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Conservative Temporomandibular Disorder Management: What DO I do? – Frequently Asked Questions

Abstract: There are many myths and fallacies surrounding the conservative or non-surgical management of patients with temporomandibular disorders (TMD). This paper is not a treatise on splint design and does not champion any one particular treatment philosophy. It is, however, produced as the outcome of many years of lecturing and talking to fellow practitioners and represents the most frequently asked questions and common misconceptions encountered by the authors, who have addressed the topics raised with the intention of helping to avoid pitfalls.

The common symptoms encountered in general dental practice are pain, either from muscles or the temporomandibular joint (TMJ) itself, limitation or deviation of mandibular movement, and joint sounds, and the authors have attempted to separate fallacy and fact. When appropriate examples are given.

There are general treatment guidelines but, while some methods apply to an individual, there is no panacea – individual patient treatment needs vary.

Clinical Relevance: It is important that all treatments delivered to a TMD patient should be evidenced-based and should always be in the patient's best interests. Many treatment modalities are proposed that do not fulfil these parameters and can lead to confusion in management. A reference and reading list will be given which will direct the reader to an evidence-based approach to treatment. Some treatment suggestions are founded on the extensive clinical experience of the authors. There will not always be evidence from a randomized, controlled clinical trial to substantiate support for a specific treatment, but the reader should be directed by what the majority of clinicians would undertake as a responsible approach.

Dent Update 2013; 40: 745–756

The objective of this 'Question and Answer' paper is to address questions on temporomandibular disorder (TMD) management and suggest simple examination and treatment guidelines for TMD patients that, while not being overly

complicated, should enable the dentist to elicit all relevant information.

It is important to remember that, with TMD patients, 'the one approach for all' idea is not appropriate. It is, however, preferable to work to a set examination protocol, so that any findings are meaningful not only to you as practitioner, for future reference, but also to another clinician who might become involved in the patient's management. Ideally, all findings should be recorded in a manner that can be added to subsequently.

It is not appropriate to give a 'pro-forma' for a clinical examination in the form of a document in this paper as such information can readily be accessed elsewhere. As many practices are now

computerized, a simple menu can readily be adapted from other sources for everyday use.

Q. My patient's main complaint is pain. What do I do?

A. First sort out the source of the pain.

Pain mimicking a TMD can come from many anatomical sources and a differential diagnosis is of the utmost importance.

Pain from a TMD will usually have its source either from the joint itself or the associated mandibular muscles. Pain from the joint can be associated with an internal disc

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derangement, degenerative joint disease or an acute inflammatory pain, as is seen with a traumatic arthritis. Pain associated with the masticatory muscles is frequently associated with parafunction.¹

Pain may respond to a non-steroidal anti-inflammatory drug (NSAID), such as ibuprofen. If you prescribe this, advise the patient that he/she must take the drug regularly after food for 2–3 days before the anti-inflammatory effect is maximized. If it is taken only on an 'as needed' basis, it is no more effective than paracetamol.^{2,4}

If there are palpable areas of tenderness in the muscles, then physiotherapy has great benefit. Electro-physiotherapy is thought to have its action by increasing capillary permeability and enhancing the uptake of inflammatory exudate from the tissues surrounding the muscle fibres. Some modalities of physiotherapy also enhance blood flow.^{5,6}

Patients may also experience pain with function. It is advisable to suggest the patient keeps strictly to a soft diet, such as pasta, mince, fish, eggs, etc. Chewing meat and tearing actions such as biting into crusty French bread and bagels increase the joint load and should be avoided. Patients should be counselled that biting into something hard with the mouth wide open, such as into an apple, greatly increases the load across the joint and should also be avoided. Patients should cut up apples and raw vegetables.

On infrequent occasions when patients experience intractable pain from, for instance, advanced degenerative joint disease, intra-articular injection of steroid and local anaesthetic can be given. This, however, falls into the remit of specialist treatment and, while rarely undertaken, alongside arthrocentesis does play a part in management.^{7,8}

Q. What does TMJ tenderness signify?

A. There are two common presentations.

Tenderness can be centred over the temporomandibular joint, radiating up into the temple, down the mandible, sometimes to the occiput, and to the neck and also along the zygoma. This is the distribution of tenderness that is

associated with facial arthromyalgia/pain dysfunction syndrome/myofascial pain and follows the areas of muscle attachments. Alternatively, pain can be precisely localized to the temporomandibular joint in the pre-auricular area and this distribution is usually associated with degenerative joint disease, such as osteoarthritis.

