#### Supplementary file 1: Cadaveric specimen

Hindlimbs from 10 cats (20 limbs) euthanased for reasons unrelated to this study were collected and clinically examined for any stifle pathologies (reduced ROM, tibial compression, cranial drawer). Excessive soft tissue was resected. Stifle and talocrural joint capsules, patellar tendon and collateral ligaments were preserved. Legs were wrapped in saline (sodium chloride, 0.9%) soaked towels and stored at −20°C until testing.

Legs were thawed to room temperature for 12–20 h. Bones were marked with waterproof marking pens at specified locations (medial and lateral collateral ligament, center of the patella, tibial tuberosity and fibular head).

The quadriceps mechanism was simulated by inserting a cable through a drill-hole in the proximal patella and connecting it to a force gauge; the Achilles tendon mechanism, that is the insertion of a cable through a hole drilled in the proximal one-third of the calcaneus and its connection to 2.0 mm cortical bone screws placed at the level of medial and lateral fabellae with an interposed turnbuckle, was used.

Furthermore, an eye-hook was inserted in a drill-hole on the caudal surface of the tibia 0.5 cm distal to the joint surface and connected to a spring mechanism (Ajax Scientific ME505-3000 synthetic spring scale, 30 N weight capacity; Ajax Scientific LTD) – see Figure 1 in the article.