




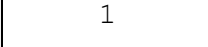
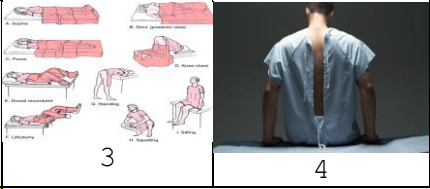





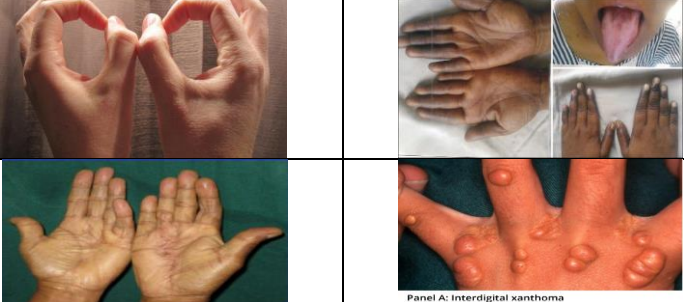

Cardiovascular Examination







Done By: Khalid Alshehri




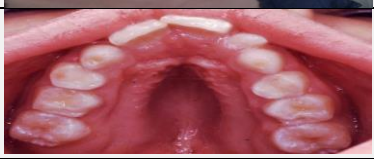




Osce Team Leaders: Abdulrahman Bahkley & Sarah Habis

Cardiovascular Examination

#	Subject steps	Pictures	Notes
A	Preparation: <u>Pre-exam Checklist:</u> <u>WIPE</u>	 <i>Be the one.</i>	Very important.
1	W ash your hands.	 1	✓ (Position the patient in a 45 degree sitting position) and uncover his/her upper body. ✓ (if you could not, tell the examiner from the beginning).
2	I ntroduce yourself to the patient, confirm patient's ID, explain the examination & take consent.	 2	
3	P ositioning of the patient and his/her Privacy.	 3	
4	E xposure. full exposure of the trunk.	 4	
B	Examination: <u>General appearance:</u> <u>(ABC2DEVs)</u>	A B C D E	
1	A ppearance: young, middle aged, or old, and looks generally ill or well.		✓ Observe the patient's general appearance (age, state of health, nutritional status and any other obvious signs e.g. jaundice, cyanosis, dyspnea).
2	B ody built: normal, thin, or obese	<ul style="list-style-type: none"> ■ Begin by observing the patient's general health from the end of the bed. ■ The patient looks well (not cachectic), overweight(don't say obese), not connected to IV line nor O2 mask, no obvious pallor or cyanosis, no respiratory or pain distress (not tachypnic). Oriented to time, place and person. ■ Also look for syndromes that associated with cardiac disease (Marfan, Down and Tunner syndromes). 	
3	C onnections: such as nasal cannula (mention the medications), nasogastric tube, oxygen mask, canals or nebulizer, Holter monitor, I.V. line or cannula (mention the medications).		
4	C olor: jaundiced, pale, or cyanosed.		
5	D istress: in pain, respiratory (using accessory muscles), or neurological (abnormal movements) distress.		
6	E lse: mental functions: consciousness, alertness, and orientation.		
7	V ital signs: 1) Pulse rate 2) Blood pressure (BP)		✓ Take the patient's radial pulse (Determine the Rate, Rhythm and the Character of the pulse). ✓ Take his/her blood pressure (Lying and standing or sitting-postural hypotension).

