

# Vascular sounds, abdominal,

[Science](#), [Anatomy](#)



The clinical treatments described and recommended in this publication are based on research and consultation with nursing, medical, and legal authorities. To the best of our knowledge, these procedures reflect currently accepted practice. Nevertheless, they can't be considered absolute and universal recommendations. For individual applications, all recommendations must be considered in light of the patient's clinical condition and, before administration of new or infrequently used drugs, in light of the latest package-insert information. The authors and publisher disclaim any responsibility for any adverse effects resulting from the suggested procedures, from any undetected errors, or from the reader's misunderstanding of the text. © 2011 by Lippincott Williams & Wilkins. All rights reserved. This book is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means—electronic, mechanical, photocopy, recording, or otherwise—without prior written permission of the publisher, except for brief quotations embodied in critical articles and reviews and testing and evaluation materials provided by publisher to instructors whose schools have adopted its accompanying textbook. Printed in China. For information, write Lippincott Williams & Wilkins, 323 Norristown Road, Suite 323, Ambler, PA 19002-2756. Derived from American Gothic, 1930 by Grant Wood. All rights reserved by the estate of Nan Wood Graham/Licensed by VAGA, New York, NY. The publishers have made every effort to obtain permission from the copyright holders to use borrowed material. If any material requiring permission has been overlooked, the publishers will be pleased to make the necessary

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<https://assignbuster.com/vascular-sounds-abdominal/>

masterpiece that's guaranteed to inspire top-notch assessment skills. It's even more extraordinary than I expected. outside the norm take note v The vividly detailed illustrations and photographs of abnormal findings are definitely “ Outside the norm. ” And what chiaroscuro! And I'm certainly going to “ Take note” of this piece. You can tell that it captures lifelike charts that illustrate the correct ways to document assessment findings. If this collection were a movie, it would have “ Best picture” written all over it. The graphic depictions of best assessment practices that appear throughout are unique and innovative. All-in-all, I find this a visually stunning and exciting new work. It has certainly inspired me to master health assessment. best picture vi Contributors and consultants Nancy Berger, RN, MSN, BC, CNE Program Coordinator Middlesex County College Edison, N. J. Marsha L. Conroy, RN, BA, MSN, APN Nurse Educator Indiana Wesleyan University Marion

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Columbus, Ohio Health history 2 Physical assessment 6 Documentation 9  
 Vision quest 10 Ready. Action! Health history Interviewing tips To make the  
 most of your patient interview, create an environment in which the patient  
 feels comfortable. Also, use the following techniques to ensure  
 effective communication. Fundamentals ; Provided by the patient, or “  
 subject” ; Verified only by the patient ; Include statements such as “ My head  
 hurts” or “ I have trouble sleeping” Subjective data Are observed ; Are  
 verifiable ; Include findings such as a red, swollen arm in a patient with arm  
 pain Objective data The success of your patient interview depends on  
 effective communication. Select a quiet, private setting. Choose terms  
 carefully and avoid using medical jargon. Speak slowly and clearly. Use  
 effective communication techniques, such as silence, facilitation,  
 confirmation, reflection, and clarification. Use open-ended and closed-ended  
 questions as appropriate. Use appropriate body language. Confirm patient  
 statements to avoid misunderstanding. Summarize and conclude with “ Is  
 there anything else? 2 Fundamentals All assessments involve collecting

two kinds of data: objective and subjective. The health history gathers  
 subjective data about the patient. Health history 3 Components of a

complete health history Biographical data Name  
 \_\_\_\_\_ Address

\_\_\_\_\_ Date of birth

\_\_\_\_\_ Advance directive explained: Yes No

Living will on chart: Yes No Name and phone numbers of next of kin: NAME

RELATIONSHIP PHONE # \_\_\_\_\_

\_\_\_\_\_

Chief complaint History of present illness

\_\_\_\_\_  
\_\_\_\_\_

Current medications DRUG

AND DOSE FREQUENCY LAST DOSE

\_\_\_\_\_  
\_\_\_\_\_

Medical history Allergies

Tape Iodine Latex No known allergies Drug:

Food:

Environmental:

Blood reaction:

Other:

Childhood illnesses

DATE \_\_\_\_\_

Previous hospitalizations

(Illness, accident or injury, surgery, blood transfusion) DATE Health problems

Yes No Arthritis . . . . . Blood problem

(anemia, sickle cell, clotting, bleeding). . . . Cancer . . . . .

. . . . . Diabetes mellitus . . . . . Eye problem

(cataracts, glaucoma) . . . . . Heart disease (heart failure, MI, valve

disease) Hiatal hernia . . . . .

