GC Tooth Mousse
Portfolio
Since its introduction in late 2002 (Australia/NZ), Tooth Mousse has quickly become a firm favourite with dental professionals as a topical coating for teeth with a myriad of uses.

More and more applications are being found for Tooth Mousse and so we thought it would be useful to bring together some of the more common applications in one booklet.

If you already use Tooth Mousse, we hope you may find some additional applications by reading the clinical cases. If you have not yet tried this remarkable product, we hope the growing body of clinical case studies will encourage you to sample it.

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Some of the typical questions you are no doubt asked on a regular basis are:

• Why do I need this treatment?
• How much will it cost?
• How to apply Tooth Mousse?
• When finished how long will it last?

The first two questions are relatively easy but the third & fourth one may require a well rehearsed and complicated response that you often feel uncomfortable with.

How to apply Tooth Mousse?

The application is easy. Apply Tooth Mousse at night/ or in the morning after brushing your teeth – use your finger, a cotton bud or a preformed tray to apply the paste onto your teeth – allow 2 to 5 minutes working time.

When finished how long will it last?

“Well, ahem … it all depends on how well you brush your teeth, the condition of your saliva and the acidity of any accumulated plaque”, could be a reasonable reply. Unfortunately it avoids answering the question of longevity. A different response could be: “If you are able to continue brushing properly, regularly remove all plaque and your saliva is healthy, then X years could be expected. However, you would need to agree to an annual maintenance program where we regularly checked your saliva, plaque accumulation as well as plaque acidity. This would give you maximum longevity and allow us to introduce an early preventive program if we detected any potential problems. The annual maintenance program would cost X. Do you want to go ahead with it?”

“How long should I use Tooth Mousse?” This is another frequently asked question.

Depending upon the clinical case and the reason for prescribing Tooth Mousse, your answer could be, “I would like you use it every day and apply before sleeping. Then come back in X weeks so we can check your saliva or plaque levels and decide if you need to continue using it. There will be an additional charge for a saliva and or plaque test.”
Tooth sensitivity

10 year old Emma complained of sensitivity of the palatal surface of her maxillary incisor teeth. They displayed a characteristic pattern of tooth loss suggesting dissolution by contact with gastric contents. The other areas of the dentition were unaffected and appeared clinically normal. Her general health was good, however she suffered from moderately severe asthma requiring daily use of a number of maintenance medications. She had a moderate intake of caffeine (140mg/day) from cola soft drinks. Her daily water intake was low, and she avoided drinking any sizeable volumes of cold water, since this caused a stomach upset. Careful questioning revealed Emma had suffered for some years from gastro-oesophageal reflux, a condition frequently associated with asthma. She noticed that her reflux was less severe on days when she had no cola soft drinks.

Emma’s saliva test revealed a low resting flow rate and acidic pH, but normal stimulated parameters. The low pH was explained partly by a negative fluid balance (from the diuretic effects of the caffeine) and by the hyposalivatory effects of her medications. She was advised to eliminate cola soft drinks, since caffeine stimulates gastric acid production and could exacerbate gastric reflux. Emma was also advised to drink warm water slowly, to minimise the stimulation of gastric acid secretion caused by stomach distension. She was referred to her medical practitioner who considered the value of using a H-2 receptor antagonist medication to suppress gastric acid production. Emma was advised to apply Tooth Mousse directly onto the eroded palatal surfaces and rapidly obtained relief from sensitivity. After 2 weeks, the eroded dentine was covered with a thin layer of Fuji II LC and composite resin for further protection.

Prof. Laurie Walsh, University of Queensland

Result:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydration Levels:</td>
<td>Low</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>Normal</td>
</tr>
<tr>
<td>Resting pH:</td>
<td>5.6 Moderately acidic</td>
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<tr>
<td>Stimulated flow:</td>
<td>6.0mL Normal</td>
</tr>
<tr>
<td>Buffering:</td>
<td>10 Normal</td>
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</table>
A difficult case of fluorosis on a 26 year old patient that required two in-surgery power bleaching appointments one month apart. **Tooth Mousse** was recommended prior to treatment to reduce sensitivity often experienced during this procedure and to give an improved final result. In between appointments **Tooth Mousse** was applied twice daily.

