GAZİ UNIVERSITY
FACULTY OF MEDICINE

DEPARTMENT OF MEDICAL EDUCATION

CLINICAL SKILLS EDUCATION

LEARNING GUIDES

Gazi University Faculty of Medicine

Clinical Skill Education Committee
Associate Prof. Dr. Sühan Ayhan
Associate Prof. Dr. Meltem Yalınay Çırak
Associate Prof. Dr. I. İrem Budakoğlu
Assistant Prof. Dr. Serhan Tuncer

August 2009

CONTENTS

PHASE 1

LEARNING GUIDE

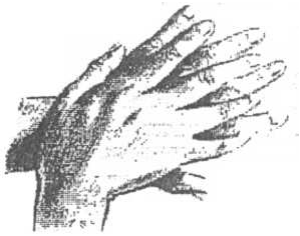
WASHING HANDS

TOOLS: Water, soap or cleaning solution, paper towels

PARTICIPANT:

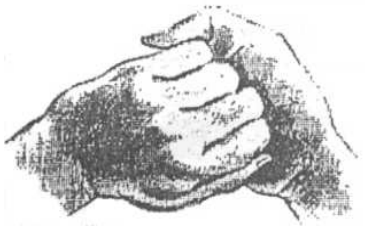
Most of our contact with the environment occurs with our hands, and they are the organs with the highest risk of transmitting disease. Therefore, it is imperative to remember to wash your hands and to use the proper technique. When washing hands, use water to wet your hands and then lather them up with soap or cleaning solution. While your hands are foamy, sequentially repeat the steps shown below at least five times. This way, your hands will be thoroughly cleaned.

Rub hands together with palms facing eachother.



Use one palm to rub the back of the other hand and repeat with opposite hand,

Interlock fingers and rub palms together,



With fingers flexed, rub back of fingers on palm of other hand.

Rub each thumb inside palm of other hand.

Rub fingertips on palm of other hand.

After cleaning hands thoroughly, rinse them with water. If there is a screw type faucet in your facility, splash some water onto it to remove soap and turn it off. Faucets with handles are widely used in medical facilities; these should be turned off not with your hands but using your elbows. Dry your hands after washing.

STEP NO	STEPS
1	Roll up sleeves to expose wrists.
2	Remove watch, rings, bracelets and other accesories.
3	Turn on faucet.
4	Wet hands under running water.
5	Put an appropriate amount of soap or cleaning solution on hands.
6	Lather up hands using some water.
7	If using soap, rinse the bar of soap off with water while keeping hands foamy and lay soap down.
8	With remaining foam, repeat the steps described below in the same order by rubbing hands rotationally in every direction:
9	Rub palms of hands together,
10	Rub back of left hand with palm of right hand,
11	Rub back of right hand with palm of left hand,
12	Interlock fingers and rub palms together,
13	With fingers of right hand flexed, rub back of fingers on palm of left hand,
14	With fingers of left hand flexed, rub back of fingers on palm of right hand,
15	Rub right thumb inside palm of left hand,
16	Rub left thumb inside palm of right hand,
17	Rub fingertips of right hand in palm of left hand,
18	Rub fingertips of left hand in palm of right hand,
19	Still using a rubbing motion, rinse your hands completely under running water.
20	Dry hands with paper towel.
21	If faucet is a screw type, remove any soap by splashing water on it and turn it off with used paper towel. Turn off handle-type faucets using your elbow.
22	Throw used paper towel into blue (household) waste bag.

LEARNING GUIDE

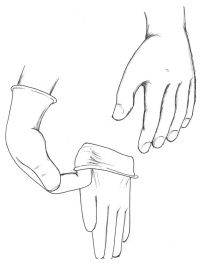
APPLYING AND REMOVING STERILE GLOVES

TOOLS: Sterile gloves

PARTICIPANT:

Types of gloves and their uses
Nylon gloves: They are made of thin, usually clear nylon. They are used in simple procedures to keep hands clean. Because the gloves are not a tight fit, fine procedures requiring precision cannot be carried out with them. They are more commonly used in the food industry to prevent contamination.
Examination gloves: They are made of latex. They are not sterile, come in one size and are sold in packages of many gloves. Because of their tight fit, they are used in our profession very often. Both gloves of a pair are the same.
Surgical gloves (sterile gloves): Like the examination glove, they are made of latex. However, the thumbs are slightly retracted to ensure a better fit. Therefore, there are different gloves for your right and left hands. Again, to ensure a better fit, they come in different sizes. Starting from size 7 they increase by half a size and go up to size 8½.

Pay attention to the position of your thumb. Holding the glove by the neck with one hand, advance your other hand into glove until each finger is in its place. Then push hand completely forward.



With your gloved hand, hold other glove by placing fingers under its cuff. Then put glove onto other hand as described in previous step.

NOT: Eldivenlerin ince olduğunu, sert hareketler, keskin cisimler ile delinebileceğini unutmayınız. Hatta eldivenlerin ender de olsa delik çıkabileceğini anımsayınız.

To remove gloves, grasp neck of opposite glove with fingers and create a fold outwards. Pull glove off by pulling it by the neck.

Insert fingers of ungloved hand between opposite wrist and glove so as to fold glove onto itself. Grasp glove from the inside and slide it off.

NOTE: The most commonly made mistake at this step is to grasp the neck of the glove from the *outside* with ungloved hand

STEP NO	STEPS
1	Wash and dry your hands.
2	Choose a pair of gloves with the appropriate size.
3	Make sure the package is intact and check expiration date.
4	Remove external package without tearing the wrapping inside and place internal package on the table.
5	Open the internal package on the table without touching the glove or the inside of the package.
6	With your dominant hand, pick up the opposite glove by the wrist without touching the outer surface of the glove.
7	Turn glove so the thumb is facing forwards. Insert hand into glove and make sure fingers are in their places. After fingers are in their places, pull glove towards your wrist with the other hand.
8	Insert 2nd and 3rd fingers of gloved hand into the folded neck part of opposite glove and remove it from its package without touching the outer surface with your ungloved hand.
9	Turn glove so the thumb is facing forwards. While advancing your hand in the glove, pull the glove by the neck with your gloved hand and make sure your fingers are in place without touching anything else.
10	Pull up folded neck part of the other glove to cover wrist.
11	After completing the procedure, grasp neck of opposite glove with your dominant hand and pull it off without getting skin in contact with outer surface of glove.
12	Throw the glove you removed into red (medical) waste bag
13	Insert fingers of ungloved hand between opposite wrist and glove so as to fold glove. Grasp glove from the inside and slide it off without touching outer surface.
14	Throw glove into red medical waste bag and the packaging into blue waste bag.
15	Wash and dry your hands.

* Drawings by Assoc. Prof. Dr. Billur Demiroğulları

LEARNING GUIDE

TAKING AND WRITING A PATIENT HISTORY

TOOLS: None

PARTICIPANT:

A patient history should be taken and written in a specific order. The patient may not give a hisory with the desired sequence, but the physician can obtain relevant details of complaints by asking open-ended questions as well as closed-ended questions with short answers.

The physician is required to write down the patients' information for a number of reasons. He/she should write his/her name, last name, and time and date of examination in the file. The physician should also write down the patient history in the order listed below. The order in which the features of each complaint are written may vary, as long as they are all present in the note.

It will be of help for you to remember what you learned in the patient encounter video and to use that information in this encounter.

1. Demographic data (age, sex, race, occupation, location, marital status, number of children if applicable)
2. Chief complaint in patient's own words
3. Who we obtained history from, reliability
4. History of current disease
5. Features of complaints described by patient
    i. Localization
    ii. Radiation
    iii. Quality
    iv. Severity
    v. Associated symptoms
    vi. Onset
    vii. Duration
    viii. Aggrevating factors
    ix. Alleviating factors
    x. Treatments received and response to treatment
6. Effect of disease on patient and his/her environment
7. Patient's opinions on the disease

Practice Plan:

Take a history from a friend and write it down.

Your friend will put checks on his/her notes next to the questions you asked.

When you are finished taking the history, your friend will tell you if you left something out.

STEP NO	STEPS
1	Greet patient.
2	Write down your name, last name, and time and date of examination.
3	Obtain patient's demographic data and write them down.
4	Ask patient's chief complaint and write it down in their own words.
5	Write down who you obtained the history from.
6	Take a history of current disease and write it down.
7	Inquire about and wirte down the complaints of the patient
8	• Localization • Radiation • Quality • Severity • Associated symptoms • Onset • Duration • Aggrevating factors • Alleviating factors
9	Inquire about and write down the effects of the disease on the patient and his/her environment.
10	Inquire about and write down patient's opinions on the disease.

LEARNING GUIDE

BASIC PHYSICAL EXAMINATION

TOOLS: Stethoscope

PARTICIPANT:

The physical examination is an important part of the patient-physician relationship. The patient should be evaluated from head to toe as a whole. After noting general appearance and vital signs, the physical examination is conducted by evaluating each system, or area, sequentially. Every system (or area) is examined using these 4 basic techniques:

1. **Inspection** utilizes our vision. We observe related anatomical structures and detect any abnormalities in their appearances.
2. **Palpation** utilizes the sense of touch of our fingers. The texture, surface, mobility, warmth etc. of sturctures is evaluated.
3. **Percussion** is done by placing the 3rd finger of one hand on the area we are examining and striking it with a finger of the other hand. The sound that is produced echoes back from the inside of the body. If there are organs containing air, e.g. hollow organs, under the area we strike, the sound is reflected less and we hear a high note. This is called "tympany". The sound produced when normal lungs are percussed is called "resonance". If there are solid organs or areas filled with liquid, the sound we hear is a lower note. This is called "dullness". Areas containing both air and liquid give a note in between. This is called "relative dullness".
4. **Auscultation** utilizes our sense of hearing via the stethoscope. This enables us to hear the sounds produced from functioning body parts.

Now we will get to know these 4 basic steps. Carry out the steps listed below and write your findings, if there are any, in the spaces provided underneath them.

STEP NO	STEPS
1	Wash your hands.
	Inspection
2	Choose a friend. (Each student should be evaluated by one friend each.)
3	Evaluate general appearance, body structure, posture and emotional status of your friend. Write down anything you find relevant.
4	Inspect your friend's eyes.
5	Note his/her eye color.
6	Inspect your friend's cheeks.
7	Note if he/she has dimples or not.
8	Ask your friend to smile.
9	Check if dimples appear or not.
10	Student no: ..... Eye color: ..... Dimples At rest: YES NO Smiling: YES NO
	Palpation
11	Palpate the area below your own chin. Note the texture.

12	Palpate the tip of your chin.
13	Palpate your cheek.
14	Palpat your earlobe.
15	Arrange the areas you palpated from softest to hardest and write them down: ***Softest* >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> *Hardest*** 1- 2- 3- 4-
	Percussion
16	Hyperextend the middle finger of your left hand.
17	Place the middle and distal phalanges of that finger on the area you would like to percuss.
18	With the tip (not pulpa) of the middle finger of your opposite hand, strike the middle phalanx of the other finger, with your hand moving from the wrist.
19	Listen to the sound that is produced.
20	Percuss the wall, doors and other objects in your environment and listen to the sounds they produce.
	Auscultation
21	Look at your stethoscope's ear tips. They cross eachother witha slight angle. Hold the stehoscope so that the crossing tips look away from you.
22	Carefully place the ear tips in your ears.
23	Rub the diaphragm of your stethoscope, which is the round part on the end used to listen, on your shirt to warm it.
24	Place the diaphragm of the stehoscope on your carotid artery and listen to your pulse.
25	Place the diaphragm of the stethoscope on the front of your neck and listen to your breath sounds.
26	Keep the diaphragm in the same position and listen while you are talking to your friend.
27	Listen to yourself making different noises.
28	Place the diaphragm of the stethoscope on your heart and listen to the sounds.

LEARNING GUIDE

MEASURING PULSE AND RESPIRATORY RATE

TOOLS: None

PARTICIPANT:

STEP NO	STEPS
1	Wash your hands.
2	Inform the patient about the examination and make him/her comfortable.
3	If the patient climbed stairs, walked or is tired etc., tell him/her to rest for 5-10 minutes.
4	Tell patient to take off any clothing that conceals his/her chest wall movements .
5	Stand on the right side of patient.
	MEASURING PULSE FROM RADIAL ARTERY
6	Position the patient so that their right palm faces the ground.
7	Place your 2nd, 3rd and 4th fingers on the radial artery.
8	Palpate the radial artery.
9	After finding the pulse, count the beats for 60 seconds.
10	Note the rate, rhythm and fulness of the beats.
11	**MEASURING RESPIRATORY RATE**
	Observe the chest wall go up and down, or feel it by placing your hand on the patient's chest (sternum)
12	Count the inspirations (chest elevations) for 60 seconds.
13	Note the respiratory rate.
14	Inform the patient about your findings.
15	Wash your hands.

LEARNING GUIDE

MEASURING BODY TEMPERATURE

TOOLS: Thermometer

PARTICIPANT:

STEP NO	STEPS
1	Wash your hands.
2	Inform the patient about the examination and make him/her comfortable.
3	If the patient climbed stairs, walked or is tired etc., tell him/her to rest for 5-10 minutes.
4	Ask the patient to take off his/her clothes so that the armpit is exposed.
5	Hold the thermometer by the opposite end of the mercury chamber.
6	Hold the thermometer with the mercury chamber facing down and rapidly shake it a few times.
7	With the white part facing backwards, turn the thermometer until the column of mercury comes into view.
8	If the column is not below 35^0 C, repeat procedure starting from step 7.
9	Make sure patient's armpit is dry.
10	Place the thermometer so that the end with the mercury chamber is in contact with the patient's armpit.
11	Abduct the patient's arm so that the thermometer stays in place.
12	Wait for 3 minutes and remove thermometer from the patient's armpit. Note the temperature that the mercury column indicates and write it down.
13	Wipe thermometer with disinfectant and put it away.
14	Inform patient about your measurements.
15	Wash your hands.

LEARNING GUIDE

MEASURING ARTERIAL BLOOD PRESSURE

TOOLS: Sphygmomanometer, stethoscope

PARTICIPANT:

STEP NO	STEPS
1	Measure arterial blood pressure in a quiet, calm environment.
2	Inform patient about the procedure.
3	Make sure that the patient has not exercised, consumed caffeine, smoked cigarettes or used nose/eye drops 30 minutes prior to the measurement.
4	Before the measurement, have the patient sit on a chair (with feet on the ground and arms at level of the heart) for at least 5 minutes.
5	The blood pressure measurement should be done with a calibrated sphygmomanometer and stethoscope. (The cuff size of the manometer system you are using is important. A small cuff should be used for children, and a large one for adults. The cuff should be 2/3rds the length of an arm.)
6	Make sure the patient's arm is completely exposed. (The upper part of the arm should not be constricted by the rolled up sleeve of the patient's garment)
7	Check the brachial and radial pulses of the arm you are going to measure from.
8	Empty the cuff completely so that no air is left in it.
9	Place cuff on arm. • 2-3 cm above the elbow, • So that it fits snugly, but does not compress the arm • There should be 1 cm between the cuff and skin of arm.
10	Place stethoscopes in ears so that ear tips face forward.
11	Tap diaphragm of stethoscope to make sure the system is ready.
12	Place diaphragm on brachial artery without pressing on it. (Do not insert it between cuff and skin so that it will not be under pressure when cuff is inflated)
13	Turn off valve of manometer completely and start inflating cuff. • Simultaneously palpate radial pulse. • Inflate an additional 15-20 mmHg after the pulse disappears.
14	Stabilize the stethoscope on the brachial artery without compressing it and turn on the valve. The pressure should drop by 2-3 mmHg every second.
15	While the pressure drops 2-3 mmHg/sec, • Listen for Korotkoff sounds. • The value at which you hear the first sound indicates the systolic blood pressure. • The value at which the sounds disappear indicates the diastolic blood pressure.
16	Take your stethoscope off.
17	Empty air from cuff.
18	Remove cuff from arm.
19	Write down the values you measured and inform the patient about them.

