External skeletal fixation

External frames and circular (Ilizarov-type) fixators | Dogs and cats

An external fixator holds bone with pins or wires attached to a frame (scaffold) outside the limb. It can be useful when a plate is not the best option.

About the procedure

Why use an external frame?

External fixation may suit some open, complex or infected fractures, small bone fragments, limb deformities and tendon or ligament ruptures. It allows the surgeon to stabilise the bone while leaving access to the skin and soft tissues for wound care. Some frames are also designed to gradually change the shape or length of a bone. The choice depends on the fracture, bone quality and the pet's ability to tolerate and safely live with a frame.

What does the frame look like?

Pins or fine wires pass through the skin and into or through the bone. They connect to a rigid framework outside the body. A linear frame uses bars; a circular frame uses rings connected by rods or adjustable parts, and a hybrid design combines both features. The frame is fitted under anaesthesia and X-rays are used to assess alignment. The skin entry sites remain visible while the device is in place.

Will the frame stay on forever?

No. Most fracture frames are temporary. They are removed once examination and imaging show that the bone can safely support the limb. This may require sedation or anaesthesia. In some cases, frame components can be adjusted or gradually removed as healing progresses. If the frame is being used to correct a deformity, its adjustment schedule is a separate, carefully planned process.

What are other options?

Depending on the injury, internal plates and screws, another implant, a cast or a different treatment may be suitable. An external frame avoids leaving a large implant at some fracture sites but requires regular monitoring of the pins and framework. Your surgeon will explain why it is recommended for your pet.

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Recovery, risks and home care

Recovery and home care

Expected outcome

A frame can support healing without placing a large implant at the fracture. The result depends on injury severity and the condition of surrounding tissues.

Looking after a frame at home

Keep your pet in a safe restricted space, away from furniture, other animals and anything that can catch the frame. Follow the specific cleaning and dressing instructions from the practice. Check each visible pin or wire site and the surrounding skin daily. Prevent chewing and licking. Never tighten, loosen, remove or adjust frame components unless your surgeon has specifically trained and instructed you to do so.

Follow-up and healing

Early checks are important to assess comfort, skin and frame stability. X-rays are repeated at intervals chosen for the injury; the frame may remain for weeks or months. If a gradual correction is planned, attend every appointment and keep a record of any prescribed adjustments. Activity remains restricted until the bone is strong enough, including after frame removal when pin holes are healing.

When should I call?

Call if a pin becomes loose, a ring or bar changes position, a wire breaks, the frame rubs the skin, or there is increasing redness, pain, smell or discharge. Sudden loss of limb use or frame damage after a fall warrants urgent review. Do not try to fix the frame yourself.

Questions to ask your vet

How will I clean the pin sites? What should the frame normally look like? How will removal be planned?

Discussing risks and complications

As with any surgical procedure, complications can occur. Your surgeon will discuss the possible complications, individual risks and expected outcome for your pet during the pre-operative consultation.

General anaesthesia can cause serious complications, including death. Your veterinary team will explain individual risks and alternatives.

Your veterinary team will discuss the recommended treatment, alternatives and the risks of general anaesthesia for your individual pet.

Important information

Check the wound daily; prevent licking and keep it dry. Give prescribed medicines only. Report vomiting, diarrhoea, poor appetite or increasing illness. For breathing difficulty, collapse, uncontrolled bleeding or severe distress, seek emergency care immediately.

Follow the personalised discharge plan; this sheet is not a consent form. Contact your own practice or its out-of-hours service for urgent care.