

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Sleep disordered breathing

NHS England has asked NICE to develop a new guideline on sleep disordered breathing.

The guideline will be developed using the methods and processes outlined in [developing NICE guidelines: the manual](#).

This guideline will also be used to develop the NICE quality standard for sleep disordered breathing.

1 Why the guideline is needed

Sleep disordered breathing is a generic term that includes obstructive sleep apnoea/hypopnoea syndrome, central sleep apnoea and nocturnal hypoventilation. There is an overlap between these conditions, but the underlying aetiology and pathogenesis is diverse, and prevalence, investigation and management differ. Obstructive sleep apnoea/hypopnoea syndrome is the most common form of sleep disordered breathing and therefore it is the focus of the guideline.

Although obstructive sleep apnoea/hypopnoea syndrome is common, it is a frequently unrecognised cause of serious disability that has important health and social consequences. It is characterised by recurrent episodes of complete or partial upper airway obstruction during sleep resulting in dips in oxygen level, autonomic dysfunction and sleep fragmentation. The consequent daytime sleepiness can be profound, affecting social activities, work performance, the ability to drive safely and quality of life.

Key facts and figures

- It is estimated that 5% of adults in the UK have undiagnosed obstructive sleep apnoea/ hypopnoea syndrome – that is, over 2.5 million people.

- 29 • Although closely associated with obesity, one-quarter to one-third of people
30 affected are not obese.
- 31 • High-risk groups include those with cardiac disease, refractory
32 hypertension, arrhythmias, cerebrovascular disease and type 2 diabetes.
33 Obstructive sleep apnoea/hypopnoea syndrome can worsen these
34 conditions.

35 **Current practice**

- 36 • Clinical assessment and questionnaires are sometimes used to select
37 patients for investigation.
- 38 • Diagnosis is made by monitoring breathing during sleep – a sleep study. A
39 range of sleep studies of varying complexity can be performed, some as an
40 inpatient, or at home, depending on local arrangements and patient
41 preference.
- 42 • The availability of appropriate services for investigation and management is
43 patchy. Failure to treat the condition can result in increased healthcare
44 utilisation.
- 45 • Recognition and optimal investigation and management need experienced
46 clinical teams, usually working in respiratory medicine departments in
47 secondary care.
- 48 • Highly effective treatment, in the form of continuous positive airway
49 pressure (CPAP), is available, however approaches to personalising CPAP
50 therapy differ.
- 51 • Other forms of treatment, or adjuncts to treatment, include intraoral
52 mandibular advancement devices and advice on weight reduction if
53 appropriate. Guidance is required as to when, and in whom, these forms of
54 treatment may be an effective option.
- 55 • In people who are severely obese, bariatric surgery may improve
56 symptoms of obstructive sleep apnoea/hypopnoea syndrome in addition to
57 its other recognised benefits.
- 58 • Clinics, telemonitoring and data downloads from CPAP devices may help
59 with adherence to therapy, but their effectiveness is not clear.

60 This guideline aims to provide evidence-based recommendations for the
61 investigation and management of obstructive sleep apnoea/hypopnoea
62 syndrome in adults and young people (16 and older).

63 **2 Who the guideline is for**

64 This guideline is for:

- 65 • Healthcare professionals providing NHS-commissioned services.
- 66 • Commissioners of health and social care services.
- 67 • People using services, their families and carers, and the public.

68 It may also be relevant for:

- 69 • Driver and Vehicle Licensing Agency (DVLA)

70 NICE guidelines cover health and care in England. Decisions on how they
71 apply in other UK countries are made by ministers in the [Welsh Government](#),
72 [Scottish Government](#), and [Northern Ireland Executive](#).

73 ***Equality considerations***

74 NICE has carried out [an equality impact assessment](#) during scoping. The
75 assessment:

- 76 • lists equality issues identified, and how they have been addressed
- 77 • explains why any groups are excluded from the scope.

78 **3 What the guideline will cover**

79 ***3.1 Who is the focus?***

80 **Groups that will be covered**

81 Adults and young people (16 and older) with obstructive sleep
82 apnoea/hypopnoea syndrome.

83 No specific subgroups of people have been identified as needing specific
84 consideration.

85 **3.2 Settings**

86 **Settings that will be covered**

87 All settings in which NHS commissioned care is provided.

88 **3.3 Activities, services or aspects of care**

89 **Key areas that will be covered**

90 We will look at evidence in the areas below when developing the guideline,
91 but it may not be possible to make recommendations in all the areas.

- 92 1 Initial identification, assessment and referral of people with suspected
93 obstructive sleep apnoea/hypopnoea syndrome.
- 94 2 Diagnosis of obstructive sleep apnoea/hypopnoea syndrome.
- 95 3 Management of obstructive sleep apnoea/hypopnoea syndrome
96 – treatment of rhinitis
97 – upper airway surgical interventions
98 – interventions to modify sleeping position
99 – mandibular advancement devices
100 – use of positive airway pressure devices.
- 101 4 Monitoring of obstructive sleep apnoea/hypopnoea syndrome
102 – determining efficacy of treatment
103 – how to monitor
104 – how to improve adherence.
- 105 5 Information and support for people with obstructive sleep
106 apnoea/hypopnoea syndrome, and their families or carers.

107 **Areas that will not be covered**

- 108 1 Clinical and cost effectiveness of CPAP (this guideline will cross refer to
109 NICE technology appraisal guidance TA139, Continuous positive airway
110 pressure for the treatment of obstructive sleep apnoea/hypopnoea
111 syndrome).
- 112 2 Lifestyle interventions (this guideline will cross refer to other appropriate
113 NICE guidelines).
- 114 3 Assessment and management of central sleep apnoea.

115 4 Assessment and management of nocturnal hypoventilation and overlap
116 disorders.

117 **Related NICE guidance**

118 ***Published***

- 119 • [Stop smoking interventions and services](#) (2018) NICE guideline NG92
- 120 • [Physical activity: exercise referral schemes](#) (2014) NICE guideline PH54
- 121 • [Weight management: lifestyle services for overweight or obese adults](#)
122 (2014) NICE guideline PH53
- 123 • [Smoking: harm reduction](#) (2013) NICE guideline PH45
- 124 • [Continuous positive airway pressure for the treatment of obstructive sleep](#)
125 [apnoea/hypopnoea syndrome](#) (2008) NICE technology appraisal guidance
126 139
- 127 • [Soft-palate implants for obstructive sleep apnoea](#) (2007) NICE
128 interventional procedures guidance 241
- 129 • [Obesity prevention](#) (2006) NICE guideline CG43

130 ***In development***

- 131 • [Suspected neurological conditions](#). NICE guideline. Publication expected
132 May 2018.
- 133 • [Thyroid disease: assessment and management](#). NICE guideline.
134 Publication expected November 2019.
- 135 • [Perioperative care in adults](#). NICE guideline. Publication expected February
136 2020.

137 **NICE guidance about the experience of people using NHS services**

138 NICE has produced the following guidance on the experience of people using
139 the NHS. This guideline will not include additional recommendations on these
140 topics unless there are specific issues related to the investigation and
141 management of obstructive sleep apnoea/hypopnoea syndrome:

- 142 • [Medicines optimisation](#) (2015) NICE guideline NG5
- 143 • [Patient experience in adult NHS services](#) (2012) NICE guideline CG138

- 144 • [Service user experience in adult mental health](#) (2011) NICE guideline
145 CG136
- 146 • [Medicines adherence](#) (2009) NICE guideline CG76

147 **3.4 Economic aspects**

148 We will take economics into account when making recommendations. We will
149 develop an economic plan that states for each review question (or key area in
150 the scope) whether economic considerations are relevant, and if so whether
151 the area should be prioritised for economic modelling and analysis. We will
152 review the economic evidence and carry out economic analyses, using a NHS
153 and personal social services (PSS) perspective.