Dr. Brett Dorney, Pymble NSW

“The white staining on these teeth was very intense but after treatment there was an aesthetic improvement and an acceptable result was achieved.”

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Now you can get a great makeover for your teeth.

Cosmetic makeovers for every occasion

Tooth whitening

Before whitening

Immediately after the initial whitening appointment with heavy white staining on teeth still apparent

Two weeks after final whitening appointment and twice daily application of **Tooth Mousse**
Orthodontics

RECALDENT™ CPP-ACP has been shown to have a dramatic effect on white spots especially for patients undergoing orthodontic treatment. This series of clinical photographs was provided by an orthodontist who used a prototype paste containing 5% RECALDENT™ CPP-ACP following bracket removal.

Immediately after bracket removal

A five minute twice daily application produced these results after one month

In order to avoid the incidence of white spots, it is recommended to apply Tooth Mousse twice daily for the entire period that brackets are in place or an extra oral appliance is in use.

After 3 months

Dr Hayashi Yokohama, Japan
What does it all mean to the regular wine taster?

Whilst the application of fluoride agents has so far acted as a desensitiser, the new and exciting RECALDENT™ CPP-ACP breakthrough can potentially reverse some of the damaged dental structures which are exposed to short, repeated acid attacks, such as when wine sampling. Interestingly, research comparing the effects of both fluoride 1000ppm and 2% CPP-ACP shows that, whilst fluoride causes a hypermineralised outer layer, CPP-ACP increases the mineral content within and through the subsurface layers. Prof. Laurie Walsh, University of Queensland says: under acidic conditions, CPP-ACP releases calcium and phosphate ions thereby supersaturating the enamel, reducing demineralisation and increasing remineralisation.

What to advise in practical terms?

Recommend/prescribe some of the RECALDENT™ CPP-ACP containing products.

Currently there is a range of RECALDENT™ chewing gums (not available in Europe) in adults’ and children’s flavours, as well as Tooth Mousse.

Use these products as well as topical fluoride and fluoride mouthwashes in order to maximise the longevity of the teeth. RECALDENT™ gum is very handy and beneficial between tastings of white wines as it immediately raises the pH of acidic saliva, making it difficult for plaque to adhere to tooth surfaces. High fluoride toothpaste and acidulated phosphate fluoride rinses should also be used regularly.

Dr Gilbert Labour is a wine judge and reviewer for a number of food and wine magazines.
HELEN
Helen, a 55 year old school principal, complained of marked sensitivity to cold and air affecting many of the root surfaces of her teeth. This problem began six months ago but has become more severe over time. She has also noticed small cavitations appearing on some of the root surfaces. Coincidentally, Helen has noticed increasing dryness in both her mouth and eyes. Her general health is good and she has no other health problems. Clinical examination revealed that the exposed root surfaces of the maxillary anterior teeth are affected by erosion and are extremely sensitive to air and thermal stimuli. Root surface caries lesions are present on the lower anterior teeth. Saliva testing revealed an acidic salivary pH, both at rest and when stimulated. She also had depressed salivary buffering capacity. A lifestyle analysis revealed that Helen did not consume either caffeine or alcohol, and had a water intake of more than 2 litres per day. The combination of depressed salivary parameters and ocular dryness in a female patient of this age is suggestive of primary Sjögren’s syndrome. Serological testing and a labial salivary gland biopsy confirmed this presumptive clinical diagnosis. In the light of her ongoing caries and erosion problems, Helen’s home care program included Tooth Mousse twice daily, a saliva substitute, and intermittent chlorhexidine gel therapy once per week to suppress harmful bacteria. After restoring her cavitated areas with Fuji VII (or alternatively with a combination of Fuji VII and composite resin), Helen was then enrolled in a three-monthly maintenance program to ensure regular review of her status and to provide ongoing fluoride varnish applications to the at-risk tooth surfaces.

