NATIONAL CENTRE FOR FARMER HEALTH

Respiratory illness

“If you can’t breathe, nothing else matters’

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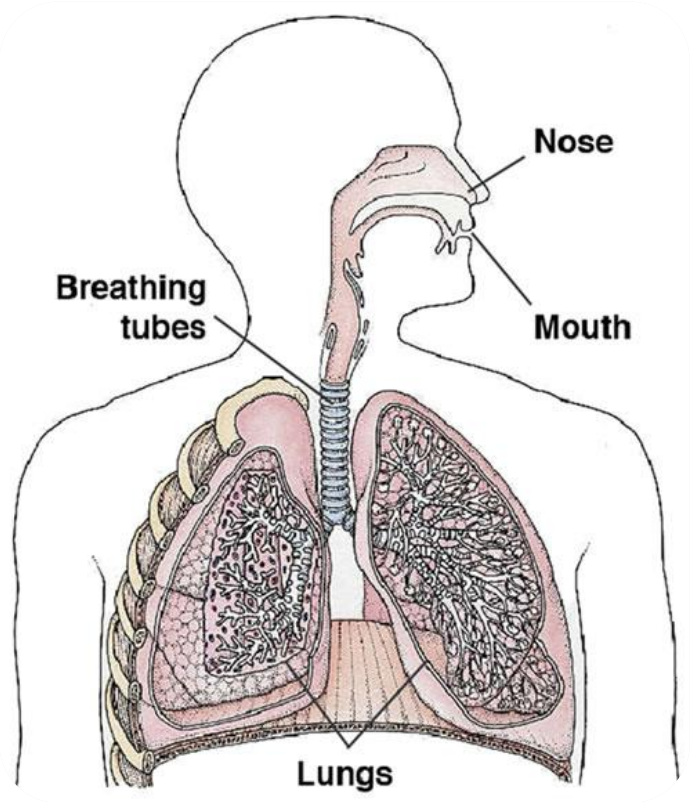
Lungs & breathing

- Breathe about 25,000 times per day
- Breathing tubes branch out into each lung where oxygen is picked up by circulating blood
- Oxygen is essential for our cells to function
- Blood carries the oxygen to the cells throughout the body



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In your table groups

Discuss the following questions:

- What do you believe are the major causes of respiratory illness in rural Australia?
- What are the major respiratory hazards on your farm?

Document your answers page 12.2 in your resource kit

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Respiratory diseases in Australia

- Very common in Australia
- Cause numerous disabilities in farmers
- Disrupt daily life and productivity
- Contribute to thousands of deaths
- Preventable and manageable

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Major respiratory diseases

- Asthma
- Chronic obstructive pulmonary disease (COPD)
- Influenza
- Hay fever
- Allergic rhinitis
- Pneumonia

- Lung Cancers
- Bronchitis
- Organic dust toxic syndrome (Farmer's Fever)
- Hypersensitivity pneumonitis (Farmer's Lung)
- Pulmonary fibrosis
- Emphysema

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Piko - What are we measuring?

- Elasticity and lung volume!!
  - Fev1= forced expiratory volume in 1 second
  - Fev6 = forced expiratory volume over 6 seconds

- Ratio between the two
  - 1 second/6 seconds
  - E.g. 5 litres in total
    - 4 litres exhaled first second
    - 1 litre exhaled in remaining 5 seconds
    - 0.80 of volume exhaled in first second
    - remaining .20 exhaled over total 6 seconds

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The Piko

Two measures

- Elasticity and volume

1. Both are a concern for men and women
2. Elasticity is damaged over time
3. Volume can only be improved by use!!! (exercise)
4. Respiratory disease and farming do have linkage

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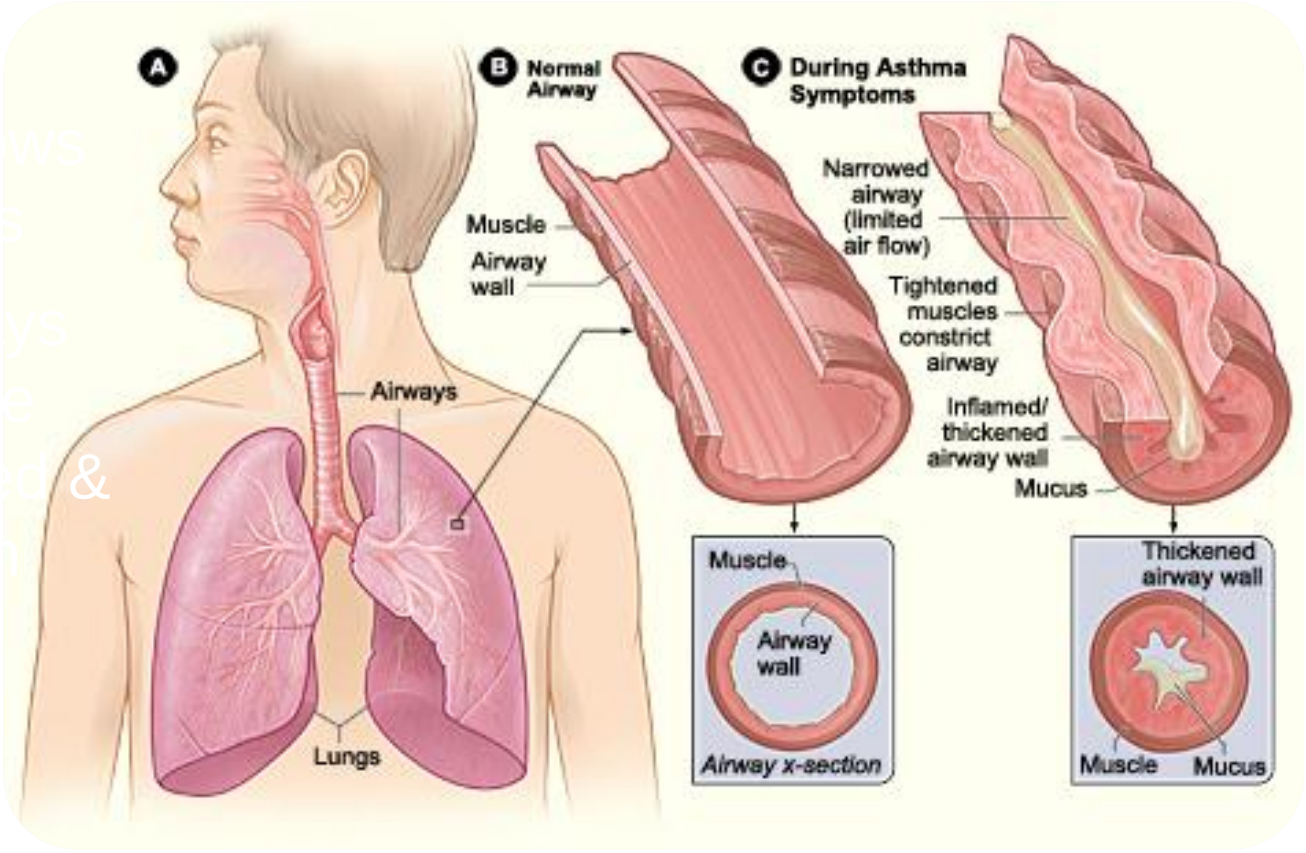
Asthma



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Group activity

How does breathing difficulty feel?

- Pinch your nose off
- Breathe through the drinking straw while walking for 1 minute around room

How does it feel?

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Asthma in Australia

The incidence of asthma in Australia is among highest in the world[1].

- 15% of children and 11% of adults suffer the effects of asthma
- Higher in rural areas

[1]National Asthma Council Asthma Facts.

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Signs & symptoms of asthma

- Cough (night & early morning)
- Shortness of breath
- Difficulty in breathing
- Chest tightness
- Wheezing (whistling sound during breathing)

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Causes of asthma

- Family history (eczema, allergic rhinitis, asthma)
- Allergies
- Environment (dusts, gases, tobacco smoke, pollen, dust mites, chemical vapours)
- Viral infections
- Food chemicals (sulphites in wine, MSG in food)
- Medicines (Aspirin, blood pressure medication)

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Exercise induced asthma

- Occurs in 50-65% of people with asthma
- Induce asthma attacks in normal non-asthmatics
- Sensitive to changes in temperature and humidity
- Exercising - breathe through your mouth, air is colder, drier which can trigger an attack
- Breathing warm humid air (steam inhalation) reduces the risk

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Personal asthma management plan

1. Employers and staff aware of the plan
2. Identify allergens and avoid stimuli
3. No smoking
4. Diet (avoid food allergens)
5. Exercise (manage exercise induced asthma if required)
6. Always have a weeks supply of medication
7. Maintain healthy body weight

