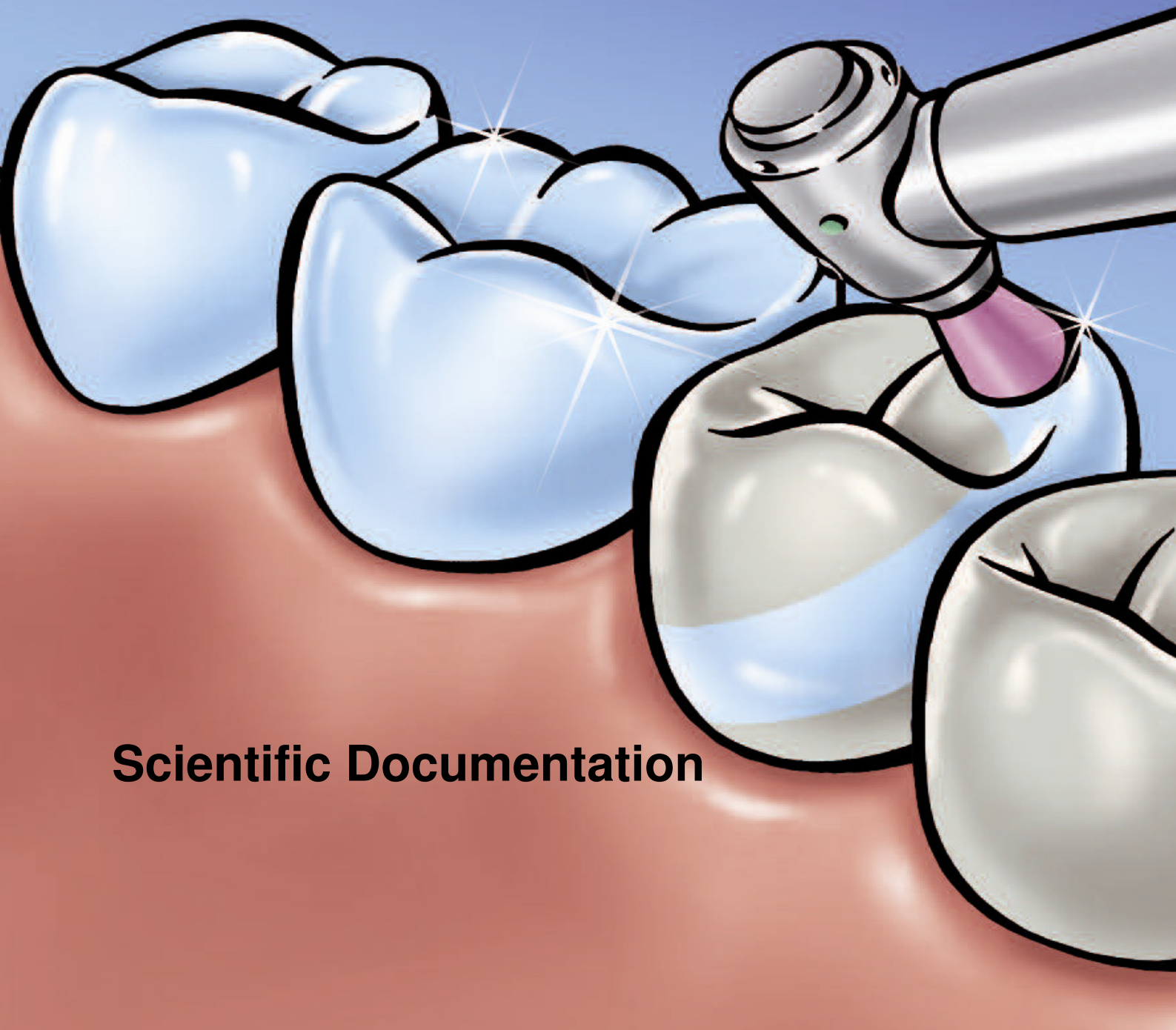


Proxyt[®]



Scientific Documentation

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1. Introduction

Bacterial plaque (Fig. 1) is the primary cause of both dental caries and periodontal disease. Acids that are produced by the metabolic processes of bacteria in the presence of carbohydrates demineralize the structure of enamel, dentin and cementum. If no countermeasures are taken, this will result in demineralization and ultimately dental caries.

Plaque that collects around the gingival margin may, if left untreated, cause damage to the supporting structures of the tooth and may result in periodontal diseases, for example, gingivitis, periodontitis, mucositis or peri-implantitis. Plaque deposits lead to inflammation of the gingiva and cause false pocketing. Plaque then penetrates the subgingival area. The bacterial spectrum shifts from the aerobic type (lactobacilli and mutans streptococci) towards anaerobic microorganisms, such as *porphyromonas gingivalis* and *aggregatibacter actinomycetemcomitans*. The metabolic products of the bacteria and the mechanisms of defense of the immune system accelerate the inflammatory process. As a consequence, the dental supporting tissue is weakened. In extreme cases, loss of teeth may ensue. If soft tissue around an implant becomes inflamed (mucositis or peri-implantitis), the survival of the implant is at stake.



Figure 1: Bacterial plaque can cause caries and periodontal disease (Picture courtesy of Prof. Dr Ernst)

Therefore, it is of vital importance to keep surfaces within the mouth as plaque-free as possible. This applies to natural teeth as well as teeth that have been restored or replaced by implants. Studies have demonstrated the effectiveness of controlled oral hygiene.

One study, for example, established that smooth, clean surfaces provide microorganisms with less opportunities to adhere [1]. While another study found that controlled measures, including professional cleaning and polishing of teeth reduced the development of new carious lesions to a minimum compared with the teeth in the control group [2]. Furthermore, gingivitis was shown to subside quite rapidly when good oral hygiene was practiced [3]. Therefore, the degeneration of dental supporting tissue was also reduced.

Plaque-covered tooth surfaces

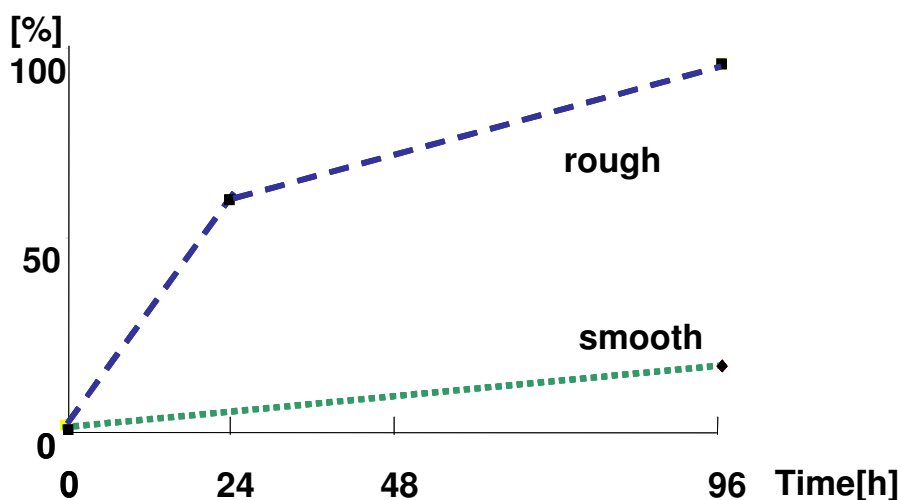


Figure 2: Smooth surfaces are less inviting to bacteria [1].

1.1 Professional tooth cleaning

In addition to oral hygiene measures at home, professional tooth cleaning and polishing significantly contributes to the reduction of plaque deposits. Professional tooth cleaning includes the removal of supragingival deposits (including calculus) and stains as well as the smoothing and polishing of rough surfaces.

Professional tooth cleaning is not only important in prevention, but is also a standard treatment in various other fields of dentistry. An accurate clinical examination is only possible after the complete removal of deposits. Prosthetic treatment and the placement of inlays and implants require a thoroughly cleaned oral environment. Once plaque has accumulated, gingival bleeding occurs quite easily, which impairs accurate preparation and impression-taking. Therefore, the treatment field must be free of active inflammation. Furthermore, the retention of fissure sealants is significantly enhanced if teeth are professionally cleaned before the treatment [4; 5]. In addition, dental varnishes containing fluoride or chlorhexidine adhere more effectively to clean dental surfaces.

Moreover, professional tooth cleaning helps to motivate patients to carry out effective oral hygiene measures. This is an aspect that should not be underestimated. Professional tooth cleaning is painless and leaves a pleasant feeling in the mouth. Within the framework of restorative procedures with implants, professional tooth cleaning also plays an important role. Evidence suggests that in the case of plaque accumulation, inflammation of the peri-implant tissue occurs more quickly than inflammation of the gingiva [6]. Gentle professional tooth cleaning carried out during recall visits helps to keep implants in excellent condition for a long time.