Note : To repeat measurement from the same arm, you must wait at least 5 minutes.

LEARNING GUIDE

APPLYING ELASTIC BANDAGE

TOOLS: Elastic bandage, rescue dummy

PARTICIPANT:

STEP NO	STEPS
1	Inform patient about the procedure.
2	Prepare 15-20 cm of bandage for lower extremities and 5,8-10 cm for upper extremities.
3	Ask patient to remove clothing on the limb that will be wrapped.
4	Hold the bandage in your dominant hand and the free end with your opposite hand.
5	Wrap bandage around limb from proximal to distal, covering half of the prior bandage and keeping fingers exposed. Make sure not to wrap too tightly.
6	When applying bandage to joints, draw an '8' by crossing over the joint repeatedly.
7	After you are finished wrapping, fasten the free end of the bandage.
8	You can use these steps when applying bandage to wrist, elbow, ankle and knee joints.
9	When you finish applying the bandage, make sure to check the patient's blood circulation at his/her fingertips.

LEARNING GUIDE

INTRAMUSCULAR INJECTION

TOOLS: Medication, syringe, antiseptic, tampon, gloves

PARTICIPANT:

STEP NO	STEPS
1	Wash and dry your hands. Put on gloves.
2	Check the label of the medication you are going to inject and prepare medication and syringe.
3	Imagine a line from the posterior superior iliac spine (the posterior protrusion of the hip bone), to the greater trochanter of the femur. (This line is parallel to the sciatic nerve and is lateral to it)
4	The area you will make the injection is on the upper and outer side of this line, 5-8 cm below the iliac crest.
5	Clean this area with antiseptic solution.
6	With the thumb and 3rd finger of your left hand, hold the skin of this area taut.
7	Hold the syringe in your right hand like you would hold a pen, with a 90 degree angle to the skin.
8	Rapidly and firmly insert the syringe into the skin and advance it towards the muscle. You should reach muscle when ¾ths of the needle is inside.
9	Pull the piston lightly towards yourself; if blood is drawn, quickly pull the syringe out. Replace the needle if possible and repeat procedure.
10	If no blood is drawn when the piston is pulled, slowly inject the medication.
11	When finished, quickly pull the syringe out.
12	Press firmly on the area with a cotton ball soaked in antiseptic solution or gauze.
13	Clean up after yourself: used syringes, needles and any other medical waste goes should be safely disposed of. When finished, take you gloves off and wash your hands.

LEARNING GUIDE

SUBCUTANEOUS INJECTION

TOOLS: Medication, syringe, antiseptic, tampon, gloves

PARTICIPANT:

STEP NO	STEPS
1	Wash and dry your hands and put on your gloves.
2	Determine the are you will do the injection and clean it with a tampon soaked with antiseptic solution by making circular movements from the center towards the periphery.
3	Remove the cap of the syringe and squeeze the skin and subcutaneous tissue of the area you are going to inject with the fingers of your passive hand and pull the tissue away from the body.
4	Hold the syringe as you would a pen or hold it so that it is in your palm pointing downwards.
5	With the needle slant facing upwards, insert into subcutaneous tissue with a 45-90 degree angle.
6	Release the skin and subcutaneous tissue that you are holding with your passive hand.
7	Pull the piston of the syringe towards yourself and make sure you are in subcutaneous tissue. (If blood is drawn, pull the needle out and prepare medication again)
8	Inject medication into subcutaneous tissue.
9	With your passive hand, press lightly with a tampon on the entry point of the needle and pull syringe out with your active hand.
10	Press on the area you injected.
11	After throwing away syringe, needle, cotton etc. İnto their respective waste bags; take off you gloves and wash your hands.

LEARNING GUIDE

INTRAVENOUS INJECTION

TOOLS: Medication, syringe, antiseptic, tampon, gloves, tourniquet

PARTICIPANT:

STEP NO	STEPS
1	Wash and dry your hands. Put on gloves.
2	Remove syringe from its sterile packaging and attach needle onto it.
3	Tap the ampule to ensure that the medication is in the body part of it. Break the neck of the ampule pushing on the indicated point with your thumb, using a tampon for support.
4	Remove cap of syringe and draw medication into it.
5	Hold the syringe perpendicular to the ground and lightly tap it to move bubbles upward. Lightly push the piston to remove the air bubbles. Replace the cap.
6	Determine the vein to be used. Tie the tourniquet 10-15 cm above the area you would like to use and make sure you do not disrupt the arterial circulation.
7	Clean the area with a tampon soaked in antiseptic solution starting from above and wiping downwards.
8	After removing the cap of the syringe, stabilize the arm with your passive hand and stretch the skin underneath the area you will inject downwards with your thumb.
9	Hold the needle with its slant facing upwards (sharp edge close to skin) and insert with a 35 degree angle.
10	After penetrating skin, advance the needle parallel to skin for 3-5 mm and enter the vein.
11	Advance the needle 2-3 mm inside the vein.
12	Pull the piston with your passive hand and make sure you have entered the vein.
13	If you are inside the vein, remove tourniquet with you passive hand.
14	Slowly inject medication while observing the vein.
15	After the injection, press on the area with a dry tampon and quickly pull out the needle, maintaining the same angle.
16	Continue compressing the area with the tampon to achieve hemostasis.
17	Apply special bandage on the area.
18	Throw syringe into appropriate bin and other supplies into medical waste bag. Wash and dry your hands.

LEARNING GUIDE

BASIC LIFE SUPPORT AND REMOVING A FOREIGN OBJECT

TOOLS: None

PARTICIPANT:

STEP NO	STEPS
1	When you encounter the patient, first make sure you are safe and you are in a safe environment.
2	Keeping in mind the risk of neck (cervical spine) injury, have the patient lie down on a hard surface without being shaken.
3	Stand on the side of the patient.
4	Check if the patient responds: gently shake the patient by the shoulders. Ask loudly, "How are you? Are you OK?" (Do not move patient too much, think of possible cervical injury.)
5	If the patient responded, ask what his/her complaint is and call 112 (emergency ambulance system). If the patient is unresponsive, and you are considering a cardiac problem, call 112 first.
6	However, if you think a respiratory cause is present, or if there is trauma, drowning or poisoning, first complete 5 cycles of CPR (cardiopulmonary resuscitation), and then call 112.
7	Inform the employee on duty at 112 about the patient and event: • Address of the emergency (street, building, room number etc.) • The phone number from which you are calling. • What happened (heart attack, stroke, accident etc.) • Number of people in need of help. • Current status of patient and any treatments given • Do not hang up until the 112 official has hung up.
	AIRWAY
8	Kneel next to the patient and pull open his/her mouth by the chin and check to see if there are any foreign objects inside.
9	If you see a foreign object, wrap a piece of bandage or cloth around your finger and remove the object wth a sweeping motion.
10	In patients who have not had any trauma, apply the Head Tilt – Chin Lift maneuver to elevate the tongue, which may be obstructing the airway: • By putting one hand on the patient's forehead and the other on the bony protrusion of the lower jaw, push patient's head backwards and the jaw forwards.
11	For patients with trauma, use the Jaw Thrust maneuver: • Kneel by the patient's head • Put each hand on one corner of the lower jaw and push upwards and forwards .
12	Maintain this position and proceed to Breathing.
	BREATHING
13	**Look** – Kneel next to the patient and lean slightly forward, so that your cheek is close to the patient's face. Look for up-down movements of chest wall.
14	**Listen** – Leaning over the patient, bring your ear close to his/her face and try to hear any breath sounds.
15	**Feel** – Lean over patient and try to feel him/her breathing on your cheek.
16	If the patient is breathing, proceed to Circulation. (Do not assess breathing for more than 10 seconds).
17	If the patient is not breathing, give two efective breaths through his/her mouth, nose or tracheostomy so that the chest wall is elevated for at least 1 second.
18	To give a breath, maintain the patient's position to keep the airway patent and close nostrils with the thumb and 2nd finger of one hand.

19	Take a deep breath and give the breath to the patient slowly for at least 1 second through his/her mouth. (the chest wall should be elevated)
20	An alternative way is to close the patient's mouth by supporting the lower jaw with one hand and giving the breath through his/her nose for at least 1 second.
21	Make sure the air is not escaping.
22	After giving 2 breaths, proceed to Circulation.
	CIRCULATION
23	Kneel next to patient.
24	Palpate the windpipe (trachea) on the patient's neck with one hand; then lightly move your hand to the side to palpate the carotid pulse .
25	Check if there is a pulse. (Do not spend more than 10 seconds on this step)
26	If you feel a pulse, put the patient in recovery position.
27	If there is no pulse, begin chest compressions.
28	For chest compressions, palce one hand on the lower half of the chest bone (sternum) and the other hand on top of it.
29	Keep your elbows straight.
30	Your body should move as a whole to transmit your weight through your arms.
31	Start pushing on the sternum so that it is depressed 4-5 cm with every compression.
32	After each compression, let the sternum rise back to its original position.
33	Continue with chest compressions at a speed of 100 compressions/minute.
	SINGLE PERSON CPR
34	Make sure you are safe and assess patient responsiveness.
35	Call 112.
36	Check airway patency.
37	Assess breathing and initiate artificial respiration if needed.
38	Assess circulation; if there is no pulse or evidence of circulation, initiate chest compressions.
39	Proceed with CPR with each cycle consisting of 30 chest compressions and 2 breaths.
40	After 5 cycles are completed, assess ABC (Airway, Breathing, and Circulation).
41	If there is no change, continue with CPR.
42	If the patient hs recovered, put him/her in recovery position.
	RECOVERY POSITION
43	If the patient has a pulse and is breathing but has impaired consciousness, lay him/her on his/her back. (Keep in mind the possibility of neck injury)
44	Stand on right side of patient.
45	Place the patient's left hand under his/her right cheek so that the left arm crosses the front of the neck. Put the arm in a 90 degree angle to the body.
46	Flex the patient's left knee.
47	Holding the patient by the shoulder with your left hand and by the hip with your right hand, turn him/her towards yourself.
48	The patient's left knee and elbow should be in contact with the ground.
49	Asses ABC.
50	If the patient will be in recovery position for more than 30 minutes, turn him/her to the opposite side by first laying him/her on the back
51	The patient should wait in recovery position until the ambulance arrives.
52	If there are no signs of circulation or respiration, turn the patient on his/her back and initiate CPR.
53	Make sure you are safe and that the environment is not threatening.

LEARNING GUIDE

APPLYING A CERVICAL COLLAR

TOOLS: None

PARTICIPANT:

STEP NO	STEPS
1	Make sure you are safe and that you are in a safe environment.
2	If possible, put on gloves.
3	Do not move the patient.
4	Do not move the patient's neck.
5	Stabilize the patient's head and neck with an assistant.
6	Prepare a neck collar with the appropriate size for the patient.
7	Open the collar and place it on the back of the neck so that the chin area is facing to the front.
8	Position the collar so that the chin piece is seated on the chin.
9	Stabilize the collar so that it is neither too tight nor too loose.
10	Remove ear from under the collar.

LEARNING GUIDE

PATIENT TRANSPORT WITH A SPINE BOARD

TOOLS: Rescue dummy, spine board

PARTICIPANT:

STEP NO	STEPS
1	Make sure you are safe and that you are in a safe environment.
2	If possible, put on gloves.
3	Apply a cervical collar to patient.
4	One person should stabilize the patient's head and neck and maintain that position.
5	2 people should be on either side of the patient .
6	On person should hold the patient's shoulder and hip, while the other person holds his/her hip and calf.
7	With the command of the person holding the patient's head, turn the patient 90 degrees.
8	A 4th person should slide the spine board under the patient.
9	With the command of the person holding the patient's head, turn the patient 90 degrees and place the patient on the board.
10	All 4 people should simultaneously help place the patient on the middle of the board.
11	Carry the patient with the board with 2 people on each side.

LEARNING GUIDE

SINGLE PERSON PATIENT TRANSPORT

TOOLS: Rescue dummy

PARTICIPANT:

STEP NO	STEPS
1	Make sure you are safe and that you are in a safe environment.
2	If possible, put on gloves.
3	Turn patient on his/her back, making sure to protect the neck and spine.
4	Clutch your hands in front of the patient with your arms passing under his/her arms and hold his/her neck between your two hands.
5	Lift the patient's head by 30^0, and drag him/her with feet on the ground.

LEARNING GUIDE

PATIENT TRANSPORT WITH TWO-HAND SEAT CARRY

TOOLS: None

PARTICIPANT:

STEP NO	STEPS
1	Put together your front hand with your assistant's front hand.
2	Hold eachother's wrists.
3	Have the patient sit on your hands.
4	Cross your other arms on the patient's back.
5	Grasp the victim by his/her clothes to keep them from falling.

LEARNING GUIDE

STABILIZING A FRACTURE/DISLOCATION

TOOLS: None

PARTICIPANT:

STEP NO	STEPS
1	Make sure you are safe and that you are in a safe environment.
2	If possible, put on gloves.
3	Do not move the deformed or discolored limb.
4	Cover any obvious bleeding or open wound with a clean cloth.
5	Stabilize the deformed limb by placing a hard material (cardboard, wood etc.) on each side of the limb making sure to include both upper and lower joints.
6	Place an object under limb to elevate it 10-15 cm .
7	Obtain a triangular bandage for upper limb; palce elbow in the middle of bandage without changing the arm's position.
8	Tie free ends of triangular bandage around neck of patient with the arm above heart level.
9	Safely transport patient.

LEARNING GUIDE

HEMOSTASIS

TOOLS: None

PARTICIPANT:

STEP NO	STEPS
1	Make sure you are safe and that you are in a safe environment.
2	If possible, put on gloves.
3	Have the patient sit in a comfortable place or lie down.
4	Place a gauze or clean cloth on the bleeding area and apply pressure with your hand.
5	Wrap the are you are applying pressure on with bandage.
6	If the bleeding is on the arm or leg, lift the limb above the level of the heart.
7	Prepare a triangular bandage for bleeding areas on the head.
8	Place a clean cloth on the bleeding area.
9	Fold a big piece of cloth into a triangle and wrap it on the gauze.
10	After wrapping the cloth around the head, tie the free ends of the triangle into a knot and position it on the wound.
11	Check for any additional complaints and transfer the patient.

LEARNING GUIDE

DRESSING WOUNDS IN SKIN INJURIES

TOOLS: Intramuscular injection simulator, forearm mannikin for suturing, saline, wound dressing set, antiseptic solution, adhesive bandage

PARTICIPANT:

Note: In this exercise, we will start from step 12 and learn how to dress a wound.

STEP NO	STEPS
1	Prepare the supplies.
2	Wash your hands.
3	Put on gloves.
4	Cut off the tube of the saline bag that is used to attach serum set with scissors. If you are using aa bottle of saline, remove its cap.
5	Compress the remaining tube from the outside with two fingers.
6	Turn bag of saline upside down.
7	Direct the tip of the bag that you are pressing on towards the wound.
8	Hold the tip 5 cm away from the wound without them coming into contact.
9	Loosen your grip on the tube and let some saline flow onto wound.
10	Clean wound thoroughly by irrigating it completely with the saline.
11	Continue cleaning wound until saline bag is empty.
12	Check autoclave band on dressing set.
13	If there are black diagonal lines on autoclave band, open set from the outside, making sure not to touch the inside.
14	Put on sterile gloves.
15	Pick up clamp with your right hand and hold it with the distal phalanges of your 3rd and 4th fingers.
16	Pick up tissue forceps with your left hand and hold it as you would a pen.
17	Grasp gauze with forceps.
18	Fold gauze inside dressing set using the clamp and tissue forceps.
19	Continue holding the gauze with the forceps and grasp the gauze by the intersection of the folds with the clamp in your right hand.
20	Lock clamp and hold it so that the folds of the gauze face upwards.
21	Ask your assistant topour antiseptic solution on the gauze without contaminating it.
22	End the procedure when the gauze is thoroughly soaked.
23	Wipe the surroundings of the wound with circular motions without touching the inside.
24	Clean edges of wound with circular motions from center to periphery.