Prof. Laurie Walsh, University of Queensland

Result:
Hydration Levels: Low
Viscosity: Frothy, bubbly
Resting pH: 5.6 Acidic
Stimulated flow: 3.5mL Low
Buffering: 4 Low
ALBERT

Albert is a 72 year-old retired construction engineer. He had experienced rapid wear of his teeth over the previous 5 years, and was seeking cosmetic treatment. Albert suffered from obstructive sleep apnoea and had been using a continuous positive airways pressure (CPAP) mask at night as part of the management of this condition. Clinical examination revealed marked loss of tooth structure, with overclosure and forward posturing of the mandible to gain occlusal contact between the anterior teeth.

Saliva testing indicated an acidic resting salivary pH and also when stimulated, as well as a moderately depressed salivary buffer capacity. A lifestyle analysis revealed that Albert had a high intake of both caffeine (400 mg/day) and alcohol (5 standard drinks per day), but he drank little water. The diuretic effect of these two agents was substantial in his case, and added to the dehydrating influence of the CPAP therapy. Albert was recently diagnosed with insulin-dependent (Type 2) diabetes mellitus, which may have exerted an additional negative effect on his fluid balance. The low flow, pH and buffer parameters contributed directly to his current complaint of tooth wear through softening of the remaining tooth structure.

Albert’s dental management included lifestyle modifications, to increase water intake and reduce his consumption of caffeine and alcohol. He was then placed on a remineralisation program using Tooth Mousse for 4 weeks, after which time his salivary parameters were re-checked and found to be normal. He then underwent rehabilitation of his occlusion.

Result:

<table>
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<tbody>
<tr>
<td>Hydration Levels</td>
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<tr>
<td>Viscosity</td>
<td>Sticky</td>
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<tr>
<td>Stimulated flow</td>
<td>2.5mL Low</td>
</tr>
<tr>
<td>Buffering</td>
<td>5 Low</td>
</tr>
</tbody>
</table>

Prof. Laurie Walsh, University of Queensland
Geriodontic mousse

Elderly patients with salivary dysfunction (dry mouth) linked to their medical conditions or their medications can undergo a rapid increase in the risk of both coronal and root surface caries. By elevating levels of calcium in saliva and dental plaque, Tooth Mousse can reduce the harmful effects of plaque-derived acids and drive remineralisation.

Prof. Laurie Walsh University of Queensland

Antonio has type II diabetes mellitus, and at the initial presentation had active caries and untreated periodontitis. His diabetic condition was undiagnosed until recently, and was a major contributor to his impaired salivary flow rates.

The primary root surface caries lesion on the buccal aspect of tooth 33 has hardened and undergone arrest. It is free of plaque and is not likely to breakdown in the future as it is now hypermineralised.

After instituting a home care program to promote remineralisation and a series of appointments for periodontal debridement and restorative work, the situation has improved. Daily use of Tooth Mousse used in conjunction with a triclosan-releasing toothpaste (Colgate Total™) and flossing is a useful protocol for Antonio’s home care over the long term.
FOLLOWING RADIATION TREATMENT JACK is 79 and underwent radiation for a palatal tumour in December 2002. Initial fluoride application commenced immediately following treatment but was discontinued in June 2003 due to allergy concerns, because he had developed significant rashes, eythematos areas and spontaneously developed osteoradionecrosis that had to be treated with hyperbaric oxygen. In June 2004 Jack was prescribed **Tooth Mousse**. Since then he has been able to sleep continuously for 6 hours each night, whereas previously he would awaken every two hours due to dryness of the teeth and mouth.

Dr. Liz Coates, University of Adelaide

"Initially we had expected it would take months or years before the benefits of Tooth Mousse could be positively evaluated in relation to a home care protocol, but the quality of life improvement was almost immediate." Dr Liz Coates
Mousse for hypomineralisation

MEET SANDRA - 24 YEARS OLD

The strategy of enamel subsurface regeneration can be applied to some cases of enamel hypoplasia where impaired enamel formation results in the accumulation of water in voids within the enamel, causing opacity. In cases where the lesions are poorly defined, the use of Tooth Mousse can provide a useful improvement in the patient’s appearance following a very conservative treatment approach.

As with fluorosis, it is important to maximise the microscopic porosity of the enamel surface overlying the defect, by etching combined with gentle microabrasion. Tooth Mousse is then applied immediately and the patient continues to apply Tooth Mousse each evening immediately before bed. The treatment sequence can be repeated several times (e.g. with appointments spaced several weeks apart) to gain a greater effect.

