COPD
Chronic Obstructive Pulmonary Disease

By: Erica Italiano

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What is COPD?

- **Definition:**
  
  - A disease that limits airflow through either inflammation of the lining or the bronchial tubes, or destructive of alveoli

- **COPD will become the third leading cause of death worldwide by 2020**

ASSESSMENT
Mr. Hayato

• **Age:** 65

• **Sex:** Male

• **Chief Complaint:**
  – Shortness of breath

• **Medications**
  – Combivent
  – Lasix
  – Oxygen 2 L/hour via nasal cannula when sleeping

• **Smoker:**
  – Yes, 2 PPD for 50 years

• **Family History:**
  – Father with lung cancer
Medical History

- COPD secondary to chronic tobacco use
- Cholecystectomy 20 years ago
- Total dental extraction 5 years ago
- Intermittent claudication
- Allergic to penicillin
Nutrition History

- Fair appetite
- Ht: 5’4”
- UBW: 135 lbs
- Current BW: 122 lbs
Medical Diagnosis

- Acute Respiratory distress
- COPD
- Peripheral vascular disease with intermittent claudication
### Biochemical Parameters

<table>
<thead>
<tr>
<th>Test</th>
<th>Patients</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transferrin</td>
<td>173 mg/dl</td>
<td>215-365 mg/dl</td>
</tr>
<tr>
<td>Uric Acid</td>
<td>3.9 mg/dl</td>
<td>4.0-9.0 mg/dl</td>
</tr>
<tr>
<td>Bilirubin</td>
<td>0.8 mg/dl</td>
<td>≤ 0.3</td>
</tr>
<tr>
<td>LDH</td>
<td>412 U/L</td>
<td>208-378 U/L</td>
</tr>
<tr>
<td>HDL</td>
<td>32 mg/dl</td>
<td>&lt; 45 mg/dl</td>
</tr>
<tr>
<td>LDL</td>
<td>142 mg/dl</td>
<td>&lt; 130 mg/dl</td>
</tr>
<tr>
<td>HCT</td>
<td>39 %</td>
<td>40-54%</td>
</tr>
<tr>
<td>SEGS</td>
<td>83%</td>
<td>50-62%</td>
</tr>
<tr>
<td>Lymphs</td>
<td>10%</td>
<td>24-44%</td>
</tr>
<tr>
<td>Monos</td>
<td>3%</td>
<td>4-8%</td>
</tr>
<tr>
<td>pH</td>
<td>7.2</td>
<td>7.35-7.45</td>
</tr>
<tr>
<td>PCO2</td>
<td>65 mm Hg</td>
<td>35-45 mm Hg</td>
</tr>
<tr>
<td>CO2 content</td>
<td>35 mmol/L</td>
<td>23-30 mmol/L</td>
</tr>
<tr>
<td>PO2</td>
<td>56 mm Hg</td>
<td>≥ 80 mm Hg</td>
</tr>
<tr>
<td>HCO3-</td>
<td>38 m EQ/L</td>
<td>24-28 EQ/L</td>
</tr>
</tbody>
</table>
**Physical Exam**

- **General appearance:** Acutely dyspneic Asian American male in acute respiratory distress
- **HR 118 bpm, should be 60-100 bpm**
- **RR 36 bpm, should be 12-20 bpm**
- **HEENT:** AV nicking
- **Throat:** Jugular veins appear distended, trachea shifted to the right
- **Extremities:** Cyanosis, 1+ pitting edema
Anthropometric

- Current weight: 122 lbs
- UBW: 135 lbs
- Ht: 5’44”
- IBW: 94%
- UBW: 90%
- BMI: 20.9
24 HOUR RECALL

- **AM:** 2 scrambled eggs, few bites of Cream of Wheat, sips of hot tea, bite of toast
- **PM:** Sips of hot tea
Usual Diet

- **Breakfast:** Egg, hot cereal, bread or muffin, hot tea with milk and sugar

- **Lunch:** Soup, Sandwich, hot tea with milk and sugar

- **Dinner:** Small amount of meat, rice, 2-3 kinds of vegetables, hot soup and tea
Energy Needs

- Caloric needs: 2019 kcals/day
- Protein needs: 55g/day
Enteral Vs.