A variety of auxiliary aids are available for professional tooth cleaning measures:

- Mechanical instruments, such as abrasive systems and ultrasonic scalers
- Hand instruments, such as scalers and curettes
- Prophylaxis pastes with rubber cups or small brushes used with a contra-angle handpiece

1.2 Prophylaxis pastes

Cleaning and polishing pastes feature a similar composition to that of dentifrices. As they are designed to meet the specific requirements of professional tooth cleaning, they are not suitable for at-home use. Prophylaxis pastes should provide maximum cleaning in order to effectively remove stains and plaque build-up. Furthermore, the surfaces should be as smooth as possible after polishing. At the same time, the pastes should be minimally destructive to dental hard tissue and dental materials.

1.2.1 Abrasiveness

The abrasiveness of prophylaxis pastes is important to their effectiveness. The most commonly used abrasive materials include pumice, silica, carbonate and phosphate. The pastes differ primarily in their concentration, composition and the size and structure of the particles. While coarser particles are required to remove plaque and stains, they may also be responsible for scratching surfaces. Smaller particles are important for successful polishing results. Nevertheless, they are not as effective at cleaning surfaces [7]. Apart from the size of the particles, the sharpness of their edges also plays an important role.

However, the abrasive properties of the pastes cannot be established on the basis of isolated information such as the particle size alone. A number of factors influence the actual abrasive properties of the pastes [8]. In other words, the pH value, the type and concentration of the binding agents have to be taken into account. In addition, the following external factors must be considered: treatment time, the pressure applied, the instruments used, such as brushes or cups, and the speed of rotation. One study, for example, showed that abrasion depended on the type of application instrument used: A brush caused more wear than a cup [9].

Nevertheless, it is possible and necessary to classify the pastes according to a certain scale depending on their level of relative abrasion. For this purpose, the RDA (Relative Dentin Abrasion) and REA (Relative Enamel Abrasion) values are used. The best possible guideline is offered by the RDA information, since it relates to the sensitivity of the dentin portion of teeth. The largest risk of substance loss is experienced in exposed tooth necks.

These values are determined in the lab by means of radioactively marked human dentin and enamel specimens. In assessing these values, professional tooth cleaning procedures are simulated as realistically as possible [10]. However, the RDA of different pastes can only be compared to a limited extent, as differences in these values may occur as a result of the different methods used.

Furthermore, it is important to note that the same paste abrades various materials to a different extent. For example, an *in vitro* investigation established that gold showed the least, while composite resin exhibited the most wear. Amalgam showed average wear [9].

1.2.2 Reduction of roughness

Professional tooth cleaning causes comparatively light roughness of intact enamel and ceramic restorations. Dentin and cementum as well as composite resin, compomer and glass ionomer cement restorations, however, are particularly susceptible to wear [11; 12]. The organic components are abraded, while the inorganic components are exposed on the surfaces. Surface roughness ensues, which promotes the development of plaque. Clearly less deposit forms on polished restoration surfaces than on unpolished surfaces [13].

Generally, cleaning and polishing should be conducted with pastes demonstrating low abrasive values. If a coarse paste is used, the surfaces should be post-polished with a finer paste.

1.3 Proxyt

Proxyt constitutes a system of prophy pastes for professional tooth cleaning. It includes three fluoride-containing pastes of different grit sizes. The pastes demonstrating high and medium abrasive values (coarse and medium, RDA83 and RDA36) are designed for the removal of plaque and light stains. The fine-grit paste does not contain pumice. As a result, it has a very low RDA of 7. This paste is recommended for polishing sensitive surfaces, such as exposed root dentin, implants and restorations. In addition, the medium-grit paste is offered in a fluoride-free version without taste additives, which is indicated for the cleaning of cavities prior to direct restoration procedures. All the pastes contain xylitol, which hampers the metabolism of bacteria and therefore inhibits their growth [14; 15].



Figure 3: The Proxyt family of products: coarse (RDA 83, blue), medium (RDA 36, teal, fluoride-free; green, with fluoride) and fine (RDA 7, pink).

2. Composition

Standard composition (in wt%)

	<i>Fine (pink)</i>	<i>Medium (green)</i>	<i>Medium (teal)</i>	<i>Coarse (blue)</i>
Water, glycerine	41.0	37.0	37.0	35.0
Sorbitol, xylitol	21.0	20.0	20.5	18.0
Inorganic fillers	35.0	40.0	40.0	43.0
Auxiliary materials	1.2	1.2	1.2	1.2
Sodium fluoride	0.12	0.12	-	0.12
Flavours and pigments	< 1.68	< 1.68	< 1.3	< 1.68

Physical properties

	<i>fine (pink)</i>	<i>medium (green)</i>	<i>medium (teal)</i>	<i>Coarse (blue)</i>
Relative dentine abrasion [RDA]	7	36	36	83
Density [g/ml]	1.43	1.47	1.47	1.53

3. *In vitro* investigations

As of April 2011, an improved version of the prophylaxis pastes will be available. The new Proxyt pastes are much easier to handle. They are less sticky and easier to rinse off. However, the proven grit levels of “coarse”, “medium” and “fine” have been maintained. A fluoride-free “medium” grit paste has been added to the range.

The results with the predecessor pastes as well as the latest versions are described in this section. As the abrasive properties of the pastes have remained unchanged, previous results of tests regarding the loss of tooth structure and the polishing and clinical performance remain unchallenged.

3.1 *Effect on dental hard tissue*

3.1.1 *Abrasiveness*

Objective: Determination of the abrasiveness of Proxyt according to ISO 11609 (Relative Dentin Abrasion RDA und Relative Enamel Abrasion REA)

Investigator: B. Schemehorn, University of Indiana, USA, 1991

Method: Eight human enamel and dentin specimens were irradiated according to international standard requirements and subsequently cleaned with prophylaxis pastes for 30 seconds. For the control group, slurry composed of pumice and water was used (mixing ratio 3:2). The abraded radioactivity was determined and compared to the control.

Results: Proxyt “fine” demonstrated an RDA of 7 and an REA of 1.8. Proxyt “medium” exhibited an RDA of 36 and an REA of 4. The readings of Proxyt “coarse” reached an RDA of 86 and an REA of 15 (Figs 4a and 4b).

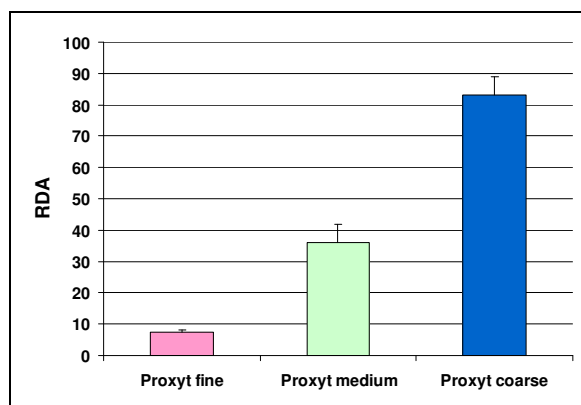


Figure 4a: Relative Dentin Abrasion of Proxyt coarse, medium and fine

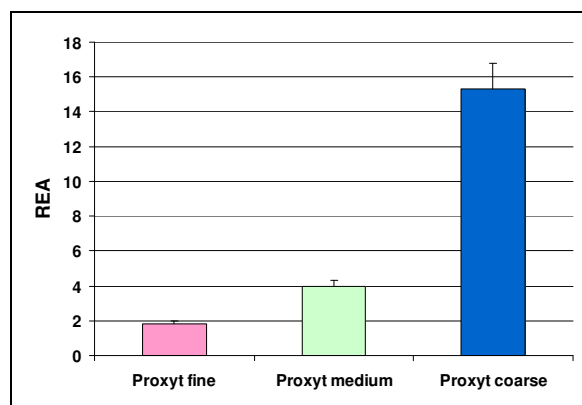


Figure 4b: Relative Enamel Abrasion of Proxyt coarse, medium and fine

3.1.2 Wear of root cement

Objective: Determination of the abrasiveness of Proxyl and Cleanic on root cement.

Investigators: Rühling A, Wulf J, Schwahn C, Kocher T, University of Kiel / University of Greifswald, Germany

Method: Six surfaces of bovine teeth were cleaned with the corresponding polishing paste for 15 seconds. The surfaces were either cleaned twice with Cleanic or once with Proxyl “medium” (green) and once with Proxyl “fine” (pink). The loss of substance was measured in μm with a precision sliding rule and digital display.

Results: On cementum, Proxyl caused significantly less loss of tooth structure compared with Cleanic (5 μm versus 27 μm) (Fig. 5) [12].