25	Throw away gauze.
26	Pick up another gauze with tissue forceps and unfold with the help of clamp.
27	Drape gauze onto wound.
28	Drape one more gauze in the same way.
29	Cut a piece of adhesive bandage that is %50 longer than the gauze and appropriately wide.
30	Stick one half of the gauze onto skin with the adhesive bandage you prepared.
31	Stick other half of gauze with another piece of bandage with the same size.
32	Throw away waste in appropriate waste bins.
33	Wash your hands.
34	Inform the patient.

PHASE 2

LEARNING GUIDE

STARTING AN INTRAVENOUS LINE

TOOLS: Gloves, tourniquet, i.v. cannula, cotton ball soaked with disinfectant solution, adhesive bandage for fixation

PARTICIPANT:

STEP NO	STEPS
1	Wash and dry your hands. Put on your gloves.
2	Tie the tourniquet 10-15 cm above the elbow.
3	Clean the area you will insert the i.v. line with tampon soaked in antiseptic solution in a circular motion or starting from the top wiping downwards.
4	Pull down the skin right below the area you will be using with the thumb of your passive hand.
5	With the needle slant facing upwards, insert the cannula 0,5-1 cm below the vein with a 30-45 degree angle, staying parallel to the vein.
6	After penetrating skin, advance the cannula parallel to the skin for 3-5 mm and enter the vein with a 15 degree angle.
7	Advance the cannula for 2-3 mm inside the vein and pull the needle slightly to see if there is blood in the "flash back" chamber.
8	If there is blood in the chamber, you have entered the vein; if not, repeat the procedure starting from step 5.
9	While pulling the needle towards yourself, advance the polyurethane cannula into the vein.
10	Remove the tourniquet.
11	After the i.v. cannula has been placed, fix it with adhesive bandage.
12	If fluids are to be given, connect the serum set to the cannula; if not, close the cap of the cannula. (When tip of the cannula is open, do not forget to compress the vein with your thumb to stop blood flow)
13	Do not forget to write the date on the adhesive bandage.
14	Throw away waste into appropriate waste bags. Remove your gloves and wash your hands.

LEARNING GUIDE

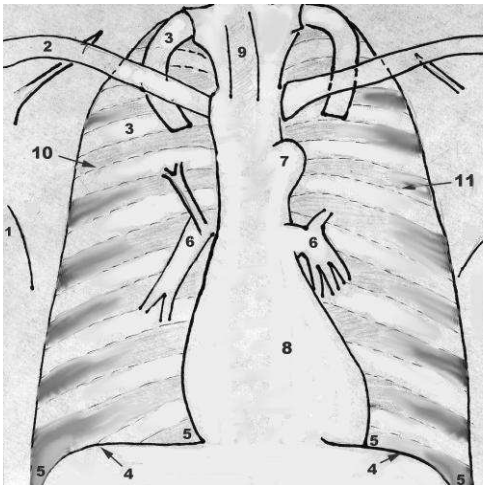
READING POSTERO-ANTERIOR CHEST X-RAYS

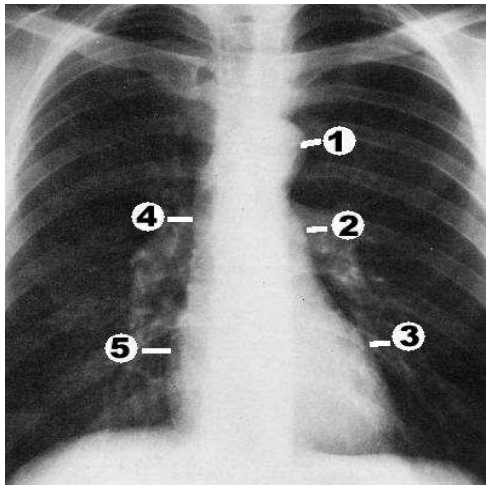
TOOLS: Negatoscope, postero-anterior chest X-ray

PARTICIPANT:

A postero-anterior (P-A) chest X-ray is one of the most commonly ordered radiological tests in medical practice. They provide us with information about the lungs, heart, great vessels, bony structures of the chest wall and also partially about the surrounding soft tissue.
X-rays are fundamental to many radiological tests. The X-rays coming from the X-ray tube passes through the tissue to be evaluated and produce a photographic effect on film. Structures that let light through (*e.g., structures containing air; lungs and trachea*) will be **radiolucent**, meaning black or blackish gray on film. Structures that absorb the X-rays, preventing it from reaching the film (*e.g. heart or bony structures*) will be **radioopaque**, meaning white or grayish white on film. Structures with an intermediate capacity to absorb X-rays will show up as gray tones on film.

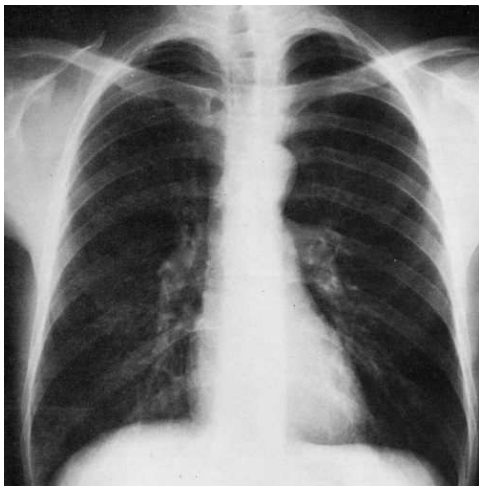
Basic structures seen in a radiograph are labeled below.





The heart and great vessels are visible on a P-A chest X-ray. When reading an X-ray, the visible structures should be assessed in a specific sequence and the heart and great vessels are evaluated.

In this exercise, first observe the structures in the order listed in the steps in the 1st part of your guide. Afterwards, answer the questions in the 2nd part.



STEP NO	STEPS
1	Turn negatoscope on.
2	Determine which side of the X-ray is the right side. (Use the indicator on the X-ray, heart shadow, or gas in the gastric fundus for reference)
3	Hang the X-ray on the negatoscope so the right side is on your left.
4	Evaluate the anatomical structures in the following order:
	1. Axillary fold.
	2. Clavicle.
	3. Ribs.
	4. Diaphragm.
	5. Sinuses.
	6. Pulmonary vessels.
	7. Aortic arch.
	8. Heart.
	9. Trachea.
	10. Right lung.
	11. Left lung.
5	Evaluate cardiac structures in the following order:
	1. Aortic arch.
	2. Pulmonary conus.
	3. Left ventricle.
	4. Superior vena cava.
	5. Right atrium.
6	Remove the X-ray from negatoscope.
7	Turn off the negatoscope.

What are the radiolucent structures seen in the X-ray?
Paired structures, e.g. right and left lungs, can be seen in the radiograph. What are the single structures?

LEARNING GUIDE

INSERTING A URINARY CATHETER (FEMALE PATIENT)

TOOLS: Female urethral catheter mannikin, urethral (Foley) catheter, syringe, saline, antiseptic solution, sterile gel, tampon, gloves

PARTICIPANT:

STEP NO	STEPS
1	Wash and dry your hands. Prepare supplies. Put on sterile gloves.
2	Clean the area between the perineum and labia majora with gauze soaked in antiseptic solution from front to back. Wipe at least 3 times.
3	Apply sterile gel or vaseline on a gauze and wipe the tip of the Foley catheter with it.
4	Separate the labia majora with the 1st and 2nd fingers of your passive hand while holding the tip of the catheter with your dominant hand. Locate the entrance of the urethra and slowly advance the catheter into it. Keep the catheter parallel to the long axis of the body.
5	Look for urine coming out of the other end of the catheter.
6	After seeing urine flow, advance catheter for at least 4 cm more.
7	Attach urine bag.
8	Inject an appropriate amount of saline into balloon.
9	Slowly pull the catheter to feel the balloon settle at the neck of the bladder; then push the catheter back in 1-2 cm.
10	Hang the urine bag below the level of the bladder. Gather your supplies. Throw away waste into appropriate waste bags. Wash your hands.

LEARNING GUIDE

INSERTING URINARY CATHETER (MALE PATIENT)

TOOLS: Male urethral catheter mannikin, urethral (Foley) catheter, syringe, saline, antiseptic solution, sterile gel, tampon, gloves

PARTICIPANT:

STEP NO	STEPS
1	Wash and dry your hands. Prepare supplies. Put on sterile gloves.
2	Clean the penis starting from the external urethral meatus in a circular motion with gauze soaked in antiseptic solution. Repeat at least 3 times.
3	Apply sterile gel or vaseline on a gauze and wipe the tip of the Foley catheter with it.
4	Hold the penis with your passive hand while holding the tip of the catheter with your dominant hand and slowly advance the catheter into urethra. Make sure the catheter is parallel to the long axis of the penis.
5	When the tip of the catheter has reached the perineum, place the penis down and continue advancing the catheter parallel to the long axis of the body. Continue advancing the catheter upwards, parallel to the long axis of the body.
6	Look for urine coming out of the other end of the catheter
7	After seeing urine flow, advance catheter for at least 4 cm more.
8	Attach urine bag.
9	Inject an appropriate amount of saline into balloon.
10	Slowly pull the catheter to feel the balloon settle at the neck of the bladder; then push the catheter back in 1-2 cm.
11	Hang the urine bag below the level of the bladder. Gather your supplies. Throw away waste into appropriate waste bags. Wash your hands.

PHASE 3

LEARNING GUIDE

EXAMINATION OF MOUTH AND THROAT

TOOLS: Light source, head mirror, tongue depressor

PARTICIPANT:

After completing this exercise, the participant should be able to be comfortable carrying out the steps listed below in the correct sequence and should be able to conduct a mouth and throat examination.

STEP NO	STEPS
1	Inform the patient about the procedure and obtain consent from him/her or a proxy.
2	Wash and dry your hands.
3	Conduct the examiation with the patient sitting on the examination chair.
4	Stand on the right side of the patient.
5	Hold a light to the area you are going to examine.
6	With the help of a tongue depressor, assess the following: • Lips • Gums • Gingiva • Stenon canal • Floor of the mouth • Warthon canal • Tongue • Hard and soft palate • Uvula
7	With the tongue inside the mouth, press on its anterior 2/3rds and evaluate the tonsils and oropharynx.
8	Throw tongue depressor in used tool tub.
9	Turn off light source.
10	Inform patient about your findings.
11	Throw away waste in appropriate bins and wash your hands.

LEARNING GUIDE

INSERTING A NASOGASTRIC CATHETER

TOOLS: Nasogastric catheter insertion mannikin, nasogastric catheter, syringe, liquid vaseline, gloves

PARTICIPANT:

STEP NO	STEPS
1	Wash and dry your hands. Put on examination gloves.
2	**Measurement:** Bring the tip of the cateter to the level of the patient's nostrils. With your other hand, extend the catheter to the patient's ear lobes. While holding the catheter at the ear lobes, let go of the end at the nostrils. With your free hand, extend the catheter to the side of the patient's neck, anterior chest, and then to midline at stomach. Hold the catheter by the part which is at xyphoid level. The distance from the nostrils to the ear lobes to the xyphoid process is the length necessary to reach the stomach from the nose.
3	Wipe the measured length of the catheter with a liquid vaseline or other lubricant.
4	Slowly advance the catheter through one nostril.
5	Tell the patient to swallow when he/she feels the catheter in their throat.
6	Slowly continue advancing the catheter up to the measured length.
7	When the marked length is at the level of the nostrils, have someone hold the catheter in place.
8	Attach an appropriate syringe to the tip of the catheter and check to see if gastric fluid is drawn.
9	If you draw fluid, slowly aspirate it until you have emptied all of it.
10	When the stomach is emptied, draw 5 ml of air into syringe.
11	Place your stethoscope on the patient's epigastrium and listen. While you are listening, slowly inject the air in the syringe. If you hear the sound of air passing through liquid, you have reached the stomach. Aspirate the stomach again to empty the air you have injected.
12	Fixate the catheter with adhesive bandage, making sure not to compress the nasal septum and wings.
13	Attach an appropriate extension to the end of the catheter, and attach this to a bottle placed below the level of the patient so that the fluid flows freely.
14	Throw all waste into appropriate waste bags and wash your hands.

LEARNING GUIDE

ANORECTAL EXAMINATION

TOOLS: Male pelvis simulator

PARTICIPANT:

STEP NO	STEPS
1	Wash and dry your hands; put on examination gloves.
2	Apply some vaseline or other lubricant on your 2nd finger.
3	Stand **next to** the patient. (Do not stand in front of the anus)
4	Pull buttocks apart and assess anal entrance and its surroundings.
5	Check for lesions in perianal area and the visible part of the anal canal.
6	Apply lubricant/anesthetic cream on perianal area.
7	Very slowly and carefully advance your 2nd finger into anus, as if pressing a button.
8	If the patient clenches, tell him to relax, and that you will not hurt him.
9	Do not turn your hand right-left while advancing your finger.
10	When you advanced your finger as far as possible, examine the anal canal thoroughly with careful motions. Your finger will be free from the pressure of the anal sphincter when you have reached the rectum.
11	If you feel a mass, check its relation to the anal canal.
12	If there is a mass, evaluate its size, quadrant and texture.
13	If there is a mass on the sides or front of the anorectum, conduct a bimanual examination by palpating the perineum with your other hand simultaneously (or through vagina in women)
14	Slowly pull your finger out, making sure to be gentle.
15	Throw your gloves into appropriate waste bin.
16	Wash your hands.
17	Inform patient about your findings.
18	Write down your findings and schematize them (date, name, special forms if applicable).

LEARNING GUIDE

MALE GENITAL EXAMINATION

TOOLS: Male pelvis simulator, examination gloves

PARTICIPANT:

STEP NO	STEPS
1	Put on examination gloves.
2	Ask the patient to take all of his clothes off, including underwear, and have him stand facing you or lie on his back.
3	First, inspect the external genital organs.
4	Start external genital organs examination with the penis.
5	Evaluate the location and opening of the external urethral meatus.
6	Check for urethral discharge.
7	Proceed to scrotal examination and evaluate scrotal skin.
8	Examine testes. • Location; texture; presence of tenderness, pain or mass • Check for hydrocele or varicocele, • Evaluate vas deferens
9	Complete examination with a digital rectal examination depending on the patient's age and preliminary diagnosis.
10	Take off your gloves and wash your hands.

LEARNING GUIDE

BREAST EXAMINATION

TOOLS: Breast examination mannikin and breast palpation simulator

PARTICIPANT:

STEP NO	STEPS
1	Ask the patient to take off clothes above waist and make sure the room is well-lighted.
2	Wash your hands.
3	Have the patient sit on the examination table with her facing you.
	Inspection
4	Tell the patient to let her arms hang freely on her sides
5	Evaluate each breast and look for asymmetry, difference in size, retraction, nipple inversion, edema, ulceration and redness.
6	Have the patient put her palms on her waist and apply pressure to contract her pectoral muscles.
7	Repeat step 5.
8	Tell patient to lift both arms above her head.
9	Repeat step 5.
	Palpation of axilla
10	Tell the patient to let her arms hang freely on her sides.
11	Hold the patient's elbow with your left hand.
12	Slightly lift the elbow you are holding and let it rest freely on your arm.
13	Carefully palpate the axilla with the fingers of your right hand.
14	Repeat steps 10, 11, 12, and 13 for the opposite axilla.
	Palpation of supraclavicular area
15	Tell the patient to let her arms hang freely on her sides.
16	Simultaneously palpate right supraclavicular area with your left hand and vice versa.
	Palpation
17	Have the patient lie on the examination table.
18	Place a pillow under the patient's back on the side of the breast you are going to examine.
19	Tell the patient to place her arm under her head on the side you are going to examine.
20	Make small circular motions with the palmar surfaces of your 2nd, 3rd and 4th fingers of your right hand starting from the areola.
21	Apply different amounts of pressure on each area ou are examining.
22	Make bigger circles and repeat steps 20 and 21.
23	Evaluate the breast tissue extending towards the axilla, the tail.
24	Write down the size, shape, texture and location of any masses you palpate.

