

# Radiographic Procedure for Hip Dysplasia Evaluation

## Position 1 (official position)

### **Extended hind limbs : figure A**

The dog is deeply sedated or anaesthetized to ensure complete muscle relaxation and placed in a cradle to ensure exact ventrodorsal positioning. The left or right side is marked with a lead marker. The beam is centered at the caudal end of the pelvis, which can be palpated. The beam is collimated to ensure complete visualisation of the pelvis and the patellae.

The hind limbs are held with gloved hands at the tarsi in a relaxed position. First the stifles are adducted and the hind limbs pronated. Then they are extended and pulled caudally and pushed down towards the table top. The tip of the paws are rotated inwards and superimposed to ensure proper position of the femora.

If the position of the dog is correct you will notice on the radiograph that

- the entire pelvis is visible
- both iliac wings and obturator foramina are perfectly equal in size, and the sacroiliac joints appear similar.
- the patellae are superimposed over the midline of the femora and projected between the fabellae.
- the femora are
  - parallel to each other
  - parallel to a sagittal plane through the spinal column
  - parallel to the table top indicated by approximately level position of the top of the greater trochanter and the center of the femoral head (somewhat breed dependent).
- the Left / Right marker is clearly visible.

Important: the dorsal edge of the acetabulum must be clearly visible through the femoral head.

In case the above requirements cannot be achieved because of the size of the dog (giant breed), the image needs to show the full pelvis and the stifles including the fabellae.

Films should be identified prior to the development (see f) of the Requirements).



**Figure A**

## Position 2

### **Abducted hind limbs (additional position or position II) Figure B**

The femora are abducted (see fig. B). In an average sized dog (Retriever) the tarsi are elevated off the table by 30-40 cm! (1 ft!). The beam is centered over the hip joints which are located at the level of the M. pectineus, which can be palpated easily as a strong spindle shaped muscle running from the floor of the pelvis to the femur. The beam is collimated to ensure complete visualisation of the pelvis.

If the position is correct you will notice on the radiograph that

- the pelvis is symmetrically projected (obturator foramina and ilial wings are equal in size)
- the last lumbar vertebra is included in the film
- the entire pelvis is visible
- the greater trochanter is projected caudal to the femoral neck
- the cranial border of the femoral head-neck intersection is positioned outside of the acetabulum.



**Figure B**