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PHYSICAL EXAMINATION MODULE

STUDENT TEXT

1380

Rural Health Development Project
Ministry of Health and Social Welfare
Maseru, Lesotho

ACKNOWLEDGEMENTS

Nurse Clinician training materials are Lesotho adaptations based upon the MEDEX prototype curriculum for training mid-level health workers.

The prototype MEDEX materials were developed by the Health Manpower Development Staff of the John A. Burns School of Medicine, University of Hawaii. The original prototypes were based on training experience in over a dozen third-world countries. These were revised on the basis of HMDS experience in Micronesia, Thailand, Pakistan, and Guyana before being made available to Lesotho under a U.S.A.I.D. funded contract.

Major adaptation in Lesotho began at the National Nurse Clinician Training Programme Curriculum Adaptation Workshop held at Mazenod in January 1980. The nearly fifty participants represented all major health and health related activities in Lesotho, both Government and private. These participants and others working as individuals and then as review committees have adapted the Nurse Clinician training materials to meet the conditions and needs of Lesotho.

The Government of Lesotho and particularly the staff of the Nurse Clinician training Programme are grateful to HMDS for supplying the prototype materials and to all those individuals who have helped in the Lesotho adaptation process.

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SCHEDULE

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5

GLOSSARY

1. anterior - situated in front of or in the forward part of.
2. atrophy - a wasting away or shrinkage in size of cell, tissue, organ or part.
3. dorsal - referring to the back.
4. hyperactive - abnormal over-activity.
5. lateral - referring to a side.
6. medial - pertaining to the middle; in anatomy, nearer the median plane.
7. palpate - to examine by the hand; to feel.
8. percussion - the act of striking a part with short, sharp blows.
9. pitting oedema - the formation of a depression following pressure on a part, due to swelling.
10. posterior - situated behind or toward the rear.
11. prone - lying with face downward.
12. supine - lying on the back, face upward.

INTRODUCTION
to
PHYSICAL EXAMINATION

A physical examination is the process by which a health worker uses his senses of sight, hearing, touch, and smell to examine a patient or situation in order to determine his state of health and if necessary determine the origin of any problem he may have.

The findings of a physical examination are combined with the clues found in the medical history in order to solve a diagnostic problem and manage the patient or situation correctly. It is necessary to have a general knowledge of normal and abnormal anatomy and physiology to do this well.

Four chief methods are used; inspection, palpation, percussion and auscultation. Smell is also useful in certain situations.

Inspection is the process of critical observation in order to find physical signs. Many correct diagnoses can be made by inspection alone but this is the most difficult to learn because no module or book can record all variety of signs that exist. General inspection is the observation of the body as a whole. Local inspection is the observation of a single anatomic region.

Palpation is the act of feeling or touching to determine temperature, vibrations, moisture, texture and irregularities.

Percussion is a method of examination in which the surface of the body is struck in order to make a sound. The sound will vary depending on the density of underlying tissue.

Auscultation refers to the use of a stethoscope to hear sounds as physical signs. Listening to speech and coughs can also be helpful in determining physical signs but is usually not called auscultation.

Smelling is the use of the nose to determine odours as physical clues to diagnosis. Odours of the breath, discharges and pus may be helpful.

Clinical measurements are also used as physical signs - such as height, weight and body temperature.

Patient Preparation for a Physical Examination

A person who visits your dispensary is usually anxious about his problem and what you are going to do to him. It is your responsibility to make the patient as comfortable and relaxed as possible for his own well being and because your findings will be more accurate as a result.

You should explain all procedures to your patient as you precede with the examination. All skills should be performed with confidence and in a relaxed and friendly manner.

The patient should be disrobed or lightly dressed for the examination so that you can perform inspection as well as the other parts of the exam properly.

At the completion of the examination you should explain all your findings and their significance to the patient.

Equipment for Exam

The equipment necessary for a physical examination includes the following:

1. Otoloscope
2. Nasal speculum
3. Flashlight or other light source
4. Tongue depressor
5. Tape measure
6. Watch with second hand
7. Child's scale
8. Adult's scale
9. Blood pressure apparatus
10. Stethoscope
 - with snug and comfortable ear tips, thick rolled double tubes, a trumpet shaped bell and a diaphragm.
11. Gloves
12. Lubricant >for rectal and vaginal examinations
13. Vaginal speculum
14. Paper and pen or pencil
15. Thermometer
16. Cotton wool
17. Pin
18. Measuring board
19. Visual chart
20. Records

The complete physical examination has been divided into various categories:

1. General Appearance of the Patient
2. Vital Signs
3. Systems and Anatomical Regions
 - a. Skin
 - b. Head and neck
 - c. Chest and Respiratory System
 - d. Cardiovascular System
 - e. Lymphatic System
 - f. Musculoskeletal System
 - g. Abdomen
 - h. Nervous System
 - i. Reproductive System
 - j. Anus and Rectum
 - k. Breasts

These are then recorded accordingly on your physical examination form.

During routine visits often only the abnormal findings are recorded along with the significant normal findings that help you with the diagnosis.

STUDENT GUIDE

VITAL SIGNS/EXAMINATION OF THE SKIN

I. Entry Level Knowledge and Skills:

Before starting this unit, you should be able to:

1. Conduct an interview with a patient to obtain historical information.
2. Identify the normal ranges for an adult of the following: pulse, temperature, respiration rate, blood pressure, weight and height.
3. Describe the normal anatomy and physiology of the skin.

II. Objectives:

Using the information and experiences provided by the instructor and the module text, you will be able to:

1. Obtain and record information about the general appearance of your patient by observing him closely during interview.
2. Obtain and record blood pressure, pulse, respiration, temperature, weight and height, using acceptable procedure.
3. Identify arterial locations where pulse can be felt.
4. Explain causes of changes in pulse rate, respiration rate, blood pressure, temperature, weight and height.
5. Perform examination of the skin and record any skin lesions or abnormal skin colourations, such as inflammation, cyanosis, jaundice, pallor, purpura and bruises.
6. Perform an examination to assess the state of hydration.

III. Evaluation:

Upon completion of this module you will be assessed on:

1. Knowledge: Written test based upon content of module. Acceptable performance, 80%.
2. Skill: See evaluation sheets.
 - a. Obtain and record blood pressure, pulse, respiration rate, temperature, weight and height.

- b. Perform examination of skin and record result.
 - c. Obtain and record information about general appearance, including state of hydration.
 3. Prior to entry in the Rotation Phase , you will be assessed on: (a) Your ability to obtain and record vital signs; and (b) your ability to perform exam of skin, observe general appearance and record the findings.
- IV. Activities you will be participating in to complete the objectives:
 1. Read module text pages and answer review questions.
 2. Participate in demonstration and discussion of physical examination:
 - a. General appearance, including state of hydration.
 - b. Vital signs, including height and weight.
 - c. Skin.
 3. Practice the above physical examination procedures on other class members.

GENERAL APPEARANCE:

1. Apparent state of health

2. Skin colour

3. Weight

4. Posture

5. Motor activity

6. Personal hygiene

7. Speech

Physical Examination

Technique:

Observation while taking the medical history

Normal Findings:

1. Looks bright, alert and active. Note expression. Sits in comfortable upright position. Smiles and talks with ease.

2. Has same colour throughout the body and is the same colour as other people of that ethnic group.

3. Seems to be of average weight for build.

4. Holds body and back upright and straight.

5. Walks symmetrically and evenly. Gait is smooth and coordinated. Movements are purposeful.

6. Clean and neat in appearance - hair combed, nails clean, fresh smelling.

7. Clear, spontaneous and articulate.

Abnormal

1. Looks dull, worried, sad. Holds an area in pain. Droops in the chair. Slouches in chair, holds up his head or unconscious.

2. Paleness or blueness around the eyes. Blotchy areas of increased or decreased colour. Redness.

3. Is either very thin or very fat for build.

4. Slouches when seated or when walking. Leans to one side.

5. Irregular gait. Unusual movements for no apparent reason.

6. Disheveled, dirty clothing, dirty body, uncombed hair, dirty nails or an unpleasant odour.

7. Hoarse voice, hesitant speech, garbled words.

Physical Examination

Abnormal

GENERAL APPEARANCE: (cont'd)

8.State of awareness

8.Alert, bright, responds co activity in the room, responds to speech appropriately. Reacts to pain when pinched or pricked with a pin.

8.Sluggish, responds little or not at all to activity or spoken commands, comatose or semi-comatose. Does not react to pain - seems confused, does not know his name or where he is.

Introduction of the
Remainder of the Module

The rest of this module takes you through a complete physical examination. The module is only a guide to the actual examination. This must be actively practiced. Your skill during examination of patients will be increased if you thoroughly master the procedures involved by practicing on fellow students.

The Physical Examination Module is designed to follow the Anatomy and Physiology Module and Medical History Taking Module. You should review these before beginning. The format of presentation is:

1. Techniques of examination.
2. Description of normal findings.
3. Description of common abnormalities (when applicable).

Physical Examination

Abnormal

VITAL SIGNS

1. Pulse rate

1. Technique:

The pulse is usually taken over the radial artery. With the pads of your fingers, press against the skin of the wrist over the site of the radial artery until pulsation is determined.

Figure PE 1:



Figure PE 1: Radial Pulse

Other arterial locations where pulse can be felt are over the brachial, temporal, carotid and femoral arteries, dorsalis pedis, popliteal arteries. Figure PE 2:

Physical Examination

Abnormal

VITAL SIGNS (cont'd)

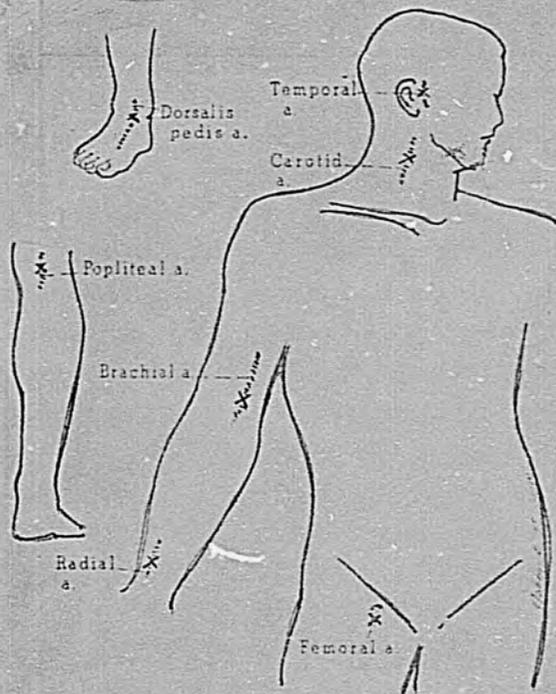


Figure PE 2: Pulse areas

Physical Examination

Abnormal

VITAL SIGNS (cont'd)

The pulse rate is recorded as the number of beats per minute: Count the number of pulses felt in 15 seconds and multiply by 4. One, also, palpates for the rhythm of the pulse.