Palpation of the TMJ in the immediate pre-auricular region (Figure 1) only gives limited information owing to the relatively poor nerve supply to the capsule and disc. More reliable information is gained by palpation via the external auditory meatus (ear canal).⁹ The little finger is placed in the external auditory meatus and gentle forwards pressure is applied (Figure 2). The patient is asked to open and close his/her mouth gently. The posterior bilaminar zone of the disc and capsule is highly innervated. If this part of the joint is inflamed, or if the disc is displaced, this area will be tender to examine, especially if this tissue is interposed between the head of the condyle and the fossa. It can also be extremely painful to approximate the molar teeth on the affected side owing to compression of the retro-discal tissue. This is a common complaint when patients attend with an acute disc displacement of recent onset.²¹

Q. What about muscle examination; what should be done?

A. This should be limited to what is interpretable.

The usually examined muscles are the *masseter*, *temporalis*, *lateral pterygoid* and *digastric*.¹⁰ These are small muscles and are generally tender where they are attached to bone. The medial pterygoid is not accessible to digital palpation.

The *masseter* can be examined bi-manually with one finger inside the mouth and one finger outside the mouth (Figure 3a, b). This muscle is usually tender in patients who have a clenching habit.

The *temporalis* muscle is usually tender in its origin. The area where tenderness is frequently found is in the temple above and slightly anterior to the TMJ and these are the anterior vertical elevator fibres (Figure 4). This muscle is tender in patients who are bruxists.

The *lateral pterygoid* muscle is not



Figure 1. Lateral palpation of the TMJ.



Figure 2. Intra-auricular palpation of the TMJ.



b



Figure 3. (a) Palpation of the origin and (b) insertion of the masseter.



Figure 4. Palpation of the anterior vertical fibres of the temporalis.

accessible for digital palpation.¹¹ This muscle is best tested against forced resistance, whereby the patient is asked to open his/her mouth, with the operator's hand placed under the chin resisting further movement (Figure 5a, b). If there is pterygoid muscle spasm, then discomfort will be felt in the pre-auricular area on the affected side.

The *digastric* muscle is a depressor of the mandible. The clinical manifestation of tenderness in the digastric muscle is pain behind the ascending ramus of the mandible, over the posterior belly in the region under the earlobe. This tends to be tender in patients who brux on their anterior teeth.

Q What do TMJ sounds signify?

A. What do you mean by 'sounds'?

Joint sounds vary. The common sounds are clicking and crepitation. An early or mid opening cycle click is commonly caused by disc displacement. If the intra-articular disc is displaced, then the patient can usually open to 15–20 mm without causing a click. This is a consistent range of measurement due to the rotational condylar movement. Once this rotatory phase is exceeded, translation occurs when the head of the condyle moves forwards across the intra-articular disc. If the disc is displaced then, as translation commences, the head of the condyle encounters the disc in an unexpected and displaced position. Friction is built up until the head of the condyle 'jumps past' the disc with a positive audible release of energy, which is the click. The closing click tends to be softer than the opening click, as it is more of a passive movement when the disc repositions. Another explanation for a late opening click could be subluxation, when the disc is not displaced at the commencement of mouth opening, but the click occurs as a result of the condylar head moving considerably further than the disc and, thereby, attaining a displaced position. The click associated with facial arthromyalgia or myofascial pain tends to be present on waking in the morning for the first hour or so. Thereafter, as the muscles relax, the disc returns to its normal anatomical and functional position, owing to the elastic pull of the posterior part of the disc, and the click disappears.

It may return at times of increased muscle tension, such as when eating. If, however, the click is consistently present throughout movement, this is more indicative of a true internal derangement in which the disc is consistently displaced. It is important to differentiate between the two types of clicks on the basis of the patient's history as this will directly affect the treatment plan.

Patients often confuse TMJ clicking with dislocation. True dislocation is extremely rare and generally occurs when trauma is applied to the mandible with the mouth open. In such circumstances, the patient would attend with his/her mouth stuck open and deviated across towards one side and would be in considerable pain.

The other common joint sound is crepitation. This is a crunching or grating sound and is indicative of either degenerative joint disease, such as osteoarthritis or, less frequently, of acute inflammation. Crepitation associated with osteoarthritis is a joint sound which may be present with or without pain. It is indicative of degeneration of the joint surfaces, either of the condyle, of the fossa or of the intra-articular disc itself. Radiographic findings may or may not be present (Figure 6). This sound can also be attributable to a variety of other degenerative joint diseases, such as psoriatic arthritis and rheumatoid arthritis. It should be remembered, however, that if either of the latter two diagnoses is involved, the patient will usually present with the systemic disease already established.

Q. Does a click need treating?

A. No. Not always!

Clicking can be related to myofascial pain and dysfunction when the click is intermittent. An alternative presentation is when the click is consistently present and is associated with a true internal derangement of disc displacement with reduction.

If a patient presents at the surgery with a painless click that is completely symptom free, there is no pain and there never has been any experience of locking, there may be no need to treat the condition.¹² Treatment of a click, however, may be appropriate if the click is painful, if there is a tendency to lock or if it is audible to others and socially embarrassing. In these

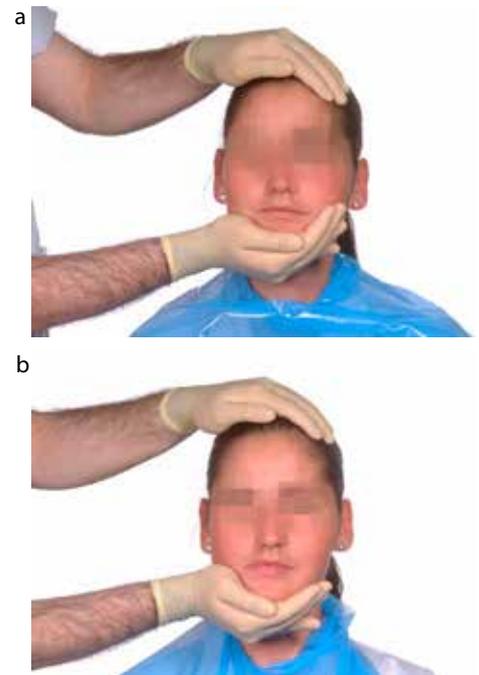


Figure 5. (a) Vertical examination of lateral pterygoid muscle against resisted movement. (b) Lateral examination of lateral pterygoid muscle against resisted movement.

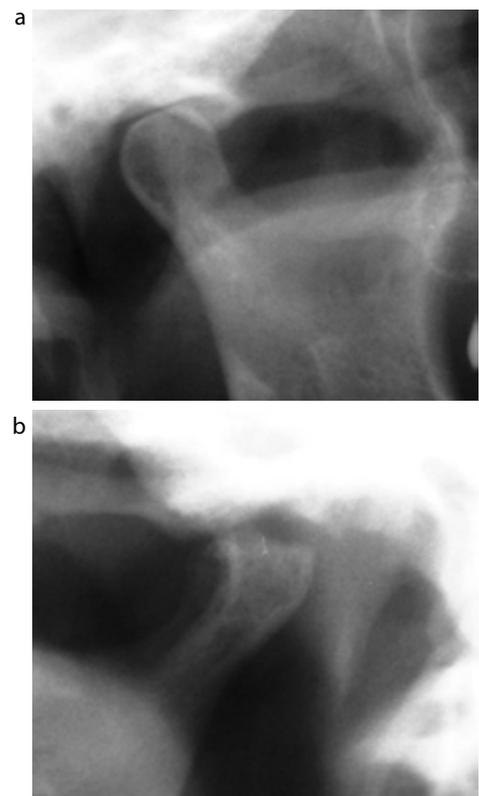


Figure 6. DPT of (a) right TMJ and (b) left TMJ. Same patient showing degenerative joint disease.

circumstances, the treatment of choice is an anterior repositioning splint (Figure 7). These appliances are successful in about 85% of patients.¹³⁻²⁰ The acid chairside test is when the patient is asked initially to open his/her mouth and then to protrude the lower jaw and then close. On subsequent opening and closing movements, he/she is asked to keep the mandible forwards with the incisors in an edge-to-edge relationship and the click should disappear. In some patients, for instance with a Class II division 1 bone and dental relationship, it may not be necessary to attain an edge-to-edge position. If the click is heard on a protrusive mandibular movement, record this position as the one to work to. If protrusion eliminates the click, this is indicative that an anterior repositioning splint would have a high chance of success.

When the patient postures forwards onto his/her incisor teeth (Figure 8a, b), the head of the condyle projects downwards and forwards so that the displaced disc assumes a more normal 'functional' relationship to the head of the condyle. Opening and closing from this position without causing the click thereby eliminates trauma to the disc and the natural elasticity of the posterior part of the disc gradually repositions it. An anterior repositioning splint must be worn 24 hours a day for approximately 12 weeks followed by a gradual weaning off period until the splint is eventually dispensed with. The temporary protrusive position of the mandible reverts to normal, the occlusion will return to its pre-treatment state and, if splint treatment is successful, with the disc back in position.²¹

These appliances work well when the patient has a click on opening in the vertical dimension. If the click is only present on lateral movements, this is much less easy to treat and an anterior repositioning splint is less successful.

The joint sound of crepitation is different to manage. If you see a patient who has recently developed crepitation, the chances are that for up to a period of 9–12 months this will persist. The temporomandibular joint, however, does retain the capacity to repair and remodel throughout life. The undifferentiated germinative mesenchyme cell layer can be stimulated by irritation. The direct effect of this, in response to degenerative joint disease, is for the head of the condyle to reshape, remodel and resurface. This

reparative cycle can take anything from 18 months to three years to occur.

Q. Should I record the range of jaw movements?

A. Yes, this is important.

Assess the range of jaw movement in both the vertical and horizontal planes (Figure 9a, b). The lower limit of normal vertical movement for female patients is approximately 38 mm and 45 mm for male patients. The normally accepted range of lateral movement is 8 mm from midline to midline. Assess not only the pain-free range of movement, but also the maximum forced range of movement. This will negate any subconscious patient

guarding, which might reduce the range of movement to within his/her pain-free comfort zone.

Apart from the clinical measurement of the range and pattern of movement, which is the one *objective* measurement that can be undertaken, much can be gained from watching the patient during his/her normal functional movements.

Restricted jaw movement in a TMD patient is either due to pain in the muscles or a physical obstruction within the joint, such as a disc displacement. If there is reduced lateral movement, the patient will be able to move away from the affected side to a lesser distance than towards the affected side. When moving towards the symptomatic side, the affected condyle is rotating,



Figure 7. Anterior repositioning splint.

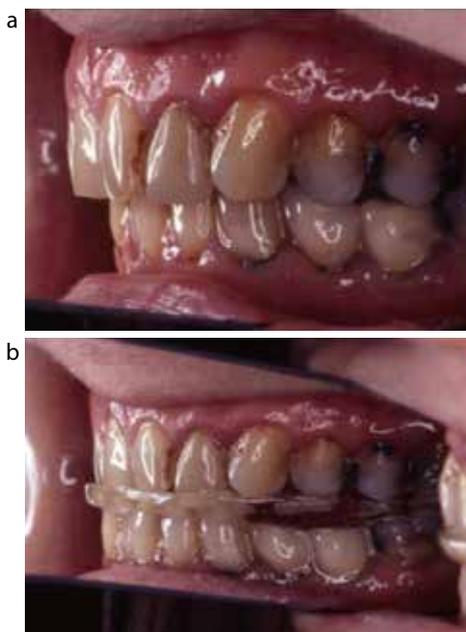


Figure 8. (a) Mandibular position without anterior repositioning splint (ARPS). (b) Mandibular position with ARPS.

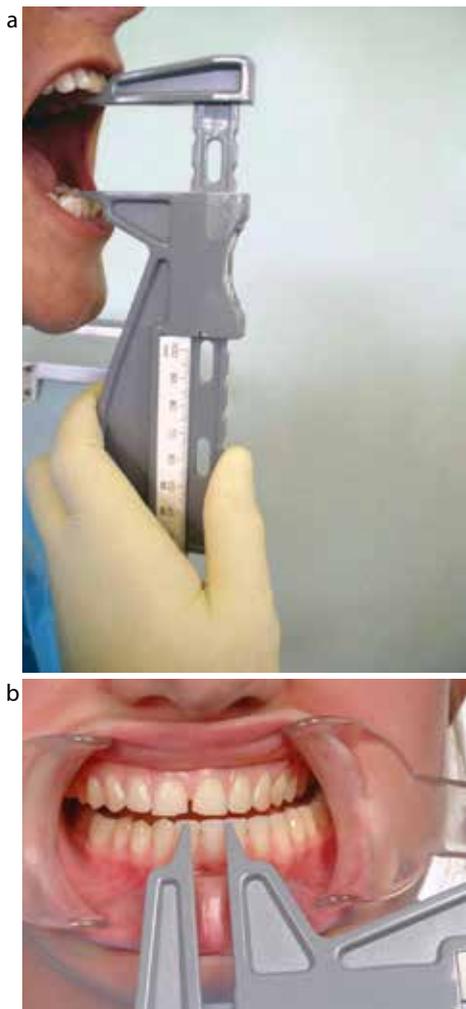


Figure 9. (a) Measurement of incisal opening. (b) Measurement of lateral jaw movement.

whereas when moving away from the affected side, the condyle will be orbiting and will have a range of movement obstructed by the displaced disc. Deviation in the pathway of movement is best seen by standing in front of the patient. If the pathway of movement is straight (Figure 10a), then both joints are acting synchronously. A temporary deviation to one side (Figure 10b) or the other implies that there has been an obstruction to smooth movement, possibly indicating disc displacement with reduction. If the mandible moves obliquely from the start of opening to maximum opening (Figure 10c), then this might imply adhesions within the joint. If the mandible moves vertically only subsequently to deviate markedly to one side (Figure 10d), this might indicate disc displacement without reduction in that the condyles move to a certain point when movement of one side is blocked.

Q. How do I react to a complaint of a decreased range of movement?

A. Think about the possible cause.

A decreased range of movement can be due to a variety of causes, the most frequent of which are muscle pain or an

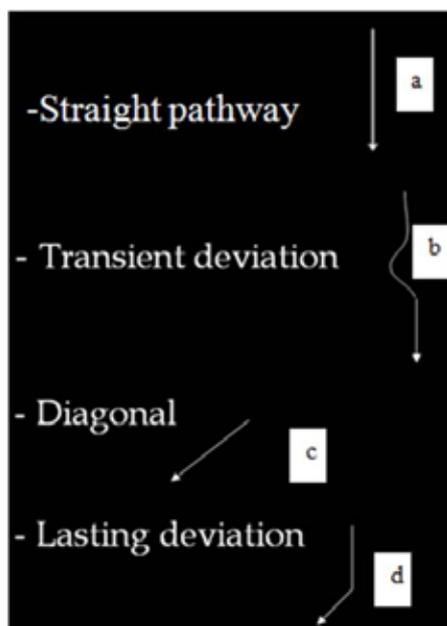


Figure 10. (a–d) Diagrammatic representation of mandibular movements.

internal derangement of disc displacement, without reduction when there is a physical obstruction. Restricted mouth opening can, on rare occasions, be due to a medial pterygoid haematoma following an ID block. This, however, occurs with a totally different presentation and could be dismissed without a germane history.

When considering the former, it is sensible to address the cause of the muscle tenderness. This could be secondary to parafunction, secondary to trauma or, as happens frequently, may arise spontaneously with the patient having done nothing that he/she was aware of to cause the onset of the symptoms. NSAIDs, such as Ibuprofen, do have a place. A more effective way of addressing this, however, is with an immediate and intensive course of outpatient electro-physiotherapy in combination with a soft diet and anti-inflammatory gel, preferably containing both Ibuprofen and Levomenthol.

When the pain is acute, hot and cold compresses can be used, such as frozen peas for a minute wrapped up in a towel followed by a hot water bottle for 2–3 minutes, repeating this cycle two or three times (Figure 11a, b).

If a patient presents with a specific area of acute muscle spasm, which is readily identifiable by digital palpation, a vapo-coolant spray, such as ethyl chloride can be used for temporary relief (Figure 12). This should be administered in the surgery environment.

In some instances, when a jaw relationship recording is being attempted, such as Centric Relation or Retruded Contact Position, the muscles can be very uncomfortable and unforgiving and prevent ready manipulation of the mandible. In these circumstances, a small anterior acrylic biteplane may be used to prevent the posterior teeth meeting and this in itself may be enough to induce muscle relaxation. This should be used as a diagnostic aid only and should not be given to the patient to use at home because of its poor retention.

If the restricted movement is due to a physical obstruction (disc displacement without reduction), the authors consider an intensive course of outpatient physiotherapy, either megapulse or ultrasound, directed at 'relaxing' the superior pterygoid muscle, to be helpful.²² If this is of recent onset, there is a high chance of success of allowing the

disc to reposition. This must be an intensive course (3x per week for 3 weeks).

If the disc displacement is recent and associated with acute muscle spasm of the superior pterygoid, then prescription of Temazepam oral suspension should also be considered.²³ This must be done in conjunction with the patient's medical practitioner and should be given as a 10 mg dose at night for a period of about 10–12 days. The patient should be counselled to take this half an hour before going to sleep at night. The dose must not be increased beyond 10 mg and ideally should be

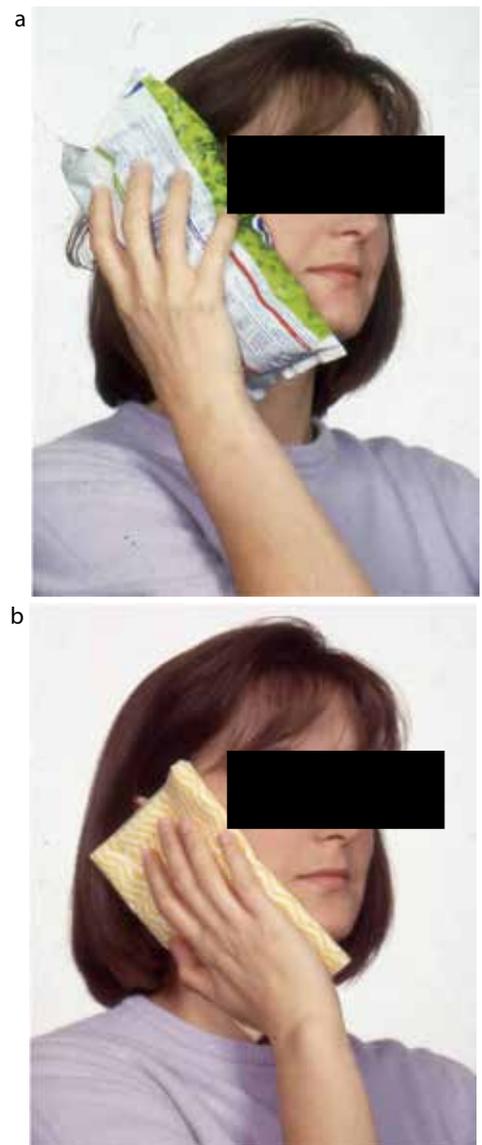


Figure 11. (a, b) Hot and cold compresses can be used to treat acute pain.

gradually reduced. This drug is not licensed as a muscle relaxant but as an anxiolytic. It does, however, have a recognized pharmacological muscle relaxant effect. It is not licensed for use in children under 12 years of age.

If locking is of very recent onset, it is sometimes possible to manipulate the mandible to free the disc. This is done by asking the patient to bite with a wooden tongue spatula between the molar teeth on the affected side for approximately one minute (Figure 13). This causes the muscles on the contra-lateral side to pull the condyle up while the condyle on the affected side is 'fixed'. The patient is then asked to open the mouth gently and the operator places his/her thumbs on the molar teeth and exerts gentle downwards and posterior pressure on the affected side, while rotating the other side upwards and slightly forwards. This does work on occasion in freeing the disc but the patient should be told that the disc is unstable. This must be followed by a period of a strict soft diet and reduction of mouth opening as far as possible.

Q. Should I look for signs of bruxism for patients with a TMD?

A. Yes.

An awareness of bruxism can be reported but a direct cause and effect relationship is difficult to establish. Mild forms of bruxism rarely have severe consequences for oral structures. Bruxism is a parafunctional oromotor habit, that can occur during sleep or daytime, that can sometimes pose a threat to the integrity of the structures of the masticatory system if the magnitude and direction of the forces exerted exceed the system's adaptive capacity.¹ In extreme cases, however, bruxism can cause tooth structure breakdown and it has been suggested that this can play a role in the development of a TMD. The two most reliable signs of *active* bruxism are scalloping of the lateral margins of the tongue (Figure 14) and ridging of the buccal cheek mucosa along the occlusal plane (Figure 15). Both scalloping of the tongue and ridging of the cheek mucosa disappear when parafunction ceases, usually within 2–3 weeks. Attrition or abnormal wear facets may also be seen but will

obviously remain after active parafunction has ceased.

Q. Do I need an X-ray or will an MRI scan be better?

A. Special tests are hugely overprescribed and are normally unjustified.

Special tests are rarely necessary in the diagnosis or treatment planning of a patient with a temporomandibular disorder.

Radiographic and other investigations are *not* indicated as part of a patient's routine examination.^{24–28}

Q. Is a specific diagnosis important?

A. Yes, vital. Treatment for one condition might be ineffective at best or detrimental at worst for another.

The diagnosis should be made in relation to the patient's history and his/her subjective complaints and the clinical findings. The diagnostic criteria for the individual disorders are well known and do not merit repetition here.

Q. Should I advise the patient to exercise, especially when there is restricted movement?

A. No.

Aggressive exercise during an acute TMD phase is best avoided owing to the potential for possible further damage to a displaced disc or inflamed muscle. If the acute symptoms have resolved and there is a residual deviation or restriction on opening, closing or on protrusion, then remedial exercises can be advised to correct the deviation. These should be done in the vertical, lateral and antero-posterior directions. The patient should stand in front of a mirror, place one hand over the side of the mandible towards which the deviation is occurring and then open, close or protrude the lower jaw, applying hand pressure to ensure the mandible moves in a straight line. These are all useful 'corrective' exercises. During the acute phase, however, a patient should be told to treat his/her TMD as similar to a sprain and should rest the mandible as

much as possible, keep to a soft diet and avoid vigorous exercise.

Q. Is physiotherapy useful in the management of a TMD patient?

A. Yes!

A temporomandibular disorder is like any other musculoskeletal disorder. If any other joint was injured, the first recourse might be to a physiotherapist. The same is true with a TMD, with the caution that, during the acute phase of a condition, exercise and active mobilization is not desirable owing to the



Figure 12. Ethyl chloride can be used for temporary relief from acute muscle spasm.



Figure 13. Asking the patient to bite on a wooden tongue spatula between the molar teeth on the affected side for approximately one minute followed by manipulation may be a helpful procedure in freeing the disc.



Figure 14. Tongue scalloping.

potential for further damage.²² An intensive course of treatment is best, initially without trying to improve the range of movement forcibly. The usually employed modalities of outpatient electro-physiotherapy are megapulse and ultrasound (Figure 16a, b). Soft laser is also used (Figure 17). The ideal regime is 2–3 times a week for 3–4 weeks, totalling about 10 sessions in all. If the attendances are less frequent, then the benefit is limited. Recent research suggests that either manual therapy or electrical modality intervention would be an option for the treatment of TMD to improve functional outcomes.²⁹

Physiotherapists are skilled in passive gentle manipulation, which has a place in myofascial pain. The best approach is to discuss the treatment directly with the physiotherapist as he/she is the expert in the field and best placed to give advice.

Q. Is there any evidence to support the use of acupuncture in TMD management?

A. Yes, but it is inconclusive.

It is claimed that acupuncture has a beneficial role in TMD management, principally of myofascial pain, and that the use of acupuncture has a success rate similar to that of occlusal splints and other treatments in relieving symptoms.^{30,31} However, owing to several methodological flaws, evidence remains inconclusive and the efficacy of acupuncture cannot be ascertained based on current literature.

