



INNOVATION FOR EVERYDAY PREVENTION

SUPERIOR BIOFILM CONTROL



Page notes

In seeking a truly innovative approach to support everyday prevention, Colgate® has leveraged the recent change in focus of the dental profession from treatment of disease to proactive prevention, harnessed the trend to more health-conscious and educated patients and consumers and built upon a new understanding of oral biology and oral health.

As a result, Colgate® has developed the next generation of Colgate Total® toothpaste, to embrace a contemporary approach to everyday prevention by delivering superior biofilm control for Whole Mouth Health.

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AIM AND LEARNING OUTCOMES

Aim

To provide an overview on the impact of uncontrolled biofilms and the challenges this presents to patients including what they can do to ensure effective biofilm control on all mouth surfaces utilising advanced oral care technologies.

Learning Outcomes:

- Understand the impact of uncontrolled biofilms on patient's oral health
- Explore what is required to ensure the effective control of biofilm on all mouth surfaces
- Review the role of Colgate Total® in providing superior biofilm control along with a range of additional benefits to deliver everyday protection for Whole Mouth Health

Anticipated GDC Development Outcome:

Taking a preventive approach and providing appropriate oral health advice

Page notes

Please review the aim and learning outcomes for this ECPD programme.



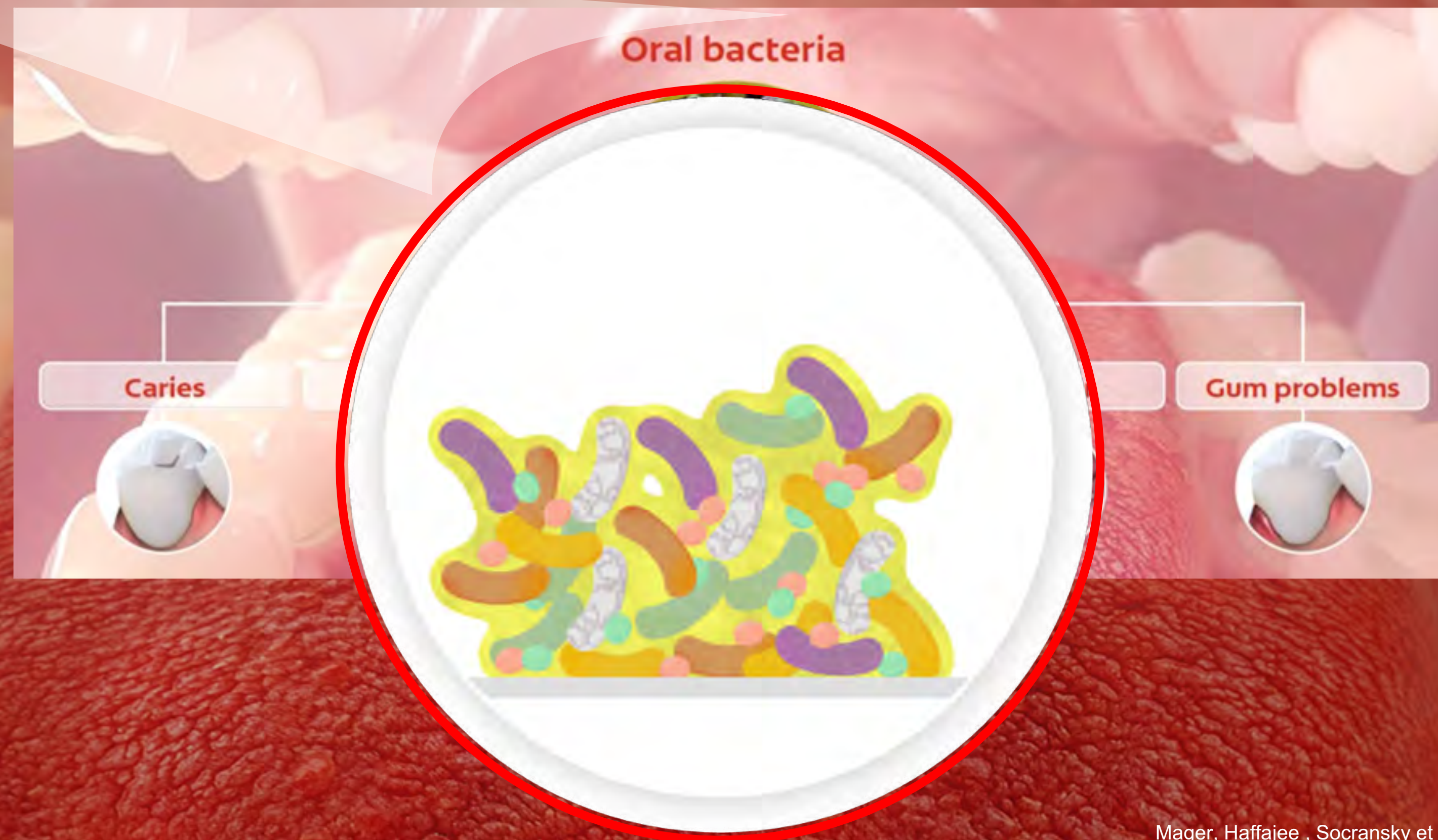
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UNCONTROLLED BIOFILMS CAN PUT YOUR PATIENTS AT RISK



Mager, Haffajee, Socransky et al. J Clin Periodontol. 2003; 30: 644-654.

Page notes

Biofilms are complex, structured communities of bacteria that live throughout the whole mouth on teeth, tongue, cheeks, and gums. Their overall defensive mechanisms support their survival in much harsher conditions, compared to planktonic bacteria, and makes the control of the biofilms a real challenge.



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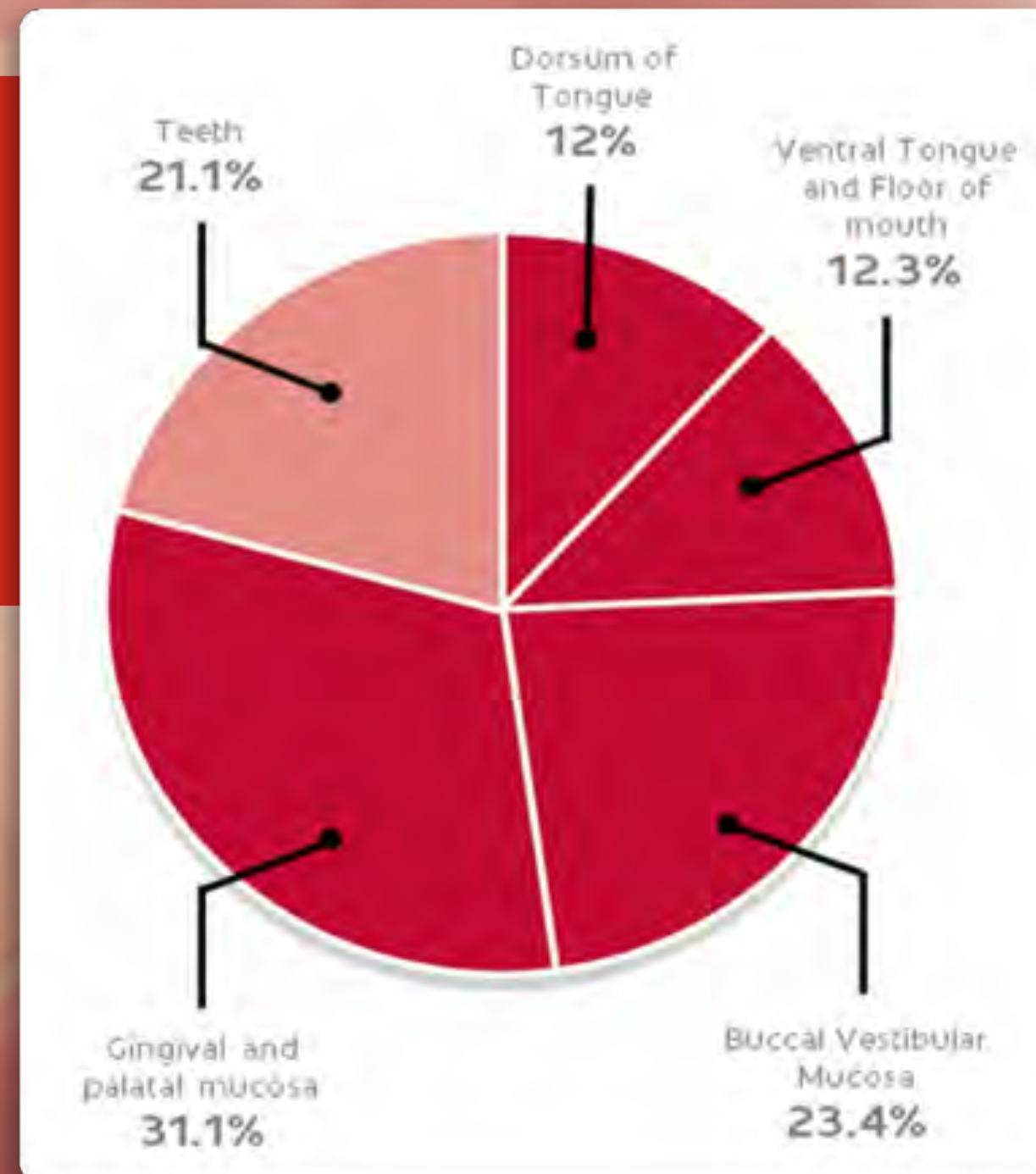
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80% OF MOUTH BACTERIA IS NOT ON TEETH

**Surface area
of different
sites in
the mouth
(sq. Mm.)**



**Oral biofilms
form on both
hard and soft
tissues**

Page notes

As we consider biofilms, it is important to highlight their relative distribution in the oral cavity. Hard tissue surfaces make up for only 20% of oral surfaces, while the remaining 80% of oral surfaces are soft tissue surfaces - mainly on tongue, cheeks and gums (Collins & Dawes 1987). The 215cm² surface area of the oral cavity presents numerous niches for biofilm colonization.

Tooth-colonizing species have been detected on the soft tissues, and thus it is considered that the soft tissues may act as reservoirs for tooth-borne pathogens. This demonstrates the importance of targeting the soft tissue as part of a bacteria load reduction strategy for the oral cavity.



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BIOFILMS CAN PUT YOUR PATIENTS AT RISK



Page notes

This short video shows that biofilms are complex, structured communities of bacteria which can survive even in harsh conditions and are difficult to control.

One reason which explains the resistance of biofilms is the synthesis of an extracellular polymeric substance known as EPS (Extracellular polymeric substance) by many of the colonizers of the biofilms. EPS enables bacteria to bind to each other and defends the biofilm from antimicrobial agents.



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THE GOAL OF EVERYDAY PREVENTION IS TO EFFECTIVELY CONTROL BIOFILM ON ALL MOUTH SURFACES

Page notes

Effective biofilm control is a key task for every day prevention measures. This could be achieved by going beyond fluoride for caries prevention, aiming to achieve effective biofilm control throughout the whole mouth.



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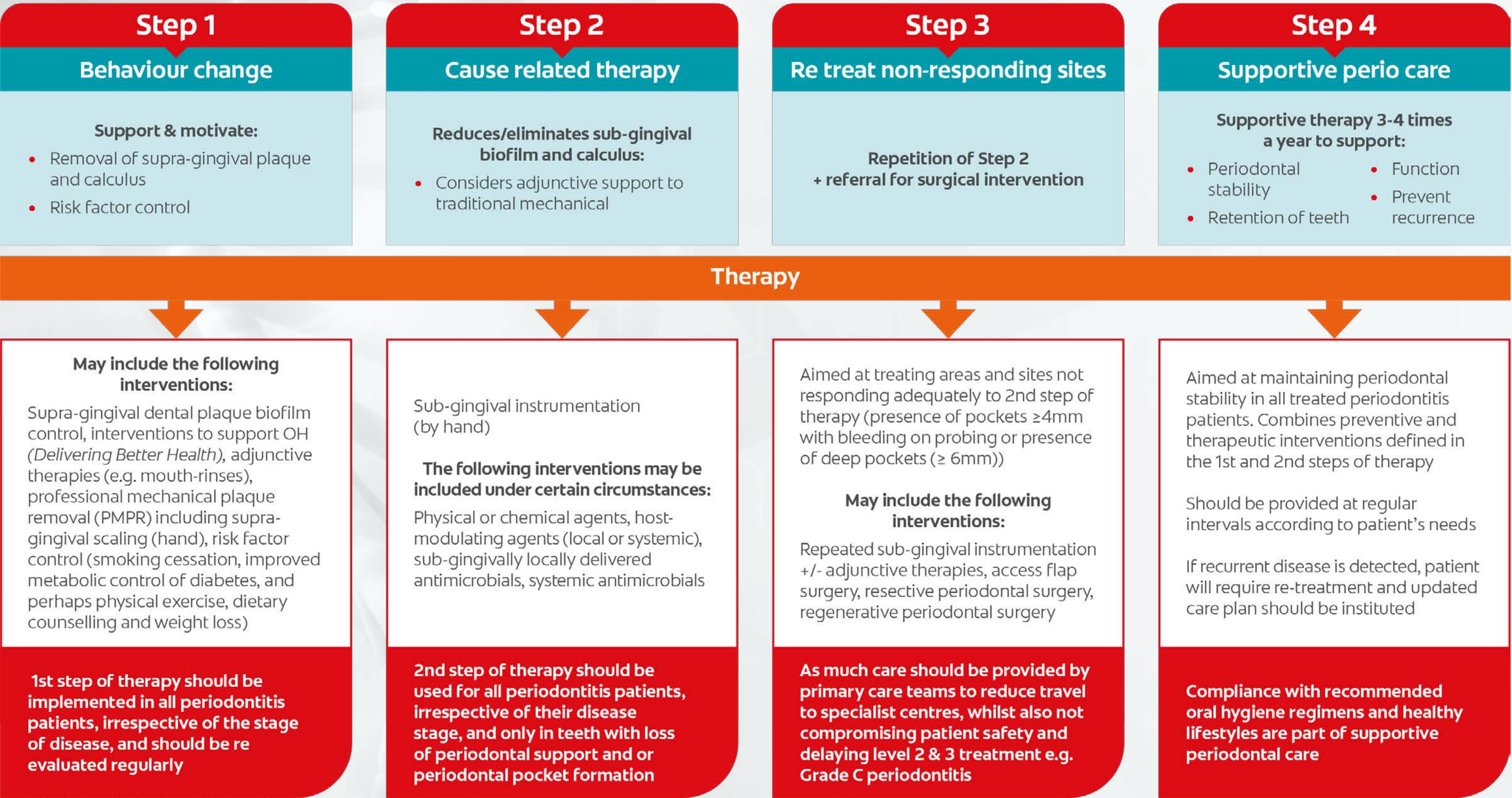


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EFFECTIVE BIOFILM CONTROL - RECOMMENDED TO HELP STABILISE PERIODONTAL HEALTH

Clinical guideline 3 - SOP, NHSE* Management of periodontal treatment (non-AGP)*

Stepwise sequence for treatment of periodontitis and gingivitis



* Adapted from 'Clinical guideline 3 - Management of periodontal treatment (non-AGP), standard operating procedure - transition to recovery guidance, NHSE, June 2020. Manus L, et al. J Clin Dent 2018;29(Spec Iss A)A10–19. Daep C, et al. August 2019, data on file.