Normal findings:

The pulse rate of an adult at rest is approximately 70 -90 pulses per minute. The rhythm is regular and even.

In children the normal pulse rate is faster than an adult.

- Newborn - 90 - 120 per minute
- 1 - 2 yrs: 80 - 150 per minute
- 2 - 5 yrs: 80 - 140 per minute
- 5 -10 yrs: 70 - 100 per minute

A normal pulse rate will increase during exercise and decrease during rest or sleep.

A rapid pulse rate is caused by fever and fear of the examination.

Rapid and weak pulse is usually the result of shock.

Rapid, pounding pulse is often the result of fear or hypertension. The pounding pulse feels very strong and often times can even be easily seen. An irregular pulse (skipping beats or rapid runs) may be the sign of serious heart trouble.

2. Respiration rate

2. Technique:

Count each rise and fall as one respiration and record in respirations per minute. This can be done by counting the respirations over a 30 second period and multiplying by two.

Physical Examination

Abnormal

VITAL SIGNS (Cont'd)

Normal findings:

Normal respiration rate of an adult is 15 - 20 per minute. Normal respirations are regular and moderate in depth.

Normal respiration rates of children are faster than adults:

6 months - 4 years:	20 - 40 per minute
Newborn:	30 - 50 per minute
Premature:	40 - 90 per minute

3. Blood Pressure

3. Technique:

Make the patient comfortable. Remove any clothing from the upper arm. Centre the blood pressure cuff over the brachial artery, the lower edge approximately one inch above the elbow joint. Wrap and secure the cuff around the arm. Inflate the cuff to 30 mm of mercury above the level that the pulse is no longer felt. Place the stethoscope over the brachial artery below the cuff. Slowly deflate the cuff while listening for the return of the pulse beat. Note the level at which you first hear a beat and note the level at which the pulse is no longer heard. The first level is

- Absence of breathing is a medical emergency.
- Rapid breathing occurs with fever and exertion.
- Rapid, shallow breathing is an important sign of shock.
- Deep sighing respiration is a sign in uncontrolled diabetes.
- Deep, gasping, laboured breathing may indicate partial airway obstruction or heart failure.
- Periodic change in rate rhythm and volume, alternating with periods when the breathing stops may be seen in the comatose patient.
- Simple, short irregularity in rhythm is usually due to excitement.

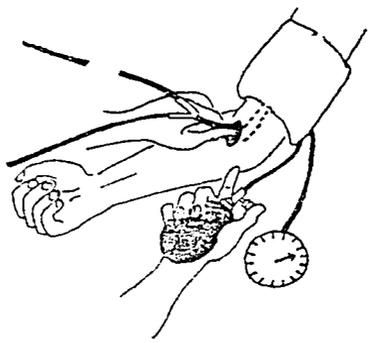
Physical Examination

Abnormal

VITAL SIGNS (cont'd)

called the systolic (peak) pressure and the lower level, the diastolic pressure (the lowest pressure).

Figure PE 3:
Blood Pressure



Normal findings:
Normal blood pressure in at adult at rest is

$$\frac{90}{60} \text{ to } \frac{140}{80}$$

Blood pressures increase with strenuous exercise.

Low blood pressure is a result of severe bleeding, heart failure or shock from a number of causes.

Increased blood pressure is called hypertension and can result in ruptured blood vessels in the brain, or damage to the kidneys and heart. The lowest recorded number (the diastolic pressure) is the most important if elevated.

VITAL SIGNS (cont'd)

4. Temperature

Physical Examination

Abnormal

4. Technique:

The body temperature can be measured using a glass mercury thermometer.



Figure PE 4:

The mercury is lowered to at least two degrees below normal by holding the non-bulbous end of the thermometer firmly in your hand and shaking it towards the floor. After the mercury line is lowered, it is ready to be inserted into one of several body areas.

The most common area for an adult is in the mouth and under the tongue. It should remain there for at least five minutes.

Another approximate method is for the examiner to use his body temperature as a comparison. The examiner puts either the back or front of his hand over the patient's forehead to see if the patient feels hot. This is a very rough method of determining the body temperature and not very accurate.

Physical Examination

Abnormal

VITAL SIGNS (cont'd)

Normal findings:

- Oral - 37°
- Rectal - 37.2°
- Axilla - 36°

-fever - an increase of body temperature is most commonly the body's response to local or general infection. The pulse rate usually increases about 10 beats per minute for each degree of fever. Respiration usually increases about 2 cycles per minute of each degree of fever. Very high fevers (42° C and greater) are life threatening.

Fever patterns (the way a fever changes by increasing or decreasing over time) can be a very helpful tool and this is why an in-patient's temperature is taken at certain regular periods and recorded.

5. Weight

5. Technique and Normal findings:

The patient is asked to remove any heavy clothing and step on a scale. The weight is recorded.

Normal weight for an adult varies depending on the height and body build.

Adult: Low weight may be due to:
 -long, serious illness
 -malnutrition

Increased weight (obesity) is usually caused by a habit of eating more than the body needs. This condition is associated with high blood pressure and heart disease.

	Physical Examination	Abnormal
<u>VITAL SIGNS</u> (cont'd)		
6.Height	<p>6.Technique and Normal findings: Have a tape measure against the wall and ask the patient to stand straight, back and heels touching the wall. Place a pencil or ruler flat across the head the record the level noted on the tape measure.</p> <p>Normal height is determined by comparing heights of other people of that age by using a chart.</p>	<p>Short adult women may have difficulty during delivery periods (1.6cm).</p>
7.State of Hydration	<p>7.Techniques and Normal findings: Pinch the skin over the abdomen to determine its elasticity. It normally will immediately return to its usual position.</p>	<p>Tenting of the skin after pinching.</p>
8.Skin	<p>8.Technique: Inspection is the main technique used for examination of the skin. It is supplemented by palpation.</p> <p>Normal findings: Colour of the skin should be uniform over the entire area and the same colour as others of his ethnic group.</p> <p>Texture of the skin should be soft, smooth, dry and intact.</p>	<p>Colour may be patchy, increased or decreased areas of pigmentation, redness, blueness, around the lips, paleness, bruises or jaundice.</p> <p>Texture may be irregular, dry and scaly, rough, wet and moist, have lumps, sores and cuts. Record the description.</p>

VITAL SIGNS (cont'd)

Physical Examination

Abnormal

The skin should be elastic; that is, it jumps back after being pinched or displaced.

The skin may have lost its elasticity and remains in a tented position. This is most common in dehydration but can also be seen in the very old.

The nails are smooth, clean, curved and well trimmed.

Nail beds may be bluish or clubbed, pale and spoon-shaped.

Hair covers and entire body but it varies in amount from part to part. Hair should be clean, dry and smooth.

Hair may be: absent, rough, brittle, reddish.

REVIEW QUESTIONS

1. A patient's temperature can be taken at a number of sites. The normal range for three of those sites is labeled below. Fill in the site:
 - a. _____ 37°
 - b. _____ 37.2°
 - c. _____ 36°
 2. What word is used to describe a temperature which is above normal limits?
 3. A subnormal temperature would be found if the patient was suffering from _____ or severe _____ loss (haemorrhage).
 4. The three most common locations to take a pulse rate are:
 - a.
 - b.
 - c.
 5. The normal resting pulse rate for an adult is _____ beats per minute.
- Fill in the blanks:
6. Children generally have a _____ pulse rate than adults.
 - a. slower
 - b. faster
 7. If a person has a fever you would expect his pulse rate to _____.
 - a. increase
 - b. decrease

8. When the amount of circulating blood is decreased (i.e. shock), it causes the pulse to feel _____ and _____.
- a. slow c. pounding
b. rapid d. weak
9. When the patient is frightened or has high blood pressure, the pulse feels _____ and _____.
10. Write "A" next to the breathing rate considered normal for an adult. Write "C" next to the breathing rate considered normal for a child of 1 year.
- a. _____ 30 per minute
b. _____ 16-20 per minute
11. Respiration usually _____ about two cycles per minute for each degree of fever.
- a. increases
b. decreases
12. If a patient has simple irregularity of respiration, you would think it is the result of _____.
- a. shock c. excitement
b. coma d. heart disease
13. If a patient has rapid shallow respirations, it could be a sign of _____.
- a. shock c. excitement
b. coma d. heart disease
14. The blood pressure is the pressure of circulating _____ against the walls of the _____.
15. When taking a blood pressure, the top (systolic) pressure is the level when the heart _____.
- a. contracts
b. relaxes

16. List five characteristics to observe when examining the skin.

a.

b.

c.

d.

e.

STUDENT GUIDE

PHYSICAL EXAMINATION OF THE HEAD, EYES, EARS,
NOSE, THROAT and NECK

I. Entry Level Knowledge and Skills:

Before starting this module, you should be able to:

1. Describe the normal anatomy of head, eyes, ears, nose, throat and neck.
2. Explain the normal physiology of head, eyes, ears, nose, throat and neck.

II. Objectives:

Using the information and experiences provided by the instructor and the module text, you will be able to:

1. Examine the head, eyes, ears, nose, throat and neck.
2. Identify physical abnormalities.
3. Examine for loss of visual acuity or hearing.
4. Record result of examination.

III. Evaluation:

MODULE PHASE

Upon completion of this module, you will be assessed on:

1. Knowledge: Written test based upon module content.
Acceptable performance, 80%.
2. Skills: See Skills Evaluation Sheet.
 - a. Examination of head, eyes, ears, nose, throat and neck
 - b. Test for visual acuity
 - c. Test for auditory acuity

ROTATION PHASE

Prior to entry, you will be assessed on:

- a. Your ability to examine head, eyes, ears, nose, throat and neck.
- b. Your ability to test for visual acuity.
- c. Your ability to test for auditory acuity.