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Asthma medication

Video Clip - House - Asthma

Reliever medication

Bronchodilator- open up airways

eg: Ventolin® (salbutamol) inhalers

Preventer medication

Corticosteroids – avoid inflammation of airways

eg: Pulmicort®, Seretide® inhalers

Know how to use inhalers and spacers correctly

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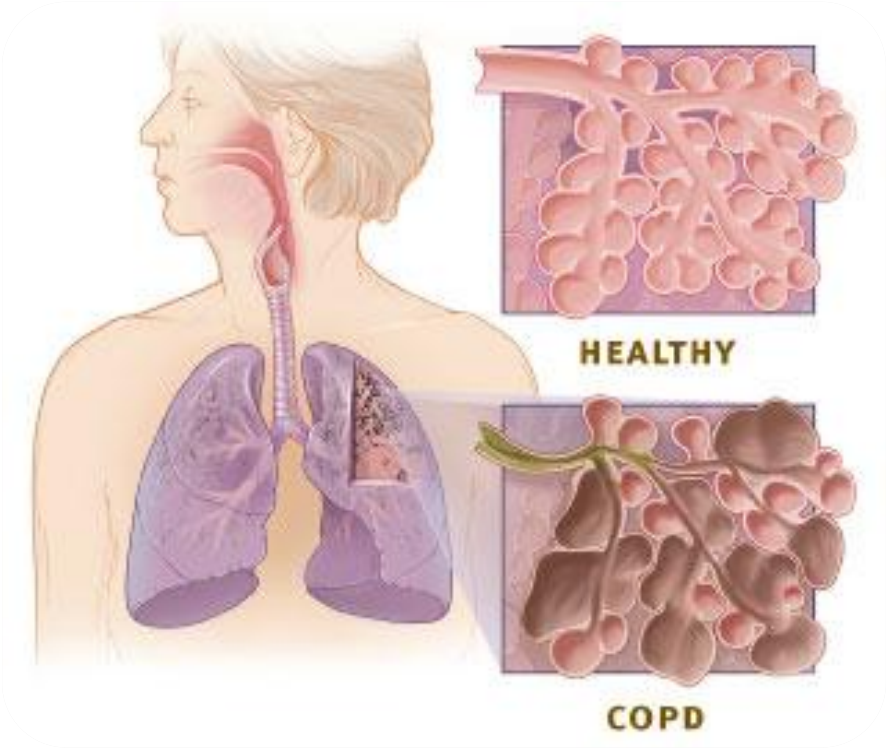
Chronic obstructive pulmonary disease (COPD)



- Airways are damaged and partly obstructed, making it difficult to get air in and out.
- Smoking, exposure to fumes, pollen, dust, or chemicals over extended periods of time may contribute.

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Chronic obstructive pulmonary disease (COPD)

Signs & symptoms of COPD

- Frequent cough (with or without phlegm)
- Shortness of breath
- Wheezing
- Chest tightness

Treatments

- No cure (irreversible)
- Improve your exercise tolerance
- Prevent exposure (flu, allergens)
- Improve your overall health
- Reliever medications (bronchodilators)
- Treat complications promptly

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Organic dust toxic syndrome (ODTS) - (grain fever)

- Agricultural workers may develop ODTS after inhaling dust from organic materials
- Fever occurs 4 to 12 hours after exposure
- Flu-like symptoms - general weakness, headache, chills, body aches, cough, shortness of breath.
- Usually disappears within 24 hours (reversible)
- Long term exposure increases risk of chronic bronchitis
- Avoid organic dusts (use masks)

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Chronic Hypersensitivity Pneumonitis - Farmer's lung

- Caused by inhaling dust
- Common in people who handle hay, compost, grains.
- Flu-like symptoms (cough, fever & chills, difficulty in breathing, muscle pain, general discomfort)
- Pulmonary fibrosis may develop (permanent scarring of lungs) (irreversible).
- Serious in low immunity (young, very old, pregnant, immuno-suppressed by drugs or disease & diabetics).

