

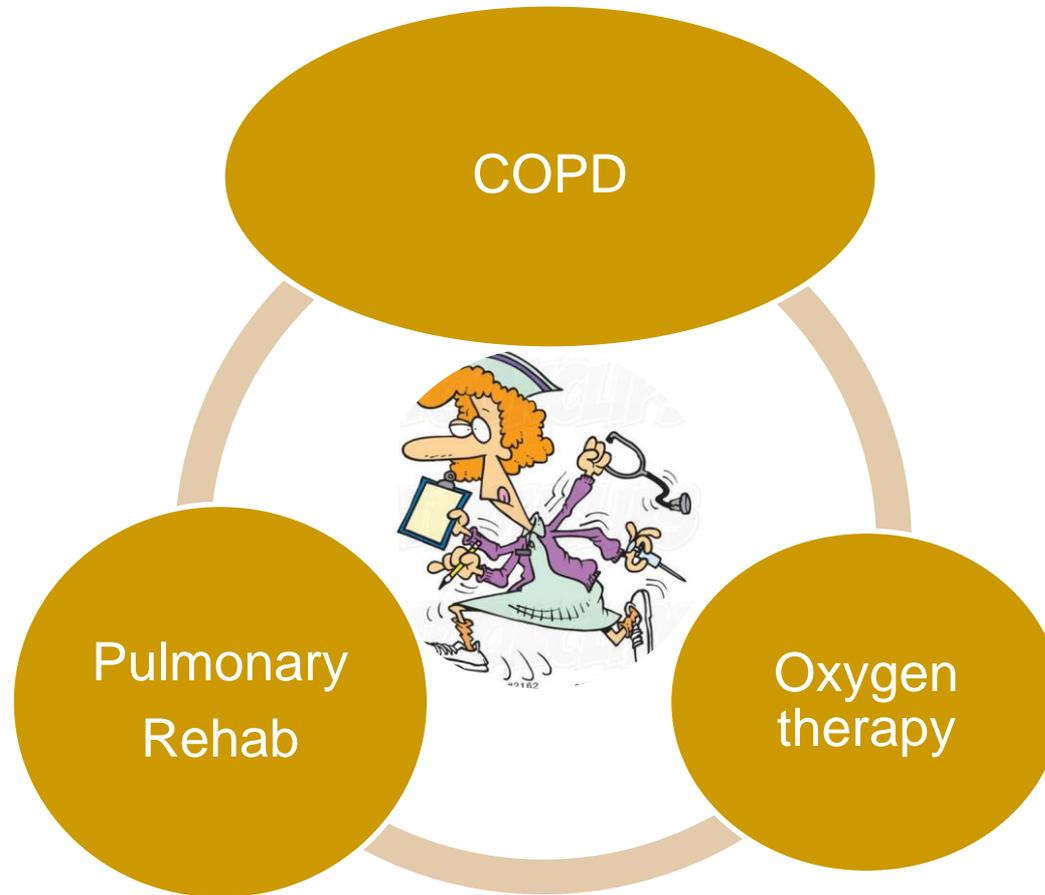
---

# Glenda Sullivan

Clinical Nurse Specialist  
Respiratory

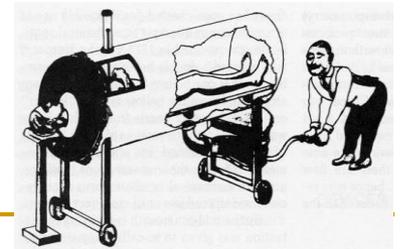


# Role

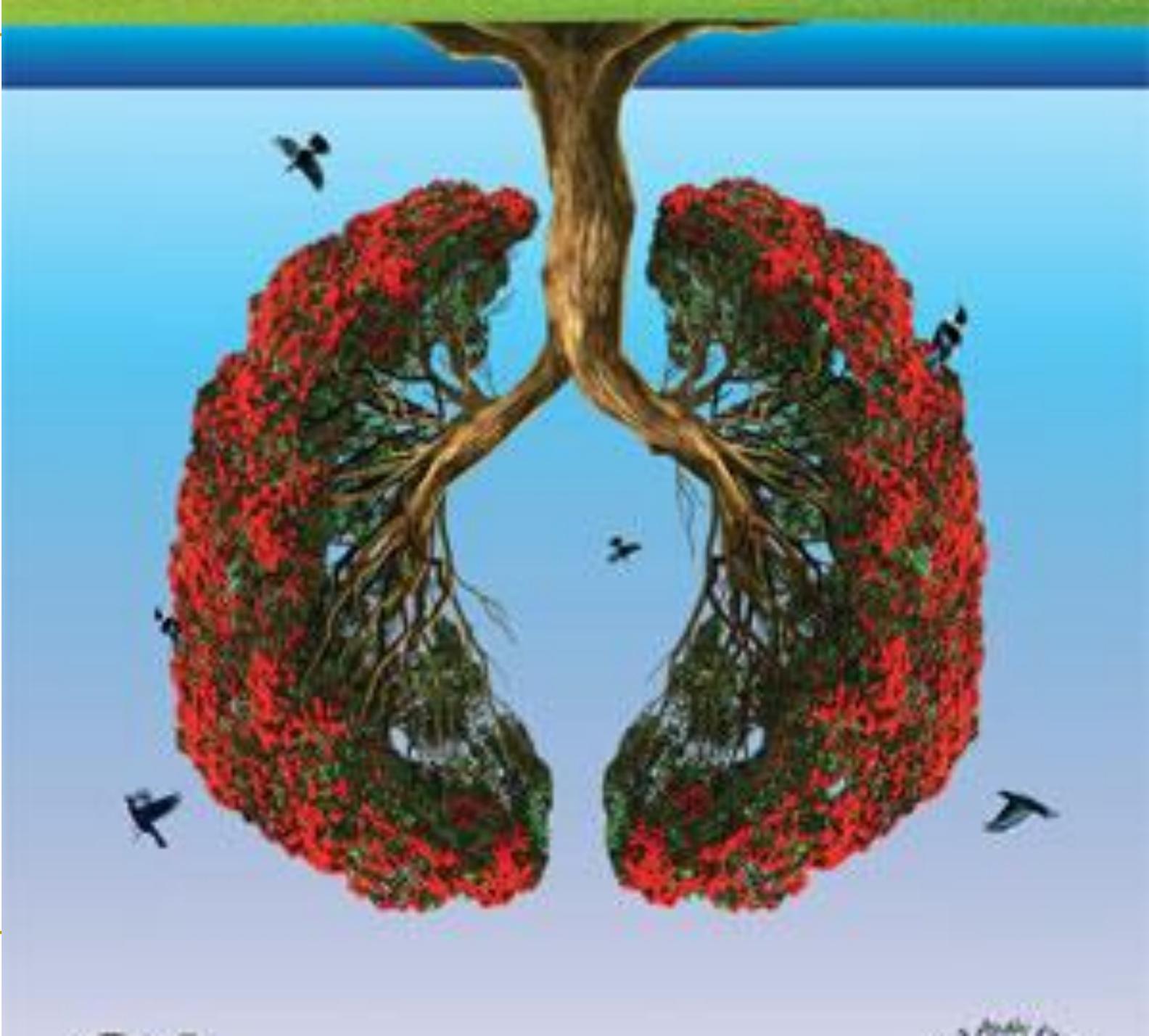


# Objectives

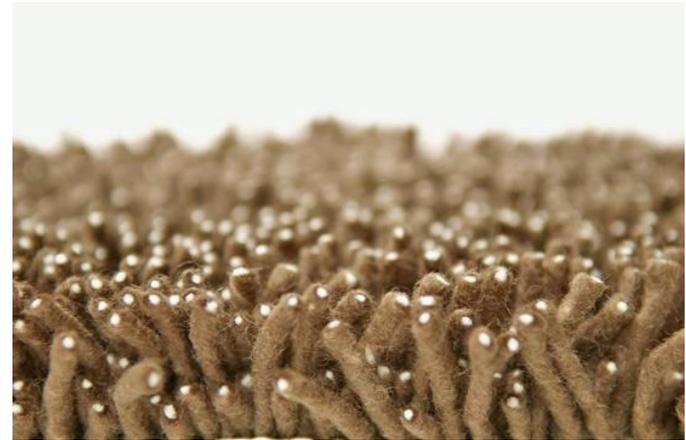
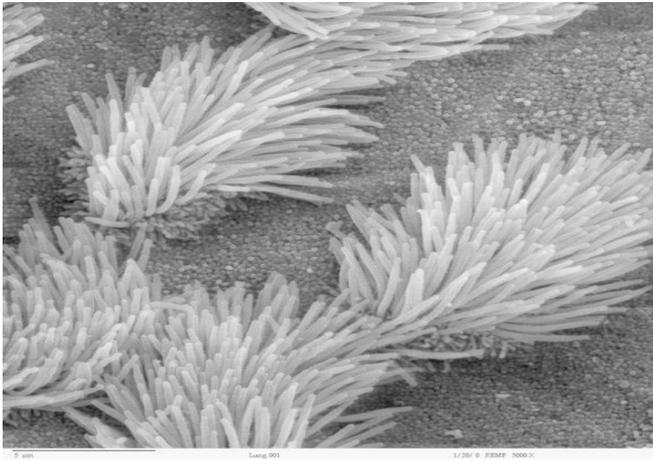
- Enhance the knowledge of nurses interacting with people with COPD (chronic obstructive pulmonary disease), therefore:
  - ❑ Improving the management of people with COPD
  - ❑ Reducing the burden of disease for people with COPD and on healthcare systems



