4.7.) **ANGINA PECTORIS**

**ASSESSMENT**
- Chest pain, lasting 3-5 minutes
- Radiates to neck or left arm
- Alleviated by nitroglycerin

**ANALYSIS**
- Adequate pain relief?

**IMPLEMENTATION**
- Monitor vital signs, ECG
- Monitor for signs of shock
- Administer oxygen, nitroglycerin as ordered

**CLIENT EDUCATION**
- Promote diet and lifestyle changes
  NITROGLYCERIN SUBLINGUAL:
  - Protect from light, moisture and heat
  - Seek immediate help if 3 doses 5 minutes apart do not lessen pain

---

**Unstable angina:**
- lasts longer than 15 minutes
- increases in intensity
- occurs at rest

**Teach client importance of reducing risk factors:**
1. Stop smoking
2. Control blood pressure
3. Lower lipids aggressively
4. Control blood glucose in diabetic patients
5.5.) PNEUMOTHORAX
Accumulation of air in pleural space → collapse of lung

ASSESSMENT
◊ Sudden sharp pain
◊ Shortness of breath
• Hypotension, shock
• Neck vein distension
• Absent breathing sounds over collapsed lung

IMPLEMENTATION
• Bed rest
• Monitor vital signs
• Oxygen as needed
THORACOSTOMY / CHEST TUBES:
• Encourage coughing after chest tube is placed
  (this facilitates lung expansion)
• Watch for air leak (bubbling)
• Do not reposition tube
• If tube dislodges, cover with gaze and call for help

client →

1 = collection bottle
2 = water seal bottle
3 = suction control bottle

COMMON CHEST TUBE PROBLEMS:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>air leak</td>
<td>continuous bubbling in water seal bottle</td>
</tr>
<tr>
<td>kinks in tubing</td>
<td>no fluctuations in water seal with inspiration</td>
</tr>
<tr>
<td>insufficient suction</td>
<td>no bubbling in suction control bottle</td>
</tr>
</tbody>
</table>
6.1.) ALTERATION IN NUTRITION

Body mass index = weight / height$^2$ (normal is 20~25 kg/m$^2$)
1. convert pound to kg: 1 lb. = 0.453 kg
2. convert feet to meter: 1 ft. = 0.305 m
3. convert inches to meter: 1 in. = 0.025 m

EXAMPLE: “Client is 5’10 tall and weighs 180 lbs.”
1. weight (180 lbs.) = 81.5 kg
2. height (5 ft. +10 in.) = 1.525 + 0.25 m = 1.78 m
3. BMI = 81.5 / (1.78 $\cdot$ 1.78) = 81.5/3.17 = 25.7
→ client is slightly overweight

MARASMUS (=SEVERE MALNUTRITION)
- Watch for electrolyte imbalance
- Do not refeed too rapidly!

OBESITY
- “Yo-yo dieting” may be a/w increased risk for coronary artery disease
- Surgery (gastroplasty, gastric bypass) only for severe obesity (BMI > 40)

ANOREXIA NERVOSA
- Psychotherapy often required
- Restore normal eating pattern / caloric intake
- Force-feed in life-threatening situations

“I look too fat…”
10.4.) **ANEMIAS**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>acute blood loss</strong></td>
<td>- hematocrit remains normal in acute phase!</td>
</tr>
<tr>
<td><strong>chronic blood loss</strong></td>
<td>- may lead to iron deficiency</td>
</tr>
<tr>
<td><strong>iron deficiency</strong></td>
<td>- search for occult bleeding, especially in elderly</td>
</tr>
</tbody>
</table>
| **Vit. B12 or folic acid deficiency** | - required for RBC maturation in bone marrow  
**Alcoholics:**  
B12 and folate deficiency common  
**Pregnancy:**  
Folate deficiency common: *give supplements!* |
| **pernicious anemia** | - chronic gastritis type A (autoimmune disease)  
- antibodies against intrinsic factor from stomach  
→ reduced vit. B12 absorption in small bowels |
| **sickle cell anemia** | - abnormal hemoglobin (electrophoresis)  
- “sickle cells” seen on blood smear  
- painful crises, leg ulcers |
| **thalassemias** | - abnormal hemoglobin (electrophoresis)  
- “target cells” on blood smear |
| **hemolysis** | - antibodies against RBCs  
- fragile RBCs |