Enteral Nutrition
• Pro’s:
  – If the gut works use it
  – Cheaper

• Con’s:
  – High residuals
  – Aspiration

Parenteral Nutrition
• Pro’s:
  – Meet caloric needs
  – No residual

• Con’s:
  – Expensive
  – Not using the gut when it works

(Tanchoco; 2008)
Psychosocial/Family

- Supportive wife
  - Cooks for him
  - Helps with day to day tasks

- Education: Bachelors degree

- Occupation: retired manager of local grocery store

- Children: four (do not live in the area)
Lifestyle

- Smokes 2 packs per day for the past 50 years
- Sleeps with nasal cannula
- Moderately active
- Health risk appraisal?
DIAGNOSIS
Nutrition Diagnosis

- Inadequate energy intake (NH 1.2) related to difficulty breathing and lack of appetite as evidence by weight loss and diet recall
Intervention
Intervention

- Food and/or nutrient delivery, enteral and parenteral nutrition (ND-2) initiate enteral and parenteral nutrition.
Diet Order

Parenteral

- Formula: Procalamine
- AA: 101g
- Dextrose: 238 g
- Lipids: 90 g

Enteral

- Formula: Nutren 2.0
- Kcals: 2064 kcals
- Protein: 83 g
- Fat: 110g
- Free Water: 723 ml
- Flushes: 240 ml every six hrs

(Grade ?)(DeLegge 2007; Basel 2007)  
(Grade ?)(Cochrane 2004; Afolabi 2004)
Nutrition Education

- High Calorie diet
- Low Carbohydrate diet
- Light exercise
- Easily chewable foods
- Adequate fiber
- Suggest Vitamin C supplement
Short Term Goals

- **Outcome Goals**: Maintain weight
- **Action Goals**: Parenteral/Enteral Nutrition Support
Long Term Goals

• **Outcome goal:** Gain weight

• **Action Goal:** Increase calories, especially fat and protein
Scope Of Practice

1. Is it permitted?
   - No or Not Sure
   - Yes

2. Is it covered by any national or organizational explicit guidance?
   - No
   - Yes

3. Would it be reasonable for a dietetics practitioner to do?
   - No
   - Yes

STOP
Performance of activity or service may place dietetics practitioners and client at risk!

4. Do I personally have the education needed?
   - Yes
   - No

STOP
Until additional education acquired

5. Can I demonstrate the knowledge, skill, and competence?
   - Yes
   - No

STOP
Until current knowledge, skill, and competence demonstrated

6. Do I accept responsibility and accountability for my actions?
   - No
   - Yes

STOP
The accountability is not assumed! Notify appropriate person(s)

Proceed if authorization documented.
Monitor and Evaluation
The Patient’s

• Anthropometric
  – Weight

• Labs
  – Pre-albumin

• Dietary Recall
  – 3 day recall prior to meeting with RD
Follow-Up

- Patient will meet with RD once before leaving the hospital

- Patient should continue monthly follow-up appointments with an RD to gain and maintain his weight


- PATIENT AND CARER PERSPECTIVES. Promoting the health of people with chronic obstructive pulmonary disease: patients’ and carers’ views, Ann Caress, Karen Luker and Karen Chalmers

- Celeste C. Tanchoco, ¹ Cecilia A. Ma Castro, ¹ Milagros F. Villadolid, ¹ Gerardo Casiño, ² Marietta P. Rodriguez, ¹ Camilo Roa, ² Christine Marie A. De La Cruz ² and Fausto Tangcongco Jr ² Enteral feeding in stable chronic obstructive pulmonary disease patients July 2008