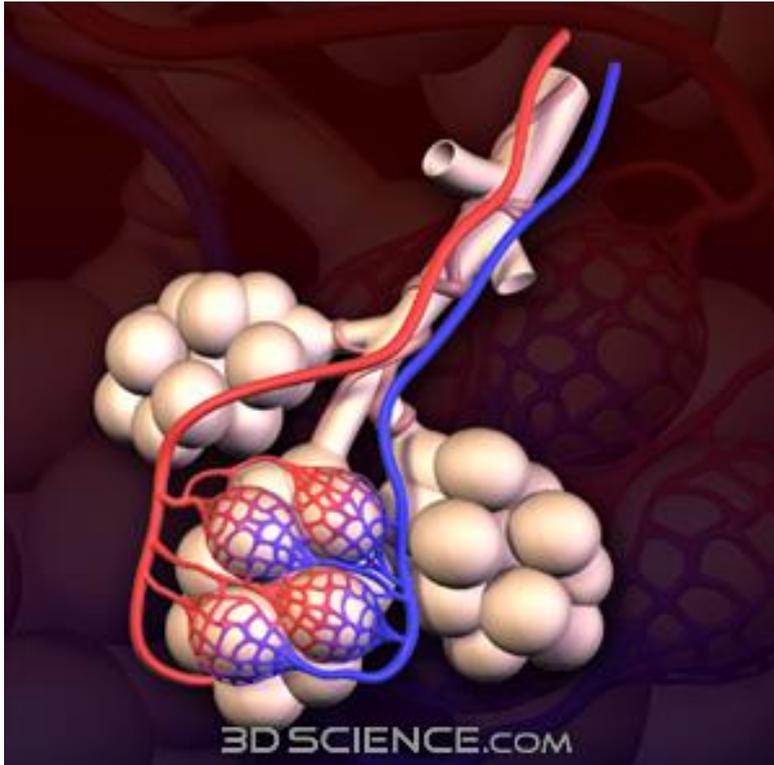




# Bronchioles



# Alveoli



---

# What is Chronic Obstructive Pulmonary Disease (COPD) ?

---

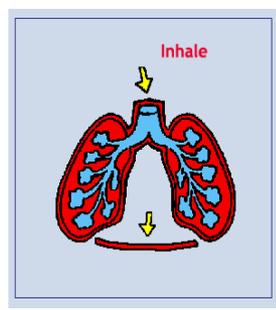
# COPD

**C**hronic means it won't go away

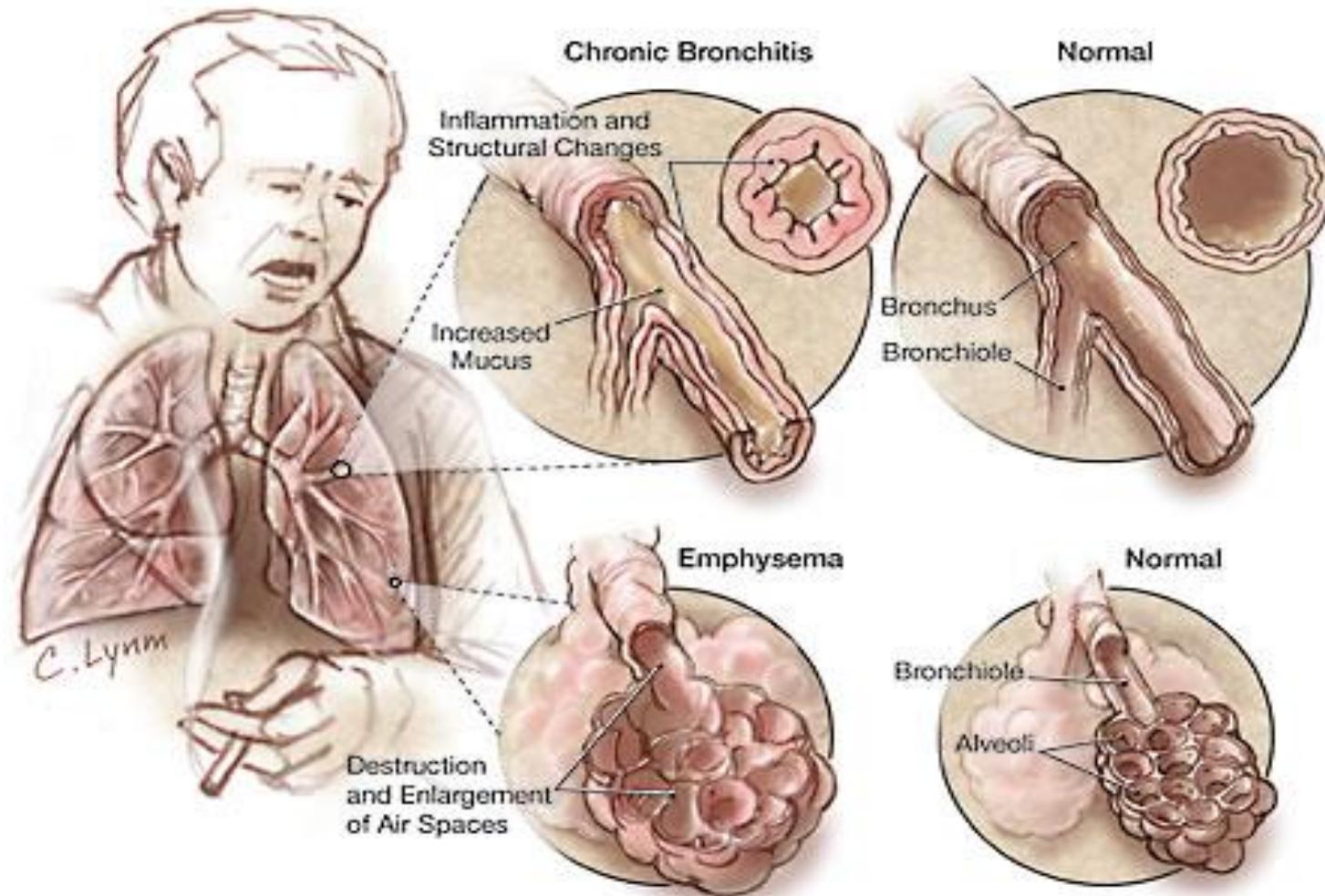
**O**bstructive means partly blocked

**P**ulmonary means in the lungs

**D**isease means sickness.



# COPD



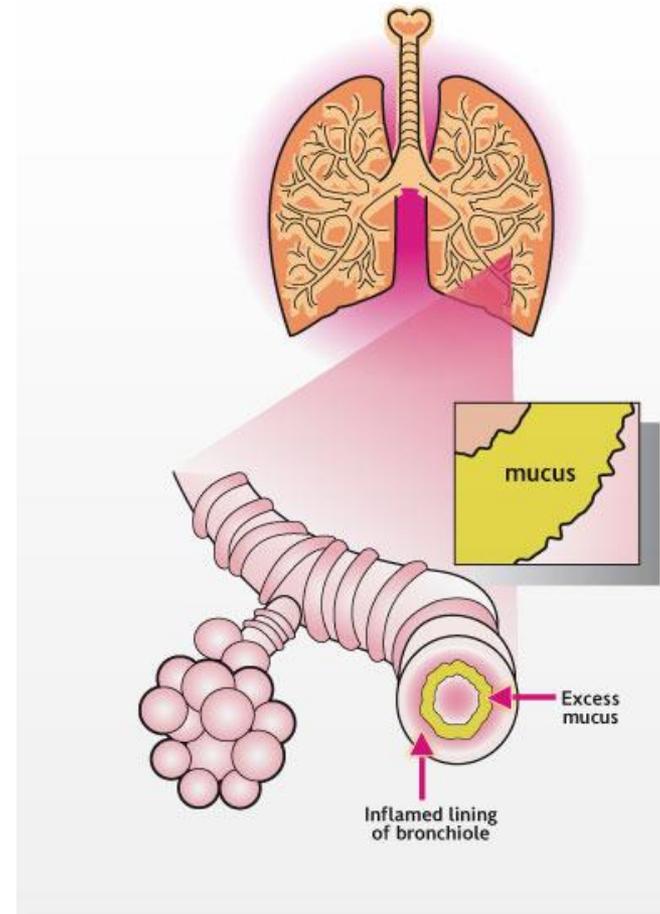
# Chronic Bronchitis

Cigarette smoke induces inflammation in the lungs.

Leading to an increase in the muscular wall of large airways & an increase in size & activity of mucous glands.