25	Repeat steps 18, 19, 20, 21, 22, 23, and 24 on the opposite breast.
26	Have the patient palpate normal breast tissue.
27	Inform the patient about self-examination.
28	Write down your examination findings.
29	Wash your hands.

LEARNING GUIDE

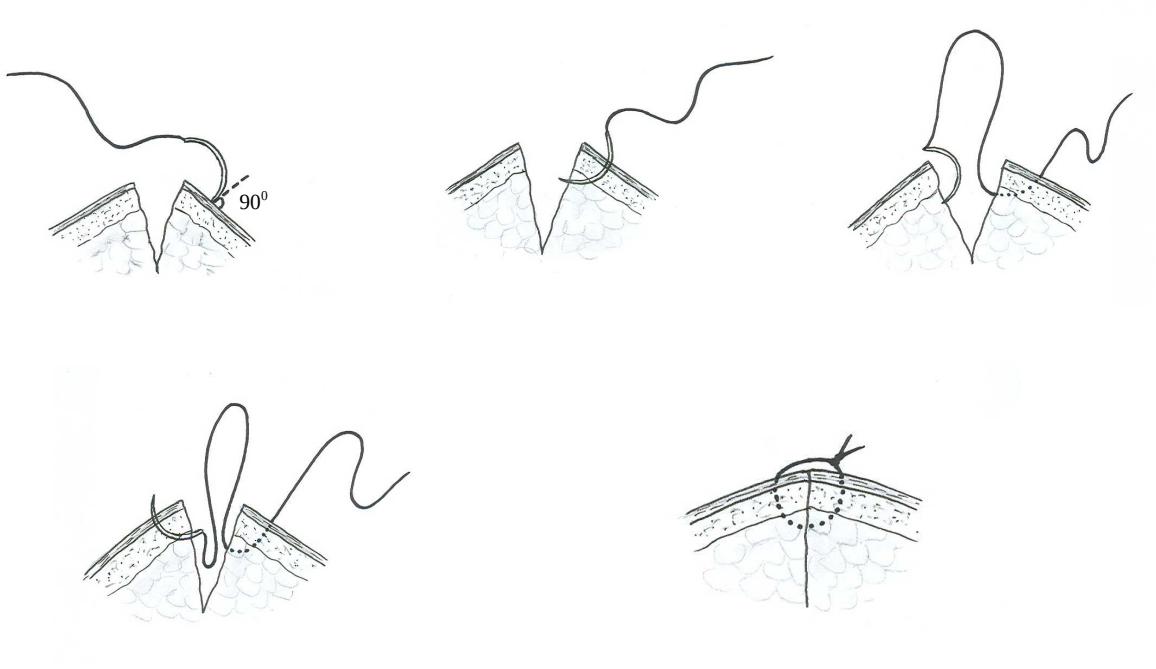
SUTURING

TOOLS: Suturing set, wound suturing cushion, wound suturing cushion holder, suturing supplies, needle holder, tissue forceps, scissors, gloves

PARTICIPANT:

STEP NO	STEPS
1	Prepare supplies. Wash and dry your hands. *(Skip this step in exercise.)* Put on sterile gloves. *(Skip this step in exercise.)* Clean wound with antiseptic solution. *(Skip this step in exercise.)*
2	Hold needle by posterior 1/3rd with the last 2 mm of the needle holder.
3	Determine the point you will insert the needle, which should be 2-4 mm away from the cut edge of the wound, and insert needle into skin with a 90 degree angle to it. When the needle reaches the dermis, advance the needle with the help of its curvature towards the inside of the wound.
4	Hold the tip of the needle with the tissue forceps and release the needle from the needle holder. Grasp the needle from its posterior end with the needle holder and pull the needle away from the wound with a circular motion of the wrist, again with the help of the curvature of the needle. Hold the free end of the needle with the tissue forceps and grasp the needle with the needle holder once again as you did in step 2.
5	Insert the needle into the other cut edge of the wound with a 90 degree angle to the subcutaneous tissue, making sure that your entry point is at the same depth as the other edge. Using the curvature of the needle, advance the needle until it exits the skin with a 90 degree angle, making sure the distance of the exit point from the edge is the same as the opposite cut edge. Place both tips of tissue forceps on both sides of exit point. Push skin down while continuing to advance the needle . Grasp needle with tissue forceps. Release the needle from the needle holder.
6	Grasp the needle end that has exited the skin with the needle holder. Pull the needle out of the skin with a motion from the wrist using the curvature of the needle. Pull the suture until 2-3 cm are left at the point you began suturing. Release needle from needle holder. Place down your tissue forceps.
7	Hold the suture by the long end with the needle attached to it with your free hand and wrap it around the tip of the needle holder 2 times. Grasp the short free end on the opposite side of the wound and pull the long and short ends to opposite sides, making a crossing motion with your hands. Pull the knot that has formed away from the wound, so that it settles on the point you first entered with the needle. Pull the knot tight until the cut edges come together and slightly heap up on the sides (eversion). Release the free end of the suture from the needle holder.

8	Wrap the suture around the needle holder once in the opposite direction. Grasp the free end of the suture with the needle holder and pull the ends away from eachother in the opposite directions as the step before.
9	Repeat these steps until you have 3 or 4 knots.
10	Cut off the ends of the suture with the scissors so 5-7 mm remain.
11	Throw away used supplies into appropriate bins. Wash your hands.



Penset
Tissue forceps

Portegü
Needle holder

LEARNING GUIDE

EAR EXAMINATION

TOOLS: Ear examination simulator, otoscope

PARTICIPANT:

After completing this exercise, the participant should be able to be comfortable carrying out the steps listed below in the correct sequence and should be able to conduct an ear examination.

STEP NO	STEPS
1	Inform the patient about the procedure and obtain consent from him/her or a proxy.
2	Wash and dry your hands.
3	Stand on right side of patient.
4	Attach the appropriate speculum fro the patient to the otoscope.
5	Turn on the otoscope and adjust brightness.
6	Turn the patient's head to the right to examine the left ear, and vice versa.
7	Hold the otoscope in your dominant hand.
8	Evaluate the retroauricular area, auricle and lateral part of the external ear canal by holding the light of the otoscope on them.
9	With your passive hand, pull the auricle up and back in adults or down in infants.
10	Slowly place the speculum inside the external ear canal.
11	Evaluate the external ear canal.
12	Evaluate the manubrium of the malleus and the umbo.
13	Observe the light reflex
14	Observe the pars tensa and pars flaccida.
15	Pull out the speculum and release the auricle.
16	Remove the speculum from the otoscope.
17	Dispose of speculum in the used tool tub.
18	Turn off otoscope.
19	Inform patient about your examination findings.
20	Throw away waste in appropriate bins and wash your hands.

LEARNING GUIDE

REMOVING A FOREIGN OBJECT FROM EAR

TOOLS: Ear examination simulator, otoscope, light source, head mirror, ear speculum, ear curette, ear forceps

PARTICIPANT:

After completing this exercise, the participant should be able to be comfortable carrying out the steps listed below in the correct sequence and should be able to remove a foreign object without damaging the external ear canal or tympanic membrane.

STEP NO	STEPS
1	Inform the patient about the procedure and obtain consent from him/her or a proxy.
2	Wash and dry your hands.
3	Stand on right side of patient.
4	Attach the appropriate speculum fro the patient to the otoscope.
5	Turn on the otoscope and adjust brightness.
6	Turn the patient's head to the right to examine the left ear, and vice versa.
7	Hold the otoscope in your dominant hand.
8	Evaluate the retroauricular area, auricle and lateral part of the external ear canal by holding the light of the otoscope on them.
9	With your passive hand, pull the auricle up and back in adults or down in infants.
10	Slowly place the speculum inside the external ear canal.
11	Evaluate the external ear canal.
12	Assess the surface of the foreign object (round-smooth/irregular/sharp)
13	Using the light of an otoscope or a speculum and head mirror, pass behind the foreign object with an ear curette and push it forward or use an ear forceps to pull it out.
14	Assess the external ear canal once more.
15	Observe the light reflex
16	Observe the pars tensa and pars flaccida.
17	Pull out the speculum and release the auricle.
18	Remove the speculum from the otoscope.
19	Dispose of speculum in the used tool tub.
20	Turn off otoscope.
21	Inform patient about your examination findings.
22	Throw away waste in appropriate bins and wash your hands.

LEARNING GUIDE

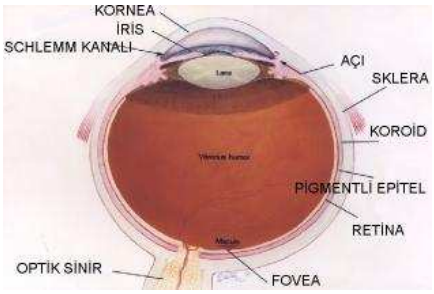
FUNDOSCOPIC EXAMINATION

TOOLS: Ophthalmoscope, fundoscopic examiantion simulator

PARTICIPANT:

What is ophthalmoscopy?
Opthalmoscopy is the visualizing of the area behind the lens to evaluate the fundus of the eye. It is used to evaluate the retina, macula and other structures in the posterior part of the eye.

How is it done?
With a hand-held ophthalmoscope or biomicroscope, the lens is rendered ineffective and the fundus is visualized. Eye drops that dilate the pupils and prevent them from constricting with light can be used for a more detailed evaluation.



STEP NO	STEPS
1	Have the patient sit down comfortably and make sure the light in the room is dim.
2	Tell the patient to look straight ahead.
3	Adjust the ophthalmoscope to overcome any refractory errors you have until you can see clearly.
4	Adjust the light to the large, round, white light.
5	Stand approximately 30 cm away from the patient.
6	To assess the right eye, hold the ophthalmoscope in your right hand.
7	Look into the patient's right eye with your right eye.
8	Direct the light of the ophthalmoscope towards the pupil.
9	You may hold the head or shoulder of the patient with your left hand to better control your movements.
10	Approach the patient with a 15 degree angle from the temporal side.
11	When you start seeing the retinal blood vessels, adjust the sharpness of the ophthalmoscope.
12	Follow the vessels to the optic disc.
13	Evaluate the macula and posterior pole of the eye.
14	To assess the left eye, hold the ophthalmoscope in your left hand.
15	Look into the patient's left eye with your left eye.
16	Repeat steps 8-13 with the left eye.

LEARNING GUIDE

EXAMINATION OF EYE MOVEMENTS

TOOLS: None

PARTICIPANT:

What are eye movements?
3 different cranial nerves innervate the muscles that enable our eyes to move. In the table below; muscles of the eye and their respective nerves and actions are listed.

Nerve	Muscle	Action
6th nerve	Lateral rectus	Turns eye laterally
4th nerve	Superior oblique	Turns eye medially and down
3rd nerve	Other eye muscles	Other actions

How do we evaluate eye muscles?
We expect both eyes to move symmetrically. If the movement of an eye is impaired, it means that the muscle moving that eye in that direction or the nerve innervating it is damaged. For example, if the right eye does not fully turn to the right, there should be a problem in the right lateral rectus or the 6th cranial nerve which innervates this muscle.

STEP NO	STEPS
1	Have the patient sit so that the light source is behind him/her.
2	Stand facing the patient.
3	Pick up an object that the patient can see easily. (Pen, keys, etc.)
4	Tell the patient to look at the object and to follow the object with only his/her eyes.
5	Hold the patient's forehead to prevent him/her from turning their head while following the object.
6	Move the object from the middle to the right.
7	Observe the movement of both eyes.
8	Bring the object back to the middle.
9	Move the object from the middle to the left.
10	Observe the movement of both eyes.
11	Bring the object back to the middle.
12	Repeat steps 6-8, this time moving the object upwards and to the right.
13	Repeat steps 6-7, this time moving the object downwards and to the right.
14	Repeat steps 6-7, this time moving the object upwards and to the left.
15	Repeat steps 6-7, this time moving the object downwards and to the left.

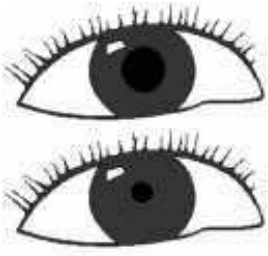
LEARNING GUIDE

EXAMINATION OF PUPILLARY LIGHT REFLEX

TOOLS: Light source

PARTICIPANT:

What is the pupillary reflex?
When excessive light enters the pupils, they react by constricting. This is called the pupillary light reflex; the afferent limb is the 2nd cranial (optic) nerve and the efferent limb is the 3rd cranial (oculomotor) nerve. When excessive light enters one pupil, the opposite pupil also reacts by constricting (indirect pupillary reflex).



How is it interpreted?
If the pupillary reflex is positive bilaterally when a light is shined into one eye, it indicates that the ipsilateral 2nd and 3rd and contralateral 3rd cranial nerves are intact. If the pupillary reflex is negative bilaterally, it indicates either a lesion in the ipsilateral 2nd nerve or in both 3rd nerves. If one pupil constricts but the other does not, this indicates a problem with the 3rd nerve on the side that does not constrict.

STEP NO	STEPS
1	Tell the patient to look straight ahead and stand at a 30 cm distance.
2	Shine the light into his/her right eye.
3	Check to see if the right pupil constricts.
4	Check if the left pupil also constricts.
5	Wait for the pupils to dilate.
6	Hold the light into the left eye.
7	Check to see if the left pupil constricts.
8	Check if the right pupil also constricts.

PHASE 4

LEARNING GUIDE

GYNECOLOGICAL EXAMINATION AND APPLYING A SPECULUM

TOOLS: Pelvis model, light source, gloves, speculum

PARTICIPANT:

STEP NO	STEPS
1	Inform the patient about the procedure and obtain permission for pelvic examination.
2	Ask patient to urinate if he/she hasn't done so recently.
3	Ask the patient to prepare for the exam and have them lie in lithotomy position.
4	Check the light source.
5	Put on gloves.
6	Let the patient know what you are going to do and do not startle him/her.
7	Inspect the external genital organs. • Labia majora, labia minora, clitoris, perineal area ve mons pubis • Check for symmetry.
8	Pull the labia apart with your thumb and 2nd finger and assess the vestibulum, vaginal and urethral orifices.
9	Superficially palpate the vulva, especially the Bartholin glands.
10	Choose an appropriate speculum.
11	Make sure the speculum is not too warm or too cold.
12	Make sure the valves of the speculum are closed.
13	Tell patient to relax and lightly do a Valsalva maneuver.
14	Hold the speculum in your active hand and separate the labia with your other hand.
18	Hold the speculum oblique to the vaginal introitus and push it downwards with a 45 degree angle while rotating it clockwise.
20	Assess the vaginal canal while advancing the speculum.
21	After assessing the anterior and posterior fornices and visualizing the cervix, fixate the speculum so that the valves are in the anterior and posterior fornices.
22	Carefully evaluate the cervix.
23	If needed, take a sample for discharge and a smear.
24	Loosen the speculum, turn it counterclockwise and pull it out, keeping the long edges of the valves perpendicular to the vagina.
25	Inform the patient before attempting the bimanual examination.
26	Tell patient to relax and slowly advance the 2nd and 3rd fingers of your right hand into the vagina (wear a glove with lubricant on it).

