# Talking with Patients

## **Tetracycline Dental Staining**

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#### WHAT IS IT?

Tetracyclines are broad-spectrum antibiotics used to treat both bacterial infections and other health conditions. When used systemically during tooth development (from the second half of the mother's pregnancy through 10 years of age), tetracycline can cause staining of the teeth. The intensity and type of staining vary depending on the type of tetracycline used as well as the concentration and duration of the drug ingestion. Research shows that dental discoloration is noted when the total dosage exceeds 3 grams and treatment is over 10 days.

Minocycline, a synthetic compound of tetracycline, is often prescribed for acne and other dermatologic conditions. Prolonged use of minocycline by children older than 10 years and even by adults also can result in mild but permanent dental staining. This type of staining usually appears as a generalized subtle graying of the teeth that is difficult to remove with toothwhitening procedures.

## HOW IS IT DIAGNOSED AND TREATED?

Tetracycline staining acquired during tooth development typically affects the teeth that are specifically developing at that time. This often results in the affected tooth having a banded stained pattern, corresponding to the time that that portion of the tooth was developing. The nature of the discoloration depends on what tetracycline analog was administered. For example, oxytetracycline or teramycin results in vellow-orange discoloration, whereas chlortetracycline and minocycline cause a blue-gray discoloration. Tetracycline-stained teeth fluoresce under ultraviolet light, which can be used as a diagnostic aid. Individuals that present with such a condition, when asked about their use of tetracycline at a young age, often remember having had a serious condition or infection that required prolonged use of antibiotics.

Tetracycline-stained teeth are not more susceptible to cavities or weaker than normal teeth. However, the staining often presents esthetic concerns. When the stained teeth are otherwise sound, the esthetic treatment depends on the severity of the staining. Tooth whitening can be attempted in mildly stained teeth. However, unless performed for long periods of time, the prognosis of whitening tetracycline-stained teeth is known to be poor. Composite bonding and porcelain veneers also can be used to treat tetracycline-stained teeth, with porcelain veneers affording the best and most predictable results.

## CONCLUSIONS

Tetracycline dental staining is the result of systemic use of some form of tetracycline during or after tooth development. Tetracyclines should be used very judiciously, especially in children under 10 years of age.

The following photograph shows teeth affected by tetracycline staining.

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