Page notes

This table published within the standard operating procedure - transition to recovery guidance, NHSE, June 2020, demonstrates the stepwise sequence for treatment of periodontitis and gingivitis.

Step 1 includes super-ginigival dental plaque biofilm control interventions to support oral health.

DOWNLOAD DOCUMENT



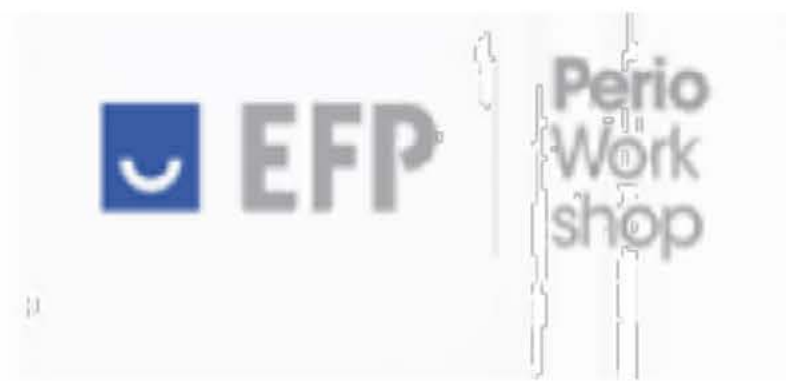
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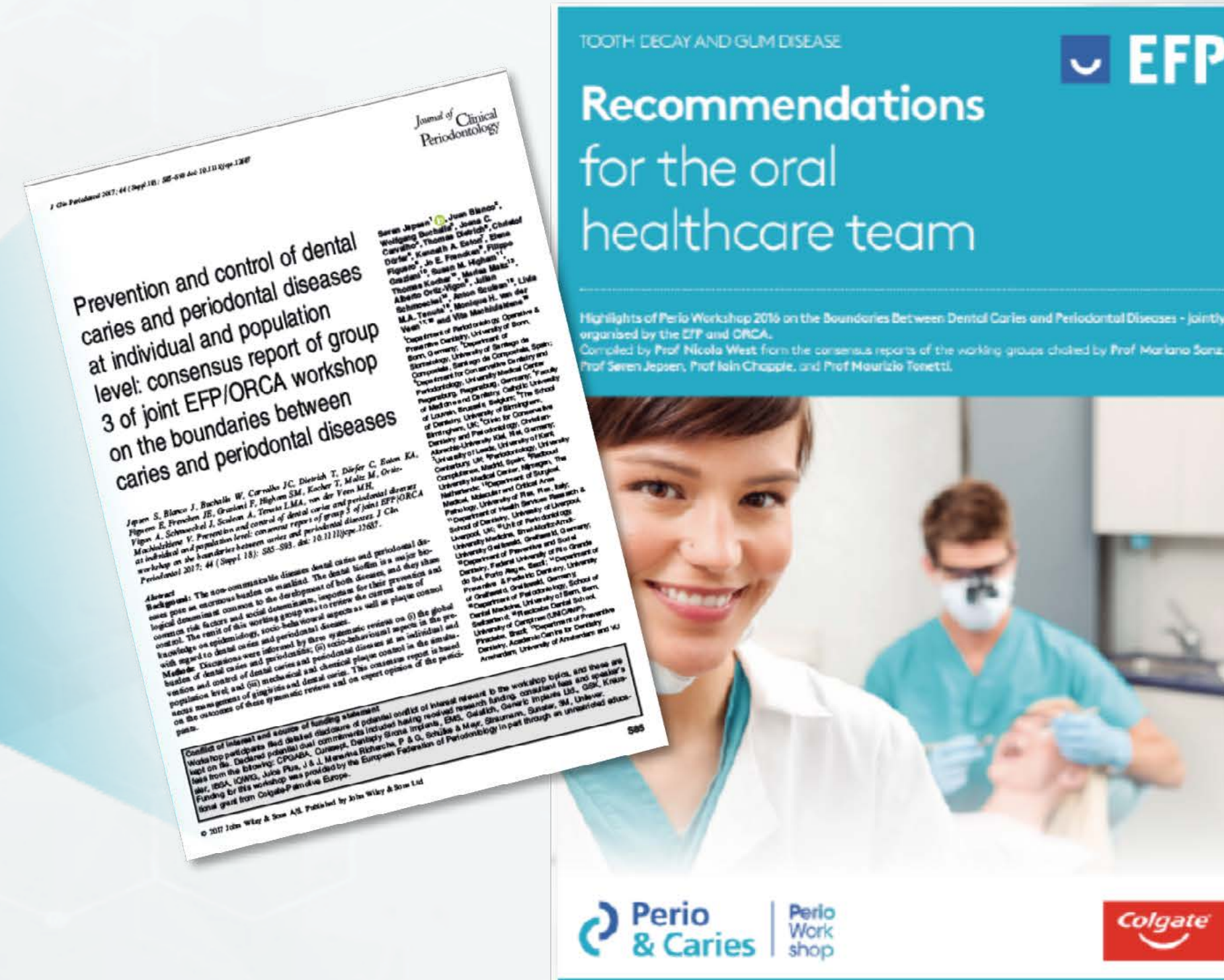
RECOMMENDING TOOTHPASTE FOR WHOLE MOUTH HEALTH



“Professionals should recommend toothpastes containing fluoride agent for the control of dental decay”

“In the management of gingivitis for the primary prevention of periodontitis fluoride can be supplemented by adjunctive chemical plaque control agent”

Fluoride toothpaste alone is not enough for Whole Mouth Health



Jepsen et al. J Clin Periodontol. 2017



Page notes

We know fluoride in toothpaste reduces caries. The EFP have stated for the management of gingivitis for the primary prevention of periodontitis fluoride can be supplemented by adjunctive chemical plaque control agent. This is an important message to share with patients - fluoride toothpaste alone is not enough for Whole Mouth Health.



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Colgate Total®

Reinvented to proactively work with the biology and chemistry of the mouth for Whole Mouth Health.*



with Dual-Zinc + Arginine

* defined as teeth, tongue, cheeks and gums.

Page notes

Introducing, Colgate Total® with Dual-Zinc plus Arginine. This unique breakthrough technology has been reinvented to proactively work with the biology and chemistry of the mouth for Whole Mouth Health, delivering superior biofilm control.



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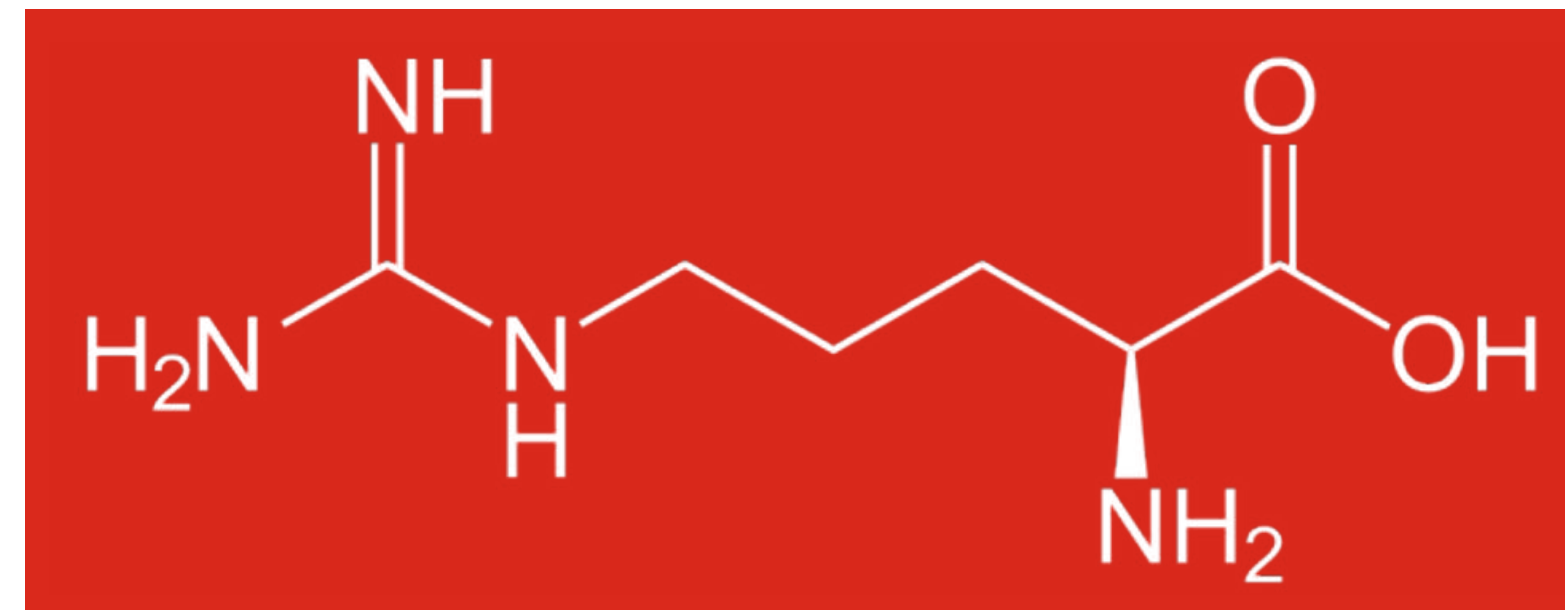


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A BREAKTHROUGH TECHNOLOGY



Dual
ZINC

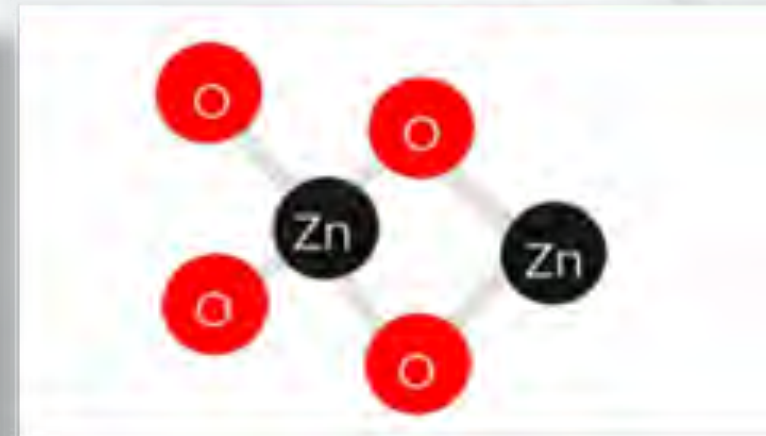


ARGININE

ZINC CITRATE



ZINC OXIDE



Manus LM et al, Enhanced in vitro zinc bioavailability through rational design of a Dual-Zinc plus Arginine dentifrice. J Clin Dent 2018;29(Spec Iss A).

Page notes

The unique technology of Dual-Zinc + Arginine offers additional benefits for you and your patients compared to a regular fluoride toothpaste.

Colgate Total®, is formulated with two zinc compounds (Dual-Zinc) – zinc citrate and zinc oxide - to offer a unique approach to whole mouth zinc delivery.

- Zinc citrate is a water-soluble, bioavailable source of zinc. It is therefore considered a compound that the body can readily use for immediate action

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A BREAKTHROUGH TECHNOLOGY



Dual
ZINC

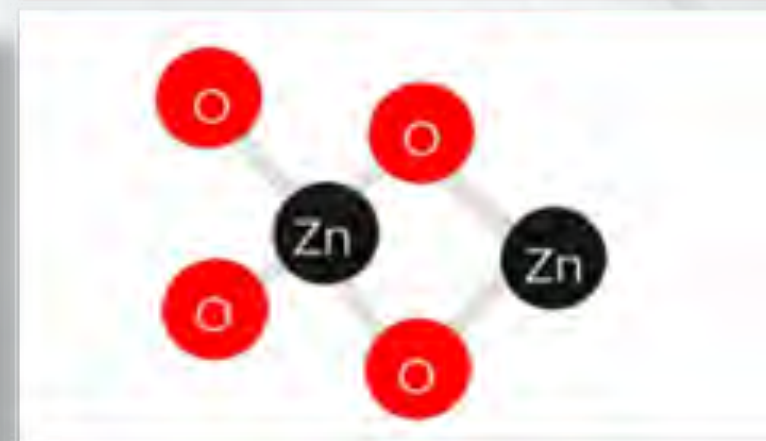


ARGININE

ZINC CITRATE



ZINC OXIDE



Manus LM et al, Enhanced in vitro zinc bioavailability through rational design of a Dual-Zinc plus Arginine dentifrice. J Clin Dent 2018;29(Spec Iss A).

Page notes

- Zinc oxide is insoluble in water but can be solubilised in the presence of other compounds, like arginine to become bioavailable

Therefore, it is considered a “reservoir” of additional zinc, available for lasting action in the mouth. L-arginine has been shown to enhance the bioavailability of the Dual-Zinc system facilitating deposition, penetration, and retention of zinc in biofilms.