HIV/AIDS . . . . . Hypertension . . . . .

. . . . . Kidney problem . . . . . Liver

problem . . . . . Lung problem (asthma, bronchitis,

emphysema, pneumonia, TB, shortness of breath) . . . . . Stroke . . . . .

. . . . . Thyroid problem . . . . .

. . . . . Ulcers (duodenal, peptic). . . . . Psychological  
 disorder . . . . . Obstetric history (females) Last menstrual  
 period \_\_\_\_\_ Gravida \_\_\_\_\_ Para \_\_\_\_\_  
 Menopause Yes No Psychosocial history Coping strategies  
 \_\_\_\_\_ Feelings of safety  
 \_\_\_\_\_ Social history Smoker No Yes  
 (# packs/day \_\_\_\_ # years \_\_ ) Alcohol No Yes (type \_\_\_\_\_ amount/day  
 \_\_ ) Illicit drug use No Yes (type \_\_\_\_\_ ) Religious and cultural  
 observances \_\_\_\_\_ Activities of  
 daily living Diet and exercise regimen \_\_\_\_\_  
 Elimination patterns \_\_\_\_\_ Sleep patterns  
 \_\_\_\_\_ Work and leisure activities  
 \_\_\_\_\_ Use of safety measures (seat belt, bike helmet,  
 sunscreen) \_\_\_\_\_ Health maintenance history DATE  
 Colonoscopy \_\_\_\_\_ Dental examination  
 \_\_\_\_\_ Eye examination  
 \_\_\_\_\_ Immunizations  
 \_\_\_\_\_ Mammography  
 \_\_\_\_\_ Family medical history Health problem Yes  
 No Who (parent, grandparent, sibling) Ask about the patient's family medical  
 history, including history of diabetes or heart disease. Ask about the  
 patient's feelings of safety to help identify physical, psychological,  
 emotional, and sexual abuse issues. Arthritis . . . . .  
 Cancer . . . . . Diabetes mellitus . . . . . Heart disease (heart failure,  
 MI, valve disease) . . Hypertension . . . . . Stroke . . . . . Be sure

to include prescription drugs, over-the-counter drugs, herbal preparations, and vitamins and supplements. 4 Fundamentals During the final part of the health history, ask about each body structure and system to make sure that important symptoms weren't missed. Start at the top of the head and work your way down to the toes. Head Psychological status Neck Endocrine system Breasts and axillae Gastrointestinal system Reproductive system General health Neurologic system Eyes, ears, and nose Mouth and throat Skin, hair, and nails Cardiovascular system Respiratory system Hematologic system Urinary system Musculoskeletal system Review of structures and systems Health history 5 Evaluating a symptom Perform a focused physical examination to quickly determine the severity of the patient's condition. Take a thorough history. Note GI disorders that can lead to abdominal distention.

Thoroughly examine the patient. Observe for abdominal asymmetry. Inspect the skin, auscultate for bowel sounds, percuss and palpate the abdomen, and measure abdominal girth. My stomach gets bloated. Your patient is vague in describing his chief complaint. Using your interviewing skills, you discover his problem is related to abdominal distention. Now what? This flowchart will walk you through what to do next. Take a brief history. Intervene appropriately to stabilize the patient, and notify the doctor immediately. Review your findings to consider possible causes, such as cancer, bladder distention, cirrhosis, heart failure, and gastric dilation. After the patient's condition stabilizes, review your findings to consider possible causes, such as trauma, large-bowel obstruction, mesenteric artery occlusion, and peritonitis. Devise an appropriate care plan. Position the



patient comfortably, administer ordered analgesics, and prepare the patient for diagnostic tests. Form a first impression. Does the patient's condition alert you to an emergency? For example, does he say the bloating developed suddenly? Does he mention that other signs or symptoms occur with it, such as sweating and light-headedness? (Indicators of hypovolemia) Yes No

Ask the patient to identify the symptom that's bothering him. Do you have any other signs or symptoms? Evaluate your findings. Are emergency signs or symptoms present, such as abdominal rigidity and abnormal bowel sounds? Yes No

6 Fundamentals Physical assessment | Cotton balls | Gloves | Metric ruler (clear) | Near-vision and visual acuity charts | Ophthalmoscope | Otoscope | Penlight | Percussion hammer | Paper clip | Scale with height measurement | Skin calipers | Specula (nasal and vaginal) | Sphygmomanometer | Stethoscope | Tape measure (cloth or paper) | Thermometer | Tuning fork | Wooden tongue blade

Assessment tools

Assemble the necessary tools for the physical assessment. Then perform a general survey to form your initial impression of the patient. Obtain baseline data, including height, weight, and vital signs. This information will direct the rest of your assessment.

