

Extract from the dissertation  
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Kindly permitted by the author

**EPIGLU®**

# Tissue Adhesive in Dentistry

## Closure of damaged skin and mucosa

With the described applications of the cyanoacrylates the real advantages of the material is not shown yet. The adhesive properties on damp and flexible materials allow a wound treatment at injuries of the skin and mucosa. If there is no tension to the wound the sutures can be replaced by some dosed drops of cyanoacrylate. In doing so, the wound edges are put together and the surfaces gets sealed with several layers. After polymerization the wound edges are well closed and can heal without scar formation. Compared with sutures it is not necessary to remove the threads.

When cyanoacrylates are used in the dental field, the wound edges adapt free of tension in many cases, i. e. after incisions past the removal of root remains, root resection or fixation of small tissue flaps during a periodontal treatment. In these cases a suture may be partially or even completely omitted if the facial muscles do not exert extreme tension during mastication or facial expressions.

If indicated during the extraction of a tooth the opened maxillary antrum is covered with an interpolated or advancement flap in the alveolar area. The truly tight closure in the approximate area of the two adjacent teeth usually presents a problem. Upon a conventional flap fixation with suture the wound edges are adapted with a few drops of cyanoacrylate in the approximate area where suture is not possible. This preventive measure is not necessary for small defects, but imperative during large openings especially when it was not prior possible to make a wound dressing, which is the rule in the daily practice with mouth-antrum-connections.

Patients having fresh, untreated skin injuries rarely come to a dental practice. More frequent are injuries inflicted to oneself or the patient during a treatment.

These injuries are often cuts caused by jutting matrixes that cut into the lip, small wounds caused by slipping diamond burs or simply tears in the corners of the mouth or dry lips. Through the topical sealing of these wounds with adaptation of the wound edges a repeat tearing of the wound is prevented. Cyanoacrylates provide excellent services for that.



*Deep wound caused by a sporting accident.  
Treatment with EPIGLU® ethyl-2-cyanoacrylate  
only. Condition after 1 year.*

## Treatment of aphthae

Aphthae are inflammations of the oral mucosa. A whitish-yellowish pseudo-membranous film that borders onto the healthy tissue with a bright red edge covers the intraepithelial erosions. These non-infectious mucosal defects may recur frequently and are a sign of an immunocompromised system or general disease. The cause of the aphthae is unknown. Suspected is a neurovegetative dysregulation which is considered to be hereditary due to the frequent occurrence within a family.

Without being treated the epithelial defects heal within approx. 8 days without leaving scars. Since a causal therapy is not possible, the treatment is restricted to cover the affected areas with anaesthetizing ointments that ease the pain for a short period of time. Homeopathic preparations also influence the clinical appearance of the aphthae and ease the discomfort of the patient.

Since chemical, thermal and mechanical stress increase the pain, a covering of the aphthae appears to be sensible and causes immediate relief, at least as long as the adhesive adheres.

Both Histoacryl and EPIGLU® are very well suited for this task, due to the short shelf life (1 – 2 days in cool storage) of the opened Histoacryl vials, EPIGLU® is better suited for practical use (approx. 9 month in refrigerator storage).

The acute aphthae is covered with a thin layer of adhesive that reaches well over the wound edges. Mechanical or chemical stimulation to the tissue in question is thereby prevented and the patient is free of pain immediately.

The layer adheres to the unmoving mucosa for several days, in the areas of moving mucosa the time of adhesion is significantly lower and the treatment should be repeated daily, if possible. The tissue has sufficient time to regenerate under this protective layer. This procedure is especially suited if aphthae are located in the area of the attached gingiva.



*Acute aphthae prior to treatment.*



*Aphthae after treatment with EPIGLU® (1st day). The patient is free of pain. The colorless adhesive is clearly visible, especially on the left wound margin.*



*Aphthae during healing process after treatment with EPIGLU® (4th day).*

## Use of cyanoacrylates as tissue adhesive in the dental field

<b>Injuries to the skin</b>	Topical dot-adhesion on the epidermis.
<b>Injuries to the mucosa</b>	Hemostasis through covering with EPIGLU®, often suture substitute.
<b>Opened maxillary antrum</b>	Upon covering the defect with mucosal flaps, additional adhesion in the approximate area of the adjacent teeth that cannot be sutured due to lack of tissue.
<b>Treatment of aphthae</b>	Application of a thin layer of EPIGLU® to the defective tissue.