Lung Testing Pathway for Ages 6 and Above

Patient Presentation, History and Physical Exam
This is not an extensive list of presentations (exclude upper respiratory, pulmonary vascular, cardiac, metabolic, haematologic, neuropsyc, etc.)

This primer on lung testing doesn't replace clinician judgment and is not intended for use in acute presentations or in clinical urgencies.

- **Age 6 – 50**, with any of the following:

Symptoms:
- *Episodic* cough, wheeze, chest tightness and/or dyspnea
- Triggers: cold air, exercise, infection, allergens, etc.

History:
- Personal and/or family history of atopy

- **Age 35+**, with any of the following:

Symptoms:
- Persistent cough, sputum, wheeze, and/or dyspnea

History:
- Tobacco/ cannabis use
- Occupational exposure
- Familial early onset COPD

Daily cough > 8 weeks not yet diagnosed

Chronic dyspnea

With any of the following:

Symptoms:
- Dry cough with or without fine crackles
- Rheumatologic disease

History:
- Occupational exposure
- >3 months following acute COVID-19

Lower respiratory condition suspected:

Asthma → Optional chest x-ray

COPD → Chest x-ray

Chronic cough → Chest x-ray

Interstitial Lung Disease (ILD) including post COVID ILD → Chest x-ray

Dyspnea not yet diagnosed → Chest x-ray

Spirometry
Measures airway flow rates pre & post-bronchodilator FEV_1, FVC, FEV_1 / FVC ratio, flow volume loops

Choosing Wisely recommends spirometry for asthma and COPD (see Guidelines links above for details)

Results indicate

FEV_1/FVC normal

Does not exclude Asthma
Re-evaluate differential diagnosis. See Lung Testing Results link above for details.

Consider consulting Respirologist. See Asthma Guidelines link above for details.

FEV_1/FVC < 0.70 or lower limit of normal. See Lung Testing Results link above for details.

With reversible expiratory airflow obstruction i.e. FEV_1 and/or FVC increase by 12% and 200 mL. See Lung Testing Results link above for details.

Consistent with Asthma

Asthma Guidelines. See Asthma Guidelines link above for details.

Without reversibility

Consistent with COPD

COPD Guidelines. See COPD Guidelines link above for details.

FVC < 80% or < lower limit of normal. See Lung Testing Results link above for details.

Possible restrictive disease

Full PFT
Spirometry followed by additional measures of alveolar loss (volumes & gas exchange)

Results indicate

TLC < lower limit of normal

DLCO low. See Lung Testing Results link above for details.

Consistent with:
- Interstitial Lung Disease
- Pneumonitis
- Pulmonary vascular disease

Order high resolution CT scan

DLCO normal. See Lung Testing Results link above for details.

Consider extra-parenchymal cause:
- Chest wall deformity
- Neuromuscular weakness
- Pleural disease
- Obesity

TLC normal and DLCO > upper limit of normal

Consistent with:
- Pulmonary haemorrhage
- Left → right intracard shunt
- Polycythaemia

Refer to relevant specialist. See referral guideline tab for details.

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