Adult History & Physical Examination

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Learning Objective
- Elicit and explain the significance of findings from a patient history and physical examination.

Medical History

History Components
- Demographics
  - Age
  - Place of birth
  - Race
  - Nationality
  - Marital status
  - Occupation

History Components
- Date and source of history
- Brief description of patient's condition
- Chief complaint (CC)

FYI - Link to medical history taking guide
http://medinfo.ufl.edu/year1/bcs96/clist/history.html

History Components
- History of present illness (HPI)- for each sign, symptom:
  - P - Palliative, provocative
  - Q - Quantity, quality
  - R - Region, radiation
  - S - Severity- degree of
  - T - Timing- when? how long?
### History Components

- **Past medical history**
  - Childhood diseases
  - Immunizations
  - Hospitalizations, surgeries
  - Allergies
  - Medications

- **Birth history, childhood development**
  - Diet
  - Sleep

- **Habits (honesty??)**
  - Tobacco: ever smoke? pk/yr, etc.
  - Alcohol consumption
  - Recreational drugs, routes for administration

- **Family history**
  - Immediate family
  - Relationships
  - Morbidity (diseases)
  - Mortality (age, cause)
  - Parental occupations - things brought home
  - Marital history

- **Familial disease**
  - Asthma
  - Emphysema
  - Diabetes
  - Alzheimer's
  - Cardiovascular disease

- **Hematological disease; e.g., hemoglobin abnormalities**
- **Renal disease**
- **Creutzfeldt-Jacob disease (Prion)**
- **Marfan's syndrome - Abraham Lincoln?**
History Components

- Social and environmental history
  - Education
  - Military experience
  - Occupational history
  - Travel
  - Hobbies

FYI - Link to information on occupational risks for healthcare
http://www.cdc.gov/niosh/topics/healthcare/

History Components

- Social and environmental history
  - Occupational history- risks
    - lung cancer- dust, fumes, smoke
    - asbestosis, mesothelioma
    - silicosis (construction)

FYI - Link to comprehensive information on NIOSH website
http://www.cdc.gov/niosh/

History Components

- Social and environmental history
  - Occupational history- risks
    -byssinosis (textile workers)
    - hypersensitivity pneumonitis (agriculture & related)
    - bronchiolitis obliterans organizing pneumonia (food flavorings)

FYI - Link to food flavorings and lung disease

History Components

- Social and environmental history
  - healthcare workers
  - aerosols- asthma, infections
  - glutaraldehyde- asthma, rash, hives
  - contact infections
  - hypersensitivities- latex
  - teratogens- radiation, infections

FYI - Link to NIOSH website for comprehensive information
http://www.cdc.gov/niosh/
History Components

- Review of systems- checklist about symptoms, by organ systems
  - General/Constitutional
  - Skin/Breast
  - Eyes/Ears/Nose/Mouth/Throat
  - Cardiovascular
  - Respiratory

Caridiopulmonary Symptoms

- Cough
  - Chronic?
  - Productive?
  - Angiotensin converting enzyme (ACE) inhibitors? - antihypertensive agents

- Dyspnea
  - Positional
  - orthopnea - number of pillows
  - platypnea/orthodeoxia - anatomic shunt; e.g., patent ductus arteriosus

Cardiopulmonary Symptoms

- Dyspnea
  - Grade I - exercise only
  - Grade II - moderate activity
  - Grade III - short walk
  - Grade IV - at rest

Click to see Borg dyspnea score
Cardiopulmonary Symptoms
- Chest pain
  - Onset
  - Nature
  - Associated phase of breathing
- Hoarseness
- Noisy breathing
- Snoring

Cardiopulmonary Symptoms
- Pedaledema (swollen ankles)
- Joint pain; e.g., rheumatoid arthritis
- Fever, chills- infections
- Night sweats
  - diseases; e.g., infections
  - medications
  - alcohol

Cardiopulmonary Symptoms
- Sensorium
  - Syncope (faintness)
  - Headache
  - Altered mental status
  - Personality change- sometimes electrolyte, blood gas abnormalities