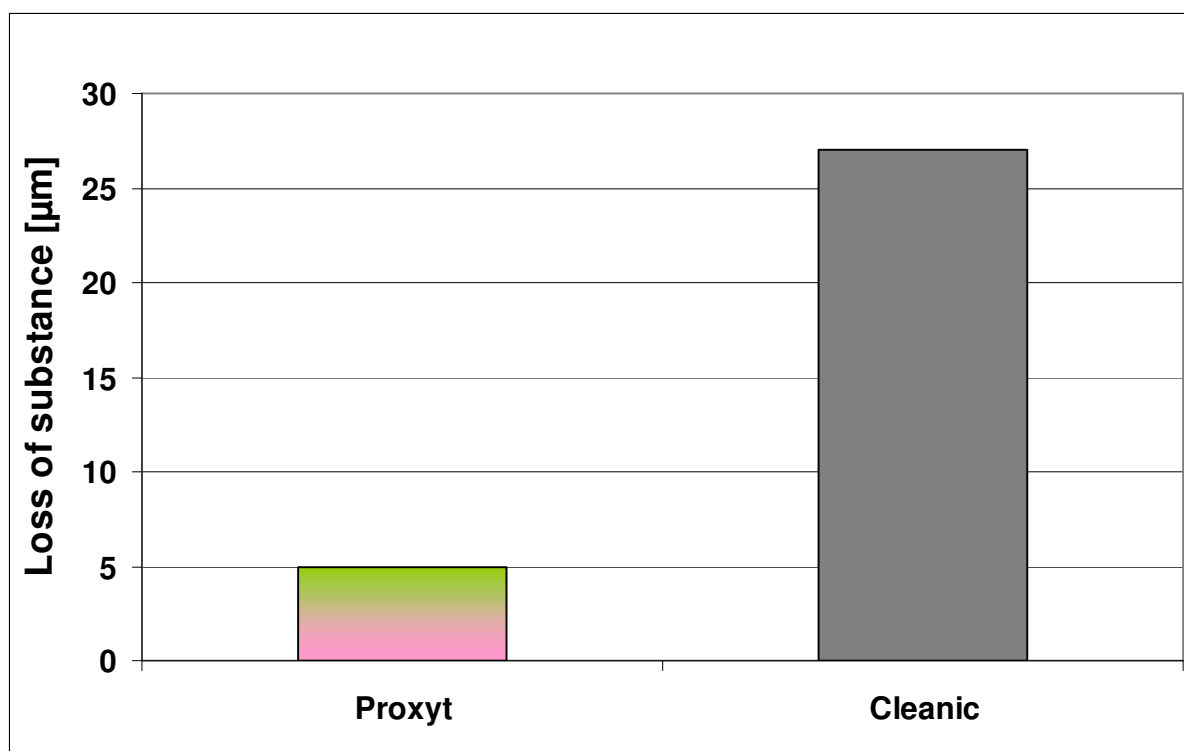


Figure 5: Loss of tooth structure after polishing of root cement with Proxyl (medium and fine) and Cleanic [12].

Conclusion: Proxyl polishes tooth structure very gently.

3.1.2 Wear of composite resin

Objective: Determination of the wear of hybrid and micro-filled composite resins by prophylactic pastes.

Investigators: M. Bose, K. H. R. Ott, Poliklinik für Zahnerhaltung, University of Münster, Germany

Method: Test specimens with flat surfaces were fabricated using a hybrid composite (Tetric) and a highly filled micro-filler composite (Heliomolar). These surfaces were smoothed with wet abrasive paper to a grit size of 2400. The test specimens were mounted in a machine and polished under constant pressure (2 N) at 1100 U/min for 60 s. The test for each paste was repeated twelve times. The specimens were weighed before and after processing and the wear values were measured and calculated in cubic millimetres with the help of the specific weight of the composite.

Results: The wear volume of the composite materials that were polished with Proxyt pastes was lower than that of the materials polished with Nupro pastes (Fig. 6). The wear created by Nupro "fine" was greater than that which resulted from polishing with Proxyt "fine" and "medium". Furthermore, Proxyt "coarse" was less abrasive than Nupro "medium" and "coarse" [11].

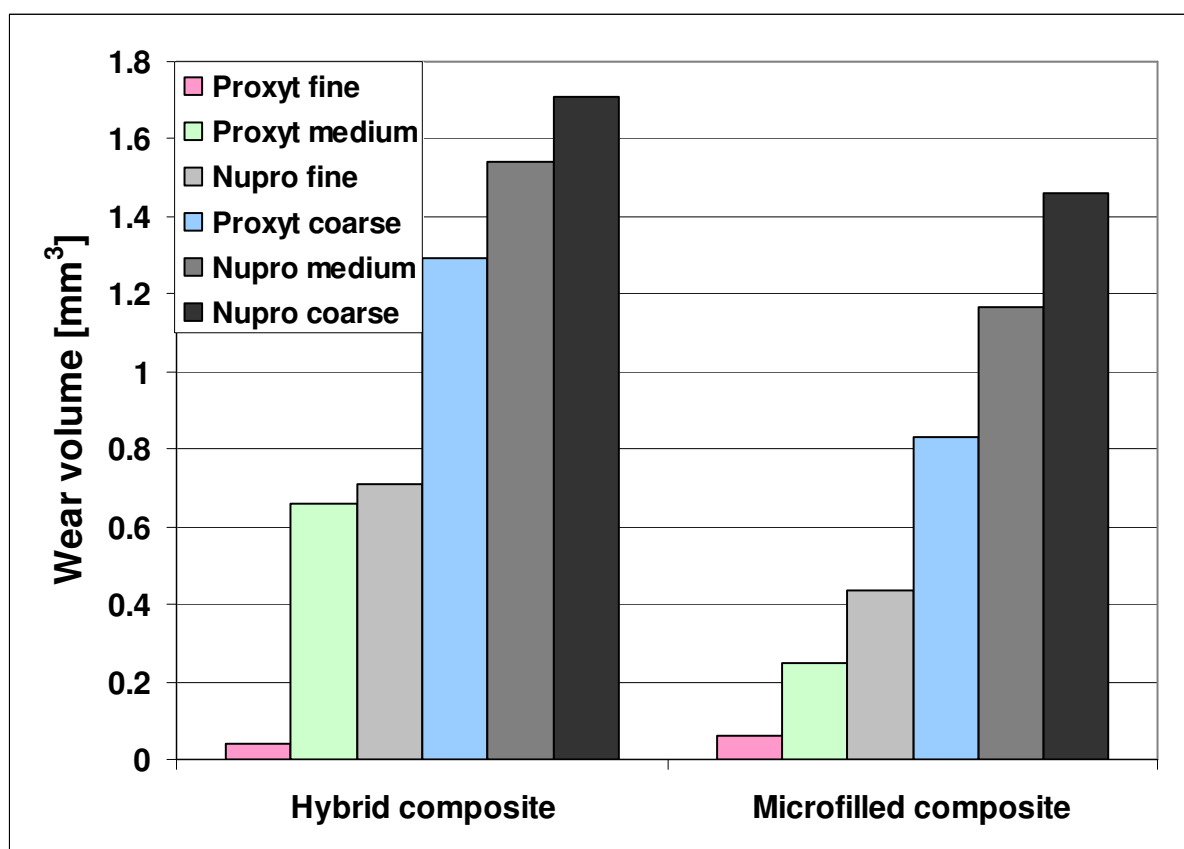


Figure 6: Wear of resin specimens made of hybrid composites (Tetric) or microfilled composites (Heliomolar) after polishing with Proxyt or Nupro [11].

Conclusion: Polishing with Proxyt is gentler than with Nupro.

3.2 *Polishing properties and lustre*

Apart from cleaning, smoothing of the dental surfaces is the prime objective of professional tooth cleaning measures. In addition to feeling good, smooth tooth surfaces are more resistant to plaque accretion and they are shiny and therefore look cleaner, healthier and more attractive. The achievement or restoration of lustrous surfaces is particularly desirable in composite resin restorations.

3.2.1 *Roughness and smoothing*

Objective: Determination of the reduction of roughness of hybrid and microfilled composites and bovine teeth by prophy pastes.

Investigators: M. Bose, K. H. R. Ott, Poliklinik für Zahnerhaltung, University of Münster, Germany

Method: Test specimens were created using a hybrid composite (Tetric) and a highly filled microfilled composite (Heliomolar) as well as bovine teeth. A total of six specimens with flat surfaces were produced for each material. These specimens were prepared to an average roughness of 1.0 – 1.2 with abrasive paper. The test specimens were mounted in a machine and exposed to constant pressure (2 N) and polished at 1100 rpm. After 30 s, new polishing paste was used. The surface roughness was measured with a profilometer.

Results: Coarse pastes left deeper marks on previously polished surfaces than fine ones. The polishing results of Nupro “coarse” and the coarse version of Proxyl (blue) and Nupro “medium” and Proxyl “medium” were comparable. Proxyl “fine” was least efficient in smoothing [11]. After 5 s of polishing, the roughness of the surface was almost the same as at the starting point. However, after 60 s of polishing with Proxyl both the resin composite and natural enamel and dentin achieved the desired value of 0.4 Ra. Nupro did not attain this result on bovine enamel (Fig. 7) [16].

