CHRONIC COUGH
**WHAT IS COUGH?**

**COUGH REFLEX IS A DEFENSIVE MECHANISM**

<table>
<thead>
<tr>
<th>Four Phases</th>
<th>TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspiratory</td>
<td>Acute</td>
</tr>
<tr>
<td>Contractive</td>
<td>Chronic</td>
</tr>
<tr>
<td>Compressive</td>
<td></td>
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<tr>
<td>Expulsive</td>
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</table>
WHAT IS CHRONIC COUGH?

Chronic cough is cough of more than 3 weeks duration
PHYSIOLOGY OF COUGH REFLEX

**Stimulants**
- Irritants
- Secretions
- Foreign bodies

**Arc consists**
- Receptors
- Afferents
- Efferents
PHYSIOLOGY OF COUGH REFLEX

**Receptors**
- Pharynx & Larynx
- Bronchi
- Esophagus & Stomach
- Pleura & Diaphragm
- Middle Ear

**Afferents**
- Cr N. IX, X And V
- C 2, 3 & 4

**Efferent**
- Cranial Nerve X
- C 3, 4 & 5

**Cough Centre**
- Medulla
ETIOLOGY OF CHRONIC COUGH
0 – 18 MONTHS

- Gastroesophageal reflux
- Vascular anomaly
- Asthma
- Tracheomalacia
- Sinusitis
- Subglottic stenosis
- Viral
- Bronchogenic cyst
- Cystic Fibrosis
- Foreign body
- Unknown
ETIOLOGY OF CHRONIC COUGH
18 MONTHS – 6 YEARS

- Sinusitis
- Asthma
- Subglottic stenosis
- Gastroesophageal reflux
- Unknown
ETIOLOGY OF CHRONIC COUGH
6 YEARS – 16 YEARS

- Asthma
- Psychogenic
- Sinusitis
- Gastroesophageal reflux
- Subglottic stenosis
- Unknown
CHRONIC COUGH DIAGNOSTIC PROTOCOL

INITIAL EVALN

- HISTORY
- PHYSICAL EXAM
- CXR

PULM FUNCT TESTS

BRONCHOSCOPY

GERD TESTING
CHRONIC COUGH DIAGNOSTIC PROTOCOL

**EVALUATION**

- HISTORY
- PHYSICAL EXAM
- CHEST X-RAY

**PULMONARY FUNCTION TESTS**

- SPIROMETRY
- MIC
CHRONIC COUGH DIAGNOSTIC PROTOCOL

**BRONCHOSCOPY**

**OTHERS**
- Laboratory
- CT Scan
- Other Consults

**GERD TESTING**
- pH Probe
- Upper GI Series
- Endoscopy
CHRONIC COUGH
DIAGNOSTIC PROTOCOL

COUGH IN A SEEMINGLY WELLCHILD

COUGH IN A SICK CHILD
HISTORY

- Family history
- Atopy
- Relief with bronchodilators
- Exposure to smoke
- Serious pulmonary infections
- Sino-pulmonary infections
- Skin infections

- Stridor
- Choking
- Feeding problems
- H/o contact
each day fifty kids under five are admitted to hospital because of passive smoking

Passive smoking causes...
- asthma
- cot death
- coughs
- chest infections
- cancer
- wheezing
- bronchitis
- heart disease
- glue ear
HISTORY

Cough quality
• Seal like
• Canada goose
• Staccato
• Paroxysmal bouts
• With sonorous breathing

Cough timing
• With feeding
• Nocturnal
• With sleep, laughing
• Exercise
## HISTORY

<table>
<thead>
<tr>
<th>Cough Duration</th>
<th>Cough Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Persistent</td>
<td>• Productive</td>
</tr>
<tr>
<td>• Episodic</td>
<td>• Nonproductive</td>
</tr>
<tr>
<td></td>
<td>• Blood stained</td>
</tr>
</tbody>
</table>
PHYSICAL EXAM

• Failure to thrive
• Malabsorption
• Signs of atopy
• Sinuses
• CVS exam

• Cyanosis
• Clubbing
• Chest deformity
CHEST X-RAY

• LUNGS
• CVS
TOTAL ATELECTASIS OF RIGHT LUNG
RIGHT MAIN BRONCHUS SHOWS A METAL FOREIGN BODY
PULMONARY FUNCTION TESTS

- FEV1/FVC
- MIC
BRONCHOSCOPY

Procedures
• Remove F.B
• Evaluate anatomy
• Collect specimen

Indications
• Cough 8 weeks or more
• Suspicion of F.B or obstruction
• Failure to make a diagnosis
GERD TESTS

TESTS

- PH PROBE
- UPPER GI ENDOSCOPY
- OESOPHAGOSCOPY

GERD occurs with stomach content reflux up the oesophagus.
OTHER TESTS

• Laboratory Tests

• C.T.Scan

• Other Consults
APPROACH TO A CHILD WITH CHRONIC COUGH - CASE SCENARIOS

• 7 years boy
• Persistent cough
• Cough quality
• Family H/o asthma
• No clubbing
• Chest deformity+
• Atopy+
• Lungs clear
Suspect Cough Variant Asthma:

- Family H/o asthma
- Triggers
- H/o or signs of atopy
- Response to bronchodilators
- R/o other causes
APPROACH TO A CHILD WITH CHRONIC COUGH - CASE SCENARIOS

- 1 year girl
- 7 kg
- Persistent cough
- Nocturnal
- Vomits after feeds
- Fails to respond to
- Bronchodilators
- Lungs clear
APPROACH TO A CHILD WITH CHRONIC COUGH – CASE SCENARIOS
LEARNING POINTS

Suspect GERD:

• Infant
• Failure to thrive
• Feeding problems
• Vomiting
• Nocturnal cough
• Failure to respond to
• Bronchodilators
APPROACH TO A CHILD WITH CHRONIC COUGH - CASE SCENARIOS

- 9 months boy
- Persistent cough
- H/o ear & skin infection
- Hospitalized 4 times till now
- Failure to thrive
- Chest deformity
- Clubbing
Suspect altered pulmonary defenses:

• Rec respiratory infection
• Serious pulmonary infection
• Failure to thrive
• Multiple sites sepsis
• Family history
Thank You