*Blood hemolysis → increased serum bilirubin!*
**ASSESSMENT**

◊ Fatigue  
• Pale skin and mucosa  
**ALL ANEMIAS:**  
• Check CBC, blood smear, hematocrit, hemoglobin and iron  
**APLASTIC ANEMIA:**  
• Low reticulocyte count indicates decreased production of RBCs  
**THALASSEMA, SICKLE CELL ANEMIA:**  
• Hemoglobin electrophoresis shows abnormal hemoglobins  
**PERNICIOUS ANEMIA:**  
• Schilling test: to evaluate vitamin B12 absorption

**ANALYSIS**

• Skin integrity?  
• Delayed wound healing?  
• Effective gas exchange?

**IMPLEMENTATION**

• Provide rest periods to avoid fatigue  
• Assist with blood transfusions  
• Monitor for transfusion reactions: pruritus, chills, fever, shock…

---

Vitamin B12

parietal cells  
(produce intrinsic factor IF)

B12-IF complex is absorbed in the ileum
12.10. CARPAL TUNNEL SYNDROME
Compression of median nerve at wrist joint

**ASSESSMENT**
- Pain in wrist or palm of hand
- Paresthesias in radial palmar aspect of hand
- Weakness of thumb

**IMPLEMENTATION**
- Relief pressure on median nerve:
  - hand elevation, splinting of hand and forearm
- Cortisone injections into carpal tunnel

**CLIENT EDUCATION**
- Avoid prolonged flexion of wrist
- Teach proper hand position when using computer keyboard

**Tinel Sign:** Tapping on the wrist of the patient (A) triggers tingling and numbness in the median nerve territory (B, palmar view).

From Tétreault & Ouellette: *Orthopedics Made Ridiculously Simple*, MedMaster, 2009
### 13.1. SIGNS & SYMPTOMS

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description</th>
<th>Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decorticate Posture</td>
<td>Legs extended, arms flexed</td>
<td>Damage above mid brain</td>
</tr>
<tr>
<td>Decerebrate Posture</td>
<td>Legs and arms extended, wrist pronation</td>
<td>Damage to mid brain</td>
</tr>
<tr>
<td>Asterixis</td>
<td>&quot;Flapping tremor&quot; (wrist joint and fingers)</td>
<td>Liver failure</td>
</tr>
<tr>
<td>Ataxia</td>
<td>Reeling, wide gait</td>
<td>Cerebellar disease, Alcoholism</td>
</tr>
<tr>
<td>Athetosis</td>
<td>Slow involuntary snakelike movements (especially face, neck and upper extremes)</td>
<td>Damage to basal ganglia</td>
</tr>
<tr>
<td>Chorea</td>
<td>Bursts of rapid, jerky movements</td>
<td>Huntington’s disease, Rheumatic fever (Chorea plus intellectual decline)</td>
</tr>
<tr>
<td>Cogwheel Rigidity</td>
<td>Jerking of arm muscles when passively stretched</td>
<td>Cardinal sign of Parkinson’s disease, side-effect of antipsychotic drugs</td>
</tr>
<tr>
<td>Gower’s Sign</td>
<td>Proximal muscle weakness</td>
<td>Characteristic way to rise from the floor (Duchenne’s muscle atrophy)</td>
</tr>
</tbody>
</table>
### 13.2. GLASGOW COMA SCALE
(coma = 7 points or less)