IV. Activities you will be participating in to complete the objectives:

1. Read the module text pages and answer the review questions.
2. Participate in demonstration and discussion of physical examination procedures for head, eyes, ears, nose, throat and neck.
3. Practice the above physical examination procedures on other class members.

Physical Examination

Abnormal

Head and Neck:

1. General

1. Technique:

Best examined with the patient sitting, relaxed.

Observe and palpate:

Normal findings:

Normal head should be rounded and even. Head is easily and comfortably moved from side to side and chin to the chest.

Irregular head, lumps or bumps.
Tenderness or pain or scars.

2. Eyes

2.a. Vision

Technique:

Non-literate patient: use a non-literate visual chart. Cover one eye at a time and ask the patient to point to the side of the box that is open.

Literate patient: Ask him to read any available printed matter using one eye at a time. Cover one eye with a piece of paper, not with his hand. This simple method will give you enough information to decide whether the patient has a vision problem and the approximate degree of the problem.

Normal finding:

A normal finding is that the patient can see well with both eyes.

Has decreased vision in one or both eyes.
Blindness in one or both eyes.

Physical Examination

Abnormal

2.Eyes (cont'd)

b.Position and movement

Technique:

Observe for position. Then ask the patient to follow your finger, move your finger upwards, downwards and from side to side. Do it one eye at a time with the other eye covered and then both eyes at the same time.

Normal finding:

Normal finding is that eyes follow your finger in all directions one at a time and that together they move equally and together.

The top eyelid covers the top fourth of the iris.

The eyebrow covers the upper ridge of the eye socket.

c.Conjunctiva and Sclera

Technique:

Wash your hands. Then ask the patient to look up while you pull down the lower lid.

Figure PE 5:

Eyes do not move together. One or both eyes cannot move into all four positions tested. Eyes seem to be bulging.

Upper eyelid - one or both drooping. Bottom lid is turned outward. Lid margins have pustules, lumps or crusting.

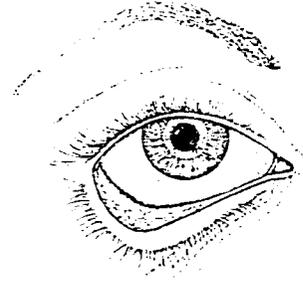
Part of the eyebrow missing.

Physical Examination

Abnormal

2.Eyes (cont'd)

Figure PE 5 -
Examination of
conjunctiva and
sclera.



The conjunctiva should be pink, smooth and moist.

The sclera normally is white, smooth, moist with fine blood vessels running across.

Any inflammation of conjunctiva or pus on the conjunctiva -
Any roughening or cobblestone like changes -
Redness and foreign bodies.

Sclera:
-haemorrhage of vessel - not serious unless associated with trauma
-white scaly area (lateral)
-foreign body
-redness
-yellowness
-thickening (from nose towards pupil)

2.Eyes (cont'd)

Physical Examination

Abnormal

d. Cornea and lens

Technique:

Observation in a good light and with a flashlight.

Normal - the cornea and the lens should be clear.

e. Pupils

Technique:

In a good light check the pupils for size, shape and equality of the pupils.
In a dimly lighted room, check for reaction to light. Shine a flashlight into the eyes one at a time. Watch pupil reaction on both sides.

Normal pupils should constrict equally and together when a light is shone into one of them and dilate when the light is removed.

Cornea - any scarring, cloudiness or whitening; foreign bodies, scratches and lacerations.

Lens - whitening, a dark fluid level behind the cornea.

Pupils that are irregular or unequal in size compared to each other are abnormal. Also, those that do not change equally in relation to light or darkness.

3. Ears

3. Ears

Technique:

Normal ears should be equal in size to each other, symmetrical and be non-offensive in odour.

Swellings, lumps, deformation or sores.
Offensive odour.
Redness, scaliness, swellings or lumps.

Physical Examination

Abnormal

3.Ears (cont'd)

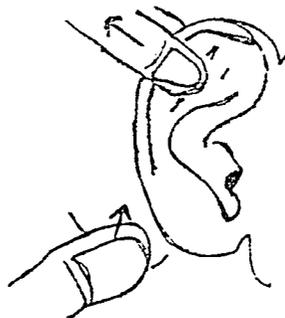
Screen for hearing:

Have the patient cover one ear. Remove your watch and slowly bring it closer to the open ear. Ask the patient to tell you when he hears the ticking of the watch. Then do it with the other ear. Compare the distances.

In a normal person the distances will be equal.

Inspect and palpate the centre ear.

Figure PE 6 -
Inspection of the
ears.



Elicit tenderness:

Pull on ear. Then press on mastoid process.

The normal ear should be non-tender.

With the otoscope, look into the canal.

In a good light examine the opening into the canal of both ears.

Any difficulty in hearing.
No reaction to sounds indicates possible deafness.

Tenderness when pulling on the ear; tenderness over the mastoid process.

Physical Examination

Abnormal

3. Ears (cont'd)

Normal ears will be open and you may see a small amount of brown wax

Technique:

Examine the tympanic membrane. The tympanic membrane should look a lumenescent gray, with a recognizable cone of light. The short process of the malleus, the handle of the malleus, and the umbo should be easily seen.

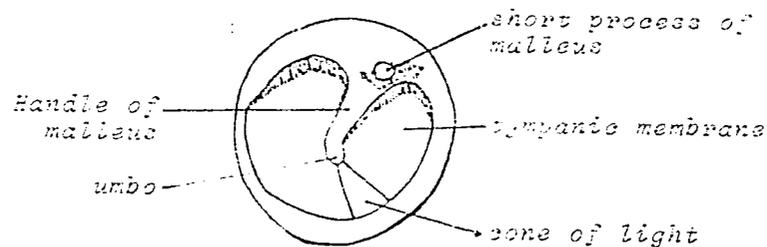


Figure PE 7 - Parts of the normal middle ear.

Discharge of any type - clear, puslike or blood. Packed with wax or foreign body.

Redness
 Bulging
 Fluid behind tympanic membrane
 Air bubbles behind tympanic membrane
 Perforations
 Scarring

Physical Examination

Abnormal

4. Nose

Direct observation and in a good light with a nasal speculum. Figure PE 8.



Figure PE 8 - Examination of the nose with nasal speculum.

The normal nose is a midline symmetrical pyramid. The nasal system divides the nose into two equal symmetrical air passages. They are normally open for a free flow of air. The mucosa is normally intact, smooth and moist.

Any external deformation
Swelling or inflammation
Bleeding, or crusting of the mucosa
Discharges - bloody or clear
Blockages of one of the passages, foreign bodies or growths.

5. Mouth and Throat

5. Technique:

In a good light inspect the external mouth. Then ask the patient to open his mouth widely. Shine a flashlight into the mouth. Take a tongue depressor and expose the inner surface of the cheeks. Examine the teeth and gums. Ask the patient to raise his tongue. Palpate any unusual lump, growth or lesion.

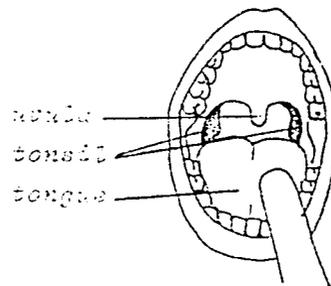
Then ask the patient to "pant like a dog" - this often flattens the tongue so the throat can be well visualized. If the throat is not well visualized, then take the tongue depressor and press on the back of the tongue gently so the throat can be seen. Try not to gag the patient. Figure PE 9.

Physical Examination

Abnormal

5. Mouth and throat (cont'd)

Figure PE 9 -
Inspection of
pharynx.



During the examination, the odour of the breath should be noted.

Normal findings:

Normal lips are moist, smooth and symmetrical.

Normal gums are firm, moist, and intact.

Normal teeth are all present, white and aligned correctly.

The tongue is normally pink and mobile.

The odour of the breath is normally non-offensive. Food odours may be present.

Lips: Blue around lips; lumps or sores; cracking at the corner.

Gums: Inflamed; swollen; bleeding; pulled away from the teeth; foul odour.

Teeth: Missing; decaying; malposition; discoloured.

Tongue: Infected; growths; swelling.

Breath odour: alcohol; sweetness; foul.

	Physical Examination	Abnormal
5. Mouth and Throat (cont'd)	<p>The normal throat has a uvula in front and on top; the back of the tongue on the bottom of the throat. The tonsils occupy the sides of the cavity. In an adult, the tonsil is retracted and just barely visible.</p> <p>The back of the throat is normally moist, pink and smooth.</p>	<p>Adult tonsils may be enlarged, swollen, reddened and covered with exudate; child tonsils are larger.</p> <p>The throat may be reddened and covered with discharge.</p>
6. Neck.	<p>6. Neck</p> <p>Technique:</p> <p>With the patient in a seated position ask him to move his head up and down and from side to side.</p> <p>Normal is a full range of motion.</p> <p>Observe for symmetry and normal landmarks of the neck - muscles, carotid pulsation, veins and trachea. Palpate the neck with the flat of the fingers, include the posterior neck, anterior, above the clavicles and under the mandibles bilaterally.</p>	<p>Stiffness, tenderness or actual limitation of movement.</p>

Physical Examination

Abnormal

6. Neck (cont'd)

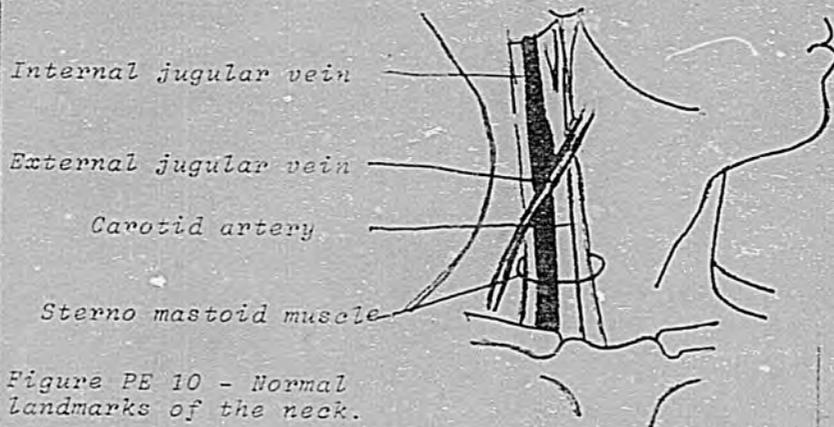


Figure PE 10 - Normal
Landmarks of the neck.