	<p>3) Temperature 4) Respiratory rate</p>	<p>Rate: counting over 30 seconds, normally 60-100. Rhythm: regular or irregular. Synchronization by comparing with the other side (radio radial or radio femoral delay). Character and volume: determined from the carotid. Blood pressure (BP) Normal BP defined as a systolic reading less the 140, and diastolic reading less than 90. □ Temperature: Normal body temperature ranges from 36.6-37.20C. □ Respiratory rate: It is traditional to count it while taking the pulse. The normal rate at rest should not exceed 25 beat per minute (range 16-25).</p>
C	<p>Head to toes From peripheral to central or other wise. In the exam, if the examiner tells you to examine the praecordium, start locally from the chest than move peripherally if you have time. (praecordium+Neck+others)</p>	
1	<p>The hand:</p>	
a	<p>Dorsum:</p> <ul style="list-style-type: none"> • Muscle wasting. • Pigmentations & erythema marginatum • Skin lesion (including scars). • Tendon xanthomata (hyperlipidemia). 	 <p>Panel A: Interdigital xanthoma</p>
b	<p>Palm:</p> <ul style="list-style-type: none"> • Signs of infective endocarditis such as <u>Osler's nodes</u> and <u>Janeway lesions</u>. • Palmar xanthomata hyperlipidemia. • Signs of a respiratory disease, or nicotine staining. • Palmar erythema: liver cirrhosis, polychromia, pregnancy. • Pigmentation of palmar breves: Addison's diseases but may be normal in Asians and black. • Pallor of palmar creases anemia becomes clearer with hyperextend fingers. • <u>Dupuytren's contracture:</u> alcoholism. <u>Raynaud' phenomenon.</u> 	 <p>Osler Node Janeway Lesion</p>

c	Nail: Clubbing: cyanotic congenital heart disease, infective endocarditis. <ul style="list-style-type: none"> • Signs of infective endocarditis & vasculitis like <u>splinter hemorrhage</u>. • Leukonychia: hypoalbuminemia, liver disease, or nephritic syndrome. • Koilonychias: iron deficiency anemia. 		
d	Flapping tremor (due to accumulation of toxins)		CO2 retention. Hepatic encephalopathy. Renal failure.
e	Forearm/ Pulse: Radial puls. <ol style="list-style-type: none"> 1. Both sides. 2. Collapsing pulse *—associated with aortic regurgitation 3. Subcutaneous nodule-associated with Rheumatic Fever. 4. Ask the patient if he has pain in his shoulder before you start raising his arm 	https://www.youtube.com/watch?v=E-LKF_pUWDA	<ul style="list-style-type: none"> • Character: anacrotic plateau, bisferiens, collapsing, alternans. • Desynchronization: coarctation of the aorta. • Water-hammer test: detects the collapsing pulse, which is pathognomonic for aortic regurgitation (AR).
f	Arm/ Blood pressure: Pulsus paradoxes: a change in the systolic pressure during inspiration more than 10mmHg.	https://www.youtube.com/watch?v=f6HtqolhKqo	Take his/her blood pressure (Lying and standing or sitting-postural hypotension).
2	The head:		
Face			
a	Face: Mitral faces; rosy, flushed cheeks and dilated capillaries: long standing MS. Eye:		

	<ul style="list-style-type: none"> • jaundice: (in the sclera liver disease, hemolytic anemia). • Pallor (in the conjunctiva): anemia. • Xanthelasma (in the periorbital regions: hyperlipidemia, primary biliary cirrhosis). • Blue sclera: Marfan's syndrome. 	 <p style="text-align: center;">Blue sclera</p>	 <p style="font-size: small;">Fig. 2 Digital photographs of the palpebral conjunctiva of four patients with hemoglobin concentrations of (a) 7.3, (b) 12.7, (c) 14.0, and (d) 14.5 g/dl.</p>
<p>b</p>	<p>Mouth:</p> <ul style="list-style-type: none"> • Central cyanosis. • Oral hygiene (Diseased teeth). • Dryness of the mouth: dehydration. • Any lesion, e.g. ulcer, bleeding. • High arched palate; Marfan's syndrome which is associated with AR or MR. 	 	 
<p>c</p>	<p>Special smell:</p> <ul style="list-style-type: none"> • Sweet smell "feto hepaticus": liver disease. • Ammoniacal fish breathe" uremic fetor" renal failure. • Cigarette smell in smokers. 		
Neck			
<p>a</p>	<p>Jugular venous pressure and the jugular venous pulse:</p> <ul style="list-style-type: none"> ▪ Ask the patient to turn his head slightly to one side. ▪ Look at the internal jugular vein medial to the clavicular head of sternocleidomastoid. ▪ Assuming that the patient is at 45 degrees, the vertical height of the jugular distension from the sternal angle should be no greater than 4 cm. 	<p style="text-align: center;">Examination of the Neck Veins</p> <p style="text-align: center;">https://www.youtube.com/watch?v=AWxbAg0E3E4</p> <p style="text-align: center;">Measuring JVP</p> <p style="text-align: center;">https://www.youtube.com/watch?v=MZKSkVSBH8k</p> <p style="text-align: center;">Measuring JVP</p> <p style="text-align: center;">https://www.youtube.com/watch?v=1-2NsEg7-n8</p>	<ul style="list-style-type: none"> ▪ JVP: Stand on the right side of the patient, and focus on the site of the right jugular vein to detect its pulsation. If you could not see it, put the patient on 35° then on 25° and then on 10° until you see it. If you did not, do the abdomino jugular refluxes test. ▪ Put the patient on 45° and press the abdomen while you are looking to his/her neck for 10 seconds. If the pulsation of the jugular vein is still rising and does not come back, the test is positive. ▪ Kussmaul's sign: rise of JVP in inspiration.
<p>b</p>	<p>Carotid pulse</p>	<p style="text-align: center;">https://www.youtube.com/watch?v=Tv8Jgk9p6VU</p>	<p>Better to get the volume and character.</p>