Measuring blood pressure | Position your patient with his upper arm at heart level and his palm turned up. | Apply the cuff snugly, 1 (2.5 cm) above the brachial pulse. | Position the manometer at your eye level. | Palpate the brachial or radial pulse with your fingertips while inflating the cuff. | Inflate the cuff to 30 mm Hg above the point where the pulse disappears. Place the bell of your stethoscope over the point where you felt the pulse, as shown in the photo. (Using the bell will help you better hear Korotkoff's sounds, which indicate pulse. ) | Release the valve slowly

and note the point at which Korotkoff's sounds reappear. The start of the pulse sound indicates the systolic pressure. | The sounds will become muffled and then disappear. The last Korotkoff's sound you hear is the diastolic pressure. best picture Got your tools? Good. Let's get to work! Tips for interpreting vital signs | Analyze vital signs at the same time. Two or more abnormal values may provide clues to the patient's problem.

For example, a rapid, thready pulse along with low blood pressure may signal shock. | If you obtain an abnormal value, take the vital sign again to make sure it's accurate. | Remember that normal readings vary with the patient's age. For example, temperature decreases with age, and respiratory rate can increase with age. | Remember that an abnormal value for one patient may be a normal value for another, which is why baseline values are so important. Physical assessment 7 Physical assessment techniques When you perform the physical assessment, you'll use four techniques: inspection, palpation, percussion, and auscultation.

Use these techniques in this sequence except when you perform an abdominal assessment. Because palpation and percussion can alter bowel sounds, the sequence for assessing the abdomen is inspection, auscultation, percussion, and palpation. 1 Inspection Inspect each body system using vision, smell, and hearing to assess normal conditions and deviations. Observe for color, size, location, movement, texture, symmetry, odors, and sounds as you assess each body system. 2Palpation Palpation requires you to touch the patient with different parts of your hands, using varying degrees of pressure. Because your hands are your tools, keep your fingernails hort and your hands warm. Wear gloves when palpating mucous membranes or

areas in contact with body fluids. Palpate tender areas last. Types of palpation

**Light palpation** | Use this technique to feel for surface abnormalities. | Depress the skin 1/2 to 3/4 (1.5 to 2 cm) with your finger pads, using the lightest touch possible. | Assess for texture, tenderness, temperature, moisture, elasticity, pulsations, superficial organs, and masses.

**Deep palpation** | Use this technique to feel internal organs and masses for size, shape, tenderness, symmetry, and mobility. | Depress the skin 1 1/2 to 2 (4 to 5 cm) with firm, deep pressure. Use one hand on top of the other to exert firmer pressure, if needed.

### 8 Fundamentals 3 Percussion

**Percussion** involves tapping your fingers or hands quickly and sharply against parts of the patient's body to help you locate organ borders, identify organ shape and position, and determine if an organ is solid or filled with fluid or gas.

### 4 Auscultation

**Auscultation** involves listening for various breath, heart, and bowel sounds with a stethoscope.

### Types of percussion

**Direct percussion** This technique reveals tenderness; it's commonly used to assess an adult patient's sinuses. Here's how to do it: | Using one or two fingers, tap directly on the body part. | Ask the patient to tell you which areas are painful, and watch his face for signs of discomfort.

**Indirect percussion** This technique elicits sounds that give clues to the makeup of the underlying tissue. Here's how to do it: | Press the distal part of the middle finger of your nondominant hand firmly on the body part. | Keep the rest of your hand off the body surface. | Flex the wrist of your dominant hand. | Using the middle finger of your dominant hand, tap quickly and directly over the point where your other middle finger touches the patient's skin. | Listen to the sounds produced.

**Getting ready** Provide a quiet environment. | Make sure the area to be

auscultated is exposed. ( Auscultating over a gown or bed linens can interfere with sounds. ) ; Warm the stethoscope head in your hand. ; Close your eyes to help focus your attention. How to auscultate ; Use the diaphragm to pick up high-pitched sounds, such as first (S1) and second (S2) heart sounds. Hold the diaphragm firmly against the patient's skin, enough to leave a slight ring on the skin afterward. ; Use the bell to pick up low-pitched sounds, such as third (S3) and fourth (S4) heart sounds. Hold the bell lightly against the patient's skin, just enough to form a seal.