Then palpate for the thyroid by placing your fingers on either side of the trachea just above the suprasternal notch. Ask the patient to swallow while you palpate for the thyroid gently.

Normally only the normal anatomical structures of the neck are palpable. The examination is without pain.

Normal thyroid is not palpable or just barely palpable. The thyroid in a pregnant woman is twice normal size and is often palpable.

Any asymmetry, growths or lumps. Lumps in the neck may be enlarged lymph nodes. They may be non-tender or tender. Palpable, enlarged thyroid with or without nodules.

Physical Examination

Abnormal

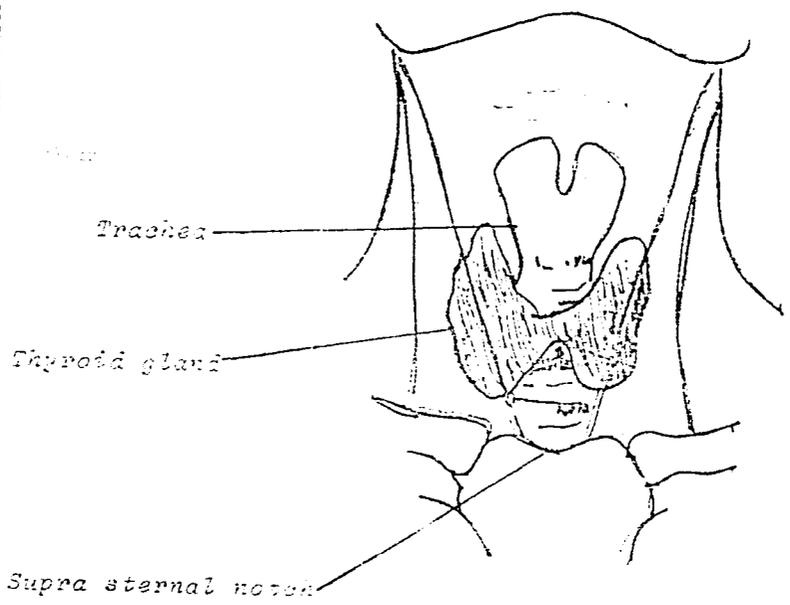


Figure PE 11 - Position of thyroid gland.

6. What three characteristics would you observe for during an examination of the nose.
 - a.
 - b.
 - c.

7. List an abnormal finding for each of the following.
 - a. Lips
 - b. Gums
 - c. Tonsils
 - d. Posterior pharynx

8. Describe the technique for examining the neck.

STUDENT GUIDE

EXAMINATION OF CHEST AND RESPIRATORY SYSTEM

I. Entry Level Knowledge and Skills:

Before starting this module, you should be able to:

1. Describe the normal anatomy of the adult chest.
2. Explain the normal physiology of respiration.

II. Objectives:

Using the information and experiences provided by the instructor and the module text, you will be able to:

1. Perform an examination of the chest using the following techniques:
 - a. inspection
 - b. palpation
 - c. percussion
 - d. auscultation
2. Explain the cause of the following abnormal chest sounds: rales, rhonchi, wheezes and friction rub.
3. Record result of chest examination.

III. Evaluation

MODULE PHASE

Upon completion of this module, you will be assessed on:

1. Knowledge: Written test based upon module content. Acceptable performance, 80%.
2. Skill: See Skill Evaluation Sheets.
 - a. Inspection of chest.
 - b. Palpation of chest.
 - c. Percussion of chest.
 - d. Auscultation of chest.

ROTATION PHASE

Prior to entry, you will be assessed on:

- a. Your ability to perform an examination of the chest using inspection, palpation, percussion, and auscultation.
- b. Your ability to diagnose the following abnormal chest sounds: rales, rhonchi, wheezes and friction rub.

- IV. Activities you will participate in to complete the objectives:
1. Read the module text pages and answer the review questions.
 2. Participate in demonstration and discussion of physical examination procedure for examination of the chest.
 3. Participate in discussion of abnormal chest sounds.
 4. Listen to abnormal breath sounds, if patient available, or audio tape of abnormal breath sound.
 5. Practice chest examination techniques on fellow students.

Chest and respiratory
System

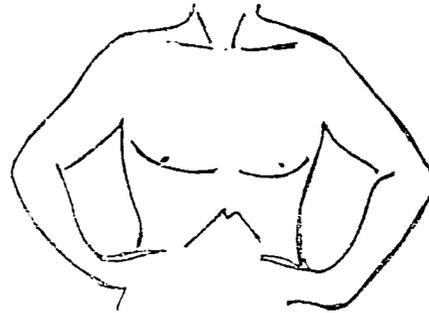
Physical Examination

Abnormal

Technique:

Inspection - observe the chest from the front and from behind while the patient is seated. See Figure PE 12.

Figure PE 12 -
Inspection of
anterior chest
with patient seated.



Observe the skin, skeletal structure, movement during respiration, rate and rhythm of breathing.

Observe any sputum the patient is able to cough up. Ask him to cough hard enough to produce sputum into a cloth or tissue.

Normal findings:

The normal chest has intact skin. Children and adult men have 2 nipples and minimal to no breast tissue. Women have enlarged conical breasts, approximately equal in size. (See P.E. of breast.)

Any scars or skin lesions.
Enlarged breast tissue in men or children.
Extra nipples in either sex may be noticed at birth.

	Physical Examination	Abnormal
<p>Chest and Respiratory System (cont'd)</p>	<p>Children and women have only a light hair pattern on the chest. Men of certain ethnic groups have a heavy hair growth over the upper chest, sometimes extending across the back.</p> <p>The normal skeletal structure follows the normal anatomical picture - symmetrical with straight and erect spine.</p> <p>Expansion of the chest is equal bilaterally and air is moved in and out without problems. Children breathe using their abdominal muscles so chest expansion may be minimal.</p> <p>Normally a person does not produce sputum. A collection of saliva may be produced.</p> <p>Technique: <u>Palpation</u> - Palpate the soft tissues and bony structure of the chest wall for tenderness or swelling. Check for rub or cracking. Check the position of the trachea. Then place your hands on either side of the chest anteriorly and then posteriorly. Ask the patient to breathe in deeply and then to exhale. Check for expansion. Figures PE 13 and PE 14.</p>	<p>Hairy chests in children or women.</p> <p>Any deformities and irregularities on one side or another of the chest. The spine may be curved and distorted.</p> <p>Unequal expansion of the chest. Infants may have retraction of the spaces between the ribs and flaring of their nasae.</p> <p>Abnormal sputum: Bloody sputum - red or dark. Green or yellow, thick sputum. White, foul smelling sputum. Large amounts of sputum in three layers.</p>

Physical Examination

Abnormal

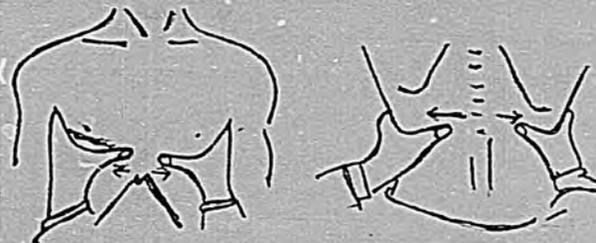
Chest and Respiratory
System (cont'd)

Figure PE 13 - Palpation. Figure PE 14 - Expansion anterior chest. Palpation. Expansion of posterior chest.

Next place the side of your hands lightly across the back of the thorax and ask the patient to say ninety-nine repeatedly. Move your hands down the chest in step like fashion and feel for vibrations against your hands.

Normal findings:

Normally the soft tissues and boney structure is symmetrical and firm. All ribs are present and palpable unless the patient is extremely obese. The trachea is midline.

The chest expands equally on both sides of the chest.

Vibrations on the hand should be equal bilaterally.

Any lumps or bumps, tenderness or cracking sounds. Trachea may be pulled to one side.

Chest may not expand equally.

Decreased to absent vibrations.

SP

Physical Examination

Abnormal

Technique:

Percussion - The palmar surface of the left middle finger is firmly pressed in a space between the ribs. The tip of the right middle finger is used to strike a sharp blow on the distal joint of the left middle finger. See Figure PE 15.

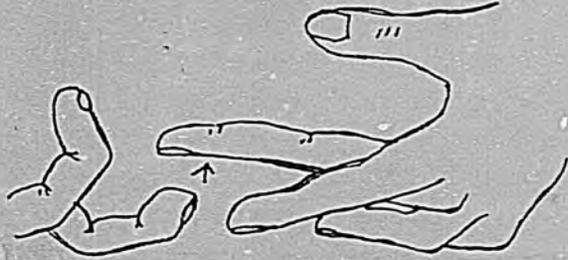


Figure PE 15 - Percussion Technique. With the middle finger of your left hand as a base, press over the distal interphalangeal joint with the tip of the middle finger of the right hand.

Only the wrist is moved to strike the blow. Two to three blows are given to the same area and the sound is compared to the sound made in an area directly opposite it on the other side of the body. See Figure PE 16.

Physical Examination

Abnormal

Chest and Respiratory System (cont'd)

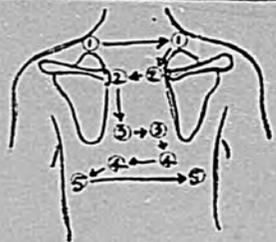
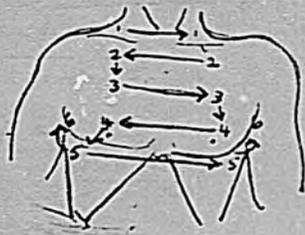


Figure PE 16 -

A. ANTERIOR

B. POSTERIOR

Normal findings:

Normal percussion sounds will be dull over the heart and liver and (loud, rounded) over the areas of normal lung tissue.

Technique:

Auscultation - Use of a stethoscope. The bell should be used for spaces and the diaphragm for flat places. Use the same pattern as used for percussion. See Figure PE 16.

Ask the patient to breathe deeply and frequently through his mouth while you listen in all the areas.

Normal findings:

Normal breathing produces a whishing noise that can be heard over the lungs. A long inspiratory phase and a shorter expiratory phase is present over the lungs. A harsher sound, with both phases equal, is normally noted in the upper mid portion of the chest.

Abnormal sounds include any dullness in any unsuspected areas especially if unilateral or areas of hypertympany.

Abnormal breathing sounds include harsh sounds, hollow sounds or rales, wheezes, rhonchi and friction rubs.

