Adapting human sciatic nerve block approaches to canine nerve blocks.

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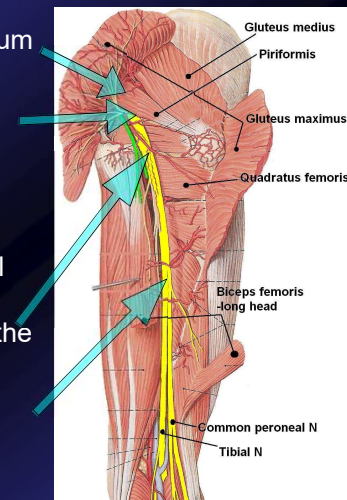
Complete analgesia distal to the stifle joint…..requires……

- Sciatic nerve block (the dominant nerve).
  - Sciatic Nerve block alone is sufficient for good analgesia (85%).

- Saphenous nerve block needed for 100% analgesia. Supplies skin and joints (pure sensory).

Human sciatic nerve

- Sufficient similarity to canine anatomy to adapt some medical technique to veterinary application, with modifications.

- Exits lateral to the sacrum

- Enters greater sciatic foramen, to reach the gluteal region under Gluteus Maximus.

- Passes between Ischial tuberosity and greater trochanter posterior to the hip joint.

- Descends vertically in midline on posterior (caudad) side.

Gluteus medius
Piriformis
Gluteus maximus
Quadratus femoris
Biceps femoris -long head
Common peroneal N
Tibial N

Human sciatic nerve block approaches

Gluteus medius
Piriformis
Gluteus maximus
Quadratus femoris
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- **Transgluteal x 4**
- **Posterior x 2**
- **Lateral x 3**
- **Medial x 1**
- **Anterior x 1**

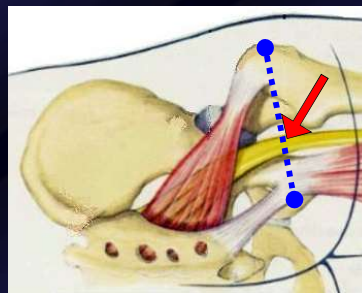- For the <u>dog</u> we select 2 blocks
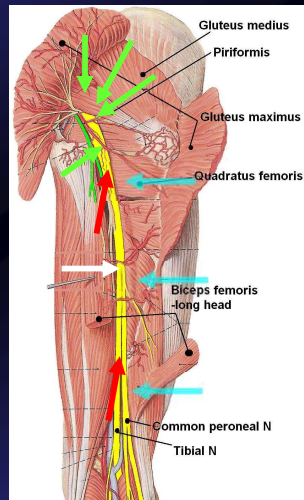
HUMAN -Parasacral approach

- Palpate post. Sup. Iliac spine.
- Descend 6 cm towards Ischial tuberosity
- Insert needle
  - Direct to ventral (anterior)
- Advance needle until electro-stimulation elicits muscle twitch
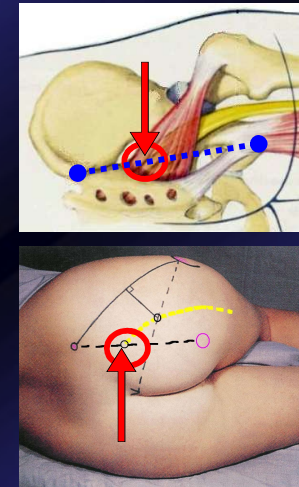
HUMAN -Ischial-Tuberosity Greater-Trochanter line (GT-IT line)

- Insert needle at midpoint of GT –IT line, vertical to skin.
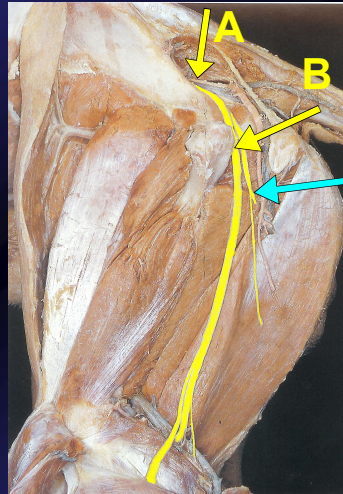

Which muscle twitch is acceptable as a nerve electro-location end point?