27	Place your left hand on the abdomen with fingers together and lightly flexed; press on abdomen with your palm.
28	Palpate vaginal walls, fornices, cervix and cervical orifice.
29	Move the cervix and check for cervical motion tenderness.
30	Press on the abdomen with your left hand while your other hand pushes the cervix and the body of the uterus upwards.
31	Determine position, size, texture, contours, and mobility of uterus and check if patient reports tenderness.
32	Turn your fingers in the vagina so that your palm faces upwards and place them in the right lateral fornix; with your left hand, press on those fingers from the outside to assess adnexa.
33	Assess mobility and presence of tenderness or mass by palpating adnexa.
34	Repeat on the opposite side.
35	Gently pull your fingers out of the vagina to end the procedure.
36	Take off your gloves and throw them in the medical waste bin.
37	Inform the patient that the examination is over.
38	Wash your hands.

LEARNING GUIDE

OBTAINING A VAGINAL SMEAR

TOOLS: Pelvis model, examination gloves, speculum, sterile gauze, clamp, smear brush, microscope slide, fixative containing alcohol (hair spray), Pathology order form

PARTICIPANT:

STEP NO	STEPS
1	After informing the patient about the procedure, put on gloves.
2	Insert speculum as described above in the gynecological examination exercise.
3	Visualize the vaginal portion of the cervix completely.
4	If there is a mucus plug or thick discharge in the external cervical os that obscures its view, remove it with a clamp and sterile gauze making sure not to cause any bleeding.
5	Take the smear brush and advance it 2 cm into the external cervical os.
6	Turn it 180 degrees clockwise and counterclockwise inside cervical canal.
7	Pull out smear brush; pick up slide.
8	Rotate the brush from one end of slide to the other to produce a thin layer. Make sure not to apply too much pressure with the brush.
9	Immediately hold the slide at a 45 degree angle and fixate with fixative containing alcohol from a 30 cm distance.
10	Stick both edges of the slide onto the pathology form that you have filled out with patient data (age, menstrual status, hormone/medication use, etc.) using tape and send it to the Medical Pathology lab.

LEARNING GUIDE

VAGINAL DELIVERY

TOOLS: Vaginal birth model, gloves.

PARTICIPANT:

STEP NO	STEPS
1	Wash your hands and arms up to the elbows appropriately and dry them.
2	Put on sterile clothes and gloves.
3	When delivering the head, take a sterile drape in your right hand and hold it by the coccyx to support the chin when lifting it up from the perineum. WIth your other hand, apply pressure to ensure that the fetal head is delivered slowly. This is called the **Ritgen maneuver**.
4	Deliver the fetal head.
5	After the head is delivered turn it towards the right or left leg and bring the fetal shoulders to the anterioposterior plane in the pelvis. This movement of the head is called **external rotation**.
6	Hold the head between your hands and apply traction downwards to deliver the anterior shoulder from under the pelvic arch.
7	Apply traction upwards to deliver the posterior shoulder.
8	The rest of the fetal body usually delivers spontaneously. However, in some situations, traction may be needed. Traction should be applied in the direction of the fetal long axis and pressure should also be applied to uterine fundus to assist delivery. Traction should not be applied to the shoulders as this can lead to brachial plexus injuries.
9	As soon as the fetus is delivered, wipe its face by applying pressure on its chin and aspirate its mouth and nose.
10	Apply two clamps to umbilical cord and then cut it. The fetus should not be above the level of the introitus during this procedure.
11	Hand baby to team and wait for delivery of placenta. When the placenta separates, there will be light bleeding and the umbilical cord will extend downwards. Deliver placenta with light traction and fundal massage. Make sure not to apply excessive traction.
12	Check the placenta to see if it is intact.
13	Check cervix, vagina and perineum and apply sutures if necessary.
14	Wash your hands.

LEARNING GUIDE

MEASURING BLOOD GLUCOSE WITH GLUCOMETER

TOOLS: Glucometer, test strip, lancet

PARTICIPANT:

STEP NO	STEPS
1	Wash your hands.
2	Take out a test strip from its box and immediately close box.
3	Lightly insert the test strip into glucometer without bending it, making sure that it is completely settled. The glucometer will automatically turn on when you insert the strip.
4	Wipe the finger you will pierce with a tampon soaked in antiseptic solution and then with a dry tampon.
5	Pierce the side of the finger with the lancet.
6	Massage the finger from proximal to distal until you obtain a drop of blood.
7	Quickly place the drop of blood on the strip.
8	Apply a dry tampon on the finger to stop the bleeding.
9	The result will automatically display on the glucometer. Write down the value.
10	Remove the test strip. The glucometer will automatically turn off after you remove it.
11	Throw test strip ino medical waste bin.

LEARNING GUIDE

URINE MICROSCOPY

TOOLS: Dipstick, centrifuge tubes, centrifuge, microscopic slide and coverglass, microscope, forms to record findings

PARTICIPANT:

STEP NO	STEPS
1	Ask the patient to clean his/her external genital area and to take a midstream sample of their first or second urine in the morning into a disposable urine cup. (The urine sample should be evaluated in less than 2 hours)
2	Put on gloves.
3	Put dipstick inside urine and take it out.
4	Obtain qualitative values by comparing colors indicated for bilirubin, urobilinogen, ketones, glucose, protein, nitrite, pH, density, and leukocytes; write them on the form.
5	Obtain 10 mL of urine and put into centrifuge tube.
6	Put 10 mL of water in a separate centrifuge tube.
7	Place tubes into centrifuge facing eachother.
8	Adjust centrifuge to 3000 cycles and keep on for 3 minutes.
9	Pour out 9.5 mL of supernatant urine and slowly shake the remaining 0.5mL.
10	Put one drop (about 50 mcL) of resuspended urine on microscope slide.
11	Place coverglass over the drop.
12	Observe through microscope with x40 magnification.
13	Record cellular elements (leukocytes, erythrocytes, bateria, etc.), casts, crystals, etc. on forms.
14	Dispose of urine in urine cup and centrifuge tubes and throw cup and tubes away.
15	Throw away slide and coverglass.
16	Clean microscope and turn its light off.
17	Take off gloves and wash your hands.

URINE EVALUATION FORM

Patient Name:

Date:

Color:

PH:

Density or osmolality:

Hemoglobin (Dipstick)

Leukocyte (Dipstick)

Glucose (Dipstick)

Ketones (Dipstick)

Nitrite (Dipstick)

Protein (Dipstick)

Bilirubin (Dipstick)

Urobilinogen (Dipstick)

Microscopy: erythrocytes (including morphology), leukocytes, epithelial cells, casts (including types), lipids, crystals, bacteria

LEARNING GUIDE

PERIPHERAL BLOOD SMEAR

TOOLS: Antiseptic solution, tampon, gloves, tourniquet, syringe, microscope slide, coverglass, adult arm simulator

PARTICIPANT:

STEP NO	STEPS
1	Wash and dry your hands.
2	Put on examination gloves.
3	Prepare supplies. Make sure slide and coverglass are clean.
4	Locate the vein you will use.
5	Tie the tourniquet 10-15 cm above the area you would like to use and make sure you do not disrupt the arterial circulation.
6	Clean the area with a tampon soaked in antiseptic solution starting from above and wiping downwards.
7	Remove cap of the syringe.
8	Stabilize the arm with your passive hand and stretch the skin underneath the area you will enter downwards with your thumb.
9	Hold the needle with its slant facing upwards (sharp edge close to skin) and insert with a 35 degree angle.
10	After penetrating skin, advance the needle parallel to skin for 3-5 mm and enter the vein.
11	Advance the needle 2-3 mm inside the vein.
12	Hold the the syringe and needle in place without moving them.
13	Pull the piston with your passive hand and obtain 0.5-1 mL of blood.
14	Remove the tourniquet with your passive hand.
15	Press on the area with a dry tampon and quickly pull out the needle, maintaining the same angle.
16	Continue compressing with dry tampon to prevent bleeding.
17	Apply special bandage on area.
18	Hold the syringe perpendicular to the ground and lightly tap it to move bubbles upward.
19	Lightly push the piston to remove the air bubbles.
20	Put one drop of blood on slide or coverglass.
21	Slowly place other coverglass on drop of blood. If you are using a microscope slide, place a second microscope slide at a 45 degree angle to smear the blood.
22	Observe the blood producing a thin smear with the pressure of the slide above it.
23	Rapidly pull the two slides apart, keeping them parallel to the ground and with the blood smear facing upwards.
24	Let the slides dry in room temperature with the smears facing upwards.
25	Stain both slides or coverglasses with Wright stain.
26	Place the stained coverglasses on slides with their stained side facing the slide.
27	Put one drop of immersion oil on slide.

28	Place slides on microscope with their oily side facing up.
29	Observe both slides on microscope with x100 magnification.
30	Throw syringe in appropriate bin.
31	Throw other supplies in medical waste bin.
32	Take off gloves and throw them in medical waste bin.
33	Wash and dry your hands.

LEARNING GUIDE

INSERTING AIRWAY ON CHILD

TOOLS: Gloves, endotracheal tube, guide, laryngoscope and blades, bag valve mask (Ambu bag), mask, aspiration catheter, oxygen supply, scissors, adhesive bandage, stethoscope

PARTICIPANT:

Intubation: Indications are to ensure a safe airway, to prevent stomach distention, to ventilate with high pressures or to administer medication. Use the following formulas to calculate what size tube you will use and how far in cm to advance it:

- Under age 8, use cuffless tube. Tube length (internal diameter in mm) = age (years)/4 + 4
- Above age 8, use tubes with cuffs. Tube length (internal diameter in mm) = age(years)/4 + 3
- Distance to advance tube in cm = age (years)/2 + 12 or = internal diameter of tube (mm)x3
- Laryngoscope blades:
    - Newborn: size 0, 1; straight blade
    - Age 1: size 1, curved blade
    - Age 2–10: size 2, curved blade
    - > age 10: size 3, curved blade

STEP NO	STEPS
	Endotracheal Intubation
1	Prepare supplies and put on gloves.
2	Have the patient lie on his/her back and lightly extend the head.
3	Stabilize the head with your left hand.
4	Have someone give oxygen to the patient during the procedure.
5	Hold the laryngoscope in your left hand with your thumb facing yourself and 2nd, 3rd and 4th fingers facing away.
6	Gently insert the laryngoscope blade into patient's mouth and advance to vallecula.
7	Push the blade forward by extending your arm by the wrist; make sure not to aply pressure on upper jaw when doing this.
8	If the larynx is not visualized, have someone apply pressure onto cricoid cartilage from the outside. Aspirate any secretions.
9	After visualizing vocal cords, pick up an endotracheal tube with a guide placed in it and insert into right side of mouth.
10	Pass the vocal cords.
11	Hold the tube tightly with your right hand and gently pull out the laryngoscope with your left hand.
12	Remove guide from endotracheal tube.
13	Attach Ambu bag to tube and start ventilating patient. Be careful not to hyperventilate the patient.
14	You should complete this procedure within 20 seconds. If you exceed this limit, pause to ventilate the patient with positive pressure using an Ambu bag and mask.
15	After verifying the position of the tube, fixate it.
16	Throw away supplies in appropriate waste bins.
17	Remove gloves and wash your hands.

LEARNING GUIDE

OBTAINING BLOOD FOR ARTERIAL GAS ANALYSIS

TOOLS: Sterile surgical gloves, 2-5 mL syringe, purple (24 Gauge) or black (22 Gauge) tipped needle for radial artery, green (21 Gauge) tipped needle for femoral artery, 1 vial heparin, sterile gauze, antiseptic solution

PARTICIPANT:

STEP NO	STEPS
1	Make sure the patient does not have any obvious coagulopathy. Keep in mind that prolonged bleeding or thromboses from puncture site can be seen in patients with severe thrombocytopenia or bleeding diatheses.
2	Make sure that there is no active infection, thrombosis or cellulitis on puncture site.
3	Place patient's arm on examination table with palms facing forward. The patient's thumb should be in a dorsiflexed and abducted position and relaxed.
4	Check radial and ulnar pulses. Make sure the ulnar artery pulse is present.
5	Check circulation using the **Allen testi**. To do this, compress radial and ulnar arteries with your fingers and ask patient to close and open fingers a couple of times. The hand should become pale. Remove your finger from the ulnar artery. If circulation to the hand is restored and it turns back to red, this indicates that the ulnar artery supplies sufficient blood. This is a positive Allen test.
6	Wash your hands and put on gloves.
7	Draw 1 mL of heparin into syringe.
8	Without removing the needle from the vial, lightly shake the syringe 1-2 times to cover the inside with a layer of heparin. Inject the heparin back into vial. Remove syringe and replace cap, making sure to maintain sterility.
9	Apply antiseptic solution to gauze.
10	Clean the puncture site with antiseptic solution with a downward motion.
11	Palpate the radial artery once more.
12	Hold the syringe with the needle slant facing forward and upwards between your thumb and 2nd finger.
13	Stretch the skin with your passive hand and insert the needle at a 30 degree angle from distal to proximal.
14	Advance the needle along the artery; when you feel you entered it, see if blood fills into syringe. Because arterial blood pressure is high, you can see pulsations at the needle-syringe attachment site.
15	When you see the pulsation, pull the piston to obtain a blood sample.
16	If blood does not fill into syringe, pull it out and throw it away. Take a new syringe, apply heparin and repeat from step 11.
17	Apply pressure with a dry gauze for 5 minutes in normal patients and 10 minutes in patients with possible coagulopathy.
18	Check puncture site to see if bleeding has stopped.
19	Immediately empty air in syringe.
20	Stick the needle of the syringe into a bar of soap and take it out so that air cannot get into the syringe.
21	Send the blood sample to the lab within 30 minutes. If you need more time, put sample on ice.

PHASE 5

LEARNING GUIDE

THROAT CULTURE

TOOLS: Sterile swab, tongue depressor, light source

PARTICIPANT:

In this exercise, we will learn how to obtain a throat culture for the differential diagnosis of viral and bacterial nasopharyngeal infection and the appropriate technique to send it to the laboratory.

STEP NO	STEPS
1	Inform the patient about the procedure.
2	Have the patient look at the light source.
3	Tell patient to take deep breaths from the mouth.
4	Take the throat swab out of its tube with your dominant hand, making sure not to contaminate the cotton tip.
5	Press on the patient's tongue with the depressor while he/she is breathing.
6	Swipe the swab on the right tonsil, left tonsil and pharyngeal mucosa with your other hand.
7	If there is exudate/pseudomembrane on the tonsils, firmly rub the edges so that they are partially lifted and obtain samples.
8	Pull out the swab without touching the oral mucosa or saliva with it.
9	Carefully place the tip of the swab into tube.
10	Send the sample to the laboratory as soon as possible.
11	If you cannot send the sample immediately, or it must be transported a long distance, use a transport medium (e.g. Stuart).

LEARNING GUIDE

LUMBAR PUNCTION

TOOLS: LP needle, sterile gauze, antiseptic solution, sterile gloves, sterile drape with hole, 2 mL syringe, biochemistry tube, adhesive bandage

PARTICIPANT:

The diagnosis of central nervous system infection is made with a lumbar punction (LP) in which cerebrospinal fluid (CSF) samples are obtained. The CSF is analyzed for cell count, microbiology (culture, microscopy with or without staining, antigen/antibody testing, PCR) and biochemistry (protein, glucose, chloride).