Rales are fine discontinuous sounds caused by moisture partially blocking air passages.

Physical Examination

Abnormal

Chest and Respiratory System, (cont'd)

The sounds produced by this blockage are not continuous and are heard mostly on inspiration.

Rhonchi and wheezes are caused by the narrowing of air passageways. Both are heard better on expiration.

Rhonchi are low-pitched continuous sounds which originate in larger air passages.

Wheezes are high-pitched hissing sounds which originate in small passageways.

Friction rubs are loud surface like sounds made by tissues (pleurae) rubbing together.

REVIEW QUESTIONS

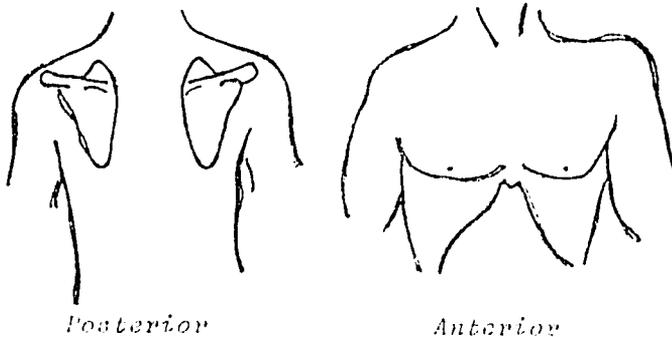
1. What is the purpose of percussing a person's chest during physical exam
 - to feel abnormal size or shape.
 - to hear rales or rhonchi
 - to hear differences in density of underlying organs.
 - to observe unequal movement during respiration.

2. You can determine the air flow through the lungs during which of the following procedures:
 - Inspection
 - Palpation
 - Auscultation

3. Define:
 - Rales:

 - Rhonchi:

4. On the following diagram of the chest - anterior and posterior:
 1. Show the areas of percussion and auscultation.
 2. Number the sequence of examination.



STUDENT GUIDE

EXAMINATION OF CARDIOVASCULAR SYSTEM

I. Entry Level Knowledge and Skills:

Before starting this section you should be able to:

1. Describe the normal anatomy of the adult cardiovascular system
2. Explain the normal physiology of the adult cardiovascular system.
3. Use the stethoscope to auscultate the chest.

II. Objectives:

Using the information and experiences provided by the instructor and the module text, you will be able to:

1. Perform an examination of the chest and heart including the following:
 - a. inspection of the anterior chest
 - b. palpation of the anterior chest
 - c. identification of the apex beat or point of maximum impulse
 - d. auscultation of the heart at four positions: mitral, pulmonary, aortic and tricuspid
2. Examine the peripheral vascular system to include the location and evaluation of the following pulses:
 - a. radial
 - b. femoral
 - c. popliteal
 - d. dorsalis pedis (pedal)
3. Identify the following abnormalities:
 - a. pitting oedema of ankles and sacrum
 - b. distended neck veins.

III. Evaluation:

MODULE PHASE

Upon completion of this module, you will be assessed on:

1. Knowledge: Written test based upon module content. Acceptable performance, 80%.

2. Skill: See rating sheets for acceptable performance rating level.
 - a. inspection, palpation or anterior chest
 - b. auscultation of heart
 - c. examination of peripheral vascular system

ROTATION PHASE

Prior to entry, you will be assessed on:

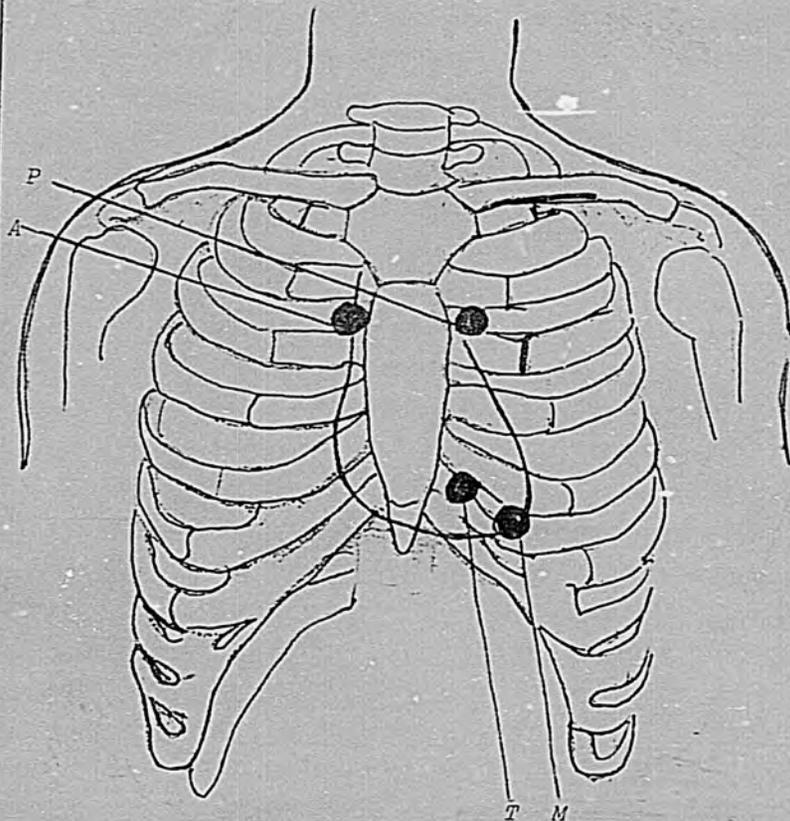
- a. Your ability to perform an examination of the heart using auscultation, inspection and palpation.
- b. Your ability to identify abnormal heart sounds.
- c. Your ability to perform examination of peripheral vascular system.
- d. Your ability to identify abnormal peripheral vascular system findings.
- e. Your ability to identify the following:
 - a. pitting oedema of ankles and sacrum, and
 - b. distended neck veins.

IV. Activities you will participate in to complete the objectives:

1. Read the module text and answer the review questions.
2. Write two questions about the cardiovascular exam for presentation during discussion.
3. Participate in the demonstration and discussion of physical exam of CV system.
4. Listen to audio tape of abnormal heart and discuss.
5. Practice chest and peripheral vascular exam techniques on fellow students.

	Physical Examination	Abnormal
<p data-bbox="106 260 462 290"><u>Cardiovascular System:</u></p> <p data-bbox="106 313 190 339">Heart</p>	<p data-bbox="595 269 761 296">Technique:</p> <p data-bbox="595 322 1313 401"><u>Inspection</u> - Observe the anterior chest when seated and lying down. Look for bulges and pulsation.</p> <p data-bbox="595 427 1361 506">Normally in a thin person one can see a pulsation in the area of the apex of the heart and over the carotid arteries.</p> <p data-bbox="595 585 1342 743"><u>Palpation</u> - Press the palmar surface of your hand over the left anterior chest and identify the point of maximal impulse (P.M.I.). This is the lowermost and outermost point at which the heartbeat can be felt maximally. This is the apex of the heart.</p> <p data-bbox="595 769 1170 802">Check also for any other vibrations.</p> <p data-bbox="595 822 1361 888">Normally the PMI in an adult is 7-9 cm from the midsternal line at the fifth intercostal space.</p> <p data-bbox="595 967 1370 1164"><u>Auscultation</u> - Place a stethoscope over the areas shown in Figure PE 17. These positions will allow you to easily listen to the heart rate and rhythm. There are two heart sounds which make up one, so called, beat (sound best described as "lub dub"). Listen for any other sounds apart from the heart sounds.</p>	<p data-bbox="1408 440 1884 598">Abnormally one may see marked pulsation over the apex of the heart or a pulsation in another area of the chest or a bulge in the anterior left sternal area.</p> <p data-bbox="1408 835 1808 868">A shift in the apex beat.</p> <p data-bbox="1408 881 1865 927">Pulsations in other areas of the chest.</p> <p data-bbox="1408 940 1884 1000">A thrill (localized vibrations on the chest wall).</p>

Physical Examination



Abnormal

Figure PE 17 - Areas of auscultation.

M - Mitral-5th.intercostal space.

P - Pulmonary-2nd.intercostal space.

A - Aortic-2nd.intercostal space.

T - Tricuspid-5th.intercostal space.

15

Physical Examination

Abnormal

Heart (cont'd)

Sounds identified between the two heartbeats are called murmurs. They may sound like a gentle blowing sound.

While examining the pulses check also for temperature. Extremities should be warm.

Peripheral Pulses and Temperature

Techniques:

Using the fingertips of your right hand, lightly palpate over arterial areas. Check for rhythm, rate, volume and character. (See pulse rate section)

A cold extremity.

Physical Examination

Abnormal

Heart (cont'd)



Figure PE 18 -
Radial pulse.



Figure PE 19 -
Femoral pulse.

Check the radial, femoral, popliteal and pedal pulses and compare to the other side. They should be normal and equal. See Figure PE 18, 19, 20, 21.

Any decrease or absence of pulse. Irregularities, very slow rate or very fast rate. (See pulse rate section)

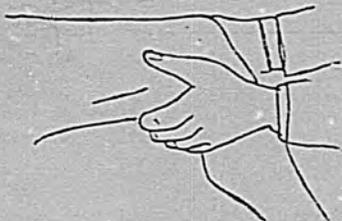


Figure PE 20 -
Popliteal pulse.



Figure PE 21 -
Dorsalis pedis pulse.

53

Physical Examination

Abnormal

Oedema

Technique:

The lower legs and feet should be examined for swelling especially "pitting oedema". This is a collection of fluids in the tissues. To demonstrate its presence, the examiner presses his thumb into the skin of the patient over the dorsum of the foot, the tibia or sacrum. When the thumb is removed, an indentation remains if pitting oedema is present.

Normal findings:

Normally no pitting oedema is present.

Any pitting oedema may be present, more frequently seen during pregnancy, is seen in heart failure, some forms of kidney disease and kwashiorkor.

Oedema may become generalized to cover great areas of the body including the face, arms and abdominal cavity.

Pain, tenderness, redness

Squeeze calf muscles by compressing them against the tibia.

Dorsiflex the foot - observe for redness or discolouration of calf muscles.

Normal findings:

No tenderness or tension of the muscles. No calf pain when foot is dorsiflexed. No redness or discolouration.

The following may suggest phlebitis:

- tenderness, tension of calf muscles.
- calf pain on dorsiflexion of foot.
- redness or discolouration.

