BAKER COLLEGE
STUDENT LEARNING OUTCOMES

VAS2220 Non-Invasive Vascular I
3 Semester Hours

Student Learning Outcomes and Enabling Objectives

1. Describe cerebrovascular and venous anatomy.
    a. Identify the vessels in the extracranial and intracranial cerebrovascular system.
    b. Identify the central, upper, and lower extremity deep and superficial veins, and list the major perforating veins in the lower extremity.
2. Analyze components of normal and abnormal cerebrovascular and venous pathophysiology and hemodynamics.
    a. Explain the effects of collateral flow on cerebral hemodynamics.
    b. Describe the function of vein valve leaflets, calf muscle pump, and Virchow's Triad.
    c. Define systemic versus autoregulatory control of peripheral resistance.
3. Determine the risk factors for cerebrovascular and venous pathology.
    a. Identify clinical signs associated with acute and chronic disease.
    b. Classify controllable or uncontrollable risk factors.
4. Evaluate the mechanisms and pathological findings associated with cerebrovascular and venous disease.
    a. Describe the evolution of atherosclerotic plaque and thrombosis.
    b. Distinguish between acute and chronic disease.
5. Identify current treatment options for patients with cerebrovascular disease, deep vein thrombosis, and superficial thrombophlebitis.
    a. Explain indications of treatment.
    b. Describe medical control and reduction of risk factors.
    c. Explain surgical intervention.
6. Analyze diagnostic criteria to include flow properties, hemodynamics, energy, and physical principles.
    a. Describe the capabilities, limitations, protocol/techniques, waveforms, and diagnostic criteria for cerebrovascular circulation test procedures.
    b. Describe the capabilities, limitations, patient positioning, protocol/techniques, and diagnostic criteria for the following venous examinations: duplex

sonography, color flow imaging, and venous capacitance and compliance plethysmography.

c. Correlate flow profiles to pressure, flow, resistance, and fluid viscosity.
d. Relate the difference between steady and pulsatile flow.
e. Describe normal flow profiles that occur in the arterial and venous systems.
f. Describe abnormal flow profiles that occur in the arterial and venous systems.
g. Describe the effects of stenosis and occlusion on flow characteristics in the extracranial cerebrovascular system.

Big Ideas and Essential Questions

Big Ideas

- Professional Behavior/Patient Care
- 2D Mode Exam
- PW Mode Exam
- CW Mode Exam
- PW measurements
- Normal Anatomy
- Abnormal Anatomy
- Exam Protocol

Essential Questions

1. How do you properly perform 2D, PW, and CW mode exams?
2. How do you properly perform PW measurements?
3. What does professional behavior look like in the Diagnostic Medical Sonography field?

These SLOs are not approved for experiential credit.

Effective: Fall 2022