STEP NO	STEPS
1	Inform patient about the procedure and obtain consent from him/her or a proxy.
2	Wash and dry your hands.
3	Position the patient appropriately.
4	Palpate the space between L3-L4 vertebrae and mark it.
5	Put on sterile gloves.
6	Starting from the marked site, wipe are in circular motions with antiseptic solution.
7	Cover the area with sterile drape so that the space between L3 and L4 is exposed.
8	Inject 1-2 cc local anesthetic to the space between L3 and L4 and surrounding area.
9	Hold the LP needle so that it is in your palm.
10	Insert the LP needle mperpendicular to the back through the interspinal space.
11	You will pass skin, subcutaneuos tissue, supraspinal ligament, ligamentum flavum, dura and arachnoid mater sequentially.
12	Pull out the guide and see if CSF flows out.
13	When CSF flows out, take guide out and insert manometer.
14	Observe CSF rising in manometer. The level it stops at s the CSF opening pressure; write this value down.
15	Put 1-2 mL of CSF into culture tube.
16	Put 1-2 mL into two other tubes.
17	Measure closing pressure with manometer and record the total amount of CSF obtained for samples.
18	Insert guide back into LP needle.
19	Press on puncture site with a sterile tampon and pull needle out.
20	Fixate sterile tampon tightly with adhesive bandage.
21	Gather supplies and throw in red waste bag.
22	Take off gloves and wash your hands.

LEARNING GUIDE

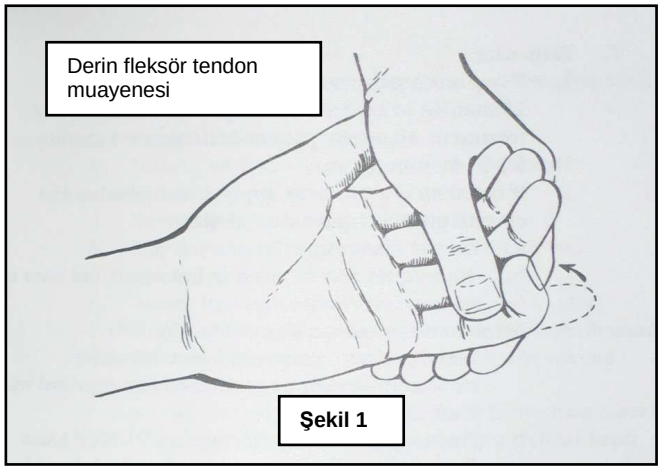
EXAMINATION OF THE HAND

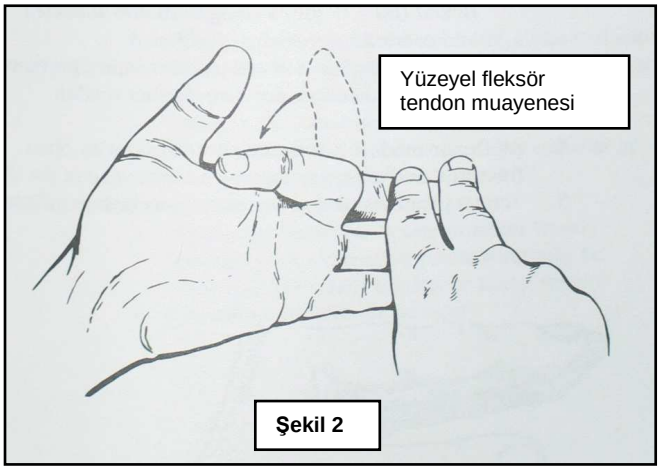
TOOLS: -

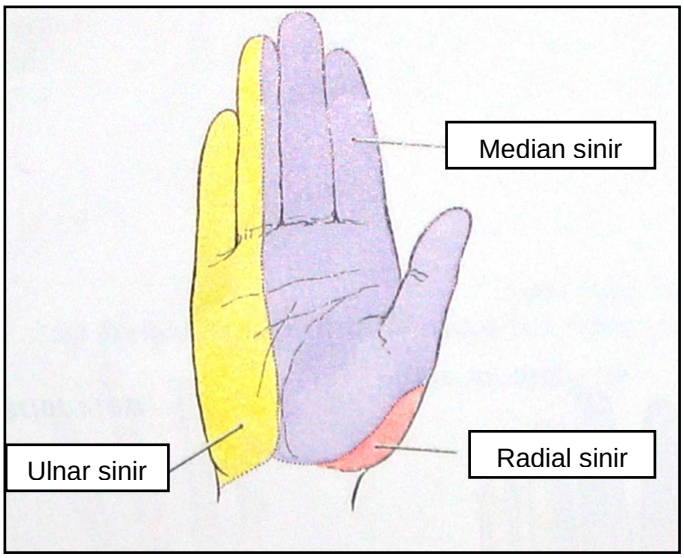
PARTICIPANT:

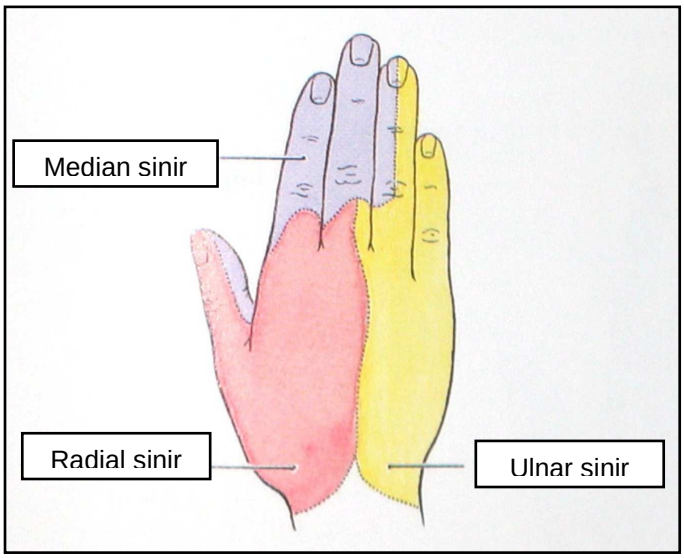
STEP NO	STEPS
1	Have the patient sit at a table with hands placed on it; his/her hands and forearms should be exposed. Sit across from the patient at the table.
2	Start the examination with inspection and do not forget to repeat each procedure for the opposite hand.
3	Evaluate the palm, dorsum, every finger and every nail and look for deformities.
4	Check for thenar or hypothenar atrophy.
5	If there is a wound on the hand, look at its shape (smooth edged, broken away, irregular). Check if the wound is a clean one or a dirty one.
6	Check if there is pain with palpation anywhere on the patient's hand.
	CIRCULATION
7	To evaluate the circulation, first check if there is capillary filling in each nail. To do this, support the patient's fingertip with your right index finger; press on the nail for 1-2 seconds with your thumb until the nail bed turns pale; and let go. Note how long it takes for the nail bed to turn red.
8	Then check the ulnar and radial pulses from the wrist.
	MOTOR EXAMINATION
9	Ask patient to make both hands into a fist and open them again. This will give you a general idea if there is any motor defect.
10	Passively flex and extend the small joints of the fingers. Check if there is any pain or restriction in movements.
11	Repeat procedure on wrist joint. Maximally flex, extend, deviate to ulnar/radial side.
12	Palpate each phalangeal, metacarpal and carpal bone to check for fractures. Look for pain or crepitations. Do the same procedure on ulna and radius from wrist to elbow.
13	Check if deep and superficial tendon function is intact in 2nd, 3rd, 4th and 5th fingers. • To test deep flexor tendons, ask the patient to put their hand on the table with palm facing upwards. Press on the proximal phalanx of the finger you are testing with one hand, while holding down the other fingers with your other hand. Ask the patient to move the distal phalanx of the finger you are testing (Fig. 1). This test indicates whether or not the deep flexor tendon of that finger is intact. • To test superficial tendons, tell patient to flex the finger you are testing while holding down the other fingers with both of your hands (Fig. 2). This test indicates whether or not the superficial flexor tendon of that finger is intact .
14	Evaluate the thumb separately. Tell the patient to flex the interphalangeal joint of their thumb. Then, have them abduct and adduct the joint. Finally, test the opposition and reposition functions of the joint.

16	After you complete the flexor tendon examination, proceed to extensor tendon examination. Have the patient put their hands on the table with palms facing down. • With the patient's hand on the table, have him/her extend each finger one after the other. You should not do a extensor tendon examination with the hands in the air. (The intrinsic muscles of the hand are rendered ineffective when placed on the table; this enables you to examine only the extensor tendons.)
17	To test muscle strength, ask patient to make a fist and resist you trying to open it. Then have them extend his/her fingers while you try to oppose it.
18	To test strength of intrinsic muscles, ask the patient to place hands on table with palms facing down. First, have him/her separate their fingers while you are trying to resist them. Then, have them try to bring fingers together while you are pulling them apart.
19	Similarly, ask them to flex and extend their wrist while you resist them. The motor examination not only tests the muscles and tendons but also the nerves that innervate the muscles.
	SENSORINEURAL EXAMINATION
20	Test the sensation on the ulnar, median and radial dermatomes of the hand with a cotton ball. Lightly touch the skin with the cotton and ask patient if he/she feels it or not. This will test light touch in each dermatome. The same procedure may be done with a sharp object to test pain sensation; you may also test cold-warm sensation, 2-point discrimination and vibration. (Dermatomes of the hand are depicted in Fig. 3.)
21	You can gently tap potential entrapment sites (e.g., carpal tunnel, cubital tunnel, Guyon tunnel, etc.) with your index finger to see if the patient feels pain or numbness (if present, this is called the **Tinel sign**). If you have positive findings, this may indicate an entrapment neuropathy.









Şekil 3

LEARNING GUIDE

MAXILLOFACIAL EXAMINATION

TOOLS: Mouth and throat examination simulator

PARTICIPANT:

STEP NO	STEPS
1	The patient should be assessed for life-threatening pathology; check for intracranial, thoracic or abdominal trauma.
2	**Inspection:** Starting from scalp, examine the patient from head to toe. • Are there cuts, hematomas, or avulsions on scalp or face? • Are there cuts on the ear, bleeding in external ear canal, or otorrhea? Is hearing intact? • Are there cuts, hematomas or avulsions on upper or lower lips? • Are there damaged vessels, hematomas or avulsions on neck? • Are there cuts on parotid gland or canal or their surroundings? If there is, check if there is blood in entrance of Stensen canal. (You may insert a blue or yellow i.v. catheter into canal and administer methylene blue to detect a cut.) • If there are cuts near the branches of the facial nerve, conduct a facial nerve examination to check if it is damaged.
3	**Forehead examination:** • Palpate the frontal sinus area to look for depression, tenderness or irregularity. • Is rhinorrhea present? (Railway sign)
4	**Examination of periorbital area and eye:** • Are there ecchymoses or edema in periorbital area or cuts on eyelids? • Is conjunctical edema or hemorrhage present; is there a foreign object in the eye? • Is enophthalmus present? • Is the patient's vision intact? • Assess visual acuity in left and right eyes separately. • Are eye movements intact? Is there any restriction in movement? • Is diplopia present? • Examine supraorbital and infraorbital rims bimanually. Are there any deformities or irregularities?
5	**Nose examination:** • Are there any obvious deformities, lacerations, or bleeding? • Examine the septum with a speculum and look for hematomas and deformities. • Stabilize the nasoglabellar area with your left hand and gently move nasal bones from side to side with your right hand, checking for crepitations.
6	**Examination of the zygomatic bone:** • Look at the patient's head from above to assess symmetry of zygomatic bones and if they are at the same level. Check if one is more depressed than the other. • Is there tenderness on zygomatic bones or arches? • Are there any irregularities or depressions on zygomaticc arch or surroundings?
7	**Maksilla Muayenesi**:

	• Maksiller dişler tam mı? • Sert veya yumuşak damakta veya dişetlerinde laserasyon var mı? • Sol elinizle nazoglabellar bölgeyi sabitleyerek sağ elinizle maksillayı hareket ettirmeye çalışarak maksillanın stabil olup olmadığını araştırınız.
8	**Examination of mandible:** • Are mandibular teeth intact? Are there lacerations or obvious hematomas in the mouth? • Is maxillomandibular occlusion normal? • Does the patient have difficulty opening his/her mouth? Can he/she close it completely? • Press on temporomandibular joints (TMJ) with index fingers and ask patient to open and close mouth. Are TMJ movements intact, is there any abnormality? • Grasp mandible by placing both of your thumbs on mandibular teeth inside mouth; then make small motions to determine the presence of fractures.

LEARNING GUIDE

SUBCUTANEOUS SUTURING

TOOLS: Suture set, suturing cushion, suturing cushion holder, suturing supplies, needle holder, tissue forceps, scissors, gloves

PARTICIPANT:

STEP NO	STEPS
1	Prepare supplies. Wash and dry your hands. Put on sterile gloves. Clean wound with antiseptic solution. *(Skip this step in exercise.)*
2	Hold needle by posterior 1/3rd with with the last 2 mm of the needle holder.
3	Determine where you will insert needle: it should be 2-4 mm deep and on the opposite side of the hand you are holding the needle holder in. Insert the needle and advance it from the inside of the wound outwards with the help of the curve of the needle. After the tip of the needle reaches the dermis right below the epidermis, direct it out of the wound with the help of the curve of the needle.
4	Grasp the tip of the needle with the tissue forceps as it emerges from the dermis and release the needle from the needle holder. Grasp the needle from its posterior end with the needle holder and pull the needle away from the wound with a circular motion of the wrist, again with the help of the curvature of the needle. Hold the free end of the needle with the tissue forceps and grasp the needle with the needle holder once again as you did in step 2.
5	Insert the needle into dermis of other cut edge of the wound at the same depth as your exit point on the opposite edge and advance it perpendicularly inward. Using the curvature of the needle, advance the needle into wound using the curve of the needle, making sure that the needle exits the dermis at the same depth as the entry point on the opposite edge. Grasp the needle with forceps and release the needle from the needle holder.
6	Hold needle with needle holder. Pull the needle out of the skin with a motion from the wrist using the curvature of the needle. Pull the suture until 2-3 cm are left at the point you began suturing. Release needle from needle holder and put down your forceps.
7	Hold the suture with your free hand by the long end with the needle attached to it and wrap it around the tip of the needle holder 2 times. Grasp the short free end on the opposite side of the wound and pull the long and short ends to opposite sides, making a crossing motion with your hands. Make sure the knot stays inside the wound and pull the knot tight until the cut edges come together and slightly heap up on the sides (eversion). Release the free end of the suture from the needle holder.
8	Wrap the suture around the needle holder once in the opposite direction. Grasp the free end of the suture with the needle holder and pull the ends away from eachother in the opposite directions as the step before..
9	Repeat these steps until you have tied 3 or 4 knots.
10	Cut off the ends of the suture with the scissors so 5-7 mm remain.
11	Throw away used supplies into appropriate bins. Wash your hands.

LEARNING GUIDE

PROSTATE EXAMINATION WITH DIGITAL RECTAL EXAMINATION

TOOLS: Examination gloves, vaseline, male pelvis simulator

PARTICIPANT:

STEP NO	STEPS
1	Put on examination gloves.
2	Give patient a knee-elbow or lateral decubitus position or have him stand up and lean forward.
3	Pull buttocks apart and check for lesions in perianal area and the visible part of the anal canal.
4	Apply some vaseline or other lubricant on your 2nd finger.
5	Apply lubricant on perianal area.
6	Very slowly and carefully advance your index finger into anud with the nail facing upwards.
7	If the patient clenches, tell him to relax.
8	After advancing your finger as far as possible, carefully examine the rectal mucosa and prostate.
9	Assess size and texture of prostate and check for tenderness.
10	Check for hardness, nodules or other abnormalities on prostate and if present, assess size and whether they are fixed or mobile.
11	Slowly pull your finger out, making sure to be gentle.
12	Take off your gloves.
13	Wash your hands.

