

Dental trauma to primary teeth

Trauma to primary teeth commonly occurs between 2-4 years of age. This is at a time when children begin to walk but are not very stable on their feet. The most commonly involved teeth are the upper anterior teeth.

Why is it important to seek dental help following dental trauma to primary teeth?

Injuries to primary teeth have the potential to disturb the development and health of the underlying permanent teeth. In order to achieve an optimal treatment outcome, a prompt assessment of the injury by a dentist is essential. The assessment would normally involve a thorough history and detailed clinical and radiographic checks. Paediatric dentists are skilled at saving injured primary teeth, although they only do so provided there is no risk to the underlying developing permanent teeth, which have a lifelong functional and aesthetic importance.

DISCOLOURED PRIMARY INCISORS

Colour change is a common indication of primary tooth trauma and may range from yellow to grey to black. Any such colour change in a traumatised primary tooth needs to be investigated. Although colour changes do not necessarily require immediate treatment, discoloured primary teeth are more likely to undergo pathologic changes and should be kept under supervision to ensure the best possible health of the developing permanent teeth.

DISPLACED PRIMARY INCISORS

The primary incisors may be displaced in several directions:

Intrusion: the tooth is pushed into the tooth socket and it looks shorter or absent.

Extrusion: the tooth is partly pushed out of its socket and it looks longer.

Lateral luxation: the tooth is displaced sideways, palatally or towards the lip.

Intrusion injuries present a high risk of damage to the developing permanent tooth in the alveolar bone. Therefore the treatment options depend on the relationship between the root of the primary tooth and the crown of the developing permanent tooth. X-rays are necessary to determine this relationship. If there is no evidence of a compromise to the developing permanent tooth, the primary tooth may be left to spontaneously re-erupt. However, the tooth should be extracted if it has not re-erupted within six months.

If the intruded tooth appears to have compromised the developing tooth, it should be carefully extracted immediately, to avoid any further damage.

For extruded or laterally luxated teeth, the tooth should always be monitored even if there has only been a mild displacement. It may need to be extracted if the displacement is severe.

With any type of displacement, a long-term clinical and radiographic follow-up is essential to monitor the vitality of these teeth and to ensure that there is no delayed infection of the root which can damage the developing permanent tooth.

FRACTURED PRIMARY TEETH

Fracture of the primary tooth may occur in the crown or the root of the tooth. The crown fracture may involve the enamel, enamel and dentine or enamel, dentine and the nerve (pulp) of the tooth.

The rough edges of simple enamel fractures can be smoothed off. If there is an enamel-dentine fracture, the crown of the tooth needs to be restored to protect the pulp of the tooth. If the fracture also involves the pulp of the tooth, then, depending on the stage of development of the primary tooth it may need to be extracted or have root canal treatment carried out. It is not ideal to carry out root canal treatment on anterior primary teeth due to the close approximation of the root of these teeth to the permanent tooth developing underneath.

AVULSED PRIMARY INCISORS

This is complete displacement of a tooth out of its bony socket. There may be associated soft tissue injuries to the lips and gums.

Avulsed primary incisors **SHOULD NOT** be re-planted as this may cause damage to the developing permanent tooth underneath.

The avulsion of the primary tooth itself may cause damage to the developing permanent tooth underneath. This may be in the form of disturbance in enamel formation or disturbance in the eruption time of the permanent tooth. The enamel may have a white or brown discolouration or an indentation, depending on the severity of the injury. Should there be a disturbance in the enamel formation, this will not become apparent until the permanent tooth has erupted.

PRIMARY TOOTH ROOT FRACTURE

This is a rare occurrence, however, when it occurs, the primary tooth may appear displaced or mobile. If the coronal fragment is very mobile or severely displaced, then this requires extraction. The remaining fractured root should be left undisturbed if deep in the bony socket. Attempts to remove deep root fragments can damage the permanent tooth underneath; these fragments are usually resorbed physiologically.