

Precis of stakeholder comment	Revision in final draft taken to address comment(s)
Spelling, grammar, and sentence structure suggestions	All comments reviewed and changes made.
Suggester reorder of title to improve search result hits	Title changed to: <i>“Management of painful Temporomandibular disorder in adults NHS England Getting It Right First Time (GIRFT) and Royal College of Surgeons’ Faculty of Dental Surgery.”</i>
Associate body, guideline development team and references	Confirmed all details/terminology correct.  Guideline development group feel appropriate associate body involvement.  Note: Approach and follow-up completed but no response received from British Society for Restorative Dentistry (BSRD).
Additions and revisions to document as a result of constructive feedback	<ul style="list-style-type: none"> <li>• Glossary of terms</li> <li>• Template history sheet (Box 1)</li> <li>• Patient support document</li> <li>• Clinician summary document</li> <li>• Video resource and link created to full cranial nerve assessment technique appropriate for dentists.</li> <li>• Bruxism section revisions.</li> <li>• Obesity and pain section.</li> <li>• Obstructive sleep apnea details.</li> </ul>
PHQ 4	Document content changed to reflect screener represents detection of potential symptoms not diagnosis of anxiety and/or depression.
Other health care professionals	Ensured all relevant professions named at appropriate points. <i>E.g.</i> , pharmacists, physiotherapists, chiropractors, osteopaths.
Splint therapy	Box 3, recognised terms used to identify splints of different types added to clarify.
Imaging	Outlined that plain film radiographic imaging of dentulous and edentulous regions may form a component of detailed examination to identifying sources of odontogenic pain or referred pain which may mimic TMD.  CBCT/CT advised most accurate for hard tissue diagnosis of DJD.
Edentulous patient measurement of inter incisal opening.	Added the information below to table 5’s footnote to support clinicians. <i>“Reliable inter-incisal measurements are more difficult in those who are edentulous or partially dentate and there is no gold standard proposed. For those who have well-fitting dentures with pontics of a size and shape representative of the natural dentition, inter-incisal opening can be measured with dentures in situ, or adjacent natural teeth can be used e.g., incisal edge of lateral incisors.”</i>
Supported self-management section	Added the phrase <i>“using freshly washed (clean) hands”</i> to self-massage section.

<p>Physical Management Options</p> <p>Manual therapy, exercise therapy and movement re-education</p>	<p>Re-titled section from Manual therapy/physiotherapy/exercise/diet modification section to <i>“Physical Management Options, Manual therapy, exercise therapy and movement re-education”</i></p> <p>Content suggestions modified as per ACP TMD advice.</p> <p>Ensured narrative supports postural training, physiotherapy and therapeutic exercises all types of TMD <u>INCLUDING</u> DJD.</p> <p>Removed and corrected “strengthening” descriptions.</p> <p>‘Find a TMD Specialist’ section on the ACPTMD’s website added to patient signposting recommendations appendix 8.</p>
<p>Surgical management section</p>	<p>Clarified surgical intervention is not appropriate for myogenous TMD.</p> <p>Outlined surgical management may be appropriate for severe arthroogenous TMD and disc displacement without reduction with specific case features.</p> <p>Indications where referral for early surgical assessment advisable made clear throughout section. The aim of this was to place emphasis on identification of patients with arthroogenous symptoms and pathology and facilitate earlier surgical assessment.</p> <p>Signposted within the document to Oral &amp; Maxillofacial Surgery GIRFT follow up report when published which will cover in detail all surgical management options for TMD and their clinical evidence base.</p>
<p>Arthritis terminology</p>	<p>Term "rheumatoid arthritis" changed to <i>"inflammatory arthritis"</i> as psoriatic and ankylosing spondylitis also present with TMJ issues.</p>
<p>Red flags table</p>	<p>Terminology change: Temporal arteritis changed to <i>“Giant Cell arteritis.”</i></p> <p>Symptom description for Giant Cell arteritis clarified.</p> <p>Causes of persistent mouth ulcers updated in table.</p>

	Pyrexia, swelling, and trismus included for infective cause.
Table 1 Progression of arthrogenous TMD reported as unclear.	<p>Clarified that progressing statements with additional text: <i>“Data demonstrated over two-thirds of people (76%) with disc displacement have no progression of over 8 years, 10% show reversal with 14% demonstrating any progression towards any form of disc displacement without reduction.[5] Only a small number of disc displacements require intervention, these are outlined in table 7 and figure 3.</i></p> <p><i><sup>b</sup> Degenerative joint disease (previously known as osteoarthritis and osteoarthrosis) tends to be a stable condition, with 71% of cases showing no progression towards more deterioration over an eight year-period.[4] Over the same period 14% of cases demonstrated reversal leaving a small minority (15%) which progress in any way. [4]”</i></p>
<p>Ear symptoms section</p> <p>Frequently patients with these symptoms will have gone to the GP first and then are sent on to the GDP. Some help and guidance for GPs would be helpful.</p>	<p>Added statement below:</p> <p>“Conversely, if a GP +/- ENT specialist has ruled out ear pathology consideration of TMD or odontogenic pain as potential differential diagnoses and subsequent direction to GDP for further assessment is sensible”</p>
Thermal modalities: Could covered ice worsen pain?	<p>Evidence is weak and linked to management of osteoarthritis and therefore inflammation, but it was felt that for the majority of cases covered ice use would do no harm.</p> <p>Added sentence “Individuals should be advised to trial a period of moist heat and covered ice and utilize the strategy which is most effective for their pain.” to capture that if ice does worsen pain, they could use the alternative.</p>
Botulinum Toxin section	Added muscular atrophy as risk
Hyaluronic acid	Terminology corrected to “off label” rather than “off license”
Analgesia use advice	Changed phrase “not for more than” and instead advised “an appropriate 7-day regimen.”
Proton pump inhibitor	<p>Current GP PPI practice is discretionary for younger patients at low risk of GI problems. There are cost and side effect implications if used in the young.</p> <p>Document content changed in line with current medical practice suggesting for gastroprotection concomitant prescription of proton pump inhibitor may be advisable for those at increased risk of</p>

	gastrointestinal problems, e.g., elderly (>65 years old), history of peptic ulcer disease, high alcohol, helicobacter pylori infection
Primary headache conditions	<p>Clarified migraine presentation in line with NICE CKS stating: <i>“Migraine is more commonly described as pounding, pulsating or throbbing pain and is usually unilateral (~60%). Bilateral presentation is more common in children.”</i></p> <p>Added cluster headache details</p>
Prednisolone tapering removed	Checked with NICE CKS and have eliminated taper for suggested prednisolone dose regimen in this guideline as not required.
Terminology for degenerative joint disease	<p>Feedback suggested patient preference for the terms <i>“osteoarthritis and osteoarthrosis”</i> instead of <i>“degenerative joint disease”</i>, which has potential negative connotations (e.g., joint degenerating/falling apart).</p> <p>The authors agree with this statement, but the terminology DJD is still utilised in DC/TMD and ICOP so its use remains appropriate. Due to this it was thought that total removal of DJD may cause confusion. Instead, where stated (table 1 and table 6) they are discussed as <i>“osteoarthritis and osteoarthrosis (degenerative joint disease)”</i></p>
Anti-cholinergic side effects of Amitriptyline and use of nortriptyline	<p>Added to neuromodulatory agent dose regimen section (appendix 12) the below:</p> <p><i>*A stronger evidence base for beneficial effect of amitriptyline for M-TMD exists supporting its position as first line agent. [134-136]</i></p> <p><i>**Risk of anti-cholinergic side effects, sedation and postural hypotension are expected to be lower with secondary amines (nortriptyline) than tertiary amines (amitriptyline).[177] In some circumstances this may mean nortriptyline is either prescribed in preference or switching from amitriptyline to nortriptyline to mediate side effects may be advised.[178]</i></p>
SSRI and SNRI role in management	<p>There is weak evidence of the potentially beneficial effect of Duloxetine for M-TMD.</p> <p>There is unfortunately no evidence at this time to support the use of other SSRIs (e.g., Citalopram, escitalopram, fluoxetine, sertraline, paroxetine) or SNRIs (e.g., Venlafaxine) for management of M-TMD. Added this detail to table 10 footnote for clarification.</p> <p>Added sentence to table 10 RE: SSRI and SNRI induced bruxism as line of caution.</p>

<p>Comment on Gabapentin's efficacy and side effect profile.</p>	<p>There is evidence (though limited) for beneficial effect of gabapentin for TMD. As the evidence is more limited than for Amitriptyline, Gabapentin is listed as second line option in guideline.</p> <p>The authors agree regarding the potential side effects of Gabapentin – these are listed in table 10, and the guideline emphasises it is important clinicians make patients aware of these.</p> <p>There are times when first line (TCAs) may be inappropriate/contraindicated for an individual, but gabapentin may be appropriate so its use as a second line agent remains beneficial.</p>
<p>Clarification of normal interincisal opening</p>	<p>International recommendations (DC/TMD) set unassisted opening at <math>\geq 35</math>mm assisted opening at <math>\geq 40</math>mm. We used information in line with international guidelines to inform this document.</p>
<p>CSC requested addition of Tran C, Ghahreman K, Huppa C, Gallagher JE. Management of temporomandibular disorders: a rapid review of systematic reviews and guidelines. Int J Oral Maxillofac Surg. 2022 Sep;51(9):1211-1225. doi: 10.1016/j.ijom.2021.11.009. Epub 2022 Mar 23. PMID: 35339331.</p>	<p>This has been added to section 9 and summary of evidence table (table 3).</p>
<p>It would be good if the whole document can have consistent emphasis on the key messages.</p>	<p>Bulleted key points were added to the end of sections 10 (Background) -14 (Diagnosis) in the document. Sections 1-9 are introductory text or sections on process. Referral and management (sections 15 &amp; 16) are summarised in the pre-existing flowchart and separate summary document.</p>
<p>Botulinum A use to have moderate recommendation rather than strong recommendation on the basis that the evidence is not incontrovertible. Patients benefit from this but as a last line of management and conservative management as first line. This is slightly lost in the way it is presented.</p>	<p>In the narrative Botulinum toxin section the guideline already clearly states equivocal evidence for beneficial effect. However, this point has been addressed by further modifications to this section and table 3 to clarify and strengthen the recommendation.</p>

## Suggestions reviewed that required partial action or a response

Stakeholder comment	Justification for lack of implementation in guideline final draft
<p>Review of associate body involvement to:</p> <ul style="list-style-type: none"> <li>• Consider sleep medicine and respiratory physician representatives for OSA</li> <li>• Educational organisations</li> </ul>	<p>Full list of relevant stakeholders contacted for the subject matter of the guideline (painful TMD). The authors felt it was therefore out of remit to consider specialist sleep medicine and respiratory physician comment specific to OSA, especially given the evidence base for OSA in TMD which we now have included in the guideline as a result of the comment made.</p> <p>Specific comment from educational committees not routine practice for clinical guidelines. The authors had already made COPDEND aware of impending publication and have agreed to produce training</p>

	webinars to inform COPDEND and all others of the guideline's content.
The importance of palpation of pterygoids for TMD diagnosis	International expert and evidence-based consensus (DC/TMD) is that for positive diagnoses with good-excellent sensitivity and specificity palpation of only the temporalis and masseter muscles is required. Palpation of temporalis tendon, lateral pterygoid area, submandibular region, and posterior mandibular and maxillary region has been eliminated from routine examination because of poor reliability. It has been shown that not examining these areas does not significantly affect the validity of M-TMD diagnoses. Whilst we appreciate that trained practitioners may opt to examine additional muscles of mastication e.g., Medial and lateral pterygoid it is not essential to formulate diagnosis.
In-ear devices	At present there is no evidence either for or against in-ear devices and therefore we felt comment at this stage was not appropriate.
Association between vertical dimension in the edentulous patient/lack of posterior occlusal support and degenerative joint disease	Unfortunately, no substantial, robust evidence base to support this could be found in the literature.
Occult, mimicking pathology	Conditions may be occult or mimicking. We feel both are important to note and the key pathologies are extensively accounted for in the red flags list in the guideline.
Parafunctional activities section: Suggestion to add the effects of certain hobbies/professions, e.g., wind instrument players, holding items between teeth (builders, seamstresses), weight lifting, etc.....	We agree subjectively with this statement from our own experience of patients presenting to clinic. However, there was no firm clinical evidence in the literature we could identify. It was therefore felt that comment in this document could not be formally made at this time.
Obstructive sleep apnea: role in TMD, inclusion of [sic] "Epstein Sleep Index"/"Epworth sleep questionnaire" and polysomnography details, and role of splints to manage OSA.	<p>Addition of OSA section including risk factors, signs and symptoms of OSA, and association between OSA and TMD completed. The importance of OSA in relation to its morbidity and mortality and screening for OSA has been highlighted throughout the guideline.</p> <p>Regarding assessment/diagnosis of OSA: the authors presume the reference the reviewer was making to the widely used Epworth Sleepiness Scale (ESS), as we can find no scale named the "Epstein Sleep Index" or "Epworth Sleep Questionnaire". Addition or recommendation of ESS and polysomnography to support OSA diagnosis was deemed out of the remit of this TMD guideline. Indeed, some evidence suggests that STOP-BANG is superior in performance for screening for sleep disorder breathing than the ESS, for example <a href="#">Solecka et al 2022</a>, <a href="#">Miller et al 2018</a>, <a href="#">Prasad et al 2017</a> and <a href="#">Silva et al 2011</a>. STOP-BANG has also been recommended by two recent systematic reviews for screening for OSA in differing populations (<a href="#">Bernhardt et al 2022</a>; <a href="#">Pivetta et al 2021</a>). The painful TMD guideline therefore advocates appropriate referral for GP assessment if concern over potential OSA. A template letter, with STOP-BANG questionnaire is included.</p>