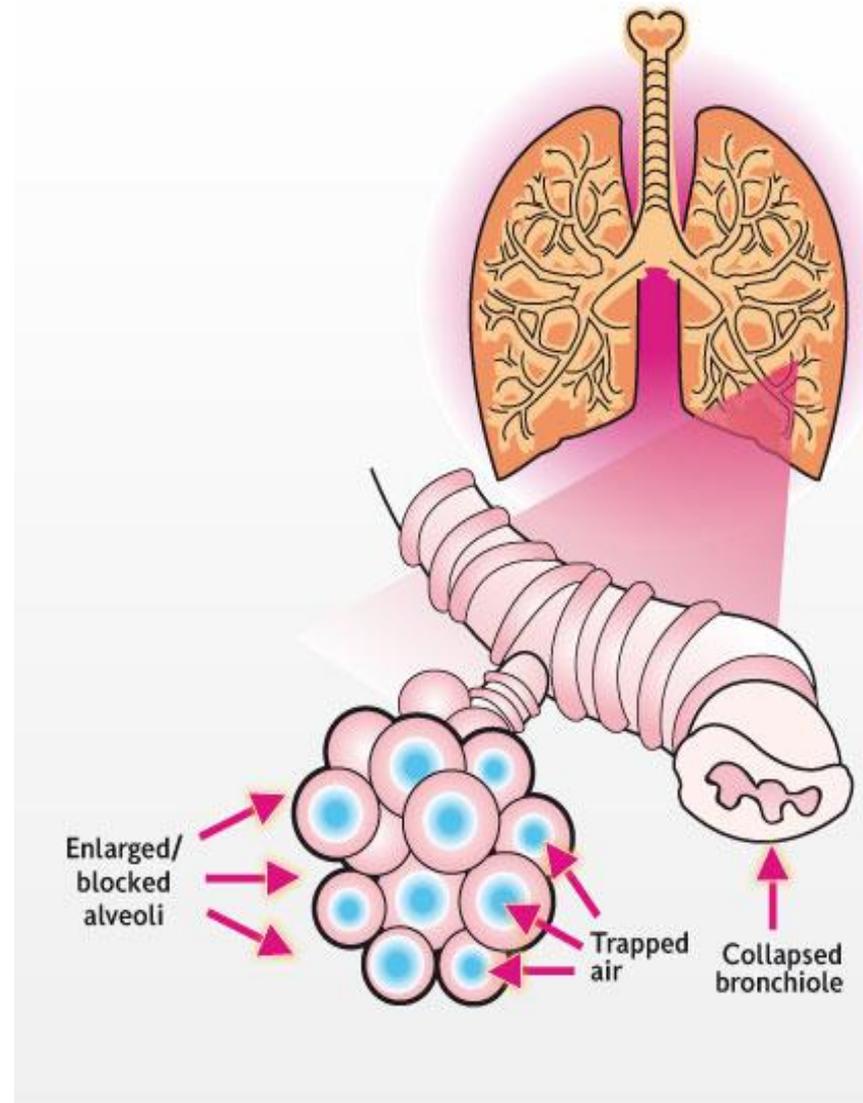
This leads to airway narrowing & blockage by thick sticky secretions.

The resulting symptoms include a chronic cough, mucus production and shortness of breath.

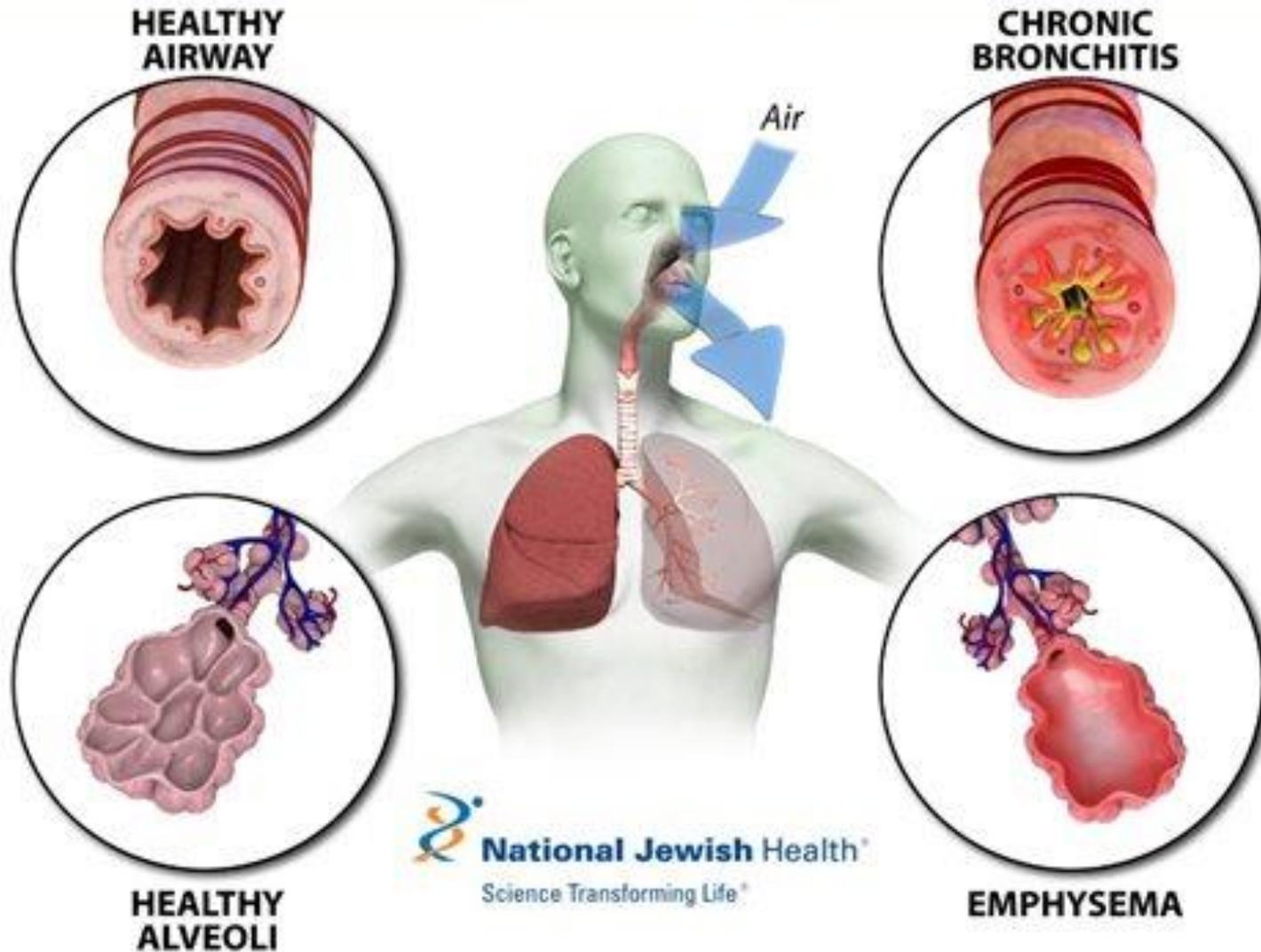


# Emphysema

Refers to the destruction of the air sacs (alveoli). This is the portion of the lung involved in the transfer of oxygen into the blood stream. When these air sacs are damaged it is difficult to get enough oxygen into the bloodstream.



# Understanding COPD



---

# Definition

Chronic obstructive pulmonary disease (COPD) is a disease state characterized by airflow limitation that is not fully reversible. The airflow limitation is usually both progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases.

