



## Black Stains

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### Abstract

Tooth discoloration is a frequent dental finding associated with clinical and esthetic problem. It differs in aetiology, appearance, composition, location and severity. Black stains is characterised as a dark line as incomplete coalescence of dots, localized on the cervical third of the teeth. Smoking tobacco and drinking beverages poor oral hygiene and pharmaceuticals can cause black teeth stains. And the treatment should involve a combination of reassurance with a minimally invasive approach to remove the staining by avoiding iatrogenic damage to the patient.

**Keywords:** Tooth discoloration , Esthetic problem ,Age ,Tooth staining, Caries, Chromogenic bacteria, Treatment outcome

### Introduction

Tooth discolouration is a common problem affecting patients, often causing aesthetic concerns. The causes of tooth discoloration can be classified according to the site of the stain and are divided into extrinsic, intrinsic. Extrinsic discoloration is deposited on the tooth surface/ in the acquired pellicle. The compounds that are present in the pellicle produce a stain due to either their basic colour or chemical interaction at the tooth surface. Intrinsic stains occur when the tooth structure is penetrated by pigmented materials, usually during tooth development. Internal discoloration is the incorporation of extrinsic stain within the tooth substance following dental development [1, 2]. Black stain is a common finding in children: however it can be also seen in adults [3]. Studies have shown equal prevalence in both sexes [4,5].

### Etiology

Using tobacco, drinking coffee or tea and consuming alcohol can lead to black teeth stains. Its microflora is dominated by chromogenic bacteria such as actinomyces and prevotella melaninogenica , and

appears to be a low incidence of caries in the presence of the stains. The cause of the dark pigmentation seems to be from iron deposits like ferric sulphate is present due to a reaction with the products of bacterial metabolism.

### Clinical features

Black staining is a specific type of extrinsic discolouration affecting the buccal and palatal or the lingual surfaces of the teeth. These black stains have been found to be recurrent in nature and are firmly attached to the tooth surface .Black stain appears to have a characteristic and relatively stable microflora. These organisms are predominantly gram-positive rods, cocci, and gram-negative rods. Increase in the plaque score decreases the severity of black stains..Its characteristics are a non cavitated incomplete line of dark dots formed at the cervical third of the tooth. BS is a common finding in children; however it can be also seen in adults [6]. The highest prevalence are the lingual surfaces of the lower mandibular teeth mainly at the proximal areas.

**Figure 1: Extrinsic black stains**



**Figure 2 :Black stains on deciduous dentition**



### **Diagnosis**

Dental discoloration is a relatively common finding and its aetiology can be varied. When diagnosing black staining, a dentist must consider the other possibilities of tooth discoloration. These can be divided into extrinsic and intrinsic. External tooth discoloration arises when chromogens (a term which refers to a colourless chemical compound that can be converted by chemical reaction into a compound which can be described as coloured) are deposited on the external surface of the tooth or its pellicle [7]. Intrinsic discoloration arises following a change to the internal structural composition or thickness of the enamel or dentine. Examples include amelogenesis imperfecta, dentinogenesis imperfecta and tetracycline staining [8].

### **Treatment**

The treatment of black staining includes explaining the cause of the staining to both patient and guardian. Patients are often reassured, that knowing the staining is not permanent and is in fact a common occurrence in the developing dentition. Particular advice should include instructions to avoid over-scrubbing the teeth while brushing, as this is unlikely to remove the stain but may cause abrasion on the tooth surface. A combination of both ultrasonic scaling and polishing with pumice paste is often sufficient to remove the black stain. Black staining deposited on the pitted grooved areas can often prove extremely difficult to remove. If stains are difficult to remove, a tissue can be used to 'blot' out the excess water from the pumice paste and the tooth dried to concentrate and take further advantage of its abrasive particles [9]. Overuse of the ultrasonic scaler should be avoided as this leads to undesired loss of hard

tissue (enamel). Black staining can commonly recur despite complete removal and patients should be advised this is a normal occurrence.

### Conclusion

Black stain is a form of extrinsic stain and is a commonly occurring dental problem to the practitioner. The aetiology of black stain is not entirely understood. Ultrasonic investigation suggests that this stain is due to a specific type of dental plaque with tendency to calcify.[10,11]. The Correct diagnosis of black stain is essential to ensure the appropriate advice is given to the patient and subsequent treatment for the extrinsic staining. It can often prove an aesthetic concern for the patient and simple procedures by the dentist can significantly improve a patient's self-esteem. Care must be taken by the practitioner to avoid iatrogenic damage when attempting stain removal.

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