3	Praecordium		<p>Praecordium is the portion of the body over the heart and lower chest.</p>
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Inspection

a	<p>Shape and deformities:</p> <ol style="list-style-type: none"> 1. Pectus excavatum 2. Pectus carinatum 		<ul style="list-style-type: none"> • Pectus excavatum (funnel shaped; depressed sternum): Marfan's syndrome. • Pectus carinatum (pigeon shaped; prominent sternum).
b	<p>Scars:</p> <ul style="list-style-type: none"> ▪ Lateral thoracotomy (mitral valve) ▪ Midline sternotomy (CABG) ▪ Clavicular (pacemaker) 		
c	<p>Devices:</p> <ul style="list-style-type: none"> ▪ Holter monitor: an ambulatory 24 hours ECG. ▪ Pacemaker, or intracardiac defibrillator (ICD): usually below the left or right clavicle. 		
d	<p>Apex beat: Visible pulsations with the aid of torch.</p>		<p>forceful apex beat may be visible > (hypertension / ventricular hypertrophy) Abnormal pulsations.</p>



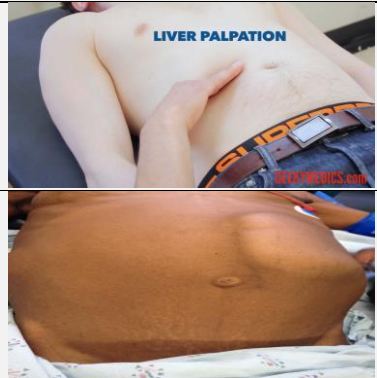
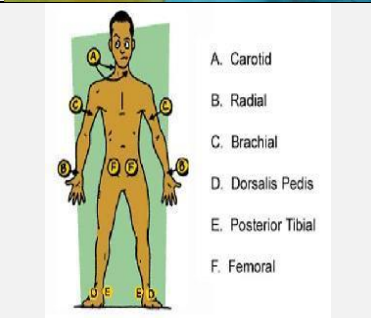



Palpation

a	<p>Apex beat: The beat may be:</p> <ul style="list-style-type: none"> ✓ Normal. ✓ Tapping: mitral stenosis (MS), tricuspid stenosis (TS). ✓ Double impulse: hypertrophy cardiomyopathy. ✓ Sustained: aortic stenosis, uncontrolled hypertension. 		<ul style="list-style-type: none"> ✓ located in the 5th intercostal space in mid-clavicular line ✓ The most inferolateral palpable pulse. ✓ If it is impalpable, ask the patient to turn to the left.
b	<p>Parasternal heaves: Place the heels of your hands over the right and left parasternal regions, and ask the patient to stop breathing.</p>		<p>In the presence of a heave, the heel will lift off the chest wall with each systole. Causes include:</p> <ul style="list-style-type: none"> ▪ Right ventricular hypertrophy. ▪ Left atrial enlargement (not hypertrophy).