Physical Examination

Abnormal

Neck Veins

Technique:

Observe for distended neck veins by positioning the patient in a supine position at 45° angle.

Normal findings:

Normally the neck veins would be full and visible only $\frac{1}{3}$ to $\frac{1}{2}$ the length of the neck. See Figure PE 22.



Figure PE 22 - Normal neck veins at 45° .

The neck veins are full $\frac{2}{3}$ to the full length of the neck. See Figure PE 23.

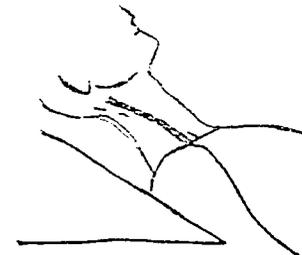


Figure PE 23 - Distended neck veins at 45° .

This is a sign of heart failure.

REVIEW QUESTIONS

1. What is the apex beat and why is it important?

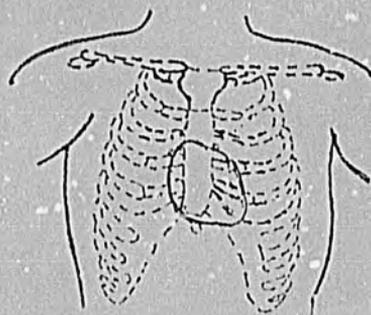
2. On the following diagram mark and label the four positions which will allow nurse clinician to listen easily to the heart rate and rhythm. Describe in writing the exact anatomical location of each.

1)

2)

3)

4)



3. The location of the apex beat is:

- _____ under the ribs
- _____ approximately 7 to 9 cm from the midsternal line at the 5th intercostal space
- _____ directly above the apex
- _____ approximately 5 to 6 cm from the midsternal line

4. Four characteristics nurse clinician would note when palpating the pulse are:

1)

2)

3)

4)

5. What is the purpose for comparing the right femoral pulse and the right radial pulse?

STUDENT GUIDE

EXAMINATION OF THE LYMPHATIC SYSTEM
AND MUSCULOSKELETAL SYSTEM *

I. Entry Level Knowledge and Skills:

Before starting this section you should be able to:

1. Describe the normal anatomy and explain the function of the lymphatic system.
2. Describe the anatomy and function of the musculo-skeletal system.

II. Objectives:

Using the information and experiences provided by the instructor and module text, each trainee will be able to:

1. Palpate the lymphatic groups in the neck, axillary and inguinal areas and identify any abnormal lymph nodes.
2. Record the findings of your examination.
3. Observe and palpate the musculo-skeletal system while the body is at rest and during movement.

III. Evaluation:

MODULE PHASE

Upon completion of this module, you will be assessed on:

1. Knowledge: Written test based upon module content. Acceptable performance, 80%.
2. Skill: See Skill Evaluation Sheets
 - a. palpation of lymphatic groups in the neck, axillary and inguinal areas.
 - b. observation and palpation of the musculo-skeletal system and rotation of deviation from normal range of motion.
 - c. test for power of arm, fingers, wrist, grip, thigh, leg, and foot.

*These examinations can easily be done in conjunction with the exam of the peripheral vascular system.

ROTATION PHASE

Prior to entry, you will be assessed on:

- a. Your ability to perform an examination of the lymphatic and musculoskeletal systems.
- b. Your ability to identify abnormalities in the lymphatic or musculoskeletal systems.

IV. Activities you will participate in to complete the objectives:

1. Read the module text and answer the review questions.
2. Participate in the demonstration and discussion of the examination of the lymphatic system and musculoskeletal system.
3. Practice range of motion examination and palpation of lymph nodes on fellow students.
4. Practice test for power of muscles.

Physical Examination

Abnormal

Lymphatic System:

Technique:

Palpation with the palmar surface of the fingers - all the areas where lymph nodes are located. See Figure PE 24.

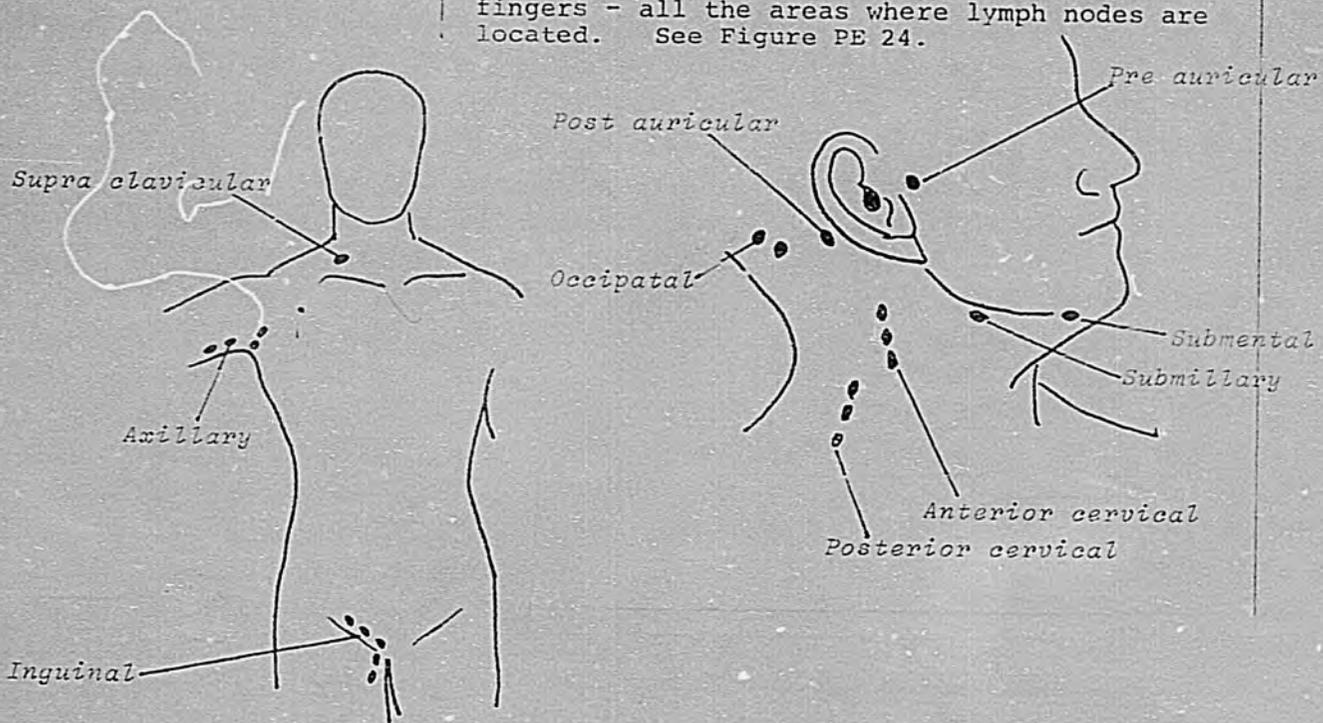


Figure PE 24 - Lymph Nodes.

Normal findings:

Lymph nodes are not normally palpable.

In adults, Lymph nodes:

- may be enlarged
- may be tender
- may be non-tender
- free, discrete
- firm or hard

Physical Examination

Abnormal

Muscular Skeletal System:

Technique:

Observe the body in general at rest and during movement. Then observe and palpate each joint and the spine at rest and during movement. Check for power, strength and range of motions. See Figures PE 25, 26, 27, 28 and 29.

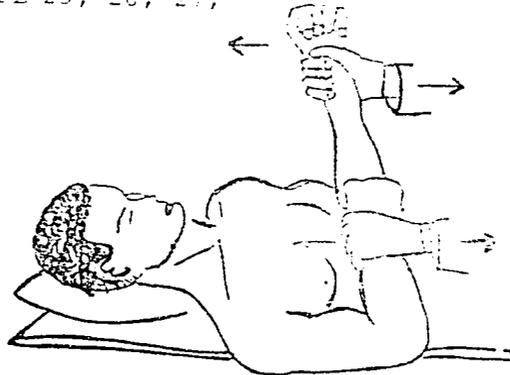


Figure PE 25 - Test for power of arm.

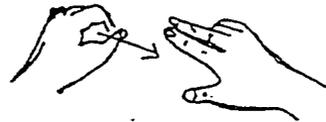


Figure PE 26 - Test for power of grip.

Physical Examination

Abnormal

Muscular Skeletal System
(cont'd)

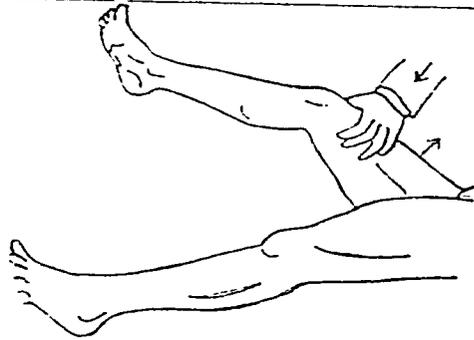


Figure PE 27 -
Test for power
of thigh.



Figure PE 28 -
Test for power
of leg.

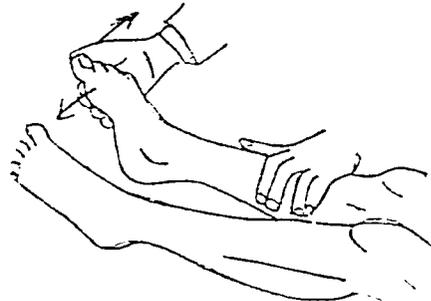


Figure PE 29 -
Test for power
of foot.

Physical Examination

Abnormal

Muscular Skeletal System
(cont'd)

Normal findings:
Normally the body moves symmetrically and equally.

The spine is straight, erect and non tender.
All joints go through a normal range of motion smoothly and bilaterally. Power and strength is equal on both sides. Muscles are well formed.

Abnormal findings:

- deformity
- change in walking pattern
- spine bent or tender
- tenderness and warmth over a boney process
- range of motion decreased
- power and strength decreased
- grating sensation on moving a joint.

REVIEW QUESTIONS

1. List three common locations for palpating lymph nodes
 - a.
 - b.
 - c.
2. Explain the function of lymph nodes.
3. What findings would you consider abnormal when examining the lymph nodes?
4. Normally the body moves _____ and _____ .
5. List three abnormal musculoskeletal findings.
 - a.
 - b.
 - c.