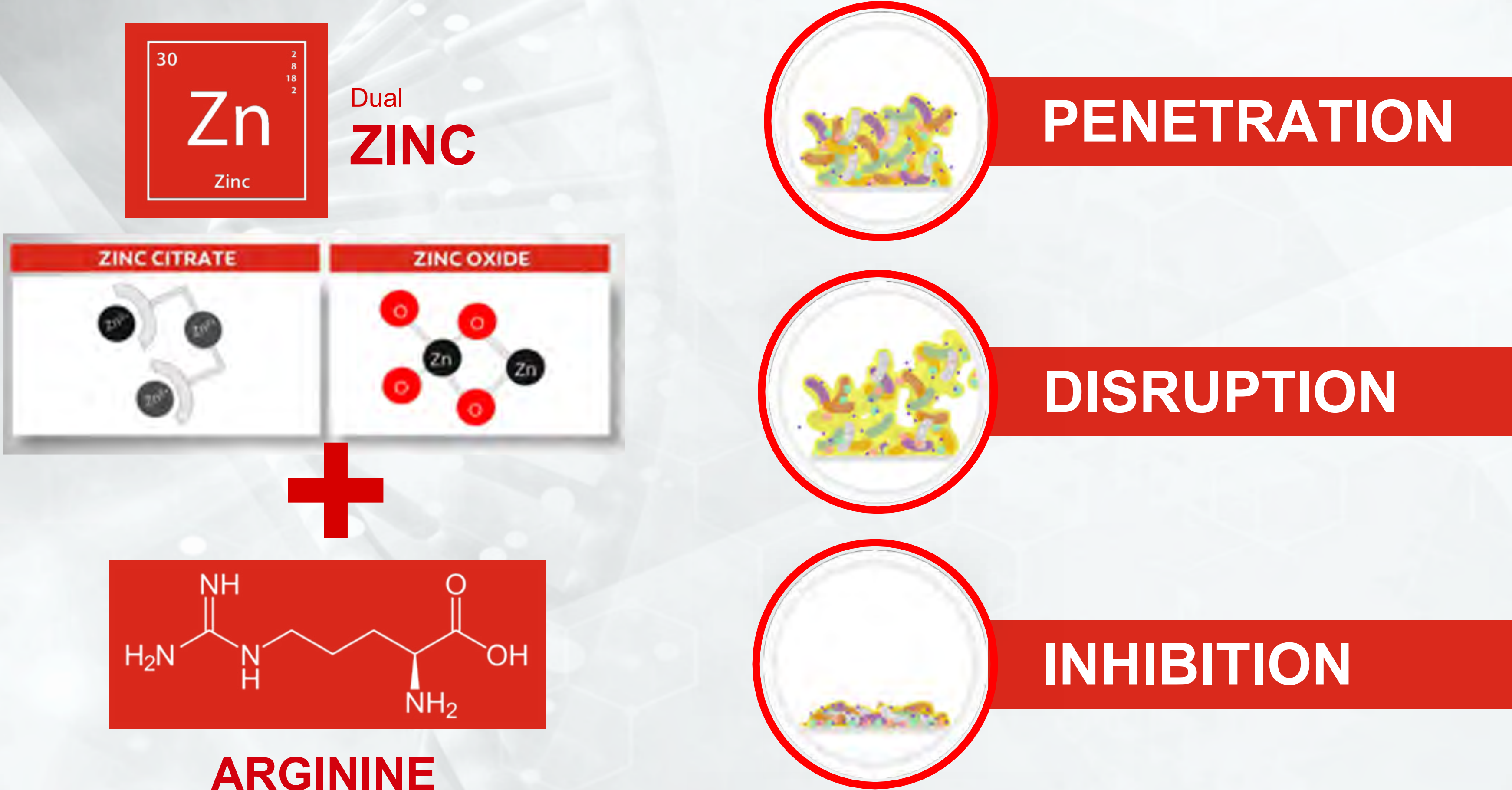
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DUAL-ZINC PLUS ARGININE DELIVERS SUPERIOR BIOFILM CONTROL*



* Colgate Total® provides in vitro superior delivery, penetration, and retention of Zinc and biofilm mass reduction vs Zinc control toothpaste.
1. Daep et al, Data on File, 2019. 2. Manus LM et al, J Clin Dent 2018;29(Spec Iss A).

Page notes

The mode of action for Dual-Zinc plus Arginine delivers superior biofilm control in three ways: penetration and disruption of the biofilm and further inhibition of bacterial regrowth.



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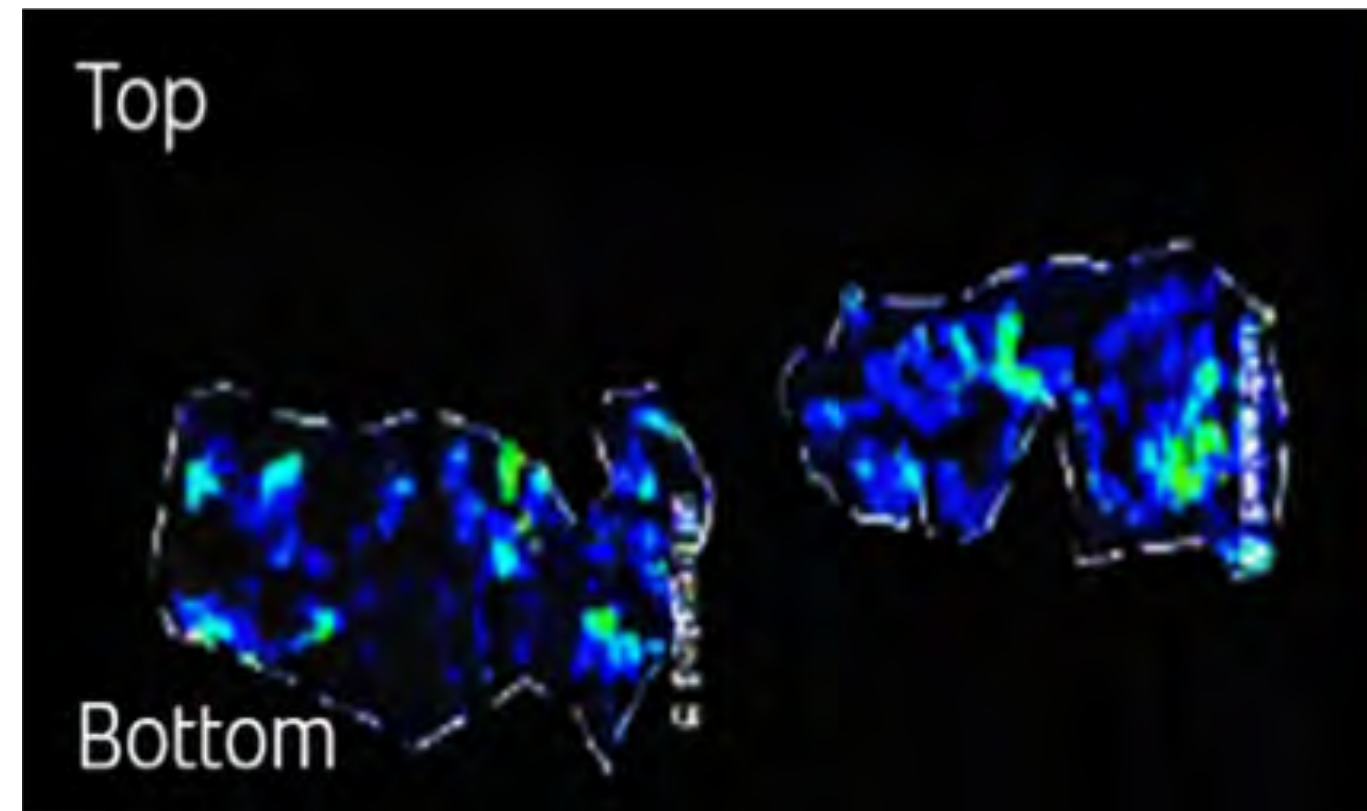


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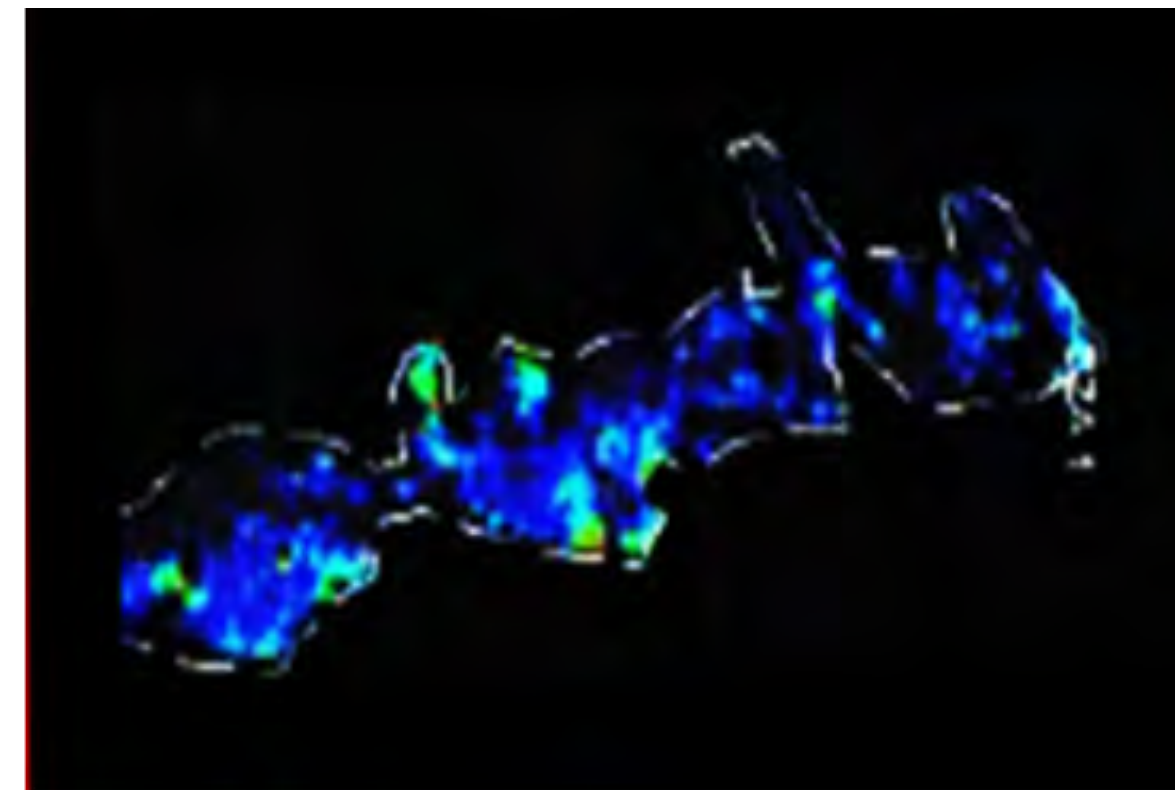
DELIVERING OPTIMIZED ZINC PENETRATION AND RETENTION



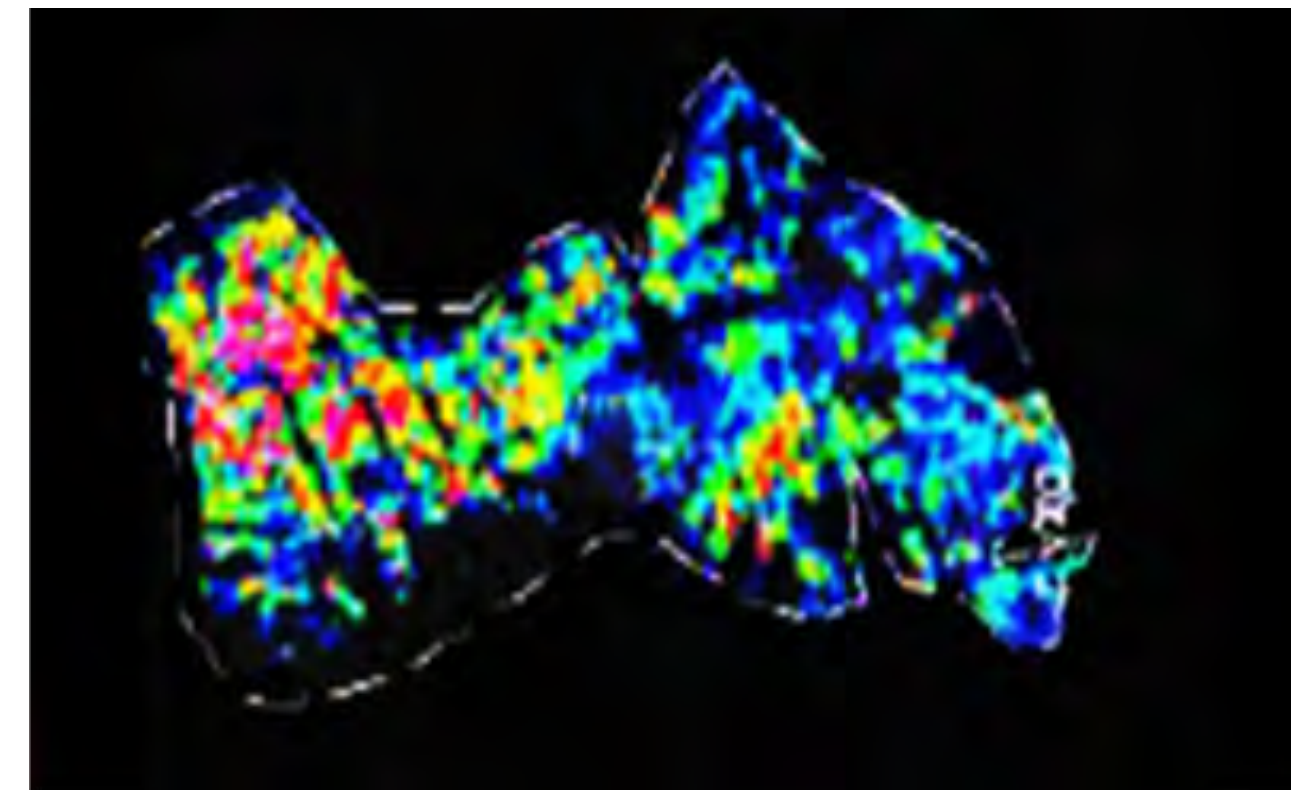
In vitro studies demonstrate that Colgate Total® with Dual-Zinc + Arginine improves zinc delivery, penetration and retention in bacterial biofilms



Untreated control



Dual-Zinc treated



Dual-Zinc + Arginine treated



Zinc levels retained in treated laboratory biofilms under salivary flow conditions*

*Mass spectrometry images of salivary in vitro 10-day biofilms treated once with toothpaste slurry and regrown overnight under constant artificial salivary flow. Manus LM et al., J Clin Dent 2018;29(Spec Iss A)

Page notes

Zinc delivery penetration and retention in biofilm is of particular importance, given how the known limitations of antimicrobials in classic product formulations in being effective on biofilms.

