

The Application of KerrHawe's Prophylactic Products for Convenient Professional Tooth Cleaning

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Introduction

Several factors give rise to an accumulation of deposits on teeth. The modern diet and life style (including frequent coffee and tea drinking, smoking, foods which require little mastication) cause extrinsic tooth staining. The standard of oral hygiene of many dental patients is very low. In addition, certain commonly used antibacterial preparations - e.g. chlorhexidine based mouthwashes - may lead to staining of the teeth. As a result bacterial plaque, food residues, calculus and unattractive deposits develop on tooth surfaces (**Picture 1**):



Picture 1: Typical location of deposits on the lingual surface of the lower jaw

Neglecting oral hygiene leads to a roughened tooth surface making it impossible to completely remove tooth surface deposits using home oral care products. Failure to clean the teeth adequately may in turn cause:

- new tooth cavities;
- difficulty in the detection of existing tooth cavities;
- difficulty in assessing leaking restorations and prosthetic devices;
- reduced effectiveness of restorative dental treatment due to gingival haemorrhage, pocketing and exudates;

- an inappropriate selection of shades for restorations and prostheses;
- development of periodontal diseases;
- offensive mouth odour, etc.

It is unprofessional to proceed with restorative treatment without cleaning the teeth first. In addition it is more comfortable to operate in a clean mouth. Moreover, the remaining tooth deposits lead to the increased number of pathogenic microorganisms and consequently an increased risk of cross contamination in the dental office. In some cases these pathogens may affect general condition of patients with systemic diseases to a significant degree.

Usually professional cleaning and polishing procedures are not difficult but they have to be performed thoroughly and require sufficient amount of time. Either the dentist or the dental hygienist may carry them out. These procedures include:

- manual and ultrasound scaling;
- air abrasive;
- cleaning and polishing.

Not every patient requires all the procedures mentioned above. Frequently cleaning and polishing is sufficient (**Picture 2**). However, it should be kept in mind that scaling and the use of air abrasives leave the tooth surface rough and this may contribute to the accumulation of new dental plaque. Both procedures must be followed by polishing.



Picture 2: Dental deposits requiring a professional cleaning and polishing procedure

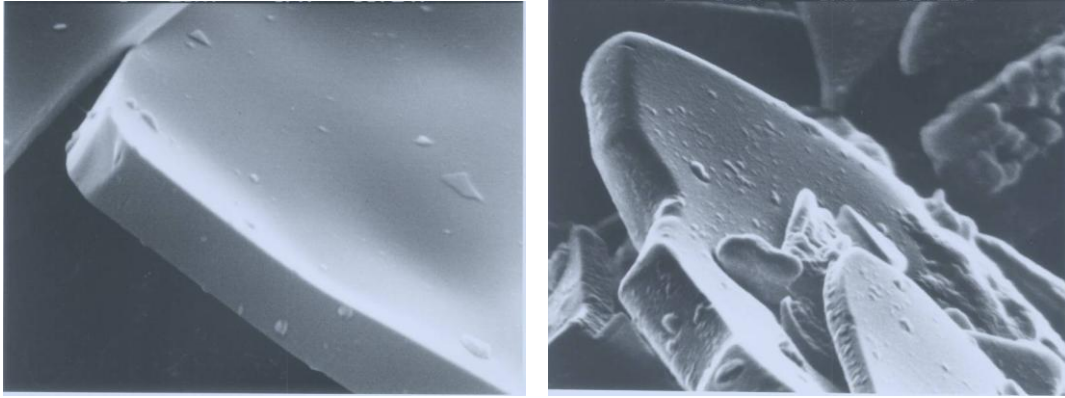
KerrHawe's Products: Cleanic[®], Pro-Cup[®], Pro-Brush[®] and Pasteless Prophy

KerrHawe offers several professional pastes for a complete cleaning and polishing procedure, as well as various types of rubber cups (**Pro-Brush[®]**) and brushes (**Pro-Brush[®]**) to be mounted on a dental or prophylactic hand piece. **Cleanic[®]** is the most interesting prophy paste among all KerrHawe's pastes and is offered with several tastes (**Classic Mint**, **Menthol-free Green Apple** (**Picture 3**) and **Bubble Gum**), with and without fluoride and in several package formats (jar, monodoses and in tubes).



Picture 3: Application of **Cleanic[®]** (green apple flavour, menthol-free) with **Pro-Brush[®]**

Unlike traditional professional dental pastes, the **Cleanic[®]** formulation contains Perlite, an abrasive mineral instead of pumice. The Perlite integrated in the paste - a natural volcanic glass – has particles with a flat shape (platelets). Initially, it acts as an abrasive and cleans the tooth surface. A few seconds later under pressure, the Perlite particles crack and their edges become more rounded (**Pictures 4, 5**). The cleaning paste turns into a polishing paste within ca. 7 seconds of application. Hence there is no need to use a coarse paste first to remove large deposits and then another paste to polish the tooth surface. The rapid change of **Cleanic[®]** particle profile reduces the risk of excessive abrasion of hard tissues of the tooth (average RDA-value: 27). The fluoride paste aids in the prevention of tooth decay.



