

**CONSIDERATIONS:**

1. Lower extremity pulses include:
  - a. Femoral (inguinal area)
  - b. Popliteal (behind knee)
  - c. Posterior tibialis (ankle)
  - d. Dorsalis Pedis (top of foot)
2. Use a head to toe approach with side-to-side (left and right) comparison, noting if pulse strength across sides is equal.
3. Pulses are usually recorded in one of two ways:
  - a. Present or absent
  - b. On an amplitude scale from 0 to 4:
    - i. 0 = absent
    - ii. 1+ = diminished, barely palpable, easy to obliterate
    - iii. 2+ = easily palpable, normal
    - iv. 3+ = full, increased
    - v. 4+ = strong, bounding, cannot be obliterated
4. Assess and compare both legs for:
  - a. Color and temperature
  - b. Presence/absence of sensation
  - c. Capillary refill of great toe nails:
    - i. Press nail until blanches
    - ii. Determine seconds until color returns:
      1. Brisk = < 2 seconds
      2. Normal = 2 - 4 seconds
      3. Sluggish = > 4 seconds
  - d. Color, temperature, etc. of extremities are especially important to assess if pulses are difficult or impossible to palpate
5. Absence of pulses or a decrease in lower extremity pulse amplitude can indicate compromised circulation.

**EQUIPMENT:**

Clock/timer with second hand

**PROCEDURE:**

1. Adhere to Standard Precautions and explain procedure to patient.
2. Choose pulse location.
3. Femoral Pulse:
  - a. Position patient flat on back
  - b. Palpate at juncture of thigh and torso (inguinal crease) midway between anterior superior iliac spine and symphysis pubis
  - c. If difficulty palpating pulse, use two hands, one on top of the other, pressing deeply

4. Popliteal Pulse:
  - a. Position patient with knee slightly flexed, the leg relaxed
  - b. Press the fingertips of both hands deeply into popliteal regions, slightly lateral to the midline
  - c. If difficulty palpating pulse, position patient on abdomen, flex the leg 45° at the knee, palpating deeply
5. Posterior Tibial Pulse:
  - a. Slide your fingertips behind the medial (inner) malleolus (ankle bone)
  - b. Palpate in the groove between the malleolus and the Achilles tendon
  - c. If difficulty palpating pulse, try passive dorsiflexion of the foot, to make the pulse more accessible
6. Dorsal Pedal Pulse:
  - a. Slide your fingertips between the big and second toes towards the top of the foot
  - b. Palpate the dorsal pedal pulse lateral to the extensor tendon of the big toe
  - c. If difficulty palpating pulse, palpate more lightly, as too much pressure obliterates the pulse

**AFTER CARE:**

1. Document findings in patient's record:
  - a. Pulse presence/absence or pulse amplitude using 0 to 4 scale for each site both sides
  - b. Color, temperature, capillary refill of each extremity (particularly important if pulses were difficult /impossible to palpate)
  - c. Symptoms: lack of sensation, numbness, pain, etc. of lower extremities
  - d. Any actions to improve circulation, such as loosening of bandage, etc.
  - e. Any communication with physician
2. Compare findings to previous findings in medical record to determine if a significant change has occurred.
3. Report to physician any significant changes to patient's abnormalities, which reflect changes from the patient's baseline pulse.

**REFERENCE:**

Perry, A.G., Potter, P.A., & Elkin, M.K. (2012). Nursing Interventions and Clinical Skills. (5<sup>th</sup> Edition) St. Louis: Elsevier/Mosby.