STUDENT GUIDE

EXAMINATION OF THE ABDOMEN

I. Entry Level Knowledge and Skill:

Before starting this section you should be able to:

1. Identify the organs contained in the abdomen and their position.
2. Be familiar with the purpose of palpation and the procedure for percussion and auscultation.

II. Objectives:

Using the information and experiences provided by the instructor and the module text, you will be able to:

1. Perform an examination of the abdomen including the following techniques:
 - a. observation
 - b. palpation: liver, spleen, kidney, reproductive organs (female)
 - c. percussion
 - d. auscultation
2. Identify the following structures during palpation of the abdomen of a thin person:
 - a. the liver edge
 - b. portions of the large bowel
 - c. the pulsating aorta and iliac arteries
 - d. the lower pole of the right kidney
3. Describe the possible abnormalities which can be identified during examination of the abdomen.

III. Evaluation:

MODULE PHASE

Upon completion of this module, you will be assessed on:

1. Knowledge: Written test based upon module content. Acceptable Performance, 80%.
2. Skill: See Skills Evaluation Sheets.
 - a. examination of the abdomen, including: observation, palpation, percussion and auscultation.

ROTATION PHASE

Prior to entry, you will be assessed on:

- a. Your ability to perform examination of the abdomen.
- b. Your ability to identify abnormal findings and record them.

IV. Activities you will participate in to accomplish the objectives:

1. Read the module text and answer the review questions.
2. Participate in demonstration and discussion of abdomen examination.
3. Practice the examination of the abdomen on fellow student or patient.

Physical Examination

Abnormal

Abdominal Exam:

Technique:

Inspection - Ask the patient to lie down in a supine position. Visualize the entire abdomen. Inspect for contour, scars, veins, peristalsis, pulsation and masses.

Ask the patient to point to any areas of pain and examine these last. See Figure PE 30.

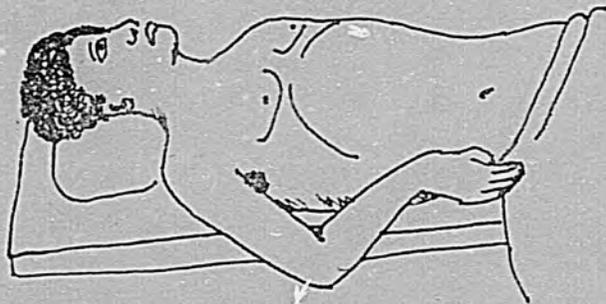


Figure PE 30 - Inspection of the Abdomen

Normal findings:

The normal abdomen will be scarless. Veins will be barely visible. Peristalsis is not usually visible except on very thin people. The contour is symmetrical and varies according to the degree of thinness or obesity. The abdominal aorta causes a slight pulsation in the epigastrium.

- any scar
- dilated veins
- visible peristalsis
- asymmetry in contour
- increased pulsation of the aorta
- bluish colour around the umbilicus
- rounded tense abdomen

Physical Examination

Abnormal

Abdominal Exam, (cont'd)

Auscultation:

Using the diagram of the stethoscope, listen over each quadrant of the abdomen. Listen for presence of bowel sounds, quality and amount.

Normal bowel sounds are active, or medium intensity and present throughout the abdomen.

Palpation: Position the patient comfortable on his back with his knees slightly raised.

Using the pads of your fingertips, feel in all four quadrants - first superficially and then deeply. Examine the areas of known pain or tenderness gently and last. See Figure PE 31.

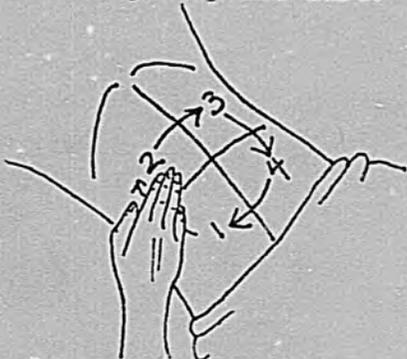


Figure PE 31 -
Palpation of the
abdomen.

In order to palpate the liver, place your left hand under and below the patient's ribs; your right hand just below the costal margin and ask the patient to breathe in and out deeply. See Figure PE 32.

Large rushes of bowel sounds followed by gurgling sounds may be present.

No bowel sounds.

Physical Examination

Abnormal

Abdominal exam. (cont'd)



Figure PE 32 -
Palpation of liver.

In order to palpate for the spleen, ask the patient to lie on his right side and cough three times. This will bring the spleen downward. Then with your left hand behind the left costal margins, use your right hand to gently palpate for the spleen. See Figure PE 33.



Figure PE 33 -
Palpation of
spleen.

	Physical Examination	Abnormal
Abdominal Exam, (cont'd)	<p>Check for masses, tenderness or pain.</p> <p>Normally you will not be able to palpate the liver or spleen. The abdomen should be soft and non-tender. No masses should be palpable. In a thin patient a pulsating aorta or iliac artery may be felt.</p> <p>Percussion for fluid</p> <p>Using the same technique as when percussing the chest, percuss across the abdomen while the patient is in the supine position. Determine where the tympanic area ends and dullness begins. Then ask the patient to lie on his side and percuss the abdomen again.</p> <p>Normal findings: In normal people no change is noted in the percussion sounds related to position.</p>	<p>Enlarged liver; enlarged spleen; A tender or painful abdomen may show rebound tenderness - tenderness upon release of pressure on the abdomen. Board-like rigidity.</p> <p>Tenderness localized to one quadrant. Generalized tenderness.</p> <p>A full bladder in the lower half of the abdomen midline may be present. This will disappear after urination.</p> <p>A soft easily reducible midline swelling may be a ventral hernia.</p> <p>A change in area of dullness as the fluid puddles in another area. This is called shifting dullness. See Figures PE 34 and 35.</p>

Physical Examination

Abnormal

Abdominal Exam. (cont'd)



Figure PE 34 - Percussing for shifting dullness - supine position.



Figure PE 35 - Percussing for shifting dullness - lateral position.

REVIEW QUESTIONS

1. In what quadrant of a patient's abdomen would you expect to palpate the liver?

2. Check the abdominal structures you might expect to palpate on a thin patient.

_____ pancreas	_____ appendix	_____ spleen
_____ kidney	_____ large bowel	

3. Define "Rebound Tenderness":

4. List five finds of an abdominal examination that you would consider abnormal
 - 1)
 - 2)
 - 3)
 - 4)
 - 5)

STUDENT GUIDE

EXAMINATION OF NERVOUS SYSTEM

I. Entry Level Knowledge and Skills:

Before starting this module, you should be able to explain the anatomy and physiology of the nervous system as given in the Anatomy and Physiology Module.

II. Objectives:

Using the information and experiences provided by the instructor and the module text, you will be able to:

1. Conduct an examination of the nervous system, including assessment of the following:
 - a. mental status
 - b. motor function
 - c. sensation
 - d. meningeal signs

III. Evaluation:

MODULE PHASE

Upon completion of this module, you will be assessed on:

1. Knowledge: Written test based upon module content. Acceptable performance, 80%.
2. Skill: See Skill Evaluation Sheets.
 - a. Examination of the nervous system: mental stress, motor function, sensation and meningeal signs

ROTATION PHASE

Prior to entry, you will be assessed on:

- a. Your ability to perform examination of the nervous system.
- b. Your ability to identify abnormalities and record them.

IV. Activities you will be participating in to complete the objectives.

1. Read the module text and answer review questions.
2. Participate in demonstration and discussion of the nervous system examination.
3. Practice the examination of the nervous system.

Physical Examination

Abnormal

Meningeal Signs

Technique:

Examine for neck stiffness by raising the head.
See Figure PE 36.



Figure PE 36 - Testing for neck stiffness.

Normally the neck should flex easily without stiffness or pain.

Children:

Another meningeal sign is especially good for children. Lay child on his back. Flex the hip to 90° (straight up) allowing the knee to flex. Then extend the knee. See Figure PE 37.

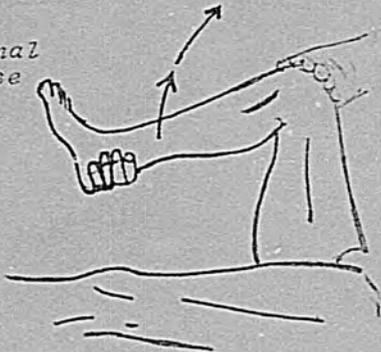
Resistance to flexion
-stiffness
-pain

Physical Examination

Abnormal

Meningeal Signs, (cont'd)

Figure PE 37 - Additional meningeal sign for use in children.



Normal - no resistance, or pain.

If meningeal inflammation is present, there will be pain and irritation and sometimes a tendency to flex the neck.

Leg not being extended will bend.

REVIEW QUESTIONS

1. The test of meningitis is known as _____ sign.
2. List four findings you would consider abnormal when examining a patient's neurological system:
 - 1)
 - 2)
 - 3)
 - 4)
3. Describe the techniques of examination for the following:
 - mental status

 - motor function

 - sensation

STUDENT GUIDE

EXAMINATION OF THE MALE AND FEMALE GENITALIA,
ANUS AND RECTUM

I. Entry Level Knowledge and Skills:

Before starting this module, you should be able to:

1. Describe the anatomy and explain the function of the male reproductive system.
2. Describe the anatomy and explain the function of the female reproductive system.

II. Objectives:

Using the information and experiences provided by the instructor and module text, you will be able to:

1. Describe the examination of the external male genitalia and explain the recording procedure.
2. Describe the examination of the external female genitalia and explain the recording procedure.
3. Describe the examination of anus and rectum and explain the recording procedure.

III. Evaluation:

MODULE PHASE

Upon completion of this module, you will be assessed on:

1. Knowledge: Written test based upon module content. Acceptable performance, 80%.
2. Skill: Be able to describe procedure for:
 - a. exam of female genitalia
 - b. exam of male genitalia
 - c. exam of anus and rectum

ROTATION PHASE

Prior to entry, you will be assessed on:

1. Your ability to perform examination of female/male genitalia.
2. Your ability to perform examination of the anus/rectum.
3. Your ability to recognize and record abnormal findings.

IV. Activities you will be participating in to accomplish the objectives.

1. Read the module text and answer review questions.
2. Participate in demonstration and discussion of the examination of male and female genitalia, anus and rectum. Demonstration of this portion of the examination may be postponed until the rotation phase of training.
3. Discuss range of abnormal findings possible to detect during examination.
4. Slide presentation of the male/female external genital examination, and exam of anus and rectum, if available.