LEARNING GUIDE

SUPRAPUBIC BLADDER PUNCTION

TOOLS: Urethral catheterization mannikin, sterile gloves, sterile gauze, antiseptic solution, 10-20 cc syringe

PARTICIPANT:

STEP NO	STEPS
1	Wash your hands.
2	Make sure the patient's bladder is full by conducting a glob vesicale examination.
3	Put on sterile gloves.
4	Apply antiseptic solution on sterile gauze and clean suprapubic area.
5	Have your assistant prepare a 10-20 cc syringe with a sufficiently long needle.
6	Insert the needle 1 cm above the symphysis pubis with a 90 degree angle and advance it towards bladder while simultaneously aspirating.
7	When urine starts to fill into syringe, continue aspirating and obtain a sufficient sample for testing.
8	Slowly pull out needle after procedure is complete.
9	Press on the are with gauze for 1-2 minutes.
10	Take off gloves and wash your hands.

LEARNING GUIDE

INSERTING NASAL TAMPONS

TOOLS: Mouth-throat examination simulator, light source, head mirror, nasal speculum, aspirator, bayonet, nasal tampon

PARTICIPANT:

At the end of this exercise, the participant should be able to perform the steps in the correct order and manage a nose bleed.

STEP NO	STEPS
1	Wash and dry your hands.
2	Inform the patient about the procedure.
3	Premedicate patient with Dolantin 1 mg/kg, IM + Atropin 0,1 mg/kg IM.
5	Have the patient sit up in examination chair.
6	Stand on patient's right side.
7	Shine light onto area you are going to examine with the help of light source and head mirror.
4	Wash out nose with cold water and try to remove clots.
8	If there are clots or scabs left in the nose, remove them with a nasal speculum or aspirator.
9	Place a guide tampon (cotton, adrenaline, pantocain) into nose with bayonet. Anesthetize the nasal cavity and try to visualize the bleeding area.
10	Remove guide tampon. If active bleeding has not stopped, insert nasal tampons first into bleeding nostril and then the other nostril; start from floor of nasal cavity and fill completely with tampons.
11	Throw nasal speculum, aspirator and bayonet into used tool tub.
12	Turn off light source.
13	Inform patient about your findings.
14	Throw waste into appropriate bins and wash your hands.

LEARNING GUIDE

CRICOTHYROTOMY (CONIOTOMY)

TOOLS: Cricothyrotomy simulator, light source, scalpel, mosquito forceps, aspirator, bayonet, tracheotomy cannula

PARTICIPANT:

At the end of this exercise, the participant should be able to perform the steps in the correct order and perform a cricothyrotomy.

STEP NO	STEPS
1	Wash and dry your hands.
2	Extend the patient's neck.
3	Stand on patient's right side.
4	Shine light onto area you are going to examine with the help of light source and head mirror
5	Stabilize larynx and trachea with the 1st and 3rd fingers of your left hand.
6	Palpate cricothyroid space with the index finger of your left hand.
7	Make a horizontal incision right above the cricoid cartilage.
8	When you reach cricothyroid membrane, make a hole in its midline.
9	Expand the hole laterally with a blunt tool.
10	Insert the tracheostomy cannula or intubation tube into the hole.
11	Make sure the cannula is in the right place (above the carina) by auscultating the lungs. If it is, inflate the cuffs.
12	Fixate the cannula or intubation tube onto neck.
13	Turn off light source.
14	Throw waste into appropriate bins.
15	After the patient stabilizes, a separate incision should be made and the cricothyrotomy should bee converted to a tracheostomy in 24-48 hours.

LEARNING GUIDE

INSERTING AIRWAY ON ADULT

TOOLS: Laryngoscopy set, adult airway insertion simulator, endotracheal tube, stethoscope, examination gloves, adhesive bandage

PARTICIPANT:

STEP NO	STEPS
1	Wash your hands and put on gloves.
2	Hold handle of laryngoscope with your left hand.
3	Straighten the line through the mouth, pharynx and larynx by slightly flexing the neck and extending the head.
4	Place blade of laryngoscope into right side of mouth, pushing patient's tongue to the left.
5	Advance blade over patient's tongue until you reach the vallecula.
6	Observe the epiglottis and advance the blade of the laryngoscope until you reach the base of the epiglottis.
7	To remove epiglottis and structures in base of mouth from your view, lift laryngoscope upwards and forward*
8	Choose an intubation tube with the appropriate size and place it inside trachea, making sure it passes the epiglottis. **
9	After verifying its position, fixate the tube.***
10	Throw waste into appropriate waste bins.
11	Take off your gloves and wash your hands.

* Be gentle when you are doing this. The upper teeth should not be used as a lever. Make sure the lips are not caught between teeth and laryngoscope. It will be easier to see epiglottis if your assistant simultaneously presses on thyroid cartilage.

** Males: internal diameter (ID) 8-8.5 mm, Females: internal diameter (ID) 7-7.5 mm

*** The tip of endotracheal tube should be positioned inside trachea and below vocal cords. To achieve this, make sure

- The tube enters trachea during intubation and is advanced sufficiently
- You observe the chest, both hemithoraces are rising equally and there is no distention in epigastrium
- Both lungs are ventilated equally by listening with a stethoscope
- Patient can be ventilated manually without any resistance

LEARNING GUIDE

CENTRAL VEIN CATHETERIZATION

TOOLS: Central venous catheterization simulator, central vein catheter, 22G syringe with guiding needle, sterile gloves

PARTICIPANT:

STEP NO	STEPS
1	Inform the patient about the procedure and obtain consent.
2	Turn the head to the opposite side of the one you will puncture and position head 10-30 degrees downwards.
3	Wash your hands and put on gloves.
4	Clean puncture site with antiseptic solution and cover with sterile drape.
5	Apply local anesthetic.
6	Check catheterization set.
7	Prepare guide and catheter.
8	Irrigate lumen of catheter with saline.
9	Keep open the caps on the distal ends.
	A. SUBCLAVIAN VEIN CATHETERIZATION
	A.1. Infraclavicular approach
10	• Stand on the side you are going to insert catheter.
11	• Place patient's arm on that side next to his/her body.
12	• Insert needle 2 cm below middle of clavicle and advance under clavicle.
13	• During expirium, advance tip of needle towards suprasternal notch, staying close to lower surface of clavicle.
14	• Advance tip of needle medially until you reach sternoclavicular joint.
15	• Aspirate continuously with a 10 mL syringe until you see blood fill into it. Then turn needle 90 degrees to direct it towards heart.
	A.2. Supraclavicular approach
16	• Stand by the patient's head.
17	• Place patient's arm on that side next to his/her body.
18	• Insert needle immediately above and lateral to clavicle and advance towards intersection of sternocleidomastoid muscle and clavicle with a 45 degree angle.
19	• Advance needle from underneath clavicle caudally towards the opposite nipple.
20	• Make sure the needle tip is positioned below the clavicular head of the sternocleidomastoid muscle with a 10-15 degree angle to the coronal plane and a depth of 1-4 cm.
	B. CATHETERIZATION OF INTERNAL JUGULAR VEIN
	B.1. Central approach
21	• Place your left hand on carotid artery pulsation without applying excessive pressure.
22	• Prepare to insert needle into apex of the triangle formed by the two heads of the sternocleidomastoid and the clavicle.

23	• Hold the guiding needle in your right hand, and insert it with a 30-45 degree angle with its tip directed towards the patient's nipple on the same side.
24	• After penetrating skin, advance needle while simultaneously aspirating.
25	• If you have not punctured vein despite advancing 3-5 cm, pull out needle while simultaneously aspirating.
26	• In your next attempts, try the lateral of your first attempt, and then the medial.
27	• Insert catheter needle right above guiding needle pointed towards the same direction.
28	• Advance tip of needle towards the patient's nipple on the same side with a 30-45 degree angle.
	B.2. Anterior approach
29	• Palpate carotid artery pulsation on the middle of the anterior edge of right sternocleidomastoid muscle, medial to the lateral edge of the sternal head.
30	• Insert needle 0.5-1 cm lateral to pulsation.
31	• Advance tip of needle towards patient's ipsilateral nipple with a 30-45 degree angle to frontal plane.
	B.2. Posterior approach
32	• Insert needle 1 cm dorsal to intersection of external jugular vein and the posterior edge of sternocleidomastoid muscle or 5 cm cephalic to clavicle at the level of clavicular head of sternocleidomastoid.
33	• Advance needle tip caudally and ventrally towards suprasternal notch with a 45 degree angle to sagittal plane and 15 degree angle upwards.
34	• If you have not punctured vein despite advancing 5-7 cm, direct tip of needle slightly cephalic and repeat attempt.
35	Advance catheter 16-17 cm on the right and 18-19 cm on the left side.
36	If your attempt is unsuccessful, move your entry point laterally or medially.
37	If you puncture an artery, pull out needle and apply pressure on puncture site for 5-10 minutes.
38	When you successfully puncture vein, hold injector down at level of skin and make sure the blood flows freely.
39	Remove inhector from needle and make sure blood is not flowing in a pulsatile fashion.
40	Advance guide inside needle; you should not come across resistance.
41	Advance guide no more than 20 cm.
42	If you come across resistance, try holding the needle parallel to the vein and rotating it while advancing the guide.
43	Stabilize needle with your left hand while removing injector from needle with your right hand.
44	After making sure the blood is not flowing in a pulsatile fashion, close tip of needle with a finger.
45	Advance guide 15 cm inside needle.
46	After positioning guide, pull needle out.
47	Expand entry point of guide wioth a scalpel.
48	Insert a vessel dilator right above guide.
49	Pull dilator out and cover entry site with gauze.
50	Insert catheter carefully above guide, making sure to maintain sterility.
51	Pull out guide.
52	Close distal end of catheter.
53	Fixate catheter.
54	Clean skin.
55	Cover the site under sterile conditions.
56	Take off gloves and wash your hands.
57	Throw waste in appropriate bins.
58	Order chest X-ray to confirm position of catheter and look for presence of complications.

LEARNING GUIDE

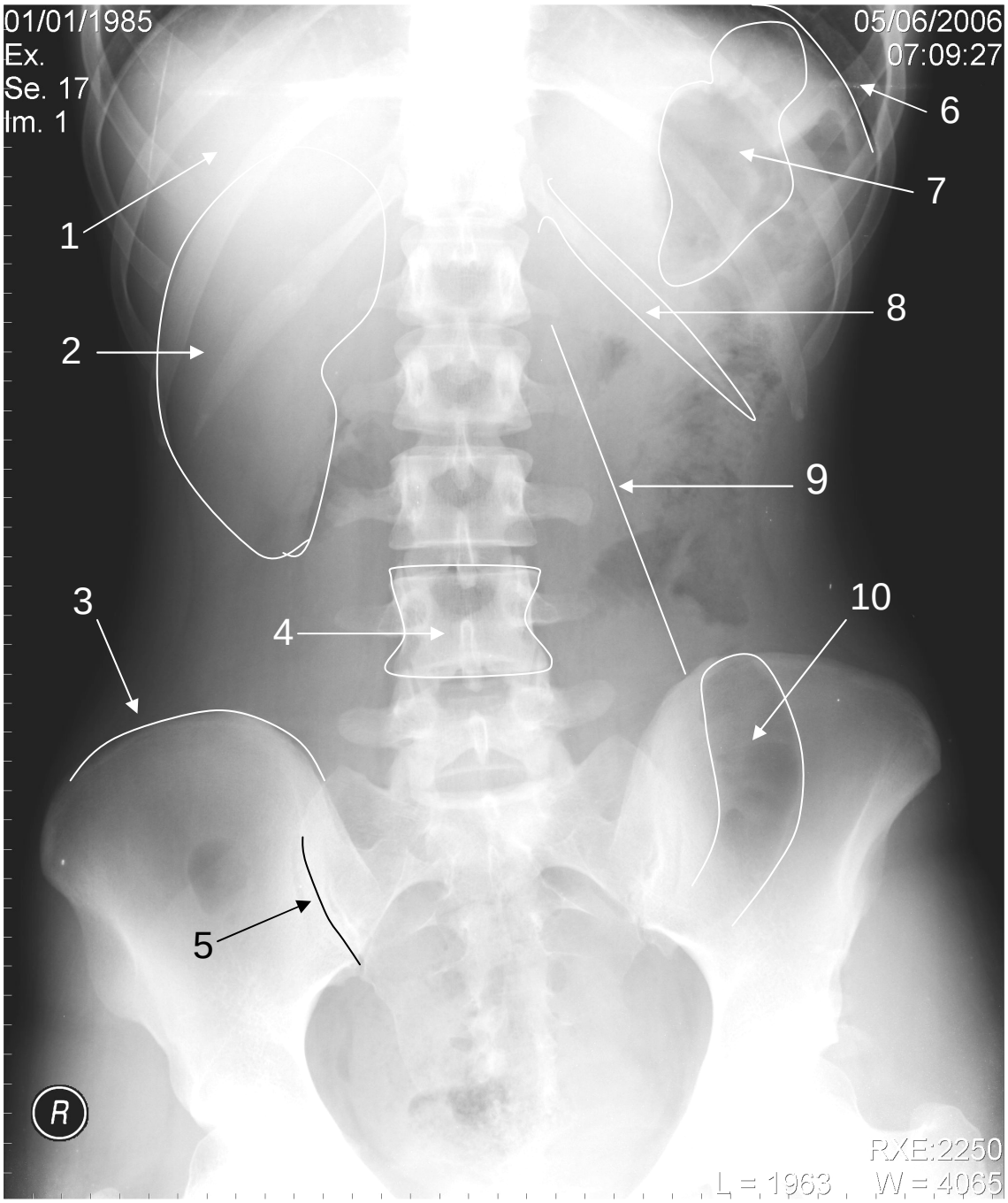
NAMING IMPORTANT ANATOMICAL STRUCTURES ON URINARY SYSTEM X-RAY

TOOLS: Negatoscope, urinary system X-ray

PARTICIPANT:

Urinary system X-rays are obtained in the supine position, with the intestinal contents being evacuated the night before using a laxative. This X-ray is used to assess the urinary system and other (bone, soft tissue, intestinal gas distribution) structures visualized in the area. In this exercise, we will get to know the main anatomical structures seen in a urinary system X-ray.

STEP NO	STEPS
1	Turn on negatoscope.
2	Determine the right side of the X-ray. (There may be an R to specify the right side)
3	Hang radiograph onto negatoscope with its right side on your left.
4	Evaluate the following anatomical structures sequentially:
	1. Liver
	2. Right kidney
	3. Iliac crest
	4. Body of lumbar vertebra
	5. Sacroiliac joint
	6. Diaphragm
	7. Stomach gas
	8. 12th rib
	9. Contour of psoas muscle
	10. Colonic gas
5	Remove radiograph from negatoscope.
6	Turn off negatoscope.