Holding the bell too firmly causes the skin to act as a diaphragm, obliterating low-pitched sounds. ; Listen to and try to identify the characteristics of one sound at a time. Documentation 9 Documentation Get to know your stethoscope Your stethoscope should have snug-fitting ear tips, which you'll position toward your nose. The stethoscope should also have tubing no longer than 15 (38. 1 cm) with an internal diameter not greater than 1/8 (0. 3 cm). It should have both a dia phragm and bell. The parts of a stethoscope are labeled below. Ear tips Binaurals (ear tubes) Tension bar Tubing Bell Stem Diaphragm Headset Chestpiece

Documenting initial assessment findings Here's an example of how to record your findings on an initial assessment form. take note Name Age \_\_\_\_\_ Sex \_\_\_\_\_ Height \_\_\_\_\_ Weight \_\_\_\_\_ T \_\_\_\_\_ P \_\_\_ R \_\_\_ B/P (R) \_\_\_\_\_ (L) \_\_\_\_\_ Room \_\_\_\_\_ Admission time \_\_\_\_\_ Admission date \_\_\_\_\_ Doctor \_\_\_\_\_ Admitting diagnosis: \_\_\_\_\_ Patient's stated reason for hospitalization \_\_\_\_\_

Allergies				
Current medications				
Name	Dosage	Last	taken	

General survey

Henry Gibson 55 M  
 163 cm 57 kg 37 C 76 14 150/90 sitting 148/88 sitting 328 0800 4 -28-10  
 Manzel Pneumonia " To get rid of the pneumonia" Penicillin

Codeine None In no acute distress. Slender, alert, and well-groomed. Communicates well. Makes eye contact and expresses appropriate concern throughout exam. C. Smith, RN General information Identify the assessment technique being used in each illustration. Show and tell Unscramble the words at right to discover terms related to fundamentals of assessment. Then use the circled letters from those words to answer the question posed. My word! Answers: Show and tell 1. Indirect percussion, 2. Deep palpation; My word! 1. Auscultation, 2. Subjective data, 3. Chief complaint, 4. Palpation; Question: Abdomen 10 1. 2. 1. tunicaastolu 2. ivateacub jest 3. place inchmotif 4. aplaintop Answer: Question: Assessment of which body part does not follow the usual sequence? Anatomy 12 Assessment 14 Skin abnormalities 16 Hair abnormalities 24 Nail abnormalities 25 Vision quest 26 Quiet on the set. The assessment is about to begin. Anatomy 12 Skin, hair, and nails SkinSkin, hair, nails The skin covers and protects the internal

structures of the body. It consists of two distinct layers: the epidermis and the dermis. Subcutaneous tissue lies beneath these layers. Epidermis ; Outer layer ; Made of squamous epithelial tissue Dermis ; Thick, deeper layer ; Consists of connective tissue and an extracellular material (matrix), which contributes to the skin's strength and pliability ; Location of blood vessels, lymphatic vessels, nerves, hair follicles, and sweat and sebaceous glands Subcutaneous tissue ; Beneath dermis and epidermis ; Consists mostly of adipose and other connective tissues Stratum corneum Pore of sweat gland Free nerve ending Eccrine sweat gland Hair bulb Sensory nerve fibers Autonomic nerve fibers Artery Vein Anatomy 13 Hair Hair is formed from keratin produced by matrix cells in the dermal layer of the skin. Each hair lies in a hair follicle. Hair shaft Sebaceous gland Arrector pili muscle

Hair follicle Sensory nerve fibers Hair bulb ; Contains melanocytes Hair papilla ; Consists of a loop of capillaries ; Provides nourishment to hair Nails Nails are formed when epidermal cells are converted into hard plates of keratin. Hyponychium Nail plate Lateral nail fold Lunula Eponychium Nail root Nail matrix Hair bulb Matrix cell ; Produces hair Cuticle cells Inner root sheath Outer root sheath Capillary in hair papilla Melanocyte ; Determines hair color What is the matrix? The area of the dermis on which the nail rests. 14 Skin, hair, and nails Assessment To assess the skin, hair, and nails, use inspection and palpation. Skin