---

# The burden COPD



- COPD is an irreversible disease that could be largely **preventable by avoiding exposure to tobacco smoke**
- COPD affects an estimated **15%** of the adult population **over 45 years in NZ**
- COPD is the **sixth leading cause of disease** world wide
- It is estimated that only **1 in 5 people** have had a **diagnosis** made
- Based on hospital admission data, the prevalence for **Maori is more than twice that for non-Maori.**

---

What are the risk  
factors for COPD

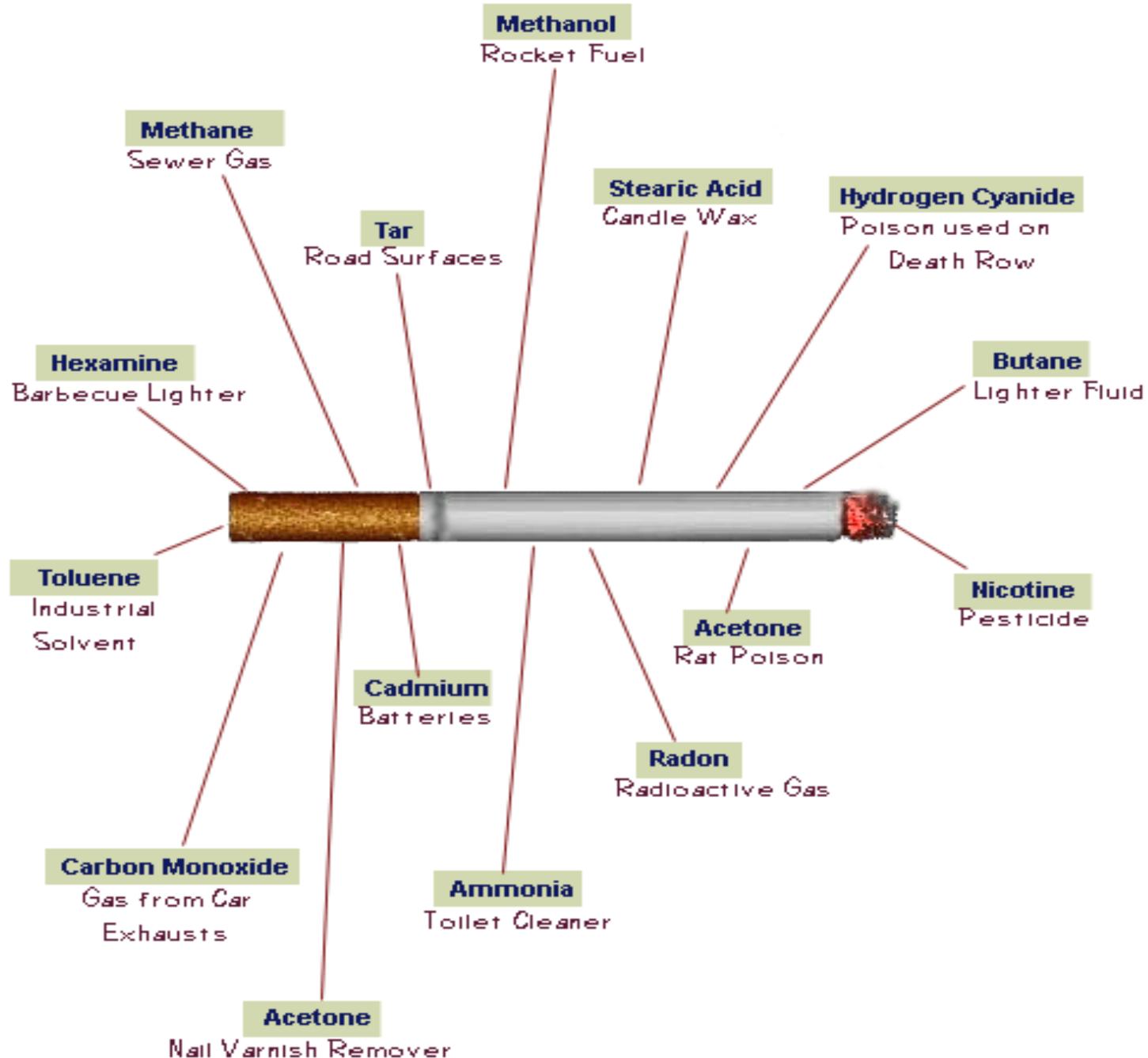
???

---



# Risk factors COPD

- Over 95% of the cases COPD are caused by smoking cigarettes.
- 5% of cases are likely caused by significant exposure to various types of dust, (coal, grain or wood).
- Recurrent or significant lung infections in infancy and early childhood
- Preterm birth
- 1% of the cases of COPD have genetic based deficiencies in an enzyme called alpha-1 antitrypsin.



# Symptoms

- ❑ Shortness of breath
- ❑ Cough a lot & bring up mucus
- ❑ Wheeze
- ❑ Fatigue



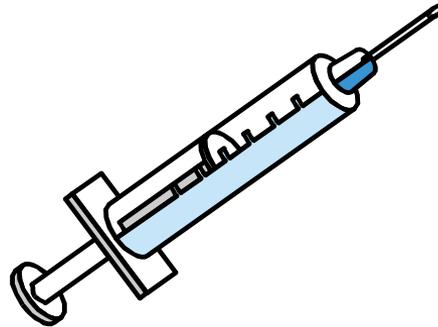
www.clipartof.com · 1186414

Patients do not develop recognizable symptoms until the disease reaches a stage where lung function is significantly impaired