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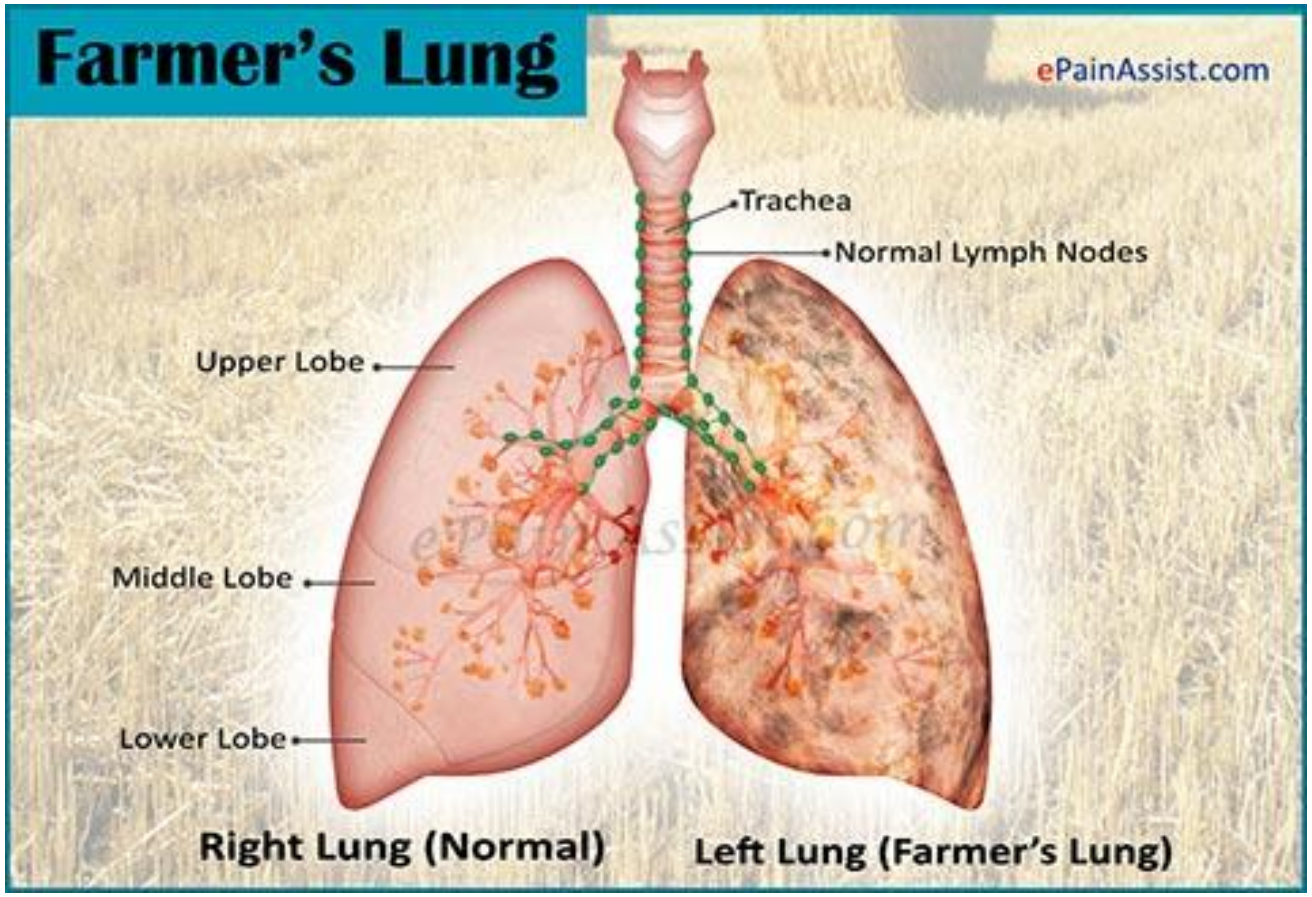
Farmer's lung



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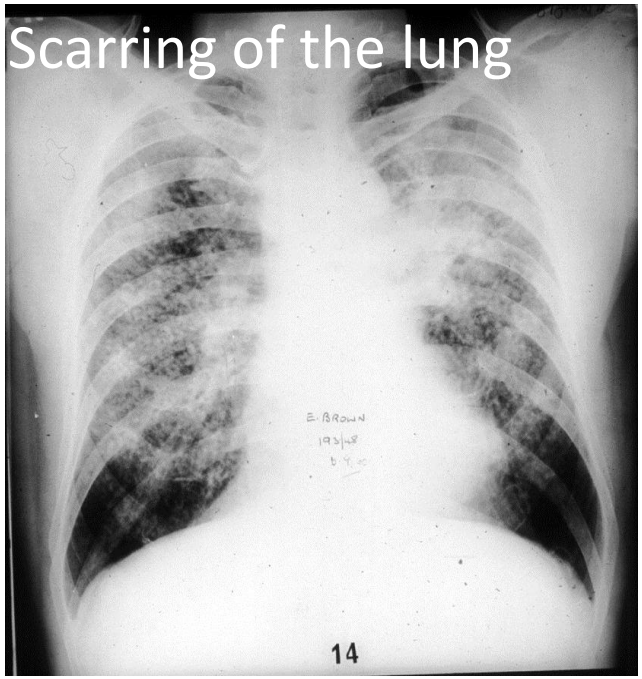
Pulmonary fibrosis