c	<p>Thrill: Apalpable murmur (like the feeling on an arteriovenous fistula).</p>		<p>The site of a thrill is the same site of the valve; we detect its site by using the valve area, i.e. mitral area, tricuspid area.. etc, or by using the anatomical position, i.e. 2nd intercostal space, 5th intercostal space... etc.</p>
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Auscultation of the heart

a	<p>Listen for Heart sounds, additional sounds, murmurs, and pericardial rub.</p> <p>Using the stethoscope's diaphragm, listen in the:</p> <ul style="list-style-type: none"> ▪ Aortic area - right second intercostal space near the sternum. ▪ Pulmonary area - left second intercostal space near the sternum. ▪ Tricuspid area - left third, fourth, and fifth intercostal spaces near the sternum. ▪ Mitral area - left fifth intercostal space, in the mid-clavicular line. ▪ Palpate the carotid pulse to determine the 1st heart sound 	<p>https://www.youtube.com/watch?v=83CBjj9dMRc</p>	<ul style="list-style-type: none"> ✓ Ask the patient to bend forward and to hold his breath in expiration. Using the stethoscope's diaphragm, listen at the left sternal edge in the fourth intercostal space for the mid-diastolic murmur of aortic regurgitation. ✓ Ask the patient to turn onto his left side and to hold his breath in expiration. Using the stethoscope's bell, listen in the mitral area for the mid diastolic murmur of mitral stenosis. ✓ Listen over the carotid arteries for any bruits.
b	<p>In case there is a murmur:</p>	<p>https://www.youtube.com/watch?v=YXXiMoEMyMI</p>	<ol style="list-style-type: none"> 1. Accentuation maneuvers (These maneuvers cause particular murmurs to become louder) <ol style="list-style-type: none"> a. Roll onto left side and hold his breath in expiration: Listen in mitral area with bell – mitral murmurs are louder b. Lean forward and hold his breath in expiration: Listen over aortic area with diaphragm- aortic murmurs are louder c. During inspiration (Right sided murmurs increase) d. During expiration (Left sided murmurs increase) 2. The radiation of the murmur: <ul style="list-style-type: none"> ▪ Carotid arteries: radiation of aortic stenosis murmur. ▪ Axilla: radiation of heart murmur into the left axilla – mitral regurgitation
c	<p>Sounds:</p> <ul style="list-style-type: none"> ▪ AS murmur ▪ MR murmur ▪ These are the most imp. Murmur. 	<p>https://www.youtube.com/watch?v=4euNGIguluk</p>	<p>Make sure to cover the rest.</p>

<p>4</p>	<p>The back:</p> <ul style="list-style-type: none"> ▪ Inspection for (scars, deformity) ▪ Percussion and auscultation of the lung bases. ▪ crackles / pulmonary oedema – left ventricular failure ▪ Sacral edema. ▪ Ascites. 		<p>Percuss and auscultate the chest especially at the bases of the lungs. Heart failure can cause pulmonary edema and pleural effusions.</p>
<p>5</p>	<p>Abdomen:</p> <ul style="list-style-type: none"> • Hepatomegaly: (right ventricular failure). • pulsatile liver (tricuspid regurgitation) • aortic aneurysm • Splenomegaly: (endocarditis). 		
<p>6</p>	<p>The lower limb:</p> <ul style="list-style-type: none"> • Any change in the nails, dorsal, or the sole of the foot (clubbing) . • Peripheral pulses: popliteal, posterior tibial, and dorsalis pedis pulses. Bilaterally. • Lower limb edema. 		
<p>7</p>	<p>To complete the examination: Tell the examiner that "I will conclude my examination by doing funduscopy exam"</p>		
<p>8</p>	<p>After the examination:</p> <ul style="list-style-type: none"> ✓ Ensure that the patient is comfortable. ✓ Make explanations to the patient, answer his/her questions and discuss management plan. ✓ If necessary, order diagnostic investigations. ✓ Dispose of sharps and waste material according to infection control standards. ✓ Wash hands. ✓ Document the procedure. 		

Cardiovascular Examination: (7:52)

<https://www.youtube.com/watch?v=SJ3UwKkLyy0>

For any question please feel free to contact us on:

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