Observe the skin's overall appearance. Then inspect and palpate the skin area by area, focusing on color, moisture, texture, turgor, and temperature. Examine the conjunctivae, palms, soles, buccal mucosa, and tongue. Look for dull, dark color. Examine the area for decreased color and palpate for

tightness. Palpate the area for warmth. Examine the sclerae and hard palate in natural, not fluorescent, light if possible. Look for a yellow color. Examine the sclerae, conjunctivae, buccal mucosa, lips, tongue, nail beds, palms, and soles. Look for an ashen color. Examine areas of lighter pigmentation such as the abdomen. Look for tiny, purplish red spots. Palpate the area for skin texture changes. Cyanosis Edema Erythema Jaundice Pallor Petechiae Rashes Color Look for localized areas of bruising, cyanosis, pallor, and erythema. Check for uniformity of color and hypopigmented or hyperpigmented areas. Moisture Observe the skin's moisture content. The skin should be relatively dry, with a minimal amount of perspiration. Be sure to wear gloves during your examination of the skin, hair, and nails. Detecting color variations in dark-skinned people Assessment 15 Texture and turgor Inspect and palpate the skin's texture, noting its thickness and mobility. It should look smooth and be intact.

To assess skin turgor in an infant, grasp a fold of loosely adherent abdominal skin between your thumb and forefinger and pull the skin taut. Then release the skin. The skin should quickly return to its normal position. If the skin remains tented, the infant has poor turgor. Temperature Palpate the skin bilaterally for temperature using the dorsal surface of your hands and fingers. The dorsal surface is the most sensitive to temperature changes. Warm skin suggests normal circulation; cool skin, a possible underlying disorder. Assessing skin turgor in an adult Gently squeeze the skin on the forearm or sternal area between your thumb and forefinger, as shown. If the skin quickly returns to its original shape, the patient has normal turgor. If it returns to its original shape slowly over 30 seconds or maintains a tented

position, as shown, the skin has poor turgor. best picture Normal skin variations You may see normal variations in the skin's texture and pigmentation. Such variations may include nevi, or moles, and freckles (shown below).

### 16 Skin, hair, and nails

#### Lesion configurations

Discrete Individual lesions are separate and distinct. Grouped Lesions are clustered together. Dermatomal Lesions form a line or an arch and follow dermatome. Confluent Lesions merge so that discrete lesions are not visible or palpable.

#### Lesion shapes

Discoid Round or oval Annular Circular with central clearing Target (bull's eye) Annular with central internal activity

#### Hair

When assessing the hair, note the distribution, quantity, texture, and color. Hair should be evenly distributed.

#### Nails

Examine the nails for color, shape, thickness, consistency, and contour. Nail color is pink in light-skinned people and brown in dark-skinned people. The nail surface should be slightly curved or flat and the edges smooth and rounded.

#### Lesions

When evaluating a lesion, you'll need to classify it as primary (new) or secondary (a change in a primary lesion). Then determine if it's solid or fluid-filled and describe its characteristics, pattern, location, and distribution. Include a description of symmetry, borders, color, configuration, diameter, and drainage.

#### Skin abnormalities

I know you'll have these assessment skills nailed in no time!

#### Lesion distribution

Generalized — Distributed all over the body Regionalized — Limited to one area of the body Localized — Sharply limited to a specific area Scattered — Dispersed either densely or widely Exposed areas — Limited to areas exposed to the air or sun Intertriginous — Limited to areas where skin comes in contact with itself

### 17 outside the norm

#### Types of skin lesions

Fissure A painful, cracklike lesion of the skin that



extends at least into the dermis  
Cyst A closed sac in or under the skin that contains fluid or semisolid material  
Papule A solid, raised lesion that's usually less than 1 cm in diameter  
Vesicle A small, fluid-filled blister that's usually 1 cm or less in diameter  
Bulla A large, fluid-filled blister that's usually 1 cm or more in diameter  
Ulcer A craterlike lesion of the skin that usually extends at least into the dermis  
Macule A small, discolored spot or patch on the skin

Wheal A raised, reddish area that's commonly itchy and lasts 24 hours or less  
Pustule A small, pus-filled lesion (called a follicular pustule if it contains a hair)  
Nodule A raised lesion detectable by touch that's usually 1 cm or more in diameter  
Documenting a skin lesion take note  
At 0820, pt. c/o right shoulder blade pain, 4/10 on a 0-10 scale. A closed, purulent lesion noted in right upper scapular region of back, approx. 1.5 cm x 1 cm, with 3 cm surrounding area of erythema. T 100. 2 F. Call placed to Dr. Tomlin's service at 0830. Angela Kessler, RN 4/15/10 0845 18 Skin, hair, and nails  
Benign versus cancerous lesions