Prof. Laurie Walsh University of Queensland
A conventional 37% phosphoric acid gel is applied to the lesions and the surrounding normal enamel for one minute.

In this patient, there is enamel hypoplasia which is limited to the incisal third of the labial enamel of the two maxillary central incisors. The lesions are poorly demarcated, which is a positive sign as it suggests a shallow depth and thus a greater effect from the treatment.

After surface conditioning, the surface enamel is more porous.

‘My dentist explained that the white marks on my front teeth were due to a defect in the enamel when the teeth were originally formed.

These ugly marks started to disappear after using Tooth Mousse.’

After four weeks of nightly application of Tooth Mousse, the visible appearance of the lesions has reduced.

After six weeks the effect is even more pronounced.
Mousse for mild fluorosis

DARRYL - 21 YEARS OLD

In many cases of mild fluorosis, a single treatment sequence of etching / microabrasion followed by Tooth Mousse can achieve the desired result. Patients should be instructed that the visual effect occurs through a slow chemical reaction, and thus should expect to see changes over several weeks rather than instantly.

Darryl is completing his university studies and his lifestyle poses a number of challenges for effective remineralisation. He has regular sporting involvements with competitive rowing, which places him at risk from dental erosion should his fluid balance situation not be kept in check. Darryl's teeth have the benefit of being formed with optimal systemic fluoride exposure (in his case from fluoride tablets), and he has remained caries free to this point. Because of its higher acid resistance, Darryl's enamel should be less prone to tooth wear driven by erosive factors such as subclinical dehydration and the intake of acidic sports drinks, although he will, of course, still be prone to attrition in the normal pattern. There is good evidence that incisal, palatal, occlusal and non-occlusal erosion is less common in patients who have optimal systemic fluoride exposure, however in the mandibular molar sextants, prior fluoride exposure does not appear to protect against occlusal erosion. A useful reference is the paper ‘Prior fluoridation in childhood affects dental caries and tooth wear in a south east Queensland population’ by Carolyn Teo et al. Australian Dental Journal. 1997 Apr;42(2): 92-102.)

Prof. Laurie Walsh, University of Queensland
Tooth Mousse

The pre-treatment view shows mild fluorosis with “snow-capped” anterior teeth.

At the end of the first appointment, three cycles of etching / microabrasion have led to a reduction in the area of the opacities. A two minute etching time was used for each cycle.

After four weeks of nightly application of Tooth Mousse, the remaining opacities have been replaced by enamel with a normal optical appearance.

This image shows the visual effect of the treatment on the maxillary central incisor teeth.

The effect of the treatment on the right anterior teeth.
But the truth is that until recently, the mum of two children, Tyler, six and Molly, two had hardly cleaned her teeth since the age of 12. Her mouth was so sore with recurring outbreaks of ulcers that she couldn’t bear to put a brush anywhere near her teeth. Along with the ulcers, Corrina also suffered with a numb tongue.

‘I started getting mouth ulcers when I was about 10. And not just the odd one like most kids. I’d wake up with a mouthful, and they were so painful.

‘One lot would clear up and then another outbreak would start. My friends were used to me being unable to talk because my tongue was completely numb. At one point, the numbness lasted three days. I couldn’t say a word the whole time.’

When her mouth was like this, Corrina couldn’t even touch her gums with a toothbrush – let alone give them a decent scrub.

‘It meant I was only brushing my teeth when the ulcers healed – which was every other week.’

Then, five years ago, when she was 18, her husband, Nick, urged her to investigate the cause of ulcers. Her dentist suggested that she keep a diary in order to figure out what triggered them.

‘It didn’t take long to realize that I was allergic to toothpaste’, she says.

It’s a reasonably common problem, although not many people suffer as badly as Corrina. Most eventually find a toothpaste that doesn’t cause problems, according to a spokesman for the British Dental Health Foundation.
Over several months, Corrina tried every kind of toothpaste available. But when she couldn’t find one that didn’t give her mouth ulcers, she gave up looking and was forced to find ways around the problem.