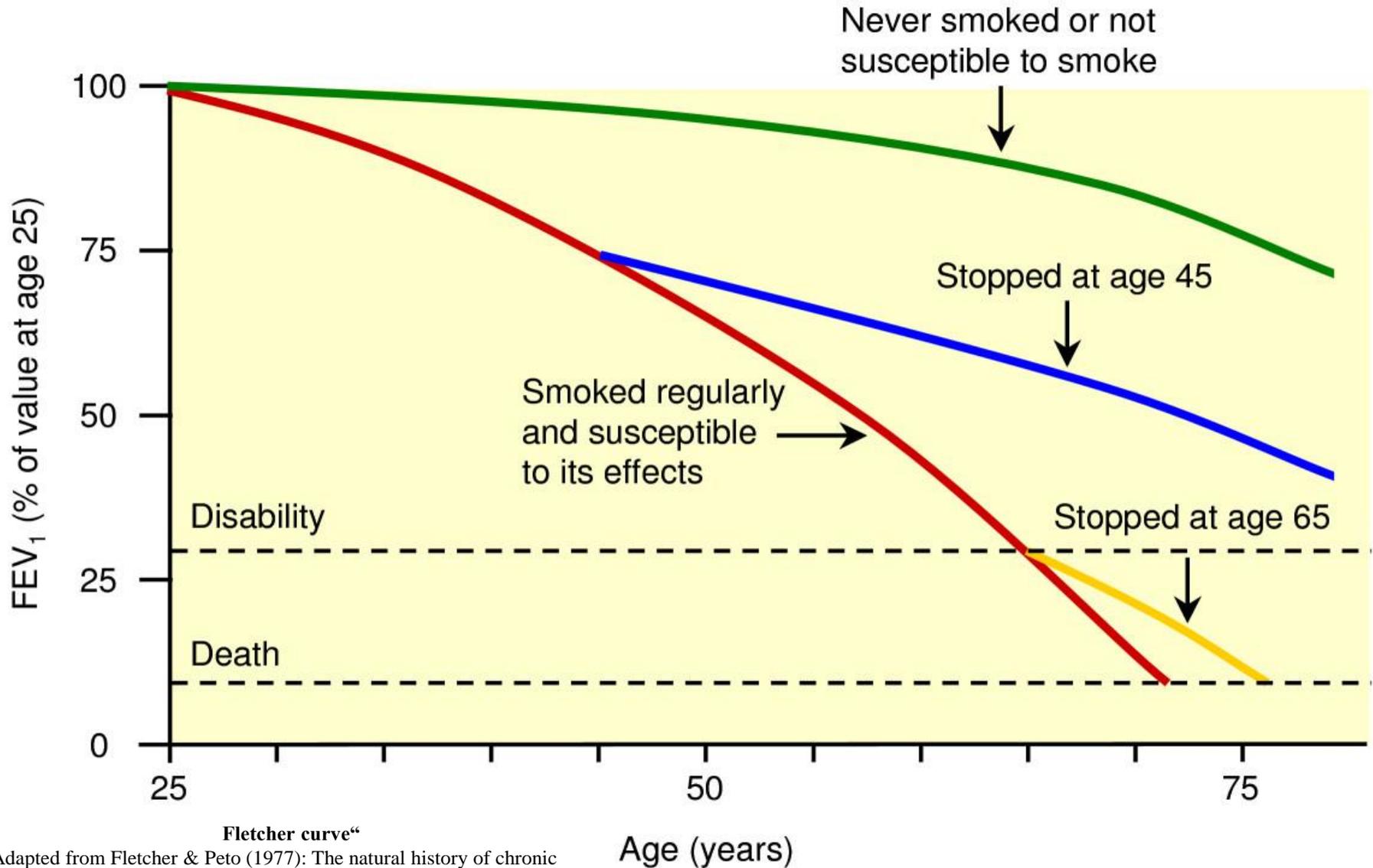
---

# Diagnosis

- History
- Pulmonary Function Tests
  - Spirometry-determines presence & severity
- CXR
- Laboratory Tests
  - ABG's



# History of chronic airflow obstruction

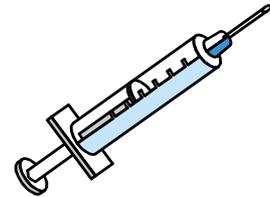


Fletcher curve“

Adapted from Fletcher & Peto (1977): The natural history of chronic airflow obstruction [30].Kotz *et al. BMC Public Health* 2007

# Treatment

- Smoking cessation
- Medication management
- Pulmonary Rehabilitation
- Annual flu vaccination



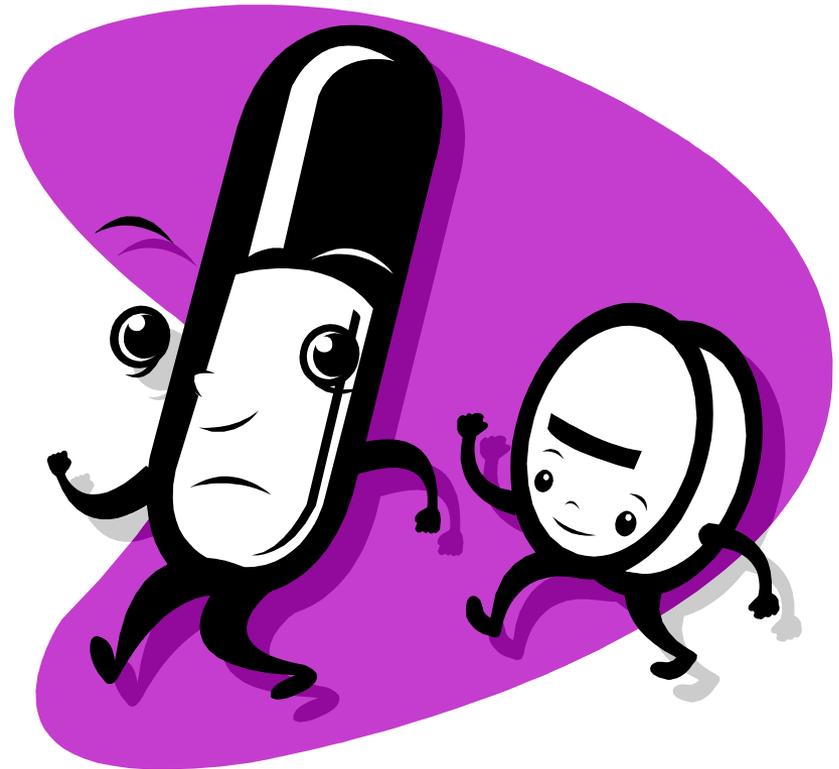


# Medication Management



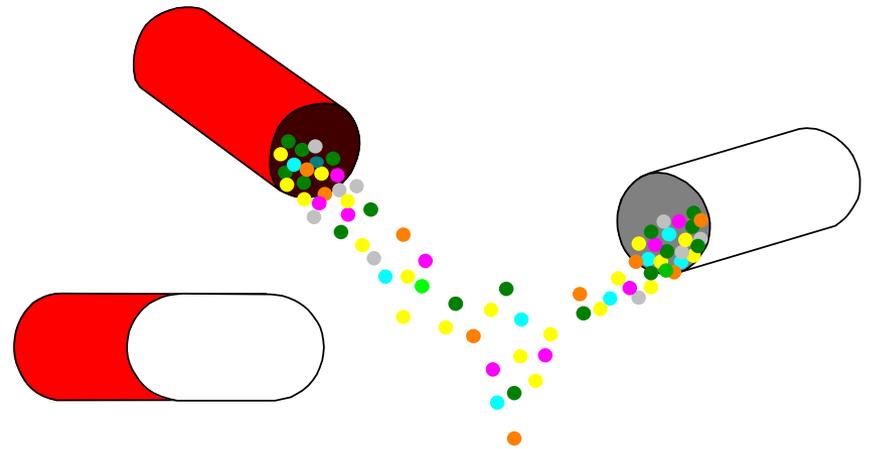
# Oral steroids

- Prednisone 40mg 7-10 days (varies)  
no benefit beyond 2/52
- No weaning except when person has had numerous course prior to admission
- Side effects
  - altered mental state
  - insomnia
  - anxiety
  - depression
  - hyperglycemia
  - osteoporosis
  - cataracts

