procedures: These involve releasing tissues which are too tight and tightening tissues which are too slack following either of the above two procedures.



Femoral Osteotomy: Occasionally a significant deformity of the lower Femur is present and in these cases patellar instability cannot be achieved without surgically addressing this. Sectioning of the bone allows realignment and the bone is repaired with a plate and screws.

Whilst development of patellar instability is known to involve many factors, it is recognised that the condition is hereditary in nature and affected animals should not be bred from.

Aftercare following Surgery

Post operatively it is essential that sufficient time is allowed for healing to take place prior to normal exercise and activities being resumed. Failure to allow this will result in significant complications that may require further surgery and negatively affect the outcome. A minimum six week period of strictly controlled, little and often lead controlled exercise is advised combined with room rest or confinement

All operated dogs will be re-examined after four to six weeks and those who have undergone significant bony surgery (especially femoral osteotomy) will be X-rayed.

In 90% of cases recovery is uneventful. As with any major surgery a minority may encounter complications. This can include return of instability, implant failure and surgical site infection.