Physical Examination

Initial impression
- Age
- Ethnicity
- Gender
- Body type
- Height, weight
- Dominant hand
- General appearance- level of comfort

Level of Consciousness
- Glasgow Coma Scale (GCS)
  - Eye opening response
  - Verbal response
  - Motor response
**Level of Consciousness**

- **Glasgow Coma Scale (GCS)**
  - **Eye opening response (1-4)**
    - Spontaneous
    - Verbal
    - Pain
    - None

- **Verbal response (1-5)**
  - Oriented- time, place, person
  - Confused
  - Inappropriate words
  - Incoherent
  - None

- **Motor response (1-6)**
  - Response to commands
  - Localizes pain
  - Withdraws from pain
  - Flexion to pain
  - Extension to pain
  - None

**Glasgow Coma Scores**

- 13 or higher ==> mild brain injury
- 9 to 12 ==> moderate injury
- 8 or less ==> severe brain injury.

FYI - click for more information on GCS
http://www.trauma.org/archive/scores/gcs.html

**Vital signs**

- **Pulse**
  - rate
  - intensity
  - regularity
  - pulsus paradoxus- less intense during inspiration

FYI - Click for more information on pulsus paradoxus
http://www.bioline.org.br/request?jp02014
Vital signs
- Respiration
  - Rate
  - Regularity
- Blood pressure
- SPO2 (fourth vital sign)

Inspection of head (HEENT)
- Face
  - Expression
  - Markings - e.g. hemangiomas
  - Nasal flaring
  - Pursed-lip breathing
  - Color - cyanosis
  - Hypoxemia
  - Methemoglobinemia

Inspection of head (HEENT)
- Eyes - pupils
  - Size
  - Equality
  - Shape
  - Reactivity to light
  - Accommodation to distance

Inspection of head (HEENT)
Pupils affected by:
- Neurologic disease
- Trauma, death
- Medications
  - Anticholinergics - dilate pupils
  - Narcotics - constrict pupils
- Kindergarten teachers have tiny pupils

Inspection of head (HEENT)
- Eyes
  - Pupils
  - Equal
  - Round
  - Reactive to
  - Light
  - Accommodative

Neck - Inspection & Palpation
- Position of trachea - midline?
  - Shifts away from pneumothorax, tumors
  - Shifts toward atelectasis
Neck- Inspection & Palpation

- Jugular venous distention (JVD) ==> increased right ventricular preload
  - veins normally flat while erect
  - JVD- jugular veins visible while sitting

Click to see video on estimating jugular venous pressure (1 min.)
http://www.youtube.com/watch?v=4YBXaWWG3Ns

Neck- Inspection & Palpation

- Accessory muscles
  - usage
  - hypertrophy, esp. sternocleidomastoid

Abdomen

- Inspection
  - Distention, ascites
  - Coordination with chest is normal
  - Abdominal paradox ==> Diaphragmatic fatigue
  - Diaphragmatic paralysis

Abdomen

- Palpation and percussion
  - detect hepatomegaly
  - measure excursion of diaphragm
- Auscultation
  - Bowel sounds
  - Confirm location of endotracheal tube

Extremities

- Color of nailbeds- cyanosis
  - requires 5 vol% desaturated Hb
  - absent with anemia

Extremities

- Digital clubbing- chronic hypoxia
**Extremities**

> Digital clubbing - chronic hypoxemia

![Image of Clubbed Fingertips]

**Extremities**

> Capillary refill - peripheral perfusion

< 3 sec

**Extremities**

> Skin temperature, moisture
> Poor skin turgor - dehydration

Click to see illustration of skin turgor

**Chest physical exam**

> Inspection
> Palpation
> Percussion
> Auscultation

Click to see video of chest physical examination (2.0 min.)
http://www.youtube.com/watch?v=HzrZwdxOBg&NR=1

**Chest Inspection**

> Configuration
> Barrel chest
> Pectus carinatum - pigeon chest
> Pectus excavatum - concave
> Scoliosis, kyphoscoliosis