	<p>As this guideline's subject matter is the management of painful TMD, providing extensive details of splints to protrude mandible and manage OSA was deemed out of remit. However, we have signposted to the NICE guidelines on OSA and briefly explained the range of treatment based on severity (Obstructive sleep apnea section, last part of first paragraph). We have also strengthened our assertions throughout the document on OSA having potentially life-threatening consequences if left undetected and unmanaged. We have added it to the flowchart (Figure 3) as a reason for further opinion from the patient's GP.</p> <p>In addition, the lead and senior author of the TMD guideline made a suggestion to the RCS FDS CSC Chair that for further detail on this important topic, the RCS FDS CSC could convene another GDG to support the development of a separate guideline focussed on OSA if they felt the NICE guidelines lacked prominence or accessibility for the dental community.</p>
<p>The philosophy of central sensitisation and its contribution to co-morbidities is now widely accepted but does not have central emphasis in their pathophysiology. The general dental practitioner would not be aware either of this modern take on pain theory.</p>	<p>The guideline already outlines in section 10 (background) functional changes with pain processing, <i>e.g.</i>, generalized hyper-excitability in the central nervous system, as a potential aetiological feature. We do not feel detailed pain science mechanistic discussion would offer further benefit in the guideline. However, we have now highlighted to those who want to read more about pain processes and mechanisms, the NHS's excellent e-learning for health care resource and two specific modules relevant to pain science (in the trigeminal system) at the end of section 10.</p>
<p>Consider improving emphasis on cluster headaches and co-morbidities with hormonal influence related to TMD/ cluster headaches / migraines. Strong female predilection noted in the evidence for this.</p>	<p>There is no evidence for increased prevalence of TMD in those with cluster headaches. Migraine and tension type headache have been shown to be co-morbid and these are included in this piece. We have added narrative to this effect to the end of the sub-section on comorbidities in section 10.</p> <p>Importance of assessment of headache symptoms is included in guidance (appendix 1 and 2).</p> <p>Symptoms of cluster headache are outlined in appendix 1.</p> <p>We have added some further detail on the hormonal influence to TMD to sub-section on hormones (last sub-section of section 10)</p>
<p>There is too much emphasis on SSM and there is a risk of resorting to SSM in cash-strapped trust areas.</p>	<p>We appreciate this point, but the only management for which there is consistently strong supporting evidence in painful TMD is for the use of supportive self management. All TMD cases should therefore receive this as a first line and as explained throughout the guideline this forms a foundation for any other adjunctive management. The guideline in no way</p>

	<p>advises against other adjunctive management strategies and has included in detail all other options in both the narrative guidance and flow chart. The guideline cannot pre-empt or mitigate the action or decisions of individual NHS Trusts or ICBs, but does provide all the evidence to make informed, evidence-based decisions in the best interests of patients.</p>
<p>Review sections related to pharmacological management to include advice / scaffolding from secondary care specialists such as psychiatrists (if needed) especially where drug therapy overlaps with mental health management.</p>	<p>At present the guideline provides:</p> <ol style="list-style-type: none"> <li>1. An overview of all pharmacological management strategies with evidence base appropriate <u>for use in TMD</u></li> <li>2. An appropriate dosing schedule for pharmacological agents for TMD</li> <li>3. Pharmacological options are outlined in the care pathway flow chart</li> </ol> <p>The guideline therefore provides a substantial amount of guidance. It is difficult to see how this could be enhanced more to provide a bespoke level suggestion for each and every case of painful TMD that might present to the clinical team. We do, however, recognise the importance of liaison and have further strengthened our recommendations within the guidelines in respect of this. We have done so by specifically highlighting the importance of liaising with relevant clinical teams when there is comorbid mental health illness or psychotropic medication (Section 16 Management, at end of paragraph 2; Legend to Table 10 where medication dosing recommendations are stated).</p>