

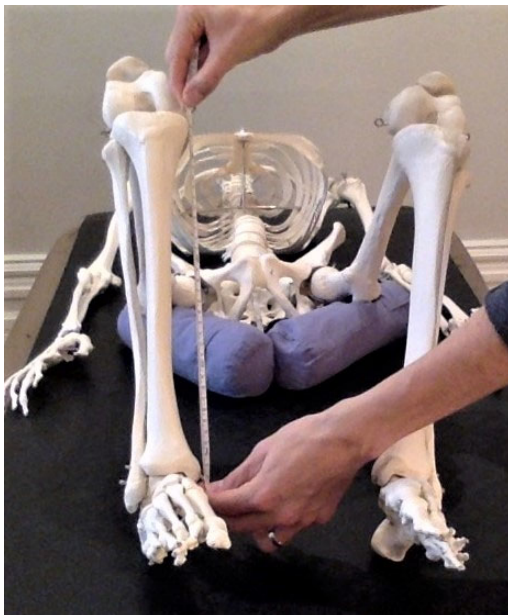
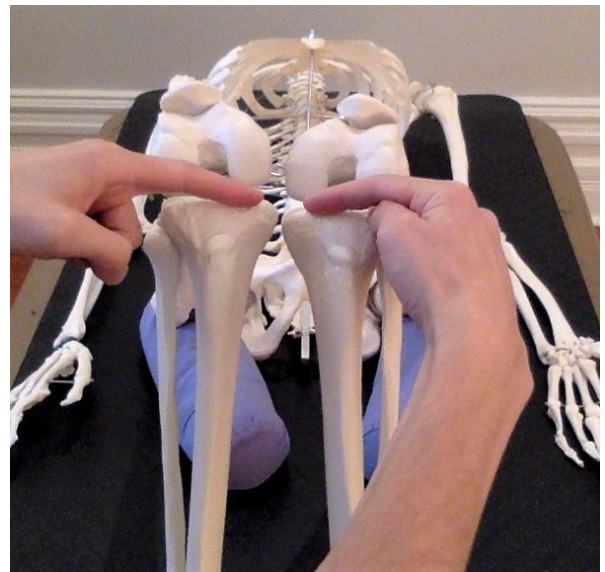
Instructions for Measuring Bone Size for Lower Extremity

Equipment required:

- Measuring tape
- Sheet of paper
- Pen or pencil, china marker (optional)
- Calipers (optional)

1. Tibial Length:

- a. Patient position: supine, hips and knees flexed, tibia positioned as perpendicular to the table as comfortable, feet aligned and flat on the table
- b. Practitioner position: at foot of table, facing patient's feet
- c. Locate the soft tissue between the medial aspect of tibia and femur (knee joint).
- d. Locate the upper margin of the medial



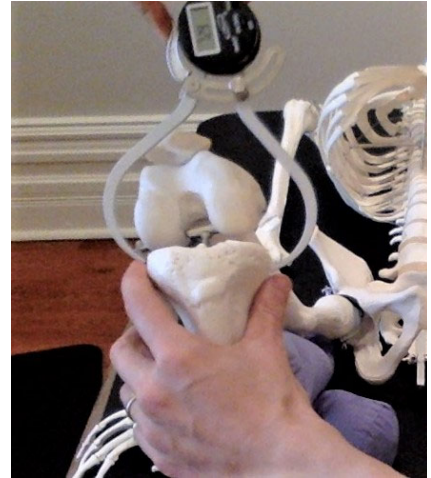
tibial plateau (hard edge of bone) with the index fingers of each hand. Position the index fingers so the palmar surfaces are facing inferiorly, and tips of fingers are pointing toward one another.

e. Note any difference in the relative height of the right and left tibia.

f. Alternatively, mark the upper margin of the tibia (tibial plateau) with pen or china marker, and measure the length from this point to the inferior aspect of the medial malleolus with a measuring tape. Record the value and compare to the other side.

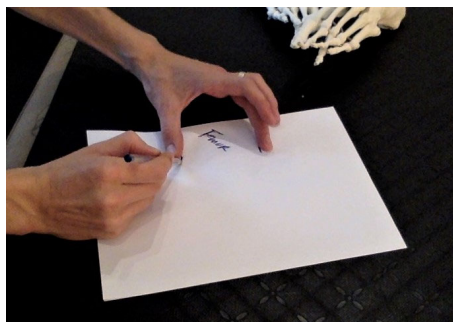
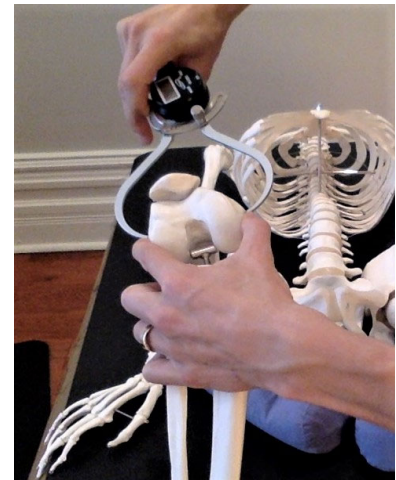
2. Tibial Plateau (proximal epiphysis of tibia) Width:

- a. Patient position: supine with knees flexed to 90 degrees, feet flat on the table
- b. Contact the widest position of the medial and lateral aspect of the tibial plateau (proximal epiphysis) with the thumb and finger, as close to the knee joint as possible.
 - i. Holding this position of the hand (like a caliper), place the tips of the thumb and finger onto a sheet of paper. Mark the paper with a pen or pencil where the pads of the finger and thumb meet the paper.
 - ii. While holding the thumb and finger position on the lateral and medial epicondyles of the tibial plateau, align the calipers with these landmarks as closely as possible. This may need to be done visually if the caliper arms are not long enough to reach the widest portions of the tibial plateau.
- c. Record the measurements of either method to compare the relative width of the proximal tibia on left and right sides.



3. Femoral Epicondyle (distal epiphysis of femur) Width

- a. Patient position: supine with knees flexed to 90 degrees, feet flat on the table
- b. Practitioner position: at foot of table, facing patient's feet
- c. Contact the widest position of the medial and lateral aspect of the distal femoral epicondyles with the thumb and finger, as close to the knee joint as possible.
 - i. Holding this position of the hand (like a caliper), place the tips of the thumb and finger onto a sheet of paper. Mark the paper with a pen or pencil where the pads of the finger and thumb meet the paper.
 - ii. While holding the thumb and finger position on the lateral and medial epicondyles of the distal femur, align the calipers with these landmarks as closely as possible. This may need to be done visually if the caliper arms are not long enough to reach the widest portions of the distal femur
- d. Record the measurements of either method to compare the relative width of the distal femur on left and right sides.



4. Patella Diameter:

- a. Patient position: supine with, legs extended, and knees supported by a small cushion or bolsters
- b. Practitioner position: at side of table, at the level of the knees, with the dominant eye over the table
- c. Palpate the widest portion of the patella (near its center), using thumb and finger.
- d. Position the caliper arms on those two points next to your thumb and finger.
- e. Record measurements for each side.

