

Northern Navajo Medical Center (NNMC) Physical Assessment Training Program

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Purpose

Provide training on a wide range of physical assessments skills that will be encountered in a general practice setting. The training will consist of lectures and labs. In addition to general examination skills, the trainees will be introduced to a skill set that will allow them to evaluate selected new complaints based on prevalence of these conditions. Additionally, all examinations will require the trainee present the patient to the instructor as they would in a real life situation

1. General assessment lectures that may be tested in the lab and require case presentation
 - a. Head, eyes, ears, nose, throat
 - b. Cardiology
 - c. Respiratory
 - d. Abdominal
 - e. Neurology
 - f. Musculoskeletal
2. New complaint lecture that may be tested in the lab and require case presentation
 - a. Abdominal pain
 - b. Headaches
 - c. Lower back pain
 - d. Chest pain
 - e. Knee injury
3. Lectures without lab due to specialty of examination
 - a. Mental Status
 - b. Older Adults
 - c. Male genital, rectal, and female breast examination

Background

Pharmacy scope of practice is expanding and single disease management is being replaced by broader scopes of practices encompassing multiple disease states. With this broader scope of practice, pharmacists are required to have a larger depth of knowledge for evaluating medical conditions including performing physical assessments. Additionally, it is imperative that a pharmacist be able to minimally evaluate new complaints and present to a medical provider in a logical format.

The training format and lecture content are based off of University of New Mexico Physical Assessment Training program slides. For some lectures, minimal changes to the UNM slides have occurred to ensure similar training material.

Textbooks and Equipment

Textbooks	
Required	Optional (depending on future practice)
Bate's Guide to Physical Assessment and History Taking (full sized, last several editions may be used)	<ul style="list-style-type: none"> • Surface Anatomy • Essentials in Musculoskeletal Care
Equipment	
Required	Optional
<ul style="list-style-type: none"> • Good quality stethoscope • Otoscope • Ophthalmoscope • Reflex hammer • Pen light • Tuning fork – 128Hz 	<ul style="list-style-type: none"> • Blood pressure cuff

Satisfied Requirements

This training satisfies the physical assessment component of the National Clinical Pharmacy Specialist – Pharmacist Provider (NCPS-PP) requirement

Attire

Students will be practicing physical assessment skills on each other. Therefore, casual attire is recommended (t-shirts, shorts/sweat pants, loose fitting clothes). Pants must be able to be lifted above the knee to facilitate practice of knee exams. The exception will be the last day of class (after exams) when a class picture will be taken and professional/uniforms will be required.

General Training

The trainee must successfully pass all the following

Exercise	Comments
General Practical Examination (30 minutes to complete)	<ul style="list-style-type: none"> • Trainee obtains medical history • Trainee performs two correct examination • Trainee presents case to instructor in correct format
Specific Practical Examination (30 minutes to complete)	<ul style="list-style-type: none"> • Given 1 of 5 new complaint cases the trainee obtains thorough history and rules out red flags • Performs appropriate physical examination • Trainee presents case to instructor in correct format

Schedule of training

Time	Topic	Readings
Monday (9 hours)		
0900-1200	Course Introduction and Pharmacy Provider The Interview Obtaining a medical history Presenting a medical case	Bates Chapters 1-3
1200-1300	Lunch	
1300-1500	General Survey and vital signs	Bates Chapter 4
1500-1700	HEENT (lecture)	Bates Chapter 7
1700-1900	Lab	
Tuesday (9 hours)		
0900-1100	Mental Status (lecture)	Bates Chapter 5
1100-1200	Neurology (lecture)	Bates Chapter 17
1100-1200	Lunch	
1200-1300	Neurology (lecture continued)	Bates Chapter 17
1300-1630	Musculoskeletal (lecture)	Bates Chapter 16
1630-1900	Lab	
Wednesday (9 hours)		
0800-1200	Thorax and Lungs (lecture)	Chapter 8
1200-1300	Lunch	
1300-1800	Lab	
Thursday (9 hours)		
0900-1200	Cardiovascular (lecture) Peripheral vascular system (lecture)	Bates Chapter 9 Bates Chapter 12
1200-1300	Lunch	
1300-1500	Cardiovascular (lecture) Peripheral vascular system (lecture)	Bates Chapter 9 Bates Chapter 12
1500-1900	Lab	
Friday (9 hours)		
0900-1100	Abdominal (lecture)	Bates Chapter 11
1100-1200	Geriatrics (lecture)	Bates Chapter 20
1200-1300	Lunch	
1300-1700	Acute complaints - Abdominal Pain - Low back pain - Headaches - Knee injury - Chest pain	UpToDate
1700-1900	Lab	
Saturday (8 hours)		
0900-1200	Male genital exam Rectal exam Female breast exam	Bates Chapter 13 Bates Chapter 15 Bates Chapter 10
1200-1300	Lunch	

1300-1800	Lab	
Sunday (8 hours)		
0900-1700	Final Exams	

INDIAN HEALTH SERVICE PHYSICAL ASSESSMENT TRAINING - INTRODUCTION

Audience questions

- ❑ How many of you are currently working in clinics?
- ❑ How many of you treat a broad range of chronic complaints?
 - >3 diseases, >4, >5
- ❑ Approach to chronic disease not listed in protocol.
- ❑ Approach to new, acute complaint.
- ❑ How many feel adequately trained to perform a physical examination?

Overall Class Objectives

- ❑ Obtain health history on a patient
- ❑ Perform focused and broad physical assessment of patients in specified areas
 - Acute and chronic complaints
- ❑ Present patients to providers in a manner similar to medical students

History and Physical Covered

Chronic	Acute
HEENT (head, eyes, ears, nose, throat)	Headaches
Cardiac	Chest pain
Pulmonary	Abdominal pain
Neurology	Knee pain
Abdominal	Lower back pain
Musculoskeletal	

Requirements For Successful Completion

- ❑ Summative evaluation 1 - 30 minutes
 - Obtain a medical history on patient
 - Perform 2 full and appropriate physical examinations on patient
 - Present case to instructor in an appropriate format
- ❑ Summative Evaluation 2 - 30 minutes
 - For a new onset acute complaint obtain appropriate history of complaint
 - Perform appropriate examination (focused v broad)
 - Present case to instructor in proper format

Why

- ❑ According to U.S. Department of Health and Human Services
 - By 2020, a projected shortage of 20,400 providers will exist
 - Midlevels "could somewhat alleviate" the shortage
- ❑ Pharmacists are ideally trained to care for chronic disease
 - Many chronic diseases require physical assessment skills
 - Inevitably, new complaints will arise and pharmacists need to be able to assess and present

Satisfied Requirements

- ❑ This class is approved by the USPHS National Clinical Pharmacy Specialist Committee (NCPSC)
- ❑ Meets physical assessment training requirements for the National Clinical Pharmacy Specialist - Pharmacy Provider (NCPS-PP)

Review of I.H.S. and State Clinical Pharmacy Certifications

Objective

- ❑ Be able to identify the differences between the I.H.S. certifications (NCPS and NCPS-PP)
 - National Clinical Pharmacy Specialist (NCPS)
 - National Clinical Pharmacy Specialist - Pharmacy Provider (NCPS-PP)
- ❑ Review the New Mexico Pharmacist Clinician (PhC) requirements

NCPS - Qualifications

Option 1	Option 2	Option 3
Complete 2 years at I.H.S. or BOP facility with one year practicing in disease area for which applicant is applying	Completed an Indian Health Service residency, an Ambulatory Care, Primary Care, or a General Practice	Possess a current state recognized clinician's license (e.g. New Mexico's Pharmacist Clinician designation).
Possess a nationally recognized certification in the specific area that NCPS certification is being requested, board certification, or equivalent I.H.S. or BOP training	Pharmacy Residency with documented experience in the specific area that privileging is being requested BOP = Bureau of Prisons	

NCPS Scope of Practice

NCPS - Qualifications

- ❑ Obtain and document for review by NCPSC 30 patient contacts in area being requested
- ❑ 45 hours of continuing education (CE) in 3 year recertification cycle with 6 hours in specific disease state in which certified

Changes to NCPS

- ❑ Current model
 - Disease state specific ("silo" clinics)
 - Work under a designated protocol approved locally and by NCPSC
- ❑ Program changes
 - Broad scope of practice
 - Local medical staff privileging will be required
 - Protocol a thing of the past

New Mexico PhC - Qualifications

- ❑ Proof of completion of 60 hour physical assessment course
- ❑ 150 hours (300 patient contacts) under supervision of a prescribing provider (MD, DO, PA, NP, PhC, etc)
- ❑ 150 hours completed w/in two years of completing physical assessment course
- ❑ May prescribe Schedule medications if certain requirements are met

NM Admin Code 16.19.4

New Mexico PhC - Scope

- ❑ Must work under a board approved protocol
- ❑ New complaints or diagnoses must be presented to a medical provider
 - Not allowed to diagnose
- ❑ Supervising provider must be a physician (MD or DO)

NM Admin Code 16.19.4

NCPS-PP Qualifications

- ❑ Document local CPS (clinical pharmacy specialist) practice for the last 2 years AND four years of I.H.S. or BOP experience
- ❑ Completion of a 60 hour physical assessment class approved by NCPSC
- ❑ Demonstrate to a physician ability to assess and monitor a patient for new and/or established complaints

NCPS-PP Scope

- ❑ Must be a member of the local medical staff
- ❑ Extent of practice is defined by the local privileging
 - Must include diagnosing statement
- ❑ NCPS-PP in training
 - NCPS certified pharmacists may work as a NCPS-PP at service unit's discretion
 - Work under "supervision" of physician
 - Direct supervision is not defined

Questions

Reference

- ❑ Projecting the supply and demand for primary care practitioners through 2020. HRSA. Updated 11/2013. Available at: <http://bhr.hrsa.gov/healthworkforce/supplydemand/usworkforce/primarycare/>
- ❑ Cochran M. A Guide to Case Presentations. Available at: https://114me.osu.edu/tp-preceptors/system/block_resource_items/resources/000/000/048/original/Oral_Presentation_handout.pdf?1384793577
- ❑ Scope of Practice. Commissioned Corps of the U.S. Public Health Service. Pharmacist Professional Advisory Committee. NCPS Scope of Practice. Obtained 8/28/16. Last updated 9/30/14. Available at: https://dcp.psc.gov/osp/pharmacy/ncps_scopeofpractice.aspx
- ❑ New Mexico Administrative Code, Title 16, Chapter 19, Part 4 - Pharmacists. Available at: <http://164.64.110.239/nmac/parts/title16/16.019.0004.htm>

INTERVIEWING, OBTAINING A MEDICAL HISTORY AND PRESENTING THE CASE

Objectives

- ❑ Identify techniques that will improve interview outcomes
- ❑ Recognize differences between comprehensive and focused history taking
- ❑ Describe the components of a medical history
- ❑ List components and order of a good patient case presentation

The Interview

Bates

Interview Milestones

- ❑ Getting ready for the interview
- ❑ Learning about the patient
- ❑ Building the relationship with the patient
- ❑ Adapting interview style to specific situation
- ❑ Dealing with sensitive topics

Getting Ready for the Interview

- ❑ Self-reflect on your performance regularly
- ❑ Review medical history and chart prior to the interview
- ❑ Set clear goals for the interview
 - Obtaining a history, following up on a study, etc
- ❑ Review your clinical behavior and appearance
- ❑ Adjust the environment to be comfortable for the patient
- ❑ Take minimal notes if possible

Learning about the Patient

- ❑ Greet the patient and family/caregiver if present
- ❑ May need to clarify if everyone can be in the room during interview
- ❑ Use appropriate titles (Mr., Mrs., Ms.)
- ❑ Tune in to patient's comfort level
- ❑ Some small talk may be useful

Learning about the Patient

- ▣ Establish agenda: "What brings you in today?"
- ▣ Allow patient to tell their story
- ▣ Respond to the patient's emotional cues
- ▣ Clarify patient response

Building a Relationship

- ▣ Active Listening
 - Being attentive to patient's communication
 - Being aware of the patient's emotional state
 - Using verbal and nonverbal cues to encourage the patient
- ▣ Guided Questions
 - Moving from open ended to focused questions
 - Questions with graded response
 - Clarifying patient responses

Building a Relationship

- ▣ Nonverbal communication
 - Eye contact, facial expression, posture, etc.
- ▣ Empathic response
 - Identifying with the patient's feelings will go a long way towards increasing the connection
 - Examples
 - "That must be frustrating."
 - "I understand why you are upset."
 - Providing a tissue during crying episodes

Building a Relationship

- ▣ Validation
 - Be able to acknowledge the reason for the patient's concerns
- ▣ Reassurance
 - Acknowledge the patient's feelings
 - Do not state "everything is going to be okay"
- ▣ Partnering
 - Express your intent to have the patient be part of the healthcare team
 - If viable options exist for a treatment, let them be part of the decision making process

Adapting the Interview

- ▣ Silent patient
 - Is the patient overwhelmed with your question(s)?
 - Are they just collecting their thoughts before answering?
 - Does the patient speak/ understand English?
 - Be aware of physical cues from patient and family (angry, confused, etc.)

Adapting the Interview

- ▣ Confused patient
 - Confused from barrage of questions
 - Slow down; one question/answer at a time
 - Unable to speak/ understand English
 - Ask family/ caregiver if patient has a baseline level of confusion
 - History from others in room
 - Take your time with these patients

Adapting the Interview

- ▣ Talkative patients
 - Stay calm and attempt to direct interview in correct direction after several minutes
 - Tune in to why the patient is talkative
 - Lives alone and appointment is an outlet
 - Nervous or anxious about appointment
 - History of psychiatric issues
 - May need to tell the patient that not all of their concerns can be addressed at this visit
 - Make sure patient understands reasons for prioritizing

Adapting the Interview

- ▣ Crying patient
 - Source of emotion could be sadness, anger, or frustration
 - Support and empathize with patient and allow him/her to cry
 - Most will compose themselves shortly and resume their story
 - DO NOT say "everything will be ok" ...it may not be

Adapting the Interview

- ▣ Angry patient
 - Accept the source of emotion may not be you
 - Death in family, overwhelming illness
 - System failure (wait times)
 - Review your interactions and be honest with yourself - you could be the source of the hostility
 - Accidental but inconsiderate words or actions
 - Your emotions can be felt by the patient

Sensitive Issues

- ▣ Sexual history, mental health, alcohol and drug use, family violence
- ▣ Tell patient up front you will be asking some sensitive questions
 - Let them know these are important to their care
- ▣ Be self-reflective - acknowledge your own concerns and work to improve yourself as a clinician

Obtaining the Medical History

Bates

Comprehensive versus Focused

Comprehensive	Focused
New patients	Established patients or urgent care visits
Provides full history of patient	Addresses specific concerns
Strengthens relationship between patient and provider	
Baseline for future visits	

Bates

Subjective versus Objective

Subjective	Objective
What the patient tells you	Found in the chart - vitals, prior document tests, etc.
History from review of systems and chief complaint	Found on physical exam

Bates

Pearls for Obtaining History

- Obtain history based on the patient
 - New patients - full history may be needed
 - Existing/previously seen - abbreviated history adequate
- Use a checklist of some kind
 - Electronic health record (E.H.R.) templates
 - Pocket checklist
- Use a mnemonic
 - CHAPS-FRAPS (next slide)

HISTORY GENERALLY CONTAINS

- Chief complaint
- History of present illness
- Allergies
- Past medical history
- Social history
- Family history
- Review of Systems (ROS)
- Assessment
- Plan
- SOAP

Chief Complaint (CC)

- The reason the patient is being seen (chronic versus acute)
- Somewhat different skill set required for each
- Pharmacists great at chronic disease management
 - Acute workup not so much
- A good history will help you evaluate an acute complaint and logically present to a provider
 - Improve with practice
 - Very uncomfortable at first

History of Present Illness

- Background is important for assessment/diagnosis/treatment
 - O - onset
 - L - location
 - D - duration
 - C - character
 - A - aggravating factors
 - R - relieving factors
 - T - timing
 - S - severity

Allergies and Past Medical History

- Allergies
- Past medical history
 - Do not rely on "what other medical conditions do you have" to give you all information
 - You may need to be specific and ask about the "big ones" - diabetes, stroke, myocardial infarction, etc.
 - Past surgeries are often not thought of as a medical issue for patients
 - Childhood illnesses can be important

Social History

- ❑ Marital status
- ❑ Where do they live
- ❑ Who do they live with
- ❑ Tobacco use
- ❑ Alcohol use
- ❑ Drug use
- ❑ Occupation (past and present)
- ❑ Highest education level completed

Family History

- ❑ Many diseases run in families so this can be very useful
- ❑ Strokes, coronary artery disease, diabetes, asthma, headaches, seizures, mental illness, cancer, substance abuse

Review of Systems

- ❑ If you forget to ask or the patient doesn't remember then it may come up here
- ❑ Numerous systems to review so it can be time consuming
 - May just want to target specific systems
- ❑ Consider an E.H.R. template or cheat sheet
- ❑ No Gold Standard

Review of Systems

General (Constitutional)	Skin	HEENT (head, eyes, ears, nose, throat)
Neck	Breasts	Respiratory
Cardiovascular	Gastrointestinal	Vascular
Urinary	Genital	Musculoskeletal
Psychiatric	Neurological	Hematological
Endocrine		

General

- ❑ How does the patient look
 - Normal appearing adult (NAD), uncomfortable, tripodding, etc.
 - Very important part of the exam
- ❑ Fevers
- ❑ Unintentional weight loss
- ❑ Chills
- ❑ Weakness
- ❑ Trouble sleeping
- ❑ Fatigue

Skin

- ❑ Rashes
- ❑ Lumps
- ❑ Sores
- ❑ Itching
- ❑ Dryness
- ❑ Changes in nails
- ❑ Change in mole size(s)

HEENT

- ☐ Head: neck pain, history of injury
- ☐ Eye: pain, drainage, redness, change in vision
- ☐ Ear: hearing changes, pain, discharge
- ☐ Nose: bleeding, congestion, sinus pressure, pain
- ☐ Throat: dryness, pain, bleeding from gums

Neck and Breasts

- ☐ Neck
 - Swollen glands
 - Goiter
 - Pain or neck stiffness
- ☐ Breasts
 - Lumps
 - Pain or discomfort
 - Nipple discharge
 - Self-examination practices

Respiratory

- ☐ Shortness of breath
- ☐ Wheezing
- ☐ Coughing
 - Bloody, productive?
- ☐ Last chest x-ray

Cardiovascular

- ☐ Chest pain
- ☐ Dyspnea
- ☐ Orthopnea
- ☐ Palpitations
- ☐ Edema

Gastrointestinal

- ☐ Abdominal pain
- ☐ Nausea/vomiting/diarrhea
- ☐ Constipation
- ☐ Change in bowel habits
- ☐ Difficulty swallowing
- ☐ Rectal bleeding

Peripheral Vascular

- ☐ Leg cramps
- ☐ Varicose veins
- ☐ Past clots
- ☐ Swelling in extremities

Urinary

- ▣ Frequency of urination
- ▣ Urgency
- ▣ Burning or pain
- ▣ Nocturia
- ▣ Polyuria
- ▣ Incontinence

Genital

- ▣ Male
 - Hernias
 - Penile discharge or sores
 - Testicular pain or masses
 - Sexual habits (condom use, partners, orientation)
 - Birth control method
- ▣ Females
 - Age of menarche
 - Regularity of cycle, last period
 - Age of menopause
 - Vaginal discharge, itching
 - Birth control method

Musculoskeletal

- ▣ Painful joints
- ▣ Muscle stiffness
- ▣ Weakness
- ▣ Joint swelling
- ▣ Gout
- ▣ Arthritis

Neurology and Psychiatric

- ▣ Neurology
 - Headaches
 - Seizures
 - Syncope
 - Numbness/tingling
 - Tremors
- ▣ Psychiatric
 - Depression
 - Mood swings
 - Nervousness

Hematological and Endocrine

- ▣ Hematological
 - Anemia
 - Bleeding or bruising
 - Past transfusions
- ▣ Endocrine
 - Heat/cold intolerance
 - Thyroid disease
 - Increased thirst, hunger, urination
 - Excessive sweating

Assessment

- ▣ What you think is going on with the patient
 - Diagnosis and differential diagnose(s)
- ▣ In the SOAP note, write full sentences and express your entire thought process

Plan

- ❑ As stated – what your plan is for the patient
- ❑ Clear, concise statements or bullet points
- ❑ For every assessment there should be a plan

Presentation of Patients

Overview

- ❑ Pharmacists can be very bad at this
 - “Kevin, you may have just cured cancer in there but if you don’t present like a doctor no one will care.”
- ❑ We are stepping into the provider world and must learn their language
 - Alleviate provider concerns
- ❑ Not a verbal presentation of the SOAP note
 - Edited, concise presentation of only essential information
 - Parallels SOAP format

Common Mistakes

- ❑ Wandering and disorganized
- ❑ HPI is too brief
- ❑ Not paralleling the SOAP format
- ❑ Proper terminology not used
- ❑ Diagnoses during physical exam report

A Guide to Case Presentations

Presentation Structure

- ❑ Identifying information/ Chief complaint
 - “46 year old male presenting with a chief complaint of wheezing and cough.”
- ❑ History of present illness
- ❑ Other pertinent active problems
- ❑ Medications/allergies
- ❑ Social history as relevant to the case
- ❑ ROS for pertinent areas ONLY
- ❑ Pertinent physical exam findings
- ❑ Summary
- ❑ Assessment and plan

Identifying Information

- ❑ Orients the listener to the patient quickly
- ❑ Concise
- ❑ Include active problems important to presentation by diagnosis only
- ❑ “Mr. Bruce Wayne is a 46 year old man presenting to clinic today for a follow-up on his hypertension. His active problems include diabetes and history of myocardial infarction.”

History of Present Illness

- ❑ OLDCARTS can be used for both acute or chronic illness
- ❑ Chronic, stable complaints could be summarized
 - "Mr. Wayne was diagnosed with HTN in 1999 and is well controlled."

Other Medical Problems

- ❑ List only medical conditions relevant to the chief complaint
- ❑ Bad...
 - "Mr. Wayne has a history of seasonal allergies, specifically cottonwood. He also had an umbilical hernia repair in 2006. Additionally, he is a poorly controlled diabetic."
- ❑ Better
 - "Mr. Wayne's past medical history includes poorly controlled diabetes for the last 5 years."

Medications and allergies

- ❑ State allergies
- ❑ List only pertinent medications
 - The provider will not really care that a patient being seen for hypertension is taking eye drops

Social History

- ❑ Only list social history that is important to the case.
- ❑ Examples
 - Asthma – employment history; uranium exposure
 - Diabetes – alcohol intake
 - Depression – home situation, drug use (self treatment)

Physical Examination

- ❑ Include pertinent vital signs
- ❑ Important positive and negative findings only
- ❑ General section of exam provides a lot of information to your listener
 - "well nourished adult in no apparent distress..."
- ❑ Asthma - "O2 96%, peak flow 85% of predicted with exam remarkable for expiratory wheezes in left upper lung field"
- ❑ HTN - "BP 134/78, pulse 87, with cardiac exam showing normal rate and rhythm, no S3 or S4 sounds noted"

Assessment and Plan

- ❑ Short and to the point
- ❑ "Ms. Smith is a 47 year woman presenting with a mild asthma exacerbation secondary to poor compliance. Oral steroids not warranted today. My plan is to increase her controller medication to mometasone/formoterol 200/5mcg 2 puffs twice daily and see again in 2 weeks."
- ❑ Maybe end by asking "Would you recommend anything else?"

References

- Bickley L.S. *Bates' Guide to Physical Examination and History Taking*. Wolters Kluwar Health. 10th Ed. 2009
- A Guide to Case Presentations. Available at: https://webcampus.drexelmed.edu/deccom/user/static/m_37/assets/Oral_Presentations_handout.pdf



General Survey and Vital Signs

Objectives

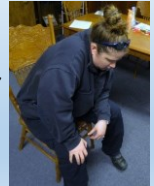
- Perform a general survey of the patient and identify key elements of the survey
- Be able to obtain vitals

Initial Assessment

- The general survey is one of the most important physical examinations tools
- In the first seconds of the encounter much can be obtained
 - Comfort level
 - Mood
 - Level of consciousness
 - Weight
 - Ill appearing

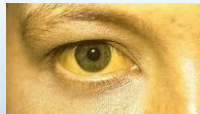
General Appearance

- General state of health
 - Acute or chronically ill, frail, athletic, obese
- Level of consciousness
 - Lethargic, alert, responsive
- Signs of distress
 - Cardiac: clutching chest, pallor, diaphoresis, labored cough, wheezing
 - Pain: wincing, sweating, protectiveness, unusual posture
 - Respiratory: cough, wheezing, tripodding
 - Depression/anxiety: fidgety, lack of eye contact, abnormal affect



General Appearance

- Skin color and lesions
 - Pallor, cyanosis, jaundice, rashes, bruises
- Dress and personal hygiene
 - Excess clothing – hypothyroidism??, hiding bruising or needle marks??
 - Shoes – cutout shoes = possible gout, bunions, pain in foot, or style
 - Jewelry – copper bracelets could indicate pain treatment; look for piercings
 - Fingernails – chewed from stress, manicured
 - Hygiene – unkempt could be depression or dementia; compare with norm if possible



General Appearance

- Facial expression
 - Hyperthyroid stare, parkinsonism
 - Decreased eye contact – anxiety, sadness, personal trait, cultural
- Odors
 - Breath and body



General Appearance

- Posture
 - Sitting up for left-sided heart failure
 - Tripoding for respiratory problems
- Gait
 - Hemiparesis gait
 - Cerebellar gait
 - Limp
 - Normal
- Activity
 - Restless or slowed

General Appearance

- Height
 - Normal
 - Significantly short or tall
 - Age related change (vertebral osteoporosis)
- Weight
 - Obesity, anorexic, normal
 - Body Mass Index (BMI) may be useful

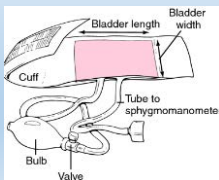
BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
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65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287

National Institutes of Health

Vitals

Blood Pressure

- Cuff selection
 - Width of inflatable bladder should be about 40% of upper arm circumference
 - Length of inflatable bladder should be about 80% of upper arm circumference

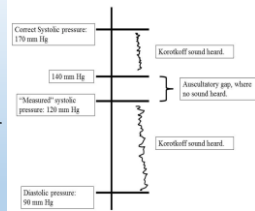


Steps for Accurate Blood Pressure

- Avoid smoking or caffeine 30 minutes before measurement
- Examination room is quiet and comfortable
- Patient should be sitting quietly for at least 5 minutes
- Testing arm is free of clothing; check for any anatomical concerns (fistulas, injuries, etc.)
- Position arm so that brachial artery at antecubital space is at heart level

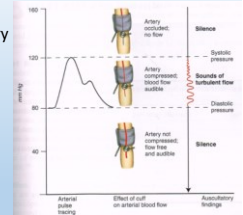
Taking the Blood Pressure – Palpating Method

- Center bladder on brachial artery as cuff indicates and about 2.5 cm above the antecubital crease
- Feel for radial pulse with one hand while rapidly inflating until the pulse disappears
- Take note of pressure and add 30mm Hg for target inflation
 - Reduces pain on subsequent testing
 - Reduces change of falling into auscultatory gap
- Deflate cuff and wait 15-30 seconds



Taking the Blood Pressure - Auscultatory

- Place bell of stethoscope on brachial artery
 - Bell for low pitch Korotkoff sounds
- Inflate bladder to previously determined pressure
- Deflate at 2-3mm Hg/second
- Systolic blood pressure: level when you hear two consecutive heart beats
- Diastolic blood pressure: level where sounds disappear



Heart Rate and Rhythm

- Use the pad of index and middle finger
- Compress radial artery until pulsation if felt
- Obtain rate
 - 30 seconds is sufficient for normal rate
 - 60 seconds for abnormal rate
- Usual adult range 50-90
- Abnormal rhythms at radial artery should have rate determined by cardiac auscultation

Orthostatic Checks

- Possible indications: dizziness, fainting, nausea, blurred vision, feeling weak
- Patient in supine position 5 minutes then obtain blood pressure and pulse
- Stand and obtain again at 1 and 3 minutes
- Diagnosed if
 - At least a 20mm Hg fall in SBP -OR-
 - At least a 10mm Hg fall in DBP

UpToDate
CDC

Respiration Rate and Rhythm

- Count the number of respirations in one minute
 - Visual inspection
 - Stethoscope on trachea
- Usual adult rate is 20 breaths/minute

Pain

- Nociceptive or somatic
 - Pain from tissue damage
- Neuropathic pain
 - Trauma to central or peripheral nerves
- Psychogenic pain
 - Pain related to psychiatric pain (depression, anxiety, etc.)
- Idiopathic pain
 - Pain w/o identifiable cause

References

- Bickley LS. *Bates' Guide to Physical Examination and History Taking*. Wolters Kluwar Health. 10th Ed. 2009
- National Institutes of Health and National Heart, Lung, and Blood Institute. Accessed 9/4/2016. Available at: http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmi_tbi.htm
- Kaufmann H and Kaplan N. Mechanism, causes, and evaluation of orthostatic hypotension. Accessed 9/4/2016. Last updated 8/2016. Available with subscription at: <https://www.uptodate.com/contents/mechanisms-causes-and-evaluation-of-orthostatic-hypotension?source=machinelearning&search=orthostatic+blood+pressure&selectedTitle=1%7E150§ionRank=2&anchor=164H71156235>
- Centers for Disease Control and Prevention; National Center for Injury, Prevention, and Control. Accessed 9/2016. http://www.cdc.gov/steadi/pdf/measuring_orthostatic_blood_pressure-a.pdf

NNMC Physical Assessment Course: Head, Eyes, Ears, Nose, Throat (HEENT) and Skin

Objectives

- Discuss and demonstrate the physical examination of the head, eyes, ears, nose, throat (HEENT), and skin
- Discuss and describe basic anatomy of HEENT and skin
- Discuss and describe common pathology of HEENT and skin

Integument

- The skin is the largest organ of the body
- Elastic, rugged, self-regenerating and serves as a progressive covering for the body

Basic function of the skin

- Protects against microorganisms/foreign substance invasion
- Slows body fluid loss and regulates body temperature
- Provides sensory perception via nerve endings
- Repairs surface wounds by cell replacement

Anatomic Structures of the Skin

- Epidermis – outermost layer, consists of two major layers
- Stratum corneum – protective layer, restricts water loss
- Cellular stratum – synthesizes keratin cells

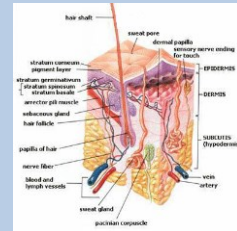
Anatomic structures of the skin

- Dermis
 - Richly vascular connective tissue layer provides nourishment for the epidermis
 - Provides strength and resilience
 - Location of nerve fibers providing sensation of pain, touch, and temperature
 - Contains autonomic motor nerves

Anatomic structures of the skin

- Hypodermis
 - Connects the dermis to underlying organ
 - Consists of connective tissue that is filled with fatty cells
 - Provides insulation, shock absorption, calorie storage

Cross Section



History

- CC
- HOPI
- Meds
- PMH
- Health habits
- Travel
- Occupational/environmental exposures
- Skin care regimens

Examination: Inspection

- Includes:
 - Mucus membranes: color, lesions, moisture, symmetry
 - Hair: texture, quality, color, brittleness, hair loss (patchy? thinning?)
 - Nails: length, color, symmetry, thickness, pitting, splinter hemorrhages, capillary refill

Examination: Palpation

- Palpate for:
 - Moisture
 - Temperature
 - Turgor
 - Mobility
 - Elevation, depression

Description of lesions

- Primary Lesions
- Secondary lesions
- Patterns and Distribution

Primary Lesions

- Primary lesions are physical changes in the skin considered to be caused directly by the disease process. Types of primary lesions are rarely specific to a single disease.
- Includes: macule, papule, nodule, tumor, plaque, vesicle, bullae, pustule, wheal, burrow, wart, contact dermatitis

Macule

- A macule is a change in the color of the skin.
- It is flat; a purely macular lesion could not be detected by touch.
- A macule >1cm may also be referred to as a patch.



Papule

- A papule is a solid raised lesion that has distinct borders and is less than 1cm in diameter.
- Papules may have a variety of shapes (domed, flat-topped, umbilicated)
- Papules may be associated with secondary features such as crusts or scales.



Nodule

- A nodule is a raised solid lesion more than 1cm
- May be in the epidermis, dermis, or subcutaneous tissue



Tumors

- A tumor is a solid mass of the skin or subcutaneous tissue
- Larger than a nodule
- May or may not be neoplastic

Plaque

- A plaque is a solid, raised, flat-topped lesion greater than 1cm in diameter.



Vesicle

- Vesicles are raised lesions less than 1cm in diameter that are filled with clear fluid



Bullae

- Bullae are circumscribed fluid-filled lesions that are greater than 1cm in diameter.



Pustules

- Pustules are circumscribed elevated lesions that contain pus. They are most commonly infected (as in folliculitis) but may be sterile (as in pustular psoriasis)



Wheal

- A wheal is an area of edema in the upper epidermis



Burrow

- Burrows are linear lesions produced by infestations of the skin and formation of tunnels (e.g., with infestation by scabitic mite)



Secondary Lesions

- May evolve from primary lesions OR, may be caused by external forces (scratching, trauma, infection, or the healing process)
- Includes: scale, crust, atrophy, lichenification, erosion, excoriation, fissure, ulcerations, scar, eschar

Scale

- Scale consists of flakes or plates that represent compacted desquamated layers of stratum corneum. Desquamation occurs when there are peeling sheets of scale following acute injury to the skin.



Crust

- Crust is the result of the drying of plasma or exudates on the skin.
- Crusting is different from scaling



Atrophy

- Atrophy is thinning or absence of the epidermis or subcutaneous fat.



Lichenification

- Refers to a thickening of the epidermis seen with exaggeration of normal skin lines.
- Usually due to chronic rubbing or scratching of an area



Excoriation

- Traumatized or abraded skin caused by scratching or rubbing



Fissure

- A fissure is a linear cleavage of skin which extends into the dermis



Ulcerations

- Necrosis of the epidermis and dermis and possibly underlying subcutaneous tissue



Scar

- Scars are the permanent fibrotic changes that occur on the skin following damage to the dermis.
- Scars may have secondary pigment characteristics.



Eschar

- A hard, usually darkened plaque covering an ulcer implying extensive tissue necrosis, infarcts, gangrene



Petechiae, Purpura, Ecchymoses

- Terms that refer to bleeding
 - Petechiae
 - Smaller lesions
 - Purpura
 - Larger lesions
 - May be palpable
 - Ecchymoses
 - Larger lesions
- None blanch when pressed



Patterns and distribution

- Not only is the appearance of lesions important, but the pattern and distribution on the skin is as well

Patterns and distribution

- Annular-Seen in a ring shape
 - Tinea corporis
 - Erythema migrans (Lyme disease)
 - Granuloma annulare
- Discrete
 - Tend to remain separate
- Clustered
 - Grouped together, commonly seen with herpes simplex or insect bites
- Confluent
 - Tend to run together

Dermatomal

Follow a dermatome

Ex: varicella zoster



Follicular

- Lesions specifically involving the hair follicle



Target lesions

- In a series of concentric rings
- Have a dark or blistered center
- Frequently seen with erythema multiforme



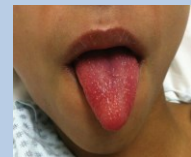
Morbilloform

- Looks like measles (which as macular discrete morbilliform lesions)
- Also seen in Kawasaki disease, drug reactions, among others
- Macular lesions that are 2-10mm in diameter but may be confluent in places



Strawberry Tongue

- Patients with scarlet fever, Kawasaki disease, or other conditions may develop distinctive appearance of their tongues.
- Looks like a strawberry



Assessing dermatologic emergencies

- If the patient presents with a rash, the clinician should immediately ask three questions:
 - Do you have fever?
 - Are you having difficulty breathing or swallowing?
 - If there is a fever, is the rash tender?

Skin Cancer

- Basal cell carcinomas and squamous cell carcinomas are the most common cancers in the United States

ABCDEs of Melanoma

- **A**symmetry
- Irregular **B**orders
- **C**olor
- **D**iameter
- **E**levation



Head and Neck Examination

- Equipment
 - Otoscope
 - Penlight



Cranial Examination

- Inspect hair and scalp
- Palpate for any areas of deformity or tenderness
- Note facial symmetry, involuntary movements
- Note scars, lumps, rashes, hair loss, or other lesions

External Eye Examination

- Observe the patient for ptosis, exophthalmos, lesions, deformities, or asymmetry
- Ask the patient to look up and pull down both lower eyelids to inspect the conjunctiva and sclera
- Next, spread each eye open with your thumb and index finger
- Note any discoloration, redness, discharge, or lesion
- If you suspect the patient has conjunctivitis, be sure to wash your hands immediately

Eye Examination

- Equipment needed
 - Snellen chart
 - Ophthalmoscope
- Visual acuity
 - In cases of eye pain, injury, or visual loss, always check visual acuity before proceeding with the rest of the exam

Visual Acuity

- Allow the patient to use their glasses or contact lenses if available
- Position the patient at the distance indicated on the Snellen chart
- Have the patient cover one eye at a time
- Ask the patient to read progressively smaller letters until they can go no further
- Record the smallest line the patient can read
- Repeat with the opposite eye

Extraocular Movements

- Assess directions of gaze using the H pattern
 - Assesses cranial nerves 3,4,5
 - III: Oculomotor
 - IV: Trochlear
 - VI: Abducens
 - Looking for nystagmus and ptosis

Pupillary Reaction

- Dim the room lights as necessary
- Ask the patient to look into the distance
- Shine a bright light obliquely into each pupil in turn
- Look for both the direct (same eye) and consensual (other eye) reactions
- Note pupil size and any symmetry or irregularity

Fundoscopy Examination

- Darken the room as much as possible
- Adjust the ophthalmoscope so that the light is no brighter than necessary. Set the Doppler dial to 0.
- Use your right hand and left eye to examine the patient's left eye, placing your free hand on the patient's shoulder.
- Do the same for the right side.

Hearing evaluation

- Auditory acuity – with the patient blocking the opposite ear and you on the side to be tested, whisper “ninety-nine” at a distance of 1-2 feet
- Perform the same test on the opposite side

Examining the External Ear

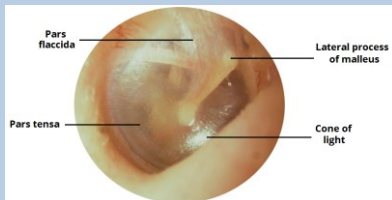
- Examine the external ear for symmetry, size, position on head
- Inspect external auditory canal for discharge and note odor if any
- Palpate the auricles and mastoid area for tenderness, swelling, or nodules

Otoscopic Examination

- Select the largest size speculum that will fit comfortably in the patient's ear
- Tilt the patient's head towards the opposite shoulder and simultaneously pull the auricle upward and back while inserting the speculum
- Inspect the external auditory canal for discharge, redness, lesions, foreign bodies, and cerumen

Otoscopic tympanic membrane inspection

- Note landmarks (umbo, Handle of malleus, light reflex)
- Typical color should be pearly gray



Nose and Nasopharynx Examination

- External Nose
 - Inspect for deviations in shape, size, or color
 - Inspect nares for discharge, flaring, or narrowing

Nasal Cavity

- Tilt the patient's head back slightly. Ask them to hold their breath for the next few seconds
- Insert the otoscope into the nostril, avoiding contact with the septum
- Inspect the visible nasal structures and note any swelling, redness, drainage, or deformity
- Repeat for the other side
- Palpate the frontal and maxillary sinuses

Nasal Cavity

- Percussion
 - Percuss frontal and maxillary sinuses assessing for pain/tenderness and dullness/resonance

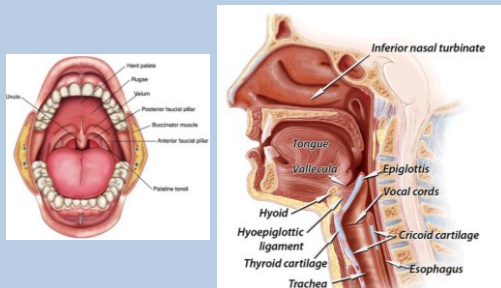
Throat Examination

- Ask patient to open their mouth
- With a wide open mouth (may use tongue depressor) and a good light source, inspect the inside of the patient's mouth including the buccal folds and under the tongue
- Note any ulcers, white patches, or other lesions
- If abnormalities are present, use a gloved finger to palpate the anterior structures and floor of the mouth

Examination of the Throat

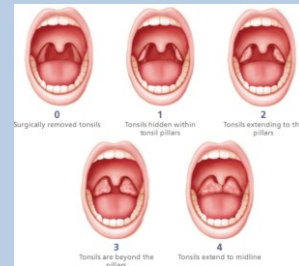
- Inspect the posterior oropharynx by depressing the tongue and asking the patient to say "AH"
- Be able to locate the tonsils, uvula, and pharynx
- Notice any tonsillar enlargement, redness, or discharge

Anatomy of Throat



Tonsillar Size

- Graded 1-4 based on size



Neck Examination

- Inspect the neck for asymmetry, scars, or other lesions
- Palpate the neck to detect areas of tenderness, deformity, or masses
- Palpate with the pads of your index finger for the various lymph nodes

Neck: Thyroid

- Inspect the neck looking for the thyroid gland
- Note whether it is visible and symmetrical. A visibly enlarged thyroid gland is called a goiter.
- Move to a position behind the patient
- Identify the cricoid cartilage with the fingers of both hands
- Move laterally from the midline while palpating for the lobes of the thyroid
- Note the size, symmetry, and position of the lobes. The normal gland is not palpable.

Thyroid Exam



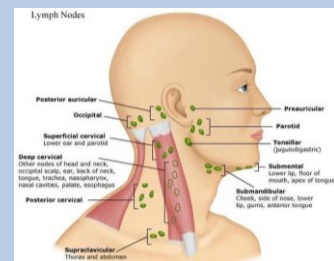
Lymph Nodes

- Note the size and location of any palpable nodes and whether they were soft or hard, non-tender or tender, mobile or fixed
- Whenever a malignancy or infection is observed, look for involvement of the regional lymph nodes that drain it.
- Whenever a node is enlarged or tender, look for the source such as infection in the area that it drains

Lymph nodes

- Preauricular – in front of the ear
- Postauricular – behind the ear
- Occipital – at the base of the skull
- Tonsillar – at the angle of the jaw
- Submandibular – under the jaw on the side
- Submental – under the jaw in the midline
- Supraclavicular

Lymph Node Location



Reference

- Bickley LS. *Bates' Guide to Physical Examination and History Taking*. Wolters Kluwer Health. 10th Ed. 2009

Northern Navajo Medical Center Physical Assessment Course

HEENT/Skin Physical Exam Grading Form

Student: _____

Evaluator: _____

Final Score: _____/123 = _____% (80% to pass)

Students attending the NNMC Physical Assessment Class shall be evaluated his/her ability to illicit an appropriate history based on chief complaint, respectful approach to the patient, appropriate use of equipment, and ability to perform the required physical examination(s).

Scoring criteria is as follows:

0: Skill/Task Not Done

- Skill/task not addressed or completely omitted

1: Needs Significant Improvement

- Skill/task addressed but completely incorrect, or
- Skill/task addressed but numerous aspects omitted

2: Needs Slight Improvement

- Skill/task addressed and mostly executed correctly, or
- Skill/task addressed with few omissions

3: Competent

- Skill/task completed correctly

Communication and General Considerations	Skill/Task Score (circle one)
Student introduced self to patient	0 1 2 3
Student spoke with patient clearly and appropriately	0 1 2 3
Student washed hands prior to beginning exam	0 1 2 3
Student appropriately obtained chief complaint and history	0 1 2 3
Student demonstrated appropriate listening skills and body language	0 1 2 3
Student appropriately maneuvered patient around exam room	0 1 2 3
Student correctly used medical equipment	0 1 2 3
Student respected privacy of patient	0 1 2 3
Student closed encounter appropriately and politely	0 1 2 3

Comments:

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

HEENT/Skin Physical Exam Grading Form

HEENT Examination	Skill/Task Score (circle one)
Head (Must assess each of the following elements and state what is being assessed)	0 1 2 3
• Inspect hair & scalp	
• Palpate scalp for abnormalities	
Eyes (Must assess each of the following elements and state what is being assessed)	
• Begin with open ended question (e.g., “What problems have you been having with your eyes?”)	0 1 2 3
• Visual acuity (assess using Snellen chart)	0 1 2 3
• Extraocular movements (states what is being examined & purpose)	0 1 2 3
• General inspection (must spread each eye open with thumb and index finger; state looking for discoloration, opacities, discharge, lesions)	0 1 2 3
• Pupillary reactions [look for direct (same eye) and consensual papillary reaction]	0 1 2 3
• Fundoscopic examination <ul style="list-style-type: none"> ○ Darken room, appropriately examine each eye ○ Assess for “red reflex” from ~2 ft away ○ Utilizing ophthalmoscope, inspect for abnormalities (blood vessels, optic disk, etc.) 	0 1 2 3
Ears	
• Auditory acuity (must whisper in ear while covering opposite ear and ask patient to repeat, then repeat test for opposite ear)	0 1 2 3
• External examination (inspect both ears externally and palpate auricles gently)	0 1 2 3
• Mastoid process (palpate the mastoid process behind each ear)	0 1 2 3
• Internal inspection (both ears) <ul style="list-style-type: none"> ○ Pull ear up and back prior to inserting otoscope ○ Demonstrate proper insertion of otoscope (insert otoscope just past ear hair and rest hand holding scope on patient’s head as a lever) ○ Explain the inner ear parts being examined (ear canal, middle ear, tympanic membrane) 	0 1 2 3

Comments:

Score: _____/33

Northern Navajo Medical Center Physical Assessment Course

HEENT/Skin Physical Exam Grading Form

HEENT Examination	Skill/Task Score (circle one)
Nose	
<ul style="list-style-type: none"> • Inspection <ul style="list-style-type: none"> ○ External exam (explain what is being examined/inspect outside of nose) 	0 1 2 3
<ul style="list-style-type: none"> ○ Internal exam (inspect internal nasal structures, tilting patient's head back slightly, while they hold their breath insert the otoscope into nostril so as to avoid hitting the septum) 	0 1 2 3
<ul style="list-style-type: none"> • Palpation <ul style="list-style-type: none"> ○ Palpate frontal and maxillary sinuses assessing for pain and tenderness 	0 1 2 3
<ul style="list-style-type: none"> • Percussion <ul style="list-style-type: none"> ○ Percuss frontal maxillary sinuses assessing for pain/tenderness & dullness/resonance 	0 1 2 3
Throat/Mouth	
<ul style="list-style-type: none"> • Inspection <ul style="list-style-type: none"> ○ External (examine lips and surrounding area) 	0 1 2 3
<ul style="list-style-type: none"> ○ Internal (using light and tongue depressor, examine interior of mouth) 	0 1 2 3
Neck	
<ul style="list-style-type: none"> • Inspection <ul style="list-style-type: none"> ○ Visual inspection of neck 	0 1 2 3
<ul style="list-style-type: none"> ○ Visual inspection of thyroid gland while having patient swallow (state that symmetry and visibility of thyroid gland are being assessed) 	0 1 2 3
<ul style="list-style-type: none"> • Palpation <ul style="list-style-type: none"> ○ Palpate neck for tenderness/masses 	0 1 2 3
<ul style="list-style-type: none"> ○ Palpate the following lymph nodes on both sides: <ul style="list-style-type: none"> ▪ Preauricular (front of ears) ▪ Postauricular (superficial to mastoid process) ▪ Occipital (at base of skull posteriorly) ▪ Tonsillar (at angle of mandible) ▪ Submandibular (midway between angle & tip of mandible) ▪ Submental (midline a few cm behind tip of mandible) ▪ Supraclavicular (deep in the angle formed by the clavicles and sternomastoid) 	0 1 2 3
<ul style="list-style-type: none"> ○ Palpate thyroid gland examining for size, shape, and consistency (must use hands from behind and have patient swallow while palpating) 	0 1 2 3

Comments:

Score: _____/33

Northern Navajo Medical Center Physical Assessment Course

HEENT/Skin Physical Exam Grading Form

Integumentary Examination	Skill/Task Score (circle one)
Must be accompanied by visual inspection. Any affirmative answers to questions should prompt follow up questions.	0 1 2 3
<ul style="list-style-type: none"> Have you had any problems with your skin? 	
<ul style="list-style-type: none"> Have you noticed and new moles or have any existing moles changed in size, shape, or color? 	
<ul style="list-style-type: none"> Have you noticed any rashes? 	
<ul style="list-style-type: none"> Have you noticed any changes in your nails (color, texture, hardness)? 	

Presentation to Instructor	Skill/Task Score (circle one)
Identified Chief Complaint	0 1 2 3
History of Chief Complaint	0 1 2 3
<ul style="list-style-type: none"> OLDCARTS format 	
Relevant past/other medical problems	0 1 2 3
Vitals reported	0 1 2 3
<ul style="list-style-type: none"> Blood pressure as appropriate 	
<ul style="list-style-type: none"> Pulse as appropriate 	
<ul style="list-style-type: none"> Oxygen saturation as appropriate 	
Allergies and medications	0 1 2 3
Brief social history	0 1 2 3
Pertinent physical examination findings only	0 1 2 3
Short and concise assessment	0 1 2 3
Plan/recommendations	0 1 2 3

Comments:

Score: ____/30

Mental Health Examination

NNMC Pharmacist Clinician Physical Assessment Course

Objectives

- Explain the impact mental health disorders have on the patient and health system
- Describe general characteristics of mental health disorders found during interview
- Learn to perform basic screening tests during patient interviews

Mental Health (MH) Impact

- Primary Care
 - About 20% of primary care visits patients have MH disorders
 - 50-75% are undiagnosed
- Anxiety 20%
- Mood disorders (depression, bipolar, etc) 25%
- Depression 10%
- Somatoform disorder 10-15%
- Alcohol and substance abuse 15-20%

Mental Health Impact

- Physical symptoms account for approximately half of office visits
- About a third of physical symptoms are unexplained
 - 20-25% of patient's pain will become chronic
- Patient's with unexplained symptoms
 - Depression and anxiety is over 50%; increases with the number of physical symptoms reported

Mental Health Impact

- Functional syndromes often co-exist with MH disorders
 - Irritable bowel syndrome
 - Fibromyalgia
 - Chronic fatigue
 - Multiple chemical sensitivities

Common or Concerning Complaints

- Changes in attention, mood, or speech
- Changes in insight, orientation, or memory
- Anxiety, pain, ritualistic behavior, and phobias
- Delirium or dementia

Patient Identifiers for MH Screening

- Medically unexplained physical symptoms
- Multiple physical or somatic symptoms
 - High symptom count
- High severity of presenting somatic symptom
- Chronic pain
- Symptoms > 6 weeks
- Physician notes indicating “difficult encounter”
- Recent Stress
- Substance abuse
- High use of healthcare system

Mental Health Examination

- Cultural Considerations
- Appearance and behavior
- Speech and language
- Mood
- Thoughts and perception
- Cognition
- Sleep Hygiene
- Assessment Tools

Cultural Considerations

- Consider impact of culture on pt’s presentation
- Can affect diagnostic assessment
- What sounds delusional in one culture may be normal in another
 - Familiarize with commonalities of culture at hand

Appearance and Behavior

- Level of consciousness
 - Alert versus lethargic
- Posture and motor behavior
 - Full body control versus ticks, paralysis, etc.
 - Anxiety – tense posture, restlessness, fidgety
 - Depression – crying, slumped posture, slowed movements

Appearance and Behavior

- Dress, grooming, hygiene
 - Depression, schizophrenia, dementia – may result in deterioration in grooming and hygiene
 - Obsessive compulsive – excessive neatness
 - Shirt/pants buttoned – parkinsonism and paralysis may be the cause and not a MH disorder
- Facial expressions
 - Anxiety, depression, anger, parkinsonism facial immobility
- Manner
 - Paranoia – anger, hostility, suspiciousness
 - Mania – elation or euphoria
 - Schizophrenia – flat affect

Speech and Language

- Quantity
 - Talkative or silent
- Rate
 - Depression – slow speech
 - Mania – rapid, loud speech
- Articulation of words
 - Aphasia – inability to comprehend or formulate language
- Fluency
 - Rate, flow, melody of speech

Mood

- Mood
 - History of overall mood
 - "Thoughts of hurting yourself or others"

Thoughts and Perceptions

- Schizophrenia
 - Derailment – speech shifts from one subject to another that have no association
 - Neologisms - inverted or distorted words
 - Incoherence – speech largely incomprehensible
 - Blocking -sudden interruption of speech midsentence; occurs in health individuals but more intense in schizophrenic patients
 - Echolalia – repetition of words and phrases
 - Clanging – words chosen on sound rather than meaning

Thoughts and Perceptions

- Mania
 - Derailment
 - Flight of ideas – continuous flow of accelerated speech with rapid changes in topic; similar to derailment but topics may have some association
 - Clanging
- Obsessive
 - Circumstantiality – delay in reaching the point due to excessive detail; this can be a normal trait in people without mental disorders

Cognitive Functions

- Orientation – person, place, time
- Attention
 - Digit span – random series of numbers; start with two and move up until patient misses one; repeat with second series; repeat backwards; should be able to repeat 5 numbers forward and backwards
 - Serial 7s – Count backwards from 100 by sevens; normally can be done in 1.5 minutes with 4 errors or less
 - Spelling backwards – spell "WORLD" backwards

Cognitive Functions

- Memory
 - Recent memory and recall – list 3 objects, have patient repeat back immediately and again in five minutes
 - Remote memory – inquire about birthdays, anniversaries, schools attended
 - May be impacted by dementia, delirium, anxiety, depression, head trauma

Sleep Hygiene

- Extended periods of non-sleep (24hrs – days in a row)
- Difficulty falling asleep
 - Running thoughts
- Waking up repeatedly from sleep
 - Nightmares, sleep walking

Medication Monitoring Requirements

- AIMS – Baseline, every 6 months
- Fasting glucose or HbA1c – baseline, then every 6 months
- ECG – Baseline 3 months after initiation of drug, then as needed. (Exception: Geodon and all typical antipsychotics should have yearly ECG.)
- Mg – Baseline and then as needed
- Lipid panel – Baseline, then every 6 months for patients with LDL > 130 or triglycerides > 200 (fasting or non-fasting)
- Lipid Panel – Baseline, then yearly for patients with LDL ≤ 200 and no CV disease or diabetes
- BP – Baseline, 3 months after initiation, then every 6 months.
- Weight – Baseline, 3 months after initiation, then every 6 months.
- Vision Screen for Cataracts – baseline and yearly with quetiapine use.

Example Interview Questions By Diagnosis

- Mania:
 - Tell me what your typical day is like.
 - Do your thoughts go faster than you can say them?
 - Have you noticed a change in the amount of sleep that you require?
 - Have you spent a lot of money lately, and what did you spend it on?
 - Do you have a lot of extra energy?
- Depression:
 - How do you spend your time?
 - Do you cry without any reason?
 - Do you still enjoy the same hobbies or activities that you once did?
 - Has your weight changed recently?
 - Do you have any guilty feelings?
 - Do you find it difficult to remember phone numbers, names of friends, appointments?

Example Interview Questions By Diagnosis

- Schizophrenia
 - Delusions
 - How do people treat you?
 - Do you feel that people plot against you?
 - Do you ever feel that you are watched or spied on?
 - Do you have any special abilities?
 - Does anyone ever try to mess with you or bother you?
 - Do others read your thoughts?
 - Hallucinations
 - Does the TV or radio ever tell you things?
 - Do you hear voices that other people don't hear?
 - What do they say? Are there many voices?
 - How often do they bother you?
 - Do the voices ever tell you to harm yourself or others?
 - Have you ever heard your name called when there is no one there?
 - Have you ever seen anything strange that you can't explain?
 - Do you ever see things that bother you and no one else?
 - Do you want to act on what the voices say?
 - Thought Broadcasting or Insertion
 - If I stood by you could I hear your thoughts?
 - Does your head ever act like a radio?
 - Do you feel that others can put thoughts in your head?

Example Interview Questions By Diagnosis

- Insight:
 - What reasons did your family give you for coming here?
 - What brought you here?
 - Do you consider yourself in need of help?
 - What does your medication do for you?
- Sleep:
 - Tell me about your sleep.
 - How many hours do you sleep each night at present?
 - Do you sleep all through the night?
 - Is there a reason for you waking up if you do in the night?
 - How do you feel when you wake up?
- Suicide Potential:
 - Do you feel your life is not worth living?
 - Do you ever think of killing or harming yourself? How often?
 - Do you see things improving in the future?
 - Do you have the means of hurting yourself?

Assessment Tools

- PHQ-9
 - Screening tool for diagnosing, monitoring and measuring depressive symptoms; measures response to treatment
 - Completed by patient or clinician interviewer in minutes and rapidly scored
- GAD-7
 - Screening tool for diagnosing, monitoring and measuring anxiety symptoms/response to treatment
- AIMS Test
 - Method of documenting tardive dyskinesia (TD) presence and severity over time in patients taking neuroleptic medications
 - Done by indirect observation usually during completion of physical exam

Assessment Tools

- SLUMS – Saint Louis University Mental Status Exam
 - Measures ability in orientation, executive function, memory and attention.
 - Utilized to evaluate cognitive impairment
 - SLUMS superior to MME in areas of
 - Orientation
 - Short-term recall/memory
 - Detecting aphasia
 - Possibility of cognitive reserve allowing pt to “fool” the test
- MMSE
 - Addresses orientation, attention, memory, written and verbal skills
 - Dismisses mood and executive function

Depression Assessment – PHQ-9

PHQ-9 Questionnaire

The Patient Health Questionnaire (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems?

Item	Not at all	Seldom	More than Seldom	Often
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling asleep, staying asleep, or waking too early	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Trouble concentrating or making decisions	0	1	2	3
6. Thinking about death or suicide, or that you'd be better off dead or hurting yourself in some way	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Feeling slowed down, or that you're not as quick as you used to be	0	1	2	3
9. Feeling hopeless about the future, or that things will never get better	0	1	2	3

Colored Scale: Add Total Together

PHQ-9 Scoring

The Patient Health Questionnaire (PHQ-9) Scoring

Sum of the PHQ-9 items = Patient's Depression Severity Score

Score 0 = No depression
 Score 1-4 = Mild depression
 Score 5-9 = Moderate depression
 Score 10-14 = Severe depression
 Score 15-19 = Very severe depression
 Score 20-27 = Extremely severe depression

Item 6: Thoughts of death or suicide

Item 6 is scored as follows: 0 = No thoughts of death or suicide; 1 = Thoughts of death or suicide, but not suicidal; 2 = Thoughts of death or suicide, suicidal ideation, but not suicidal; 3 = Thoughts of death or suicide, suicidal ideation, suicidal ideation with suicidal ideation.

Item 9: Hopelessness

Item 9 is scored as follows: 0 = No hopelessness; 1 = Mild hopelessness; 2 = Moderate hopelessness; 3 = Severe hopelessness.

GAD-7 Anxiety Screening

GAD-7 anxiety scale

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

Total score = Add Columns

Score: 5 to 9 = mild anxiety; 10 to 14 = moderate anxiety; 15 to 21 = severe anxiety.

AIMS Test

AIMS Procedure

AIMS Examination Procedure

Administer the test according to the instructions provided. Administer the test in a quiet room.

Procedure:

1. Read the instructions to the patient and ask if they understand.
2. Ask about the patient's condition and the patient's history. Ask if the patient understands the instructions and if they understand the instructions.
3. Ask the patient to read the instructions and to read the instructions to you. Ask if the patient understands the instructions and if they understand the instructions.
4. Administer the test to the patient. Ask if the patient understands the instructions and if they understand the instructions.
5. Ask the patient to read the instructions and to read the instructions to you. Ask if the patient understands the instructions and if they understand the instructions.
6. Ask the patient to read the instructions and to read the instructions to you. Ask if the patient understands the instructions and if they understand the instructions.
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9. Ask the patient to read the instructions and to read the instructions to you. Ask if the patient understands the instructions and if they understand the instructions.
10. Ask the patient to read the instructions and to read the instructions to you. Ask if the patient understands the instructions and if they understand the instructions.

AIMS Scoring

Abnormal Involuntary Movement Scale (AIMS)

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1. Abnormal eye movements	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

SLUMS Test

SLUMS Examination

Department of Veterans Affairs

1. What day of the week is it?
 2. What year are we in?
 3. How many months ago was the day you were born?
 4. How many years ago was the day you were born?
 5. How many years ago was the day you were born?
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Mini-Mental State Examination (MMSE)

Method	Score	Interpretation
Single Cutoff	<24	Abnormal
Range	<21	Increased odds of dementia
	>25	Decreased odds of dementia
Education	21	Abnormal for 8 th grade education
	<23 <24	Abnormal for high school education Abnormal college education
Severity	24-30	No cognitive impairment
	18-23	Mild cognitive impairment
	0-17	Severe cognitive impairment

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Mini-Mental State Examination (MMSE)

Instructions: All the questions in this order listed. Score one point for each correct response unless otherwise specified.

Question	Points
1. What is the year? Season? Day of the week? Month?	1
2. There are two names. Name? Count? Name? Count?	1
3. I want you to count backwards from 100 by tens. 100, 90, 80, 70, 60, 50, 40, 30, 20, 10.	1
4. Name 3 objects. Name of them? Name of them? Name of them?	1
5. Name 3 colors. Name of them? Name of them? Name of them?	1
6. Name 3 animals. Name of them? Name of them? Name of them?	1
7. Name 3 fruits. Name of them? Name of them? Name of them?	1
8. Name 3 vegetables. Name of them? Name of them? Name of them?	1
9. Name 3 drinks. Name of them? Name of them? Name of them?	1
10. Name 3 professions. Name of them? Name of them? Name of them?	1
11. Name 3 sports. Name of them? Name of them? Name of them?	1
12. Name 3 hobbies. Name of them? Name of them? Name of them?	1
13. Name 3 places. Name of them? Name of them? Name of them?	1
14. Name 3 countries. Name of them? Name of them? Name of them?	1
15. Name 3 states. Name of them? Name of them? Name of them?	1
16. Name 3 cities. Name of them? Name of them? Name of them?	1
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100. Name 3 cities. Name of them? Name of them? Name of them?	1

https://www.uml.edu/docs/Mini%20Mental%20State%20Exam_tcm18-169319.pdf

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Neurology Examination

Learning Objective

- Understand basic neuro anatomy needed to conduct a physical examination
- Be able to conduct a neurological exam by
 - Identifying the name of the nerve tested
 - Describe the functionality of the nerve tested
 - Identify abnormal tests and describe impact on patient
- Identify central versus peripheral lesions based on the neurological exam

Common Complaints

- Headache
- Dizziness or vertigo
- Generalized, proximal, or distal weakness
- Numbness, abnormal or loss of sensation
- Loss of consciousness, syncope
- Seizures
- Tremors or involuntary movements

Bate's Guide to Physical Examination
UpToDate

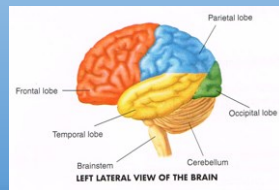
Mini-Mental Status Examination (MMSE)

- A screening tool used to evaluate a patient's mental status
- Numerous forms can be found online
- Instead of using the entire form, select several questions to screen the patient
 - Recall of 3 of 3 objects at 5 minutes
 - Location, year, current president

UpToDate
Neurology for the Non-neurologist

Anatomy of the Nervous System

- Four regions of the brain
 - Cerebrum
 - Diencephalon
 - Brainstem
 - Cerebellum
- The cerebrum is most basically divided into for lobes
 - Frontal
 - Temporal
 - Parietal
 - Occipital



Bate's Guide to Physical Examination

Region Functions

- Diencephalon
 - Thalamus – relays sensory and motor inputs to cerebral cortex; regulation of sleep/wake cycles
 - Hypothalamus – controls release of hormones for posterior and anterior pituitary glands controlling limbic function, fluid balance, body temperature, cardiovascular and respiratory function
- Physical exam unlikely to be diagnostic of a lesion in this area

Bate's Guide to Physical Examination

Region functions – cont.

- **Brainstem**
 - Cardiovascular and respiratory control, pain sensitivity, awareness, consciousness
 - An acute brainstem injury will unlikely be evaluated by a pharmacy provider
- **Cerebellum**
 - Coordination of movement
 - Something a pharmacy provider may encounter

Bate's Guide to Physical Examination

Region functions – cont.

- **Cerebral Cortex (in brief)**
 - Frontal lobe – planning, judgement, attention span, decision making skills, inhibitions
 - Temporal lobe – sensory input, auditory perception, language and speech production, memory
 - Parietal lobe – sensation, perception, sensory perception
 - Occipital lobe – visual processing

Merck Manual

12 Cranial Nerves

Number	Name	Function
I	Olfactory	Sense of Smell
II	Optic	Vision
III	Oculomotor	Pupillary constriction, opening of the eye, most extraocular movements
IV	Trochlear	Downward, internal eye movement
V	Trigeminal	Motor- temporal and masseter muscles, lateral jaw movement Sensory- facial (3 sections)
VI	Abducens	Lateral eye deviation



Bate's Guide to Physical Examination
UpToDate

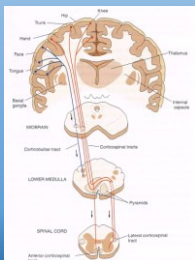
Cranial Nerves – cont.

Number	Name	Function
VII	Facial	Motor – facial expression, eye closure, mouth closure Sensory – taste for sweet, salt, sour, bitter on anterior 2/3 of mouth
VIII	Acoustic	Hearing and balance
IX	Glossopharyngeal	Motor – pharynx Sensory – posterior portion of eardrum, pharynx, posterior tongue including taste
X	Vagus	Motor – palate, pharynx, larynx Sensory – pharynx and larynx
XI	Spinal Accessory	Motor – sternomastoid and upper portion of trapezius
XII	Hypoglossal	Motor – tongue

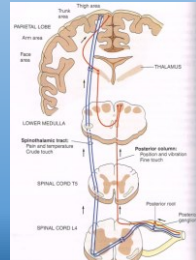
Bate's Guide to Physical Examination
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Pathways

Motor – Corticospinal Pathway

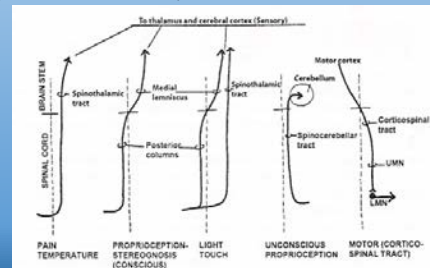


Sensory – Posterior and Spinothalamic



Bate's Guide to Physical Examination

Spinal Cord Pathways – another view



Clinical Neuroanatomy

The Examination

Pearls

- Experience in this area is needed; will need to see lots of normal examinations before recognizing subtle abnormalities
- Look for symmetry: Is the right and left side the same? Is there a reason for asymmetry such as trauma causing weakness?
- If symmetric but abnormal then what
 - Will a single lesion cause symmetric abnormal results?
 - Look for other causes to present – sedating medication will globally change exam results; depression will also change exam results

Key Points

- Areas of importance
 - Mental status
 - Cranial nerves
 - Motor system- normal muscle tone, bulk, strength, coordination, stance, gait
 - Sensory system – pain, temperature, position, vibration, light touch
 - Deep tendon – reflexes normal
- Questions to ask yourself during the exam
 - Mental status intact
 - Symmetric findings
 - If asymmetric, is lesion central or peripheral

Mental Examination

- Perform specific tests
 - Repeat 3 of 3 objects in 5 minutes
 - Ask date and location
- Many other mental health concerns can be ascertained during normal conversation
 - Language: expressive or receptive aphasia
 - Mood and affect
 - Level of consciousness (i.e. medication related)
 - Appearance and behavior

Neurology for the Non-neurologist

Cranial Nerves

- Olfactory (I) – not tested; may ask patient about changes in smell
 - Causes of defect: sinus infection, trauma, smoking, Parkinson's Disease
- Optic (II) - vision testing
 - Visual fields – patient covers one eye; examiner places hands at "1:30" and "10:30" beyond patient's field of view; wiggling fingers move into field of view while patient looking directly at your nose; repeat at the "4:30" and "7:30" position; repeat for other eye
 - Many other tests exist (see UpToDate)
 - Causes of defect: glaucoma, retinal emboli, optic neuritis, pituitary tumor, stroke

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UpToDate

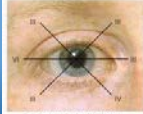
Cranial Nerves – cont.

- Optic and Oculomotor (II and III) – pupillary testing
 - Inspect size and shape of each and compare
 - Test pupillary reaction to light
 - Dim room, shine light into one eye – check for constriction in BOTH eyes
 - Repeat for other eye
 - Swing light source back and forth on each eye and make sure pupils no not change
 - Causes of abnormal findings
 - Minimal constriction in larger pupil – CNIII palsy, ptosis, ophthalmoplegia (eyes not aligned)
 - Constriction and remains small – Horner's syndrome

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UpToDate

Cranial Nerves – cont.

- Oculomotor, Trochlear, Abducens (CN III, IV, VI) – eye movement
 - Inspect for any abnormalities (i.e. ptosis)
 - Test eye movement in the six cardinal directions of gaze
 - About 2 feet from patient move slowly in all six directions (rapid movement can induce nystagmus in healthy individuals)
 - Causes of abnormal findings: myasthenia gravis, trauma, thyroid disease, medications (nystagmus with phenytoin), CNIII palsy



RIGHT EYE (CN III, IV, VI)

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UpToDate

Cranial Nerves - cont

- Trigeminal (CN V)
 - Motor – have patient clench teeth and move jaw side-to-side as you palpate the muscle
 - Sensory – have the patient close his/her eyes and touch suggested areas of the face. Use sharp or soft objects to compare both sides
 - Causes of abnormal findings
 - Motor – masseter and lateral pterygoid weakness; CNV lesion (unilateral weakness), cerebral hemisphere disease (bilateral weakness), CNS symptoms 2/2 stroke
 - Sensory – trigeminal neuralgia



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UpToDate

Cranial Nerves - cont

- Facial (CN VII)
 - Inspect face at rest and during conversation
 - Ask patient to perform: eyebrow raise, frown, smile, show teeth, clench eyes shut while you attempt to open, puff out cheeks
 - Causes of abnormal findings – Bell's Palsy will affect upper and lower face; CNS lesions (i.e. stroke) will affect lower face (below eyes)

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UpToDate

Cranial Nerves - cont

- Acoustic (CN VIII)
 - May evaluate using whispered voice or finger rubbing
 - Rarely evaluated on neuro exam but appropriate to ask patient about hearing changes
- Glossopharyngeal and Vagus (CN IX and X)
 - Listen to patients voice for abnormalities
 - Have patient swallow, say "ah" while observing rise of soft palate; do not mistake a normal curved uvula as a CN X lesion
 - Causes of abnormalities – CN X lesion (bilateral if palate fails to rise, unilateral if one side of palate rises)

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UpToDate

Cranial Nerves - cont

- Spinal Accessory (CN XI)
 - Observe for symmetry
 - Observe for atrophy or fasciculations in the trapezius muscle
 - Patient shrugs shoulders against your pressure
 - Patient turns head against your pressure
 - Causes of abnormal findings: trapezius weakness with atrophy and fasciculations indicates peripheral nerve disorder

Bate's Guide to Physical Examination
UpToDate

Cranial Nerves – cont.

- Hypoglossal (CN XII)
 - Have patient stick tongue straight out and verify it is midline
 - Inspect for atrophy
 - Have patient move tongue side-to-side
 - Causes of abnormal findings: Unilateral cortical lesion (deviates away from side of lesion)

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UpToDate

Motor Examination

- Gait – observe patient’s casual gait, walking on heels, walking on toes, and tandem; look for imbalance and changes in rate of steps or length of stride
 - Always be available to catch patient if s/he falls
 - Good idea to ask patient about balance before beginning
 - Certain disease types of specific gaits: motor hemiparesis, cerebellar
 - Causes of abnormal findings: ataxia due to cerebellar disease, medications, loss of position sense
- Hemiparesis gait: <https://www.youtube.com/watch?v=iOHhGS-XQPg>
- Cerebellar gait: <https://www.youtube.com/watch?v=eBvzFkcvScg>

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Motor Examination – cont.

- Coordination
 - Finger to nose – have patient touch his/her nose and then touch your finger; position yourself so patient must fully extend arm to expose tremors; move your finger to create a moving target
 - Finger tapping – one hand at a time have patient open and close fingers in claw like manner
 - Other tests exist such as flipping hands on patient’s lap and heel-to-shoen

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UpToDate

Motor Examination – cont.

- Coordination
 - Romberg – patient stands with feet together and eyes closed
 - Positive Romberg is patient falling – be sure you can support the patient
- Causes of abnormal findings
 - In cerebellar disease, one movement cannot be followed quickly by opposite movement; in finger tapping, a decreasing amplitude of motion could indicate a decrease in dopamine

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UpToDate

Coordination – cont.

- Involuntary movements – observe patient for involuntary movements
 - Tremor
 - Myoclonus – rapid, shock-like muscle jerks
 - Chorea – rapid, jerky twitches; similar to myoclonus but more random in location and more likely to blend together
 - Athetosis – slow, writhing movements of the limbs
 - Ballismus – large amplitude flinging limb movements
 - Tics – abrupt, stereotyped, coordinated movements or vocalizations
 - Dystonia – maintenance of an abnormal posture or repetitive twisting movements

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UpToDate

Motor Examination – cont.

- Pronator Drift - patient extends arms out with palms up and eyes closed for 5-10 seconds; observe for drop of arm for turning inward of palm
 - Cause of abnormal finding: unilateral drift indicative of upper motor neuron lesion
- <https://www.youtube.com/watch?v=o8zkr3tmszQ>

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UpToDate

Strength Testing

- Upper extremities
 - Shoulder abduction, elbow flexion/extension, wrist flexion/extension, finger abduction, grip strength
 - Abnormal findings: shoulder abduction already discussed, elbow weakness – possible peripheral or central nerve damage; old or acute injury preventing full movement
- Lower extremities
 - Hip flexion/extension, knee flexion/extension, ankle dorsiflexion, ankle plantar flexion
 - Peripheral or central nerve damage; old or acute injury preventing full movement

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UpToDate

Grading of Strength

- 0 = no contraction
- 1 = visible muscle twitch but no movement of the joint
- 2 = weak contraction insufficient to overcome gravity
- 3 = weak contraction able to overcome gravity but no additional resistance
- 4 = weak contraction able to overcome some resistance but not full resistance
- 5 = normal; able to overcome full resistance

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Weakness Terminology

- Monoparesis – weakness of single limb
- Hemiparesis – weakness of one side of body
- Paraparesis – weakness of both lower extremities
- Quadriparesis – weakness of all four limbs

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UpToDate

Muscle Terminology

- Muscle bulk – muscles active in each movement should be inspected/palpated for atrophy and fasciculations (random, involuntary muscle twitches)
- Muscle tone – slight residual tension present in voluntarily relaxed muscles
 - Spasticity – limb moves freely for some duration and then progressively becomes harder to move; more force applied until sudden release; generally greatest in upper limb flexors and lower limb extensors
 - Rigidity – increasing resistance through entire movement
 - Paratonia – increased resistance that becomes less prominent when patient is distracted

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UpToDate

Upper versus Lower Motor Neuron Lesions

Upper Motor Neuron Defect	Lower Motor Neuron Defect
Spastic Paralysis	Flaccid Paralysis
No significant muscle atrophy	Significant muscle atrophy
Muscle fasciculations and fibrillations not present	Muscle fasciculations and fibrillations present
Hyperreflexia	Hyporeflexia
Babinski reflex present	Babinski reflex not present

Clinical Neuroanatomy

Deep Tendon Reflex (DTR)

- Pt must be relaxed to perform – distraction may be necessary
- DTRs commonly tested include biceps, triceps, brachioradialis, patellar and Achilles. Occasionally interior knee reflexes are tested
- Test one DTR then test corresponding DTR on other side; do not perform the entire left side and then move to the right side
- Clonus (rhythmic muscle contractions) may be discovered when a relaxed tendon is suddenly stretched, usually the Achilles
- Crossover (a response to the other side of the body) is normal as long as it occurs from both sides
- Patients with known or anticipated hyperreflexia (i.e. hemiparesis) may find DTRs painful

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UpToDate

Grading of DTRs

- 0 = absent
- 1 = reduced (hypoactive)
- 2 = normal
- 3 = increased (hyperactive), but can still be normal
- 4 = clonus
- This, as with muscle strength, a subjective system
- More important to compare symmetry versus absolute grade

Bate's Guide to Physical Examination
UpToDate

Plantar and Hoffman Reflex

- **Plantar**
 - Using the reflex hammer, stroke the bottom of the foot as shown
 - Negative result is flexion of the toes; positive is extension of toes
 - In infants some controversy of response
 - Positive test indicative of upper motor neuron lesion
- **Hoffman**
 - Not always performed
 - Involves flicking the nail of the middle or ring finger; positive is flexion of the thumb and index finger
 - Be careful – can be present or absent in normal patients; look for asymmetric response; indicative of upper motor neuron lesion

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UpToDate

Sensory Examination

- **Light touch** – with the patient's eyes closed, lightly touch various parts of the hand and feet
- **Temperature** – with patient's eyes closed, use a cool object (such as the metal tuning fork) to test; check hands and feet
- **Vibration** – use tuning fork to test for vibration in lower and upper extremities; place for on bone and not muscle
- **Pain** – don't recommend testing; let neurology do this
- **Abnormal findings:** varied with most common being diabetic neuropathy and B12 deficiency; location of spinal injuries can also impact as previously discussed

Bate's Guide to Physical Examination
UpToDate

Documentation

- **Mental Status:** Oriented to person, place, and time. Normal judgement and assimilation of information. Distant memory intact. Able to recall 3/3 objects at five minutes. No expressive or receptive aphasia. Normal naming.
- **Cranial Nerves:** Pupils equal, round and responsive to light. Extra ocular muscles intact. Full visual fields. Symmetric facial strength and sensation. Midline palate elevation and tongue protrusion.
- **Cerebellum:** Normal finger to nose. Rhythmic rapid alternation movements. No dysdiadokinesis.
- **Motor:** Normal tone and bulk. Symmetric rapid alternating movements. No drift. 5/5 strength in all muscle groups.
- **Sensory:** Intact temperature, light touch, position and vibratory sensory diffusely.
- **DTRs:** 2+ and symmetric throughout. No pathological reflexes.
- **Gait:** Can arise from a chair with arms crossed. Normal stride. Can perform tandem gait. Romberg sign is negative.

References and Sources

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- Huang J. *Overview of Cerebral Function*. Merck Manual online. Last updated: 9/2015. Available at: <http://www.merckmanuals.com/professional/neurologic-disorders/function-and-dysfunction-of-the-cerebral-lobes/overview-of-cerebral-function>
- Goldberg S. *Clinical Neuroanatomy Made Ridiculously Simple: Interactive Edition*. MedMaster Inc. 4ed. 2010.

Northern Navajo Medical Center Physical Assessment Course

Neurological Physical Exam Grading Form

Student: _____ Evaluator: _____

Final Score: _____/108 = _____% (80% to pass)

Students attending the NNMC Physical Assessment Class shall be evaluated his/her ability to illicit an appropriate history based on chief complaint, respectful approach to the patient, appropriate use of equipment, and ability to perform the required physical examination(s).

Scoring criteria is as follows:

0: Skill/Task Not Done

- Skill/task not addressed or completely omitted

1: Needs Significant Improvement

- Skill/task addressed but completely incorrect, or
- Skill/task addressed but numerous aspects omitted

2: Needs Slight Improvement

- Skill/task addressed and mostly executed correctly, or
- Skill/task addressed with few omissions, or

3: Competent

- Skill/task completed correctly

Communication and General Considerations	Skill/Task Score (circle one)			
Student introduced self to patient	0	1	2	3
Student spoke clearly and appropriately	0	1	2	3
Student washed hands prior to beginning exam	0	1	2	3
Student appropriately obtained chief complaint and history	0	1	2	3
Student demonstrated appropriate listening skills and body language	0	1	2	3
Student appropriately maneuvered patient around exam room	0	1	2	3
Student correctly used medical equipment	0	1	2	3
Student respected privacy of patient	0	1	2	3
Student closed encounter appropriately and politely	0	1	2	3

Comments:

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

Neurological Physical Exam Grading Form

Mental Status Examination	Skill/Task Score (circle one)
Student must assess at least 2 of the following elements	0 1 2 3
<ul style="list-style-type: none"> • Orientation (person, place, date, situation) 	
<ul style="list-style-type: none"> • Registration: student lists 3 objects, asks patient to repeat back until correct, and asks patient to recall in 3-5 minutes 	
<ul style="list-style-type: none"> • Attention and Calculation: Serial 7's backward from 100 (stop after 5 answers) or spelling "World" backwards 	
Mood Disturbance (both required)	0 1 2 3
<ul style="list-style-type: none"> • Evaluate general mood: "In the last 2 weeks have you lost interest in doing things that previously brought you pleasure?" 	
<ul style="list-style-type: none"> • "Any thoughts of hurting yourself or others?" 	
Neurological Examination	
Cranial Nerves – student must perform or examine each item below. Students MUST state what is being performed	
<ul style="list-style-type: none"> • I (Olfactory) – student asks about smell 	0 1 2 3
<ul style="list-style-type: none"> • II (Optic) – Examine fields by confrontation 	0 1 2 3
<ul style="list-style-type: none"> • III (Oculomotor) – pupillary reaction to light 	0 1 2 3
<ul style="list-style-type: none"> • III, IV, VI (Oculomotor, Trochlear, Abducens) – must do both 	0 1 2 3
<ul style="list-style-type: none"> ○ Direction of gaze 	
<ul style="list-style-type: none"> ○ Look for ptosis and nystagmus 	
<ul style="list-style-type: none"> • V (Trigeminal) – must do both 	0 1 2 3
<ul style="list-style-type: none"> ○ Motor: student has patient clench teeth while palpating temporal and masseter muscles 	
<ul style="list-style-type: none"> ○ Sensory: pain and light touch (3 regions: ophthalmic, maxillary, mandibular) 	
<ul style="list-style-type: none"> • VII (Facial) – do and state what is being done 	0 1 2 3
<ul style="list-style-type: none"> ○ Observe for tics, asymmetry, unusual movements 	
<ul style="list-style-type: none"> ○ Show teeth, puff out cheeks, raise eyebrows, frown, close eyes 	

Comments:

Score: _____/24

Northern Navajo Medical Center Physical Assessment Course

Neurological Physical Exam Grading Form

Neurological Examination	Skill/Task Score (circle one)
Cranial Nerves (cont.) – student must perform or examine each item below. Students MUST state what is being performed	
<ul style="list-style-type: none"> • VIII (Acoustic) – student asks about hearing changes <ul style="list-style-type: none"> ○ Whisper or rub fingers 	0 1 2 3
<ul style="list-style-type: none"> • IX (Glossopharyngeal) <ul style="list-style-type: none"> ○ Have patient swallow 	0 1 2 3
<ul style="list-style-type: none"> • X (Vagus) <ul style="list-style-type: none"> ○ Patient says “ahh” and check for symmetric rise/fall of soft palate and uvula 	0 1 2 3
<ul style="list-style-type: none"> • XI (Spinal Accessory) <ul style="list-style-type: none"> ○ Patient shrugs shoulders against resistance ○ Turn face right and left against resistance 	0 1 2 3
<ul style="list-style-type: none"> • XII (Hypoglossal) <ul style="list-style-type: none"> ○ Tongue midline, move side to side 	0 1 2 3
Motor System	
<ul style="list-style-type: none"> • Coordination (all three required) <ul style="list-style-type: none"> ○ Rapid alternating movements (either up/down palms or finger to thumb) – each side separately ○ Finger to nose (patients hand must be maximally outstretched) ○ Heal to shin 	
<ul style="list-style-type: none"> • Gait <ul style="list-style-type: none"> ○ Test/observe normal gait (walk across room) ○ Heel-to-toe 	0 1 2 3
<ul style="list-style-type: none"> • Position – student must ensure safety of patient <ul style="list-style-type: none"> ○ Romberg (instruct patient to stand feet together, close eyes, observe 10-20 seconds) ○ Pronator drift 	0 1 2 3

Comments:

Score: _____/21

Northern Navajo Medical Center Physical Assessment Course

Neurological Physical Exam Grading Form

Sensory System	
• Upper extremities (assess at least 2)	0 1 2 3
○ Pain	
○ Light touch	
○ Vibration	
• Lower extremities (assess at least 2)	0 1 2 3
○ Pain	
○ Light touch	
○ Vibration	
• Reflexes	0 1 2 3
○ Bicep	
○ Tricep	
○ Brachioradialis	
○ Knee	
○ Ankle	
○ Plantar	

Comments:

Score: _____/9

Northern Navajo Medical Center Physical Assessment Course

Neurological Physical Exam Grading Form

Presentation to Instructor	Skill/Task Score (circle one)
Identified Chief Complaint	0 1 2 3
History of Chief Complaint	0 1 2 3
<ul style="list-style-type: none"> • OLDCARTS format 	
Relevant past/other medical problems	0 1 2 3
Vitals reported	0 1 2 3
<ul style="list-style-type: none"> • Blood pressure as appropriate 	
<ul style="list-style-type: none"> • Pulse as appropriate 	
<ul style="list-style-type: none"> • Oxygen saturation as appropriate 	
Allergies and medications	0 1 2 3
Brief social history	0 1 2 3
Pertinent physical examination findings only	0 1 2 3
Short and concise assessment	0 1 2 3
Plan/recommendations	0 1 2 3

Comments:

Score: _____/27

Musculoskeletal Examination

Objectives

- Obtain appropriate medical history from patient
- Perform a full body basic musculoskeletal physical examination
- Present case to instructor in appropriate format

Musculoskeletal History Taking

General History

- Refer to previous lecture (Intro) for history taking
- Specifically, ask about history of musculoskeletal issues
 - Gout
 - Rheumatoid or osteoarthritis
 - Joint surgeries

The Examination

General Techniques

- Inspect
- Palpate
- Assess range of motion (ROM) passively and actively
- Strength testing

Strength Chart

Grade	Comments
0/5	No muscle contraction noted
1/5	Detectible flicker or trace of contraction
2/5	Active movement of the body part with gravity eliminated
3/5	Active movement against gravity
4/5	Active movement against some resistance
5/5	Active movement against full resistance without fatigue. Normal muscle tone

Examination Areas

- Fingers
- Wrist
- Elbows
- Shoulders
- Hips
- Spine
- Knees
- Ankles/foot/toes

Bate's Guide to Physical Examination

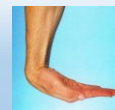
Fingers

- Inspection
 - Observe motion
 - Deformities/swelling
- Palpation of each joint
 - Palpate each joint from wrist to finger
 - Tenderness, swelling
- Flexion/extension
- Opposition of thumb
- Abduction/adduction
- Strength



Wrist

- Inspection/palpation
- Flexion/extension
- Radial/ulnar deviation
 - Abduction/adduction



Wrist flexion



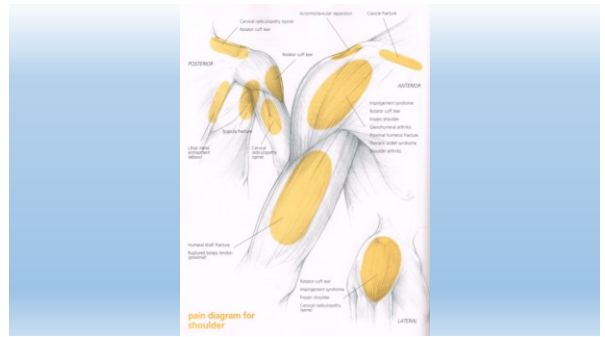
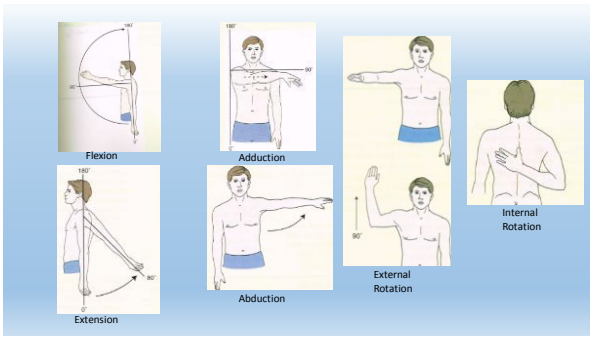
Wrist extension



Wrist abduction



Wrist adduction



Selected Abnormal Finding – Rotator Cuff Tear

- No single test will be definitive for a diagnosis

Neer's Impingement

Hawkin's Impingement

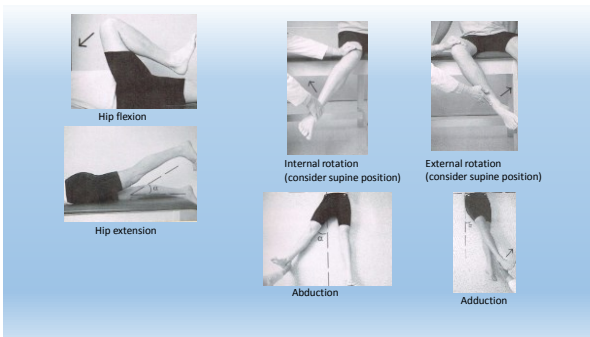
Empty Can Test

Drop Sign Test

Hips

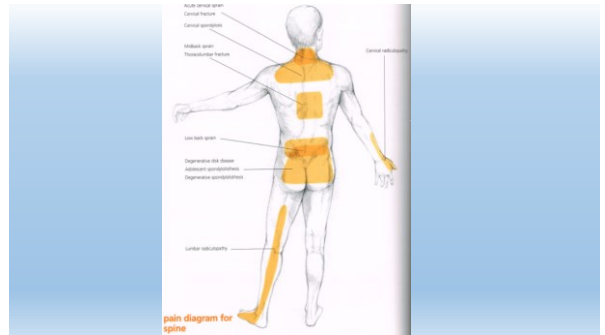
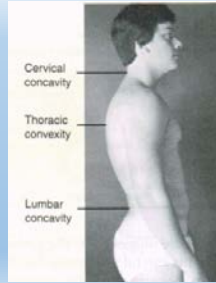
- Inspection
 - Stance/gait
- Flexion/Extension
- Internal/external rotation
- Abduction/adduction

Anterior view of the pelvis and hips. Labels include: Wing of ilium, Iliac crest, Iliac tubercle, Greater trochanter (Tubercle), Anterior superior iliac spine, Acetabulum, Pubis, Pubic symphysis, Ischium, and Ischial spine.



Spine and Neck

- Inspection
 - Stance, bony structure of spine
- Palpation
 - Bony structure of spine
- Flexion/extension
- Right/left bending
- Right/left rotation



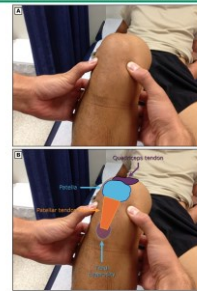
Knee

- Inspect
 - Stance/gait
 - Muscle atrophy/swelling/deformities
- Palpate
 - Palpate for joint tenderness
- Flexion/extension



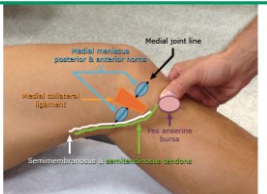
Palpation

Anterior knee joint line palpation and anatomy

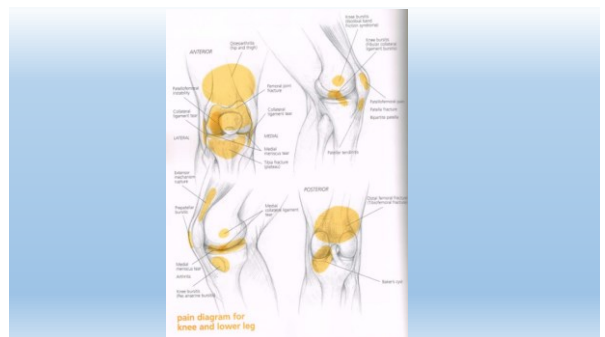
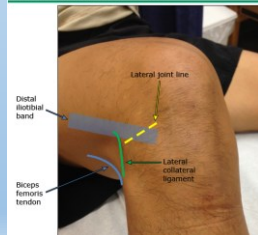


Palpation

Medial knee structures to palpate



Lateral knee structures to palpate



Northern Navajo Medical Center Physical Assessment Course
Musculoskeletal Physical Exam Grading Form

Student: _____ Evaluator: _____

Final Score: _____/93 = _____% (80% to pass)

Students attending the NNMC Physical Assessment Class shall be evaluated his/her ability to illicit an appropriate history based on chief complaint, respectful approach to the patient, appropriate use of equipment, and ability to perform the required physical examination(s).

Scoring criteria is as follows:

0: Skill/Task Not Done

- Skill/task not addressed or completely omitted

1: Needs Significant Improvement

- Skill/task addressed but completely incorrect, or
- Skill/task addressed but numerous aspects omitted

2: Needs Slight Improvement

- Skill/task addressed and mostly executed correctly, or
- Skill/task addressed with few omissions, or

3: Competent

- Skill/task completed correctly

Communication and General Considerations	Skill/Task Score (circle one)			
Student introduced self to patient	0	1	2	3
Student spoke with clearly and appropriately	0	1	2	3
Student washed hands prior to beginning exam	0	1	2	3
Student appropriately obtained chief complaint and history	0	1	2	3
Student demonstrated appropriate listening skills and body language	0	1	2	3
Student appropriately maneuvered patient around exam room	0	1	2	3
Student correctly used medical equipment	0	1	2	3
Student respected privacy of patient	0	1	2	3
Student closed encounter appropriately and politely	0	1	2	3

Comments:

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

Musculoskeletal Physical Exam Grading Form

Inspection/Palpation/Range of Motion (ROM)	Skill/Task Score (circle one)
NOTE: ROM is first done actively then passively if pain is noted.	
Fingers	0 1 2 3
• Inspection and palpation of each joint	
• Flexion/extension	
• Opposition of thumb	
• Abduction/adduction	
Wrist	0 1 2 3
• Inspection/palpation	
• Flexion/extension	
• Radial/ulnar deviation	
Elbows	0 1 2 3
• Inspection/palpation	
• Flexion/extension	
• Pronation/supination	
Shoulders	0 1 2 3
• Inspection/palpation	
• Flexion/extension	
• Internal/external rotation	
• Abduction/adduction	
Hips	0 1 2 3
• Flexion/extension (patient supine, lift leg)	
• Internal/external rotation	
• Abduction/adduction	

Comments:

Score: _____/15

Northern Navajo Medical Center Physical Assessment Course

Musculoskeletal Physical Exam Grading Form

Inspection/Palpation/Range of Motion (ROM)	Skill/Task Score (circle one)
Knees	0 1 2 3
• Inspection/palpation	
• Flexion/extension	
Ankles/foot/toes	0 1 2 3
• Inspection/palpation	
• Plantarflexion/dorsiflexion	
• Toe flexion/extension	
• Inversion/eversion	
Spine	0 1 2 3
• Inspection/palpation	
• Flexion/extension	
• Right/left bending	
• Right/left rotation	
Muscle Strength	
Fingers/thumb/wrist	0 1 2 3
• Fingers (abduction)	
• Thumb (opposition)	
• Grip Strength	
• Wrist (extension)	
Elbow	0 1 2 3
• Flexion (biceps)/extension (triceps)	
Hips	0 1 2 3
• Flexion/extension	
• Abduction/adduction	
Knee	0 1 2 3
• Flexion/Extension	
Ankle	0 1 2 3
• Plantarflexion/dorsiflexion	

Comments:

Score: _____/24

Presentation to Instructor	Skill/Task Score (circle one)			
Identified Chief Complaint	0	1	2	3
History of Chief Complaint	0	1	2	3
<ul style="list-style-type: none"> • OLDCARTS format 				
Relevant past/other medical problems	0	1	2	3
Vitals reported	0	1	2	3
<ul style="list-style-type: none"> • Blood pressure as appropriate 				
<ul style="list-style-type: none"> • Pulse as appropriate 				
<ul style="list-style-type: none"> • Oxygen saturation as appropriate 				
Allergies and medications	0	1	2	3
Brief social history	0	1	2	3
Pertinent physical examination findings only	0	1	2	3
Short and concise assessment	0	1	2	3
Plan/recommendations	0	1	2	3

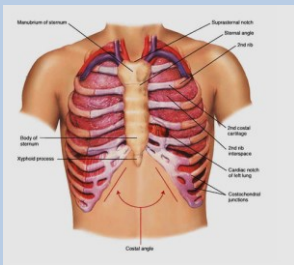
Score: _____/27

Pulmonary

Objectives

- Perform a complete pulmonary physical examination
- Recognize normal vs abnormal findings and propose explanations for the findings
- Document physical exam findings

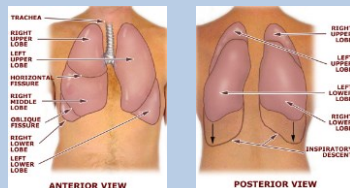
Anatomy Review



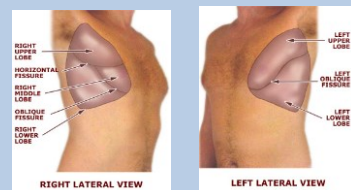
Lungs

- Right Lung
 - Upper, middle and lower lobes
 - Horizontal fissure between RUL and RML
 - Oblique fissure between RML and RLL
- Left Lung
 - Left upper and lower lobes
 - Left oblique fissure divided lobes

Anatomy



Lateral View



Anatomy

- The trachea and major bronchi
 - The **trachea** bifurcates into the mainstem **bronchi** at the levels of the sternal angle anteriorly and the T4 spinous process posteriorly
- The pleurae
 - The **pleurae** are serous membranes that cover the outer surface of each lung (**visceral pleura**), and also the inner rib cage and upper surface of the diaphragm (**parietal pleura**)

Exam Techniques

- Inspect
- Palpate
- Percuss
- Auscultate

Exam Techniques

- Visualize underlying lobes
- Compare one side with the other
- Posterior thorax and lungs
 - Examine with patient sitting
 - Patient's arms should be folded across chest
- Anterior thorax and lungs
 - Examine with patient supine

Initial Survey

- Respiratory Rate
 - Rate, rhythm, depth and effort of breathing
 - Normal range (breaths/minute)
 - Infant: 30-60
 - Age 2: 20-30
 - Age 6: 18-26
 - Adult: 14-20

Abnormalities in RR

- Tachypnea
 - Rapid shallow breathing
 - Restrictive lung disease, elevated diaphragm
- Hyperventilation
 - Rapid deep breathing
 - Exercise, anxiety, hypoglycemia
 - Kussmaul breathing
 - Deep breathing due to metabolic acidosis
- Bradypnea
 - Diabetic coma, drug induced respiratory depression

Abnormalities

- Cheyne-Stokes respirations
 - Periods of deep breathing alternate with periods of apnea
 - May be normal in children and aging people
 - Heart failure, uremia, brain damage
- Obstructive breathing
 - Prolonged expiration
 - Narrowed airways increase resistance to air flow

Initial Survey

- Inspect the neck
 - Use of accessory muscles (includes nasal flaring)
 - Trachea midline?
 - Pneumothorax, pleural effusion, atelectasis
- Observe the shape of the chest
 - Anterior-posterior (AP) diameter
 - Increased with age
 - Increased with COPD

Inspect Nails- Clubbing



Atopy



Assess Breathing



Inspection of Posterior Chest

- Deformities or asymmetry
- Abnormal retractions in interspaces
- Impaired respiratory movements

Asymmetry

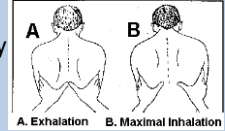


Palpation of Posterior Chest

- Identify tender areas
- Assess observed abnormalities
- Test chest expansion
- Feel for tactile fremitus

Chest Expansion

- Thumbs at the level of 10th rib
- Slide hands medially to raise a loose fold of skin
- Have patient inhale deeply
- Looking for:
 - Distance between thumbs
 - Feel for range and symmetry



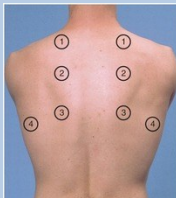
Chest Expansion

- Causes of unilateral decrease or delay in chest expansion
 - Chronic fibrotic disease of lung or pleura, pleural effusion, pneumonia, unilateral bronchial obstruction

Tactile Fremitus

- Palpable vibrations transmitted through the bronchopulmonary tree to the chest wall
- Use ball of hand or ulnar surface of hand
- Ask patient to repeat “99”, “1,1,1”
- Compare symmetric areas and look for differences
- If fremitus is faint, ask patient to speak louder or in a deeper voice

Tactile Fremitus Locations



Tactile Fremitus

- Increased over areas of consolidation
 - Pneumonia
- Absent or decreased
 - COPD
 - Pleural effusion
 - Infiltrating tumor
 - Faint voice

Percussion of Posterior Chest

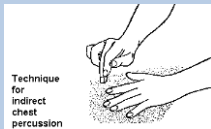
- Produces audible sound and palpable vibrations
- Helps establish if underlying tissues are air-filled, fluid-filled or solid

Percussion Technique

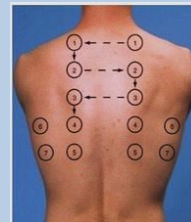
- Hyperextend middle finger
- Press distal interphalangeal joint firmly on surface to be percussed
- Avoid contact by any other part of the hand
- With quick sharp wrist motion strike the finger with middle finger of other hand (use tip of finger, not pad)
- Aim at distal interphalangeal joint
 - Trying to transmit vibrations through the bones of the joint to the underlying chest wall
- Withdraw striking finger quickly

Percussion

- Percuss one side, then other side at same level
- Omit areas over scapulae



Percussion Location



Percussion Notes

- Listening for percussion notes
 - Resonant
 - Healthy lungs
 - Dullness
 - When fluid or solid tissue replaces air or occupies the pleural space (pneumonia, pleural effusion)
 - Practice site: liver
 - Hyperresonant
 - Hyperinflated lungs (COPD)
 - Unilateral hyperresonance (pneumothorax)
 - Practice site: none

Percussion Notes

- Listening for percussion notes
 - Flatness
 - Practice site: thigh
 - Large pleural effusion
 - Tympanic
 - Gastric air bubble or puffed-out cheek
 - Large pneumothorax

Percussion- Diaphragmatic Excursion

- Identifying descent of diaphragm
- Determine extent of excursion by determining the distance between the level of dullness on expiration and the level of dullness on full inspiration



Percussion- Diaphragmatic Excursion

- Start percussion above expected level of dullness
- Percuss downward until dullness clearly replaces resonance
- Identify the boundary between lung and diaphragm
- Repeat with patient holding full inspiration
- Normally 5-6cm
- High level suggests pleural effusion or high diaphragm (paralysis)

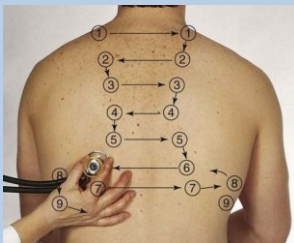
Auscultation of Posterior Chest

- Listening to sounds generated by breathing
- Listening for adventitious sounds
- If abnormalities are suspected listen to spoken or whispered voice as they are transmitted

Auscultation Technique

- Use diaphragm of stethoscope
- Patient should breathe deeply through open mouth
- Listen to at least one full breath in each location
- Stethoscope to skin

Auscultation Location



Auscultation

- Breath sounds
 - Vesicular
 - Soft and low pitched
 - Heard through inspiration, continue without pause through expiration. Fades away 1/3 of the way through expiration
 - Heard over most of both lungs

Auscultation

- Bronchovesicular
 - Inspiratory and expiratory sounds about equal in length
 - Separated by silent interval
 - Heard in 1st and 2nd interspaces anteriorly and between scapulae

Auscultation

- Breath sounds
 - Bronchial
 - Expiratory longer than inspiratory
 - Short silence between
 - Heard over manubrium

Auscultation

- Breath sounds
 - Tracheal
 - Inspiratory and expiratory are about equal
 - Heard over the trachea in the neck

Auscultation Abnormalities

- Decreased breath sounds
 - Air flow decreased
 - Obstructive lung disease, muscular weakness
 - Poor sound transmission
 - Pleural effusion, pneumothorax
- Bronchovesicular or bronchial sounds
 - Heard in distant locations
 - Suspect air-filled lung replaced by fluid-filled or solid lung tissue

Auscultation

- Adventitious sounds
 - Crackles (aka rales)
 - Intermittent, nonmusical and brief
 - If crackles clear after a cough suggest that secretions caused them
 - May be due to abnormalities of lungs (pneumonia, CHF) or airways (bronchitis)

Auscultation

- Adventitious sounds
 - Wheezes
 - High pitched and have a hissing or shrill quality
 - Suggest narrowed airway
 - Asthma, COPD
 - Rhonchi
 - Low pitched and have a snoring quality
 - Suggest secretions in large airways

Adventitious Sounds

- Normal vesicular breathing
- Normal bronchovesicular breathing
- Normal bronchial breathing
- Mild expiratory wheeze
- Crackle
- Inspiratory crackle, expiratory wheeze

Auscultation

- Transmitted voice sounds
 - Assess if you hear abnormality located bronchovesicular or bronchial breath sounds
 - Increased transmission suggests that air-filled lung has become airless
 - Ask patient to say “99”
 - Normally sounds transmitted through chest wall are muffled and indistinct
 - Louder, clearer voice sounds are called bronchophony

Auscultation

- Transmitted voice sounds
 - Ask patient to whisper “99” or “1-2-3”
 - Whispered voice is normally heard faintly and indistinctly if at all
 - Louder, clearer whispered sounds are called whispered pectoriloquy
 - Ask patient to say “ee”
 - Normally you hear a muffled long E sound
 - If “ee” is heard as “ay” it is called egophony

Inspection of Anterior Chest

- Observe deformities or asymmetry
- Retractions
- Lag or impairment of respiratory movement
- Assess for symmetry

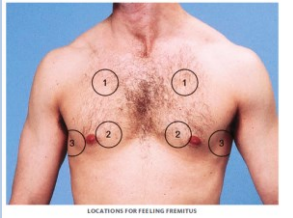
Palpation of Anterior Chest

- Identification of tender areas
- Assessment of observed abnormalities
- Assessment of chest expansion
- Assessment of tactile fremitus

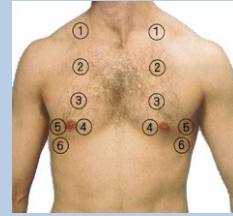
Chest Expansion

- Place thumbs along costal margin along the lateral rib cage
- Slide hands to raise loose skin folds between thumbs
- Have patient inhale deeply
- Observe how far thumbs expand and symmetry of respiratory movement

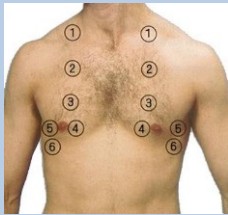
Tactile Fremitus Locations



Percussion of Anterior Chest



Auscultation of Anterior Chest



Documentation

- If you don't record it, you didn't do it

Commonly Used Abbreviations

- RR: respiratory rate
- RUL: right upper lobe
- RML: right middle lobe
- RLL: right lower lobe
- LUL: left upper lobe
- CTA: clear to auscultation
- CXR: chest x-ray

Physical Exam Documentation

VS: BP: 100/68 T: 102.5 F HR: 110 RR: 24
 Chest: Respirations unlabored and even/without distress; rate slightly elevated. Negative for cyanosis, clubbing, atopy or accessory muscle use. AP diameter not enlarged, trachea is midline. Negative tenderness on palpation anteriorly and posteriorly. Respiratory expansion is symmetrical with tactile fremitus of normal intensity and equal bilaterally anteriorly and posteriorly. Percussion tone is resonant to all fields anteriorly and posteriorly. Diaphragmatic excursion: 4 cm bilaterally. Vesicular breath sounds heard throughout both lung fields anteriorly and posteriorly with with no adventitious sounds noted. No egophony, whispered pectoriloquy or bronchophony is noted.

Reference

- Bickley LS. *Bates' Guide to Physical Examination and History Taking*. Wolters Kluwar Health. 10th Ed. 2009

Northern Navajo Medical Center Physical Assessment Course

Pulmonary Physical Exam Grading Form

Student: _____ Evaluator: _____

Final Score: _____/111 = _____% (80% to pass)

Students attending the NNMC Physical Assessment Class shall be evaluated his/her ability to illicit an appropriate history based on chief complaint, respectful approach to the patient, appropriate use of equipment, and ability to perform the required physical examination(s).

Scoring criteria is as follows:

0: Skill/Task Not Done

- Skill/task not addressed or completely omitted

1: Needs Significant Improvement

- Skill/task addressed but completely incorrect, or
- Skill/task addressed but numerous aspects omitted

2: Needs Slight Improvement

- Skill/task addressed and mostly executed correctly, or
- Skill/task addressed with few omissions, or

3: Competent

- Skill/task completed correctly



Communication and General Considerations	Skill/Task Score (circle one)			
Student introduced self to patient	0	1	2	3
Student spoke with clearly and appropriately	0	1	2	3
Student washed hands prior to beginning exam	0	1	2	3
Student appropriately obtained chief complaint and history	0	1	2	3
Student demonstrated appropriate listening skills and body language	0	1	2	3
Student appropriately maneuvered patient around exam room	0	1	2	3
Student correctly used medical equipment	0	1	2	3
Student respected privacy of patient	0	1	2	3
Student closed encounter appropriately and politely	0	1	2	3

Comments:

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

Pulmonary Physical Exam Grading Form

Pulmonary Examination	Skill/Task Score (circle one)
General Inspection Must perform or examine each of the below and state what is being assessed	
• Cyanosis (examine mouth and fingertips)	0 1 2 3
• Shape of nails (assess for clubbing)	0 1 2 3
• Atopy (examine eczema, allergic shiners, etc)	0 1 2 3
Posterior Examination	
• Posterior Inspection Must inspect for deformities or asymmetry, abnormal retractions, impaired respiratory movements	0 1 2 3
• Posterior Palpation	
○ Identify tender areas	0 1 2 3
○ Chest Expansion Must place thumbs at 10 th rib level, slide hands medially to raise loose fold of skin, have patient inhale deeply, looking for distance between thumbs, range and symmetry	0 1 2 3
 ○ Tactile fremitus Must palpate all 4 areas on both sides using ball of hand, ask patient to repeat "99", "1,1,1". Compare location on one lung immediately to location on second lung.	0 1 2 3
• Posterior Percussion	
 ○ Percusses all 7 locations on each side Must percuss one side immediately after other side at same level	0 1 2 3
○ Diaphragmatic Excursion Must perform as follows: (looking for descent of diaphragm). Pt breathes normally, student percusses down listening for resonance vs dullness, mark level, pt takes deep breath and holds while student percusses from mark downward, listening for resonance vs dullness, (nl distance 5-6 cm)- only on one lung field.	0 1 2 3

Score: _____/27

Presentation to Instructor	Skill/Task Score (circle one)			
Identified Chief Complaint	0	1	2	3
History of Chief Complaint	0	1	2	3
<ul style="list-style-type: none"> • OLDCARTS format 				
Relevant past/other medical problems	0	1	2	3
Vitals reported	0	1	2	3
<ul style="list-style-type: none"> • Blood pressure as appropriate 				
<ul style="list-style-type: none"> • Pulse as appropriate 				
<ul style="list-style-type: none"> • Oxygen saturation as appropriate 				
Allergies and medications	0	1	2	3
Brief social history	0	1	2	3
Pertinent physical examination findings only	0	1	2	3
Short and concise assessment	0	1	2	3
Plan/recommendations	0	1	2	3

Score: _____/27

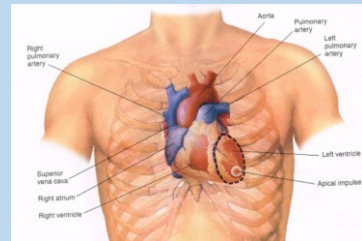
Cardiovascular Examination

Objectives

- Review basic heart anatomy
- Be able to perform a cardiovascular and peripheral vascular examination
- Identify normal and abnormal heart sounds

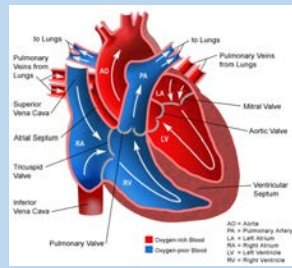
Heart Anatomy and Blood Flow

Basic Anatomy



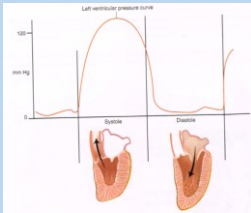
Basic Heart Anatomy and Flow

- Blood drains to right atrium
- Through tricuspid valve to right ventricle
- Pulmonary valve to pulmonary artery to lungs
- Lungs to pulmonary veins to left atrium
- Mitral valve to left ventricle
- Aortic valve to aorta



Cardiac Cycle and Heart Sound

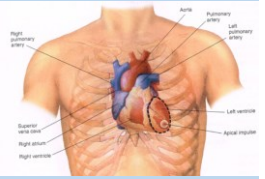
Heart Cycle



- **Systole**
 - Contraction of the ventricles causing the closing of the tricuspid and mitral valves (S1 sound)
- **Diastole**
 - Contraction of the atriums causing the closing of the aortic and pulmonic valves (S2 sound)

Normal Heart Sounds

- 1st heart sound (S1)= mitral and tricuspid valve closure- heard best from the apex; identifies the onset of systole
- 2nd heart sound (S2)= aortic and pulmonic valve closure- heard best at the left upper sternal border; identifies the beginning of diastole
- Splitting of S1-occurs when mitral and tricuspid valve closure is split by >0.03sec; may be normal or heard with right bundle branch block



S3 Heart Sounds

- Occurs during passive diastolic ventricular filling
- Physiologic (normal) sound found in children and adults to age 40
- Common in last trimester of pregnancy
- >40 years of age
 - Causes: decrease contractility, heart failure, ventricular volume overload
- Gallup with cadence of "Kentucky"
- Low pitch so heard best with bell of stethoscope

S4 Heart Sounds

- Result of decreased compliance of ventricular myocardium
- Causes: hypertension, coronary artery disease, aortic stenosis
- Gallup cadence of "Tennessee"
- Low pitch so heard best with bell of stethoscope

Murmurs

-An extended series of auditory vibrations due to turbulent blood flow
-More prolonged than normal heart sounds

Quality of Murmurs

- Blowing: High pitched
- Rough/harsh: Low pitched
- Musical: Overtones

Grading of Murmurs-relates to a murmur's intensity as subjectively assessed by the listener

- Grade 1: very faint, difficult to hear
- Grade 2: low intensity, but easily heard
- Grade 3: moderately loud
- Grade 4: quite loud, often accompanied by a palpable vibration of the chest wall (thrill)
- Grade 5: very loud, associated with a thrill
- Grade 6: exceptionally loud, may be heard with the stethoscope a short distance away from the chest wall

Types of Murmurs

Systolic Murmurs

- Occur between S1 and S2 and may be pathogenic or benign
- An early systolic murmur begins with S1 and ends before S2 in a decrescendo pattern
- A late systolic murmur begins in mid-late systole and ends at S2 in a crescendo pattern

Diastolic Murmurs

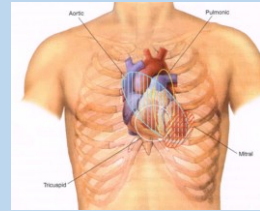
- Occur between S2 and S3 and are almost always associated with heart disease
- A late or mid-late diastolic murmur is associated with mitral stenosis or tricuspid stenosis
- An early diastolic murmur occurs immediately following S2 and ends before S1 in a decrescendo pattern; indicative of aortic regurgitation

Valvular Stenosis versus Regurgitation

- **Stenosis**
 - Valve is unable to open properly or completely
 - Causes a murmur or "whooshing" sound between normal heart sounds
- **Regurgitation**
 - Valve does not completely close or leaks with back pressure
 - Causes a murmur or "whooshing" sound between normal heart sounds
- Identifying the murmur depends on where the murmur occurs and location of stethoscope

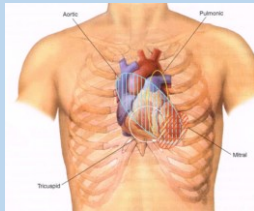
Best Locations to Hear Heart Sounds

- **Aortic Stenosis**
 - Stethoscope on aortic valve: S1 – "whoosh" – S2
- **Aortic Regurgitation**
 - Stethoscope on aortic valve: S1-S2 – "whoosh"
- As per diagram, aortic valve closure heard of most of heart
 - Stethoscope location not as important



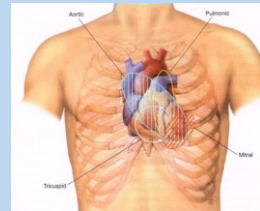
Best Locations to Hear Heart Sounds

- **Mitral Stenosis**
 - Stethoscope on mitral valve: S1-S2 – "whoosh"
- **Mitral Regurgitation**
 - Stethoscope on mitral valve: S1 – "whoosh" – S2
- May not be heard outside of "Mitral Area" on diagram



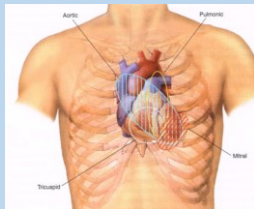
Best Locations to Hear Heart Sounds

- **Pulmonic Stenosis**
 - Stethoscope on pulmonic valve: S1 – "whoosh" – S2
- **Pulmonic Regurgitation**
 - Stethoscope on pulmonic valve: S1-S2 – "whoosh"
- Should be louder in pulmonic area but be careful not to confuse with aortic sounds



Best Locations to Hear Heart Sounds

- **Tricuspid Stenosis**
 - Stethoscope on tricuspid valve: S1-S2 – "whoosh"
- **Mitral Regurgitation**
 - Stethoscope on tricuspid valve: S1 – "whoosh" – S2
- May not be heard outside of "Tricuspid Area" on diagram



Peripheral Vascular System

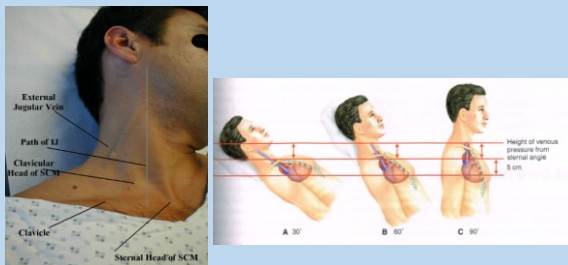
- **Inspection/Palpation:** note temperature (back of hand), wet/dry, hair distribution, nailbeds
- **Carotid pulse/bruits:** avoid compression of carotid sinus, a reflex drop in blood pressure or pulse may occur due to baroreceptor response; older adults or anyone with a thrill should be followed-up for bruits with auscultation using the diaphragm of the stethoscope
 - Patient should not breathe when listening for bruits

Classification of Pulse Amplitude and Edema

Pulse Amplitude Rating Scale		Edema Assessment	
Grade	Amplitude	Grade	Pitting depth
0	Absent	Trace	<0.5mm
1	Weak	1+	0.5-1mm
2+	Strong	2+	2-3mm
3+	Bounding	3+	4-5mm
		4+	>5mm

Jugular Vein Pressure

- Related to right arterial pressure; measured using the internal jugular vein
 - External jugular vein may be used if necessary, but less reliable
- Use sternal angle adjacent to 2nd rib as the reference point; normally sternal angle is about 5cm above the right atrium
- Elevate bed to 30 degrees to enhance detection of jugular veins; higher degrees of elevation may be necessary to detect higher pressures
- JVP>3-4 cm above the sternal angle is considered elevated
- Elevated JVP may indicate right-sided heart failure
- If you cannot see internal or external jugular pulsations use the point above which the external jugular veins appear to collapse



Inspection and Palpation

- Inspect the precordium for apical impulse and palpate for apical impulse
- Point of Maximal Impulse (PMI): usually the apical impulse, may be displaced in a patient with right ventricular hypertrophy
 - PMI is usually located in the 4th or 5th left intercostal space just medial to the midclavicular line and is less than the size of a quarter
- Percussion: typically done only when a PMI cannot be located; ask the patient to exhale and hold his/her breath to help locate
- Document location, diameter, amplitude and duration of the PMI

Palpation to Determine Location of PMI



Auscultation

- Apply bell lightly to chest, diaphragm with firm pressure against the skin; never listen through clothing
- Steps of auscultation
 - Listen with the diaphragm at the 2nd right interspace near the sternum (aortic area)
 - Listen with the diaphragm at the left 2nd interspace near the sternum (pulmonic area)
 - Listen with the diaphragm at the left 3rd, 4th and 5th interspaces near the sternum (tricuspid area)
 - Listen with the diaphragm at the apex (PMI) (Mitral area)
 - Listen with the bell at the apex
 - Listen with the bell at the left 4th and 5th interspace near the sternum

Auscultation



Take a listen! <http://www.med.ucla.edu/wilkes/inex.htm>

Pericardial Rub

- Sometimes seen with pericarditis or pericardial effusion
- High pitched scratchy sound; may be loud or soft
- Cause: Beating of the heart against inflamed tissue
- Usually continuous sound which can be heard over the chest
- Often accompanied by sharp chest pain but may be painless

Typical Documentation of Normal Exam

BP 120/77, left arm, sitting, regular adult cuff pulse 62 bpm
 Cardiac: RRR, normal S1 and S2, no m/r/g JVP 3cm above sternal angle
 PMI noted medial to the mid-clavicular line at the left 5th intercostal space, normal amplitude, diameter and duration
 No carotid bruits

Extremities: no c/c/e; extremities dry and warm to touch 2+ distal pulses bilaterally no LAN

Example Documentation of Abnormal Exam

BP 158/90, right arm, sitting, regular adult cuff pulse 112 bpm

Cardiac: irregular rate and rhythm, 3+ no rubs JVP 8cm above sternal angle PMI displaced laterally and prolonged, increased amplitude and diameter +carotid bruits bilaterally

Extremities: Cyanotic, +clubbing of fingers bilaterally, 1+ lower extremity edema bilaterally to mid calf

Reference

- Bickley LS. *Bates' Guide to Physical Examination and History Taking*. Wolters Kluwar Health. 10th Ed. 2009

Northern Navajo Medical Center Physical Assessment Course

Cardiovascular Physical Exam Grading Form

Student: _____ Evaluator: _____

Final Score: _____/117 = _____%

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0: Skill/Task Not Done

- Skill/task not addressed or completely omitted

1: Needs Significant Improvement

- Skill/task addressed but completely incorrect, or
- Skill/task addressed but numerous aspects omitted

2: Needs Slight Improvement

- Skill/task addressed and mostly executed correctly, or
- Skill/task addressed with few omissions, or

3: Competent

- Skill/task completed correctly

Communication and General Considerations	Skill/Task Score (circle one)
Student introduced self to patient	0 1 2 3
Student spoke with clearly and appropriately	0 1 2 3
Student washed hands prior to beginning exam	0 1 2 3
Student appropriately obtained chief complaint and history	0 1 2 3
Student demonstrated appropriate listening skills and body language	0 1 2 3
Student appropriately maneuvered patient around exam room	0 1 2 3
Student correctly used medical equipment	0 1 2 3
Student respected privacy of patient	0 1 2 3
Student closed encounter appropriately and politely	0 1 2 3

Comments:

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

Cardiovascular Physical Exam Grading Form

Vitals	Skill/Task Score (circle one)
Heart rate (spends at least 15 seconds palpating radial pulse to get hear rate)	0 1 2 3
Blood pressure <ul style="list-style-type: none"> • Patient is seated in the upright position with legs uncrossed and feet on the floor • Arm is positioned and supported such that the cuff is at the level of the heart and arm is relaxed • Cuff is inflated and released at appropriate rate • Patient is provided results 	0 1 2 3
Respiratory Rate (spends at least 30 seconds observing; states result when finished)	0 1 2 3

Comments:

Score: _____/9

Peripheral Vascular Exam	Skill/Task Score (circle one)
Pulses (must palpate both left and right for at least 2 seconds)	
• Carotid	0 1 2 3
• Temporal	0 1 2 3
• Brachial (inside bicep just inside elbow joint)	0 1 2 3
• Radial (thumb side of wrist)	0 1 2 3
• Popliteal (underside of knee, knee must be bent)	0 1 2 3
• Dorsalis pedis (top of foot)	0 1 2 3
• Posterior tibialis (inside ankle)	0 1 2 3

Comments:

Score: _____/21

Northern Navajo Medical Center Physical Assessment Course

Cardiovascular Physical Exam Grading Form

Pericardium	Skill/Task Score (circle one)
<ul style="list-style-type: none"> • Inspection for point of maximal impulse (PMI) (must clearly inspect left chest wall at lower edge of sternum) 	0 1 2 3
<ul style="list-style-type: none"> • Palpation for PMI (must use entire hand) 	0 1 2 3

Comments:

Score: ____/6

Auscultation/Edema Assessment	Skill/Task Score (circle one)
Palpates for the 2 nd intercostal space (Must clearly auscultate the areas listed with both the bell and diaphragm of the stethoscope)	
<ul style="list-style-type: none"> • Right Upper Sternal Border 	0 1 2 3
<ul style="list-style-type: none"> • Left Upper Sternal Border 	0 1 2 3
<ul style="list-style-type: none"> • Left Lower Sternal Border 	0 1 2 3
<ul style="list-style-type: none"> • Apex 	0 1 2 3
Edema (must palpate both left and right)	
<ul style="list-style-type: none"> • Foot, ankle, shin 	0 1 2 3

Comments:

Score: ____/15

Jugular Vein and Carotid Artery Auscultation	Skill/Task Score (circle one)
Inspection (must position head of exam table at 30 degrees; asks patient to turn head to expose jugular vein; inspects neck for jugular vein)	0 1 2 3
Measurement (after inspection; must use ruler positioned at top of sternum and straight edge positioned perpendicular to ruler to measure jugular venous pulse)	0 1 2 3
Auscultates carotid arteries while patient holds breath (must auscultate both arteries) Should instruct patient to breathe after auscultating one side before moving to the other.	0 1 2 3

Comments:

Score: ____/12

Northern Navajo Medical Center Physical Assessment Course

Cardiovascular Physical Exam Grading Form

Presentation to Instructor	Skill/Task Score (circle one)
Identified Chief Complaint	0 1 2 3
History of Chief Complaint	0 1 2 3
<ul style="list-style-type: none"> • OLDCARTS format 	
Relevant past/other medical problems	0 1 2 3
Vitals reported	0 1 2 3
<ul style="list-style-type: none"> • Blood pressure as appropriate 	
<ul style="list-style-type: none"> • Pulse as appropriate 	
<ul style="list-style-type: none"> • Oxygen saturation as appropriate 	
Allergies and medications	0 1 2 3
Brief social history	0 1 2 3
Pertinent physical examination findings only	0 1 2 3
Short and concise assessment	0 1 2 3
Plan/recommendations	0 1 2 3

Comments

Score: _____/27

Abdominal Examination

Objectives

- Obtain appropriate medical history from patient
- Perform an abdominal physical examination
- Present case to instructor in appropriate format

Abdominal History

- Common complaints
 - Indigestion, anorexia, nausea, vomiting, hematemesis, abdominal pain, dysphagia, changes in bowel habits, jaundice
- Disease states
 - Hepatitis, peptic ulcer disease, GERD, pancreatitis, cholecystitis, appendicitis, inflammatory bowel disease, pyelonephritis, CHF
- For any complaint, determine the history through use of the “basic 7”
 - Location, timing, severity, quality, setting, moderating factors, associated symptoms

Abdominal Pain

- Visceral
 - Occurs in hollow abdominal organs
 - Pain may be gnawing, burning, cramping, or aching
- Parietal pain
 - Occurs in the parietal peritoneum as a result of inflammation
 - Pain is steady, aching usually more severe than visceral and aggravated by movement
- Referred pain
 - Pain that travels from initial site to more distant sites

Abdominal Exam

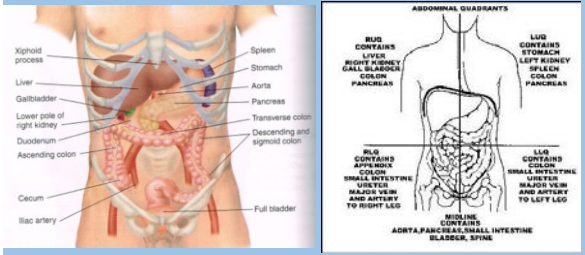
- General Considerations
 - Patient should have an empty bladder
 - Supine position on exam table
 - Watch patient’s face for signs of pain or discomfort

Abdominal Exam

- Use the appropriate terminology to locate your findings
- RUQ = right upper quadrant; LUQ = left upper quadrant; RLQ = right lower quadrant; LLQ = left lower quadrant
- Epigastric, periumbilical, suprapubic



Anatomy

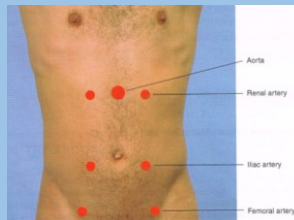


Abdominal Exam

- Inspection
 - Approach from right side
- Skin
 - Scars
 - Striae
 - Dilated veins
 - Rashes, lesions
- Umbilicus
- Contour of abdomen
 - Flat, rounded, protuberant, or scaphoid
 - Peristalsis or pulsations

Auscultations

- Always perform prior to percussion and palpation
- Using diaphragm of stethoscope listen for bowel sounds
 - Note if normal (5-30/min), increased, decreased, or absent
- Listen for bruits over the renal arteries, iliac arteries, femoral arteries, and aorta
 - Absence of bruits is normal



Percussion

- Percuss in all quadrants
- Categorize as tympanic or dull
 - Tympany is normally present over most of the abdomen
 - Unusual, large areas of dullness may indicate mass or enlarged organ
- Liver
 - Measured vertically at the right midclavicular line
 - Always begin percussion over an area of tympany and proceed to an area of dullness
 - Below umbilicus and more upward until dullness. Mark lower border
 - Upper border assessed at area of lung resonance and move downward until dullness. Mark upper border
 - Measure distance between upper and lower border
 - Normal: 6-12cm

Percussion

- Spleen
 - When enlarged, it expands anteriorly, downward, and medially. It may become palpable below costal margin
 - Check for splenic percussion sign
 - Percuss the lowest interspace in the left anterior axillary line (normally tympanic)
 - Then ask patient to take a deep breath and percuss again
 - If normal, it will remain tympanic

Percussion

- Ascites
 - Test for shifting dullness
 - Percuss for areas of tympany and dullness while in supine position
 - Have patient lie onto one side and again percuss for tympany and dullness
 - If ascites present, area of dullness shifts to dependent side
 - Fluid wave
 - Requires assistance
 - Have assistant press edges of hand firmly down midline
 - Tap one flank with fingertips and feel opposite flank for an impulse transmitted through the fluid

Percussion

- Kidneys
 - Assess for kidney tenderness bilaterally
 - Costovertebral angle (CVA) tenderness
 - Place ball of one hand in the CVA and then strike hand with ulnar surface of your fist
 - Use enough force to cause a perceptible jar or thud
 - Pain is an abnormal finding



Palpation

- Light palpation
 - Observing for areas of tenderness
 - Watch patient's face and for voluntary or involuntary guarding
- Deep palpation
 - Try to identify abdominal masses or areas of deep tenderness

Palpation

- Liver
 - Place your fingers below right CM (costal margin) and press firmly
 - Ask patient to take deep breath
 - On inspiration the liver is palpable about 3 cm below the right CM in the midclavicular line
 - A normal liver is not tender
 - "Hooking technique" helpful with obese patients



Palpation

- Spleen
 - Use left hand to lift the lower rib cage and flank
 - Press down just below the left CM with right hand
 - Ask the patient to take a deep breath
 - A normal spleen is not normally palpable
 - An enlarged spleen is palpable below the left CM on deep inspiration



Abdominal Exam

- Palpation
 - Kidneys
 - For the right kidney, use left hand to lift the back just below the 12th rib
 - Press down just below the right CM with right hand
 - Ask the patient to take a deep breath
 - At peak inspiration, press right hand deeply into RUQ and try to capture the kidney between your two hands
 - Repeat for left side using opposite hands
 - Left kidney sits 1 cm higher than the right and is not normally palpable

Special Tests

- Rebound tenderness
 - Test for peritoneal irritation
 - Warn the patient what you are about to do!
 - Press deeply on the abdomen with your hand
 - After a moment, quickly release pressure
 - If pain is worse upon release, the patient has rebound tenderness
 - Ask patient which felt worse and ask to show you the exact location
 - Acute pancreatitis, appendicitis

Common Signs of Appendicitis

- Location: poorly localized periumbilical pain followed by right lower quadrant pain on palpation (the single most important sign)
- Quality: mild but increasing, possible cramping, then changing to steady and more severe
- Timing: rapid onset, lasting 4 to 6 hours
- Modifying factors: worse with movement or cough, if pain subsides than suspect perforation
- Associated symptoms: low-grade fever (38° C [or 100.4°F]), anorexia, nausea, possibly vomiting
- Physical exam: peritoneal signs, localized tenderness to percussion, guarding

Exam for Appendicitis

- Psoas Sign
 - Place your hand above the patient's right knee
 - Ask the patient to flex the right hip against resistance
 - Increased abdominal pain indicates a positive psoas sign
- Rovsing's sign
 - Press deeply in LLQ, then quickly withdraw fingers
 - Pain in RLQ with LLQ pressure suggests appendicitis
- Other confirmatory peritoneal signs (absence of these signs does not exclude appendicitis)
 - Obturator sign – pain on internal rotation of right thigh (pelvic appendix)
 - Dunphy's sign – increased pain with coughing
 - Flank tenderness in right lower quadrant (retroperitoneal retrocecal appendix)
 - Patient maintains hip flexion with knees drawn up for comfort

Acute Cholecystitis

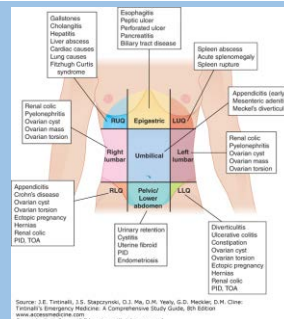
- Caused by obstruction of the cystic duct or common bile duct by gallstones
- Location: RUQ or upper abdominal area; may radiate to right scapular area
- Quality: steady, aching
- Timing: gradual onset, course longer than biliary colic
- Modifying factors: jarring, deep breathing may aggravate
- Associated symptoms: nausea; vomiting, anorexia, and fever

Acute Cholecystitis

- Assessment
 - If pain on palpation in RUQ, check for "Murphy's sign"
 - Hook fingers under costal margin and ask patient to take deep breath
 - Watch patient's respiration, an increased in tenderness with a sudden stop in inspiration is a (+) Murphy's sign

Acute Pancreatitis

- An acute inflammation of the pancreas
- Causes:
 - ETOH abuse and gallstones account for 60-80% of cases
 - Other Cause: trauma, postoperative complications, hypertriglyceridemia, hypercalcemia, infection, and medications
- Location: epigastric, may radiate to the back or flank or both
- Quality: usually steady, mild to severe pain
- Timing: acute onset, persistent pain
- Modifying factors:
 - Worse: lying supine
 - Better: leaning forward with trunk flexed
- Associated symptoms: nausea, vomiting, abdominal distention, fever
- Assessment: pain with palpation of epigastric & LUQ



Reference

- Bickley LS. *Bates' Guide to Physical Examination and History Taking*. Wolters Kluwar Health. 10th Ed. 2009

Northern Navajo Medical Center Physical Assessment Course

Abdominal Physical Exam Grading Form

Student: _____ Evaluator: _____

Final Score: _____/81 = _____%

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Communication and General Considerations	Skill/Task Score (circle one)
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Student appropriately obtained chief complaint and history	0 1 2 3
Student demonstrated appropriate listening skills and body language	0 1 2 3
Student appropriately maneuvered patient around exam room	0 1 2 3
Student correctly used medical equipment	0 1 2 3
Student respected privacy of patient	0 1 2 3
Student closed encounter appropriately and politely	0 1 2 3

Comments:

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

Abdominal Physical Exam Grading Form

Inspection	Skill/Task Score (circle one)
Student must perform or examine each item below and state what is being assessed.	
<ul style="list-style-type: none"> • Scars 	0 1 2 3
<ul style="list-style-type: none"> • Gross Distension 	0 1 2 3
Auscultation	
Students must examine each item below bilaterally and state what is being assessed	
<ul style="list-style-type: none"> • Auscultation performed prior to palpation an percussion 	0 1 2 3
<ul style="list-style-type: none"> • Auscultate bowel sounds (<i>listen for 10-20 seconds</i>) 	0 1 2 3
<ul style="list-style-type: none"> • Auscultate Aorta (<i>umbilicus</i>) 	0 1 2 3
<ul style="list-style-type: none"> • Auscultate Renal arteries (<i>right and left and just superior to umbilicus</i>) 	0 1 2 3
<ul style="list-style-type: none"> • Auscultate Iliac arteries (<i>right and left and just inferior to umbilicus</i>) 	0 1 2 3
<ul style="list-style-type: none"> • Point to femoral arteries 	0 1 2 3
Percussion	
Students must examine each item below bilaterally and state what is being assessed	
<ul style="list-style-type: none"> • Warm hands prior to percussing and explains each step 	0 1 2 3
<ul style="list-style-type: none"> • Percuss all 4 quadrants 	0 1 2 3
<ul style="list-style-type: none"> • Percuss and measure liver span (<i>normal liver span 6-12cm at Rt mid-clavicular CM</i>) 	0 1 2 3
<ul style="list-style-type: none"> • Percuss for spleen (<i>along Lt axillary line last rib space, then ask pt to breath in while percussing. Should not be able to percuss unless enlarged</i>) 	0 1 2 3

Comments

Score: _____/36

Palpation	
Students must examine each item below bilaterally and state what is being assessed	
<ul style="list-style-type: none"> • Warm hands prior to palpating and explains each step <i>(should be asking if there is any pain/tenderness)</i> 	0 1 2 3
<ul style="list-style-type: none"> • Light palpation in all quadrants 	0 1 2 3
<ul style="list-style-type: none"> • Deep palpation in all quadrants <i>(check for rebound tenderness if pain in a quadrant, watch pt's face for wincing, etc.)</i> 	0 1 2 3
<ul style="list-style-type: none"> • Palpate liver on Rt side <i>(place Lt hand under pt's rib cage and lift slightly. Then palpate with Rt hand under Rt costal margin to feel for liver while asking p to take a deep breath in & out)</i> 	0 1 2 3
<ul style="list-style-type: none"> • Palpate for spleen in LUQ <i>(Place Lt hand under pt's rib cage and lift slightly and attempt to palpate spleen with Rt hand under Lt coastal margin .Then ask patient to take deep breath in & out)</i> 	0 1 2 3
<ul style="list-style-type: none"> • Assess for costovetebral angle (CVA) tenderness bilaterally <i>(Place palm on CVA and strike dorsal surface of hand with ulnar surface of fist. Should warn pt prior to striking hand)</i> 	0 1 2 3

Comments:

Score: _____/18

The Older Adult

Objectives

- Understand common health concerns for geriatric patients
- Review physiologic changes that occur as adults age
- Adjust physical examination techniques to account for special considerations in geriatric patients

Common Concerns

- Activities of daily living (ADLs) or Instrumental activities of daily living (IADLs) may become more challenging
- Polypharmacy will become more common
- Nutrition requirements may change
- Acute and persistent pain may occur as bodies age
- Smoking or alcohol dependence is more damaging to the body
- Advanced directives and palliative care are sensitive topics that should be discussed with geriatric patients

ADLs and IADL

ADLs	IADLs
Bathing	Using the telephone
Dressing	Shopping
Toileting	Preparing food
Transferring	Housekeeping
Continence	Laundry
Feeding	Transportation
Managing money	Taking medications



Vital Signs

- Blood pressure
 - Systolic (SBP) rises with age as arteries stiffen
 - Diastolic (DBP) stops rising after sixth decade
 - Tendency towards orthostatic hypotension can develop
- Heart rate and rhythm
 - Resting heart rate remains unchanged
 - Decrease in pacemaker cells decline in sinoatrial node (SA node) affecting response to physiologic stress
 - Elderly patients more likely to have abnormal rhythms



Vital Signs

- Respiratory rate
 - Unchanged
- Temperature
 - Change in temperature regulation can lead to susceptibility to hypothermia



Skin, Nails, Hair

- Increasing skin wrinkles
- Skin loses turgor
- Lighter skin looks more opaque due to loss of dermis vascularity
- Skin on hands thin, fragile and transparent
- Nails lose luster and may yellow and thicken
- Scalp hair loses pigment causing graying
- Normal hair loss of body hair
- At around 55 years, women may develop coarse facial hair

Head and Neck

- Eyes
 - Fat around eye may atrophy causing the eyeball to recede
 - Eyelids wrinkle and may hang in loose folds
 - Fewer lacrimal secretions → dry eyes
 - Pupils may be smaller
 - Visual acuity diminishes at around 70 years of age
 - Near vision blurring common
 - Increasing risk: cataracts, glaucoma, macular degeneration

Head and Neck

- Hearing
 - Diminishes with age, especially after age 50
- Mouth
 - Decrease salivary secretion and taste with age; could be compounded by increased medication use
 - Increased risk of needing dentures
- Neck
 - Cervical lymph nodes less palpable
 - Submandibular glands more palpable



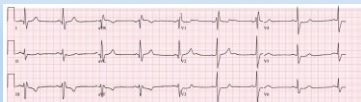
Thorax and Lungs

- Chest wall becomes stiffer and harder to move
- Respiratory muscles may weaken
- Lungs lose elasticity
- Capacity for exercise decreases
- Skeletal changes may accentuate dorsal curve producing kyphosis spine



Cardiovascular

- Extra heart sounds
 - S3 after age 40 strongly suggestive of congestive heart failure
 - S4 may be heard in healthy older adults but may imply decreased ventricular compliance
- Murmurs
 - Systolic aortic murmur found in one-third of people over 60 and over half in people over 80



Abdomen

- Fat accumulates in lower abdomen and near hips
- Fat accumulation and weakening abdominal muscles may cause protruding abdomen
- Aging may blunt manifestations of acute abdominal disease
 - Pain less severe
 - Fever less pronounced
 - Rebound tenderness reduced or absent



New Complaints

Objectives

- Be able to obtain an appropriate history of new complaint to rule out Red Flag concerns
- Perform appropriate and focused physical assessment
- Present patient to “provider” including assessment and plan

Intent of this lecture is NOT to make you a diagnostician but give you the tools to obtain history and physical on a patient then present to a provider.

Work within your scope of practice and comfort!!!

Why should a pharmacist workup a new complaint?

- Our focus is chronic disease management
BUT...
- At some point you will be confronted with a new complaint
- Physicians do not want us to simply kick these off to them
- We are expected to workup the patient
 - Obtain history
 - Perform exam
 - Present case intelligently to a provider
- Key point – present NOT diagnose!!

Prevalence of New Complaints

Complaint	Prevalence/Office Visits	Source
All Visits	928 million office visits	CDC
Cough	26 million office visits	CDC
Knee Symptoms	14 million office visits	CDC
Low back pain	13 million office visits	CDC
Abdominal pain	12 million office visits	CDC
Skin Rash	12 million office visits	CDC
Chest Pain	1% of all visits (about 9.3 million based on CDC total visits)	American Family Physician
Migraines	12% of population Top 10 visit reason	UpToDate Mayo Clinic

New Complaints Evaluated in Training

- Lower back pain
- Migraines and headaches
- Abdominal pain
- Knee pain
- Chest pain

General Evaluation

OLD CARTS Evaluation

- O – onset
- L – location
- D – duration
- C- character
- A – aggravating factors
- R – relieving factors
- T – timing
- S - severity

OLD CARTS

- Onset
 - When did the complaint start?
 - Acute, chronic, acute-on-chronic
- Location
 - Patient should point to and/or describe location
 - Saying "right knee" is not enough; have them point where on the joint
- Duration
 - Constant or intermittent
 - Again – acute, chronic, acute-on-chronic

OLD CARTS

- Character
 - Stabbing, dull, throbbing, etc.
 - Swelling, stiffness
- Aggravating factors
 - What makes it worse?
 - Movement, sitting, lying down, sound, lights, exercise, etc.
- Relieving factors
 - Medications
 - Rest
 - Movement

OLD CARTS

- Timing
 - Does the complaint occur with any activity
 - Time of day, relation to monthly cycle, stress, exercise
- Severity
 - Pain scale
 - 1-10 during episodic pain
 - 1-10 during baseline

Pearls for New Complaints

- Review chart before seeing the patient if possible
 - Understand past medical history through problem list and previous notes
 - Is complaint acute, chronic, acute on chronic
- Use OLDCARTS with all new complaints
- Ask complaint specific questions
- Always present case to a provider

Lower Back Pain

Wheeler - UpToDate

History

- OLDCARTS
- Back surgery history
- Bowel/bladder changes
- Fevers
- Use of corticosteroids
- Gait disturbances and falls

Low Back Pain Red Flags

- Neurological deficits
- Infection
- Cancer
- Fracture

Neurological Deficits and Infection

- Cauda equina syndrome
 - Pain, numbness, tingling in low back spreading to lower extremities
 - Leg weakness or foot drop
 - Changes in bowel or urine control
 - Problems with sex
- Infections
 - Recent back surgery
 - Fevers
 - Recent infections (epidural abscess)
 - Immunosuppression

Cancer and Fracture

- Cancer
 - Current or recent cancer
 - History of cancer
- Fracture
 - Advanced age
 - History of prolonged glucocorticoid use
 - History of back trauma
 - History of osteoporosis

Recommended Examinations

- Focused musculoskeletal
 - Posture - inspect
 - Spine – inspect and palpate
 - Hips – movement and strength
 - Straight leg raise – next slide
- Focused neurological exam
 - Lower extremity DTR's
 - Lower extremity strength
 - Gait

Straight Leg Raise

- Patient in supine position
- Ipsilateral leg
 - Passively lift leg (no pt assistance) with knee fully extended AND ankle dorsiflexed
 - Sciatic pain occurs during maneuver and disappears when knee flexed
 - More sensitive but less specific than contralateral leg for radiculopathy from disc herniation
- Contralateral leg
 - As above; radicular pain with contralateral leg lift is relatively specific for disc herniation

Assessment and Plan

- No red flags in history and normal exams
 - Standard of care is physical therapy
- Positive red flags or abnormal exam
 - MRI recommended

Headaches and Migraines

Cutrer – UpToDate; Bajwa - UpToDate

General Evaluation Plan for Headaches

- Rule out serious underlying pathology and look for secondary causes for the headaches
 - Clinical pharmacist has a very clear role here for new onset headaches
- Determine the type of primary headache
 - Clinical pharmacist's role here will be dependent on scope of practice and diagnostic privileges
 - Likely role for diagnostician (i.e. primary care provider)

History

- OLDCARTS
- Age at onset
- Presence or absence of aura and prodrome
- Frequency, intensity, and duration of attack
- Number of headache days per month
- Time and mode of onset
- Quality, site, and radiation of pain
- Associated symptoms and abnormalities
- Family history of migraine

Key History Questions

- Precipitating and relieving factors
- Effect of activity on pain
- Relationship with food/alcohol
- Response to any previous treatment
- Any recent change in vision
- Association with recent trauma
- Any recent changes in sleep, exercise, weight, or diet
- State of general health

Key History Questions

- Change in work or lifestyle (disability)
- Change in method of birth control (women)
- Possible association with environmental factors
- Effects of menstrual cycle and exogenous hormones (women)

Headache Red Flags (SNOOP)

- **Systemic**
 - Illness or medical conditions including fever, weight loss, pregnancy, cancer, immunocompromised
- **Neurological**
 - Confusion, impaired consciousness, seizures, focal neurological symptoms
- **Onset**
 - New – especially over 40 years of age
 - Sudden onset (e.g. thunderclap)
 - Thunderclap headaches could indicate subarachnoid hemorrhage and requires emergent CT

Headache Red Flags (SNOOP)

- **Other associated conditions**
 - Head trauma, drug use, toxic exposure, precipitated by exercise or sexual activity, headache awakens patient from sleep
- **Previous headache with changing frequency and intensity**

Physical Exam

- Check vitals – blood pressure and pulse specifically
- Auscultate for bruits in the neck
- Palpate head, neck, and shoulders
 - Feel for tense muscles (tension headache)
- Examine spine and neck muscles
- Perform full neurology examination

Assessment and Plan

- No red flags and benign history and physical
 - May defer to primary provider
- Red flag(s) or abnormal history and physical
 - MRI recommended
 - If MRI not available then CT

Abdominal Pain

Penner – UpToDate

Pain Location

- **Right Upper Quadrant (RUQ)**
 - Likely biliary tree
 - Liver pain requires “stretching” of the capsule
- **Epigastric**
 - See section on chest pain if patient has cardiac hx or concerns
- **Left Upper Quadrant (LUQ)**
 - Splenic in origin
- **Lower Abdominal Pain**
 - Distal intestinal tract
 - Radiating pain for upper quadrant pain

History

- OLD CARTS
- Gastrointestinal - nausea, vomiting, diarrhea, constipation
- Liver disease - changes in skin color and in urine color
- Infectious/malignancy - fevers, chills, weight loss
- Female patients
 - STD screen for pelvic inflammatory disease
 - Abdominal pain related to menstrual cycle
- Other important history
 - Alcohol use, travel history, sick contacts, family history

Abdominal Red Flags

- Unstable vital signs
- Signs of peritonitis on exam
 - Abdominal rigidity, rebound tenderness, pain when patient is bumped
- Concern that pain is life threatening
 - Acute bowel obstruction
 - Acute myocardial infarction
 - Perforation
 - Ectopic pregnancy

Examination

- Full abdominal examination
- Consider rectal examination
 - Fecal impaction may be cause of pain in older individuals
- Eyes and Skin
- Cardiac and pulmonary as appropriate

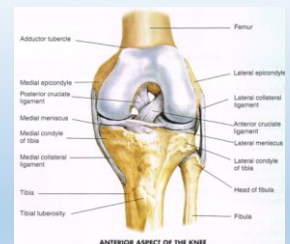
Assessment and Plan Non-Emergent

- Red Flags present – to emergency room
- RUQ pain
 - Complete blood count (CBC), Chem 7, liver function tests (LFTs), amylase and lipase
 - RUQ ultrasound
- Epigastric pain
 - CBC, Chem 7, LFTs, amylase, lipase
 - Consider ultrasound

Assessment and Plan Non-Emergent

- Lower abdominal pain
 - CBC and Chem 7
 - Pregnancy test in women of child bearing age
 - Consider urinalysis and culture
- Diffuse, nonspecific abdominal pain of unknown etiology
 - CBC, Chem 7, LFTs, lipase, amylase, pregnancy test

Knee Pain



Anderson – UpToDate
Beutler – UpToDate
Essentials of Musculoskeletal Care

Pain Location

- **Medial Knee**
 - Most common knee complaint
 - Osteoarthritis, bursitis, medial collateral ligament tear (most common tear), medial meniscal tear
- **Anterior Knee**
 - Quadriceps injury, patella and tendon injury
 - Patellofemoral Pain Syndrome
 - Osteoarthritis
- **Lateral Knee**
 - Least common knee pain

Pain Categories Based on Location/Source

- **Intraarticular**
 - Meniscus or ligament tear; fracture
- **Patellar misalignment or dislocation**
- **Cartilage**
 - Loss from osteoarthritis or synovitis
- **Periarticular**
 - Bursitis or tendinopathy
- **Referred pain**
 - Hip, spine, femur
- **Inflammatory**
 - Infection or arthritis or gout

History

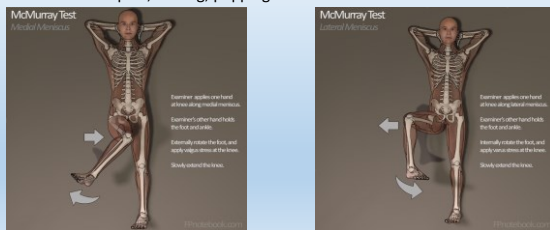
- OLD CARTS
- Past surgeries
- Past injuries
- History of arthritis, steroid use, gout

Examination

- Apply what has been previously learned
- Some specific maneuvers exist that are designed to diagnose specific injuries
 - A complete history, full knee exam (inspection, palpation, strength, ROM, etc), neuro testing and special tests only yield a correct diagnosis 50% of the time!!!
 - Obviously, a special test alone is not recommended
- Your role in the exam is to evaluate and present to appropriate provider

Meniscal Tears – McMurray Test

- Positive: pain, locking, popping



Medial Collateral Ligament (MCL)

- Valgus (abduction) stress test
- Perform at 0 and 30 degrees extension
- Positive at 0 degrees: MCL and one or both cruciate ligament injury
- Positive at 30 degrees and negative at 0: isolated MCL injury



Lateral Collateral Ligament (LCL)

- Varus (adduction) stress test
- Perform at 0 and 30 degrees extension
- Positive at 0 degrees: LCL and anterior cruciate ligament injury
- Positive at 30 degrees and negative at 0: isolated LCL injury



Anterior Cruciate Ligament (ACL)

- Anterior Drawer Test
 - Forward movement showing contours of upper tibia is positive
 - Positive test makes ACL tear 11.5 times more likely
- Lachman Test
 - Knee in 15 degree of flexion
 - Positive is significant movement
 - Positive increases likelihood of ACL tear by 17 times



Posterior Cruciate Ligament (PCL)

- Posterior Drawer Test
 - Push tibia posteriorly and observe femur
 - Isolated PCL tears are rare



Assessment and Plan

- Recommend/obtain plain films for knee trauma based on the Ottawa Knee Rule
 - Age >55
 - Isolated tenderness of the patella
 - Tenderness at head of fibula
 - Inability to flex knee 90 degrees
 - Inability to bear weight immediately post injury and in ER (or clinic in this case)
- MRIs better for soft tissue injuries of the knee

Chest Pain

Yelland - UpToDate

Common Causes of Chest Pain

- Cardiac
- Pulmonary
- Gastrointestinal
- Musculoskeletal
- Psychiatric

Chest Pain Pearls

- History and physical will be extremely important to tease out likely cause
- When in doubt an EKG is a good idea
- Non-cardiac chest pain does not mean benign pain
- Your goal is to efficiently evaluate for possible life threatening conditions and present findings to provider for triage
- ALWAYS discuss these cases with a provider

Quality of Pain

- No single symptom is diagnostic of the cause but some can help with cause
- Cardiac (myocardial infarction) – radiation of pain to one or both arms and associated with diaphoresis and nausea/vomiting
- Pleuritic – worsens with respirations
- Pericarditis – pain relieved with sitting
- Aortic dissection – ripping or tearing

Location and Radiation

- Ischemic pain often diffuse and hard to localize
- MI – may radiate to neck, back, jaw, shoulder(s), teeth, upper extremity
 - Increased areas of radiated pain increases likelihood of MI
- Musculoskeletal – well localized with point tenderness
- Associated abdominal or back pain could be referred pain for outside chest

Palliation

- Ischemic
 - Decreasing pain with rest
- Pericarditis
 - Improves in sitting position
- Gastrointestinal
 - Pain relieved with antacids
 - However, ischemic pain can be relieved by GI cocktails containing lidocaine

Associated Symptoms

- Cardiac
 - Ischemia can be associated with syncope (but so can other etiologies)
- Pulmonary
 - Exertional dyspnea – cardiac versus pulmonary
- GI
 - Heartburn, regurgitation, dysphagia
 - Provoked with postural changes
 - Nocturnal pain
 - Not consistent with exercise
 - Belching can be GI or cardiac ischemia

Associated Symptoms

- Musculoskeletal
 - Insidious onset, recent unaccustomed repetitive motion, positional
- Psychiatric
 - Pain with panic attacks
 - Depression and pain

History

- OLD CARTS
- Past medical history
 - Cardiac – prior events, pain similar to current
 - Pulmonary – asthma, COPD, etc
 - GI – GERD
 - Psychiatric – depression, panic attacks
 - Musculoskeletal – recent change in activities, recent trauma

Examination

- Review vitals including oxygen saturation
- Cardiac
- Pulmonary
- Musculoskeletal and/or abdominal may be needed based on history

Assessment and Plan

- Recommend/obtain ECG in following cases
 - New onset chest pain not associated with known cause (i.e. musculoskeletal)
 - Chest pain is different from previous experiences
- Present all cases to a provider!

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Northern Navajo Medical Center Physical Assessment Course
Acute Abdominal Pain New Complaint Grading Form

Student: _____ Evaluator: _____

Final Score: _____/81 = _____% (80% to pass)

Students attending the NNMC Physical Assessment Class shall be evaluated his/her ability to illicit an appropriate history based on chief complaint, respectful approach to the patient, appropriate use of equipment, and ability to perform the required physical examination(s).

