

Lesson Plan of Practical Physiology

For International Medical Students

Grade: <i>General Medicine</i>	Subject: <i>Physiology of Blood Circulation</i>	Date: 2024	Time: 90 min
Topic: <i>Blood Pressure Assessment</i>			
Lesson Focus and Goals: <i>Teaching different methods of blood pressure measurement.</i>			
Materials Needed: <ul style="list-style-type: none">✓ <i>Video projector</i>✓ <i>Whiteboard</i>✓ <i>Sphygmomanometer (Mercury and Aneroid)</i>✓ <i>Stethoscope</i>			
Learning Objectives: <i>Students will:</i> <ol style="list-style-type: none">1. <i>Define blood pressure and know its normal values.</i>2. <i>Explain the Systolic and Diastolic pressure.</i>3. <i>Measure the blood pressure by two palpatory and auscultatory methods with partners in small groups.</i>4. <i>Calculate the mean arterial blood pressure.</i>5. <i>Know the cause of Korotkoff sounds.</i>6. <i>Explain the effective factors in blood pressure.</i>			
Assessment: <i>OSCE exam at the end of the course</i>			

Grade: <i>General Medicine</i>	Subject: <i>Heart Physiology</i>	Date: 2024	Time: 90 min
Topic: <i>Electrocardiography (ECG) or (EKG)</i>			
Lesson Focus and Goals: <i>Teaching the basics of electrical activity of the heart, teaching the steps of taking an ECG, description of the electrocardiograph.</i>			
Materials Needed: <ul style="list-style-type: none">✓ <i>Video projector</i>✓ <i>Whiteboard</i>✓ <i>Electrocardiograph</i>✓ <i>Electrocardiographic leads</i>✓ <i>ECG strips</i>			
Learning Objectives: <i>Students will:</i> <ol style="list-style-type: none">1. <i>Know the basics of electrical activity of the heart.</i>2. <i>Review the conduction system.</i>3. <i>Explain each part of a normal electrocardiogram, waveforms (P wave, QRS complex, T wave), intervals and segments.</i>4. <i>Know the Electrocardiographic leads.</i>5. <i>Know the procedure of ECG recording with electrocardiograph device by placing electrodes on the surface of patient's skin correctly.</i>6. <i>Determine the heart rate.</i>7. <i>Determine the cardiac axis.</i>8. <i>Determine heart rhythm and whether displaying regular or irregular rhythm.</i>			
Assessment: <i>OSCE exam at the end of the course</i>			

Grade: <i>General Medicine</i>	Subject: <i>Blood Physiology (First Session)</i>	Date: 2024	Time: 90 min
Topic: <i>Bleeding Time (BT) and Clotting Time (CT) Test</i>			
Lesson Focus and Goals: <i>Teaching the methods of measuring bleeding time and blood clotting time.</i>			
Materials Needed: <ul style="list-style-type: none"> ✓ <i>Video projector</i> ✓ <i>Whiteboard</i> ✓ <i>For BT test: Cotton, Alcohol, Lancet, Timer, Absorbent Paper</i> ✓ <i>For CT test: Cotton, Alcohol, Lancet, Timer, Slides</i> 			
Learning Objectives: <i>Students will:</i> <ol style="list-style-type: none"> 1. <i>Learn the basis of blood flow test and platelets function.</i> 2. <i>Learn the basis of blood coagulation test and the function of coagulation factors.</i> 3. <i>Perform BT and CT tests with partners in small groups.</i> 4. <i>Know the normal values of each of the tests.</i> 			
Assessment: <i>OSCE exam at the end of the course</i>			

Grade: <i>General Medicine</i>	Subject: <i>Blood Physiology (Second Session)</i>	Date: 2024	Time: 90 min
Topic: <i>Hemoglobin Measurement (Hb)</i> <i>Hematocrit Measurement (Hct)</i> <i>Measurement of Erythrocyte Sedimentation Rate (ESR)</i>			
Lesson Focus and Goals: <i>Teaching methods of measuring hemoglobin, hematocrit and blood sedimentation rate.</i>			
Materials Needed: <ul style="list-style-type: none"> ✓ <i>Video projector</i> ✓ <i>Whiteboard</i> ✓ <i>For Hb measurement test: Blood sample, Drabkin's solution, Micropipette, Cuvettes, Spectrophotometer</i> ✓ <i>For Hct measurement test: Blood sample, Glass capillary tubes, Capillary tube sealant, Microhematocrit centrifuge, Hct ruler</i> ✓ <i>For ESR test: Blood sample, Sodium Citrate 3.8%, Westergren ESR pipette, ESR rack</i> 			
Learning Objectives: <i>Students will:</i> <ol style="list-style-type: none"> 1. <i>Explain the basis of experiments.</i> 2. <i>Know the normal ranges and the measurement unit of each experiment.</i> 3. <i>Explain reasons for the decrease and increase of each of the tests.</i> 4. <i>Learn how to set up and work with a spectrophotometer.</i> 5. <i>Know the ingredients in Drabkin's solution and the reason for using them.</i> 6. <i>Perform hematocrit, hemoglobin and ESR tests with partners in small groups.</i> 7. <i>Interpret the results of the experiments.</i> 			
Assessment: <i>OSCE exam at the end of the course</i>			

Grade: <i>General Medicine</i>	Subject: <i>Gastrointestinal Physiology</i>	Date: <i>2024</i>	Time: <i>90 min</i>
Topic: <i>Basal Metabolism Rate (BMR)</i>			
Lesson Focus and Goals: <i>Teaching methods of measuring basal metabolism.</i>			
Materials Needed:			
<ul style="list-style-type: none"> ✓ <i>Video projector</i> ✓ <i>Whiteboard</i> ✓ <i>Spirometer</i> 			
Learning Objectives: <i>Students will:</i>			
<ol style="list-style-type: none"> <i>1. Define basal metabolism.</i> <i>2. Know the unit of measurement and its normal values.</i> <i>3. Know the necessary and basic conditions for the test.</i> <i>4. Describe physiological and pathological factors that affect BMR.</i> <i>5. Can use a spirometer to determine the amount of consumed oxygen volume in a certain period of time.</i> <i>6. Do the calculations of BMR percentage by an example test.</i> <i>7. Report and interpret the test result.</i> 			
Assessment: <i>OSCE exam at the end of the course</i>			

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