

Comparison of RECALDENT™



COMPARISON OF RECALDENT™ (CPP-ACP) TECHNOLOGY WITH ACP, NOVAMIN® & SENSISTAT®

	ACTIVE INGREDIENTS	HOW PRODUCTS WORK	PEER-REVIEW STUDIES	CLINICAL USES	WHAT PRODUCTS CONTAIN THIS
RECALDENT™ (CPP-ACP)	<p>RECALDENT™ contains Casein Phosphopeptides (CPP) and Amorphous Calcium Phosphate (ACP). Casein Phosphopeptides (CPP) are peptides derived from the milk protein casein that are complexed with calcium (Ca) and phosphate (PO₄). In this complex, the CPP maintains/stabilizes the Ca and PO₄ in an amorphous form (ACP) without precipitation.</p> <p><i>Not to be used if patient has a casein allergy, but OK if lactose-intolerant.</i></p>	<p>RECALDENT™ (CPP-ACP) utilizes CPP peptides derived from the milk protein casein to maintain Ca and PO₄ in an amorphous form (ACP). The CPP will bind to surfaces such as plaque, bacteria, soft tissue and dentin, providing a reservoir of bioavailable Ca and PO₄ in the saliva and at the surface of the tooth. The Amorphous Calcium Phosphate (ACP) is released from the CPP complex during oral acidic challenges. Stabilization of ACP by the CPP ensures the delivery of Ca and PO₄ ions into the tooth structure before they precipitate/crystallize.</p>	<ul style="list-style-type: none"> • 90+ peer-reviewed abstracts and studies on RECALDENT™ (CPP-ACP) technology • Textbook - Additional aids to the remineralization of tooth structure. Reynolds EC, Walsh LJ. In Preservation and Restoration of Tooth Structure – 2nd Edition 2005, p111-118. 	<ul style="list-style-type: none"> • Strengthens tooth enamel with the release of Ca and PO₄, preventing demineralization and promoting remineralization of the tooth by increasing the hydroxyapatite • Reduces sensitivity by occluding dentinal tubules • Reduces dentinal hypersensitivity, especially with bleaching, scaling and root planing • Buffers plaque acid • Reduces decalcification in orthodontic treatment • Repairs "white spot" lesions • Reduces erosion • Helps with dry mouth (xerostomia and salivary gland hypofunction) 	<ul style="list-style-type: none"> • MI Paste™ - GC America Inc. • Trident White® Gum - Cadbury Adams USA
AMORPHOUS CALCIUM PHOSPHATE (ACP)	<p>ACP - Amorphous Calcium Phosphate</p> <p>ACP is an inorganic Amorphous Calcium Phosphate made by combining soluble salts of calcium (Ca) and phosphate (PO₄). A two-phase system with Ca in one phase and PO₄ in the other, they mix together and react to form an ACP material that precipitates onto the tooth surface.</p>	<p>When mixed together, CA and PO₄, react to form an Amorphous Calcium Phosphate (ACP) precipitate (note that this material is not maintained/stabilized in a delivery system like RECALDENT and Novamin are, and so has lower substantivity). Precipitated Amorphous Ca and PO₄ is highly soluble, so continuous acidic attacks will rapidly wash the Ca and PO₄ away. ADA Foundation ACP is not bioavailable after the product, whether it is toothpaste or gel, is rinsed away or removed.</p>	<ul style="list-style-type: none"> • Amorphous Calcium Phosphate is licensed by ADA Foundation • A few peer-review studies by ADA Foundation 	<ul style="list-style-type: none"> • Reduces patient sensitivity and restores enamel luster • ACP releases Ca and PO₄ ions, reducing micro-leakage-related decay 	<ul style="list-style-type: none"> • ARM & HAMMER® Enamel Care® • Liquid Calcium® • Mentadent® Replenishing White™ • Church & Dwight Co. Inc. • Zoom2® ACP, Day White ACP, Nite White ACP - Discus Dental® • Aegis® Products with ACP - Bosworth Company • Enamel Pro™ prophylactic paste with ACP - Premier Dental Products Co
NOVAMIN®	<p>NovaMin is composed of calcium, phosphorus, sodium and silica. Its chemical name is Calcium Sodium Phosphosilicate.</p>	<p>NovaMin particles bind to the tooth surface and, when the particle comes in contact with saliva and water, it reacts and releases Ca and PO₄ ions. The Ca and PO₄ ions are protected by glass particles which need to be trapped for the Ca and PO₄ to be localized. Sodium ions in the particles exchange with hydrogen cations; this then allows calcium and phosphate ions to be released. A calcium phosphate layer is formed which then crystallizes into hydroxycarbonate apatite. The physical occlusion of dentinal tubules results from both the hydroxycarbonate apatite layer and the residual Novamin particles.</p>	<ul style="list-style-type: none"> • 10+ published abstracts and studies, mainly from the manufacturers 	<ul style="list-style-type: none"> • Relief of root surface hypersensitivity • Physically occludes dentin tubules to protect the nerve and prevent pain 	<ul style="list-style-type: none"> • NuCare™ Prophylactic Paste - Sunstar Butler • SootheRx™ - Omnii Oral Pharmaceuticals • DenShield* • Oravive™
SENSISTAT®	<p>SensiStat contains arginine, a common amino acid found in saliva, in combination with calcium and bicarbonate/carbonate.</p>	<p>The arginine complex binds to the tooth surface and allows the calcium carbonate to slowly dissolve and release calcium.</p>	<ul style="list-style-type: none"> • Advertisement claims only • Little peer-review evidence 	<ul style="list-style-type: none"> • Relief of root-surface hypersensitivity • Sealing dentinal tubules will stop the ability of fluid movement in the tubules to elicit pain 	<ul style="list-style-type: none"> • ProClude® • DenClude™ - Ortek