Physical Examination

Abnormal

Reproductive System

Male Genitalia

Penis

Technique:

Inspection and palpation distinguish most disorders of the male external reproductive organs.

For examination of the penis, retract the prepuce from the glans to observe the size of the urethral opening and the moist covering of the glans. Palpate the length of the shaft. If any lesions or discharge is present, use gloves to protect yourself from contagious venereal disease.

Normal findings:

Normally the skin and mucous membrane are intact. The male may or may not be circumcized. No discharge should be coming from the urethral opening.

Any lesion, growth, tenderness or discharge should be noted.

Scrotum

Examination of the scrotal wall for intact or broken skin.

Thickening or swelling of the scrotal wall.

Normal findings:

Normally the skin is thin, loose and intact.

Any lesion should be examined with gloves for tenderness.

Examination of scrotal contents is done by palpation. Figure PE 38. (Any swelling is palpated and gentle attempt at reducing the swelling through the inguinal ring.)

Physical Examination

Abnormal

Reproductive System (cont'd)



Figure PE 38 -
Checking
scrotum.

The testes are palpated using a thumb and a forefinger. Compare with the other.

Normal findings:

A normal scrotum has no swellings or areas of firmness.

The testes are bilaterally equal, firm and smooth. The spermatic cord should be palpated and normally feels somewhat ropy or strand-like.

A reducible mass is probably a hernia and a non-reducible mass a hydrocele, both should be referred.

One testes may be smaller than the other.
One may be enlarged or have nodules.

The spermatic cord may be nodular or have masses attached.

Physical Examination

Abnormal

Female Genitalia

Technique: (See Pelvic Exam in Problems of Women module.)

Place the woman in lithotomy position with her knees for apart. See Figure PE 39.

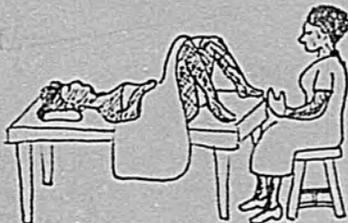
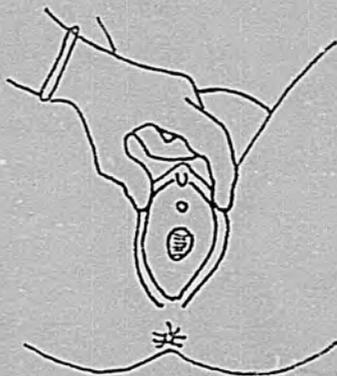


Figure PE 39 - Lithotomy Position: Here you see the correct lithotomy position as well as the position of the nurse clinician.

Figure PE 40 - Inspection.

Inspect the external genitalia. See Figure PE 40.



Physical Examination

Abnormal

Female genitalia (cont'd)

Palpate any lesions.
See Figure PE 41.

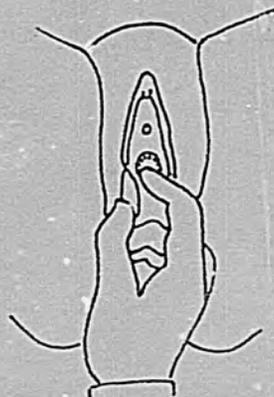


Figure PE 41 - Palpation

Do a speculum
examination.
See Figure PE 42.

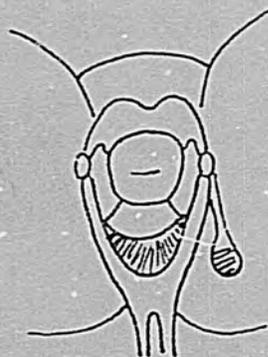


Figure PE 42 - Speculum Examination

Normal findings: See Problems of Women Module

Abnormal findings: See
Problems of Women Module.

Physical Examination

Abnormal

Anus and Rectum

Technique:

In the female the rectal examination is usually done at the time of the pelvic examination. It also may be done in the left lateral position with the left leg straight and the right leg flexed.

In a male the rectal exam is often done in a standing position, flexed at the hips with the upper body resting across the examining table. The left lateral position may also be used.

Done in any of the positions, the examiner first observes the external anal area for colour, lesions and growths.

Then taking the forefinger of a gloved hand, which has been lubricated, presses steadily against the anus and asks the patient to relax. The finger is inserted into the rectum and is rotated around the rectal wall checking for masses.

The prostate in the male is found anteriorly and is palpated to determine its consistency and shape.

Normal findings:

External anus has intact skin. The skin - mucosa junction can be seen by putting some tension on each side of the anus.

Sores, growths, lesions, fissures, blue swellings as in piles, or undue relaxation of the rectum may be found.

	Physical Examination	Abnormal
Anus and Rectum (cont'd)	<p>During palpation the anal sphincter should be tight but opens readily on applying pressure. The examination may normally be slightly uncomfortable but not painful.</p> <p>The rectal area may normally contain some faeces or be empty. No other masses should be present.</p> <p>In a male the prostate is bilaterally symmetrical and firm. It has two lateral lobes.</p> <p>The cervix or uterus may be palpable anteriorly normally in a female.</p>	<p>Areas of severe tenderness, or pain. Any swelling and masses.</p> <p>The prostate may be tender, enlarged or unsymmetrical. Nodules may be present.</p>

5. List two positions for rectal examination of male patient.
 - a.
 - b.
6. What organ of the male reproductive system is anterior to the anal rectum junction and can be felt during rectal examination?
7. What organ of the female reproductive system is anterior to the anal rectal junction and can be felt during rectal examination?

STUDENT GUIDE

EXAMINATION OF BREASTS

I. Entry Level Knowledge and Skills:

Before starting this section you should be able to describe the normal anatomy and function of the breasts.

II. Objectives:

Using the information and experiences provided by the instructor and the module text, you will be able to:

1. Perform an examination of the breasts including: observation and palpation, identify any abnormalities.
2. Record breast examination findings.

III. Evaluation:

Upon completion of this module, you will be assessed on:

1. Knowledge: Written test based upon module content. Acceptable performance, 80%.
2. Skill: See Skill Evaluation Sheets.
 - a. Observation and palpation of the breasts.

Prior to entry to the rotation phase, you will be assessed on:

- a. Your ability to perform a breast examination.
- b. Your ability to identify and record any abnormal findings.

IV. Activities you will participate in to complete the objectives:

1. Read the module text and answer the review questions.
2. Participate in the demonstration and discussion of examination of the breasts.
3. Observe the slide presentation of breast examination.
4. Practice examination of the breasts.

Physical Examination

Abnormal

Breast

Technique: (See Problems of Women Module)

With the woman seated, observe the breasts for colour, size and shape. Also, look for any dimpling or puckering of the skin (Figure PE 43). Then repeat this with her hands raised on her hips (Figure PE 44), and with her hands raised (Figure PE 45).

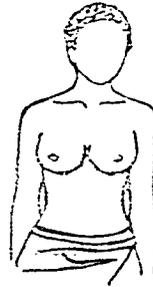


Figure PE 43 - Breast examination - observation

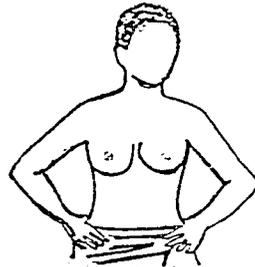


Figure PE 44 - Breast examination - observation with hands on hip.

Physical Examination

Abnormal

Breast (cont'd)



Figure PE 45 - Breast examination - observation with hands raised.

Then ask the woman to lie on a flat bed. Examine the nipples. Then place a folded towel under the shoulder of the same side to be examined. Position the woman's arm on that side so it rests comfortably above her head. (Figure PE 46)

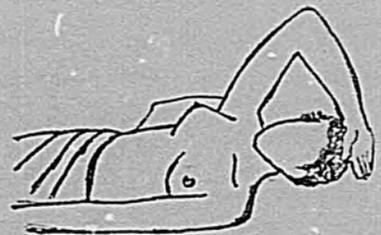


Figure PE 46 - Right breast examination position.

Physical Examination

Abnormal

Breast (cont'd)

By thinking of the breast as a clock, start at the top of the breast at 12 o'clock, and with the flat of the fingers move from the anterior portion of the breast toward the nipple, using light circular movements.

Cover the entire breast in this manner.

Then with the arm down at the woman's side, examine the tissues of the breast that extend into the armpit. Also feel for lymph nodes in this area.

The examination is then repeated on the other breast.

Normal findings:

Normally the breasts are symmetrically equal, and rise and fall equally. The skin and nipples are intact and smooth. Breasts are normally even in texture throughout and non-tender.

Asymmetry of the breast or rising and falling unequally.
Redness, heat, swelling.
Puckering of the skin.
Fissures or cracks in the nipple and bleeding from the nipple.

Tenderness.
Masses or lumps.

REVIEW QUESTIONS

1. List 3 characteristics to observe when examining the breast.
 - 1)
 - 2)
 - 3)

2. List 5 findings you would consider abnormal when performing a breast examination.
 - 1)
 - 2)
 - 3)
 - 4)
 - 5)

PHYSICAL EXAMINATION MODULE

SKILL EVALUATION

Learning to perform the physical examination is a lengthy process which requires a great deal of practice. Because of this, the physical examination will be evaluated in two stages. The first evaluation will occur at the conclusion of the teaching sessions associated with the Physical Examination Module. At this time, the emphasis of the evaluation is on your ability to perform the skills associated with the physical examination. These techniques are itemized on the attached Evaluation Sheet.

The second evaluation will be more comprehensive and will occur upon the completion of the module phase. In addition to technique, at this time you will be rated on the accuracy of the information you obtain and record during the physical examination of a patient.

Your ability to perform and record a physical examination according to the established standard is one of the prerequisites to beginning the rotation phase of training.

To help you prepare, a list of the skills to be evaluated has been included. You are advised to do the following:

1. Work on perfecting your techniques of examination with another student.
2. During the clinical practice time provided during the teaching of the module, practice the skills.
3. Have a fellow student observe and evaluate your performance.
4. When you feel you are ready, ask a trainer to observe and rate your performance.
5. If your performance is unacceptable, the trainer will give you specific comments on how to improve.
6. Practice again until you are ready for evaluation, and arrange to be rated.
7. If, after two attempts, you are unable to perform a skill at an acceptable level, arrange for a meeting with members of the training staff who will help you obtain the experiences necessary for improving your performance.