This study demonstrates how zinc concentration is actually increased in biofilms treated with Dual-Zinc and arginine, when compared to untreated or just treated with Dual-Zinc. Visualization of zinc deposition and penetration was done using imaging mass spectrometry of biofilms cross-sections.

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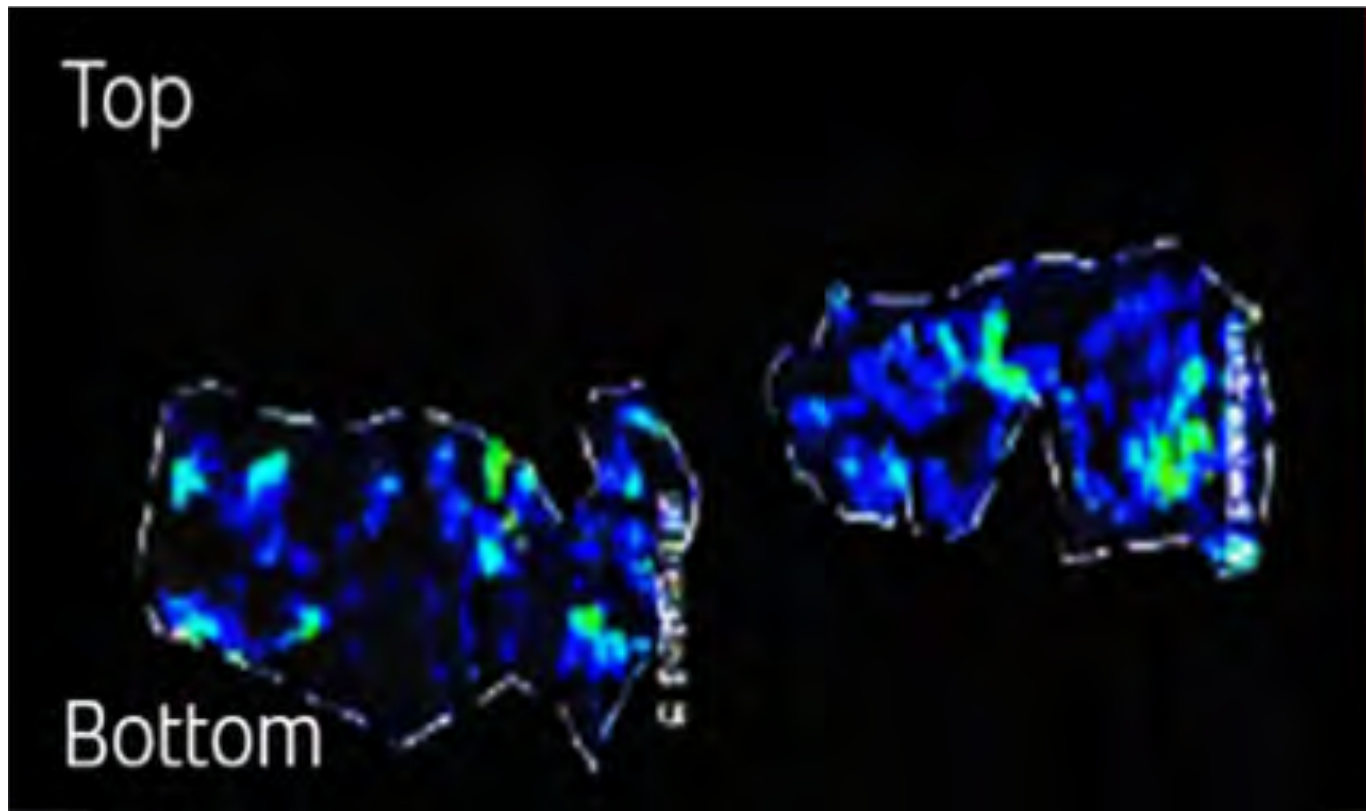


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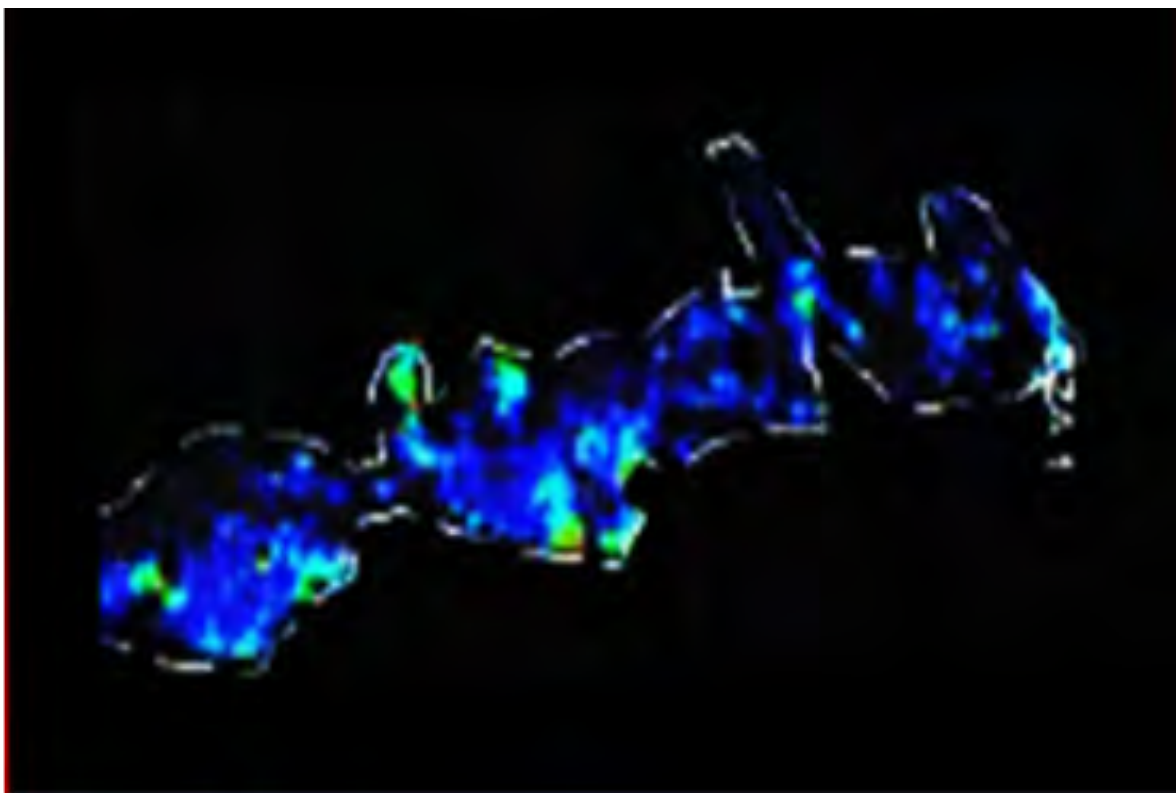
DELIVERING OPTIMIZED ZINC PENETRATION AND RETENTION



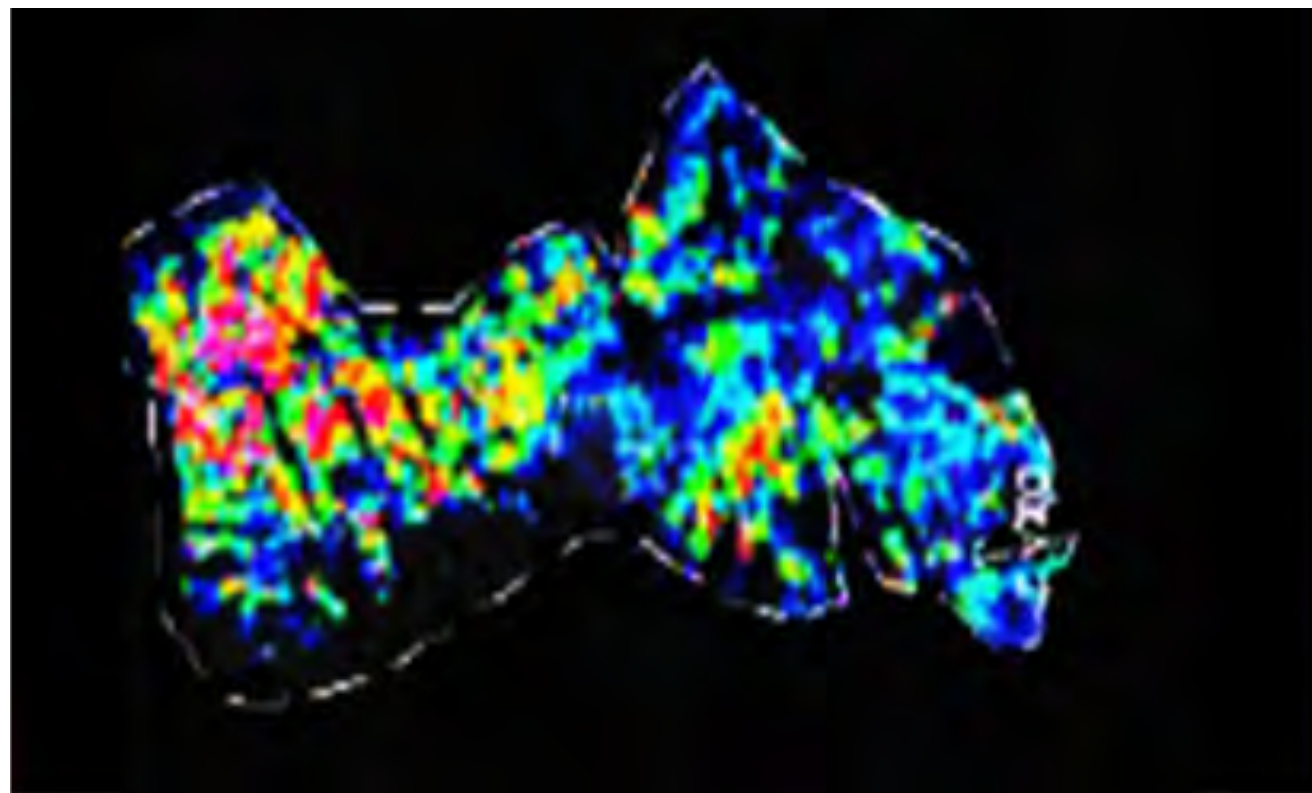
In vitro studies demonstrate that Colgate Total® with Dual-Zinc + Arginine improves zinc delivery, penetration and retention in bacterial biofilms



Untreated control



Dual-Zinc treated



Dual-Zinc + Arginine treated



Zinc levels retained in treated laboratory biofilms under salivary flow conditions*

*Mass spectrometry images of salivary in vitro 10-day biofilms treated once with toothpaste slurry and regrown overnight under constant artificial salivary flow. Manus LM et al., J Clin Dent 2018;29(Spec Iss A)

Page notes

A concentration map analysis (“heat map” visualisation) qualitatively demonstrates that biofilms treated with the Dual-Zinc plus Arginine dentifrice exhibited greater levels of zinc penetration and retention in comparison to Dual-Zinc dentifrice-treated bacterial biofilms.



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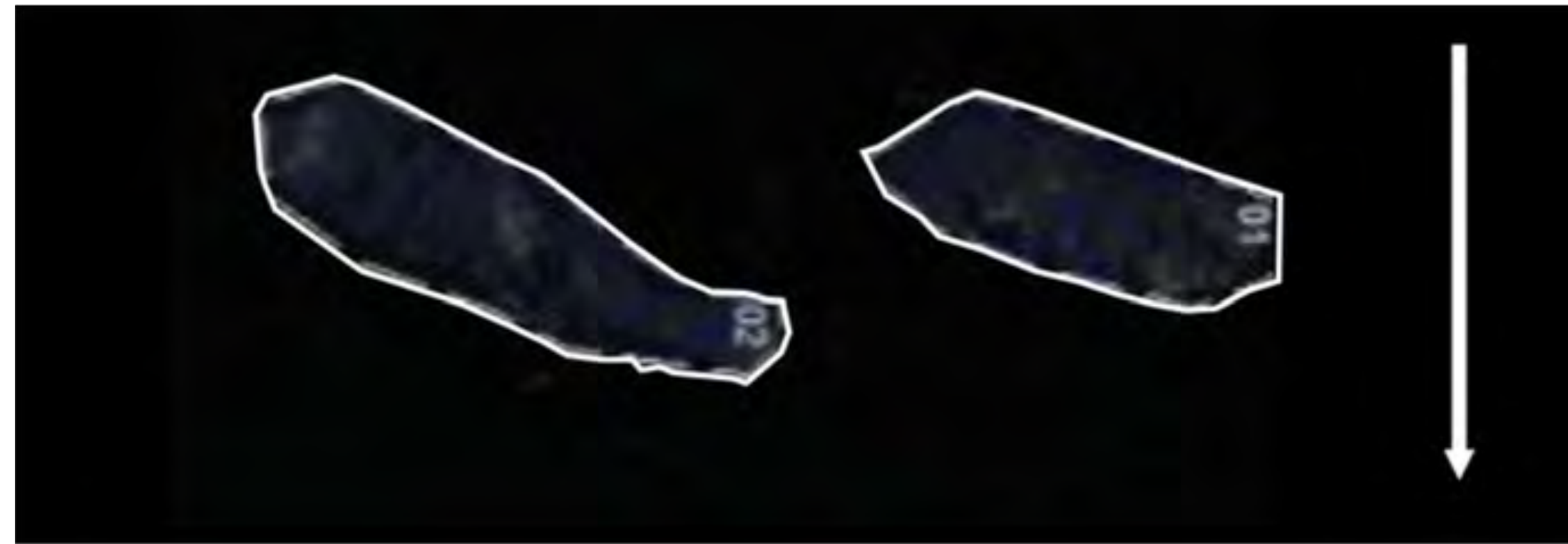