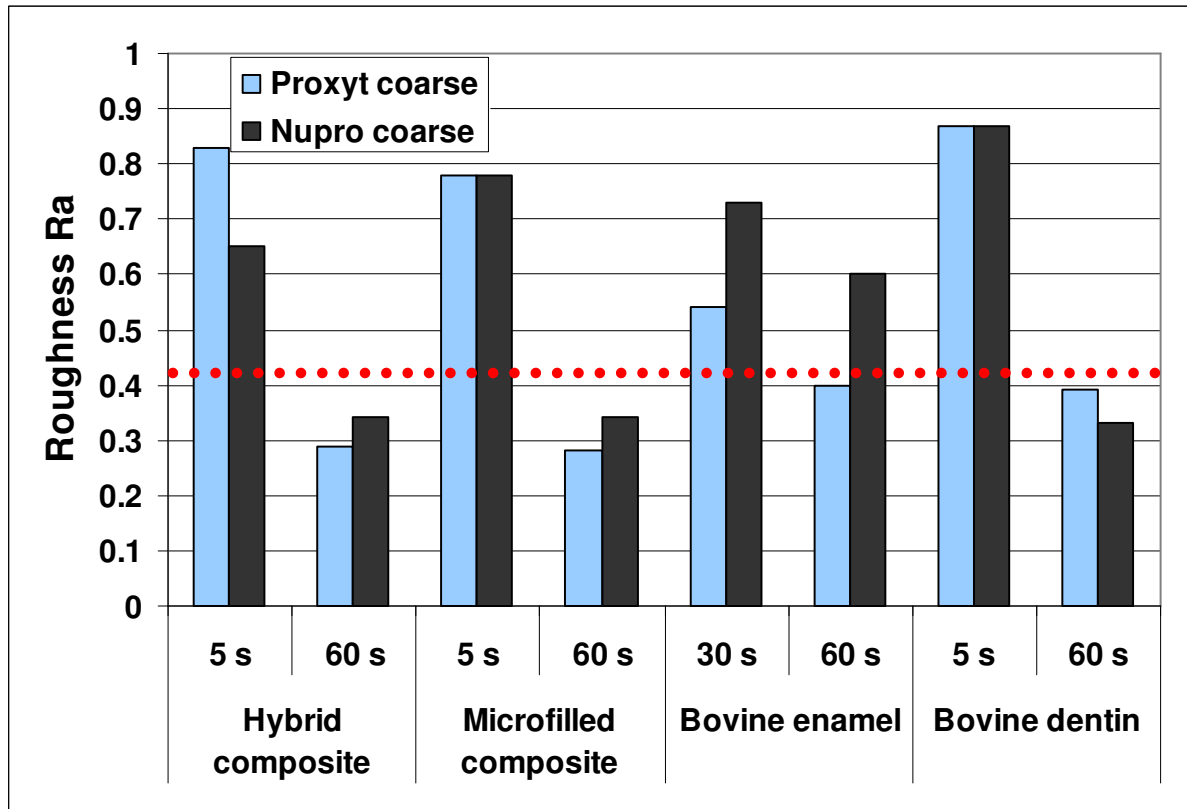


Figure 7: Surface roughness after the specimens made of hybrid composite (Tetric), microfilled composite (Heliomolar) and bovine enamel were cleaned with Proxyt “coarse” and Nupro “coarse”. The dotted red line indicates the desired roughness of 0.4 Ra [16].

Conclusion: Polishing with Proxyt “coarse” effectively reduces the roughness of natural tooth structure and resin composites. However, the surfaces need to be polished for a least one minute.

3.2.2 Composite – lustre

Objective: The objective of this investigation was to determine a change in the lustre of different composite materials after polishing with Proxyt “fine” as compared to other prophylaxis pastes.

Investigator: Ivoclar Vivadent R&D, Schaan, Liechtenstein

Method: The lustre of composite materials polished with Proxyt was measured with a Novocurve gloss meter.

The test specimens were first ground with 4000-grit abrasive paper to achieve good polishing results. Then they were polished with different prophylaxis pastes for 5, 10 and 20 seconds. Subsequently, the surface gloss was measured.

Results: The results documented in Figure 8 show that Proxyt “fine” does not impair surface gloss of the resin composites Empress Direct, Tetric EvoCeram and Filtek Supreme XT. Flowable composites, such as Tetric EvoFlow and X-Flow, were shown to demonstrate increased lustre. All the other tested products significantly reduced the surface gloss of the materials after only 5 seconds.

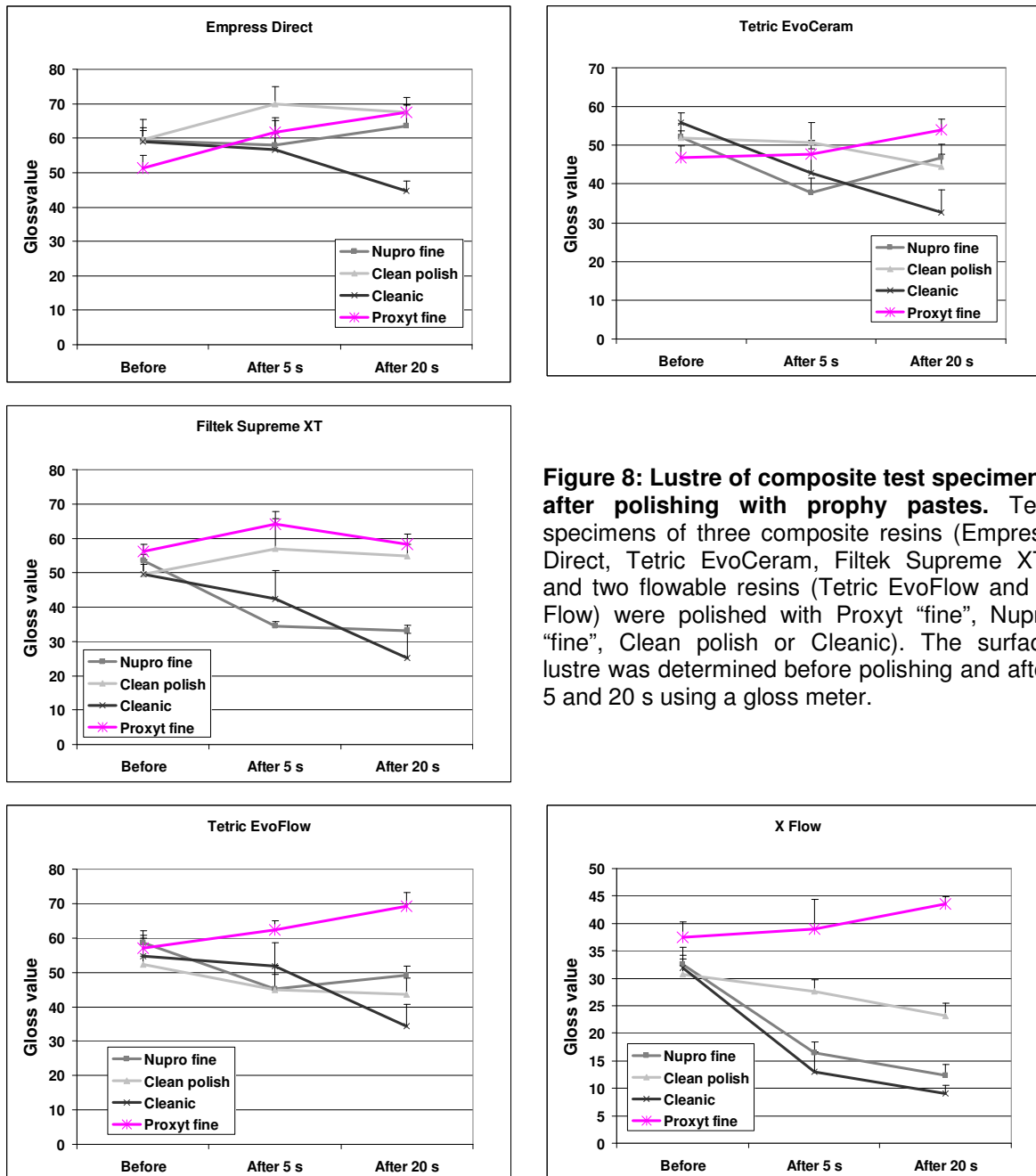


Figure 8: Lustre of composite test specimens after polishing with prophylactic pastes. Test specimens of three composite resins (Empress Direct, Tetric EvoCeram, Filtek Supreme XT) and two flowable resins (Tetric EvoFlow and X Flow) were polished with Proxyt “fine”, Nupro “fine”, Clean polish or Cleanic). The surface lustre was determined before polishing and after 5 and 20 s using a gloss meter.