- Scarring of lungs causing an irreversible loss of tissue's ability to transfer oxygen
- Dust, pesticides *(Paraquat),* chemicals and cigarette smoking

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Respiratory hazards in farming

- Organic dusts
- Inorganic dusts
- Infections (Q fever)
- Pesticides
- Fuel vapours
- Solvents
- Fertilizers
- Bushfire smoke
- Fumes

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Organic dusts

Source

- Grain, hay, cotton, animal feed, plant and animal parts (machine sheds, livestock buildings)

Illnesses

- Asthma
- Bronchitis
- Grain fever
- Farmer's lung

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Inorganic dusts

Types

- Silicates, asbestos, plastics

(stockyard work, ground work)

Illnesses

- Pulmonary fibrosis

(silicosis, asbestosis),

- Chronic bronchitis

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Infections

Causes

- Bacteria, virus, moulds

  (animal secretions & excretions, animal husbandry, bird manure and dust)

Q fever bacteria (*Coxiella burnetii)*

Illness

- Q fever
- Respiratory tract infections
- Pneumonia

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Fumes

Causes

- Bushfire
- Welding fumes
- Housed animals

Illnesses

- Occupational asthma
- Temporary asthma
- Bronchitis

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Pesticides

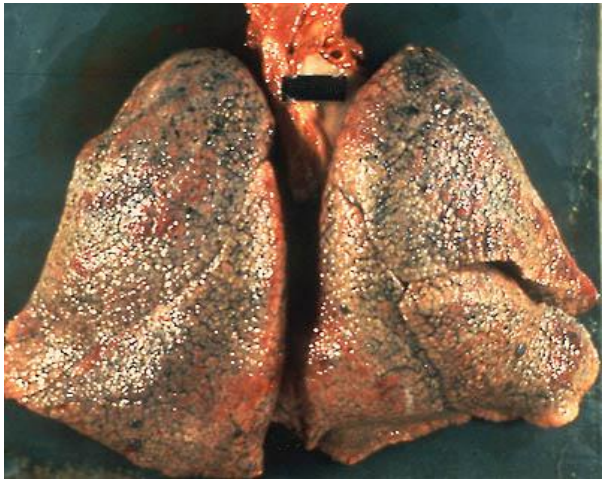
Causes

- Organophosphate, fumigants, herbicides (paraquat)

Healthy Lung

Illness

- Pulmonary fibrosis
- Pulmonary oedema



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Solvents/fuels

Causes

- Fuel spill
- Vehicle exhaust
- Storage

Illness

- Respiratory irritant
- Bronchitis

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Climate changes & respiratory illness

Impact on respiratory illness through

- Microbes growth (influenza virus etc.)
- Increase of allergens (more dust with heat and wind)
- Personal hygiene (less water)
- Delay recovery from illness through heat and stress
- Bushfire smoke (fume & dust)

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Protecting from farm hazards

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Prevention of farm hazards

- ✓ Wear masks, respirators and personal protective equipment
- ✓ Minimise contact with dusts
- ✓ Follow guidelines in agrochemical handling
- ✓ Ensure fresh air in confined working areas
- ✓ Store agro products in dry condition
- ✓ Wet down dusty areas before cleaning
- ✓ Reduce house dust mites by regular cleaning
- ✓ Inform others if you have asthma
- ✓ Do not overfill fuel tanks
- ✓ Keep emergency numbers close

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In your table groups

Discuss the following question:

- How you can reduce your exposure to respiratory hazards and protect yourself.

Document your answers page 12.14

in your resource kit

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In summary

- Be aware of respiratory hazards
- Identify respiratory risks on your farm
- Have asthma plan and inform others
- Know first aid
- Take all precautionary actions
- Inform your doctor/health professional about the farming practices you do

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Respiratory illness

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