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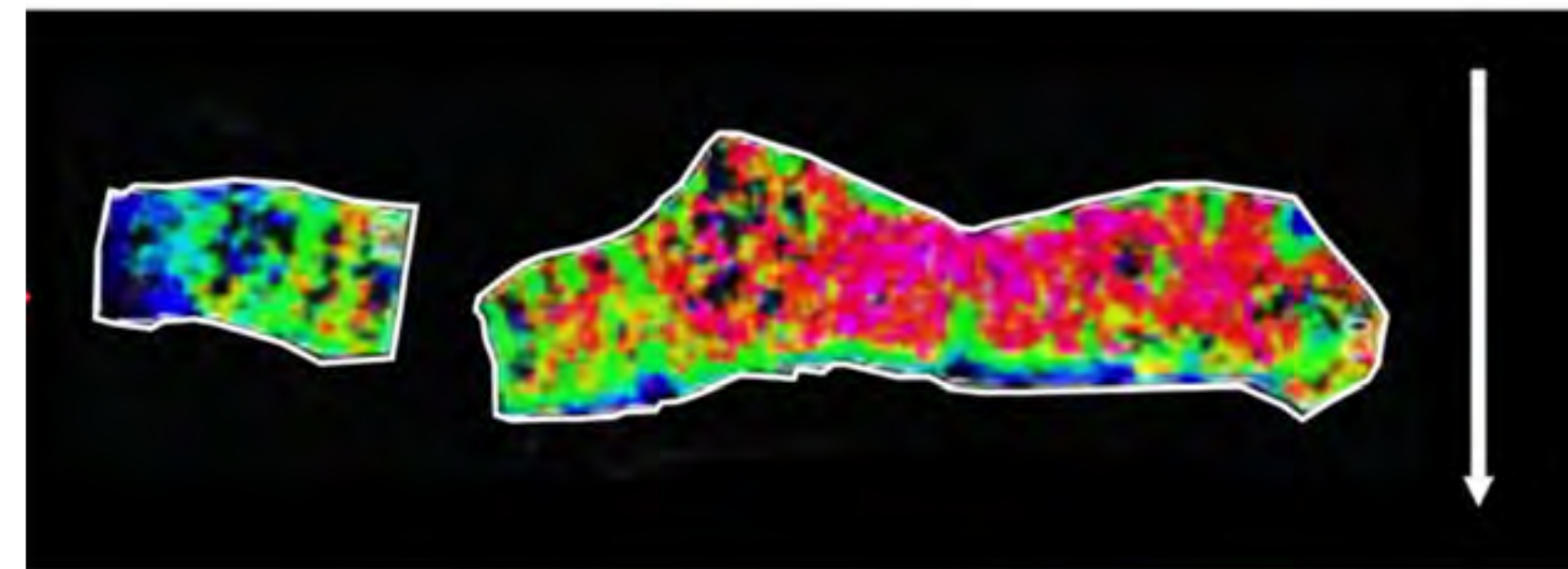
DELIVERING OPTIMIZED ZINC PENETRATION AND RETENTION



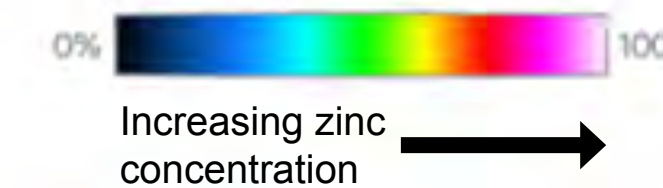
Arginine retained in the biofilm with Colgate Total® helps destabilize the biofilm (EPS) enabling zinc to better penetrate inside



Untreated control



Dual-Zinc + Arginine treated



*Mass spectrometry images of salivary in vitro 10-day biofilms treated once with toothpaste slurry and regrown overnight under constant artificial salivary flow. Manus LM et al., J Clin Dent 2018;29(Spec Iss A).

Page notes

The same technique was employed to demonstrate the retention of Arginine in the biofilms, as shown in these captures. It is considered that the arginine helps destabilize the biofilm, allowing more of the antibacterial zinc to penetrate it for effective biofilm control.



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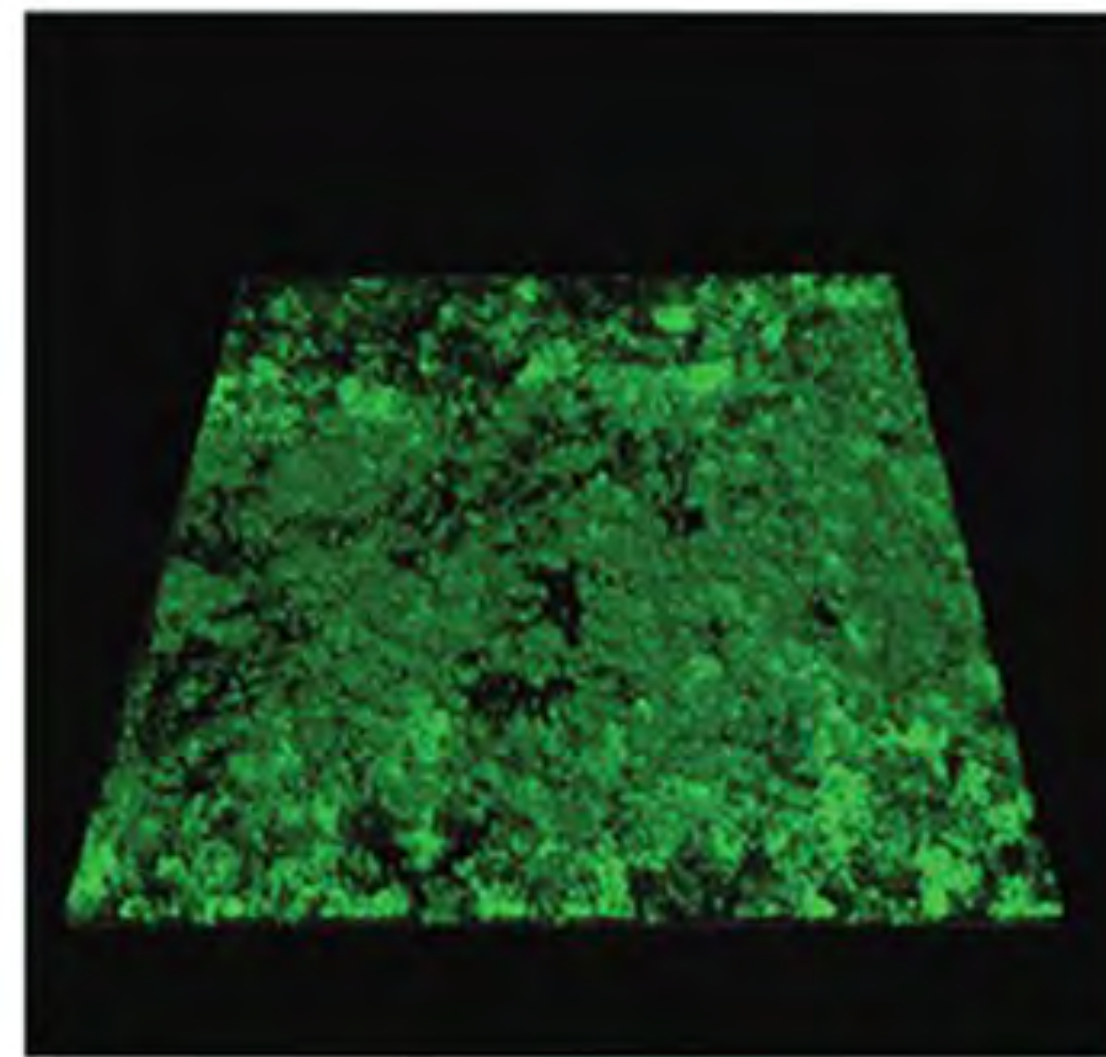


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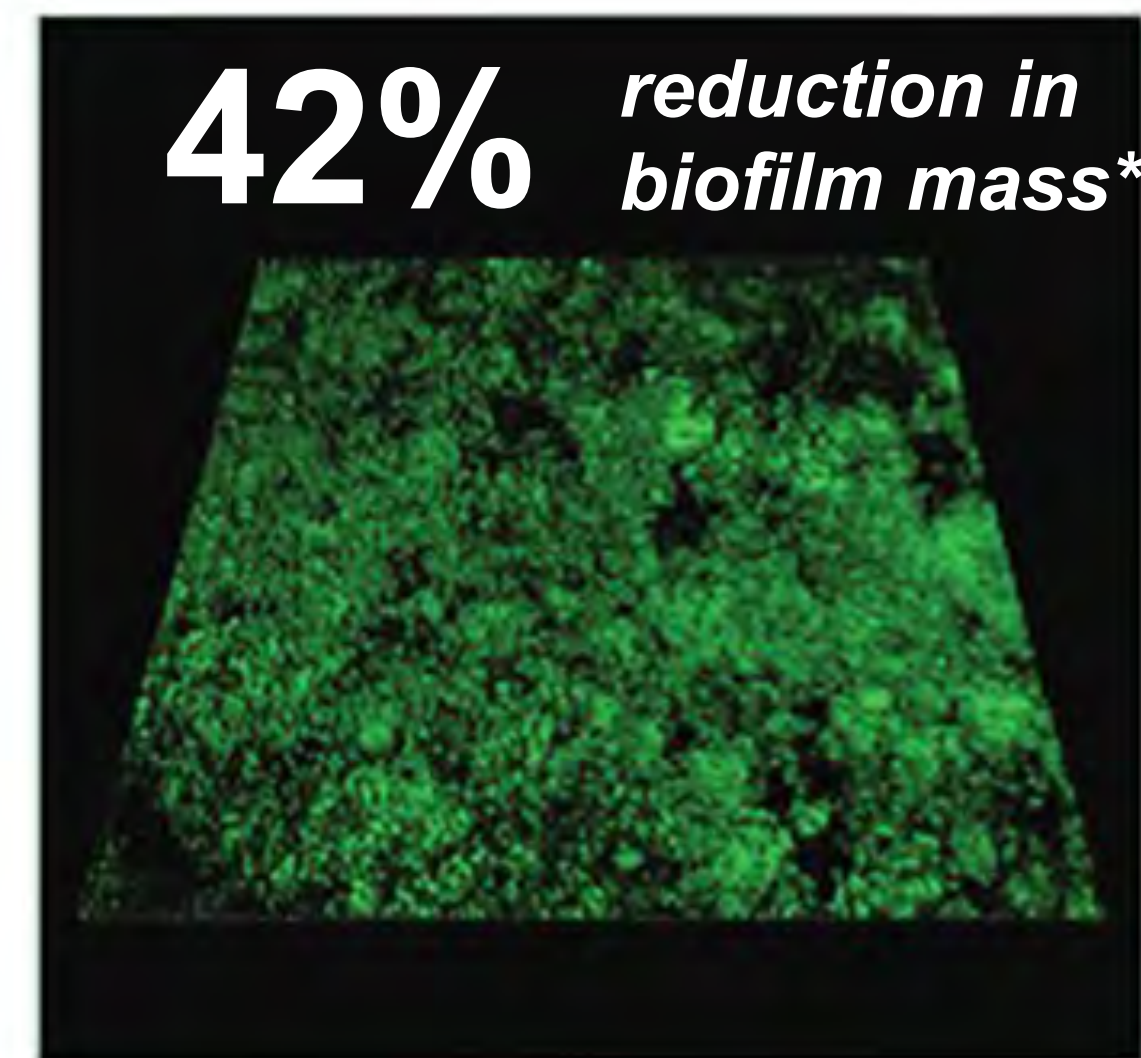
DISRUPTION AND OVERALL BIOFILM MASS REDUCTION



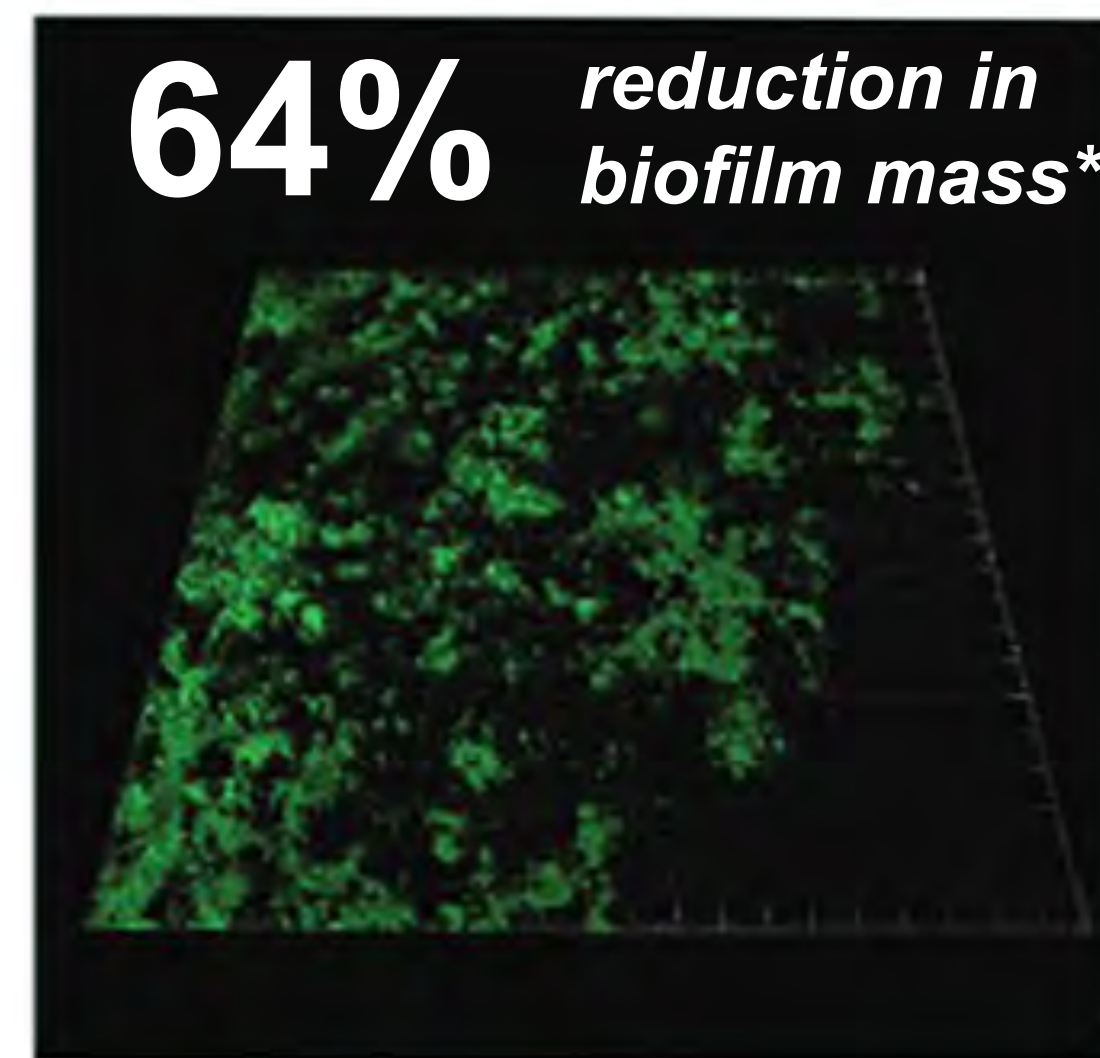
In vitro study demonstrates the role of the Dual-Zinc plus Arginine in disrupting the biofilm and the consequent overall biofilm mass reduction.



Untreated control



Dual-Zinc treated



Dual-Zinc + Arginine treated

*compared to untreated control, Daep et al , Data on File, 2019.

Page notes

A further experiment demonstrated the role of the Dual-Zinc plus Arginine in disrupting the biofilm and the consequent overall biofilm mass reduction.

This was shown by treating established salivary biofilms under flow with solutions of a water control, Dual-Zinc, or Dual-Zinc plus arginine.

The study showed 42% reduction with Dual-Zinc and a 64% reduction in biofilm mass treated with Dual-Zinc + Arginine.

Note that the biofilm treated with Dual-Zinc plus arginine appears destabilized.



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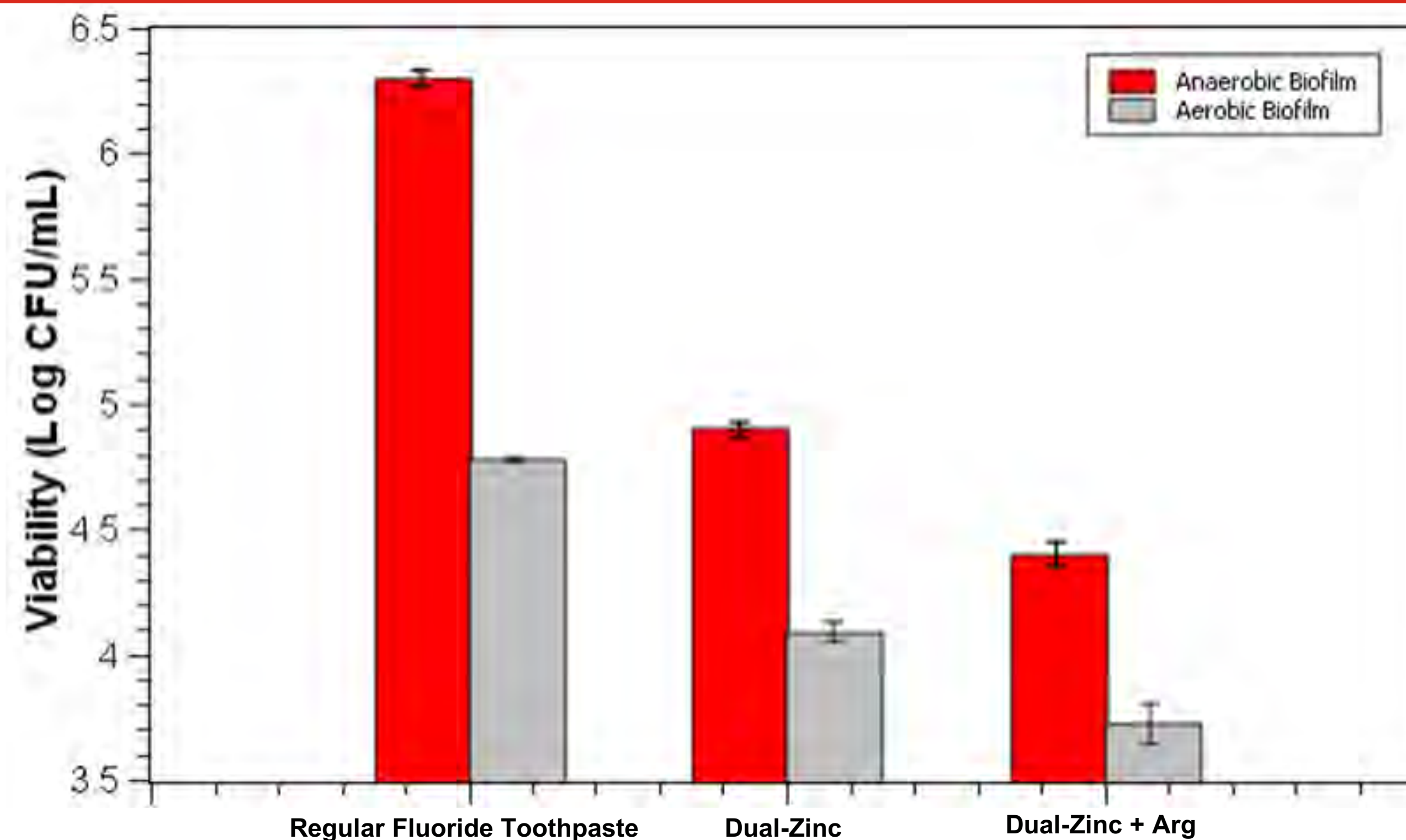


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SIGNIFICANT REDUCTION OF AN/AEROBIC BIOFILMS



In vitro bacterial biofilm viability with Dual-Zinc plus Arginine as measured by colony forming units of bacteria



*in vitro By dual-zinc plus arginine dentifrice; Manus L et al. J Clin Dent 2018.

Page notes

Treatment with the Dual-Zinc plus Arginine dentifrice was further evaluated in aerobic and anaerobic biofilm models for the ability to reduce bacteria viability. Significant reductions (one-way ANOVA) in the viability of the bacterial biofilms (as measured by bacterial colony forming units) were observed for treatment with the Dual-Zinc and Dual-Zinc plus Arginine dentifrices in comparison to treatment with a regular fluoride toothpaste ($p < 0.05$).

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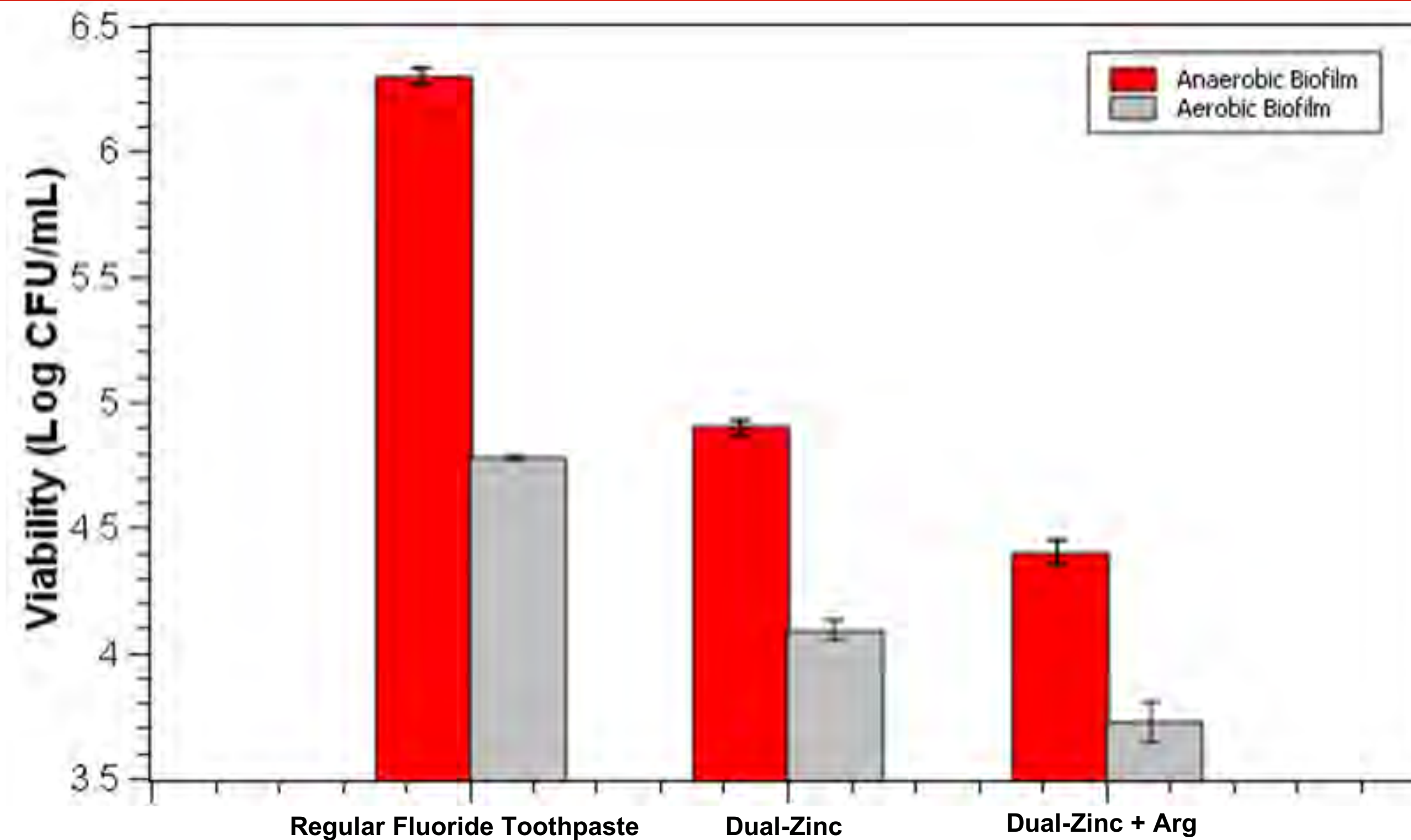


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SIGNIFICANT REDUCTION OF AN/AEROBIC BIOFILMS



**In vitro bacterial biofilm viability with Dual-Zinc plus Arginine
as measured by colony forming units of bacteria**



*in vitro By dual-zinc plus arginine dentifrice; Manus L et al. J Clin Dent 2018.

Page notes

L-arginine again enhanced the delivery and bioavailability of the zinc cation, with bacterial reductions significantly greater ($p < 0.05$) than the biofilms treated with Dual-Zinc-only dentifrice.

This reduction can be seen in the third set of columns on the adjacent graph.



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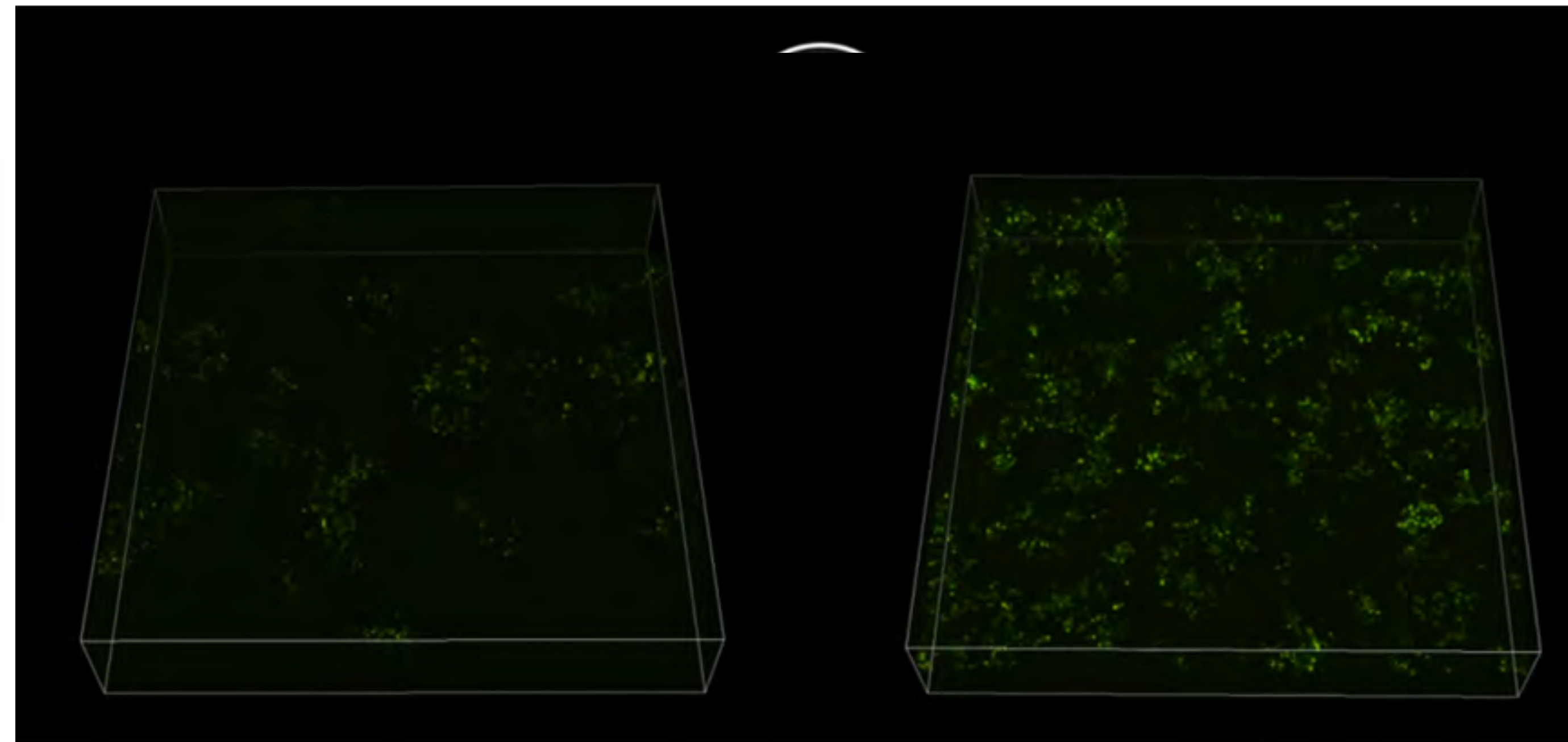
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FURTHER INHIBITION OF BACTERIA GROWTH



In vitro study demonstrates Colgate Total® with Dual-Zinc plus Arginine provides sustained inhibition of bacteria regrowth after 12 hours

12 hours



Dual-Zinc plus Arginine

Regular Fluoride Control

Daep et al, Data on File, 2019.

Page notes

An additional in vitro study confirmed that Colgate Total® with Dual-Zinc plus Arginine provides sustained inhibition of bacterial regrowth compared with non-antibacterial sodium fluoride toothpaste:

- After toothpaste application, confocal microscopy captured bacterial regrowth over time
- After 6 and 12 hours, Dual-Zinc plus Arginine showed sustained inhibition of bacterial regrowth



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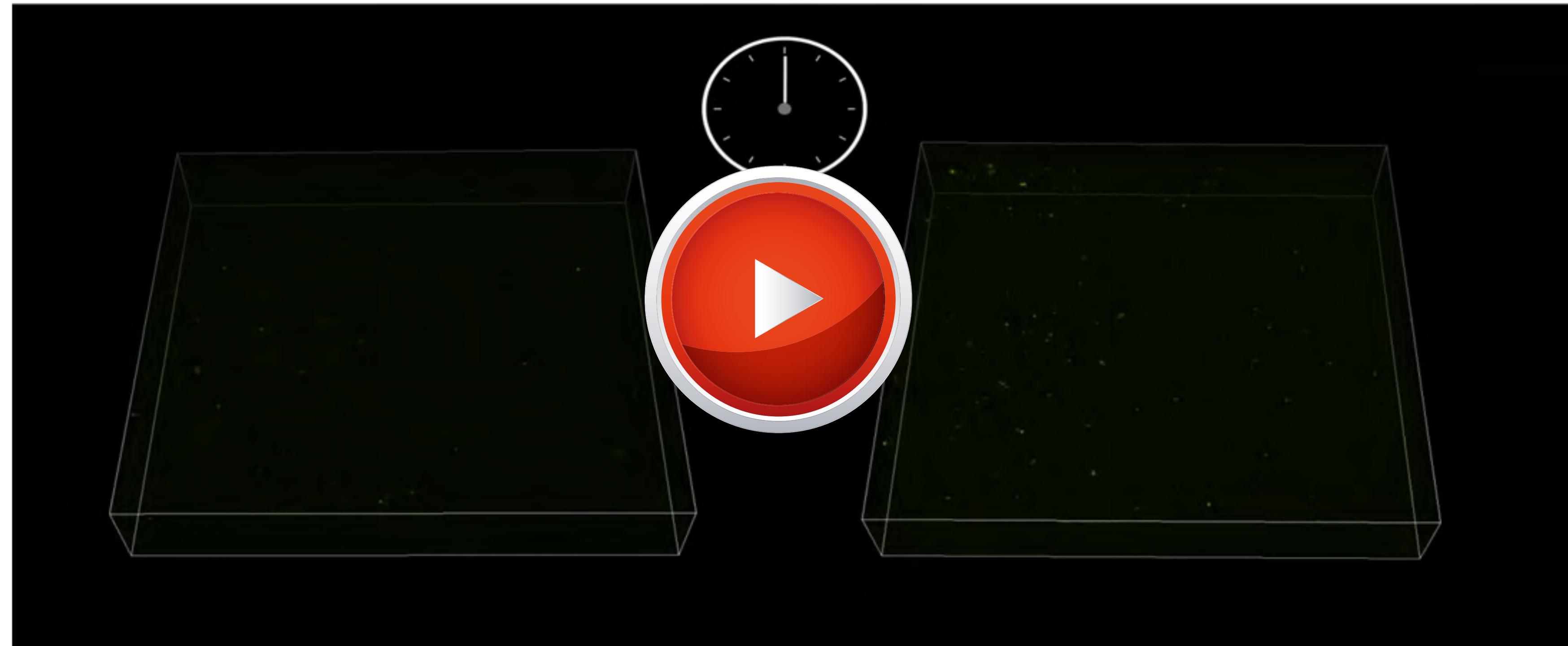


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FURTHER INHIBITION OF BACTERIA GROWTH



In vitro study demonstrates Colgate Total® with Dual-Zinc plus Arginine provides sustained inhibition of bacteria regrowth after 12 hours



Daep et al, Data on File, 2019.

Page notes

These are the findings of the previously mentioned study, visualized over time. The capture demonstrates the inhibition of biofilm regrowth 12 hours when comparing Dual-Zinc plus arginine toothpaste with a regular fluoride control. The biofilm mass is significantly reduced, as active DZA molecules likely inhibit growth.



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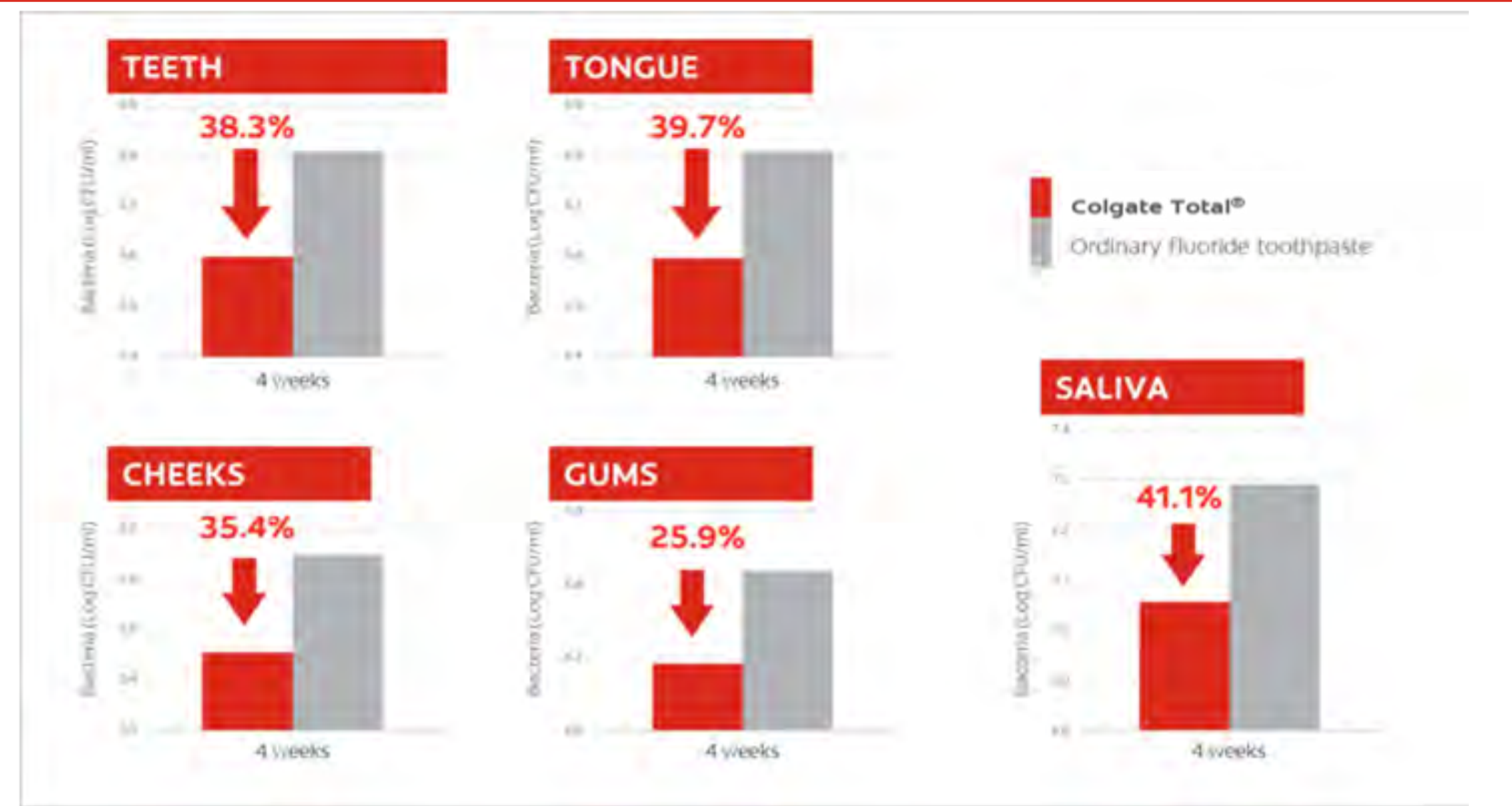


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COLGATE TOTAL® REDUCES WHOLE MOUTH BACTERIA LOAD

Up to 41.1%*

Reduction in oral bacteria



Randomized, double-blind, parallel group, clinical study - duration: 4 wk
173 subjects
Sample collection 12 h after 4 weeks of product use from teeth, tongue, cheeks, gums, saliva
Sample plated, incubated (37°C) and scored for viable bacteria

*Statistically significant reductions vs non-antibacterial fluoride toothpaste (p<0.001).
Prasad KVV et al, h. J Clin Dent 2018; 29(Spec Iss A).

Page notes

Colgate Total's unique technology provides 12-hour superior bacteria reductions, with a reduction in bacteria across the whole mouth.

In a randomized controlled double blind study, toothpastes containing 0.96% zinc (zinc oxide, zinc citrate), 1.5% L-arginine and either 1450 ppm or 1000 ppm fluoride as sodium fluoride provided statistically significant reductions of up to 41.1% in oral bacteria on the teeth, tongue, cheeks, and gums, as well as in saliva, compared to toothpaste with fluoride alone, 12 hours after 29 days of twice-daily tooth brushing.

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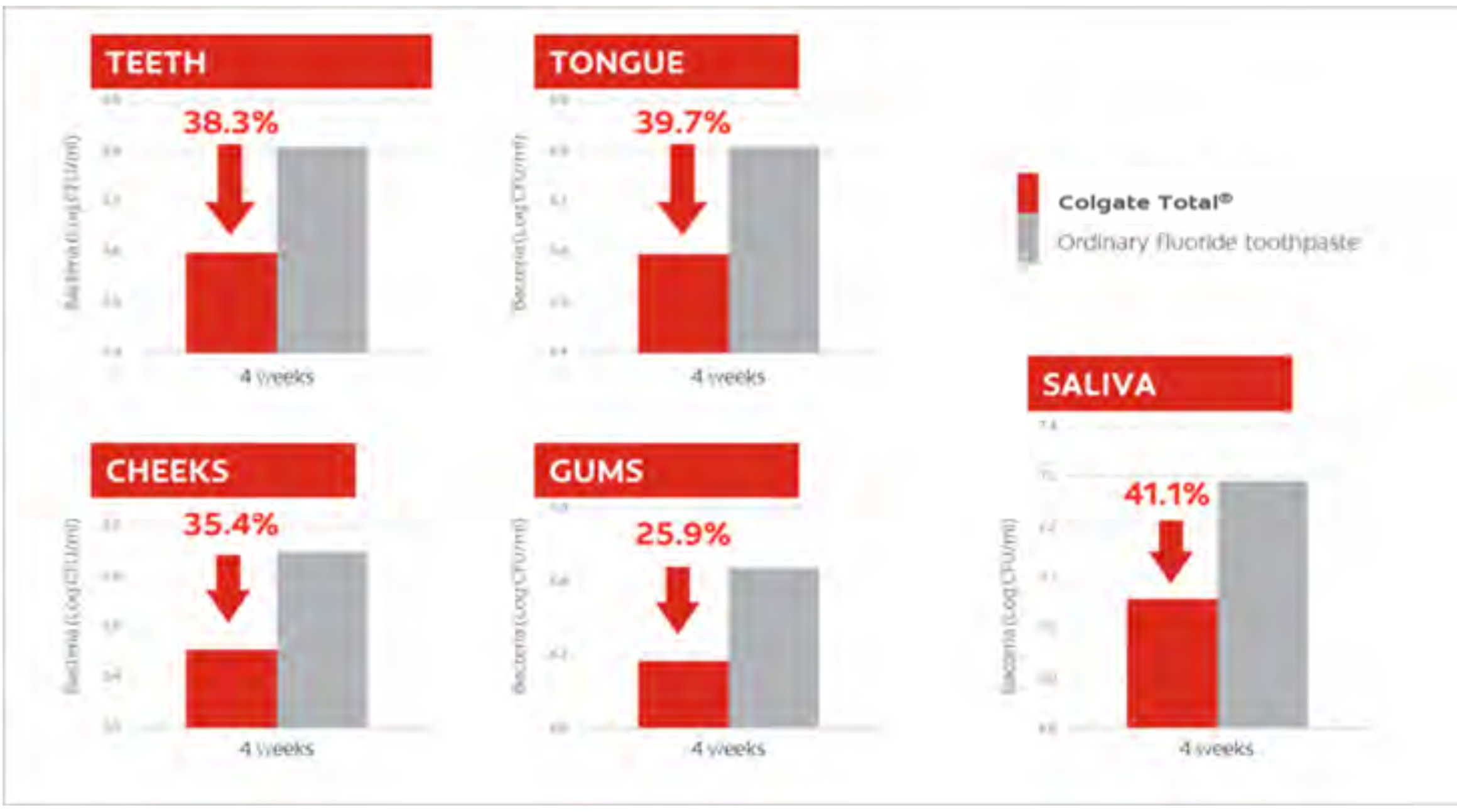


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Prasad KVV et al, h. J Clin Dent 2018; 29(Spec Iss A).

Page notes

The results demonstrate that regular and continued twice-daily use of these new toothpastes provides 12-hour whole mouth antibacterial protection for your patients Whole Mouth Health.