154 **3.5 Key issues and draft questions**

155 While writing this scope, we have identified the following key issues and draft
156 questions related to them:

- 157 1 Initial identification, assessment and referral of people with suspected
158 obstructive sleep apnoea/hypopnoea syndrome:
- 159 1.1 In whom should obstructive sleep apnoea/hypopnoea syndrome be
160 suspected (for example, based on symptoms or coexisting conditions)?
- 161 1.2 What assessment scales should be used if obstructive sleep
162 apnoea/hypopnoea syndrome is suspected (for example, the Epworth
163 sleepiness scale, STOP-Bang sleep apnoea questionnaire or Berlin
164 questionnaire)?
- 165 1.3 Which people with suspected obstructive sleep apnoea/hypopnoea
166 syndrome should be prioritised for further assessment?
- 167 2 Diagnosis of obstructive sleep apnoea/hypopnoea syndrome:
- 168 2.1 What are the most clinically and cost effective diagnostic strategies
169 for obstructive sleep apnoea/hypopnea syndrome, including home- and
170 hospital-based studies, and investigations such as oximetry, respiratory
171 polygraphy and polysomnography?
- 172 3 Management of obstructive sleep apnoea/hypopnoea syndrome:
- 173 3.1 What is the clinical and cost effectiveness of treatment of rhinitis to
174 improve symptoms of obstructive sleep apnoea/hypopnoea syndrome?

- 175 3.2 What is the clinical and cost effectiveness of upper airway surgical
176 interventions for people with obstructive sleep apnoea/hypopnoea
177 syndrome?
- 178 3.3 What is the clinical and cost effectiveness of interventions to modify
179 sleeping position for people with obstructive sleep apnoea/hypopnoea
180 syndrome?
- 181 3.4 What is the clinical and cost effectiveness of different types of
182 mandibular devices for managing obstructive sleep apnoea/hypopnoea
183 syndrome?
- 184 3.5 What is the comparative clinical and cost effectiveness of different
185 types of positive airway pressure devices (for example, fixed-pressure
186 CPAP, variable-pressure CPAP, bi-level positive airway pressure or
187 other modes of non-invasive ventilation) for managing obstructive sleep
188 apnoea/hypopnoea syndrome?
- 189 3.6 What is the clinical and cost effectiveness of the addition of
190 humidification to positive airway pressure therapy for managing
191 obstructive sleep apnoea/hypopnoea syndrome?
- 192 3.7 What support improves adherence to CPAP or other interventions?
- 193 4 Monitoring of obstructive sleep apnoea/hypopnoea syndrome:
- 194 4.1 How should efficacy of treatment be demonstrated (for example,
195 variable CPAP titration device or polysomnography titration)?
- 196 4.2 What is the most clinically and cost effective strategy for monitoring
197 people diagnosed with obstructive sleep apnoea/hypopnoea syndrome
198 (for example, based on out-patient visits, download of data from devices
199 or tele-monitoring)?
- 200 4.3 What is the optimum frequency of monitoring of obstructive sleep
201 apnoea/hypopnoea syndrome?
- 202 5 Information and support for people with obstructive sleep
203 apnoea/hypopnoea syndrome, and their families or carers:
- 204 5.1 What information and support do people and their families or carers
205 need (for example, advice on lifestyle, driving and occupation, and
206 treatment for obstructive sleep apnoea/hypopnoea syndrome)?

207 The key issues and draft questions will be used to develop more detailed
208 review questions, which guide the systematic review of the literature.

209 **3.6 Main outcomes**

210 The main outcomes that may be considered when searching for and
211 assessing the evidence are:

- 212 1 Health-related quality of life (for example, EQ-5D, SF-36).
- 213 2 Subjective and objective sleepiness scores (for example, the Epworth
214 sleepiness scale).
- 215 3 Apnoea–Hypopnea Index (AHI).
- 216 4 Oxygenation indices (for example, oxygen desaturation index [ODI],
217 arterial oxygen saturation [SaO₂] nadir, time SaO₂ < 90%).
- 218 5 Adverse effects of treatment.
- 219 6 Impact on, or development of, coexisting conditions (for example,
220 hypertension).

221 **4 NICE quality standards and NICE Pathways**

222 **4.1 NICE quality standards**

223 **NICE quality standards that will use this guideline as an evidence source**
224 **when they are being developed:**

- 225 • Sleep disordered breathing. NICE quality standard. Publication date to be
226 confirmed.

227 **4.2 NICE Pathways**

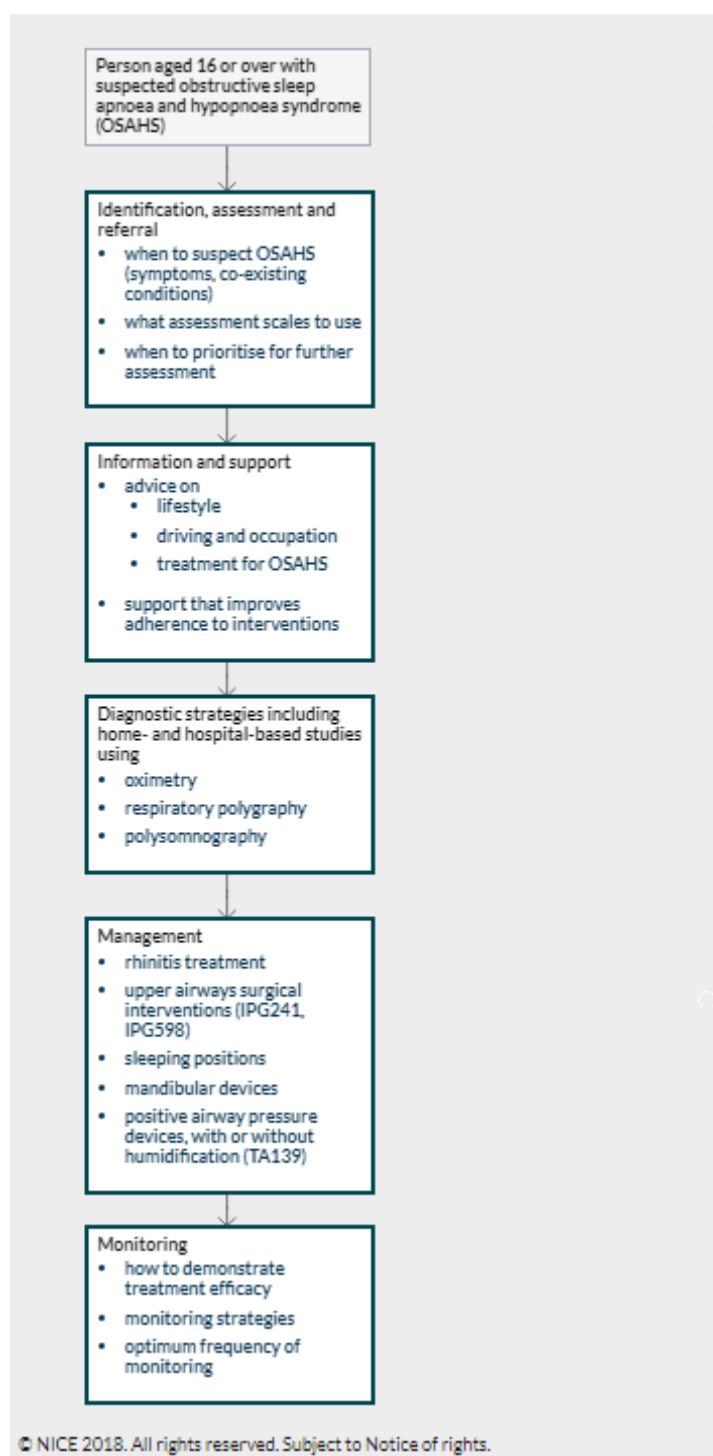
228 [NICE Pathways](#) bring together everything we have said on a topic in an
229 interactive flowchart. When this guideline is published, the recommendations
230 will be included in the NICE Pathway on sleep disordered breathing (in
231 development).

232 Other relevant guidance will also be added, including:

- 233 • [Continuous positive airway pressure for the treatment of obstructive sleep](#)
234 [apnoea/hypopnoea syndrome](#) (2008) NICE technology appraisal guidance
235 139
- 236 • [Hypoglossal nerve stimulation for moderate to severe obstructive sleep](#)
237 [apnoea](#) (2007) NICE interventional procedures guidance 598
- 238 • [Soft-palate implants for obstructive sleep apnoea](#) (2007) NICE
239 interventional procedures guidance 241

240 An outline based on this scope is included below. It will be adapted and more
241 detail added as the recommendations are written during guideline
242 development. Links will be added to relevant NICE Pathways.

Sleep disordered breathing overview



243

244 5 Further information

This is the draft scope for consultation with registered stakeholders. The consultation dates are 16 May to 13 June 2018.

The guideline is expected to be published in August 2020.

You can follow progress of the [guideline](#).

Our website has information about how [NICE guidelines](#) are developed.

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