**Guidelines for the Management of Bronchiectasis in Primary Care 13/14**

**When to suspect the diagnosis**

**In Children:**
- Chronic productive cough
- Asthma that is refractory to treatment
- A positive sputum culture for *S. aureus*, *H. influenzae* or *P. aeruginosa* in the setting of chronic respiratory symptoms
- Unexplained haemoptysis
- Persistent and unexplained physical signs or chest radiographic appearance

**In Adults:**
- Persistent productive cough - copious daily production of purulent sputum
- Frequent exacerbations
- Haemoptysis
- Persistent lung crackles on auscultation
- Finger clubbing
- Frequent bacterial colonisation of sputum (particularly *P. aeruginosa*)

**Initial Investigations**

- Investigations can be run in primary care, but suggest referral to secondary care.

1) **Sputum sample:** for routine bacterial culture (specify that the sample is for bronchiectasis)

2) **Total IgE:** to identify patients with allergic bronchopulmonary aspergillosis (ABPA)

3) **Serum Immunoglobulins (IgG, IgA, IgM):** to screen for gross antibody deficiency

In patients < 50 years of age, refer to hospital to rule out:
- Cystic Fibrosis
- Primary Ciliary Dyskinesia

**Maintenance Therapy in Bronchiectasis**

**Physiotherapy**

Patients should be assessed by a specialist chest physiotherapist and be made aware of the airway clearance techniques available.

**Airway Management**

- Consider in patients with reversible airflow obstruction
  - Salbutamol: 2 puffs PRN up to four times a day and/or Ipratropium: 2 puffs PRN up to four times a day

- Consider in patients with excessive viscous mucus (review after 6 months)
  - Nebulised Hypertonic Saline 7%: 4ml twice daily. Considered to increase sputum yield, reduce sputum viscosity and improve health status.
  - Carbocisteine: Two 375mg capsules three times a day. Stop if no benefit.

- Consider if ≥3 exacerbations/year requiring antibiotic therapy
  - Azithromycin: 500mg alternate days (review regularly*) or
  - Erythromycin: 250mg twice daily or
  - Nebulised antibiotics are used in patients with daily symptoms and frequent bacterial growth. They are usually safe and effective, and should ideally be started in hospital.
    - Nebulised Gentamicin 80mg BD, followed by Colomycin 1-2 mega units BD, then by Tobramycin 300mg BD for 6-12 months. Check hearing and U&E’s biannually.

**Important Considerations**

<table>
<thead>
<tr>
<th>Nebulised Hypertonic Saline</th>
<th>Nebulised Gentamicin</th>
<th>Management of Exacerbations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mild</strong></td>
<td>Send sputum sample for culture and sensitivity (specify that the sample is for bronchiectasis).</td>
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<tr>
<td><strong>Severe</strong></td>
<td>In-patient treatment with IV antibiotics is required if:</td>
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</table>

- Breathlessness with a raised respiratory rate (>25/min)
- Circulatory failure
- Respiratory failure
- Cyanosis or confusion
- Temperature ≥ 38°C
- Unable to take oral therapy
- Unresponsive to oral antibiotics

Please refer to Hospital A/E, Medical team or HOT clinic.

**Eradication Therapy of P. aeruginosa (at first growth)**

New growth of *P. aeruginosa* in the sputum is an indication for referral to secondary care for eradication therapy.

Treatment may be initiated in primary care:

1st line: Ciprofloxacin 750mg BD for 2 weeks

**Severe**

- Refer to oxygen assessment service if oxygen saturation ≤ 92% on air on more than one occasion, without an exacerbation

**Important Considerations**

<table>
<thead>
<tr>
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<th>Ensure annual flu vaccination and one-off pneumococcal vaccination</th>
<th>Refer to oxygen assessment service if oxygen saturation ≤ 92% on air on more than one occasion, without an exacerbation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sputum tests biannually (to be done in primary care)</td>
<td>Consider pulmonary rehabilitation if MRC Dyspnoea scale is 3 and above (see reverse)</td>
<td>Management of anxiety / depression</td>
</tr>
<tr>
<td>If resistant exacerbation, send sputum for acid-fast bacilli (to rule out non-TB bacilli)</td>
<td>* May cause gastrointestinal and hepatic side effects; also reported to cause a hearing decrement.</td>
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### When to refer to Secondary Care for follow-up

<table>
<thead>
<tr>
<th>Condition</th>
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<tbody>
<tr>
<td>Bronchiectasis in patients less than 50 years of age</td>
<td>Patients receiving prophylactic antibiotic therapy (oral/nebulised)</td>
</tr>
<tr>
<td>Patients with recurrent exacerbations (≥ 3 per year)</td>
<td>Allergic Broncho-Pulmonary Aspergillosis (ABPA)</td>
</tr>
<tr>
<td>Deteriorating bronchiectasis with declining lung function</td>
<td>- defined as asthma symptoms + total IgE &gt; 500 kU/L</td>
</tr>
<tr>
<td>Patients with chronic <em>Pseudomonas aeruginosa</em>, opportunistic mycobacteria or MRSA colonisation</td>
<td>Patients with bronchiectasis and associated rheumatoid arthritis, immune deficiency, IBD and primary ciliary dyskinesia</td>
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### MRC Dyspnoea Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Degree of breathlessness related to activities</th>
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<tbody>
<tr>
<td>1</td>
<td>Not troubled by breathlessness except on strenuous exercise</td>
</tr>
<tr>
<td>2</td>
<td>Short of breath when hurrying on walking up a steep hill</td>
</tr>
<tr>
<td>3</td>
<td>Walks slower than contemporaries on level ground due to breathlessness, or has to stop for breath if at own pace</td>
</tr>
<tr>
<td>4</td>
<td>Stops for breath after walking about 100m or after a few minutes on level ground</td>
</tr>
<tr>
<td>5</td>
<td>Too breathless to leave the house, or breathless when dressing / undressing</td>
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</table>

### Pulmonary Rehabilitation

Pulmonary Rehabilitation may be of benefit to patients who have a MRC score of 3 and above. It is not suitable for patients who are unable to walk, have unstable angina, have had a recent MI or have impaired cognition.

Programmes are tailored to individual needs and include physical training, disease education, nutritional, psychological and behavioural intervention.

### Referral for Long Term Oxygen Treatment (LTOT)

The need for oxygen therapy should be assessed in:

- Patients with oxygen saturation ≤ 92% on air on more than one occasion, without an exacerbation
- All patients with severe airflow obstruction (FEV₁ < 30% predicted)
- Patients presenting with cyanosis, peripheral oedema, polycythæmia or raised JVP
- Ambulatory assessments should be made in patients who desaturate on exercise

LTOT is indicated in patients who:

- Have a PaO₂ < 7.3kPa when stable
- Have a PaO₂ > 7.3kPa but < 8.0kPa, and one of:
  - Secondary polycythæmia, nocturnal hypoxaemia, peripheral oedema, or pulmonary hypertension

To gain benefits from LTOT patients should not be smoking and breathe supplementary oxygen for at least 15 hours a day. Greater benefits if receiving oxygen for 20 hours per day.

### Contacts for Oxygen Referrals

**NHS North Somerset contact details:**
To refer a patient or discuss suitability, contact Oxygen Respiratory Nurse Telephone: 01275 885 432

**NHS South Gloucestershire contact details:**
To refer a patient or discuss suitability, contact NBT ARAS clinic / team nbn-tr.nbthomeoxygenervices@nhs.net

**NHS Bristol contact details:**
To refer a patient or discuss suitability, contact the community Respiratory Team Telephone: 0117 987 8335/8336

Referral forms can be downloaded from: [http://www.bristolpct.nhs.uk/patients/all_services/respiratory/pro/community/](http://www.bristolpct.nhs.uk/patients/all_services/respiratory/pro/community/)

Patients can also be referred to a respiratory consultant at the nearest hospital.


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