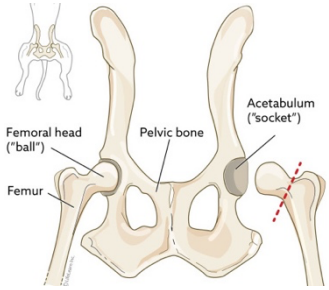
# Femoral Head & Neck Ostectomy (FHNO)

## What is FHNO?

Femoral head and neck ostectomy (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 dog 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.
- 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

A pad may be covering the wound at the time of discharge from the hospital. This can be removed after several days, or immediately if soiled. Medications e.g., Pain killers will be dispensed. Ice packs may also be helpful in the days following surgery to reduce swelling and improve comfort.

Passive range-of-motion exercises should be commenced within 3 days of surgery (if tolerated). Flex and extend the affected hip twenty to thirty times and repeat three to six times daily.

Your dog should be kept confined to **eliminate running and jumping** for the first 6 to 8 weeks: a single room with non-slip flooring and no furniture may be sufficient, however, a large cage may be necessary. Short leash walks in the garden (a few minutes four to six times daily) are recommended initially to allow toileting.

- 7 days following surgery: commence lead walking for 5 minutes at a time, two to three times daily.
- Two weeks following surgery: increase lead walking to 10 minutes at a time, three times daily. Gentle Incline walking (upward slope) will aid extensor muscle strengthening.
- Three weeks following surgery: increase lead walking to 15 minutes at a time, two to three times daily. In addition to incline walking do some walking in uncut grass (ideally elbow to shoulder height) to encourage increased flexion of all joints (higher limb lift) promoting strengthening of flexor muscles.
- Four weeks following surgery: increase lead walking to 20 minutes at a time, two to three times daily.
- Five weeks following surgery: increase lead walking to 30 minutes at a time, two to three times daily.

Maintain confinement **at all other times**; running, jumping and play should be avoided for 6 weeks.

Hydrotherapy is extremely beneficial to recovery; a water treadmill is recommended if available. Hydrotherapy may commence after 2 weeks provided your Vet is satisfied with wound healing.

Engaging a professional animal physiotherapist is recommended for an optimal outcome.

## 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 dog to undergo FHNO surgery.

Owner's name: Dog's Name:

Owner's signature: Date: