

PHYSICAL DIAGNOSIS PART II BOARD REVIEW

Please note: The general diagnosis section of the NBCE Part II examination is composed of more than the material covered in Physical Diagnosis. Please review NMS, OB/Peds, and Pathology material.

Pain & discomfort is the most common reason people seek any kind of health care including chiropractic care. Therefore it's useful to have knowledge of the following basic concepts.

Neuro-musculoskeletal pain is the most common reason people seek chiropractic care. Neuro-musculoskeletal pain is usually **initiated or aggravated by motion**

The type of pain suggests a possible tissue of origin as follows:

1. Cramping, dull or aching pain suggests **muscle**
2. Sharp, shooting, burning & lightning-like pain suggest **nerve**
3. Deep, nagging or dull pain suggests **bone**
4. Sharp, severe &/or intolerable pain suggests **bone fracture**
5. Throbbing, diffuse pain suggests **vasculature**

As a rule, the closer the tissue is to the surface of the body, the better the site of pain corresponds to the site of the tissue irritation. Conversely the further the tissue is from the body surface the less likely the site of pain corresponds to the site of the tissue irritation. For example **skin** is extremely sensitive to pain, pressure & temperature and is well localized to the site of the tissue irritation. Pain originating in **deeper organs** is often poorly localized to the site of the tissue irritation.

Visceral pain is often **initiated or aggravated by the functional component of the involved organ.**

Distension or irritation of the internal lining causes pain of **hollow organs.**

Distension or irritation of the surface capsule causes pain of **solid organs.**

In both cases the intensity of the pain depends on the rate of expansion or the degree of irritation.

Organ pain is also caused by **ischemia.**

Inflammation is the protective response of body tissues to irritation or injury whether mechanical or microbial. It's the body's attempt to rid itself of the cause of the trauma, and to heal any damage caused by it. Inflammation can be acute or chronic; its cardinal signs are **pain, redness, heat & swelling**, often accompanied by **loss of function.**

Rubor/erythema- The redness of an inflammatory response is due to dilated blood vessels

Calor/heat - The warmth of an inflammatory response is due to dilated blood vessels

Dolor/pain- Biochemical mediators are produced at the site of injury or tissue damage; they help promote transmission of pain impulses from pain receptors to the dorsal horn of the cord.

Tumor/swelling- It's edema at the site of injury or tissue damage.

Case history is an efficient way to start the evaluation & management process.

Chief complaint (CC)

The (CC) is the reason for seeking care, usually in the patient's words.

Present problem/illness (PI)

The (PI) is a record of all the detailed characteristics of the chief complaint (OPQRST).

Past Health (medical) history (PH)

The (PH) is a record of previous & concurrent illnesses, medications, injuries, surgeries & transfusions.

Family history (FH)

The (FH) an account of the health and, if applicable, the cause of death of first degree relatives (parents, siblings, spouse & children)

Personal & social history (ADL's)

An account of activities of daily living such as: occupation, hobbies, recreation, travel, environmental toxins, sleep, nutrition, hydration, alcohol & tobacco use

Review of systems (ROS)

A (ROS) is a patient-completed checklist of symptoms typically associated with particular body systems. Checked items require further investigation.

Complete history

Include all of the components listed above.

Sensitive subjects such as sexual, alcohol and illicit drug history as well as child, spousal & elder neglect &/or abuse histories need to be approached with discretion.

Detailed history

It include the chief complaint, details of the present problem, the past health history, family history & the demands of the patient's occupation.

Expanded Problem/focused history

It include the chief complaint, details of the present problem& the past health history.

Problem/focused history

A history limited to the complaint & its characteristic details. Performed in situations that are urgent or when an existing patient has a new problem occurs on

Interim history

An update of the patient's health status since the last time they were in the office. "Have you had any new illnesses, medications, injuries, surgeries or concerns since your last visit?"

Open- ended questions

Leaves the content & extent to the discretion of the patient

Leading questions

A question that suggests the answer or contains information the examiner desires.

Direct questions

They seek specific information.

Concluding Questions

Give the patient the opportunity to relate additional information or reveal other concerns

Active problem list

A list of all significant current or old problems (illnesses, injuries, surgeries) not completely resolved that were reported during case history interview.

Inactive problem list

A list of significant old problems (illnesses, injuries, surgeries) seemingly completely resolved.

Purpose of problem lists

They not only provide a quick summary of the whole patient's health status but also provide a resource for planning & management. Active problems ideally become inactive & inactive problems may unfortunately become active again.

GENERAL OBSERVATIONS

Antalgic posture is a position assumed to lessen the pain.

GAIT:

Steppage gait is a high stepping movement to avoid stubbing their toe due to loss of dorsiflexion. It may be due to injury to the deep peroneal nerve.

Antalgic gait is a limp attempting to lessen pain

Ataxic gait is an unsteady, staggering gait.

Festinating gait is slow, small shuffling step associated with **Parkinson's** disease

Scissors gait – The hips & knees are flexed, thighs & knees rub or cross with every step which forces toe walking. It's associated with spastic paralysis of **cerebral palsy**.

FACIES:

Grimacing with pain.

Hyperthyroid facies demonstrates moist/oily skin, prominent eyes and lid retraction, staring or startled expression.

Grave Disease is an autoimmune disorder that mostly functions as a hyperthyroidism (some cases can manifest as hypothyroidism). The same features of hyperthyroidism above may be seen, in addition to retrobulbar hypertrophy resulting in bulging eyes (**exophthalmos or proptosis**; ex = external or outward and pro = forward). May have non-pitting edema = pretibial myxedema.

Hypothyroidism does not usually demonstrate characteristic facies, but the decreased metabolic rates may result in dry hair and skin, weight gain, cold intolerance, and may have a goiter.

Hashimoto's Thyroiditis or Disease is an autoimmune disease that functions as a hypothyroidism with similar clinical presentations.

Acromegaly causes an elongated head with a prominent forehead, nose & lower jaw (macrognathia; gnathia = jaw/mandible). It's due to **increased growth hormone (GH)**.

Myxedema causes a dull, puffy face with obvious periorbital edema. It's associated with the **most advanced form of hypothyroidism**. The decrease in metabolic rate causes accumulation of hyaluronic acid and chondroitin sulfate in the dermis; cognitive skills usually decline.

Cushing's syndrome causes a round "**moon face**" with red cheeks and an upper thoracic fat pad (buffalo hump). It's associated with **increased adrenal hormone**.

Parkinson's causes a blank, masklike stare with limited blinking.

Hippocrates Facies is seen in the last stages of terminal illnesses. The patient has sunken eyes, cheeks, and temples, sharpened nose, and dry rough skin.

Down Syndrome has depressed nasal bridge, epicanthal folds, mongoloid slant of the eyes, low-set ears, and large tongue.

Hydrocephalus in infants causes an enlarged head, thinning of the scalp with dilated veins and frontal bossing. The eyes may demonstrate visible sclera above the irises and paresis of the upward gaze, a phenomenon known as “sun-setting” sign (the irises look like the sun descending towards the horizon; the visible sclera would be the sky).

Bell’s palsy produces a facial paralysis of the muscles supplied by CN VII). The face will be asymmetrical, the eyelid may not close, the lower lid may droop, and the mouth may not close. Most cases will resolve in about one year.

SKIN MARKINGS:

PRIMARY SKIN LESIONS

MACULE is a flat area of discolored skin less than a centimeter in diameter; an example may be a freckle or cherry angioma. Patches, marks, spots, **plaques** and **nevi** describe larger flat areas of skin discoloration; examples may be age spots, vitiligo or port wine stains.

PAPULE is a solid elevation of skin less than one centimeter in diameter; examples may be moles, warts or skin tags. **Nodules** and **tumors** describe progressively larger solid masses such as lipomas, cysts and other masses.

S.N. **Wheals** are edematous swellings like mosquito bites or hives (**urticaria**) which are technically not solid but often classified as papular lesions.

VESICLE is a small, fluid (serous) filled elevation of the skin; examples may be herpes simplex, chicken pox or herpes zoster. **Bullae** (blisters) are larger versions of vesicles.

PUSTULE

- A small pus filled elevation of the skin such as pimples; abscesses, furuncles and carbuncles are larger but similar eruptions (like a vesicle, but purulent rather than serous)

SECONDARY SKIN LESIONS

Scales – Flaky skin, keratinized cells e.g. dandruff, seborrhea, psoriasis

Crust – Dried serum, blood or purulent exudates e.g. weeping exzema

Lichenification – Rough, thickened epidermis with accentuated skin markings, e.g. chronic dermatitis

Telangiectasis – Fine, irregular, superficial capillary dilations, e.g. rosacea

Excoriation – Linear, crusted loss of epidermis, e.g. abrasion or scratch

Erosion – Loss of some epidermis, e.g. sun damaged skin

Ulcer - Loss of epidermis extending into the dermis & may include the subcutaneous layer, e.g. bed sores, basal cell carcinoma

Fissure – Linear crack extending into the dermis, e.g. athlete's foot

Nevus – mole (plural = nevi)

SKIN CANCER:

“ABCDE” GUIDELINES PROMPTING A DERMATOLOGY CONSULT

Unexplained growths with one, some or all of the following characteristics;

- A - asymmetric surface or unequal halves
- B - border is irregular, notched, scalloped or indistinct
- C – color is black, speckled or mixed
- D – diameter of a growth exceeds 6mm (pencil diameter)
- E – evolving (Any change warrants a dermatology consultation)

SKIN CONDITIONS

Rashes that affect the **palms and soles** are uncommon and essentially narrow the differentials to: Rocky Mountain Spotted Fever, gonococcemia, erythema multiforme, and secondary syphilis.

Scabies is possibly the MOST pruritic (itching) condition. Note: pruritic = itching and puritic = pus-producing. Pruritis is usually worse at night and after hot showers/baths. Scabies commonly affects the volar surfaces of the wrists, the elbows, the penis, and between the fingers. The scabies burrow into the skin to leave their eggs, leaving red excoriations (scratches of the epidermis) and track marks.

Vitiligo: typically focal (rather than regional or universal) areas of depigmentation, much more noticeable in darker pigmented skins; hereditary, but could be due to trauma.

Petechiae: red-purple non-blanchable dots, less than .5 cm, seen in hypervascularity

Café au lait macules: flat, evenly pigmented spots larger than 5 mm that may be seen in neurofibromatosis, fibrous dysplasia, tuberous sclerosis, pulmonary stenosis.

Port-wine stain: Deep red/purple pigmented patch. When occurring on the **face** in the ophthalmic division of CN V, may be seen with glaucoma and other ocular defects or angiomatous malformation of the meninges (**Sturge-Weber syndrome**). When occurring on the **trunk**, may be seen with varicosities and hypertrophy of underlying soft tissues (**Klippel-Trenaunay-Weber syndrome**).

Folliculitis: inflammation and infection of the hair follicles, seen more so with facial hair caused by frequent shaving. **Keratosis pilaris** is a very common condition that is not the same as folliculitis; it is a condition in which protein (keratin) builds up around the hair follicles (pila) and results in raised pustules, most commonly on the back of the arms and thighs.

Tinea: noncandidal fungal infections. Tinea corporis = body; tinea cruris = groin/inner thigh; tinea capitis = scalp; tinea pedis = feet; tinea unguium = nails

Pityriasis Rosea: a common, self-limiting rash of unknown cause, probably viral, but not thought to be contagious. A primary oval or round plaque (pink/red and scaly and known as a **herald patch**) will occur 1-3 weeks prior to the secondary rash. Eventually multiple salmon-colored patches will appear in multiples, often in batches. On the back, the patches may be linear and angled out towards the lateral surfaces, called a “Christmas tree” or “fir tree” pattern.

Psoriasis: classic presentation is “**silver scales**” on “**salmon-pink skin**”, though many variations are possible. It is a disorder of high epidermal cell turnover, so scaling is a prevalent feature. The back, buttocks, scalp, and extensor surfaces are commonly involved.

Eczema or eczematous dermatitis: the most common inflammatory skin condition with multiple presentations, all linked by intercellular edema and epidermal breakdown. Forms include contact dermatitis (pollens, metals) and atopic dermatitis (60% occur first in childhood; associated with asthma later in life).

Rosacea: Telangiectasia, erythema, papules, and pustules characteristically in the central face (the patient often looks as if they are blushing or have a mild sunburn); never pruritic.

Herpes zoster: varicella-zoster viral infection (identical to the varicella/chickenpox virus). The original chickenpox infection will lie dormant in the dorsal root ganglion and become re-activated in times of immune compromise. Distribution is classically along one dermatome with red vesicles.

Acnthis Nigricans: A non-specific reaction pattern seen with obesity, some endocrine syndromes (insulin resistance, hyperinsulinism) malignancies, or inherited disorders. Seen as symmetrical brown thickening of the skin or patches of thickened brown skin with a velvety texture, most commonly in the axillae or other flexor regions.

Basal cell carcinoma: The most common form of skin cancer, occurring in the sun-exposed areas of the body, and usually first noted as a wound/ ulcer that does not heal---red flag! BCC has many clinical presentations, but may appear as a nodule or new “mole” that takes on a pink-red appearance before ulcerating.

Squamous cell carcinoma: The second most common form of skin cancer, SCC also occurs in the sun-exposed areas of the body and may be noted as a wound/ulcer that does not heal. Difficult to differentiate based on appearance as it has a very similar presentation as BCC—elevated growth that eventually ulcerates or scaly red patches.

Malignant Melanoma: A typically more lethal form of skin cancer as it has a high rate of metastasis. Because it involves the migration of melanocytes, pigmentation changes are common. Roughly half of MM develops in pre-existing moles, so consider ABCDE of moles.

Hair Disorders:

Alopecia areata: sudden and rapid loss of patches of hair, cause unknown.

Older adults:

Solar lentigo/lentigines: Known as “age spots”, “liver spots”, or “sun spots”, they are variegated (multiple colors within) macules that occur on the sun-exposed areas

Sebhorreic keratosis: raised, darkly pigmented, warty-surfaced lesions that look like moles, but tend to occur after age 50 (moles don't develop beyond adulthood)

Actinic keratosis: very similar to sebhorreic keratosis, but with a malignant potential

Cherry angiomas: virtually everyone gets these tiny ruby-red papules that may become brown with age. Angiomas and hemangiomas will blanch/pale with pressure.

VITAL SIGNS

Physical evaluation of the vital signs is an efficient way to eliminate overt infectious, pulmonary or cardiovascular problems initiating, complicating or coexisting with the patient's chief complaint.

1. TEMPERATURE

Fever- Body temperature above the patient's normal (96°- 99.6° F)

Pyrexia

It's most often an infection induced fever above the patient's normal that **does not exceed 105° Fahrenheit**

Hyperpyrexia

It's a fever of a **106° Fahrenheit or greater** due to overwhelming heat exposure & dehydration or damage to the hypothalamus (thermostat center).

Turgor

It's a fold of skin pinched and pulled to a tented position on the arm or abdomen should normally spring back immediately when released.

"Tenting"

It's a fold of skin pinched and pulled to a tented position on the arm or abdomen that remains tented for 4 seconds indicates a degree of **dehydration** >10% loss of the infants or child's body weight

Hypothermia

A body temperature of 95° Fahrenheit or below and becoming especially lethal at 90° Fahrenheit

2. RESPIRATION

Rate- The number of times the thorax expands & elevates in one minute (**12-20**) as opposed to **bradypnea (<12)** or **tachypnea (>20)**.

Rhythm- Normally a **regular** series of breaths as opposed to **irregular breathing**: Cheyne-Stokes, Biot or ataxic.

Amplitude- Normally **shallow & easy** as opposed to hypopnea (shallow), hyperpnea (deep), **hyperventilation or Kussmaul** (rapid & deep).

3. PULSE

Pulse rate

The number of arterial waves (resulting from left ventricular contraction) counted in one minute

Tachycardia

Heart rate >100 bpm

Bradycardia

Heart rate <60 bpm

Pulse rhythm

The regularity of arterial waves (resulting from left ventricular contraction) noted in one minute

Arrhythmia is an irregular heartbeat

Sinus arrhythmia

These are heart rates in children that speed up during inspiration due to the pressure change in the chest. They may be palpated at a peripheral pulse or auscultated over the heart.

Premature ventricular contraction

Ventricular depolarization occurs earlier than expected resulting in less blood being ejected, which is perceived as a skipped beat. The patient may experience a “flip flop” in the chest.

Atrial fibrillation

Disorganized activity in the atria accompanied by a rapid, irregular ventricular response is palpated or auscultated as a fast irregular pulse. It's usually associated with pre-existing heart disease and necessitates emergency care.

Ventricular fibrillation

It's a rapid, uncoordinated, fluttering contraction of the lower chambers of the heart. They're palpated or auscultated as a fast irregular beat and are usually associated with heart attacks or scar tissue from previous heart attacks. They require urgent care to survive.

Pulse amplitude

The felt distention of an artery resulting from left ventricular contraction

0 = absent pulse

1= weak, thread feeble (finger pressure easily obliterates it)

2 =expected, normal (finger pressure does not easily obliterates it)

3 = full, increased (not included on most scales)

4 = bounding (strong finger pressure does not easily obliterates it)

S.N. An **alternating pulse** & a **paradoxical pulse** do not have consistent amplitude.

Pulse contour

This refers to the dome-shape, wave feel of a typical pulse as opposed to **pulsus bisferiens**, **bigeminal pulse** & **water-hammer pulse**

Pulse compliance

This refers to soft texture of a typical artery (pliable) as opposed to the calcified, hardened, “pipestem” feel of **arteriosclerosis**.

Capillary refill time

A finger or toenail pinched for several seconds then released should return from blanched to pink within 2 seconds or less; longer times indicate circulatory compromise.

Bilateral pulse symmetry

Pulse amplitude should be equal at contralateral pulse sites; decreased amplitude on one side indicates obstruction of the lumen (*atherosclerosis, clot) compression of the lumen (lymph node, tumor) or aneurysm

Radial & ipsilateral femoral pulse symmetry

Relatively diminished femoral amplitude compared to the radial suggests coarctation of the aorta, obstruction of the lumen (*atherosclerosis, clot) compression of the lumen (lymph node, tumor) or aneurysm in vessels distal to the subclavian.

Atherosclerosis

It results from fatty material accumulating in the wall of arteries; it may eventually harden to form plaques. It narrows the lumen of the artery.

Bruit

It's an abnormal pulsed, blowing sound heard with a stethoscope due to turbulent/regurgitant blood flow in an artery. Listening for bruit over the carotid arteries is a screen for carotid artery stenosis (atherosclerosis or clot).

Venous hum

Blood flow returning from the head may vibrate the walls of the veins causing a continuous (systole & diastole), oscillating sound heard above the right clavicle; it's common in children and usually harmless. Hums are possible, but rare, over the RUQ of the abdomen in cases of increased portal vein circulation.

4. BLOOD PRESSURE

It's the maximum & minimum force of circulating blood exerted on arteries during ventricular contraction (systole) & relaxation (diastole).

Palpatory systolic blood pressure

It's the maximum force of circulating blood exerted on artery as determined by inflating a blood pressure cuff past the point the radial pulse is felt to disappear, then slowly deflating the cuff noting the point on the gauge the pulse is felt to return.

Korotkoff sounds

They're the artificially created, pulsed noises (bruit) of turbulent blood flowing through the narrowed lumen of the artery as the pressure of the sphygmomanometer is slowly released.

Auscultatory systolic blood pressure

It's the maximum force of circulating blood exerted on artery as determined by inflating a blood pressure cuff past the point the radial pulse was felt to disappear, then applying the bell of the stethoscope over the brachial artery and slowly deflating the cuff noting the point on the gauge where a series of Korotkoff sounds was first heard (phase one).

Mid diastolic blood pressure

The 4th of five changes in the quality of the Korotkoff sounds; it's the point where the sounds first begin to fade away (usually within 10 mmHg of ceasing).

End diastolic blood pressure

It's the 5th phase of the Korotkoff sounds; it's the point where the sounds cease to be heard

Auscultatory Gap

A period of silence in the Korotkoff sounds for unknown reasons; the gap may be fairly wide in people with systolic hypertension or aortic regurgitation.

Taking the palpatory systolic blood pressure provides the examiner with a good estimate of the systolic blood pressure, thus eliminating the possibility of underestimating the systolic pressure with the stethoscope.

Hypertension

It's high blood pressure. It's considered systolic hypertension if systolic BP is consistently over 140 mmHg; It's considered diastolic hypertension if diastolic BP is consistently over 90 mmHg.

Pulse pressure

It's calculated by subtracting the diastolic from the systolic pressure; a wide pulse pressure may be a best predictor of future cardiovascular disease.

LYMPHATIC SYSTEM

Lymphadenopathy/lymphadenitis usually means that lymph nodes are swelling in response to an infection; however, they may also swell in response to an autoimmune disease or malignancy.

Lymphangitis: tender red streaks extending **proximally** from the infected area (lymph fluid moves in the same direction as venous blood returning to the heart, so the infection would be distal to the lymphangitis).

Lymphedema: swelling due to accumulation of lymph fluid in areas without adequate drainage (such as in the upper extremity of a post-mastectomy patient).

DESCRIPTIONS: The size, texture & location give clues to the cause of the lymphadenopathy as follows:

Swollen nodes due to **acute infection** usually produce small, mobile & tender nodes. If due to suppurative infections, the nodes may palpate as “**fluctuant**”, a wave-like motion.

Swollen nodes due to **metastatic cancers** usually produce nodes that are of variable size, fixed to underlying tissue, not tender & rock hard (“**shotty**” nodes/nodules)

Swollen nodes due to **chronic infection** may also produce nodes that are “**matted**” together and fixed to underlying tissue

Swollen nodes due to **systemic infections** produce widespread lymphadenopathy

Virchow’s node/sentinel node/signal node/Troiser’s node: a palpable supraclavicular lymph node that may signal **malignancy**. If located in the left supraclavicular region, it suggests abdominal malignancy (gastric, pancreatic, liver cancer). If located in the right supraclavicular region, it suggests an intrathoracic malignancy (bronchogenic cancer, lymphoma, esophageal cancer).

The liver & spleen should also be palpated for enlargement when lymphadenopathy is detected.

EXTERNAL EYES

The baseline functional test is the **Snellen or Sloan** eye charts – It's primarily a test of **visual acuity at a distance** (20 or 10 ft. respectively); indirectly it's a screening test of the anterior segments of the eye, central vision, the optic nerve and the visual centers in the brain (CN II exam).

Hyperopia means the eye has good far sight but poor near sight (hyper = more, use the green #s on the ophthalmoscope to focus for examination of this patient).

Myopia means the eye has good near sight but poor far sight (my = less, use the red #s on the ophthalmoscope to focus for examination of this patient).

Presbyopia - With age (>40 y/o) the lens loses its elasticity & causes diminished near sight but continued far sight (presby = old).

Blepharitis is inflammation of the eyelash follicles & Meibomian glands resulting in red, swollen, crusty lid margins; may be associated with allergies, seborrheic dermatitis & psoriasis. This may make the patient more prone to styes & chalazions (bleph = lid).

Sty(e) (hordeolum) is a bacterial infection of a gland in an eyelash follicle causing a well circumscribed, red, swollen, tender pustule. A warm compress may help resolve the sty.

Chalazion is a hard, painless papule on the eyelid due to an obstruction of a meibowmian (oil) gland. A warm compress may help resolve the chalazion.

Ectropion is the loss of orbicularis oculi muscle tone with ageing causing the lower lid to turn outward interfering with proper tear drainage; it may also result from 7th CN palsy (ec or ex = external or outward).

Entropion is inversion of the lower lid due to scar tissue formation on the inner surface of the lid; eyelashes then irritate the conjunctiva & cornea (en = internal or inward).

Dacryocystitis is inflammation of the tear sac secondary to chronic obstruction or narrowing (**dacryostenosis**) of the of the nasolacrimal duct. A painful swollen nodule develops between the nose and eye with accompanying tearing & discharge; it usually occurs in infants.

Pinguecula – Yellow elastic fibers form a plaque on either side of the cornea resulting from chronic irritation (sunny, dusty, windy conditions) to the bulbar conjunctiva.

Pterygium - Sunny, dusty, windy conditions may stimulate growth of the pinguecula forming a vascular membrane that may extend over the cornea (pterygium = wing, like a webbed neck or pterydactyl dinosaur).

Yellow sclera – as people age the sclera thins and **fatty deposits** may show through; **jaundice (icterus)** causes uniform yellowing of the sclera where it often appears before other tissues turn yellow (natural light reveals it best); **antimalarial drugs** have produced harmless yellowing in dark-complexioned people.

Blue sclera – Osteogenesis imperfecta may cause a thin sclera which allows the choroid to show through giving the sclera a blue color.

Brown sclera – patches of melanin are common in people with dark complexions.

Kayser-Fleischer ring – a golden-brown band around the limbus of the cornea associated with Wilson's disease (a rare inherited disease where copper accumulates in the liver and throughout the body resulting in neurologic symptoms)

Physiologic (congenital) anisocoria – Pupil inequality < 2mm, reactive to all reflexes & no companion symptoms (aniso = different).

Anisocoria – Inequality of pupil size, which may be congenital or associated with head trauma or diseases of the nervous system.

Adie's tonic pupil – A fixed, dilated pupil with poor response to the pupillary reflexes; most cases are idiopathic. This is always **benign**.

Argyll Robertson pupil: A CNS defect resulting from syphilis may cause **Argyll Robertson pupil** in which there is decreased or absent response to the light reflexes yet the pupils respond to accommodation. This is always **pathological**.

Horner syndrome is due to interruption of sympathetic nerve supply to the eye resulting in ipsilateral **anhidrosis** (lack of sweating), **miosis** (constricted pupil) & mild eyelid **ptosis**. It's often associated with damage to the cervical sympathetic trunk from mediastinal tumors, bronchogenic carcinoma in the lung apex (Pancoast tumor) or metastatic cancer. It may also demonstrate enophthalmos (sunken eye; en = inward).

DIFFERENTIATING EYE CONDITIONS

Eye Red Flags:

1. Sudden, marked eye pain
2. Visible flashes followed by partial, peripheral vision loss
3. Developing tunnel vision or central blind spot

REPORTED EYE DISCOMFORT

1. Bacterial conjunctivitis

Typical patient profile – Anyone, but **kids & the elderly are prone**

Symptom characteristics – **red, burning, itching eyes**

Circumstances & course– following contact at daycare, school & institutions; seborrhea or rosacea may predispose; **self-limiting but antibiotics may aid**

Aggravating & alleviating activities – bright lights

Physical exam findings – typical conjunctival injection, slight pain, purulent discharge & the lids may stick together during sleep; pupils & visual acuity are normal

Diagnostic studies - usually unnecessary

2. Viral conjunctivitis

Typical patient profile – anyone, often kids

Symptom characteristics – red, burning, itching eyes

Circumstances & course– **previous or coexisting URI**; self-limiting

Aggravating & alleviating activities – bright lights

Physical exam findings – typical conjunctival injection & slight pain

Diagnostic studies – usually unnecessary

3. Allergic conjunctivitis

Typical patient profile – anyone

Symptom characteristics – red, burning, itching eyes

Circumstances & course– **coexisting allergies**

Aggravating & alleviating activities – bright lights

Physical exam findings – typical conjunctival injection & slight pain

Diagnostic studies – usually unnecessary

4. Corneal abrasion

Typical patient profile – anyone

Symptom characteristics – The patient **reports an eye injury, marked pain, photophobia; decreased visual acuity** is dependent on the extent of damage

Circumstances & course– often self-limiting but antibiotics & patching may aid

Aggravating & alleviating activities – bright lights & blinking

Physical exam findings – **perilimbal injection** or a circumcorneal flush in one eye

Diagnostic studies – ophthalmology consultation would be prudent

5. Acute Iritis

Typical patient profile – anyone

Symptom characteristics – The patient reports tearing, **marked pain, photophobia in one eye**

Circumstances & course– **secondary to infection or eye injury**; conventional treatment is cortisone or antibiotics

Aggravating & alleviating activities – bright lights

Physical exam findings – **perilimbal injection, swollen iris & the pupil is contracted and sluggish**

Diagnostic studies – ophthalmology consultation would be prudent

6. Acute glaucoma

Typical patient profile – Adult with a narrow corneal angle

Symptom characteristics – **marked pain, photophobia, dimmed vision & halos around lights**

Circumstances & course–

Aggravating & alleviating activities – bright lights

Physical exam findings – **perilimbal injection, dilated pupil, sluggish pupillary responses, increase eyeball tension & disc cupping in that eye**

Diagnostic studies - ophthalmology consultation to prevent vision loss

REPORTED OR DETECTED LOSS OF PERIPHERAL VISION (Tunnel vision)

7. Chronic glaucoma

Typical biographical profile- **adults > 40 y/o**

Circumstances & course- **insidious tunnel vision over the course of many years**

Symptom characteristics- slowly progressing tunnel vision in both eyes

Aggravating & alleviating activities-

Physical findings- obvious tunnel vision checking peripheral field of vision; **enlarged physiologic cup**

Diagnostic studies- ophthalmology consultation to prevent vision loss; tomometry & perimetry tests

8. Retinitis pigmentosa

Typical patient profile – anyone with the **genetic defect**

Symptom characteristics – night blindness followed by progressive tunnel vision

Circumstances & course– progressive dystrophy beginning during youth

Aggravating & alleviating activities –

Physical exam findings – **“bone spicule” retinopathy**

Diagnostic studies - perimetry tests; ophthalmology consultation

(Sector loss)

9. Optic nerve & tract lesions

Typical patient profile – anyone

Symptom characteristics – visual field deficits **dependent on the site of the lesion**

Circumstances & course– may be insidious & progressive

Aggravating & alleviating activities –

Physical exam findings – visual field deficits

Diagnostic studies - perimetry tests; ophthalmology or neurology consultation warranted

10. Retinal detachment

Typical patient profile – **Anyone who's had head or eye trauma; spontaneous detachment can occur with age due to vitreous contraction.**

Symptom characteristics – **flashes of light** or a **shower of new floaters** may signal the onset of a retinal tear; appearance of a dark, fixed shadow in the periphery of vision indicates detachment; progressive **darkness like a curtain closing indicates continued detachment**

Circumstances & course–

Aggravating & alleviating activities –

Physical exam findings – perimetry tests; fundoscopic exam may reveal the retinal tear, a discolored retina or wavy vessels following the contour of the detached retina

Diagnostic studies – **immediate ophthalmology consultation** warranted based on the symptoms

11. Amaurosis Fugax

Typical patient profile – Usually an adult **over 50 y/o**

Symptom characteristics – **Temporary** (seconds, minutes maybe hours) of **blurring or dimming of a sector of the visual field** or the classic “shade” descending over their vision

Circumstances & course–often due to atherosclerosis & usually precedes a vascular event like stroke

Aggravating & alleviating activities –

Physical exam findings – **Possible carotid bruit**

Diagnostic studies –physical exam including perimetry tests; CBC, sedimentation rate, lipid panel & glucose; ophthalmology consultation warranted

REPORTED OR DETECTED LOSS OF CENTRAL VISION

12. Central cataract

Typical patient profile – Usually an adult **over 55 y/o**

Symptom characteristics – **central blurred vision gradually progressing** to a central scotoma

Circumstances & course–

Aggravating & alleviating activities –

Physical exam findings – diminished visual acuity; the degree of density determines if it's seen with a standard ophthalmoscope or not.

Diagnostic studies - ophthalmology consultation warranted

13. Macular degeneration

Typical patient profile – adult **over 50 y/o**

Symptom characteristics – **slowly progressing central vision loss** in one or in both eyes; **images may be distorted**

Circumstances & course–

Aggravating & alleviating activities –

Physical exam findings – Altered color & configuration of the macula /fovea

Diagnostic studies – ophthalmology consultation warranted

EARS

Earwax is typically present to some degree in the ear canal. Earwax creates an acidic coat that probably inhibits bacterial and fungal growth; it's also hydrophobic & prevents water from entering the skin. Fresh wax is **honey colored** and should naturally be pumped out of the ear by the TMJ. Earwax that ends up on the far side of the canal wall may undergo progressive color changes eventually ending up **dark black**.

Earwax can lead to decreased hearing if it's **excessive** or becomes **impacted** against the eardrum, in which case removal will restore the hearing.

Tympanosclerosis are white calcium patches on the drum resulting from old perforations, chronic inflammation or previous tubes in the ear. If limited to the eardrum it's not harmful.

Otosclerosis is ossification of the ossicles. The stapes becomes ankylosed to the oval window resulting in progressive deafness.

Cholesteatomas are cystic masses composed of epithelial cells & cholesterol in the middle ear. They may appear as a white nodule pressed against the inside of the drum; they can result from congenital defects, or complications of chronic otitis media & perforations. The cyst erodes surrounding bone & ossicles and may cause hearing

Age-related hearing loss (presbycusis) is the number one reason for sensorineural hearing loss.

Noise-induced hearing loss is the second most common cause of sensorineural hearing loss. Noise is perhaps the most common occupational & environmental hazard.

DIFFERENTIATING EAR CONDITIONS

Ear Red Flags:

1. Sudden or rapidly progressive hearing loss
2. Vertigo
3. Unilateral or pulsatile tinnitus
4. Bleeding due to foreign object or pressure change injury

REPORTED EAR DISCOMFORT

1. Otitis externa

Typical biographical profile- people who irritate the canal with **excessive cleaning or swimming** or who have seborrhea or eczema of the ear canal

Symptom characteristics- earache

Aggravating & alleviating activities-

Physical findings- **red, swollen canal with canal debris or discharge**

Diagnostic studies- usually not necessary

2. Eustachian tube blockage

Typical patient profile – anyone, but **often children under 5 y/o**, who've had an **upper respiratory infection**, swollen adenoids or barotrauma

Symptom characteristics – earache

Aggravating & alleviating activities –

Physical exam findings – **landmarks are prominent due to drum retraction; no signs of inflammation**

Diagnostic studies - usually not necessary

3. Suppurative otitis media

Typical patient profile – anyone, but often **children under 5 y/o, who've had an upper respiratory infection**

Symptom characteristics – earache

Aggravating & alleviating activities –

Physical exam findings – **fever, diminished hearing, red & bulging eardrum** with possible purulent discharge; Weber lateralizes to & Rinne´ is negative on the affected side

Diagnostic studies – possible pneumatic otoscopy & tympanometry

REPORTED OR DETECTED DIMINISHED OR ABSENT HEARING

6. Excessive ear wax

Typical biographical profile- Anyone, but **adult males predominantly**

Symptom characteristics- hearing loss

Circumstances & course- **insidious or Q-tip use**

Physical findings- dark wax occluding the canal; Weber lateralizes to & Rinne´ is negative on the affected side

Diagnostic studies- usually not necessary

5. Serous or mucoid effusions

Typical patient profile – anyone, but **often children under 5 y/o**, who've had an upper respiratory infection, swollen adenoids or barotrauma

Symptom characteristics – diminished hearing

Aggravating & alleviating activities –

Physical exam findings – **normal, yellow or dark T.M. with possible air bubbles** or fluid line;

Weber lateralizes to & Rinne´ is negative on the affected side; no signs of inflammation

Diagnostic studies - possible pneumatic otoscopy & tympanometry

6. Otosclerosis

Typical patient profile – **Adult** most often with a **family history**

Symptom characteristics – progressive hearing loss

Physical exam findings – **no abnormalities of the canal or eardrum**; Weber lateralizes to & Rinne´ is negative on the affected side

Diagnostic studies – audiogram & tympanogram; otolaryngology consultation

7. Noise Induced hearing loss

Typical patient profile – anyone with a **history of recreational or occupational noise exposure**

Symptom characteristics – high frequency sounds 3000 to 6000 Hz are the lost first

Aggravating & alleviating activities –

Physical exam findings – **no canal or middle ear signs**; Rinne´ AC>BC but less than 2:1 ratio

Diagnostic studies – audiology studies more specific

8. Presbycusis (age-related hearing loss)

Typical patient profile – **Elderly**

Symptom characteristics – **complaints that other are mumbling or that can't understand what's being said when there's background noise**; low frequency sounds & whispers are first to go

Aggravating & alleviating activities –

Physical exam findings – Rinne´ AC>BC but less than 2:1 ratio

Diagnostic studies - audiology studies more specific

NOSE

Polyps – Adults who have had allergies &/or chronic sinus infections over the years sometimes develop polyps, which further interfere with nasal drainage. Polyps are grape-like inflammatory swellings of the nasal linings

Deviated Septum – Trauma to the nose is the most common cause of a deviated septum; many people can recall the incident and remember that breathing difficulties soon followed.

The nasal passage should be **inspected with a light or nasal speculum** in people who have difficulty breathing through the nose to rule out the above causes.

“**Nasal Cycle**” is a normal cycle of mild congestion (unilateral blood vessel engorgement) & decongestion alternating between nostrils about every four hours making it easier to breath out of one nostril more than the other..

MOUTH

1. Teeth: The teeth should have a horseshoe shape; **crowded teeth** suggest to those interested in craniopathy that the cranium may also be misaligned. **Malocclusions** of the teeth contribute to asymmetrical forces being transmitted into the temporomandibular-cranial-cervical complex.

2. Tongue: **Glossitis** refers to a red, swollen smooth tongue due to the loss of the papillae. Glossitis may be a primary tongue problem or a symptom of another disorder.

Geographic tongue (migratory glossitis) is a form of glossitis where the papillae are temporarily loss leaving smooth, irregular patches with a white outline. These patches can change locations on a weekly, sometimes daily basis.

Fissured tongue is characterized by groves in the tongue of varying depth & width. It's a benign, asymptomatic condition starting in childhood but becoming more prominent with age. It's frequently associated with geographic tongue

Black hairy tongue results from long-term antibiotic use or failure of the papillae to naturally fall off causing them to elongate; either fungus or bacteria attach to the papillae and may discolor them.

3. Tissues: **Herpes simplex type 1** (fever blister, cold sore) – The virus is usually contracted during childhood causing painful blisters around the lips & nose, which clear in 2-3 weeks. The virus, however, remains in the body in a dormant state until a weakened immune system allows for a recurrence of the blisters which rupture, crust and heal again in 1-3 weeks.

Aphthous stomatitis (canker sores) characterized by recurrent, crops of small, painful ulcers on the intraoral mucosa that heal without scarring in 2 weeks.

Leukoplakia is a noncancerous or precancerous oral lesion common to about $\frac{1}{2}$ - $\frac{3}{4}$ of people using smokeless tobacco daily. They appear as white leathery ridges on the buccal mucosa. They often resolve in about 6 weeks if they quit chewing tobacco.

Gingivitis (gum disease) causes red, swollen, sensitive & bleeding gums. Resident bacteria & saliva form plaque; tartar is hardened plaque and tartar causes gingivitis. Brushing & flossing can prevent or reverse gingivitis.

Oral carcinoma most commonly affects the sides of the tongue, lips & floor of the mouth. Smoking & smokeless tobacco are associated with 70% - 80% of the cases; heavy alcohol use is another

risk factor. It may present as a persistent, painless thickening, lump, ulcer or a red or white patch anywhere in the mouth or throat

Torus palatinus & mandibularis are a benign exostosis of either the hard palate or mandible that appear around age 30.

4. Tonsils: **Tonsillitis** is usually a self-limiting, viral or bacterial infection of the pharyngeal tonsils. Typical sign and symptoms are: sore throat, painful swallowing, thick voice, fever, swollen cervical lymph nodes and red, swollen tonsils that may be coated or have white spots on them. The diagnosis is usually based on the clinical presentation.

Tonsillar debris (tonsil stones) form when mucous, sulfur-producing bacteria and debris (food particles, post-nasal drip etc.) condense into small particles and collect in the crypts (divots) on the surface of the tonsils.

5. Throat: **Viral pharyngitis** accounts for about 60% of sore throats. Clinical features are: runny nose cough, hoarseness, conjunctivitis or diarrhea.

Bacterial pharyngitis accounts for about 40% of sore throats. Clinical features are: rapid onset of throat pain aggravated by swallowing. There is usually fever, tender cervical lymph nodes & inflammation with a purulent, patchy white, yellow or gray exudate.

Streptococcal pharyngitis accounts for about 10% of bacterial sore throats. Throat cultures are the best way to identify strep infections.

Rheumatic fever occurs in about 1% of those who had strep throat. Antibiotics are more than 90% effective in preventing rheumatic fever.

Post-streptococcal glomerulonephritis is usually a self-limiting illness and is not prevented with antibiotic treatment.

Unnecessary use of antibiotics has created antibiotic resistant “super bugs” and according to a study published in *The Journal of Pediatrics*, July 2004 Vol. 145 No. 1: “**Penicillin treatment had no beneficial effect in children with sore throats on the average duration of symptoms. Penicillin may, however, reduce streptococcal sequelae.**”

LUNGS

Dyspnea (shortness of breath &/or wheezing) & **cough** (dry or productive) suggest lung involvement; **chest pain** may suggest lung involvement especially if respiration aggravates the pain. The pain sensitive part of the lungs is the pleura.

Structural abnormalities should be noted:

- **Hyperkyphosis**-humpedback (gibbus)
- **Pectus excavatum**- congenitally depressed sternum
- **Pectus carinatum**- abnormal prominence of the sternum
- **Barrel chest**- Increased anteroposterior chest diameter due to COPD
- **ICS retraction**- Large airway/inspiratory obstruction
- **ICS bulging**- Expiratory obstruction

Consolidation – Mucous, white cells & red cells fill a portion of the airways and alveoli causing them to become firm and inelastic.

Atelectasis – Collapse of the alveoli secondary to obstruction of a large airway, or compression from air, fluid or a tumor in the pleural space.

Pleural filters – Air or fluid in the pleural space

FREMITUS is voice induced vibration transmitted from the larynx through the tracheobronchial tree that can be palpated on the surface of the chest.

Consolidation increases fremitus while **pneumothorax & pleural effusion** decrease fremitus

PERCUSSIVE NOTES:

Resonant- Normally heard over the lung fields

Flat- Normally heard over larger bones like the sternum and scapulae

Dull- Normally heard over the heart and diaphragm

Tympanic- Normally heard in the abdomen over the gastric air bubble and intestines

Hyperresonant- Only heard over hyperinflated alveoli as in advanced emphysema

Flat or dull percussive notes elicited over a portion of the lung field signifies **consolidation of the alveoli, pleural effusion or a large tumor**

Hyperresonant percussive notes elicited over the lung fields signifies **hyperinflated alveoli** as in advanced emphysema

Tympanic percussive notes being elicited over a portion of the lung fields signifies **spontaneous or traumatic pneumothorax**

BREATH SOUNDS:

Tracheal, bronchial & bronchovesicular breath sounds are relatively loud noises created by turbulent airflow in the trachea, bronchi & bronchioles, whose inspiratory & expiratory phases are approximately equal in length. They are normally only heard over the large airways.

Vesicular (alveolar) breath sounds are less intense because airflow becomes smooth & laminar in the smallest airways and their expiratory phase is very short. They are normally heard over the majority of the lung fields because the alveoli comprise the majority of the lung field.

Vesicular breath sounds **become bronchial** (louder longer expiration) in nature over areas of pulmonary **consolidation**

Vesicular breath sounds **become diminished or absent** over areas of **pleural effusion & pneumothorax** or distal to a **large airway obstruction**

VOICE SOUNDS:

Whispered pectoriloquy – Increased intensity & clarity of the whispered word (“ABC”) suggests lung consolidation

Bronchophony - Increased intensity & clarity of the spoken word (“ABC”) suggests lung consolidation

Egophony – The spoken “EEE” becomes a louder, nasal “AAA” suggests lung consolidation

Voice sounds become **diminished or absent** over areas of **pleural effusion & pneumothorax** or distal to a **large airway obstruction**

N.B. Fremitus, breath sounds & voice sounds become more or less intense for the same reasons. If you know how one responds to various lung conditions, you know how all five respond to various conditions.

Crackles (rales/crepitations) are gurgling, popping sounds due to agitation of excess mucous in the airways or the inflation of multiple collapsed alveoli. Crackles are usually heard during early, mid or late inspiration.

Coarse crackles are heard over the large airways (bronchi) with excess mucous as air first enters the tracheobronchial tree. S.N. **Rhonchi** are loud snore-like crackles heard through all of inspiration &/or expiration due to air passing over thick mucus.

Medium crackles are heard over the medium size airways (bronchioles) with excess mucous midway through inspiration as air reaches them.

Fine crackles are heard over the small airways (terminal airways) with excess mucous at the end of inspiration. These are the quietest often compared to the sound of hair rolled between the fingers.

II. Wheezes are squeaky, musical, whistling sounds usually heard during expiration due to narrowed airways. The narrowing may result from bronchospasm &/or excess mucous &/or compression of the airways. **Stridor** is a high-pitched wheeze heard on inspiration expiration or both; it implies narrowing of a large airway.

III. Friction rubs are grating, rubbing, crackling sounds heard on inspiration & expiration due to inflammation of the pleura. Pleuritic pain would likely accompany the sounds.

SPUTUM:

Clear or white sputum is either normal or associated with viral infections

Yellow, green, brown, rust colored blood streaked sputum suggest a bacterial infection.

Rust colored sputum suggests lobar pneumonia

Pink frothy sputum suggest left-sided heart failure

BREAST & AXILLAE

Common Conditions:

Mastitis- Infection of the breast tissue common in lactating women about the 2nd or 3rd week after delivery. Mastitis does not preclude breast-feeding.

Fibrocystic breast disease – Ductal enlargement causes benign, bilateral, single or multiple, tender cyst to form, which become more painful prior to menstruation.

Fibroadenoma – A single, benign, asymptomatic, bilateral tumor of terminal ducts

Malignant breast tumors – The initial symptom is most often a single, painless, hard, irregular shaped, fixed lump.

The following may also suggest breast cancer:

Dimpling/puckering is due to contraction of fibrotic tissue which may result from breast cancer

Nipple deviation, flattening or retraction is also due to contraction of fibrotic tissue which may result from breast cancer

Unilateral venous distension may be due to increased blood flow to a malignancy

Peau d' orange skin is thick with prominent pores; it results from edema secondary to lymphatic blockage which occurs in advanced cancer or inflammatory cancer, which is highly aggressive form of breast cancer.

Axillary lymph nodes that are rock hard with no typical explanation may signal breast cancer.

Spontaneous, unilateral nipple discharge is highly suspicious of cancer especially when it comes out of a single duct, but all non breastfeeding discharges dictate further tests &/or consultation.

Bloody discharges are never normal.

HEART

(see relevant vital sign topics)

Acute heart failure is sudden onset of heart failure

Angina is chest, arm or neck discomfort due to insufficient blood flow to the myocardium during increased demand initiated by physical or emotional exertion.

Myocardial infarct is death to a portion of the myocardium due to insufficient blood flow in a coronary artery

Cardiac arrest is abrupt stoppage of the heart; it may follow ventricular fibrillation

Acute pericarditis is sudden & usually short-lived (< a few weeks) chest pain due to inflammation of the double layered pericardium. This may progress to **chronic pericarditis**, which may evolve into **constrictive pericarditis** or **cardiac tamponade**.

Chronic right-sided heart failure/Cor Pulmonale/congestive heart failure (CHF) is a right heart that's been over-worked for a long time; often secondary to pulmonary hypertension, which is often due to COPD.

Chronic left-sided heart failure/congestive heart failure (CHF) is a left heart that's been over-worked for a long time frequently secondary to high blood pressure, coronary artery disease and/or faulty heart valves

Precordium is the portion of the anterior chest wall that overlays the heart

Palpitations are the patient senses a pounding, racing &/or irregular heartbeat in their chest

Apical pulse is a small impulse seen &/or felt in the 5th intercostals space medial to the left midclavicular line due to the apex of the heart striking the chest wall during ventricular contraction.

Point of maximum impulse should be the same as the **apical pulse**.

Precordial lift/heave is a large impulse seen or felt over the surface of the heart usually due to right (**sternal lift**) or left (**apical heave**) ventricular hypertrophy.

Jugular distention is jugular vein swelling greater than 4cm. with the patient's head elevated 45°; it's an indication of right-sided heart failure.

Jugular pulses

The visible *a* & *v* waves are due to right atrial contraction and filling respectively. Increased amplitude of either wave often indicates tricuspid stenosis or regurgitation.

Tracheal tug (Oliver's sign) – the doctor has the patient extend their neck while they feel for downward movement of the trachea that's in sync with systole; it indicates an aneurysm of the aortic arch.

Thrill is felt as a vibration over the precordium due to the turbulence created by a grade 4, 5 or 6 murmur.

Auscultation sites (diaphragm & bell)

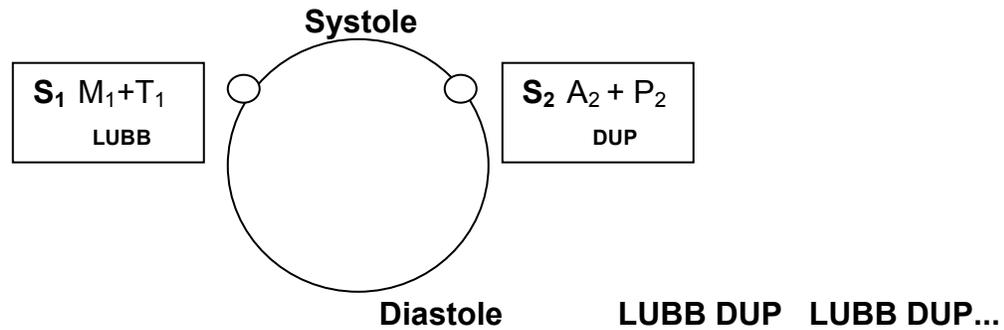
Aortic = 2nd, right, parasternal ICS

Pulmonic = 2nd, right, parasternal ICS

Tricuspid = 4th, left, parasternal ICS

Mitral = 5th, left ICS at the midclavicular line (cardiac apex)

Heart Cycle



S₁ = the sound of mitral & tricuspid valves closing in sync

S₂ = the sound of aortic & pulmonic valves closing in sync

ADDED HEARTBEATS:

1. Splits

Split S₁ = the double beat heard when the mitral & tricuspid close out of sync

Physiologic split S₂ = the double beat heard when the aortic & pulmonic valves close out of sync only during inspiration

Paradoxical split S₂ = the double beat heard when the aortic & pulmonic valves close out of sync only during expiration

Fixed split S₂ = the double beat heard when the aortic & pulmonic valves close out of sync during inspiration & expiration

2. Gallops:

S₃ = the added beat of blood vibrating a fibrotic/ stiffened ventricular wall in early diastole
(**ventricular gallop**)

S₄ = the added beat of blood vibrating a fibrotic/stiffened ventricular wall in late diastole
(**atrial gallop**)

3. Snaps & Clicks:

Opening snap = the added beat a calcified/stiffened mitral or tricuspid valve abruptly stopping after opening in early diastole

Ejection click = the added beat a calcified/stiffened aortic or pulmonic valve abruptly stopping after opening in early to mid systole

SUMMARY OF ADDED HEARTBEATS

The cadence

TLubb Dup	Tlubb Dup	Lubb Tdup	Lubb Tdup
OO O	OO O	O OO	O OO

The Visual



The Causation

Split S ₁ S ₄ Click	(a paired valve is delayed) (stiff ventricular wall vibrations) (abrupt stop of an inflexible valve)	Split S ₂ 's S ₃ Snaps
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PROLONGED, ADDED HEART SOUNDS:

1. Murmurs

Murmurs usually have a blowing or rumbling quality. They're due to turbulent blood flow within the heart usually created by stenotic or regurgitant valves, but septal defects & increased velocity of flow may also produce murmurs.

Four factors are critical with regard to naming a murmur:

1. **Location** –the auscultation site where the murmur is best heard helps to identify the defective valve
2. **Timing** –hearing the murmur during systole or diastole helps to identify a stenotic or regurgitant valve
3. If a murmur is heard when that valve should be opening then it's stenotic (**not opening all the way**)
4. If a murmur is heard when that valve should be closing then it's regurgitant (**not closing all the way**)

(Some murmurs are “**innocent**” in children, teens and young athletes; they are often heard with the bell, at the pulmonic site during the systolic phase of the heart cycle i.e. (**a short, soft, systolic blowing noise without radiation**)). You would also expect the patient to be free of any other obvious cardiac signs or symptoms.

Still's Murmur (Innocent Murmur) - A functional midsystolic murmur heard in children.

Benign murmurs are due to structural anomalies not significant enough to cause clinical problems

Machinery Murmur - A continuous, rough murmur in the 2nd ICS due to a **patent ductus arteriosus** that should have closed after birth

Austin Flint Murmur - Late diastolic murmur associated with **aortic insufficiency**; the regurgitant blood is thought to vibrate the mitral valve causing the murmur

2. Pericardial friction rubs:

Inflammation & roughening of the pericardial sac results in a high-pitched, grating, **scratching noise** heard during systole & diastole. The friction rub is best auscultated with the patient leaning forward in deep expiration.

ABDOMEN

As a general rule people experiencing sudden onset of persistent, severe or escalating abdominal pain, who also may be writhing in pain unable to find a position that offer any comfort, usually need emergency hospital or surgical intervention. This type of presentation is known as an **acute "surgical" abdomen**, where the pain is likely due to **inflammation, perforation, obstruction, infarction or rupture of intra-abdominal organ**.

Hollow organs like the stomach, intestines, bladder, ureters & uterus have pain sensors which sound a pain alarm when those organs are stretched, their lining is irritated or blood flow is interrupted. **Intestinal peristalsis** therefore causes waves of discomfort or pain when the lining is irritated or distended

Peritoneum is pain sensitive tissue, therefore when an organ expands the peritoneal covering also expands causing pain. **Solid abdominal organs** therefore usually present with constant, escalating pain. Inflammation of the peritoneum itself would also initiate pain.

Interrupted blood flow to any organ initiates constant pain

Referred Pains:

It should be noted that pain resulting from diseased chest or abdominal organs may manifest at a site distant from the distressed organ; for instance, irritation to the underside of the diaphragm may cause shoulder pain.

Kehr's sign – abdominal pain that radiates to the left shoulder = splenic rupture, kidney stone or ectopic pregnancy

Apley's Rule is another rule-of-thumb which states that the further away from the navel that a patient points to an area pain the more likely it is **organic in nature**,

Cutaneous hypersensitivity occurs when light stimulation to an area of skin on the abdomen is more sensitive than any other area. It suggests an underlying infection. If at McBurney's point it suggests **appendicitis**.

Multiple tests have been developed related to appendicitis such as the following:

Aaron' sign - pain or discomfort over the heart or stomach when **McBurney's point** (half way between the navel and the right ASIS) is palpated; it suggests **appendicitis**.

Rovsing's sign - RLQ pain intensifies when the LLQ is compressed suggesting appendicitis

Blumberg's sign - RLQ pain intensifies when the LLQ is compressed then rapidly released suggesting appendicitis

Markle's (heel jar) – the patient allows themselves to drop from their toes to their heels jarring the entire body; experiencing abdominal pain suggesting appendicitis

Symptoms suggesting gastrointestinal involvement are: difficulty swallowing, loss of appetite, indigestion, nausea, vomiting, abdominal pain, diarrhea, constipation, yellow or black colored stools, &/or mucus or blood in the stool.

S.N. **Water brash** - the mouth fills with fluid from the esophagus; it occurs with some cases of **GERD**

S.N. **Jaundice, clay-colored stools & tea-colored urine** may be associated with **hepatitis**

DIFFERENTIATING GASTROINTESTINAL CONDITIONS

Gastrointestinal Red Flags:

1. Unexpected weight loss or rapid weight gain &/or pitting edema
2. Bloody or coffee ground vomit
3. Black or grey-colored stools; mucous or blood in the stools
4. Pencil thin, ribbon-like stools or persistent constipation
5. **An acute "surgical" abdomen** – A patient who reports a history of sudden, severe, persistent, escalating or writhing abdominal pain has a presentation that often indicates the need for hospital investigation & emergency surgical intervention. The source of the pain is often due to **inflammation, perforation, obstruction, infarction or rupture of intra-abdominal organs**. Examples are acute cholecystitis, appendicitis, perforated peptic ulcer, strangulated hernia, superior mesenteric artery thrombosis, and splenic rupture.

Condition that have diarrhea as a significant feature:

1. ACUTE GASTROENTERITIS

Typical Patient Profile – anybody; 90% of the time it's due to a viral infection, otherwise it could be due to food poisoning, parasites, excess alcohol, psychological causes or morning sickness in pregnant women

Symptom characteristics – mild, ache located around the umbilicus that worsens with peristalsis; nausea, vomiting & diarrhea

Course & duration – shouldn't last > 4 days; watch for dehydration

Aggravating & alleviating activities – worse eating & better not eating

Physical exam findings – clicks & gurgles in the high normal range

Diagnostic Studies– usually unnecessary; diagnosis via clinical finding

2. Irritable Bowel Syndrome

Typical biographical profile- middle age to elderly

Symptom characteristics –

low fiber diet; overuse of laxatives result in recurrent attacks of abdominal pain, bloating, diarrhea & constipation

Course & duration - Chronic

Aggravating & alleviating activities-

Physical findings- the physical is negative, the history may be revealing

Diagnostic studies- further studies help rule-out other causes

S.N. if the descending colon becomes spastic it may be tender & palpable

3. Crohn's Disease (possible sporadic inflammation & ulceration throughout the entire GI tract)

Typical biographical profile- male or female 15-35 y/o

Symptom characteristics –episodes of diarrhea & abdominal pain that vary with each patient

Course & duration- Chronic autoimmune response

Aggravating & alleviating activities-

Physical findings- abdominal tenderness; the history may raise suspicion

Diagnostic studies- CBC, upper GI & colonoscopy

4. Ulcerative Colitis (colon inflammation & ulceration of etiology unknown)

Typical biographical profile- male or female young adults

Symptom characteristics – recurrent bouts of URGENT diarrhea (20-30/day) with associated blood, pus or mucous

Course & duration - chronic

Aggravating & alleviating activities- worse during pregnancy

Physical findings- abdominal pain absent to intense

Diagnostic studies- colonoscopy is diagnostic

5. Clostridium Difficile Colitis

The overuse of antibiotics has created a super bug that's spread by contact with an infected person or their stool. Then prescribed antibiotics alter the intestinal flora allowing C. difficile to flourish and produce a toxin which causes the watery diarrhea.

Typical Patient Profile– anybody that has been exposed to the bacteria; often spread by hospital workers who have contacted the infected stools

Symptom characteristics –frequent, foul smelling diarrhea with associated blood, pus or mucous & abdominal cramps

Course & duration – resistant to antibiotics can be fatal

Aggravating & Alleviating activities-

Physical exam findings– Abdominal tenderness

Diagnostic Studies– stool culture with a toxin assay for C. difficile & endoscopic studies

6. Cholera

Typical Patient Profile– Anybody living or visiting regions where there is poor sanitation & water purification or other means of contacting feces of an infected person

Symptom characteristics – mild or no symptoms, however 1 in 20 have profuse diarrhea with pus, vomiting & leg cramps

Course & duration – Severe case can be fatal within 24 hours

Aggravating & Alleviating activities-

Physical exam findings– signs of dehydration & shock (drop in BP)

Diagnostic Studies– stool culture or cholera dipstick test is now available

7. Colon Cancer

Typical biographical profile- male over 50

Symptom characteristics – insidious onset progressing to colicky abdominal pain, constipation; stools may be “pencil thin or ribbon-like” & occasionally diarrhea with mucous or blood

Course & duration- manageable in the early stage, fatal in late stage

Aggravating & alleviating activities- bowel movement may worsen pain

Physical findings- possible palpable abdominal mass

Diagnostic studies- fecal occult blood test; sigmoidoscopy & colonoscopy

Conditions that have upper abdominal pain as a significant feature

8. GASTROESOPHOGEAL REFLUX DISEASE (GERD)

Hiatal hernias may be a factor contributing to the incompetent esophageal sphincter

Typical Patient Profile – adult, male or female

Symptom characteristics –frequent, bouts of substernal “heartburn” about an hour after eating

Course & duration – slow intermittent progression over a few years period

Lump in the throat sensation eventually develops when swallowing

Aggravating & Alleviating activities –worse lying down especially at night; antacids help

Physical findings – no significant finding

Diagnostic Studies– imaging may reveal a hiatal hernia; endoscopic exam

9. Hepatitis (Many people have no symptoms or mistake symptoms for a bout of stomach flu)

Typical biographical profile- children via oral-fecal transmission, but unsafe sex & shared needles are typical of adults

Symptom characteristics –loss of appetite, generalized, intermittent abdominal pain, followed by bouts of vomiting; urine is dark & stools are grey-colored

Course & duration – can be self-limiting or progress to liver scarring

Aggravating & alleviating activities-

Physical findings- may be some URQ pain

Diagnostic studies- AST, ALT & alkaline phosphatase enzyme levels may indicate liver damage

10. CHOLECYSTITIS

a. Chronic Cholecystitis (three related & overlapping stages)

Typical Patient Profile – Native Americans or **female, fat, flatulent & forty** or more y/o

Symptom characteristics– extended period of recurrent, vague feelings of indigestion, bloating & flatulence not relieved with antacids

Aggravating & Alleviating activities – **worse when eating fatty or fried foods & better when avoiding them**

Course & duration – progresses to the next two stages

Physical exam findings – RUQ tenderness & guarding to percussion, **fast percussion, palpation & a positive Murphy's sign; possible jaundice**

Diagnostic Studies– cholecystography or ultrasound confirm clinical diagnosis

b. **Cholelithiasis** - cholesterol stones develop which may block the outflow of bile which in turn initiates an **acute attack**.

c. **Acute cholecystitis** occurs only after chronic cholecystitis has been present for some time and it rarely arises unless the outflow of bile from the **gallbladder is obstructed by a stone (90%)**.

Symptom intensity, quality, distribution & duration–sudden, severe right upper quadrant pain with **radiation around the midtorso to the right scapular region**. The pain lasts 2-4 hours; positive Murphy's signs.

11. DUODENAL ULCERS

Typical Patient Profile – **adults, women over 50** are liable especially if they have a helicobacter pylori infection, use NSAIDs, cigarettes, caffeine or alcohol

Symptom characteristics –chronic or recurrent, mild to severe, burning, gnawing or aching **epigastric pain, usually 2-3 hours after eating, or having citrus juice, coffee or aspirin**

Aggravating & Alleviating activities - **food helps temporarily** then worse a couple ours later; **antacids help**

S.N. Food makes a gastric ulcer worse immediately

Course & duration – manageable

Physical exam findings – epigastric tenderness

Diagnostic Studies– **barium radiographs or endoscopy are diagnostic**

Differentials- cholecystitis, reflux esophagitis, gastric cancer

12. PANCREATITIS

Typical biographical profile- **often secondary to gall stones or alcohol abuse**

Symptom characteristics– sudden, severe, constant upper abdominal pain with associated fever nausea & vomiting

Aggravating & alleviating activities- **alcohol & eating aggravate**; bending forward & fetal position may help

Course & duration –last for hours or days often recurs

Physical findings- tenderness & guarding on palpation; **ecchymosis/bruising of the umbilicus & flanks (Cullen & Grey Turner signs) 2-3 days after onset**

Diagnostic studies- **CBC, amylase & other liver & gall bladder enzymes**

S.N. **similar pains plus jaundice occur in the late stages of pancreatic cancer**

13. Gastric Cancer

Typical biographical profile- **adults over 50y/o, men** are twice as susceptible & more so if their foods are preserved by smoking, salting or pickling they eat or if they eat a lot of bacon, ham or processed food.

Symptom characteristics - **indigestion that doesn't respond to ulcer or reflux treatments**; vomiting if it's a prepyloric growth; unexpected weight loss

Course & duration – insidious until symptoms emerge; fatal if not caught early

Aggravating & alleviating activities-

Physical findings- abdominal mass, Virchow's node & pernicious anemia are late signs

Diagnostic studies- Labs may help, occult blood is sometimes present in the stools

Conditions that have lower abdominal pain as a significant feature

14. DIVERTICULITIS

Typical biographical profile- male or female **over 40**

Symptom characteristics - **recurring episodes of sudden, severe LLQ pain with associated diarrhea & rectal bleeding**

Aggravating & alleviating activities- settles rapidly with bed rest

Course & duration - last about 1-3 days

Physical findings- LLQ tenderness & guarding

Diagnostic studies- **contrast studies**

ACUTE APPENDICITIS

The clinical picture and course is quite variable and may be confused with other abdominal conditions. Suspicion is further heightened by a history of previous episodes and a low-grade fever. **Hospital referral is advised due to the possibility of perforation followed by general peritonitis and risk of death.**

15. ACUTE APPENDICITIS

Typical Patient Profile – any age or gender

Symptom characteristics – **Persistent right-sided acute abdominal pain and tenderness is the most consistent clinical feature (100%);** mild fever, nausea & vomiting may occur

Aggravating & Alleviating activities – worse with movement, coughing & sneezing

Course & duration -.peritonitis occurs when there is leakage from the digestive tract; in addition to the above findings peristalsis would stop & bowel sounds would be absent; this is potentially fatal

Physical exam findings –**hyperesthesia & guarding at McBurney's point with light palpation & a positive Markle, Rovsing's, Blumberg's, psoas or obturator signs**

Diagnostic Studies– clinical findings & elevated WBC count.

16. INTESTINAL OBSTRUCTIONS

The main causes of **high intestinal obstructions** are **strangulated hernias** and adhesions. The main causes of **low intestinal obstructions** are **carcinoma, diverticulitis and fecal impaction especially in the elderly.**

Intensity, duration & course - **Sudden onset of marked, waves of colicky abdominal pain.**

Associated symptoms – Abdominal pain and vomiting are features of **small gut obstruction.**

Obstruction of the colon causes less severe pain, but marked abdominal distention & absence of flatus or bowel movements.

Aggravating & Alleviating activities –

Typical Patient Profile – Those over 50 y/o are at greater risk.

Physical exam findings – **Visible peristalsis and frequent high pitched, tinkling sounds may accompany the waves of intense pain in the early stages (1st 24 hours), then peristaltic sounds & activity may cease.**

Diagnostic Studies– clinical findings & special studies (imaging)

17. ECTOPIC PREGNANCY

Typical Patient Profile – Woman of child-bearing age

Symptom characteristics – **missed or spotty periods for the last couple of months**

Aggravating & Alleviating activities –

Physical exam findings – Tenderness on pelvic exam

Diagnostic Studies– **positive pregnancy test**

18. INDIRECT INGUINAL HERNIA (intestines protrude through the inguinal canal)

Symptom intensity, quality, distribution & duration– report of **pain & swelling in the area of the internal inguinal ring**

Initial onset, circumstances & course

Associated symptoms –

Aggravating & Alleviating activities – **worse coughing, sneezing or straining**

Typical Patient Profile –any age male, being overweight &/or a history of frequent coughing, sneezing or straining; prevalent in infants if the path for descending testicles fails to close down

Physical exam findings – a cough induced palpable mass against the doctors finger inserted in the external inguinal ring; pain & a visible mass eventually ensue

Diagnostic Studies– diagnosis via clinical findings

19. DIRECT INGUINAL HERNIA (intestines protrude through the abdominal wall)

Symptom intensity, quality, distribution & duration– report of minimal pain & swelling medial to external inguinal ring

Initial onset, circumstances & course slow & silent until it becomes painful or apparent

Associated symptoms – limitation of activities that increase abdominal pressure; may result in intestinal obstruction or strangulation

Aggravating & Alleviating activities – coughing, sneezing or straining

Typical Patient Profile – **middle age & older males; overweight &/or history of frequent coughing, sneezing or straining pregnancies also predispose**

Physical exam findings – a cough induced palpable mass against the side of the doctor's finger inserted in the external inguinal ring; eventual visible mass

Diagnostic Studies– diagnosis via clinical findings

20. FEMORAL HERNIAS

Symptom intensity, quality, distribution & duration– report of pain &/or swelling in the area

Initial onset, circumstances & course slow & silent until it becomes painful or apparent

Associated symptoms – – limitation of activities that increase abdominal pressure; especially prone to strangulation

Aggravating & Alleviating activities – worse coughing, sneezing or straining

Typical Patient Profile – female, overweight & previous pregnancies predispose

Physical exam findings – a cough induced palpable or visible mass below the midpoint of the inguinal ligament, where the femoral vessels leave the abdomen

Diagnostic Studies–

S.N. OBTURATOR HERNIA is a **rare** type of hernia that **tends to happen in multiparous or older women who have lost a lot of weight**. Compression of the obturator nerve by the hernia may elicit the **Howship-Romberg sign** (pain down the medial thigh to the knee that is relieved by thigh flexion & aggravated by abduction, extension & rotation)

Zieman's Tridigital Hernia Examination - DeGowin R Brown D: Diagnostic Examination. New York, NY, McGraw-Hill 2000

The examiner stands by the patient's side with their hand placed near the inguinal ligament so the tip of the long finger is over the external inguinal ring, the superior positioned index finger is over the internal inguinal ring and the ring finger is over the femoral triangle. The patient is asked to turn their head and cough, a hernia may be seen &/or felt as a distinct bulge at one of the locations.

Conditions that have focal swelling as a significant feature

ABDOMINAL HERNIAS - Protrusion of an internal organ (intestines, stomach, bladder...) through an abnormal or weakened area in the abdominal wall.

21. INCISIONAL HERNIA

Symptom intensity, quality, distribution & duration– usually **painless swelling at the site of a surgical scar**

Initial onset, circumstances & course

Associated symptoms – – may result in intestinal obstruction or strangulation

Aggravating & Alleviating activities – coughing, sneezing or straining

Typical Patient Profile – overweight, pregnancies; frequent coughing, sneezing or straining

Physical exam findings – visible & palpable mass most apparent with increased abdominal pressure

Diagnostic Studies– diagnosis via clinical findings

22. UMBILICAL HERNIA

Symptom intensity, quality, distribution & duration– a **painless swelling of the belly button (adult onset- the swelling typically occurs around the belly button)**

Initial onset, circumstances & course - congenital

Associated symptoms – none

Aggravating & Alleviating activities – worse crying, coughing, sneezing or straining

Typical Patient Profile – prevalent in infants; **usually spontaneously closes by age four**

Physical exam findings – visible & palpable mass most apparent with increased abdominal pressure

Diagnostic Studies– diagnosis via clinical findings

23. HIATAL (DIAPHRAGMATIC) HERNIA WITH ACID REFLUX (many are asymptomatic if the lower esophageal sphincter is competent;

Symptom intensity, quality, distribution & duration– the ensuing **pain results from acid reflux (heartburn) from the stomach** 1-4 hours after eating

Initial onset, circumstances & course- intermittent episodes over many years

Associated symptoms – night-time substernal & epigastric pain; belching,

Aggravating & Alleviating activities – **worse reclining, & heavy meals; better antacids small, frequent, bland meals & no eating 2 hours before bedtime may help**

Typical Patient Profile – common to middle aged women and older adults; associated with obesity, pregnancy, ascites, tight fitting belts and clothing

Physical exam findings – possible above the diaphragm

Diagnostic Studies– clinical history & contrast imaging

Symptoms suggesting genitourinary involvement are: painful urination; increased, decreased or absent frequency; cloudy, reddish-brown or red urine; discharge, hesitancy or diminished force; pubic lesions or parasites; erectile dysfunction, infertility or other sexual concerns.

Symptoms suggesting gynecologic involvement are: Pain before, during or after menstruation; heavy, light or absent menstrual flow; vaginal discomfort or discharge; pubic lesions or parasites; painful intercourse, infertility or other sexual concerns.

DIFFERENTIATING GENITOURINARY CONDITIONS

Genitourinary Red Flags:

1. Painful urination or sexual intercourse
2. Urethral or vaginal discharges
3. Hematuria or brown urine
4. Persistent increase, decrease or lack of urination
5. Hesitancy or diminished force of urine
6. Genital lesions

REPORTED POLYURIA, DYSURIA &/OR HEMATURIA

1. Cystitis (UTI)

Typical biographical profile- women

Symptom location, quality & distribution— polyuria, nocturia, dysuria & possible hematuria.

Onset, circumstances & course- often secondary to urethral contamination with E coli

Associated symptoms- backache, chills and fever

Aggravating & alleviating activities-

Physical findings- pain over the pubis

Diagnostic studies- history raises suspicion, urinalysis & other labs if necessary

2. Acute Pyelonephritis

Typical biographical profile- kids under 5y/o, sexually active people & elderly women

Symptom location, quality & distribution- fever, polyuria, nocturia, dysuria & flank pain

Onset, circumstances & course- ascent following cystitis

Associated symptoms-

Aggravating & alleviating activities-

Physical findings- flank is tender on palpation; costovertebral angle tenderness & positive Murphy's punch

Diagnostic studies- UA, bacterial cultures, pyelograms & cystoscopy

3. Acute Glomerulonephritis

Typical biographical profile- boys are prone

Symptom location, quality & distribution- general malaise, oliguria & painless hematuria may occur

Onset, circumstances & course- 1-4 weeks after strep throat

Associated symptoms-

Aggravating & alleviating activities-

Physical findings- periorbital edema & hypertension

Diagnostic studies- proteinuria, elevated BUN & creatinine

4. Renal Calculi (kidney stones)

Typical biographical profile- adults

Symptom location, quality & distribution- sudden, severe flank pain (women have said it's worse than child birth) that follows the course of the ureter

Onset, circumstances & course- most stones pass within 48 hours

Associated symptoms- nausea, vomiting, profuse sweating & hematuria

Aggravating & alleviating activities-

Physical findings- none

Diagnostic studies- history, UA & helical CAT scan

5. Prostatic Hypertrophy

Typical biographical profile- 50% of men over 50 have some symptoms

Symptom location, quality & distribution- nocturia, polyuria, urgency, hesitancy, diminished force & dribbling after stopping urination

Onset, circumstances & course- insidious

Aggravating & alleviating activities-

Physical findings- a digital rectal exam may reveal one or both posterior lobes to be swollen, tender or nodular

Diagnostic studies- labs help differentiate; UA, cystoscopy & PSA

S.N. Prostatic cancer has the same symptoms and it may be possible to palpate a hard nodule on the prostate; PSA is often elevated

S.N. Prostatitis has similar symptoms plus fever, myalgia, arthralgia, perineal & low back pain

6. **Chlamydia - nongonococcal urethritis** the most common STD also known as the "silent disease" because 3/4th of women & 1/2 of men are asymptomatic

Typical biographical profile- sexually active people

Symptom location, quality & distribution- ♂ possible dysuria, mucoid discharge ♀ possible dysuria, vaginal discharge; spread to the fallopian tube may produce abdominal or back pain

Onset, circumstances & course- 1-3 weeks post infection, may persist & spread without antibiotics

Aggravating & alleviating activities-

Physical findings- probably none

Diagnostic studies- history raises suspicion, lab studies are conclusive

7. Gonorrhea

Typical biographical profile- sexually active people

Symptom location, quality & distribution- ♂ possible dysuria, yellow discharge; some men & most women have no symptoms

Onset, circumstances & course- 5-30 days post infection symptoms may appear

Aggravating & alleviating activities-

Physical findings-

Diagnostic studies- history raises suspicion, lab studies are conclusive

N.B. Pelvic Inflammatory Disease (PID)

An infection of the uterus &/or fallopian tubes secondary to chlamydia or gonorrhea. Every year one million women experience an acute episode & 100,000 become infertile, because it wasn't obvious until it was too late. Symptoms are often subtle but may include lower abdominal pain, foul smelling vaginal discharge, irregular menstrual bleeding, painful urination & sexual intercourse.

REPORTED VAGINAL DISCHARGE

8. **Bacterial Vaginosis** 40-50% of the cases

Typical biographical profile- pregnant woman

Symptom location, quality & distribution- 50% are asymptomatic

Onset, circumstances & course- a grayish-white or yellowish-white discharge without inflammation may be present often associated with pregnancy

Associated symptoms-

Aggravating & alleviating activities-

Physical findings- history & discharge

Diagnostic studies-

9. Yeast Vaginitis (candidiasis) 20-25% of the cases

Typical biographical profile- women

Symptom location, quality & distribution- vaginal itching possibly accompanied by an odorless, thick, cottage cheese-like discharge preceding menses

Onset, circumstances & course- often associated with a course of antibiotics which disrupts the natural bacteria-fungus balance

Associated symptoms-

Aggravating & alleviating activities- recurrent episodes suggest underlying immunodeficiency or diabetes

Physical findings- history, inflamed vulva & discharge

Diagnostic studies- microscopic view or culture of a scraping specimen is conclusive

10. Trichomoniasis (vaginitis) 15-20% of the cases

Typical biographical profile- women

Symptom location, quality & distribution- A copious, frothy, greenish-yellow discharge that causes pain & irritation following menses

Onset, circumstances & course- A STD

Associated symptoms-

Aggravating & alleviating activities-

Physical findings- history, red (strawberry) cervix & discharge

Diagnostic studies-

11. Endometriosis

Typical biographical profile- women in the child bearing years

Symptom location, quality & distribution- extremely variable depending on the site of endometrial implants; ranging from no symptoms to vaginal, rectal, lower belly or back pains, constantly or only during bowel movements, sex or ovulation.

Heavy menstrual flow or bleeding or spotting between periods may occur.

Onset, circumstances & course- stops after menopause

Associated symptoms- possible infertility

Aggravating & alleviating activities- depends on sites of endometrial implants

Physical findings- may be evidence revealed during a vaginal-rectal exam

Diagnostic studies- see if S&S are responsive to birth control pills, ultrasound, CT & MR may help rule out other causes, but laparoscopy is the only conclusive procedure

12. Pelvic Inflammatory Disease (PID)

Typical biographical profile- women with a history of chlamydia or gonorrhea

Symptoms - often subtle but may include lower abdominal pain, foul smelling vaginal discharge, irregular menstrual bleeding, painful urination & sexual intercourse.

Associated symptoms-

Aggravating & alleviating activities-

Physical findings- none

Diagnostic studies- laparoscopy is conclusive

REPORTED OR DETECTED SUPERFICIAL OR STRUCTURAL CHANGES

13. Genital Herpes

Typical Patient Profile – sexually active people

Symptom intensity, quality, location & distribution– painful vesicle appear, break, crust & heal over the course of several days; recurrent outbreaks are highly variable & random forever

Initial onset, circumstances & course –7 days post contact with the virus

Associated symptoms – possible dysuria & inguinal adenopathy

Aggravating & alleviating activities –

Physical exam findings – history & vesicles

Diagnostic Studies– lab cultures, blood & microscopy antibody tests

14. Genital Warts (condylomata acuminata / human papilloma virus)

Typical biographical profile- sexually active people

Symptom location, quality & distribution- persistent, soft, single or clustered papules around sites of sexual contact

Onset, circumstances & course- they start small but will enlarge without treatment; some of the 70 responsible viruses have been associated with cervical cancer.

Associated symptoms-

Aggravating & alleviating activities-

Physical findings- genital or pelvic exam may reveal lesion

Diagnostic studies- ♀ acetic acid application & colposcopy (a magnification scope) may be

needed to see the warts, a pap smear may reveal cancerous changes to the cervix associated with the HPV

15. Cervical Cancer

Typical biographical profile- women (HPV may have played a role)

Symptom location, quality & distribution- abnormal vaginal bleeding or unexplained change in the menstrual cycle; pain or bleeding during sex

Onset, circumstances & course- secondary to a HPV infection

Physical findings- none

Diagnostic studies- pap smear

16. Syphilitic Chancre

Typical biographical profile- sexually active people

Symptom location, quality & distribution- it's a single, (occasionally multiple) painless, ulcerated sore at the site of the infection that gradually disappears

Onset, circumstances & course- 10 days – 3 months post infection if it ever does appear

Associated symptoms- inguinal adenopathy

Aggravating & alleviating activities-

Physical findings- The chancre

Diagnostic studies- Dark-field microscopy for the spirochetes & identifying the antibodies in the blood (VDRL & RPR tes

17. Testicular cancer - most treatable & curable in early stages

Typical biographical profile- white, males 15 -34 y/o

Symptom location, quality & distribution- Painless testicular lump, enlargement or discomfort

Onset, circumstances & course- insidious; no known cause

Associated symptoms- possible dull ache in the lower abdomen, back or groin

Aggravating & alleviating activities

Physical findings- Painless testicular lump, enlargement or discomfort; the lump doesn't transilluminate

Diagnostic studies- blood test for tumor markers, ultrasound of the scrotum, testicle removal & biopsy