Lesions may be benign, such as a benign nevus, or mole. However, changes in an existing growth on the skin or a new growth that ulcerates or doesn't heal could indicate cancer or a precancerous lesion. Types of skin cancer outside the norm ; Abnormal changes in keratinocytes ; Can become squamous cell carcinoma  
Precancerous actinic keratosis ; Abnormal growth of melanocytes in a mole ; Can become malignant melanoma  
Dysplastic nevus  
Note the differences between benign and cancerous lesions. ; Symmetrical, round, or oval shape ; Sharply defined borders ; Uniform, usually tan or brown color ; Less than 6 mm in diameter ; Flat or raised

Benign nevus ; Abnormal changes in keratinocytes ; Can become squamous cell carcinoma ; Abnormal growth of melanocytes in a mole ; Can become malignant melanoma

Skin abnormalities 19 More severe Less severe ; Begins as a firm, red nodule or scaly, crusted, flat lesion ; Can spread if not treated

Squamous cell carcinoma ; Most common skin cancer ; Usually spreads only locally

Basal cell carcinoma ; Can arise on normal skin or from an existing mole ; If not treated promptly, can spread to other areas of skin, lymph nodes, or internal organs

Malignant melanoma If you suspect a lesion may be malignant melanoma, observe for these characteristics. memory board

ABCDEs of malignant melanoma A = Asymmetrical lesion B = Border irregular C = Color of lesion varies with shades of tan, brown, or black and, possibly, red, blue, or white D = Diameter greater than 6 mm E = Elevated or enlarging lesion

20 Skin, hair, and nails Common skin disorders outside the norm

Contact dermatitis is an inflammatory disorder that results from contact with an irritant. Primary lesions include vesicles, large oozing bullae, and red macules that appear at localized areas of redness. These lesions may itch and burn.

Contact dermatitis Psoriasis is a chronic disease of marked pidermal thickening. Plaques are symmetrical and generally appear as red bases topped with silvery scales. The lesions, which may connect with one another, occur most commonly on the scalp, elbows, and knees.

Psoriasis Occurring as an allergic reaction, urticaria appears suddenly as pink, edematous papules or wheals (round elevations of the skin). Itching is intense. The lesions may become large and contain vesicles.

Urticaria (hives)

Skin abnormalities 21 Mites, which can be picked up from an infested person, burrow under the skin and cause scabies lesions. The lesions appear in a

straight or zigzagging line about 3/8 (1 cm) long with a black dot at the end. Commonly seen between the fingers, at the bend of the elbow and knee, and around the groin, abdomen, or perineal area, scabies lesions itch and may cause a rash. Scabies Herpes zoster appears as a group of vesicles or crusted lesions along a nerve root. The vesicles are usually unilateral and appear mostly on the trunk. These lesions cause pain but not a rash. Herpes zoster Tinea corporis is characterized by round, red, scaly lesions that are accompanied by intense itching. These lesions have slightly raised, red borders consisting of tiny vesicles. Individual rings may connect to form patches with scalloped edges. They usually appear on exposed areas of the body. Tinea corporis (ringworm) Once I burrow under the skin, I settle down and make myself comfortable. 22 Skin, hair, and nails Pressure ulcers Pressure ulcers are localized areas of skin breakdown that occur as a result of prolonged pressure. Necrotic tissue develops because the vascular supply to the area is diminished. Staging pressure ulcers You can use characteristics gained from your assessment to stage a pressure ulcer, as described here. Staging reflects the anatomic depth of exposed tissue. Keep in mind that if the wound contains necrotic issue, you won't be able to determine the stage until you can see the wound base. outside the norm Suspected deep tissue injury | Maroon or purple intact skin or blood-filled blister | May be painful; mushy, firm, or boggy; and warmer or cooler than other tissue before discoloration occurs Stage I | Intact skin that doesn't blanch | May differ in color from surrounding area in people with darkly pigmented skin | Usually over a bony prominence | May be painful, firm or soft, and warmer or cooler

than surrounding tissue Note: This stage shouldn't be used to describe perineal dermatitis, maceration, tape burns, skin tears, or excoriation.

Stage II | Superficial partial-thickness wound | Presents as a shallow, open ulcer without slough and with a red and pink wound bed Skin abnormalities

23 Stage III | Involves full-thickness wound with tissue loss and possibly visible subcutaneous tissue but no exposed muscle, tendon, or bone | May have slough but not enough to hide the depth of tissue loss | May be

accompanied by undermining and tunneling Stage IV | Involves full-thickness skin loss, with exposed muscle, bone, and tendon | May be accompanied by

eschar, slough, undermining, and tunneling Unstageable | Involves full-thickness tissue loss, with base of ulcer covered by slough and yellow, tan,

gray, green, or brown eschar | Can't be staged until enough slough and eschar are removed to expose the wound base 24 Skin, hair, and nails Hair

abnormalities Typically stemming from other problems, hair abnormalities can cause patients emotional distress. Among the most common hair

abnormalities are alopecia and hirsutism. Alopecia occurs more commonly and extensively in men than in women. Diffuse hair loss, though commonly a

normal part of aging, may occur as a result of pyrogenic infections, chemical trauma, ingestion of certain drugs, and endocrinopathy and other disorders.