- Parasacral
  - Hamstring = YES
  - Below stifle = YES
- GT-IT line block
  - Hamstring = NO
  - Below stifle = YES

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Canine sciatic N.

- A = parasacral
  - Includes hamstrings

- B = GT-IT line
  - Easiest
 - May exclude hamstrings

A

B

Parasacral Sciatic N. block

- Line: most posterior point of iliac crest to Ischial tuberosity

- Insert needle vertical 1/3 of distance from iliac crest.

- Needle direction parasagital and direct to ventral (anterior).
- Explore "across" direction of nerve
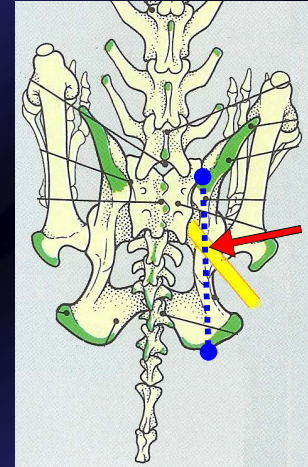
Parasacral Sciatic N. block

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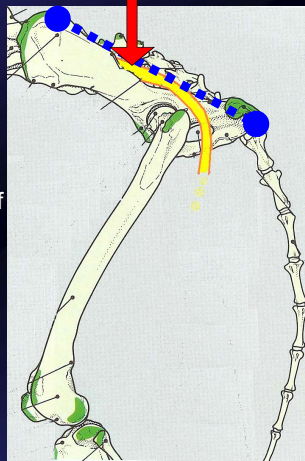
- Needle direction parasagital and direct to ventral (anterior).
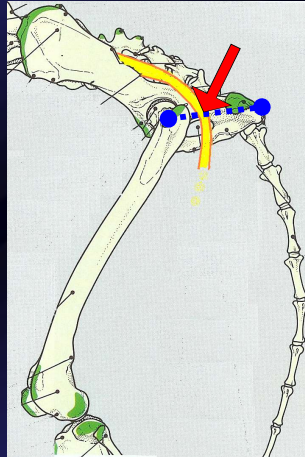- Explore "across" direction of nerve

GT-IT line Sciatic N. block

- Midpoint of line from Greater trochanter to Ischia tuberosity

- Insert needle vertical to skin.

- Explore "across" direction of nerve

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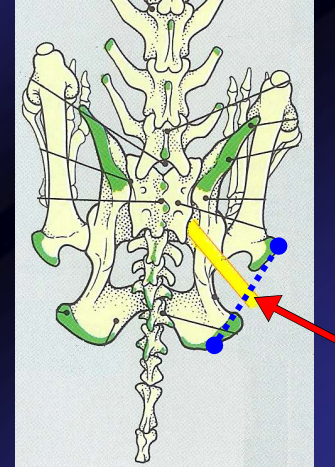
GT-IT line
Sciatic N. block

- Midpoint of line from Greater trochanter to Ischia tuberosity

- Insert needle vertical to skin.

- Explore "across" direction of nerve

Supplementary Saphenous nerve block nerve block

## The canine Saphenous nerve
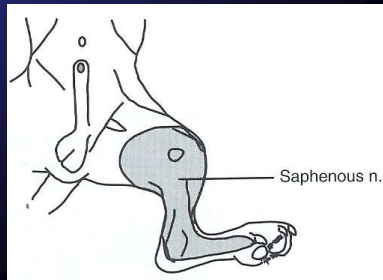
Saphenous n.

- Sensory distribution in the pelvic limb below the stifle joint.
- Should be blocked with the sciatic nerve for pain below the stifle.