Click to see pectus carinatum
http://www.childrenshospital.org/ar/Site1686/mainpageS1686P0.html
Click to see pectus excavatum
http://upload.wikimedia.org/wikipedia/commons/thumb/8/83/Pectus1.jpg/230px-Pectus1.jpg
Click to see kyphoscoliosis

**Chest Inspection**

> Ventilatory patterns
> Normal
> Restriction - rapid and shallow
> Obstruction - prolonged expiration
Chest Inspection

- Ventilatory patterns
  - Cheyne-Stokes- CHF, neuro dx
  - Biot's- unpredictable irregularity ==> medullary damage
  - Kussmaul- diabetic ketoacidosis
  - Apneustic- neurologic dx

Chest Palpation

- Expansion- symmetry
- Fremitus- vocal vibrations
  - Increased by atelectasis
  - Decreased by emphysema, pleural effusion

Chest Percussion

- Listen for resonance
  - Resonance- normal air in chest
  - Hyperresonance ==> increased air
  - Tympany ==> air under pressure
  - Dullness ==> solid tissue

Click to see video of chest percussion (1.0 min.)
http://www.youtube.com/watch?v=HDhkerh6ZZk

Chest Auscultation

- Room must be quiet
- Maintain patient privacy
- Diaphragm firmly against skin, NOT over clothes
- Auscultate, compare sides
- Auscultate entire chest, esp. posterior segments.

Anterior Chest

- Nipple line
- Upper lobes
- Lingula
- Middle lobe
- Lower lobes

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Posterior Chest

Upper lobes

Scapulae

Lower lobes

Chest Auscultation

- Normal breath sounds
  - Tracheal- over trachea
  - Bronchial and bronchovesicular- large airways
  - Vesicular- over parenchyma

Click to hear vesicular breath sounds
Play vesicular sounds

Chest Auscultation

- Abnormal (adventitious) sounds
  - Rales- obsolete term; should not be used
  - Crackles- discontinuous
    - Secretions in airways (wet)
    - Alveolar opening (dry)
    - Frequently in posterior segments

Click to hear fine crackles
Play fine crackles
Click to hear coarse crackles
Play coarse crackles

Chest Auscultation

- Rhonchi
  - Continuous, musical
  - Caused by airway vibration
  - Fine (wheezees) or coarse

Click to hear wheezees
Play wheezees

Chest Auscultation

- Abnormal (adventitious) sounds
  - Crackles- consistent with:
    - Pneumonia
    - Atelectasis
    - Pulmonary fibrosis
    - Pulmonary edema

Click to hear fine crackles
Play fine crackles
Click to hear coarse crackles
Play coarse crackles

Chest Auscultation

- Rhonchi, consistent with:
  - Secretions in airway
  - Bronchoconstriction
  - Airway edema
  - Airway neoplasms
  - Foreign body aspiration

Click to hear rhonchi
Play rhonchi
**Chest Auscultation**

- Abnormal (adventitious) sounds
  - Stridor
  - Inspiratory sound
  - Upper airway obstruction
  - Pleural rub
  - Pleurae rubbing together

- Absent sounds
- Diminished sounds
- Bronchial sounds at abnormal locations
- Atelectasis
- Pneumonia

**Reporting Breath Sounds**

- Comparison of left and right
- Intensity - locations
- Adventitious sounds
  - Type, intensity, other descriptors
  - Location
  - Post-tussive changes
  - Post-therapeutic changes

**Summary & Review**

- Components of history
  - Demographics
  - Chief complaint
  - Past medical hx
  - Social, occupational hx
  - Family hx
  - Review of systems

- Physical examination
  - Initial impression
  - Level of consciousness (LOC)
  - Vital signs
  - Head-to-toe inspection, palpation

FYI - click to download free article on respiratory sounds: [http://ajrccm.atsjournals.org/cgi/content/full/156/3/974](http://ajrccm.atsjournals.org/cgi/content/full/156/3/974)
References