<table>
<thead>
<tr>
<th></th>
<th>1 point</th>
<th>2 points</th>
<th>3 points</th>
<th>4 points</th>
<th>5 points</th>
<th>6 points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>eye opening response</strong></td>
<td>no response</td>
<td>to pain</td>
<td>to speech</td>
<td>spontaneously</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>motor response</strong></td>
<td>no response to pain</td>
<td>abnormal extension (decerebrate)</td>
<td>abnormal flexion (decorticate)</td>
<td>withdraws from pain</td>
<td>localizes pain</td>
<td>obeys verbal commands</td>
</tr>
<tr>
<td><strong>verbal response</strong></td>
<td>no response</td>
<td>incomprehensible sounds</td>
<td>inappropriate words</td>
<td>confused</td>
<td>oriented to time, place and person</td>
<td></td>
</tr>
</tbody>
</table>
### EXTENT:

- **Rule of 9:** The body is divided into 11 areas, each representing 9% of surface.

![Diagram showing the Rule of 9 for burn extent]

### DEGREE:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First degree</strong></td>
<td>- pink to red</td>
</tr>
<tr>
<td></td>
<td>- mild edema</td>
</tr>
<tr>
<td></td>
<td>- <em>no scarring</em></td>
</tr>
<tr>
<td><strong>Second degree</strong></td>
<td>- pink to red, blanches on pressure</td>
</tr>
<tr>
<td></td>
<td>- blister formation</td>
</tr>
<tr>
<td></td>
<td>- hair does not pull out easily</td>
</tr>
<tr>
<td></td>
<td>- <em>scarring possible</em></td>
</tr>
<tr>
<td><strong>Third degree</strong></td>
<td>- reddened areas don’t blanch to pressure</td>
</tr>
<tr>
<td></td>
<td>- formation of devitalized, leathery tissue</td>
</tr>
<tr>
<td></td>
<td>- hair pulls out easily</td>
</tr>
<tr>
<td></td>
<td>- <em>scarring expected</em></td>
</tr>
</tbody>
</table>
Half of all fire deaths are due to inhalation of smoke and CO.
17.5.) PRIMARY AMENORRHEA

= Client never menstruated before

- Absence of menses by age 16 if secondary sexual characteristics are present.
- Absence of menses by age 14 if secondary sexual characteristics are absent.

<table>
<thead>
<tr>
<th>Turner syndrome</th>
<th>XO (missing X chromosome)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>testicular feminization</strong></td>
<td>XY, testosterone receptor defect (genetically male, but fully developed female)</td>
</tr>
<tr>
<td><strong>dysgenesis</strong></td>
<td>- absence of tubes, uterus, cervix, upper vagina</td>
</tr>
</tbody>
</table>

**Stein-Leventhal** (polycystic ovaries) - infertility - hirsutism - endometrial hyperplasia

**imperforate hymen** - monthly abdominal pain but no menses

**TURNER SYNDROME:**

- From Zaher: *Pathology Made Ridiculously Simple*, MedMaster, 2007

Turner syndrome is the most common cause of primary amenorrhea.
## THE "DIFFICULT" CLIENT

<table>
<thead>
<tr>
<th>CLIENT</th>
<th>YOUR BEST RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>withdrawn</td>
<td>- allow client to set pace&lt;br&gt;- encourage social activities or games</td>
</tr>
<tr>
<td>depressed</td>
<td>- assess suicide potential&lt;br&gt;- let client talk about personal problems&lt;br&gt;- do not leave client alone</td>
</tr>
<tr>
<td>suicidal</td>
<td>crisis intervention to assess suicide potential:&lt;br&gt;- ask for intent “Are you tired of living?…”&lt;br&gt;- previous attempts?&lt;br&gt;- specific plan?&lt;br&gt;- social support system?&lt;br&gt;- make a “No-Suicide Contract”!</td>
</tr>
<tr>
<td>anxious</td>
<td>- convey interest and care&lt;br&gt;- don’t “force” client&lt;br&gt;- help client identify sources of anxiety&lt;br&gt;- suggest relaxation techniques</td>
</tr>
<tr>
<td>violent</td>
<td>- remain calm and in control of the situation&lt;br&gt;- give client space, avoid sudden movements&lt;br&gt;- encourage verbal expression of anger&lt;br&gt;- restrain or seclude if necessary</td>
</tr>
</tbody>
</table>