‘I could brush my teeth as long as I didn’t use toothpaste. I also found I could tolerate fluoride mouthwash, so bad breath was never a problem. I used an abrasive polish weekly to make my teeth feel clean – although I couldn’t use it too often or I would have damaged my teeth.

‘Sometimes my mouth felt so awful I’d squeeze toothpaste on my brush, scrub my teeth for five minutes and then put up with the ulcers and numbness. It sounds terrible but I’ve probably only cleaned my teeth about 20 times in the last three years.’

But Corrina was careful to go to the dentist every six months. ‘With each visit I’d have a couple more fillings. I knew I was facing losing all my teeth by the time I was 30.

‘My mouth was a mess. I’d already had veneers on my front teeth, but they cracked so I had to have them removed and crowns fitted. It was really horrible. But I had no alternative. I couldn’t cope with the pain and inconvenience of the ulcers and numbness.’

Then in November 2004, Corrina heard about a new gel called Tooth Mousse, which helps prevent tooth decay by reducing levels of acid in saliva.

The mineral-rich fruit-flavoured gel, being hailed as ‘the first all-round conditioner for the mouth’, is rubbed onto the teeth and gums.

Researchers claim the gel can halt, and even reverse early tooth decay, and dentists predict it can help treat dental decay without the need for drilling.

‘A high level of acid in the saliva attacks the tooth enamel, starting the damage that ends with cavities and decay’, explains Edinburgh dentist James Andrews.

‘This new gel prevents tooth decay by reducing levels of acid in the saliva, as well as strengthening teeth by feeding calcium and phosphorus deep into the dentine.’

Before she started using Tooth Mousse, Corrina had her saliva measured. The results were shocking. ‘A strip of testing paper showed my saliva was more acidic than lemon juice or vinegar – and about on a par with car battery acid! No wonder my teeth were in such an awful state.’

Corrina used the gel on her teeth and gums, and was careful to avoid food or drink for half an hour afterwards. ‘I don’t use it as toothpaste as such – but that’s actually how it’s working out because my teeth feel so much cleaner’, she says.

Two weeks later, she had another saliva test and this time the strip of paper gave a very different result. ‘I’d got rid of all the excess acid in my saliva – which should mean my teeth will be protected against further decay.

‘In any case, my mouth feels good, and my teeth are looking shinier and whiter. I’m still not using toothpaste, but for the first time in ages, I really feel like smiling.’

*Permission from author Jane Feinnman
In patients with overdentures, the development of a low oxygen, low salivary access environment beneath the overdentures can lead to the rapid progression of caries in the supporting teeth. Prof. Laurie Walsh University of Queensland

Testing for resting salivary flow from the labial glands of the lower lip reveals no output after periods as long as five minutes.

The saliva which is present is high viscous and has a low pH. Its frothy nature is readily apparent. This saliva has minimal lubricant properties and is unable to provide defence in terms of dental caries.

Clarence has a maxillary partial chrome cobalt denture, which was fabricated by a prosthodontist. This denture is retained in part by magnets fitted to his root-filled maxillary canine teeth, with assistance from the remaining maxillary second molar, the 17. It opposes a full lower denture which is implant-supported.

Protection of the root surface around the attachments on the canine teeth is a major goal.

Regular application of Tooth Mousse onto the fitting surface of the partial denture will provide prolonged contact and thus increased protection for the remaining tooth surfaces.

THIS IS CLARENCE - 75 YEARS OLD

Clarence has undergone radiotherapy for a malignancy in his posterior oral cavity and as a consequence his salivary outputs have been diminished to almost zero.
Listed below are ten of the best:

- Anticariogenic complexes of amorphous calcium phosphate stabilized by casein phosphopeptides: a review. Reynolds EC. Spec Care Dentist 1998 Jan-Feb 18:1 8-16
- Anticariogenic casein phosphopeptides. Reynolds EC. Prot Peptide Lett 1999 295-303

The full list of available references can be viewed on the Tooth Mousse download section at www.gceurope.com

CPP-ACP was developed at the School of Dental Science at the University of Melbourne Victoria / Australia. RECALDENT™ is used under licence from RECALDENT™ Pty. Limited. RECALDENT™ CPP-ACP is derived from milk casein, and should not be used on patients with milk protein and/or hydroxybenzoates allergy.