01/01/1985
Ex.
Se. 17
Im. 1
05/06/2006
07:09:27
1
2
3
4
5
6
7
8
9
10
R
RXE:2250
L = 1963
W = 4065

LEARNING GUIDE

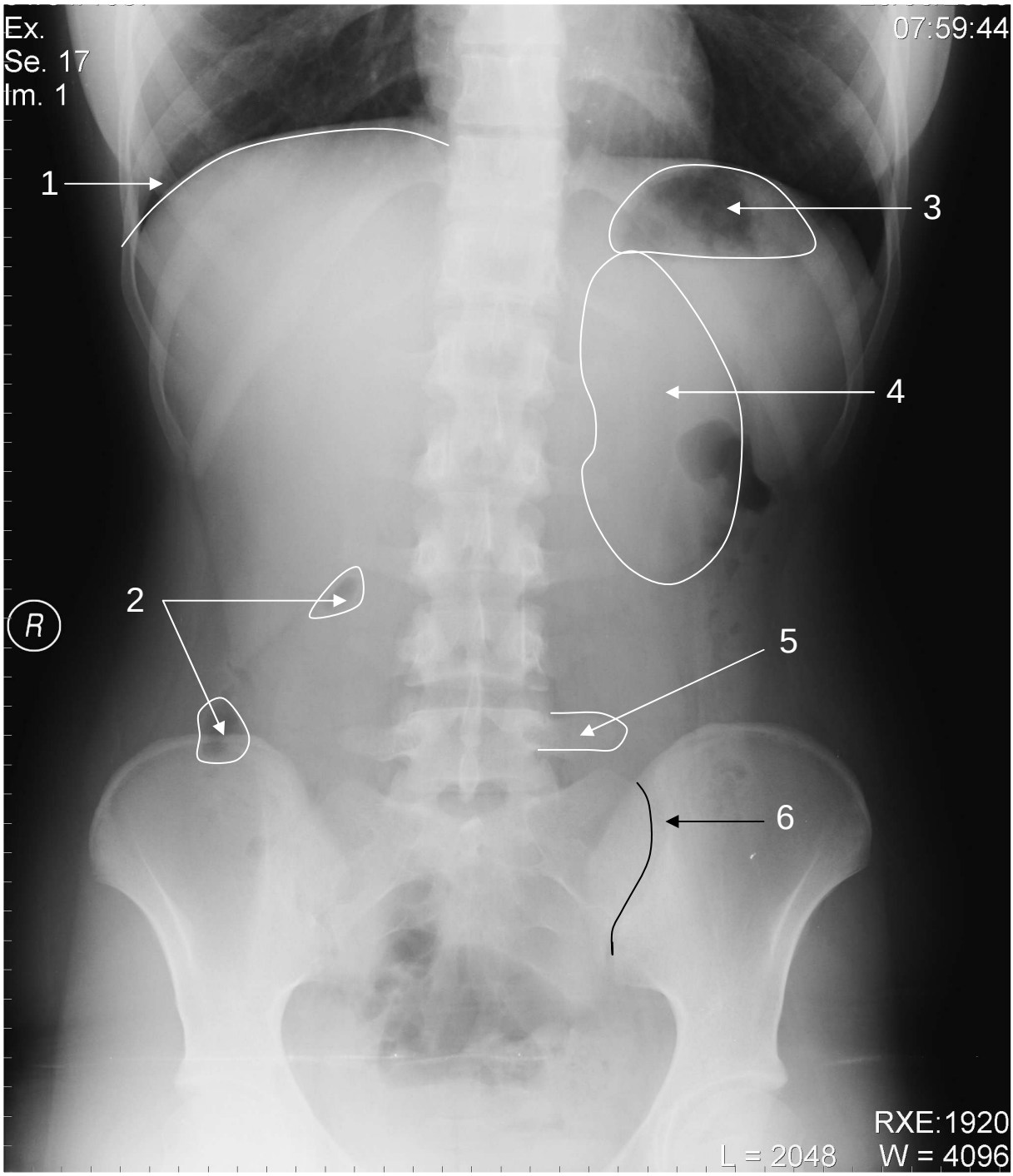
NAMING IMPORTANT ANATOMICAL STRUCTURES ON STANDING ABDOMINAL X-RAY

TOOLS: Negatoscope, standing abdominal X-ray

PARTICIPANT:

Standing abdominal X-rays are usually ordered in emergency conditions. They are primarily used for evaluating intestinal obstruction and perforation of a hollow organ. Air-fluid levels are seen in obstruction, while free air under the diaphragm indicates perforation.

STEP NO	STEPS
1	Turn on negatoscope.
2	Determine the right side of the X-ray. (There may be an R to specify the right side)
3	Hang radiograph onto negatoscope with its right side on your left.
4	Evaluate the following anatomical structures sequentially:
	1. Diaphragm
	2. Intestinal gas
	3. Stomach gas
	4. Left kidney
	5. Transverse processes of vertebrae
	6. Sacroiliac joint
5	Remove radiograph from negatoscope.
6	Turn off negatoscope.


Ex.
Se. 17
Im. 1
07:59:44
1
2
3
4
5
6
R
RXE:1920
L = 2048
W = 4096

LEARNING GUIDE

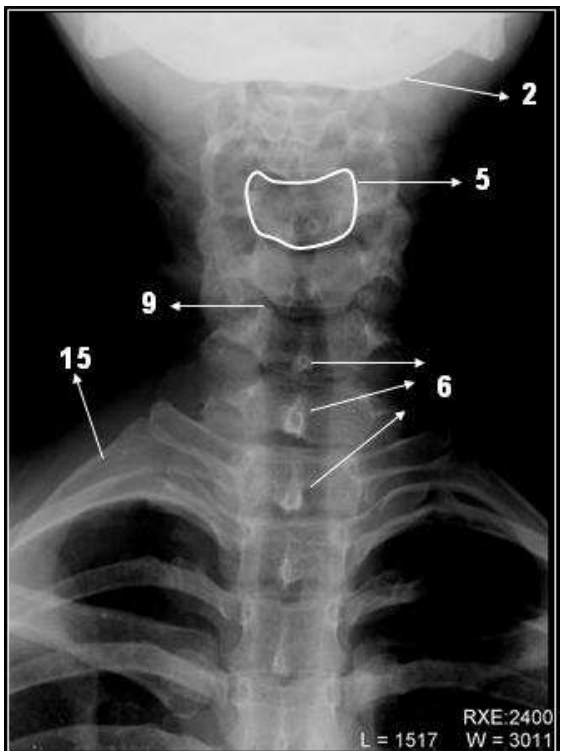
READING SPINAL X-RAYS

TOOLS: Negatoscope, spinal X-ray

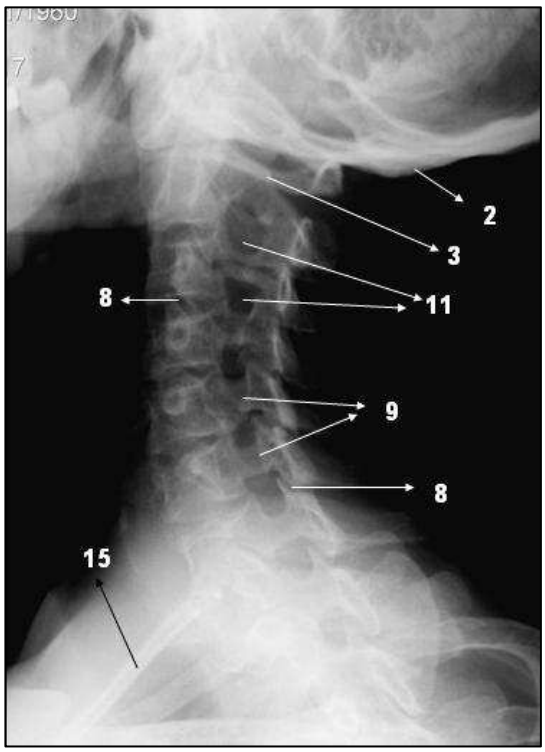
PARTICIPANT:

The X-ray of the spine is a conventional method used to evaluate the bony structures forming the spinal canal and the joints between them. There are 3 types of spinal X-rays: cervical, thoracic and lumbosacral; X-rays of a particular areas may also be obtained. They can be taken in antero-posterior, lateral and oblique projections. The structures listed and displayed below are evaluated for pathologies. In this exercise, we will learn the important anatomical structures seen in 3-way cervical spinal X-rays.

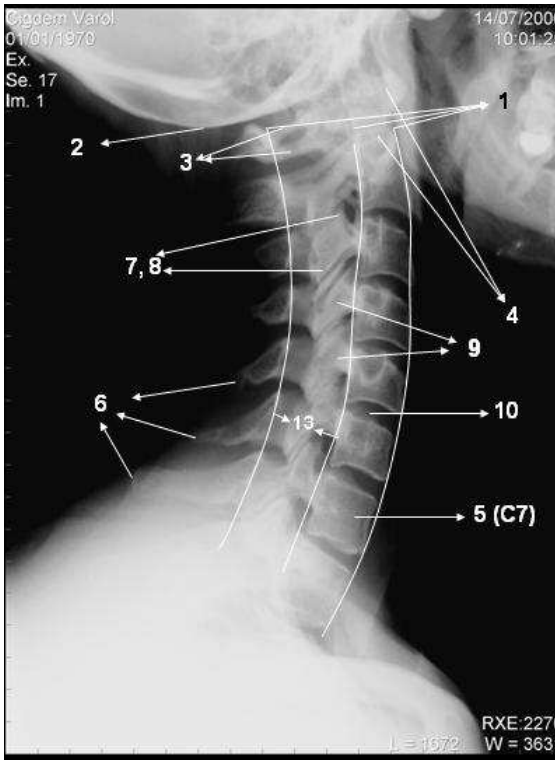
STEP NO	STEPS
1	Turn on negatoscope.
2	Determine the right side of the X-ray. (There may be an R to specify the right side) and hang radiograph onto negatoscope with its right side on your left.
3	Differentiate anteroposterior, lateral, and oblique radiographs.
4	Assess the quality of the radiographs.
5	Evaluate the following anatomical structures sequentially:
	1. Integrity of anterior and posterior spinal and interlaminar lines
	2. Occipital bone
	3. Posterior arch of C1
	4. Atlanto-axial joint
	5. Bodies of vertebrae
	6. Spinous processes
	7. Articular processes
	8. Facet joints
	9. Laminae
	9. Uncinate processes and uncovertebral joints
	10. Intervertebral discs
	11. Neural foramina
	13. Spinal canal
	14. Spinal cord
	15. 1st rib
5	Remove radiograph from negatoscope.
6	Turn off negatoscope.



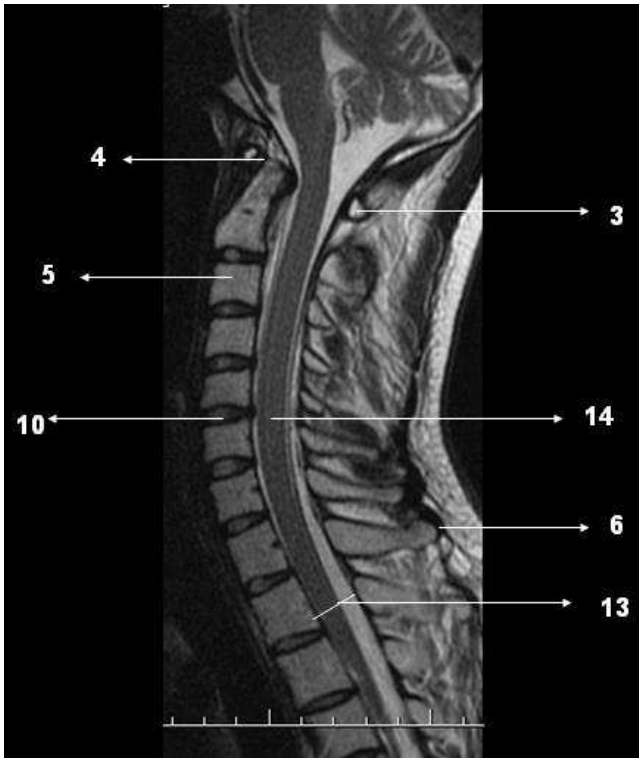
Antero-posterior cervical X-ray



Left oblique cervical X-ray



Lateral cervical X-ray



T2 weighted sagittal cervical MRI

LEARNING GUIDE

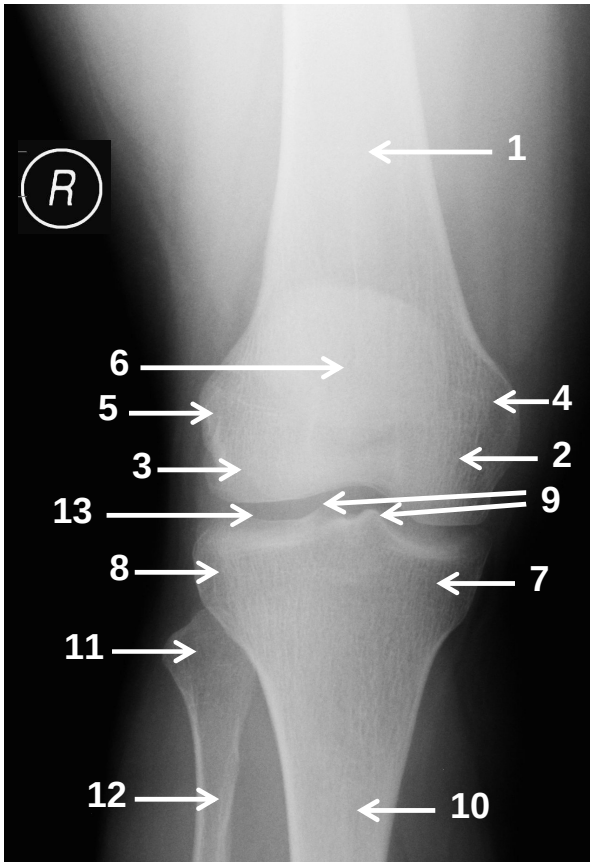
NAMING IMPORTANT ANATOMICAL STRUCTURES ON 2-WAY KNEE X-RAYS

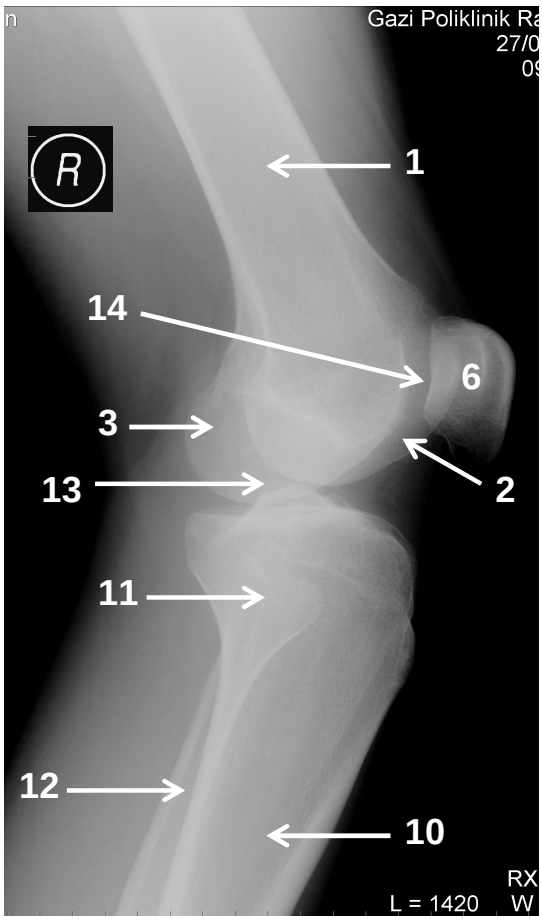
TOOLS: Negatoscope, 2-way knee X-ray

PARTICIPANT:

X-rays are commonly used and are the first-line radiological test ordered to assess bony structures and joint spaces. In this exercise, we will learn thhe major anatomical structures in 2-way (anterio-posterior and lateral) knee X-rays.

STEP NO	STEPS
1	Turn on negatoscope.
2	Determine the right side of the X-ray. (There may be an R to specify the right side)
3	Hang radiograph onto negatoscope with its right side on your left.
4	Evaluate the following anatomical structures sequentially:
	1. Diaphysis of femur
	2. Medial condyle of femur
	3. Lateral condyle of femur
	4. Medial epicondyle of femur
	5. Lateral epicondyle of femur
	6. Patella
	7. Medial condyle of tibia
	8. Lateral condyle of tibia
	9. Tibial eminences
	10. Diaphysis of tibia
	11. Head of fibula
	12. Diaphysis of fibula
	13. Tibiofemoral joint
	14. Patellofemoral joint
5	Remove radiograph from negatoscope.
6	Turn off negatoscope.


R
1
6
5
4
3
2
13
9
8
7
11
12
10


Gazi Poliklinik Ra
27/0
09
R
1
14
6
3
2
13
11
12
10
RX
L = 1420
W