The professional way to remineralize and rejuvenate teeth



MI Paste™ Protocol and Comparison Charts

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MI Paste™

MI Paste fights demineralization while improving saliva flow, boosting fluoride uptake and soothing sensitive surfaces. The first professional product to contain RECALDENT™ (CPP-ACP), a special milk-derived protein, MI Paste:

- Restores minerals that strengthen tooth enamel
- Reduces sensitivity from post-whitening procedures
- Reduces high oral acid levels from excessive soft drinks
- Relieves dry mouth caused by certain medications
- Buffers plaque and bacteria acid

Use this chart as a guide for addressing specific patient indications. For more information, call 1.800.323.7063 or visit www.gcamerica.com.



Case	When to Apply MI Paste*	FL Toothpaste (ppm) 1-2 Times Daily	MI Paste Applications Per Day	Duration	MI Paste Application (Finger: rub pea-sized amount on all teeth***)
Bleaching	Before & after treatment	1000 ppm fluoride toothpaste	1-2 applications of MI Paste after fluoride toothpaste, depending on severity of hypersensitivity (wait 1 hour before applying home bleach at night)	Several days or up to 2 weeks, depending upon severity of hypersensitivity	Finger or custom tray
Children & Adults (moderate to high caries risk)	Daily <i>Note: Children should not use if IgE casein-allergic*</i>	1000 ppm fluoride toothpaste	1-2 applications of MI Paste after fluoride toothpaste	As needed to prevent demineralization	Finger or custom tray
Orthodontic Treatment	During treatment. Post treatment: After bands are removed	1000 ppm fluoride toothpaste	1-2 applications of MI Paste after fluoride toothpaste <i>Note: May use remineralization technique during post treatment (see MI Paste brochure)</i>	As needed to prevent demineralization	During treatment: Finger, brush or custom tray. Rub MI Paste around brackets/bands and directly onto demineralized areas. Post treatment: Finger or custom tray
Gingival Recession	Daily	Apply 1000 or 5000 ppm** fluoride toothpaste 2X daily (morning and night). After evening application, apply MI Paste prior to/at bedtime.	1-2 applications of MI Paste after fluoride toothpaste**	As needed/ongoing for hypersensitivity on exposed root surfaces and demineralized area	Finger or custom tray
Pregnancy (especially if nauseated or vomiting)	During pregnancy	1000 ppm fluoride toothpaste	1-2 applications of MI Paste after fluoride toothpaste. If nauseated, apply MI Paste in place of fluoride toothpaste.	As needed; may help with minimizing erosion	Finger or custom tray
Excessive Tooth Erosion	Daily	1000 or 5000 ppm** fluoride toothpaste	1-2 applications of MI Paste after fluoride toothpaste**	As needed	Finger or custom tray

High Caries Risk and Special Needs Patients (may need to also use an antimicrobial rinse/spray and other saliva stimulants/substitutes)

Xerostomia and/or SGH (all medical and autoimmune conditions)	Daily	1000 or 5000 ppm** fluoride toothpaste	Apply MI Paste after fluoride toothpaste and as needed during the day, especially prior to/at bedtime for dry mouth**	Ongoing as needed	Apply MI Paste with finger all over teeth and oral soft tissue as a lubricant and salivary enhancer. Can also use custom tray if needed.
Radiation/Chemotherapy	Daily (pre-, during and post treatment)	1000 or 5000 ppm** fluoride toothpaste	Apply MI Paste after fluoride toothpaste and as needed during the day, especially prior to/at bedtime for dry mouth**	Ongoing as needed	Apply MI Paste with finger all over teeth and oral soft tissue as a lubricant and salivary enhancer. Can also use custom tray if needed.
'Meth' Mouth and/or Mountain Dew Mouth	Daily	1000 or 5000 ppm** fluoride toothpaste	Apply MI Paste after fluoride toothpaste and prior to/at bedtime**	Ongoing as needed	Apply MI Paste with finger all over teeth and oral soft tissue as a lubricant and salivary enhancer. Can also use custom tray if needed.

Note: Do not use antimicrobial rinses (such as chlorhexidine gluconate or CPC) within 2 hours of fluoride toothpaste containing sodium lauryl sulfate.

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* MI Paste contains casein (milk protein) and should not be used if patients have an IgE casein allergy. MI Paste does not contain lactose and is safe for lactose-intolerant patients. Contact a physician if recommending for a renal dialysis patient.

** Do NOT mix MI Paste together with 5000 ppm fluoride toothpaste or gel because it may precipitate out as CaF₂. Brush with toothpaste and then apply MI Paste afterwards.

*** MI Paste requires a thick application and needs to sit on the teeth for at least 3 minutes. Do not rinse after applying MI Paste. MI Paste can be used as a prophylaxis paste, especially in patients with a dry mouth. MI Paste should not be brushed on like toothpaste with a toothbrush, since it requires a thick layer, except in active banded orthodontic patients. If a patient chews gum, advise them to use Trident White® Gum with RECALDENT™ (CPP-ACP). Patients can use both MI Paste and Trident White® Gum, especially if they have a dry mouth.