Conclusion: Polishing of the composite resins with Proxyt “fine” maintains and even increases the lustre of restorations. Furthermore, smooth surfaces are less susceptible to plaque accretion and discolouration, which is of clinical significance. Patients are not only provided with esthetic tooth surfaces but also with a good feeling.

3.2.3 Composite resin – surfaces

Objective: The objective of this investigation was to examine the surfaces of various composite resin materials after polishing with Proxyt “fine” or comparable prophylactic pastes.

Investigator: Ivoclar Vivadent R&D, Schaan, Liechtenstein

Methods: Test specimens of Tetric EvoCeram, Empress Direct, Filtek Supreme XT and the flowable Tetric EvoFlow and X-Flow composite resins were polished for 5 s with Proxyt “fine”, Cleanic or Nupro. The results were analyzed by means of scanning electron microscopy.

Results: Figure 9 shows that Proxyt “fine” hardly changed the surface of the composite, that is, very little scratching was observed. However, Nupro and Cleanic left considerable marks on all the materials tested.

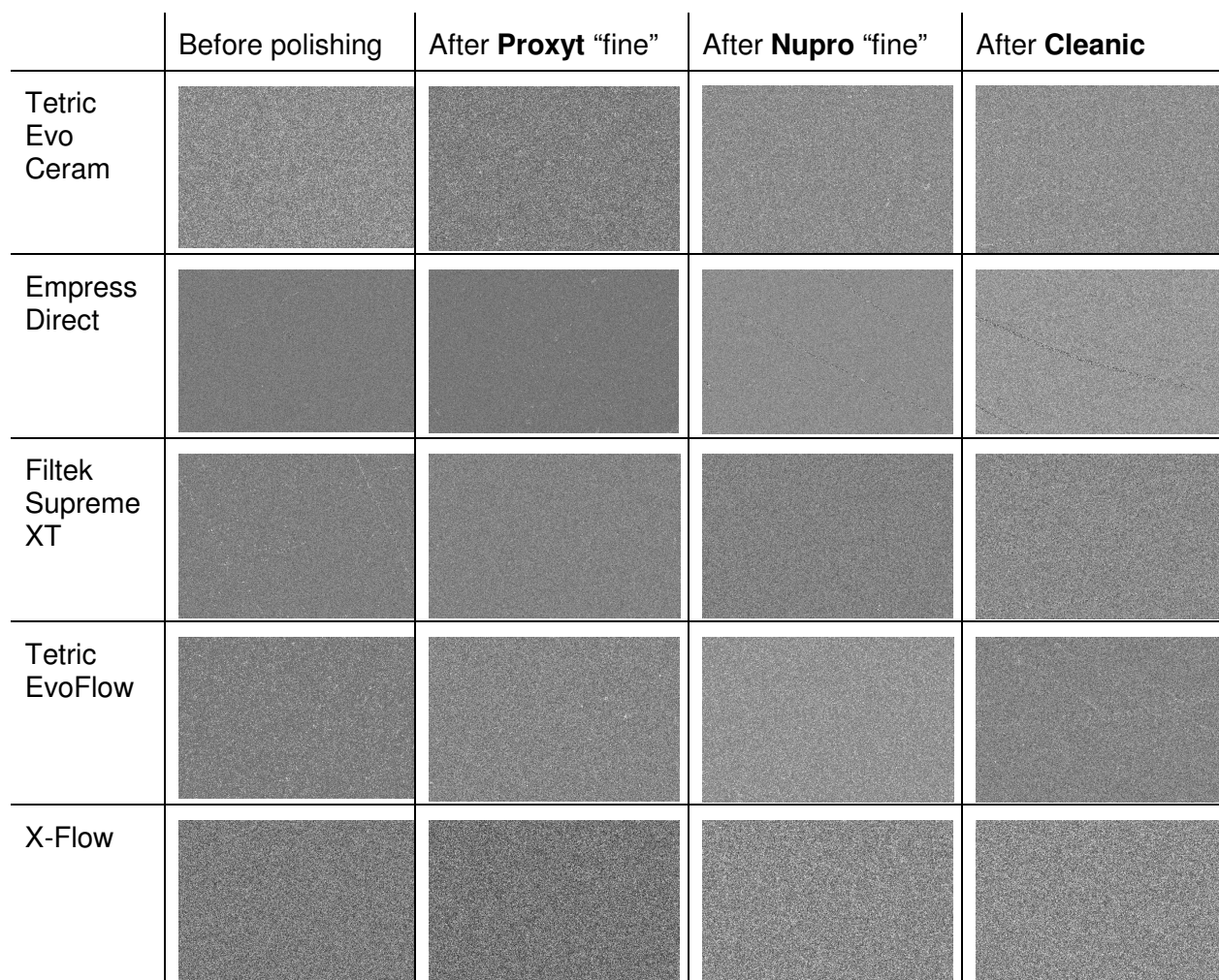


Figure 9: Surfaces of various composite resin materials (Tetric EvoCeram, Empress Direct, Filtek Supreme XT) and flowables (Tetric EvoFlow, X-Flow) before and after polishing with various prophylactic pastes (Proxyt “fine”, Nupro “fine”, Cleanic). SEM images, 200x.

Conclusion: Proxyt “fine” is suitable for polishing resin composites, as it does not scratch sensitive surfaces.

3.2.4 Implant surfaces

Objective: The aim of the investigation was to examine the surfaces of titanium implants after polishing with Proxyt “fine”.

Investigation: Ivoclar Vivadent R&D, Schaan, Liechtenstein

Methods: Titanium-based implant surfaces (3i) were polished for 20 s at 200 g pressure and 2000 rpm. The surfaces were analyzed with a scanning electron microscope.

Results: Before and after polishing with Proxylt “fine”, the titanium surfaces looked very similar. However, scratches were detected on the surface after polishing with Nupro (Figure 10).

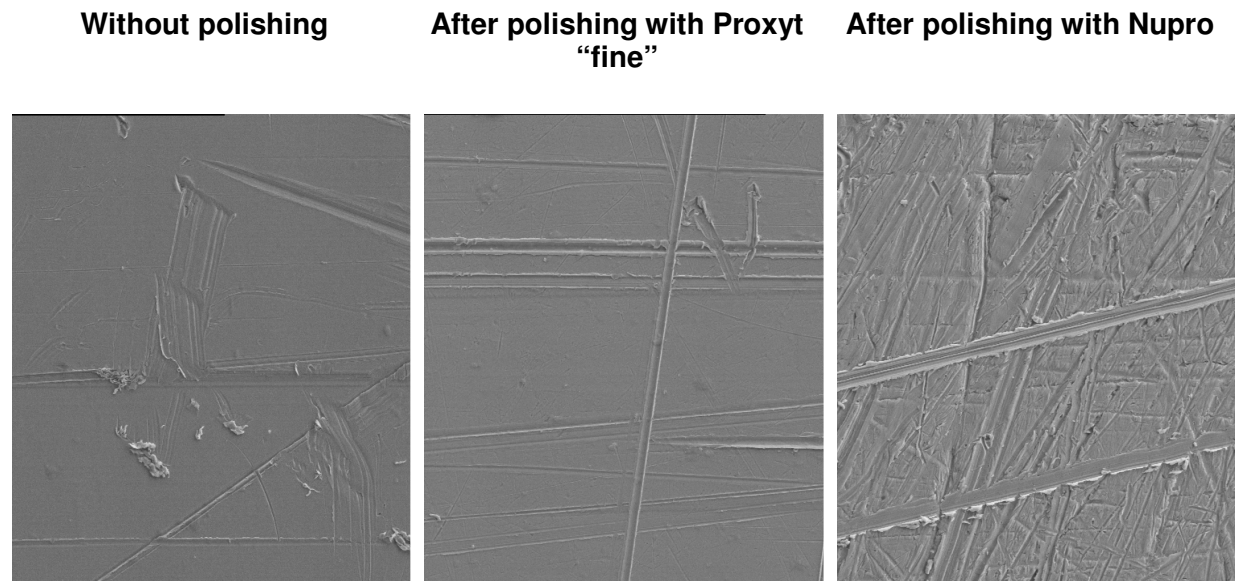


Figure 10: Surface of titanium implants before and after polishing with Proxylt “fine” and Nupro “fine”. SEM image, 400x.

Conclusion: Proxylt “fine” gently polishes implants.

3.3 Enamel etching and bonding

3.3.1 Etching pattern

Objective: Products containing fluoride may reduce the solubility of enamel against acid. The aim of the study was to find out if the use of Proxyt immediately before etching with Email Preparator (phosphoric acid) has an influence on the etching pattern.