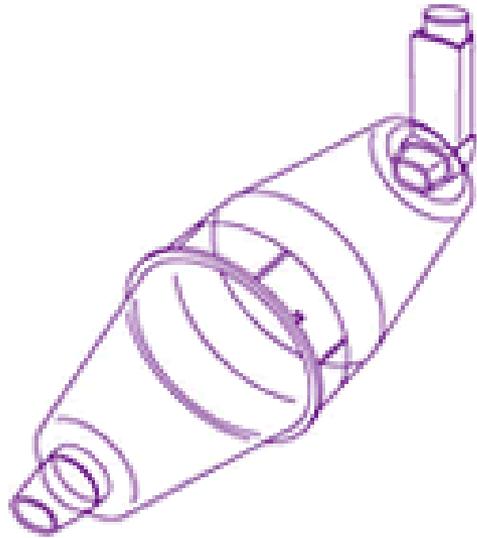


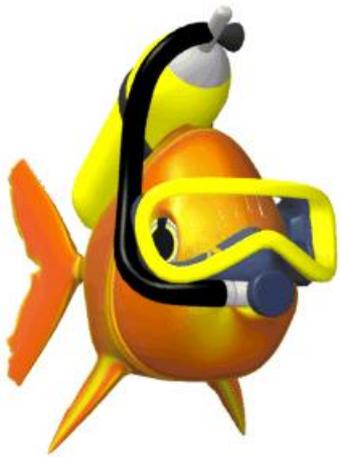
# Antibiotics

- Controversy exists
- Clear benefit in those that have all 3 symptoms ( $\uparrow$ SOB, sputum volume & purulence) also if  $\uparrow$ fever,  $\uparrow$  WCC



# Spacers versus nebulisers





- Oxygen is a prescription medication
  - Oxygen is a treatment for low oxygen, not breathlessness. (Oxygen has not been shown to have any effect on the sensation of breathlessness in patients who are not hypoxemic.)
-



What are you going to do ?

---

# Action Plan

- **Stop**
  - Get into a **rest position**
  - Practise **breathing control**
  - Use **inhaler** if required
  - Relax and continue on with activities.
-

---

# Breathing Control Technique

- Concentrate on the **OUT** breath.
  - Breathe in through the nose and out through the mouth.
  - Breathe out through **PURSED LIPS**.
  - Aim to breathe **OUT** for **THREE TIMES AS LONG** as your breathe in.
-

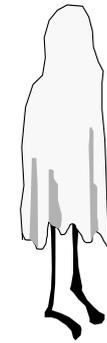
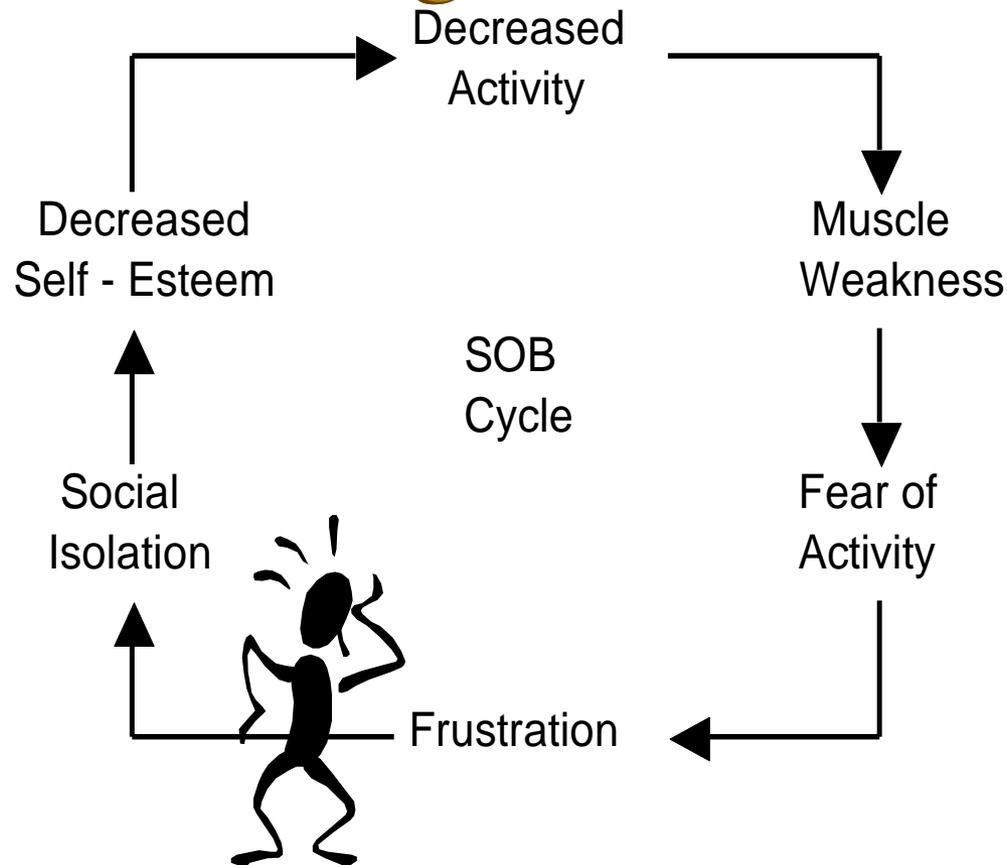
# Summary



- Normal rate of breathing per minute?
- Main cause of COPD?
- When short of breath what should a person with COPD do to try and settle their breathlessness
- Should people with COPD exercise?



# Why exercise



---

# Pulmonary Rehabilitation



“a multidisciplinary program of care for patients with chronic respiratory impairment that is individually tailored and designed to optimise physical and social performance and autonomy”

*American Thoracic Society, 1999*].

