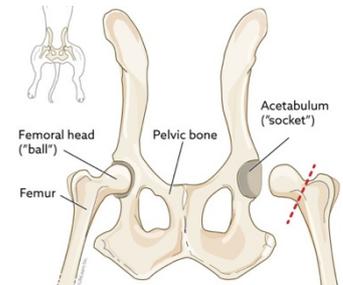


Femoral Head & Neck Osteotomy (FHNO)

What is FHNO?

Femoral head and neck osteotomy (FHNO) is a **salvage procedure** that may be used in the treatment and management of hip dysplasia, severe trauma/fractures, hip luxation or other diseases of the hip such as slipped capital femoral epiphysis and Legg–Calvé–Perthes disease (avascular necrosis of the femoral head).

FHNO involves the removal or excision of the ball portion of the hip joint (femoral head) to prevent bone-to-bone contact from occurring between the pelvis and the remaining portion of the femur. Fibrous scar tissue then forms between the femur and pelvis leading to a false joint (pseudoarthrosis). The limb is supported by the scar tissue and particularly the muscles surrounding the hip joint. Outcome is dependent on the integrity of these muscles; patients that have suffered significant muscle atrophy or muscle injury prior to surgery tend to have poorer outcomes.



For hip luxation (dislocation) reduction of the hip is preferred as it restores normal hip biomechanics. However, if hip dysplasia is present or the femoral head is damaged it is generally preferable to perform a salvage procedure.

Femoral head and neck fractures are preferably managed by primary repair, where possible, to preserve normal joint anatomy. FHNO may, however, achieve satisfactory functional results; it is most suited to cats and small dogs.

Hip salvage procedures are limited to FHNO and total hip replacement. Total hip replacement is the preferred procedure as it restores normal hip biomechanics; FHNO should only be performed where total hip replacement is not a viable option, either due to conformation, other pre-existing diseases or because it is cost-prohibitive. FHNO significantly alters hip biomechanics, is less successful at eliminating pain and **will never restore normal function** to the operated joint.

Outcome and potential risks of surgery

The outcome following FHNO is somewhat variable although results tend to be better in cats and small dogs. Stability of the fibrous pseudo-joint is largely reliant on muscle mass and the load through the joint. Larger dogs have more unstable pseudoarthroses leading to greater variation in outcome; some may function quite well, whereas others may have significant permanent lameness.

Furthermore, the operated limb is shorter than the opposing side; this typically produces some degree of mechanical lameness; this may be barely noticeable in some small patients but tends to become more significant with increasing size. Remember the goal of this salvage procedure is to achieve a satisfactory range of motion and function whilst reducing pain. Restoration of normal function is neither realistic nor even possible; only a total hip replacement can offer this as a realistic goal.

The overall complication rate associated with FHNO is likely to be in the range of 15- 25% of cases. Complications may range from mild and relatively easily resolved, to more severe complications requiring further treatments or surgery. Some of the potential complications that may arise are detailed below.

- Infection is an uncommon complication as strict sterile technique is used during the surgery and antibiotics are administered during the procedure. Risk of infection is lower than for most orthopaedic procedures as no metal implants are used. Contamination of the wound in the early postoperative period may increase the risk of infection e.g. your cat licking the wound in the first few days after surgery may significantly increase the risk of infection. Should infection occur, early detection and treatment generally result in rapid resolution.
- Excessive early activity may damage healing soft tissues, although strictly controlled and gradually increasing activity is essential to a good recovery.
- As the pseudo-joint is not as stable as a normal hip joint the soft tissues e.g. muscles around the hip joint are more likely to suffer an injury during normal activity.

- Sometimes bone-to-bone contact will still occur, particularly with more vigorous activity. This is more likely with increasing body weight and particularly if also obese, as body weight is disproportionately high compared to gluteal muscle mass. Bone on bone contact typically results in new bone formation (spurs) exacerbating the bone-to-bone contact resulting in increasing lameness. Further surgery may be necessary to remove the bone spurs.
- Prognosis following FHNO is directly correlated with muscle mass present at the time of surgery; substantial muscle loss correlates to a poorer prognosis.
- Revision FHNO (where surgery has already been performed previously) carries a more guarded prognosis, especially where substantial muscle atrophy has occurred and/or the gluteal musculature suffered excessive surgical trauma.
- Excessive scar tissue could potentially entrap the sciatic nerve although this is rare. The risk of traction (stretch) injury of the femoral or sciatic nerves may be theoretically increased, although this has not been confirmed clinically.

Postoperative care

Passive range-of-motion exercises should be commenced within 5 to 7 days of surgery, but only if tolerated. Slowly flex and extend the affected hip twenty to thirty times and repeat three to six times daily.

Your cat should be kept confined to **eliminate running and jumping**: a cage is ideal initially.

5- 7 days following surgery allow supervised walking in one room with only low-level furniture and non-slip flooring for 5 minutes at a time, three to six times daily, but **maintain cage confinement** at other times.

After 10 – 14 days, confinement may be relaxed to a single room with only low-level furniture (to prevent jumping) and non-slip flooring (temporary use of rugs or carpet offcuts is recommended for tiled floors).

After 4 weeks confinement may be further relaxed to the entire house. Be sure to lock any cat doors.

Unrestricted activity may normally be resumed after six weeks.

Hydrotherapy is beneficial to recovery and should be considered if progress in the first few weeks is unsatisfactory but should ideally be performed in a centre with qualified personnel who have **previous experience with cats**. Many (but not all) cats adapt to hydrotherapy surprisingly well.

Declaration:

I have read the information contained herein and am satisfied I have a sufficient understanding of the FHNO procedure, including potential complications that may occur and requirements for aftercare following surgery. I hereby consent for my cat to undergo FHNO surgery.

Owner's name:

Cat's Name:

Owner's signature:

Date: