

THE DIFFERENT ASPECTS OF BLEACHING: PART ONE

In the first of a series of four articles on teeth whitening, Diane Rochford looks at the prescription required from a registered dentist

Dental bleaching is a new and exciting dimension to the role of dental hygienists and therapists.

The aim of this series of articles is to look at the different aspects of bleaching teeth: the prescription required from a registered dentist, how bleaching works, dealing with patient sensitivity, the whole team approach and the legal issues that surround bleaching in the UK.

The scope of practice, published by the General Dental Council (GDC) in July 2008, added to the duties hygienists and therapists could undertake with appropriate training and experience. Among these duties was 'tooth whitening to the prescription of a dentist' (GDC, 2008).

Working from a prescription

A prescription is a requirement by the GDC, however there are no guidelines to the amount of detail that is required. This can vary from dentist to dentist.

Prior to treatment, patients should always receive a comprehensive dental and oral evaluation (Greenwall, 2001), including necessary radiographs and photographs (Haywood, 2007).

The information gathered by the dentist is essential to a successful outcome of treatment.

Patients frequently say to their hygienists and therapists during hygiene visits, 'I'd really like my teeth to be whiter'.



Figure 1: Manage patient expectations carefully



Figure 2: The whitest smile



Diane Rochford has been working in dentistry for more than 20 years. First, as a dental nurse, before qualifying as a dental hygienist from Guy's Hospital, London in 1996.

Diane joined Dr Linda Greenwall's team in September 1996. She is

a gold member of the British Dental Bleaching Society, current member of BSDHT and BPS.

Patient expectations

The initial discussion with patients regarding bleaching is vital. The most common reasons for bleaching are to improve appearance, look and feel healthier, which can in turn improve confidence.

It has been reported that in times of financial recession more people spend money on tooth whitening and cosmetic dentistry.

Patients' perceptions need to be established. Good communication between the clinician and the patient is essential; they need to understand the benefits and risks, advantages and disadvantages of the treatment options,



Figure 3: Portrait



Figure 4: Smile

especially if their expectations exceed the reality of what is achievable (Greenwall, 2001) (Figure 1).

Beware when a patient tells you they want 'dazzling white teeth' while holding a photograph of a celebrity with the whitest teeth you've ever seen! This is one of the most important parts of bleaching (Figure 2).

Medical history

Patients should complete an up to date medical history prior to bleaching.

As clinicians we should be aware of and record:

- Lifestyle habits, such as smoking. Patients who smoke should be encouraged to stop before bleaching
- Allergies. Any potential allergies to plastics, peroxide or ingredients in the bleaching gel
- Medications. Hormone medications that cause an exaggerated gingival response and medications that cause dry mouth, such as antihistamines
- Tetracycline medications for acne and other skin conditions cause varying degrees of intrinsic staining



Figure 5: Retracted



Figure 6: Need for treatment

- Pregnancy. Bleaching is not recommended during pregnancy as there is a lack of research on possible effects to the foetus, also wearing trays may be difficult if they experience nausea or episodes of gingivitis.

Radiographs

The comprehensive dental and oral evaluation should include any necessary radiographs.

Caries, evidence of periodontal disease and apical pathology need to be assessed. Bite wing and periapicals are most frequently used.

Photographs

A series of photographs is recommended during the initial evaluation, during the treatment and at the end of the treatment (Figures 3, 4 and 5).

Photographs should track the patient's progression throughout their treatment, as they often forget how discoloured their teeth are.

Photographs also provide clinicians with excellent records and evidence, should any complaints or legal issues arise.

Shade

The current (start) shade must be assessed and documented in the patient's records. Using a shade guide with the



Figure 7: Age-related yellowing

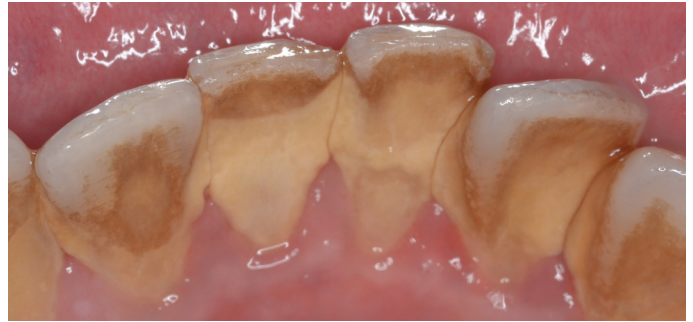


Figure 8: Diet, lifestyle, oral hygiene



Figure 9: Fluorosis



Figure 10: White spots



Figure 11: Tetracycline



Figure 12: Single yellow tooth

patient looking in the mirror, both the patient and clinician should be in agreement with the current shade. This helps patients to appreciate the shade change that occurs during the treatment.

