Clinpro™ Preventive Care Solutions Chart

	Product name	Indications	Product type	Key advantages
Maintain	**Clinpro™ Tooth Crème** 	• Caries prevention • Aids in the remineralisation of tooth surfaces (surface & sub-surface) • Aids in the reversal of white spot lesions • Helps to reduce root surface caries	**Take Home** • 0.21% w/w (950ppm) Sodium fluoride Anti-cavity paste	• **Contains an innovative *f*TCP technology** using Calcium, Phosphate and importantly Fluoride • *f*TCP enhances remineralisation by delivering more fluoride to the tooth surface • *f*TCP activates on brushing – not in the tube • Dentrifice delivery offering a simple 1 step regimen increasing patient compliance • Gentle & effective cleaning Available in a Vanilla Mint Flavour
Treat	**Clinpro™ White Varnish** 	For use as a fluoride-containing coating that: • Treats hypersensitive teeth • Treats exposed dentine and root surface sensitivity	**In-Office/Professional** • High concentration fluoride varnish (22,600ppm Sodium Fluoride)	• **Contains an innovative *f*TCP technology** involving Calcium, Phosphate & importantly Fluoride • Cessation of hypersensitivity • Unit dose delivery ensuring consistency & reliability of contents • Dosage guide for both primary & permanent dentition • Aesthetic white colour & low viscosity allowing improved delivery to interproximal surfaces • 3 year shelf life Available in a 100 single dose value pack
Protect	**Clinpro™ XT Varnish** 	• Immediate cessation of site specific sensitivity • Site-specific protective coating for: – newly erupted dentition & other at risk tooth surfaces – non-cavitated lesions – tooth surfaces around orthodontic brackets • Protects exposed root surfaces • Creates barrier against demineralisation & acid erosion	**In-Office/Professional** • Resin modified GIC • Varnish type coating	• Site Specific light cured RMGIC that releases fluoride & creates a temporary barrier against demineralisation & acid erosion • Contains a Calcium salt - Calcium glycerophosphate that delivers Calcium & Phosphate • As an RMGIC - it can be readily recharged using a fluoride toothpaste (e.g: Clinpro Tooth Creme) • Can reduce dentine permeability by up to 88%[1] • Easy to mix, easy to apply and cures almost clear offering immediate aesthetic benefits
Protect	**Clinpro™ Sealant** 	• Pit and fissure sealant for primary and permanent dentition	**In-Office/Professional** • Light-cure, low viscosity, fluoride releasing, resin-pit and fissure sealant	• Unique colour change technology making it easier to apply and verify • Light cured, low viscosity resin sealant for easy flow • Direct application via ultra-fine syringe tip • Fluoride releasing • Convenient delivery for easy application
Maintain	**Clinpro™ Prophy Paste** 	• To be used for cleaning & polishing procedures as part of a professionally administered prophylaxis treatment	**In-Office/Professional** • Prophy Paste containing unique Perlite particles • Integrated abrasion variability (IAV) • Contains fluoride ion concentration of 1.23%	• The unique “Perlite” particle in Clinpro Prophy Paste basically disintegrates / converts its coarse grains to fine grains (IAV) and results in the cleaning paste changing into a polishing paste. • Offers excellent stain removal with less abrasion to the enamel & dentine. • Offers less gloss reduction of existing composite restorations • Excellent for the “Selective Polishing” technique • Stocking various grit pastes is no longer necessary • Neutral pH value • Unit dose cup packaging Available in 2 flavours – Mint and Bubblegum

1. Rusin et al., Dentin Permeability of a New Protective Coating Material. J. Dent. Res. 87 (Spec Iss A): #1041, 2008.

How Tri-Calcium Phosphate (TCP) really works?

"Smart Tri-Calcium calcium phosphate" releases calcium and phosphate on the teeth, not in the formulation.

If fluoride interacts with calcium in such a way that could render both the fluoride and calcium inactive, then wouldn't it make sense to "protect" the calcium from the fluoride until they are applied to the teeth? That's exactly the idea behind TCP.

Tri-Calcium Phosphate (TCP) is an innovative calcium-based additive exclusively from 3M ESPE that allows calcium, phosphate and fluoride to **co-exist in an aqueous solution.**

In very simple terms, TCP is specially milled so an organic-calcium phosphate hybrid is formed. **This hybrid results in a protective coating that ensures that the calcium oxides are protected from the undesirable interactions with fluoride** throughout the shelf life of the TCP ingredient.

As illustrated (Fig. 1), when a product with TCP is applied to the teeth, saliva breaks down this protective coating to make fluoride, calcium and phosphate readily available to the tooth surface in parallel with fluoride ions.

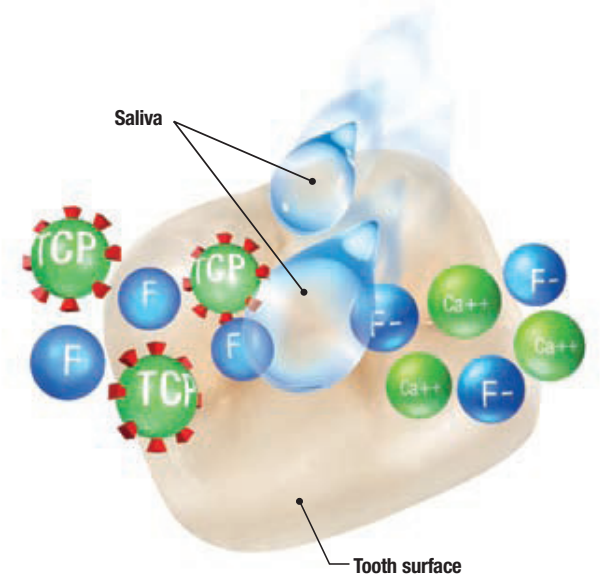

Fig. 1: Organic components (often surfactants) have an affinity for tooth surfaces—and carry calcium to the tooth surface, protected from fluoride ions. Saliva activates the protected calcium compound by degrading the protective coating and releasing the calcium making it available to the tooth surface, along with the fluoride, ensuring mineral deposition.

Calcium Phosphates:

Structures, Composition, Solubility and Stability[2]

Tung, M.S., et. al.

The lower solubility of TCP helps sustain fluoride and calcium release, and improves resistance to the demineralising effect of acid on teeth.

Calcium, phosphate and fluoride, when present in saliva, form a protective veneer on existing mineral crystals in teeth.[1] The fluoride combines with the calcium to form relatively insoluble "calcium fluoride globules" on the tooth surface—resulting in a sustained release of fluoride and calcium. On a chemical level, fluoride replaces hydroxyl groups in hydroxyapatite of tooth mineral, forming fluorapatite, a less soluble structure that is more resistant to the effect of acid on the tooth.

At the pH of saliva (6.0-7.4), ßTCP is:

- **More likely to remain on the tooth due to lower solubility**
- **Closer to hydroxyapatite in solubility**

Ease of solubility at pH 7.0[2]

ACP > TTCP > α-TCP > DCPD ~ OCP > β-TCP > HAP

Fig.2: Source: Tung, M.S.

Because beta-TCP (ßTCP) is less soluble than other calcium phosphate ingredients at a neutral pH, it's less likely to be dissolved from the tooth surface. It will remain on the tooth to combine with fluoride to create calcium fluoride, relatively insoluble globules that can help to occlude dentinal tubules and reduce hypersensitivity*.

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Contact your local 3M ESPE sales representative to learn more about our full line of preventive products.

*Data on file