

## Functional Impairment from Upper Airway Manifestations of Occupational Asthma

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## Occupational Airways Disorders

- Not limited to asthma
- Reactive airways affects upper airway, too.
- Association with obstructive sleep apnea
- May be limiting for occupations that require:
  - Constant and reliable speech
  - Alertness and reliable cognitive acuity
  - Covering over face
- Consider in fitness for duty, impairment

**THIS IS THE BASIC MESSAGE**

## Differential Diagnosis

- Asthma
- Asthmatic bronchitis: hypersensitivity +/- irritant component, bronchiectasis may be present
- Hypersensitivity pneumonitis: Often airways component
- "Chronic obstructive pulmonary disease" (COPD): fixed obstruction with /without reversible component.
- Chronic obstructive airways disease other than or in addition to COPD: associated with dust (and particularly asbestos)
- Allergic rhinitis and atopy: Wheezing and reversible airflow obstruction
- Eosinophilic pneumonias

## Respiratory Symptoms

- Cough
  - Coughing spells
  - Susceptibility to capsaicin
  - Irritant-provoked cough (fragrances, solvents)
- Loss of receptor sensitivity to chest expansion (? Link to sudden death in asthma)
- Rhinitis



Cough interferes with communication, comfort, sleep, relationships, perceptions of one's health.

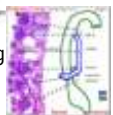
## Voice

- Manifestations
  - Quality of voice
  - Reliability or vocalizations
  - Breathlessness
- Cord edema due to inhaled corticosteroids
- Paradoxical vocal fold motion dysfunction
  - Common problem
  - Irritant-induced
  - Psychogenic causes



## Aerodigestive Symptoms

- Gastroesophageal reflux disease (GERD)
  - Secondary, after airways reactivity established
  - Provoke cough and bronchospasm
  - Aspiration
- Choking and gagging
  - Dys-coordination
  - Interference with eating
  - Sometimes spontaneous with swallowing



## Sleep Apnea

### SLEEP APNEA

- Obstructive
- Reactive upper airways dysfunction syndrome (RUDS)
  - Not the same entity as described by Meggs (1996), which was rhinitis in "MCS"
  - Specific reactivity of upper airway resulting in passage obstruction
  - Can accompany RADS

### SECONDARY EFFECTS

- Nonrestorative sleep
- Somnolence during the day
- Desaturation
- Right heart failure
- Increased risk of myocardial infarction, stroke



## Systemic and Regional

- Fatigue
  - Exertional
  - Sleep disturbance
- Thoracic pain, rib fracture
- Back pain
- Restless leg and cramps
  - Medication side effect: albuterol, formoterol
- Eye problems
  - Tear film inadequacy
  - ↑intraocular pressure
  - Vision-related issues



## Psychological Symptoms

### REACTIVE TO CONDITION

- Anxiety
- Depression
- Stress
  - Suffocating response
  - Panic/fear response

Cultural note for those in the audience not familiar with North American hand gestures: This woman is making a very rude sign intended to symbolize her frustration with chronic disease. Do not adopt this gesture in conversation.



### SECONDARY

- Cognitive changes
  - Sleep apnea
  - Fatigue
- Presenteeism
- Irritability

"Last night, today, THIS is how asthma makes me feel. Pissed off and exhausted and angry. *Fuck asthma.* Screw the nebs and the inhalers, the jitteriness, the coughing, and the not being able to clear this shit out of my lungs. I'm waking up several times a night, and have done so multiple nights this week, and then I have to be awake and think about how while *this flare* and this cold are temporary, this disease is forever."

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