

# A SYSTEMATIC REVIEW OF USAGE OF LUXATORS IN DENTAL EXTRACTION

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**Abstract:** Dental luxator periostomes are specially designed periodontal ligament knives with a fine tapering blade that compresses the alveolar and cuts the membrane to enable the dentist to ease the tooth from its socket gently. The extraction operation may be performed with the minimum amount of tissue damage. This systematic review is about various types of luxators, their application and their use over elevators.

**Keywords:** Luxators, periostomes, alveolar, extraction

## INTRODUCTION

Tooth extraction is associated with loss of alveolar bone, which is thought to occur from both physiological[1, 2, 3] and iatrogenic mechanisms as no extraction technique is completely atraumatic.[4, 5, 6] The post extraction loss of alveolar bone can compromise the functional and esthetic rehabilitation with removable or fixed prostheses, including dental implants.[4, 6, 7]

Several possible determinants of the extent of alveolar bone loss have been proposed. These include systemic factors such as a patient's general health and behavior[8,9]; local factors including the tooth type and location (mandible or maxilla); the preoperative condition of the socket; the number, proximity, and type of teeth extracted[10]; and postextraction treatment protocols.[10, 11]. Luxators prevent the damage to the alveolar bone and contact only that tooth surface leading to an atraumatic extraction.

## Luxators

Luxator are similar to an elevator, but the tip of the instrument is thinner and flatter than an elevator. One of the frequently occurring frustrating challenges when extracting teeth is breaking the tooth off at the bone level, or extracting a tooth that is grossly decayed and at the bone level. The origin of the Luxator dates back to 1975; Dr Ericson while working in practice became tired of using the older Bremer and Hyalin elevator types. The elevators used leverage from the surrounding tissues, hence surgical outcomes were difficult to predict. Dr Ericson himself recounts the old instruments frequently led to mishaps occurring during exodontia. While contemplating a better way to extract teeth Dr Ericson happened upon the idea of 'luxation': a fine instrument could be inserted into the periodontal space, thus lifting the tooth out of the socket.[12]

Dental luxators are instruments which look like small screwdrivers. Their design is such that they can be wedged into the ligament space between the tooth and its surrounding bone. As the elevator is forced into and twisted around in this space, the tooth is pressed and rocked against the bone. This helps to expand the socket. It also helps to separate the tooth from its ligament. As this work is continued, the tooth gradually becomes more and more mobile in its socket. In some cases, the dentist may be able to remove the tooth with just this tool completely.[13]

#### Types of Luxators

There are eight models to choose from, beginning with the smallest 1mm- 1S with a straight blade and going up to 5mm- 5S. Various angles have been added to the 3mm and 5mm models according to the needs of the dentists.[13] There are now 18 varieties of Luxator, each with their own specific uses and purposes.[12]

#### Method of usage

The tip of the Luxator is gently inserted into the gingival margin, with the blade angled slightly toward the root surface. This ensures that the Luxator enters the periodontal ligament between the crestal bone and the root. Once in the periodontal ligament, the Luxator is worked down the length of the root with a side-to-side rocking motion and steady axial pressure.[14] This motion first severs the periodontal fibers, and then as the blade is introduced further, the socket is dilated to allow an easier path of removal.[15] Finally, as the periodontal ligament is severed and the socket dilated, bleeding and air ingress overcome the vacuum that resists tooth removal.[16] The Luxator should be inserted around as much of the circumference of the root as possible to evenly dilate the socket. Once this has been achieved, the final delivery of the tooth may be performed with forceps, although this is often not required with single-rooted teeth.[17] when using a Luxator, the uniquely designed handle should sit neatly in the palm of your hand, cradled by your fingers and thumb, with the index finger extended toward the tip of the instrument.[18] This allows for precise control of the tip and prevents the risk of slipping. excessive force should be avoided; the Luxator is a surgical instrument and should be used as such, not as an elevator.[19] Most dentists have been taught to make a soft-tissue flap and remove bone on the facial side of such broken off teeth, allowing the teeth to be removed from the facial aspect. This bone removal is destructive, limits the possibility for placement of implants at a later date, and makes a permanent anatomical defect in the alveolar ridge. The use of luxators makes it esthetically acceptable.[20]

#### **CONCLUSION**

To summarise, luxators used for dental extraction makes the extraction less traumatic and causes less damage to the periodontium leading to better prosthetic management like immediate implant placement, faster recovery for fixed or removable partial dentures and better prognosis of the treatment.

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