Further treatment

All diagnosed treatment by the dentist should be presented to the patient. Some treatment may be required prior and following bleaching (Figure 6). Clear, concise explanations of the benefits for proceeding with treatment and the risks involved if they do not, must be given and the patient should be allowed time to ask appropriate questions.

Fees for all treatment should also be quoted and recorded. The indemnity bodies recommend that, as clinicians, we should be documenting all discussions we have with patients concerning treatment or their refusal to accept proposed treatment in our patient records. Signed, written consent from the patient that they have received all the necessary information before commencing with any treatment is essential.

Types and causes of discolouration

- Age-related yellowing (Figure 7). Teeth become more yellow primarily due to the internal deposition of secondary dentine (Haywood, 2007)
- Diet, lifestyle and oral hygiene habits (Figure 8). Coloured foods and drinks, such as curries, berries, tea, coffee, and red wine, all contribute to extrinsic staining. Smoking can cause extrinsic staining and, over time, becomes intrinsic as the nicotine is absorbed into the tooth. Poor oral hygiene can result in green, black/brown and orange stain produced by chromogenic bacteria (Greenwall, 2001)
- Fluorosis (Figure 9). Excessive fluoride uptake during the development of the enamel layers appears as white or brown patches. Simple fluorosis presents as brown patches on smooth enamel surfaces. Opaque fluorosis appears as grey or white flecks. Pitting occurs as defects in the enamel and appears darker
- White spots (Figure 10). Enamel hypomineralisation caused by premature birth, low birth weight, chronic infections or an elevated temperature are associated with

altered deposition of enamel matrix and its mineralisation. This usually affects a few teeth and the white spots appear well defined (Walsh, 2011)

- Tetracycline (Figure 11). Broad spectrum antibiotics. Minocycline is frequently prescribed for acne and other skin conditions. Tetracycline is associated with causing intrinsic staining that can be generalised or localised, in the form of horizontal banding, and can vary in colour – grey, blue, yellow and brown. The intensity and pattern can depend upon the dosage, duration and type prescribed in relation to the development of the tooth (Haywood, 2007)
- Single yellow tooth (Figure 12). May be vital or non-vital. Vital teeth may become darker due to trauma. Blood cells from the pulp invade and stain the dentinal tubules (Haywood, 2007). Internal and external resorption may also cause discolouring. Radiographs and pulp testing are crucial. Bleaching treatment alone may not be appropriate.

Legal issues

On 20 September 2011, the Council of European Dentists (CED) welcomed the adoption of the European Union to allow dentists to prescribe and use products containing up to 6% hydrogen peroxide, following a clinical examination and first treatment by a dentist. Patients can then continue the treatment by themselves. All member states (including the UK) have 12-months to adopt this new directive into their national legislation (CED, 2011).

Until the changes in legislation occur in the UK, the indemnity bodies are still offering the same advice. Dental Protection advises that ‘dentists should take into account what is in the best interests of their patients, they should be made fully aware of the risks and benefits of using bleaching products as opposed to the risks involved if healthy tooth structure is removed for alternative methods of treatment.’

Conclusion

Patients are frequently requesting tooth whitening. Dental hygienists and therapists are in a great position, following further training and experience, to help their patients (when possible and applicable) achieve a brighter smile.

Recommendations to begin successful bleaching:

- Follow a detailed prescription from a dentist to provide the best treatment recommendations
- Work with patients to establish realistic expectations
- Look for factors such as enamel defects and discolourations that may affect treatment
- Practice taking good quality photographs before, during and at the end of treatment
- Keep up to date with the current legal legislation – refer to the GDC, indemnity bodies and BDBS for current information, help and advice.

References

For the list of references to accompany this article, please email the editor at pd@fmc.co.uk. [PD](#)