



Australian Government  
National Health and Medical Research Council

# Assessment and Management of Lung Cancer

## Evidence based guidelines A Guide for General Practitioners

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Adapted from the Clinical Practice Guidelines for the Prevention, Diagnosis and Management of Lung Cancer (March 2004) [www.cancer.org.au/guidelines](http://www.cancer.org.au/guidelines)



### Incidence/Mortality

#### 8060 new cases / 6911 deaths in 2003

- Men 56 / 48 (per 100,000)
- Women 29 / 24 (per 100,000)

#### 5 year overall survival ~12–14%

- Causes 1 in 4 cancer deaths in males

#### Subtypes:

- NSCLC** (non-small cell lung cancer) ~85%
- SCLC** (small cell lung cancer) ~15%
- Subtype determines treatment options

#### Risk Factors:

##### Smoking (tobacco smoke)

- (Duration and quantity – pack years)  
Pack years = pack (20/day) x years smoked

##### Age

##### Asbestos

**Others include:** silica, radiation (medical, uranium), cadmium (electroplaters), arsenic (copper smelters), certain metals such as nickel, beryllium (ceramics, electronics, mining), chromium, and diesel exhaust fumes

Lung cancer is common, it has a high case fatality

Highest risk: older smokers (including former smokers)

Risk factors: asbestos exposure, other risk factors are less common

### Screening (asymptomatic)

Randomised controlled trials (RCTs): screening by CXR and sputum cytology is not shown to reduce mortality from lung cancer

Low dose CT screening is more sensitive than CXR for detecting lung nodules but is not currently recommended outside clinical trials  
RCT results awaited

No proven effect of any screening

Investigate symptomatic patient

### Prevention

#### Primary:

##### AVOID SMOKING

- Active
- Passive (increases risk for non smoker)

ALL SMOKERS – smoking cessation advice ask (about smoking at every opportunity)

assess (willingness to quit)

advise (all smokers to stop)

assist (smoker to stop)

Refer to the Quitline 13 QUIT or 13 7848

arrange (follow-up)

#### Secondary:

Current chemoprevention is not effective

- Avoid supplemental beta-carotene as it increases risk

Not smoking is the most effective way of preventing lung cancer. Smoking cessation is beneficial at any age

No proven chemoprevention agents

### Clinical

#### Common presentations

##### Solitary Pulmonary Nodule (SPN) / Coin lesion

- More likely to be malignant if >3cm, spiculated, enlarging

#### Symptoms:

- Unresolved chest infection
- Haemoptysis
- New or changed cough or wheeze
- Chest pain
- Dyspnoea
- Weight loss – unexplained
- Metastases eg pathological fracture
- Other eg paraneoplastic, constitutional symptoms

Lung cancer presents in many ways ranging from incidental CXR finding to persistent lung or other symptoms

Integrate individual risk profile

### Initial investigations

#### CXR

- Compare old films, if any
- Spiculation, irregular, enlarging, non-calcified, size
- Secondary effects eg lung collapse, effusion, rib lesion
- May be normal (endobronchial or behind structure)

#### Sputum cytology

- Non-invasive
- May be diagnostic if productive of sputum, proximal lesions
- Low sensitivity i.e. cannot rule out disease if negative
- Multiple samples (3) are more sensitive

#### CT chest

- Spiral; not high resolution (HRCT)
- May be useful if lesion is not obvious on CXR
- Include upper abdomen when used for staging

### Referral

Refer all suspected lung cancer to a specialist with appropriate expertise in the management of lung disease

#### Tissue diagnosis where possible

- Choice depends on tumour and suitability of patient

#### Fibreoptic bronchoscopy (FOB)

- Proximal or endobronchial lesions
- +/- transbronchial biopsy

### Fine needle aspiration (FNA)

- Peripheral lesions
- Risk of pneumothorax requiring Intercostal Catheter (ICC), bleeding

### Pleural tap

- For effusions

### Other biopsy

- eg supraclavicular node, skin lesion

Timely referral to specialist for further evaluation of suspected lung cancer cases is recommended

A practice of ~10,000 patients may diagnose 4 new lung cancers each year (McAvoy et al., Aust Fam Phys 2005). Many more at risk patients may require evaluation for symptoms

### Initial management

#### Breaking bad news

- Give bad news in a quiet private place
- Allow enough uninterrupted time in the initial meeting
- Assess the individual's understanding
- Provide information simply and honestly
- Encourage individuals to express their feelings
- Respond to individual's feelings with empathy
- Give a broad time-frame for the prognosis
- Avoid the notion that nothing can be done
- Arrange a time to review the situation
- Discuss treatment options
- Offer assistance to tell others
- Provide information about support services
- Provide written information
- Offer a tape recording of the session

#### Quality of life (QOL)

Discuss the potential impact of tests and treatments on quality of life for patient and carers

## Staging of disease

After pathological confirmation, staging informs treatment options

### Staging systems differ:

- NSCLC – TNM stage
- SCLC – Limited (localised to 1 hemithorax) or Extensive

### Staging tests options:

#### Chest CT

- For staging tumour and hilar / mediastinal nodes
- Usually includes upper abdomen (liver and adrenals)

#### CT head (with contrast)

- NSCLC – for symptoms or abnormal signs

#### Bone scan

- NSCLC – symptoms, abnormal clinical findings, lab tests

#### Fluoro-deoxy glucose (FDG) positron emission tomography (PET) scan

- Highly sensitive and specific for lung cancer
- Assess SPNs when FOB/FNA negative/unsuitable
- Helps stage NSCLC (appropriate staging will avoid fruitless surgery)

As SCLC staging and treatment is different, staging tests can stop if extensive disease confirmed

## Specific Management Principles

- Share decision making with patient and carers
- Address psychosocial issues
- Ensure patient's questions are answered
- Evaluate prognostic factors
  - TNM stage, performance status (see Appendix\* right), and weight loss are prognostic factors in NSCLC
  - Performance status guides treatment suitability

## NSCLC

Stage	Optimal Rx	If not suitable for optimal Rx, treat depending on symptoms and performance status
I and II	Surgical resection	Radical radiotherapy +/- chemotherapy (good performance status) or Palliative management (poor performance status) or Observation if no symptoms
IIIA	Induction chemotherapy followed by: Surgery +/- Mediastinal radiotherapy or Radical combination chemoradiotherapy	Palliative radiotherapy or chemotherapy or Observation if not symptomatic
IIIB	Radical combination chemoradiotherapy	
IV	Chemotherapy and Palliative radiotherapy for specific sites of disease (brain, bone pain) Some patients with solitary brain metastases may be suitable for surgical excision	Palliative radiotherapy or Supportive care alone

## SCLC

Stage	Optimal Rx	If not suitable for optimal Rx
Limited	Platinum based chemotherapy (4-6 cycles) combined with thoracic radiotherapy concomitant with first or second cycle Prophylactic cranial irradiation for complete responders	Palliative chemotherapy +/- radiotherapy
Extensive	Combination chemotherapy (4-6 cycles) Prophylactic cranial irradiation for complete responders	Symptom control

### \* Appendix: ECOG (Eastern Cooperative Oncology Group) Performance Status

- 0 Fully active, able to carry on all pre-disease activities without restriction
- 1 Ambulatory but restricted in physically strenuous activity. Able to carry out light work or sedentary work e.g. light housework, office work
- 2 Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about > 50% of waking hours
- 3 Capable of only limited self-care, confined to bed or chair > 50% of waking hours
- 4 Unable to carry on any self-care, totally confined to bed or chair

Guidelines produced by the Australian Cancer Network. Contact ACN at acn@cancer.org.au for further information

## Supportive care and quality of life

Treatment shown to improve QOL even if not curative

### Management options for common distressing symptoms

#### Dyspnoea

- Breathing retraining; coping and adaptive strategies
- Morphine – nebulised / systemic
- Oxygen as indicated
- Treat cause
  - Pleural effusion
    - Drainage +/- pleurodesis eg talc insufflation
  - Large airway obstruction
    - Stents, laser, radiotherapy/brachytherapy

#### Cough

- Nebulised lignocaine, oral opioids

#### Chest pain

- Palliative radiotherapy
- Analgesia including opioids

#### Haemoptysis

- Palliative radiotherapy

#### Bone pain

- Palliative radiotherapy
- Analgesia (opioids, +/- bisphosphonates), +/- fixation (consult orthopaedic surgeon)

#### Anxiety / depression

- Psychosocial support and counselling
- Medications (anxiolytics, antidepressants)

#### Agitation

- Midazolam

#### Address medication side-effects

- Drowsiness eg morphine –
  - Titrate, co-analgesia
- Constipation
  - Laxatives, aperients, hydration