Scoring criteria is as follows:

0: Skill/Task Not Done

- Skill/task not addressed or completely omitted

1: Needs Significant Improvement

- Skill/task addressed but completely incorrect, or
- Skill/task addressed but numerous aspects omitted

2: Needs Slight Improvement

- Skill/task addressed and mostly executed correctly, or
- Skill/task addressed with few omissions, or

3: Competent

- Skill/task completed correctly

Communication and General Considerations For All Cases	Skill/Task Score (circle one)
Student introduced self to patient	0 1 2 3
Student spoke with clearly and appropriately	0 1 2 3
Student washed hands prior to beginning exam	0 1 2 3
Student demonstrated appropriate listening skills and body language	0 1 2 3
Student appropriately maneuvered patient around exam room	0 1 2 3
Student correctly used medical equipment	0 1 2 3
Student respected privacy of patient	0 1 2 3
Student closed encounter appropriately and politely	0 1 2 3

Comments:

Score: _____/24

Northern Navajo Medical Center Physical Assessment Course
Acute Abdominal Pain New Complaint Grading Form

History	Skill/Task Score (circle one)
Student obtains history of new complaints	
OLDCARTS	0 1 2 3
Associated Symptoms	0 1 2 3
<ul style="list-style-type: none"> • Nausea/vomiting/diarrhea/constipation 	
Red Flags Addressed	0 1 2 3
<ul style="list-style-type: none"> • Vital signs stable • Peritonitis (abdominal rigidity and tenderness) • Life threatening concerns (MI, bowel obstruction, ectopic pregnancy) 	
History	0 1 2 3
<ul style="list-style-type: none"> • Abdominal pain history • Past surgeries • ETOH use • GERD/belching • Pregnancy possibility • Sick contacts/travel history 	
Examination	
Auscultation	
Students must examine each item below bilaterally and state what is being assessed	0 1 2 3
<ul style="list-style-type: none"> • Auscultation performed prior to palpation an percussion • Auscultate bowel sounds (<i>listen for 10-20 seconds</i>) • Auscultate Aorta (<i>umbilicus</i>) 	

Comments

Score: _____/15

Acute Abdominal Pain New Complaint Grading Form

Palpation	
Students must examine each item below bilaterally and state what is being assessed	
<ul style="list-style-type: none"> • Light palpation in all quadrants 	0 1 2 3
<ul style="list-style-type: none"> • Deep palpation in all quadrants (<i>check for rebound tenderness if pain in a quadrant, watch pt's face for wincing, etc.</i>) 	0 1 2 3
<ul style="list-style-type: none"> • Palpate liver on Rt side (<i>place Lt hand under pt's rib cage and lift slightly. Then palpate with Rt hand under Rt costal margin to feel for liver while asking p to take a deep breath in & out</i>) 	0 1 2 3
<ul style="list-style-type: none"> • Palpate for spleen in LUQ (<i>Place Lt hand under pt's rib cage and lift slightly and attempt to palpate spleen with Rt hand under Lt costal margin .Then ask patient to take deep breath in & out</i>) 	0 1 2 3
<ul style="list-style-type: none"> • Assess for costovetebral angle (CVA) tenderness bilaterally (<i>Place palm on CVA and strike dorsal surface of hand with ulnar surface of fist. Should warn pt prior to striking hand</i>) 	0 1 2 3

Comments:

Score: _____/15

Comments:

Northern Navajo Medical Center Physical Assessment Course
Acute Abdominal Pain New Complaint Grading Form

Presentation to Instructor	Skill/Task Score (circle one)
Identified Chief Complaint	0 1 2 3
History of Chief Complaint	0 1 2 3
<ul style="list-style-type: none"> • OLDCARTS format 	
Relevant past/other medical problems	0 1 2 3
Vitals reported	0 1 2 3
<ul style="list-style-type: none"> • Blood pressure as appropriate 	
<ul style="list-style-type: none"> • Pulse as appropriate 	
<ul style="list-style-type: none"> • Oxygen saturation as appropriate 	
Allergies and medications	0 1 2 3
Brief social history	0 1 2 3
Pertinent physical examination findings only	0 1 2 3
Short and concise assessment	0 1 2 3
Plan/recommendations	0 1 2 3

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

Chest Pain New Complaint Grading Form

Student: _____ Evaluator: _____

Final Score: _____/78 = _____% (80% to pass)

Students attending the NNMC Physical Assessment Class shall be evaluated his/her ability to illicit an appropriate history based on chief complaint, respectful approach to the patient, appropriate use of equipment, and ability to perform the required physical examination(s).

Scoring criteria is as follows:

0: Skill/Task Not Done

- Skill/task not addressed or completely omitted

1: Needs Significant Improvement

- Skill/task addressed but completely incorrect, or
- Skill/task addressed but numerous aspects omitted

2: Needs Slight Improvement

- Skill/task addressed and mostly executed correctly, or
- Skill/task addressed with few omissions, or

3: Competent

- Skill/task completed correctly

Communication and General Considerations For All Cases	Skill/Task Score (circle one)			
Student introduced self to patient	0	1	2	3
Student spoke with clearly and appropriately	0	1	2	3
Student washed hands prior to beginning exam	0	1	2	3
Student demonstrated appropriate listening skills and body language	0	1	2	3
Student appropriately maneuvered patient around exam room	0	1	2	3
Student correctly used medical equipment	0	1	2	3
Student respected privacy of patient	0	1	2	3
Student closed encounter appropriately and politely	0	1	2	3

Comments:

Score: _____/24

Northern Navajo Medical Center Physical Assessment Course

Chest Pain New Complaint Grading Form

History	Skill/Task Score (circle one)
Student obtains history of new complaints	
OLDCARTS	0 1 2 3
Associated Symptoms	0 1 2 3
• Nausea/vomiting	
• Sweating with chest pain	
History	0 1 2 3
• Past surgeries	
• Past cardiac events	
• GERD/belching	
• Psych issues/anxiety	
• Chest injuries	
Cardiac Examination	
Auscultation/Edema Assessment	Skill/Task Score (circle one)
Palpates for the 2 nd intercostal space (Must clearly auscultate the areas listed with both the bell and diaphragm of the stethoscope)	0 1 2 3
• Right Upper Sternal Border	0 1 2 3
• Left Upper Sternal Border	0 1 2 3
• Left Lower Sternal Border	0 1 2 3
• Apex	0 1 2 3
Edema (must palpate both left and right)	
• Foot, ankle, shin	0 1 2 3

Comments:

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

Chest Pain New Complaint Grading Form

Presentation to Instructor	Skill/Task Score (circle one)
Identified Chief Complaint	0 1 2 3
History of Chief Complaint	0 1 2 3
<ul style="list-style-type: none"> • OLDCARTS format 	
Relevant past/other medical problems	0 1 2 3
Vitals reported	0 1 2 3
<ul style="list-style-type: none"> • Blood pressure as appropriate 	
<ul style="list-style-type: none"> • Pulse as appropriate 	
<ul style="list-style-type: none"> • Oxygen saturation as appropriate 	
Allergies and medications	0 1 2 3
Brief social history	0 1 2 3
Pertinent physical examination findings only	0 1 2 3
Short and concise assessment	0 1 2 3
Plan/recommendations	0 1 2 3

Comments

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

Headache New Complaint Grading Form

Student: _____ Evaluator: _____

Final Score: _____ / 126 = _____ % (80% to pass)

Students attending the NNMC Physical Assessment Class shall be evaluated his/her ability to illicit an appropriate history based on chief complaint, respectful approach to the patient, appropriate use of equipment, and ability to perform the required physical examination(s).

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- Skill/task addressed but numerous aspects omitted

2: Needs Slight Improvement

- Skill/task addressed and mostly executed correctly, or
- Skill/task addressed with few omissions, or

3: Competent

- Skill/task completed correctly

Communication and General Considerations For All Cases	Skill/Task Score (circle one)			
Student introduced self to patient	0	1	2	3
Student spoke with clearly and appropriately	0	1	2	3
Student washed hands prior to beginning exam	0	1	2	3
Student demonstrated appropriate listening skills and body language	0	1	2	3
Student appropriately maneuvered patient around exam room	0	1	2	3
Student correctly used medical equipment	0	1	2	3
Student respected privacy of patient	0	1	2	3
Student closed encounter appropriately and politely	0	1	2	3

Comments:

Score: _____ /24

Northern Navajo Medical Center Physical Assessment Course

Headache New Complaint Grading Form

Headache	Skill/Task Score (circle one)
Student obtains history of new complaints	
<ul style="list-style-type: none"> • OLDCARTS 	0 1 2 3
<ul style="list-style-type: none"> • Red Flags addressed (SNOOP) <ul style="list-style-type: none"> ○ Systemic (fever, weight loss, immunocompromised, pregnancy) ○ Neurological (seizures, impaired consciousness, confusion) ○ Onset (age >40, sudden onset) ○ Other associated symptoms (head trauma, drug use, precipitated by activity) ○ Previous headache with changing frequency/intensity 	
Mental Status Examination	Skill/Task Score (circle one)
Student must assess at least 2 of the following elements	0 1 2 3
<ul style="list-style-type: none"> • Orientation (person, place, date, situation) • Registration: student lists 3 objects, asks patient to repeat back until correct, and asks patient to recall in 3-5 minutes • Attention and Calculation: Serial 7's backward from 100 (stop after 5 answers) or spelling "World" backwards 	
Mood Disturbance (both required)	0 1 2 3
<ul style="list-style-type: none"> • Evaluate general mood: "In the last 2 weeks have you lost interest in doing things that previously brought you pleasure?" • "Any thoughts of hurting yourself or others?" 	

Comments:

Score: _____/24

Northern Navajo Medical Center Physical Assessment Course

Headache New Complaint Grading Form

Neurological Examination	
Cranial Nerves – student must perform or examine each item below. Students MUST state what is being performed	
• I (Olfactory) – student asks about smell	0 1 2 3
• II (Optic) – Examine fields by confrontation	0 1 2 3
• III (Oculomotor) – pupillary reaction to light	0 1 2 3
• III, IV, VI (Oculomotor, Trochlear, Abducens) – must do both	0 1 2 3
○ Direction of gaze	
○ Look for ptosis and nystagmus	
• V (Trigeminal) – must do both	0 1 2 3
○ Motor: student has patient clench teeth while palpating temporal and masseter muscles)	
○ Sensory: pain and light touch (3 regions: ophthalmic, maxillary, mandibular)	
• VII (Facial) – do and state what is being done	0 1 2 3
○ Observe for tics, asymmetry, unusual movements	
○ Show teeth, puff out cheeks, raise eyebrows, frown, close eyes	
Cranial Nerves (cont.) – student must perform or examine each item below. Students MUST state what is being performed	
• VIII (Acoustic) – student asks about smell ○ Whisper or rub fingers	0 1 2 3
• IX (Glossopharyngeal) ○ Have patient swallow	0 1 2 3
• X (Vagus) ○ Patient says “ahh” and check for symmetric rise/fall of soft palate and uvula	0 1 2 3
• XI (Spinal Accessory) ○ Patient shrugs shoulders against resistance	0 1 2 3
○ Turn face right and left against resistance	
• XII (Hypoglossal) ○ Tongue midline, move side to side	0 1 2 3

Comments:

Score: _____/33

Northern Navajo Medical Center Physical Assessment Course

Headache New Complaint Grading Form

Motor System	
• Coordination (all three required)	0 1 2 3
○ Rapid alternating movements (either up/down palms or finger to thumb) – each side separately	
○ Finger to nose (patients hand must be maximally outstretched)	
○ Heal to shin	
• Gait	0 1 2 3
○ Test/observe normal gait (walk across room)	
○ Heel-to-toe	
• Position – student must ensure safety of patient	0 1 2 3
○ Romberg (instruct patient to stand feet together, close eyes, observe 10-20 seconds)	
○ Pronator drift	
Sensory System	
• Upper extremities (assess at least 2)	0 1 2 3
○ Pain	
○ Light touch	
○ Vibration	
• Lower extremities (assess at least 2)	0 1 2 3
○ Pain	
○ Light touch	
○ Vibration	
• Reflexes	0 1 2 3
○ Bicep	
○ Tricep	
○ Brachioradialis	
○ Knee	
○ Ankle	
○ Plantar	

Comments:

Score: _____/18

Northern Navajo Medical Center Physical Assessment Course

Headache New Complaint Grading Form

Presentation to Instructor	Skill/Task Score (circle one)
Identified Chief Complaint	0 1 2 3
History of Chief Complaint	0 1 2 3
<ul style="list-style-type: none"> • OLDCARTS format 	
Relevant past/other medical problems	0 1 2 3
Vitals reported	0 1 2 3
<ul style="list-style-type: none"> • Blood pressure as appropriate 	
<ul style="list-style-type: none"> • Pulse as appropriate 	
<ul style="list-style-type: none"> • Oxygen saturation as appropriate 	
Allergies and medications	0 1 2 3
Brief social history	0 1 2 3
Pertinent physical examination findings only	0 1 2 3
Short and concise assessment	0 1 2 3
Plan/recommendations	0 1 2 3

Score: _____/27

Northern Navajo Medical Center Physical Assessment Course

Lower Back Pain New Complaint Grading Form

Student: _____ Evaluator: _____

Final Score: _____/99 = _____% (80% to pass)

Students attending the NNMC Physical Assessment Class shall be evaluated his/her ability to illicit an appropriate history based on chief complaint, respectful approach to the patient, appropriate use of equipment, and ability to perform the required physical examination(s).

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- Skill/task addressed with few omissions, or

3: Competent

- Skill/task completed correctly

Communication and General Considerations For All Cases	Skill/Task Score (circle one)			
Student introduced self to patient	0	1	2	3
Student spoke with clearly and appropriately	0	1	2	3
Student washed hands prior to beginning exam	0	1	2	3
Student demonstrated appropriate listening skills and body language	0	1	2	3
Student appropriately maneuvered patient around exam room	0	1	2	3
Student correctly used medical equipment	0	1	2	3
Student respected privacy of patient	0	1	2	3
Student closed encounter appropriately and politely	0	1	2	3

Comments:

Score: _____/24

Northern Navajo Medical Center Physical Assessment Course

Lower Back Pain New Complaint Grading Form

Headache	Skill/Task Score (circle one)
Student obtains history of new complaints	
• OLDCARTS	0 1 2 3
• Red Flags addressed	
○ Cauda equine syndrome	0 1 2 3
▪ Pain, numbness, tingling in lower back that radiates to extremities	
▪ Leg weakness or foot drop	
▪ Changes in bowel or urine control	
▪ Problems	
○ Infection	0 1 2 3
▪ Recent surgeries	
▪ Fevers	
▪ Recent infections	
▪ immunosuppression	
○ Cancer	0 1 2 3
▪ Current, recent, or history of cancer	
○ Fracture	0 1 2 3
▪ History of prolonged steroid use	
▪ History of back trauma	
▪ History of osteoporosis	

Comments:

Score: _____/15

Northern Navajo Medical Center Physical Assessment Course

Lower Back Pain New Complaint Grading Form

Focused Musculoskeletal Examination	
Spine (inspection, palpation, range of motion)	
• Inspection	0 1 2 3
• Palpation (along spine)	0 1 2 3
• Flexion/extension	0 1 2 3
• Right/left bending	0 1 2 3
• Right/left rotation	0 1 2 3
Hips (both range of motions and strength)	
• Flexion/extension (patient supine, lift leg)	0 1 2 3
• Internal/external rotation	0 1 2 3
• Abduction/adduction	0 1 2 3
Knee (both range of motions and strength)	
• Flexion/Extension	0 1 2 3
Ankle (both range of motions and strength)	
• Plantarflexion/dorsiflexion	0 1 2 3
Sensory System	
• Lower extremities (assess at least 2)	0 1 2 3
○ Pain	
○ Light touch	
○ Vibration	
• Reflexes	0 1 2 3
○ Knee	
○ Ankle	
○ Plantar	

Comments:

Score: _____/36

Northern Navajo Medical Center Physical Assessment Course

Lower Back Pain New Complaint Grading Form

Presentation to Instructor	Skill/Task Score (circle one)
Identified Chief Complaint	0 1 2 3
History of Chief Complaint	0 1 2 3
<ul style="list-style-type: none"> • OLDCARTS format 	
Relevant past/other medical problems	0 1 2 3
Allergies and medications	0 1 2 3
Brief social history	0 1 2 3
Pertinent physical examination findings only	0 1 2 3
Short and concise assessment	0 1 2 3
Plan/recommendations	0 1 2 3

Score: _____/24

Northern Navajo Medical Center Physical Assessment Course

Knee Pain New Complaint Grading Form

Student: _____ Evaluator: _____

Final Score: _____/87 = _____% (80% to pass)

Students attending the NNMC Physical Assessment Class shall be evaluated his/her ability to illicit an appropriate history based on chief complaint, respectful approach to the patient, appropriate use of equipment, and ability to perform the required physical examination(s).

Scoring criteria is as follows:

0: Skill/Task Not Done

- Skill/task not addressed or completely omitted

1: Needs Significant Improvement

- Skill/task addressed but completely incorrect, or
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2: Needs Slight Improvement

- Skill/task addressed and mostly executed correctly, or
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3: Competent

- Skill/task completed correctly

Communication and General Considerations For All Cases	Skill/Task Score (circle one)			
Student introduced self to patient	0	1	2	3
Student spoke with clearly and appropriately	0	1	2	3
Student washed hands prior to beginning exam	0	1	2	3
Student demonstrated appropriate listening skills and body language	0	1	2	3
Student appropriately maneuvered patient around exam room	0	1	2	3
Student correctly used medical equipment	0	1	2	3
Student respected privacy of patient	0	1	2	3
Student closed encounter appropriately and politely	0	1	2	3

Comments:

Score: _____/24

Northern Navajo Medical Center Physical Assessment Course

Knee Pain New Complaint Grading Form

Knee Pain	Skill/Task Score (circle one)
Student obtains history of new complaints	
• OLDCARTS	0 1 2 3
• History	0 1 2 3
○ Past surgeries	
○ Past injuries	
○ History of arthritis, steroid use, gout	
Focused Knee Examination (both knees)	
Inspection and Palpation	0 1 2 3
Range of Motion	
• Flexion/Extension	0 1 2 3
Strength	
• Flexion/Extension	0 1 2 3
McMurray Test – medial	0 1 2 3
McMurray Test – lateral	0 1 2 3
Medial Collateral Ligament (MCL)	
• 0 degrees	0 1 2 3
• 30 degrees	0 1 2 3
Lateral Collateral Ligament (LCL)	
• 0 degrees	0 1 2 3
• 30 degrees	0 1 2 3
Anterior Cruciate Ligament (ACL)	
• Anterior drawer test	0 1 2 3
• Lachman test	0 1 2 3

Comments:

Score: _____/39

Northern Navajo Medical Center Physical Assessment Course

Knee Pain New Complaint Grading Form

Presentation to Instructor	Skill/Task Score (circle one)			
Identified Chief Complaint	0	1	2	3
History of Chief Complaint	0	1	2	3
<ul style="list-style-type: none"> • OLDCARTS format 				
Relevant past/other medical problems	0	1	2	3
Allergies and medications	0	1	2	3
Brief social history	0	1	2	3
Pertinent physical examination findings only	0	1	2	3
Short and concise assessment	0	1	2	3
Plan/recommendations	0	1	2	3

Comments

Score: _____/24

Male Genital Examination Rectal Examination Breast Examination

Objectives

- Review basic anatomy
- Describe the techniques for the male genital examination
- Describe technique for rectal examination

Male Genital Examination

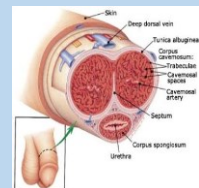
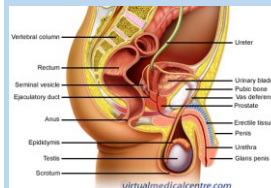
History – Male Genital Examination

- Sensitive topic for patient and sometimes provider
 - Can be worsened if patient and provider are of opposite sex
- Pertinent history to obtain
 - Sexually active
 - Sexual preference
 - History of STDs
 - Condom use
 - Self-examination history
- OLD CARTS
 - Onset, location, duration, character, aggravating factors, relieving factors, timing, severity

Common Complaints

- Penile discharge
- Penile lesions
- Scrotal pain, swelling, or lesions
- Sexual dysfunction

Male Reproductive Anatomy



Penis Inspection and Palpation

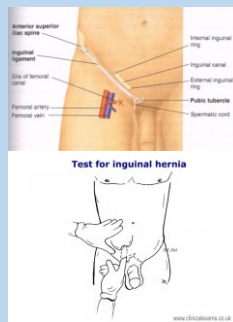
- Inspect Skin
- Inspect Foreskin (if present)
 - Must pull back foreskin to detect chancres, fungal infections, etc
- Inspect Glans
 - Look for ulcers, scars, nodules, inflammation
- Palpate any abnormal areas

Scrotal Inspection and Palpation

- Inspect skin
 - Lift up scrotum to see posterior side
- Inspect scrotal contours looking for swelling or lumps
- Palpate
 - Each testes and epididymis
 - Each spermatic cord
 - Note tenderness, lumps, and swelling

Hernia Exam

- Palpate external inguinal ring
- Have patient bear down or cough
- Check for bulges

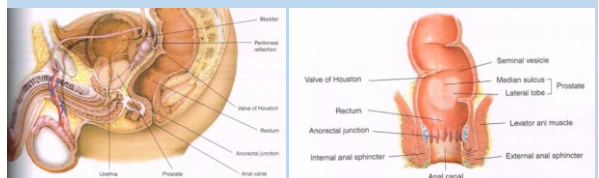


Pearls

- Lack of libido
 - Psychogenic, medication side effect, endocrine dysfunction
- Erectile dysfunction
 - Psychogenic – especially if morning erection is preserved
 - Decrease blood flow or impaired neural innervation
- Discharge
 - Yellow – possibly gonococcal infection

Rectal Examination

Anatomy



Common Complaints

- Change in bowel habits
- Blood in stool
- Pain with defecation
- Rectal bleeding or tenderness
- Weak urine stream

History

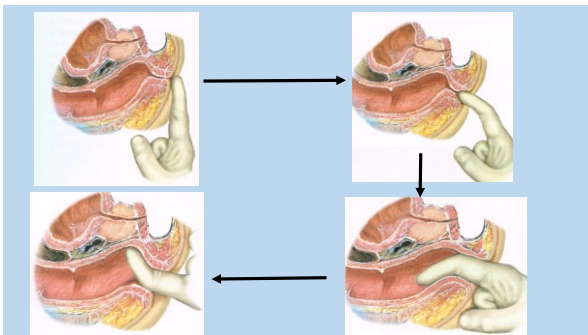
- History of bleeding
- Change in bowel habits
- History of anal fissures
- History of cancer, bowel diseases
- OLD CARTS

External Examination

- Patient may be lie on side or stand with upper body across exam table
- Inspect anus for lumps, ulcers, rashes
- Palpate any abnormal areas
- If patient is to tender for internal examination then:
 - Gently spread anal orifice from both sides and ask patient to bear down
 - Inspect for any cause of the severe tenderness

Internal Examination

- Equipment needed
 - Gloves
 - Lubrication
 - Tissue
 - Drapery
 - Hemocult kit
 - Chaperone



Internal Examination

- Identify lateral lobes and median sulcus
- Note size, shape and consistency of prostate
- Note prostate nodules or tenderness
- Prostate is normally rubbery and non-tender
- Exam stool on glove and place on hemocult slide

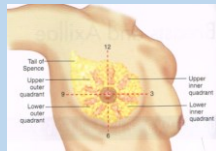
Female Breast Examination

Common Complaints and History

- Lumps or masses
- Pain or discomfort
- Discharge
- Swelling
- History
 - OLD CARTS
 - Trauma/injury
 - Cancer history
 - Breast feeding/pregnancy
 - Self examination history
 - Menstrual cycle

Examination Techniques

- Divide breast into 4 quadrants or superimpose a clock face onto breast

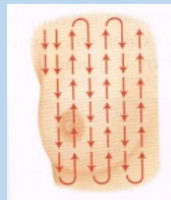


Examination - Inspection

- Seated position and disrobed to waste
- Skin
 - Color, thickening
- Size
 - Symmetry
- Contour
 - Masses, dimpling, flattening
- Observe in several positions
 - Arms over head, hands on hips, leaning forward
 - Dimpling or retraction can indicate cancer

Examination - Palpation

- Patient in supine position with arm above head
- Thorough exam will take 3 minutes for each breast
- Using shown pattern and with 2nd, 3rd, and 4th fingers make small concentric circles at each exam site
- Apply light, medium and deep pressure



Findings Consistent with Malignancy

- Hard consistency
- Irregular shape
- Dimpling over skin
- Associated retraction of nipple
- Non-tender

Reference

- Bickley LS. *Bates' Guide to Physical Examination and History Taking*. Wolters Kluwar Health. 10th Ed. 2009