Picture 4: Perlite particle prior to application **Picture 5:** Perlite particle after ca. 15 seconds

Professional prophylactic pastes are usually applied with various rubber cups or prophylactic brushes, which are mounted in a rotary hand piece. The most convenient are rubber cups of which KerrHawe's **Latex-free Pro-Cup®** is one example. The shape of these cups ensures that the paste is gradually released from the cup during the tooth cleaning and polishing procedure. The cleaning action is additionally enhanced by the internal presence of a lamellar structure. The elasticity of the rubber allows the adaptation of its shape to that of the teeth, reaching most of tooth surfaces. For places that are more difficult to reach, a rubber in the form of a flame may be used. However, a **Pro-Cup®** rubber is the most adaptable solution (**Picture 6**). The lamellae are arranged in helices on the external surface and a relatively broad collar is at the base of the rubber. Such a shape significantly reduces splashing of the paste, which is moved during cleaning in the direction of the tooth surface to be treated. This also reduces the risk of heating the teeth, due to friction of the rubber on dental surface. It has to be remembered to set the rotation in a clockwise direction. The **Pro-Cup®** rubbers come in two degrees of hardness (soft=light blue and hard=dark blue) and in two sizes (standard and junior); this facilitates the choice of the optimal cleaning and polishing tool, depending on a clinical situation and operator's preferences. **Picture 7** shows patient's teeth from **Picture 2**, after a complete cleaning and polishing procedure with **Cleanic®** and **Pro-Cup®**.

An interesting solution is the functional combination of a prophylactic paste with a prophylactic rubber cup in a single product. KerrHawe's **Pasteless Prophylactic** is offered in three shapes (cup, flame and point) and contains both: abrasive agents and fluoride (0.9% as sodium fluoride).



Picture 6: Tooth cleaning and polishing using Pro-Cup[®] and Classical Mint flavoured Cleanic[®]



Picture 7: Teeth after a complete cleaning and polishing procedure (Cleanic[®] +Pro-Cup[®])

There is no need to use prophy pastes while using **Pasteless Prophy**. It allows a complete elimination of splashing and therefore facilitates subsequent dental tool and equipment cleaning. Abrasive properties of the **Pasteless Prophy** are sufficient for the removal of topical tooth deposits and for local polishing of tooth surfaces. This is a useful device to prepare teeth prior to restorative treatment. After cleaning no intensive rinsing is necessary. Moreover this solution eliminates the risk of leaving paste residues in the tooth cavity area, which may negatively affect the quality of the restoration. In the meantime, as fluoride may interfere with bonding procedures, it is recommended to prolong the enamel etching time to achieve an optimal bond strength.

Despite the wide offer of various rubbers and polishing brushes, there are some problems remaining when cleaning adjacent surfaces, especially as these are frequently neglected by patients during their daily routine. That is why caries and periodontal disease usually begin in this region. On the other hand, it is particularly difficult to remove

deposits from these surfaces and it may not be possible to reach them using the methods described. In the “Eva-Type” device (for example “Profin” from W+H International), which is a good but costly solution, rotation is replaced by back and forth oscillations. Using this type of device with special tips and prophylactic pastes, thorough cleaning and polishing of adjacent surfaces can be carried out. If this equipment is not available celluloid abrasive strips may be used. KerrHawe’s **Finishing and Polishing Strips** or **OptiStrip™** may be selected, preferably the fine/extra-fine variety (**Picture 8**). Their advantage lies in the presence of two abrasive agents of different grades. They are separated by a short stretch without any abrasive that ensures that the contact surface with the teeth is maintained. The availability of two different widths is also helpful. Abrasive and polishing properties of these strips are sufficient for most people and, if used properly, they should not damage the tooth surface.



Picture 8: *Cleaning and polishing adjacent surfaces using a fine/extra-fine celluloid strip*

Conclusions

Professional tooth cleaning and polishing should become one of the most frequently performed dental procedures. For many years relatively few improvements in polishing preparations and equipment have been introduced. Based on a new formula, **Cleanic®** prophylactic paste has a unique property due to **Perlite-Technology**, changing from an initial more abrasive paste into a polishing paste during application. A short period of time - during which this particle change takes place - prevents the tooth surface from the excessive abrasion. Splashing of the prophylactic pastes can be a problem; however this can be limited using **Pro-Cups**, reducing the general speed (max. 3000 rpms) or eliminated entirely using **Pasteless Prophylactic** cups.