Q. Should I prescribe drugs for patients with a TMD?

A. In some instances, yes.

Non-steroidal anti-inflammatory drugs (NSAIDs) have limited success. Ibuprofen is a mild NSAID, but has only mild side-effects. It can be useful in the management of chronic pain but its use is limited and, if taken on an 'as needed' basis, is no better than paracetamol. Temazepam oral suspension has been mentioned as being useful for short-term use for patients who have suffered an acute disc displacement without reduction (locking), if accompanied by acute pterygoid muscle pain.²³

Q. Should I always provide a splint?

A. Not necessarily.

There are many different varieties of splint. Some are frequently made, such as soft vacuum-formed splints (Figure 18). In our clinical experience, it should be borne in mind that appliances such as these, if the patient is an active bruxist, can actually make matters worse, as they are subconsciously aware of having something compressible between their teeth. If the patient is an active bruxist, it is not uncommon for them to destroy such an appliance in a fairly short space of time and this can be accompanied by an exacerbation of their symptoms. An occlusally balanced stabilization splint (Figure 19) is the ideal splint of choice, if there appears to be an occlusal component

in the aetiology of the patient's symptoms of myofascial pain, such as is found with parafunction. The use of an anterior repositioning splint has already been discussed.

An in-depth treatise on splint therapy is outwith the remit of this paper and such information can be readily sought elsewhere.

Q. Can I use a partial coverage appliance for TMD management?

A. No, NEVER.

There is no indication in the management of patients with temporomandibular disorders for use of partial coverage appliances. These permit



Figure 15. Cheek ridging.



Figure 17. Soft laser apparatus in use.



a



b

Figure 16. (a) Megapulse apparatus in use. (b) Ultrasound apparatus in use.



Figure 18. Soft vacuum-formed splint.



Figure 19. Occlusally balanced stabilization splint.

unplanned unpredictable and unwanted tooth movement and are medico-legally indefensible (Figure 20 a–c).

Q. If there are occlusal interferences shouldn't I just pick up a handpiece and remove them?

A. NO!

If the patient has a TMD, then the occlusal contacts may not be the same as when symptom free, especially if there is an acute disc displacement. Therefore, an occlusal interference may be a result rather than a cause of a temporomandibular disorder. Irreversible occlusal adjustment should never be undertaken in the presence of acute muscle pain or TMD symptoms. Ideally, occlusal adjustments should not be done until after a period of successful splint treatment. If a stabilization splint is worn and the patient's symptoms resolve, only to return when the splint is 'weaned off', then there might be a logical reason to address the occlusion of the natural teeth, but not without further and detailed occlusal analysis and only after meticulous planning with articulated plaster casts and with informed consent.

Q. Can I carry on with extensive restorative treatment if a TMD arises part way through?

A. Not advisable.

It is not sensible to continue with an extensive restorative treatment plan in the presence of an acute disc displacement, if this occurs part way through treatment as, when the disc is out of place, the occlusal contacts between maxillary and mandibular teeth will change in both position and number. Get advice about whether it is necessary to treat the disc displacement first before placement of the final restorations.

Q. Should I restore posterior missing units if I thought that missing molar teeth could 'compress' the TMJ?

A. This theory stretches back many decades and is not substantiated anatomically.

There is no evidence base to show that restoration of missing and

posterior units will benefit TMD treatment, unless there are functional difficulties. Indeed, the shortened dental arch is now deemed to be a treatment of choice in some patients (Figure 21).

Q. My patient feels that orthodontic treatment caused the temporomandibular disorder. Is this right?

A. There is nothing in clinical experience or in the literature which would support such a theory when applied to conventional orthodontics.

The age that TMD can arise is about the same age as when adolescents might complete a course of orthodontic treatment, so this appears to be purely coincidental.

Q. Is the 'do nothing' approach wrong?

A. Certainly not.

If the patient has, for instance, a click or temporarily restricted movement unaccompanied by any other acute symptoms, then there may be no need to treat this. If full discussion with the patient has taken place and he/she is comprehensively informed as to what treatment can be offered should the need arise, the decision not to go down the active treatment route may be chosen at that period in time. The dentist's role is advising what treatment should be considered if temporary symptoms do not resolve, or if more intrusive symptoms, such as pain or locking, occur.

Treatment of a patient with a TMD should be individually planned. The patient's expectations and what treatment he/she will accept will have been discussed. What may be an ideal treatment plan on paper may not be practical but, as long as any suggestions are evidence-based and a full and open dialogue that treatment can be commenced at any time is maintained, then the patient's needs and best interests are being fulfilled.

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Figure 20. Disturbed occlusion (b, c) following treatment with a partial coverage appliance (a).



Figure 21. Shortened dental arch is the treatment of choice in this patient with missing posterior teeth.

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