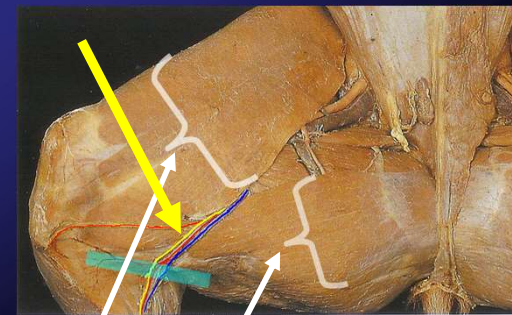## HUMAN saphenous nerve block

A   B

- *A*: Subcutaneous technique unreliable.
- *B*: Trans-Sartorius muscle is reliable, needs patient verbal feedback.
- Human legs obese, skin immobile = Palpation of single muscles is difficult.
- Dogs have loose skin and less fat = individual muscles easily palpated.

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Sciatic N.

Femoral N.
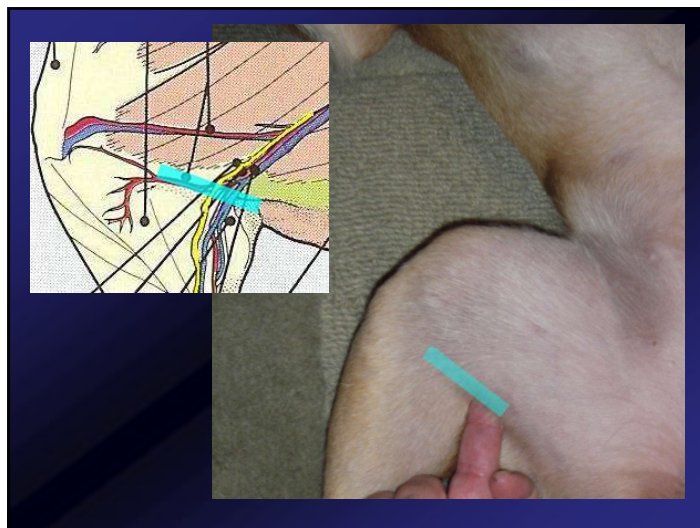
Sartorius M.
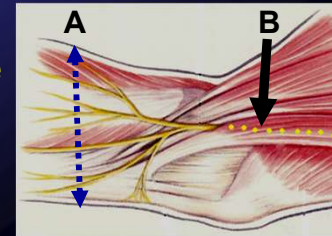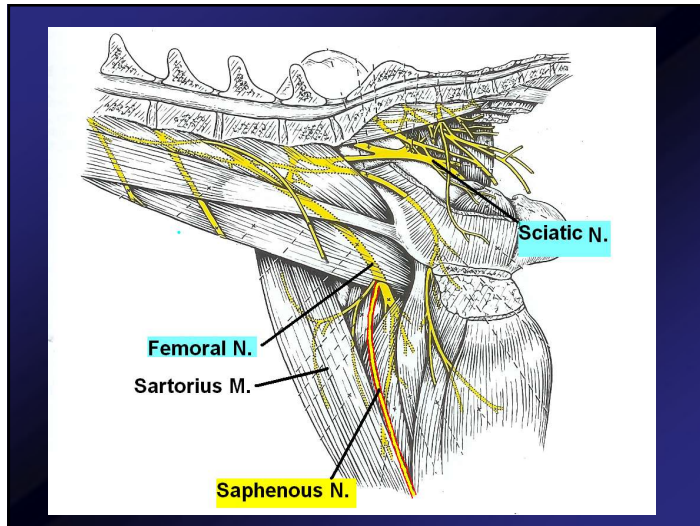
Saphenous N.

Saphenous N.

M. Sartorius

M. Gracilis

Inject subcutaneous immediately at the lower edge of the Sartorius muscle at level of the stifle joint for a distance anterior and posterior

Conclusion