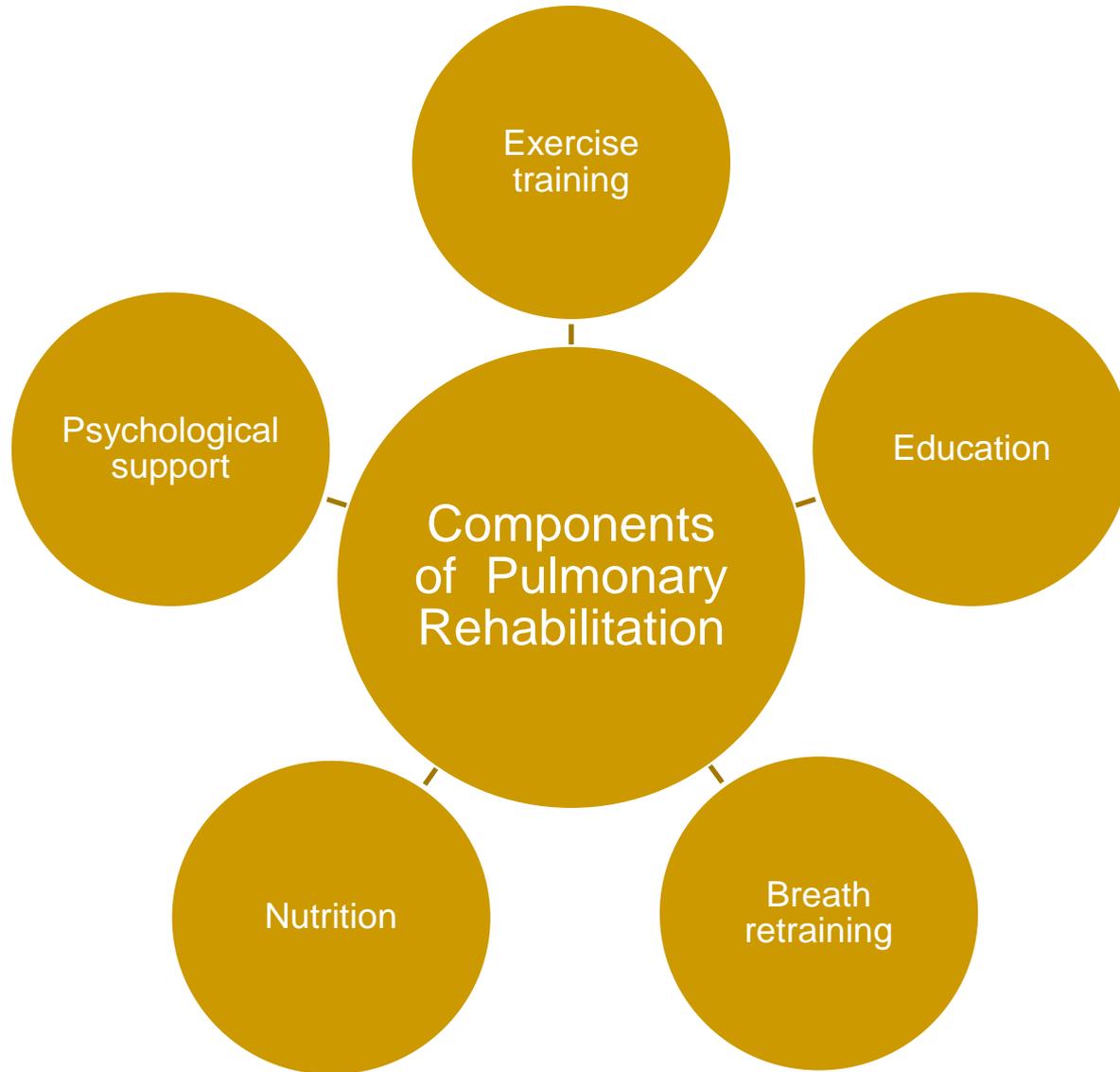
---

# Hospital-based 6 weeks



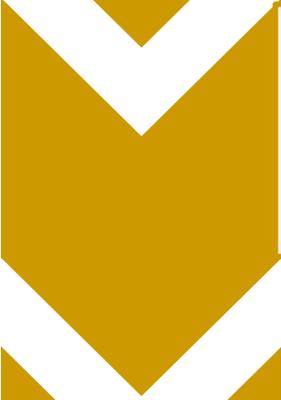
# Community-based 4 weeks





# Expected outcomes

- 
- Reduce respiratory symptoms
  - Increase exercise performance

- 
- Increase knowledge of chronic lung diseases & its management
  - Improve health related quality of life

- 
- Improve psychosocial symptoms
  - Reduce hospital admissions & use of medical resources
  - Return to work

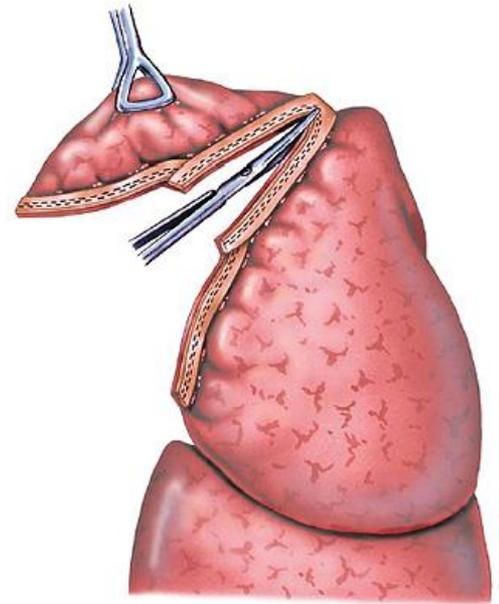
---

# Lung Transplant

- 15 are performed each year currently in Auckland (for all lung conditions)
  - survival chances start at 85% at one month, they quickly plummet to 70% at one year, and 50% at three years.
  - Unilateral and bilateral
  - Strict criteria including age, weight, walk distance, psychological assessment, life expectancy, co-morbidities
-

# Lung volume reduction surgery (LVRS)

- Pneumoplasty involves cutting away the most severely affected areas of emphysema to improve elastic recoil and diaphragmatic function.
- Mainly performed in upper lobes.



# Bronchoscopic LVRS

- The aim is to slowly collapse diseased parts of the lungs through a bronchoscope by delivering a proprietary mixture of drugs and biologics, reducing the organ in size and improving the ventilation/perfusion relationships in patients with severe emphysema.



# Intra-Bronchial Valve

- The one way valve is used to block bronchial airflow in the most emphysematous areas of lung.



# Differential Diagnosis: COPD and Asthma

---

## **COPD**

- Symptoms slowly progressive
- Long smoking history
- Dyspnoea during exercise
- Onset in mid-life
- Largely irreversible airflow limitation

## **ASTHMA**

- Onset early in life (often childhood)
- Symptoms vary from day to day
- Symptoms at night/early morning
- Allergy, rhinitis, and/or eczema also present
- Family history of asthma
- Largely reversible airflow limitation