Tinea capitis, trauma, and full-thickness burns can cause patchy hair loss.

Alopecia Excessive hairiness in women, or hirsutism, can develop on the body and face, affecting the patient's selfimage. Localized hirsutism may

occur on pigmented nevi. Generalized hirsutism can result from certain drug therapy or from such endocrine problems as Cushing's syndrome, polycystic

ovary syndrome, and acromegaly. Hirsutism outside the norm Now "hair"

this: Hair abnormalities may be caused by certain drugs or endocrine problems. Nail abnormalities 25 Nail abnormalities Although many nail abnormalities are harmless, some point to serious underlying problems.

Nail abnormalities include clubbed fingers, splinter hemorrhages of the nail bed, and Muehrcke's lines. outside the norm Splinter hemorrhages are reddish brown narrow streaks under the nails. They run in the same direction as nail growth and are caused by minor trauma. They can also occur in patients with bacterial endocarditis. Splinter hemorrhages Muehrcke's lines or leukonychia striata are longitudinal white lines that can indicate trauma but may also be associated with metabolic stress, which impairs the body from using protein. Muehrcke's lines Clubbed fingers can result from chronic tissue hypoxia. Normally, the angle between the ingernail and the point where the nail enters the skin is about 160 degrees. Clubbing occurs when that angle increases to 180 degrees or more. Clubbed fingers Normal fingers Normal angle (160 degrees) Clubbed fingers Angle greater than 180 degrees Enlarged and curved nail Answers: Able to label 1. Epidermis, 2. Dermis, 3. Subcutaneous tissue, 4. Hair bulb, 5. Eccrine sweat gland; Rebus riddle The dorsal surface of the hand is most sensitive to temperature changes. 1. 2. 3. 4. 5. Identify the skin structures indicated on this illustration. Sound out each group of pictures and symbols to reveal terms that complete this assessment consideration. Able to label? Rebus riddle 26 Anatomy 28 Assessment 31 Eye abnormalities 42 Ear abnormalities 46 Vision quest 48 Aye, aye, matey! I best be gettin' along. They're filming the eye and ear assessment down on Soundstage 3. 28 Eyes and ears Anatomy Eye Eye and ears The eyes are delicate sensory organs equipped with many extraocular and intraocular

structures. Some structures are easily visible, whereas others can only be viewed with special instruments, such as an ophthalmoscope. Extraocular structures The bony orbits protect the eyes from trauma. The eyelids (or palpebrae), lashes, and lacrimal gland, punctum, canaliculi, and ac protect the eyes from injury, dust, and foreign bodies. Bony orbit Lacrimal gland | Pars orbitalis | Pars palpebralis Upper eyelid Lashes Lower eyelid Lacrimal punctum Lacrimal canaliculi Lacrimal sac Nasolacrimal duct Eye muscles Superior oblique muscle Superior rectus muscle Medial rectus muscle Lateral rectus muscle Inferior rectus muscle Inferior oblique muscle Anatomy 29

Intraocular structures The intraocular structures of the eye are directly involved in vision. The eye has three layers of tissue: | The outermost layer includes the transparent cornea and the sclera, which maintain the form and size of the eyeball. The middle layer includes the choroid, ciliary body, and iris. Pupil size is controlled by involuntary muscles in this region. | The innermost layer is the retina, which receives visual stimuli and sends them to the brain. Retinal structures: A closer view Superonasal arteriole and vein Optic disk Physiologic cup Arteriole Inferonasal arteriole and vein Vein Superotemporal arteriole and vein Fovea centralis Macular area Inferotemporal arteriole and vein Sclera Choroid Conjunctiva (bulbar) Ciliary body Cornea Lens Pupil Iris Anterior chamber (filled with aqueous humor) Posterior chamber (filled with aqueous humor) Schlemm's canal

Vitreous humor Optic nerve Central retinal artery and vein Retina These structures are located in the posterior part of the eye, also called the fundus. They're visible with an ophthalmoscope. 30 Eyes and ears Ear External ear The flexible external ear consists mainly of elastic cartilage. It contains the

ear flap, also known as the auricle or pinna, and the auditory canal. This part of the ear collects and transmits sound to the middle ear. Middle ear The tympanic membrane separates the external and middle ear. The center, or umbo, is attached to the tip of the long process of the malleus on the other side of the tympanic membrane.

