

## 'Unbleachable' discolourations: truth versus myth

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Treating tetracycline stains is one of the biggest challenges for a dentist who deals with aesthetics.

The main side effect of taking antibiotics during pregnancy is a deposition in the dentine of a developing tooth as calcification of a fluorescent pigment. At the time of the eruption, the dentine of these teeth shows a brown to grey discolouration, and, consequently, aesthetic discomfort of the patients suffering from it.

Looking to the past, the traditional approach was based on 'subtractive' techniques aimed at covering the most severe discolourations after removing the overlying enamel. However, we should think conservatively for many reasons, but mainly as, although veneers are a simple and efficient solution, satisfactory results are only achieved with adequate thickness, meaning too prominent veneers, or preparations deep in dentine.

So, the question is... do we really need to touch sound enamel?

### Case report

In 2020, a patient came to the practice asking to improve the appearance of the severe tetracycline-induced dyschromia she suffered from.

I first took a picture using a Vita shade guide (Figure 1). According to Jordan and Boksman's (1984) classification, prognosis of bleaching was poor. However, I chose this procedure as the safest, cheapest and less invasive one.

In addition, if the bleaching did not show significant success, it would still be preparatory to a rehabilitation with indirect restorations in order to have a lighter substrate.



Figure 1: Severe tetracycline-related discolouration

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Figure 2: Polarised picture of discoloured teeth

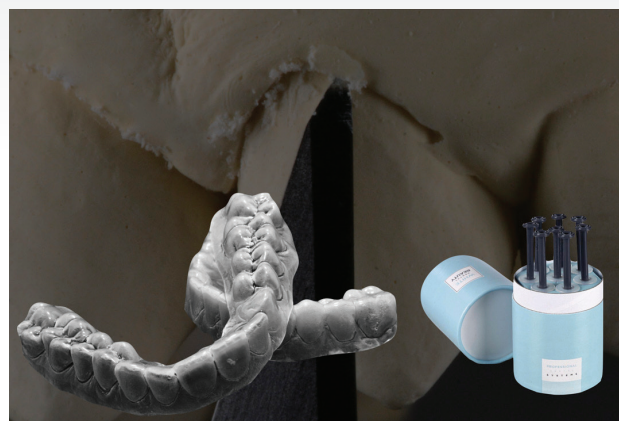


Figure 3: Model trimming for the fabrication of bleaching trays



Figure 4: Discoloured teeth before bleaching



Figure 5: One month of bleaching of discoloured teeth



Figure 6: Two months' bleaching. Antibiotics-induced discoloration during bleaching



Figure 7: Four months' bleaching

I find that taking a polarised photo can be of great help from a diagnostic point of view to better frame the issue (Figure 2).

First of all, alginate impressions were taken. Models were

created using a surgical blade to deepen the sulcus, to better follow the contour of the gingiva and avoid contact of the material with soft tissues.

A 1 mm soft tray material was used to fabricate a custom-



Figure 8: Five months' bleaching



Figure 9: Seven months and two weeks (after two months of lockdown) with 10% carbamide peroxide. Whitening teeth suffering from severe dyschromia



Figure 10: Dark teeth after bleaching for eight months (of which two weeks with 16% carbamide peroxide, White Dental Beauty)



Figure 11: Final result

fit tray without placing any reservoir (Figure 3). The tray has to cover almost 3mm of keratinised tissue. The particular consistency of this bleaching gel and a perfect custom-tray fit allow to avoid dilution of the material in the cervical area by saliva or bleaching gel leakage that could cause hypersensitivity.

The patient was instructed to put a drop of bleaching gel the size of half a rice grain for each tooth in the tray.

In this case, a 10% carbamide peroxide gel (White Dental Beauty) was chosen to be applied overnight, six days a week for five months.

A monthly appointment was arranged and a 3ml syringe of bleach delivered to the patient.

Figure 4 shows the initial situation and Figures 5 to 10 show the situation after each month of bleaching.

Figure 11 highlights the final result after eight months and

two weeks (and oral hygiene).

To boost the bleaching effect, 16% carbamide peroxide gel was applied for the last 30 days (Figure 12).

### Reflection

An evident aesthetic improvement was achieved without preparing teeth for veneers.

Could we have done better? Absolutely. Yet, when treating patients, the aim is to satisfy them completely, which means in this case we reached our goal.

Figure 13 shows the details from the polarised picture after finishing treatment.

### Conclusions

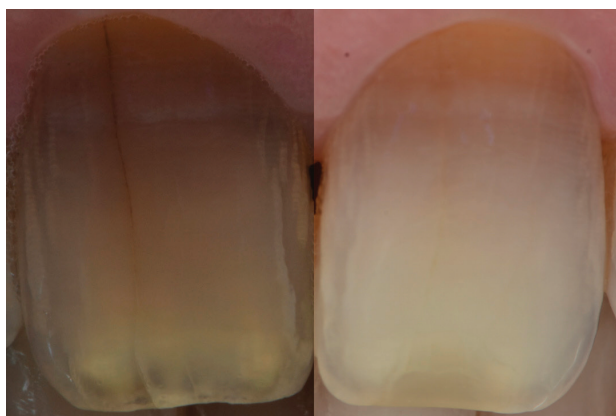
No sensitivity has been reported by the patient. As demonstrated by the before and after polarised photographs



Figure 12: Final result after whitening teeth with severe dyschromia



Figure 13: Polarised picture of bleached teeth



14: Before and after bleaching severely discoloured teeth

(Figure 14), a deep bleaching effect has been achieved with a very small amount of low concentration product placed in contact with enamel surfaces for a long time.

White Dental Beauty whitening gels are powered by Novon technology.

Novon is a whitening compound that contains hydrogen peroxide, urea and sodium tripolyphosphate and produces a pH jump into the alkaline pH range upon application, reducing the risk of sensitivity.

Be careful when you choose your bleaching system: the lower the pH of the product, the higher the sensitivity.

In addition, patient selection is very important – be sure to choose the right patient for treatment. A nine-month treatment needs a high level of compliance.

In the case presented in this article, a mild relapse of the tooth shade at nine months was observed compared with the immediate post-bleaching result.

I find it helpful to tell your patient that nothing is forever in dentistry (except extraction, obviously).

## References

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