Investigators: Ivoclar Vivadent R&D, Schaan, Liechtenstein

Method: Bovine enamel was evenly ground with a grinding machine and 320-grit grinding paper. One tooth was directly etched with Email Preparator for 45 seconds. Subsequently, it was thoroughly rinsed and dried. The second tooth was cleaned for 3 minutes with Proxyt “fine”, rinsed with water and etched with Email Preparator for 45 seconds. Next, they were rinsed and dried. Pictures of both of the teeth were taken with a scanning electron microscope.

Results: No difference is observed between the etching pattern achieved with enamel prepared with Email Preparator and enamel conditioned with Proxyt “fine” and Email Preparator (Fig. 11).

Email Preparator

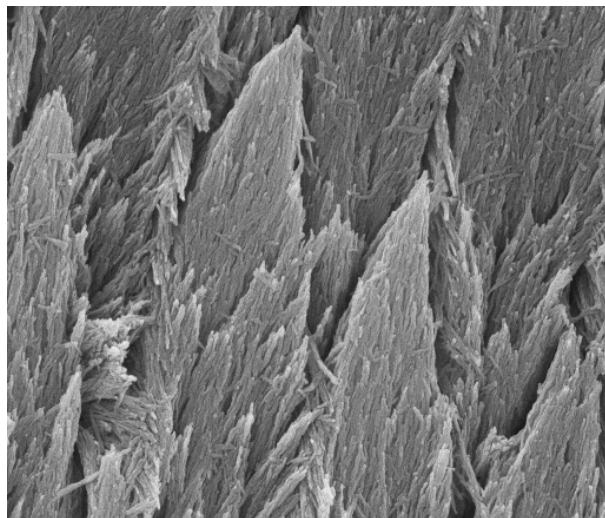


Figure 11a: Etching pattern on bovine enamel after 45-second etching with Email Preparator. SEM image, 10000x.

Proxyt “fine” + Email Preparator

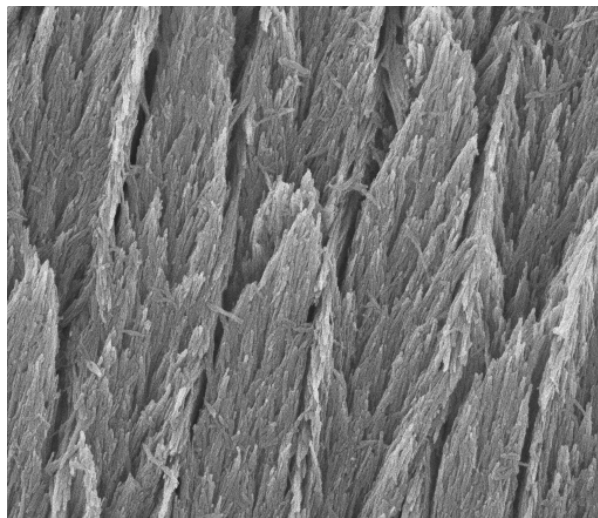


Figure 11b: Etching pattern on bovine enamel after 3-minute polishing with Proxyt “fine” and 45-second etching with Email Preparator. SEM image, 10000x.

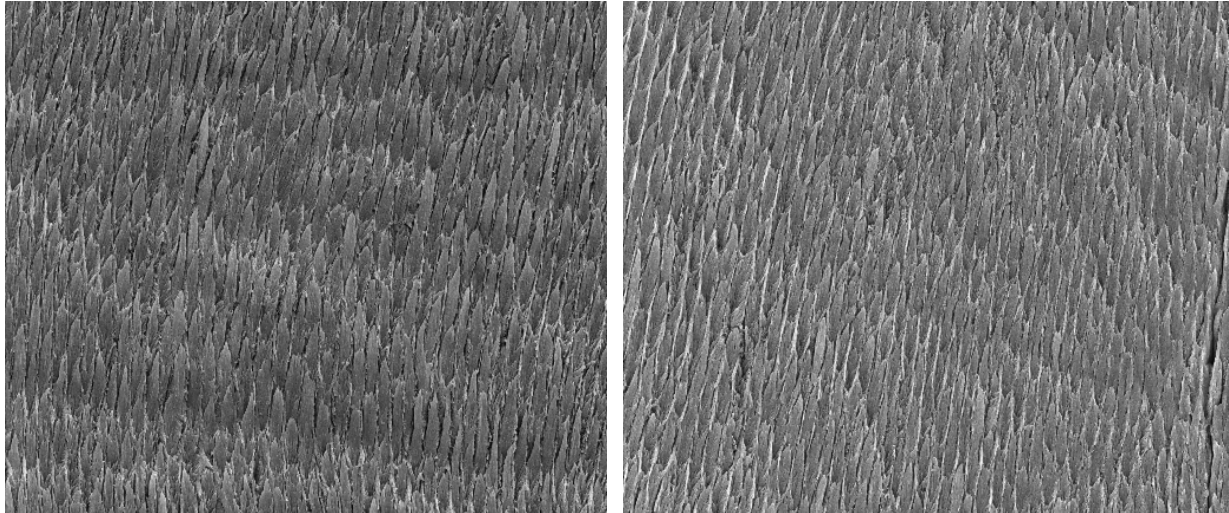


Figure 11c: Etching pattern on bovine enamel after 45-second etching with Email Preparator. SEM image, 1000x.

Figure 11d: Etching pattern on bovine enamel after 3-minute polishing with Proxyt “fine” and 45-second etching with Email Preparator. SEM image, 1000x.

Conclusion: Proxyt does not influence the acid etching of enamel.

3.3.2 Shear bond strength

Objective: A fluoride-free paste demonstrating medium abrasion has been added to the Proxyt range. The paste is suitable for cleaning cavities and dental preparations prior to restorative work. The aim of this investigation was to find out whether or not Proxyt impairs the adhesive bond.

Investigator: Ivoclar Vivadent R&D, Schaan, Liechtenstein

Method: The dentin shear bond strength of restorations was examined on bovine dentin after cleaning with Proxyt. Adhese One F adhesive and Tetric EvoCeram composite resin were used in this study.

Results: Figure 12 shows that the shear bond strength of the control group, which was not cleaned with Proxyt, and that of the samples which were treated with Proxyt “medium” (irrespective of fluoride content) do not differ significantly. The bond strength of all the specimens was around 30 MPa. Moreover, only cohesive fractures were found.

Conclusion: The bond between the dentin and adhesive is adequately strong, even after the cavity has been cleaned with Proxyt “medium”.

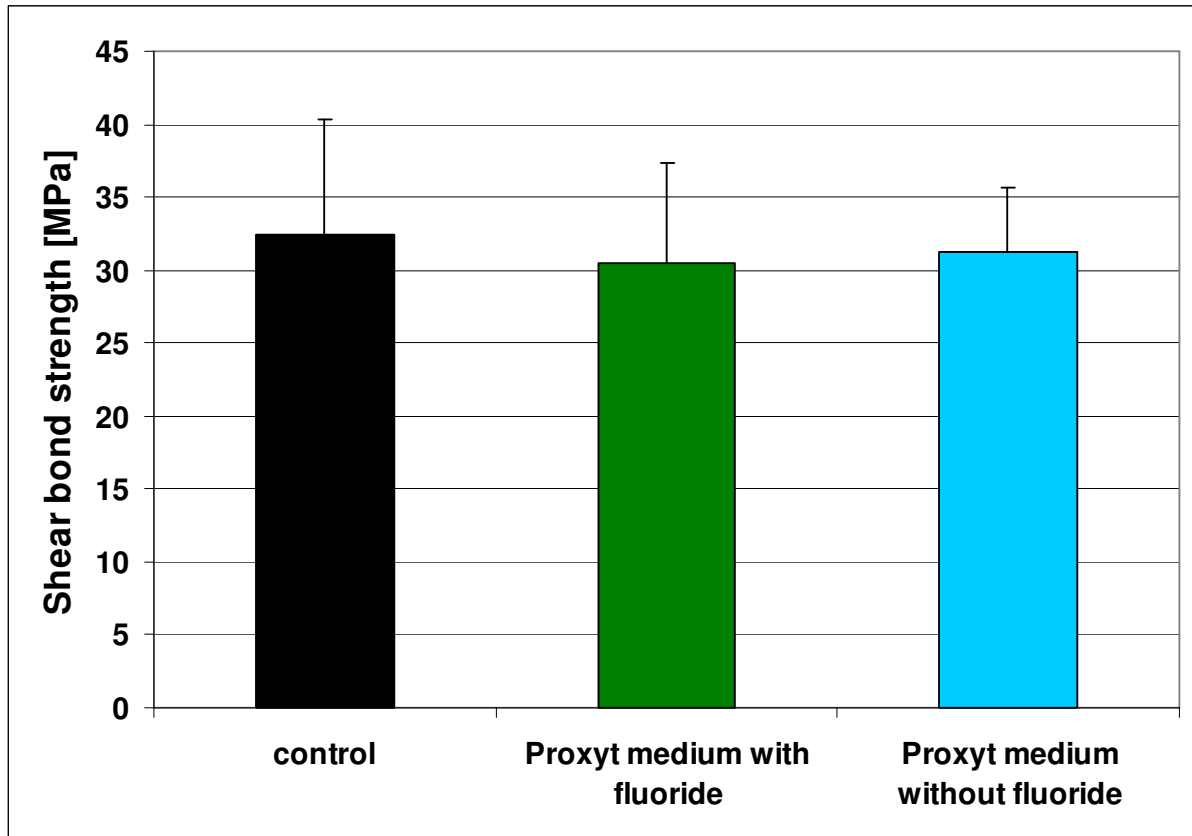


Figure 12: Dentin shear bond strength of Adhese One F / Tetric EvoCeram after cleaning with Proxyl “medium”. Bovine dentin was cleaned with Proxyl “medium” (with and without fluoride) according to the IfU. Adhese One F adhesive was applied. Subsequently, samples with a profile diameter of 3 mm were fabricated with Tetric EvoCeram. The shear strength up to fracture was determined after 24-h immersion in water.

3.4 Interference with laser-aided diagnostic methods

Modern caries diagnostic devices help dental professionals to detect caries by means of the characteristic shift in the autofluorescence of the affected dental hard tissue. The presence of exogenic factors significantly disturbs the measurement of fluorescence. As a result, caries may be detected erroneously, which may result in the wrong treatment. Prophy pastes and toothpastes may be the source of such exogenic factors.

The use of prophy pastes without autofluorescent properties in the specific spectrum is essential in the diagnosis of fissure caries in particular.

3.4.1 Autofluorescence as measured by the Diagnodent device

Objective: Measuring the autofluorescence of prophy pastes in the range of the Diagnodent unit (> 680 nm)

Investigator: Lussi A, Reich E, University of Bern, Switzerland

Results: Proxyl pastes exhibit very low autofluorescence in contrast to other pastes, such as Nupro, which appear highly fluorescent if exposed to the Diagnodent unit (Fig. 13) [17].

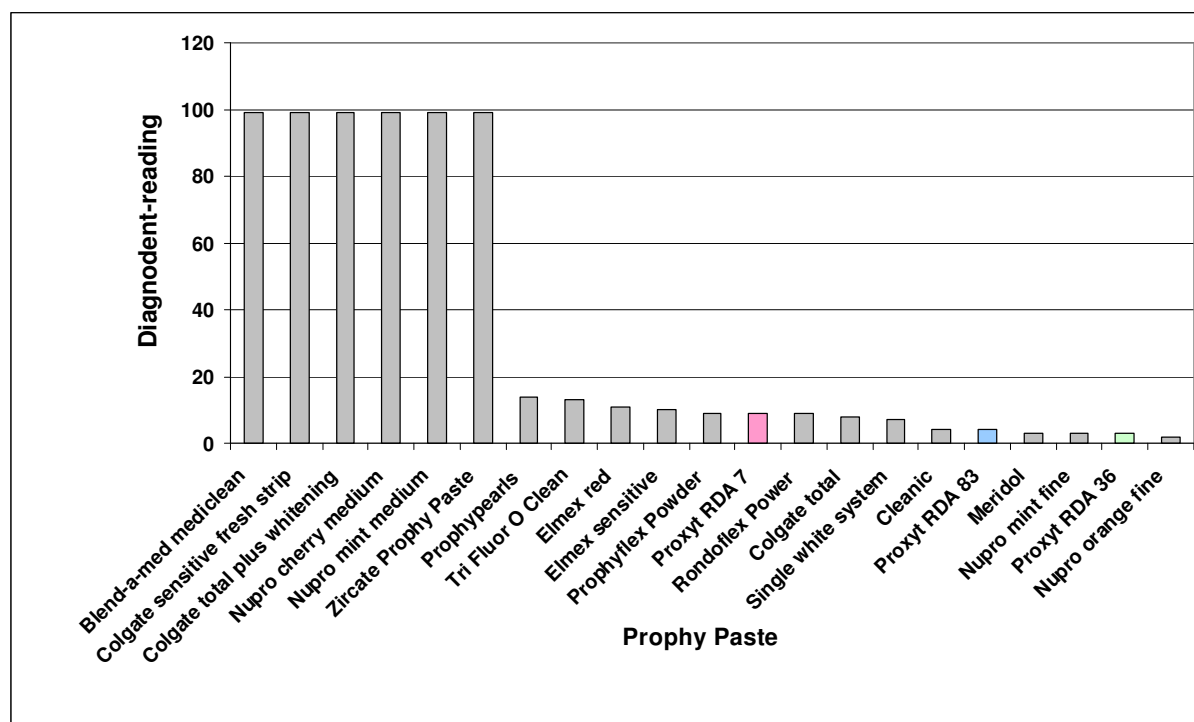


Figure 13: Autofluorescence of various toothpastes and prophy pastes according to Diagnodent readings [17].

Conclusion: The probability of obtaining misleading positive results after the use of Proxyl is minimal due to the low autofluorescence of the pastes.

3.3.2 Diagnodent readings on the tooth

Objective: Investigation of the interference of prophy pastes on the Diagnodent readings of the tooth.

Investigators: Dukić W, Vindakijević Z, Lulić Dukić O, Milardović S, University of Zagreb, Croatia

Method: Thirty-five extracted human molars were cleaned with different prophy pastes and rinsed with water for 10 seconds. Then the Diagnodent reading was taken.

Results: After cleaning with Proxyt, the teeth did not show a clinically significant increase in the Diagnodent measurements (Fig. 14) [18].

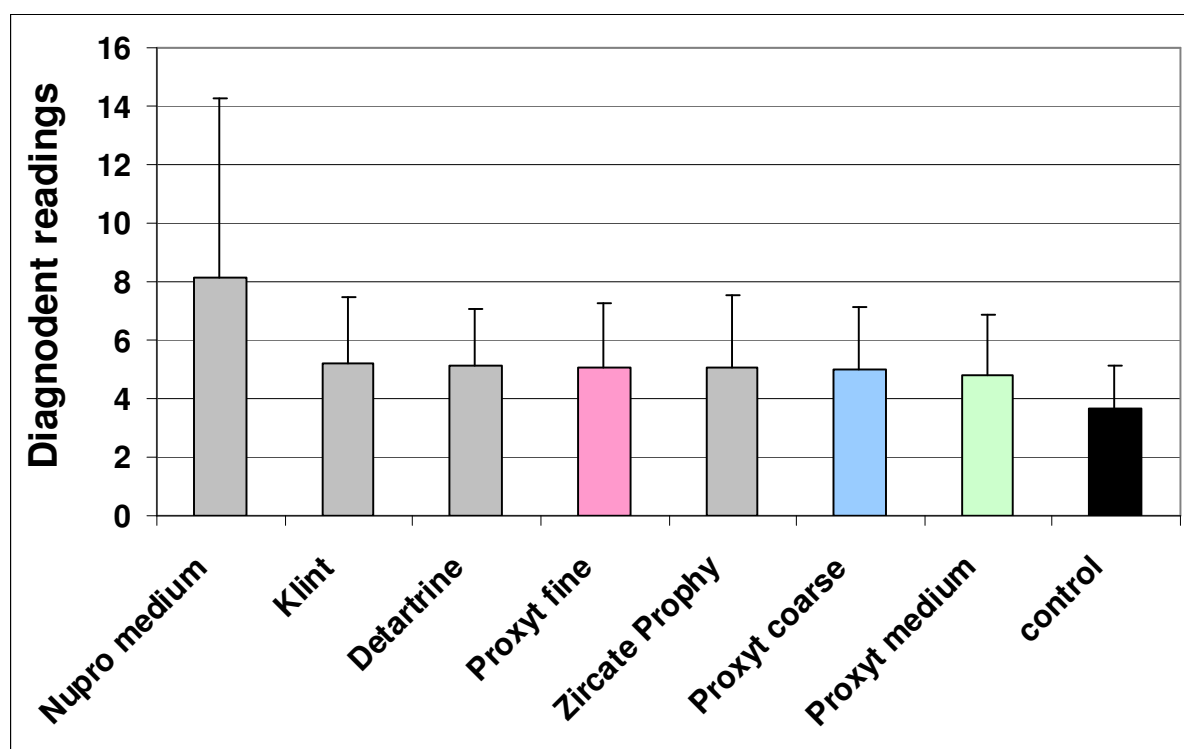


Figure 14: Autofluorescence of various toothpastes and prophy pastes as measured by the Diagnodent device [18].

Conclusion: Proxyt does not influence caries diagnostics with the Diagnodent unit.

4. Clinical experience

4.1 Reduction of lactobacilli and mutans streptococci in vivo

Objective: The objective of this study was to investigate the reduction of the mutans streptococci and lactobacilli levels achieved due to the different caries preventive treatments.