The eustachian tube connects the middle ear with the nasopharynx, equalizing air pressure on either side of the tympanic membrane. The middle ear conducts sound vibrations to the inner ear. Inner ear The inner ear consists of closed, fluid-filled spaces within the temporal bone. It contains the bony labyrinth, which includes three connected structures: the vestibule, the semicircular canals, and the cochlea. The inner ear receives vibrations from the middle ear that stimulate nerve impulses. These impulses travel to the brain, and the cerebral cortex interprets the sound. Auditory ossicles ; Stapes (stirrup) ; Incus (anvil) Malleus (hammer) Semicircular canals Vestibule Cochlea Cochlear nerve Eustachian tube Tympanic membrane (eardrum) Helix Anthelix Lobule of auricle External acoustic meatus

Assessment 31 Assessment Eyes Snellen charts The Snellen alphabet chart and the Snellen E chart are used to test distance vision and measure visual acuity. Snellen alphabet chart Snellen E chart Age differences 20 20 In adults and children age 6 and older, normal vision is measured as 20/20. 20 50 For children age 3 and younger, normal vision is 20/50. 20 40 For children age 4, normal vision is 20/40. 20 30 For children age 5, normal vision is 20/30.

To measure distance vision: Have the patient sit or stand 20 (6.1 m) from the chart. Cover his left eye with an opaque object. Ask him to read the letters on one line of the chart and then to move downward to increasingly

smaller lines until he can no longer discern all of the letters. Have him repeat the test covering his right eye. Have him read the smallest line he can read with both eyes uncovered to test his binocular vision. If the patient wears corrective lenses, have him repeat the test wearing them. Record the vision with and without correction. Distance vision Recording results Visual acuity is recorded as a fraction.

The top number (20) is the distance between the patient and the chart. The bottom number is the lowest line on which the patient correctly identified the majority of the letters. The larger the bottom number, the poorer the patient's vision. The Snellen E chart is used for young children and adults who can't read. 32 Eyes and ears Test peripheral vision using confrontation. Confrontation can help identify such abnormalities as homonymous hemianopsia and bitemporal hemianopsia. Here's how to test confrontation: | Sit or stand directly across from the patient and have him focus his gaze on your eyes. | Place your hands on either side of the patient's head at the level of his ears so that they're about 2 apart. | Tell the patient to focus his gaze on you as you gradually bring your wiggling fingers into his visual field. | Instruct the patient to tell you as soon as he can see your wiggling fingers; he should see them at the same time you do. | Repeat the procedure while holding your hands at the superior and inferior positions. Rosenbaum card The Rosenbaum card is used to evaluate near-vision. This small, handheld card has a series of numbers, E's, X's, and O's in graduated sizes. Visual acuity is indicated on the right side of the card in either distance equivalents or Jaeger equivalents. To measure near-vision: Cover one of the patient's eyes with an opaque object. Hold the Rosenbaum card 14 (35.6 cm) from



the eyes. Have the patient read the line with the smallest letters he can distinguish. Repeat the test with the other eye. If the patient wears corrective lenses, have him repeat the test while wearing them. Record the visual accommodation with and without corrective lenses. Near-vision Confrontation Does your patient wear glasses or contacts? Remember to test his vision with and without his corrective lenses. Assessment 33 Each upper eyelid should cover the top quarter of the iris so the eyes look alike. Look for redness, edema, inflammation, or lesions on the lids. Eyelids The corneas should be clear and without lesions and should appear convex. Examining the corneas Examine the corneas by shining a penlight first from both sides and then from straight ahead. Test corneal sensitivity by lightly touching the cornea with a wisp of cotton. The irises should appear flat and should be the same size, color, and shape. Irises Corneas Inspecting the eyes With the scalp line as the starting point, determine whether the eyes are in a normal position. They should be about one-third of the way down the face and about one eye's width apart from each other. Then assess the eyelids, corneas, conjunctivae, sclerae, irises, and pupils. 34 Eyes and ears Each pupil should be equal in size, round, and about one-fourth the size of the iris in normal room light. Testing the pupils Slightly darken the room. Then test the pupils for direct response (reaction of the pupil you're testing) and consensual response (reaction of the opposite pupil) by holding a penlight about 20 (51 cm) from the patient's eyes, directing the light at the eye from the side. Next, test accommodation by placing your finger