Investigators: Juric H, Dukic W, Jankovic B, Karlovic Z, Pavelic B, University of Zagreb, Croatia

Method: Randomized, 4-arm parallel-group study involving 18 patients per group (a total of 72 children aged 4 to 12 years). The groups were subjected to the following treatments:

1. Fluoridation with amine fluoride (1x)
2. Cleaning with Proxyt "medium"
3. Cleaning with Proxyt "medium" and daily chewing of gum containing fluoride and xylitol (Sensodyne)
4. Rinsing with Corsodyl mouth rinse containing 0.2% chlorhexidine (5x).

The mutans streptococci and lactobacilli count in saliva was examined with Dentocult before and 30 minutes after the treatment as well as 1, 4 and 8 weeks after the treatment.

Results: Of all the treatment methods tested, cleaning with Proxyt in combination with the chewing of dental chewing gum showed to be most effective in reducing the growth of mutans streptococci (Fig. 15) and lactobacilli (Fig. 16) in the long term [19].

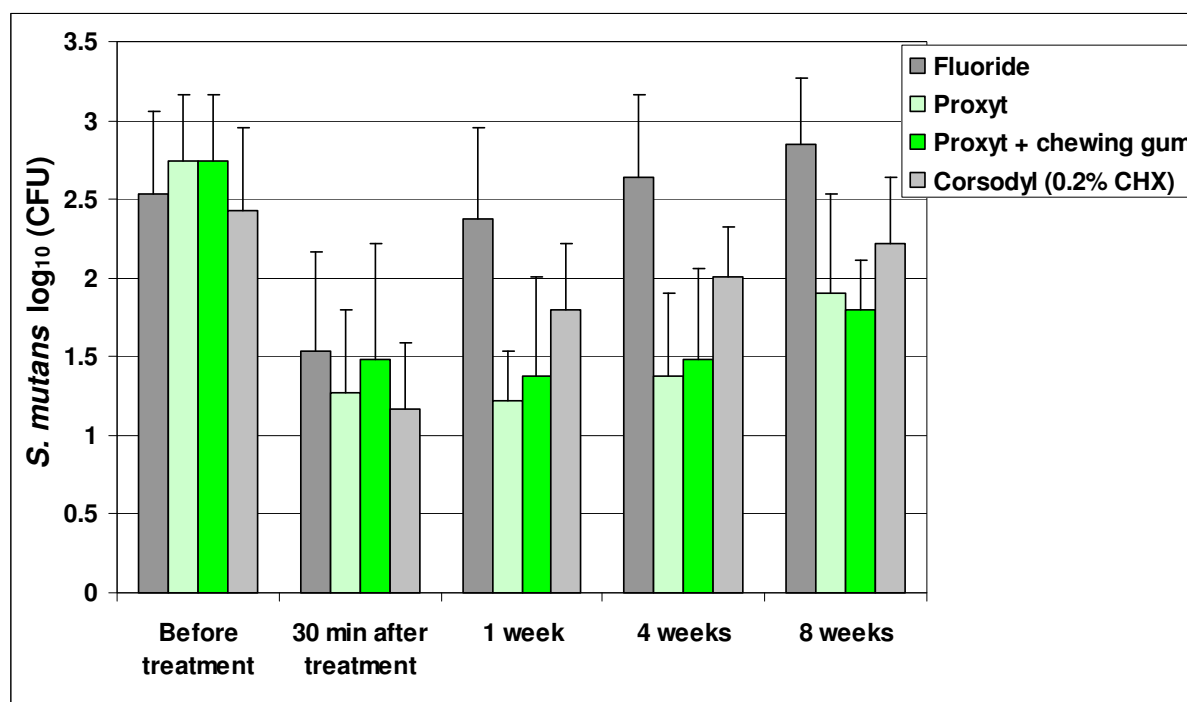


Fig. 15: *S. mutans* counts in saliva before and after the treatment with various caries prevention measures (fluoride, professional tooth cleaning with Proxyt "medium", professional tooth cleaning with Proxyt in combination with the use of dental chewing gum, chlorhexidine mouth rinse) [19].

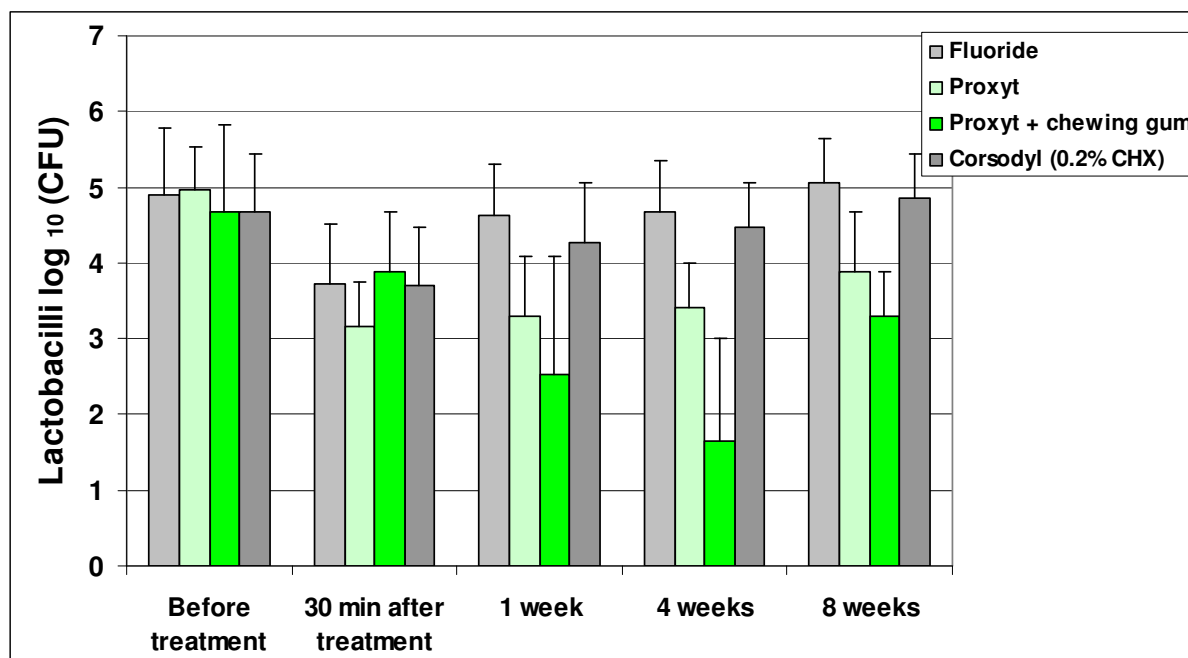


Figure 16: Lactobacilli counts in saliva before and after the treatment with various caries prevention measures (fluoride, professional tooth cleaning with Proxyt “medium”, professional tooth cleaning with Proxyt “medium” in combination with the use of dental chewing gum, chlorhexidine mouth rinse) [19].

4.2 Surface lustre and reduction of roughness

Two publications have reported on the clinical suitability of Proxyt for reducing surface roughness and promoting surface gloss. The case study illustrates the restoration of surface lustre after orthodontic treatment and the use of Proxyt “coarse”, “medium” and “fine” [20]. The second publication involves a split-mouth study in which half of the dentition of selected patients was treated with Nupro and the other half with Proxyt. The patients were unable to detect a difference between the results of the two pastes. However, the authors found that Proxyt is exceptionally suitable for polishing composite resins [21].

5. Biocompatibility

All the ingredients of Proxyt are accepted in the EU as the components of cosmetics and food stuffs. In other words, Proxyt contains substances that are associated with a very low toxicological risk.

5.1 Cytotoxicity

None of the ingredients in Proxyt represent a cytotoxic risk in the amounts used. In addition, the fluoride content is within the concentration accepted by cosmetics guidelines (< 1500 ppm). Furthermore, the formulation of Proxyt corresponds to similar dental products that have been used for many years without any negative health effects.

5.2 Sensitization

The only substance contained in Proxyt that may show sensitizing potential is the peppermint flavouring. However, the content of this substance does not exceed the restrictions of European food guidelines. Peppermint flavouring has been used in dental products for many years, without any detrimental health effects.

5.3 Irritation

The only potentially irritating substance contained in Prox is sodium lauryl sulphate. However, Proxyt contains only a very small amount and the paste is applied for a very short time. Therefore, it does not pose any health hazards. Many years of experience with similar products (e.g. toothpastes) confirm this fact.

5.4 Summary

Proxyt is not cytotoxic, irritating or sensitizing. If the pastes are used according to the prescribed instructions, neither the operator (dentist, dental hygienist) nor the patient is exposed to a health risk.

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Ivoclar Vivadent AG
Research and Development
Scientific Services
Bendererstrasse 2
FL - 9494 Schaan
Liechtenstein

Contents: Dr Kathrin Fischer
Dr Sandro Sbicego
Dr Gabriele David

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