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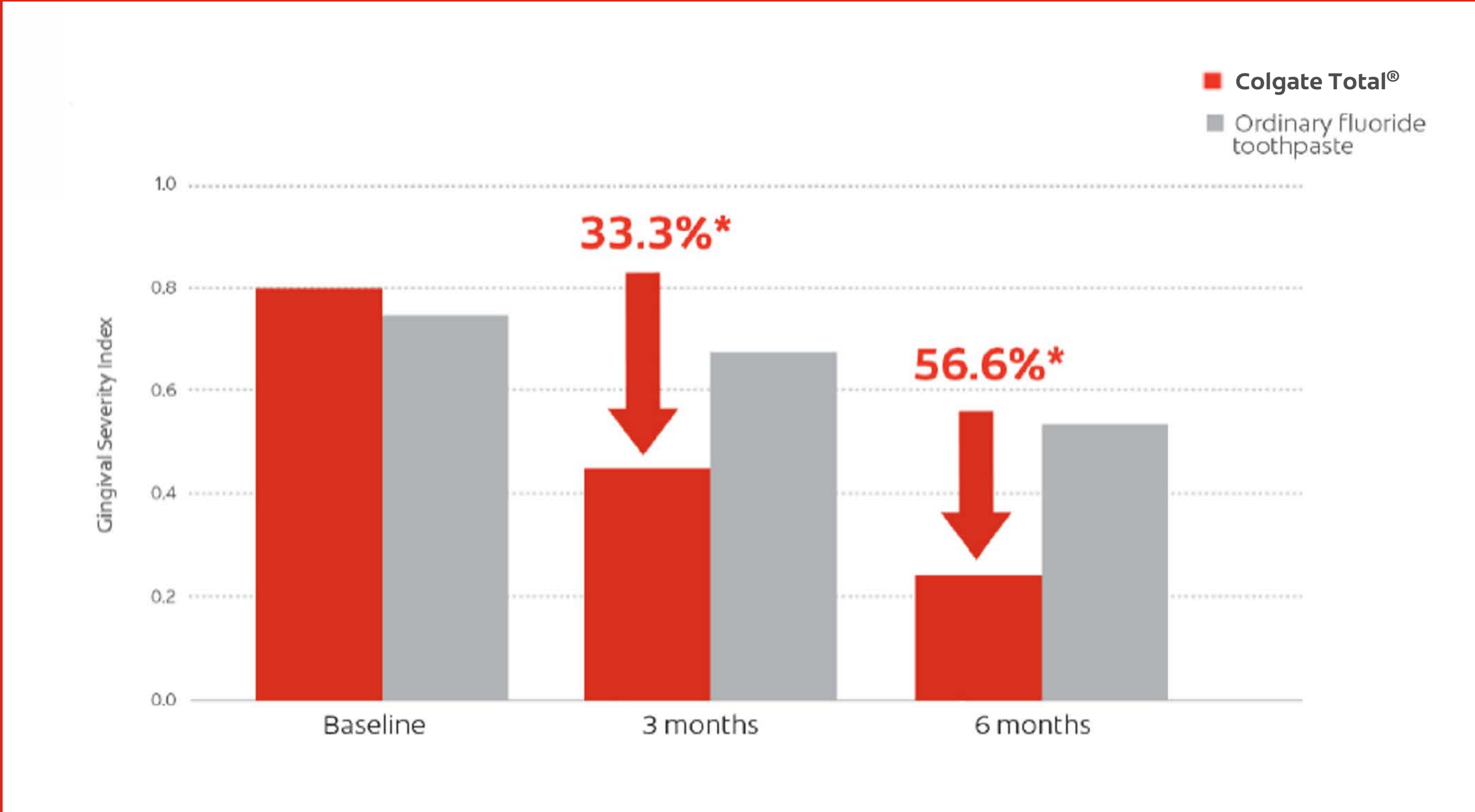


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COLGATE TOTAL® PROVIDES SUPERIOR REDUCTIONS IN GUM PROBLEMS

56.6%

Reduction in
gum problems



* Statistically significant reductions vs non-antibacterial fluoride toothpaste ($p < 0.001$). Delgado et al, J Clin Dent 2018

Page notes

Colgate Total® also offers benefits for your patients who show the early signs of gum problems. The unique technology in Colgate Total® can lead to a 56.6% reduction in gum problems, showing clear benefits for your patients in preventing or managing gum problems.



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WHY IS SUPERIOR BIOFILM CONTROL IMPORTANT?

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Through a new mode of action, Colgate Total® ultimately improves patient outcomes as demonstrated by a multitude of clinical studies, discussed in the following slides.



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SUPERIOR PLAQUE AND GUM PROBLEM REDUCTIONS COMPARED TO ORAL B PRO-EXPERT



*Oral-B and Pro-Expert are trademarks of the Procter & Gamble Co.
Li X, et al. J Dent Res 2019;98(Spec Iss A):3444, Tested on UK Oral-B Pro-Expert: Stannous Fluoride
and Sodium Hexametaphosphate formula. Results vs non-antibacterial fluoride toothpaste (p<0.05).



Page notes

This study compared the clinical efficacy of Dual-Zinc plus arginine dentifrice (Test) in reducing plaque, gum problems, and bleeding as compared to a stannous fluoride hexametaphosphate dentifrice (Control 1) and a sodium fluoride dentifrice (Control 2). The study had a randomized, double-blind, parallel-group design.

At 6 weeks, Test group provided statistically significantly 34.4%, 26.6% and 33.9% greater reductions in plaque, gum problems and gingival bleeding ($p<0.05$) than Control 2 group, respectively. Test group provided statistically significantly 13.4%, 10.9% and 12.8% greater reductions in plaque, gum problems and gingival bleeding ($p<0.05$) than Control 1 group, respectively.

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SUPERIOR PLAQUE AND GUM PROBLEM REDUCTIONS COMPARED TO ORAL B PRO-EXPERT



*Oral-B and Pro-Expert are trademarks of the Procter & Gamble Co.
Li X, et al. J Dent Res 2019;98(Spec Iss A):3444, Tested on UK Oral-B Pro-Expert: Stannous Fluoride
and Sodium Hexametaphosphate formula. Results vs non-antibacterial fluoride toothpaste (p<0.05).

Page notes

This study concluded that a Dual-Zinc plus arginine dentifrice is significantly better than both a sodium fluoride dentifrice and a stannous fluoride hexametaphosphate dentifrice in reducing plaque, gum problems and gingival bleeding at 6 months.



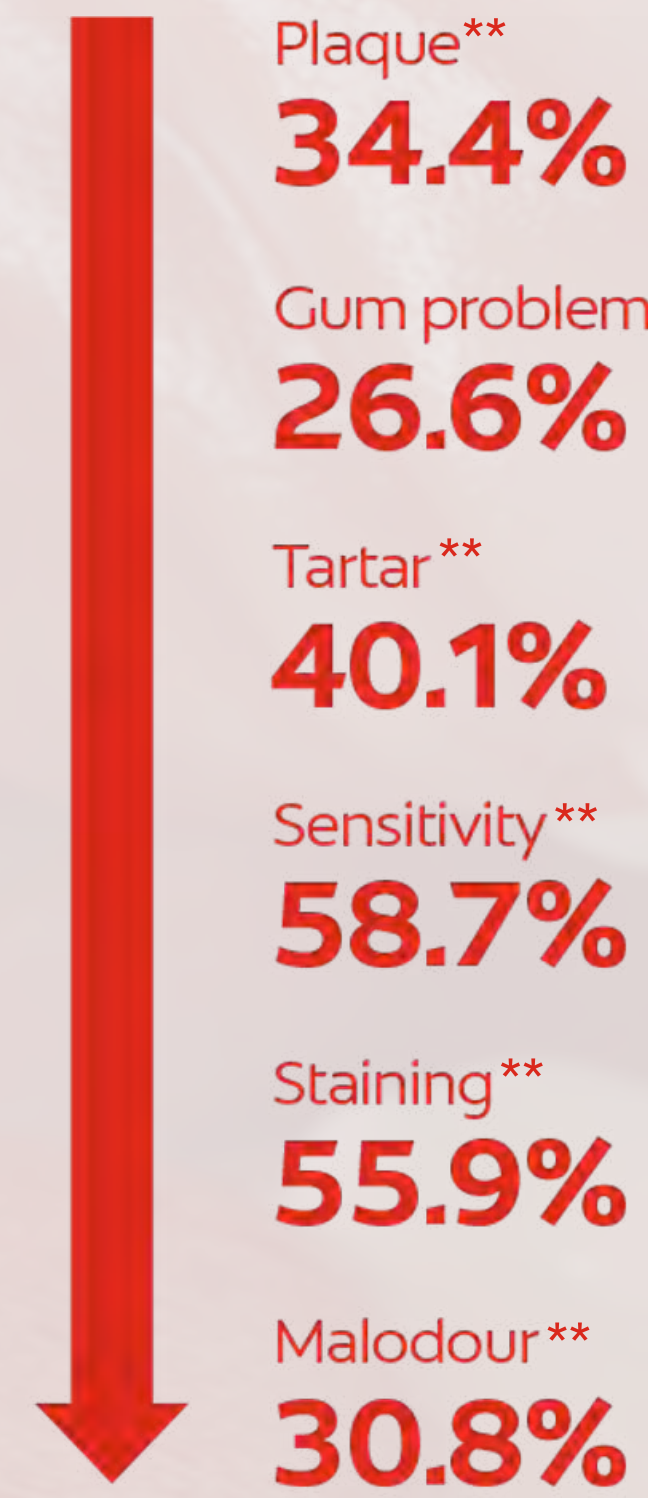
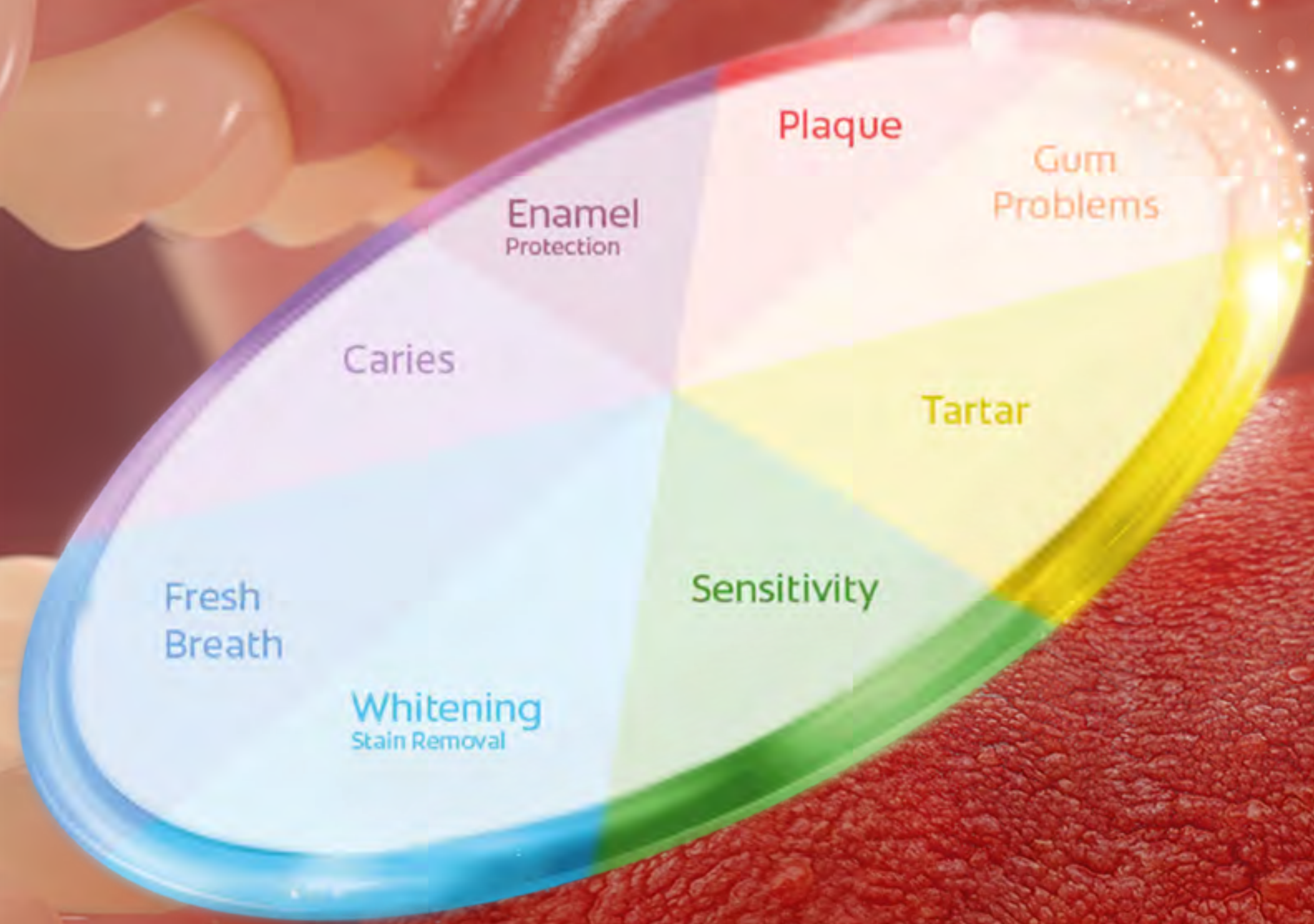
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Colgate Total® delivers comprehensive Benefits for the whole mouth*



Caries Clinically proven ingredient to help prevent tooth decay

Enamel protection Helps repair weakened enamel

*defined as teeth, tongue, cheeks and gums.
Li X, et al. J Dent Res 2019;98(Spec Iss A):3444. Seriwatanachai & Mateo, September 2016, internal report.
Seriwatanachai & Mateo, January 2016, data on file. Garcia-Godoy & Mateo, February 2017, data on file. Hu D, et al. J Clin Dent 2018;29(Spec Iss A):A41-45.

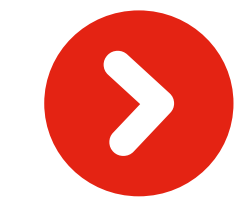
Page notes

Next to providing protection against plaque and gum problems, The Colgate Total® formulation also provide caries, tartar build up, sensitivity and stain removal benefits making it a valuable candidate for the every day protection of your adult patients, helping them achieve Whole Mouth Health.



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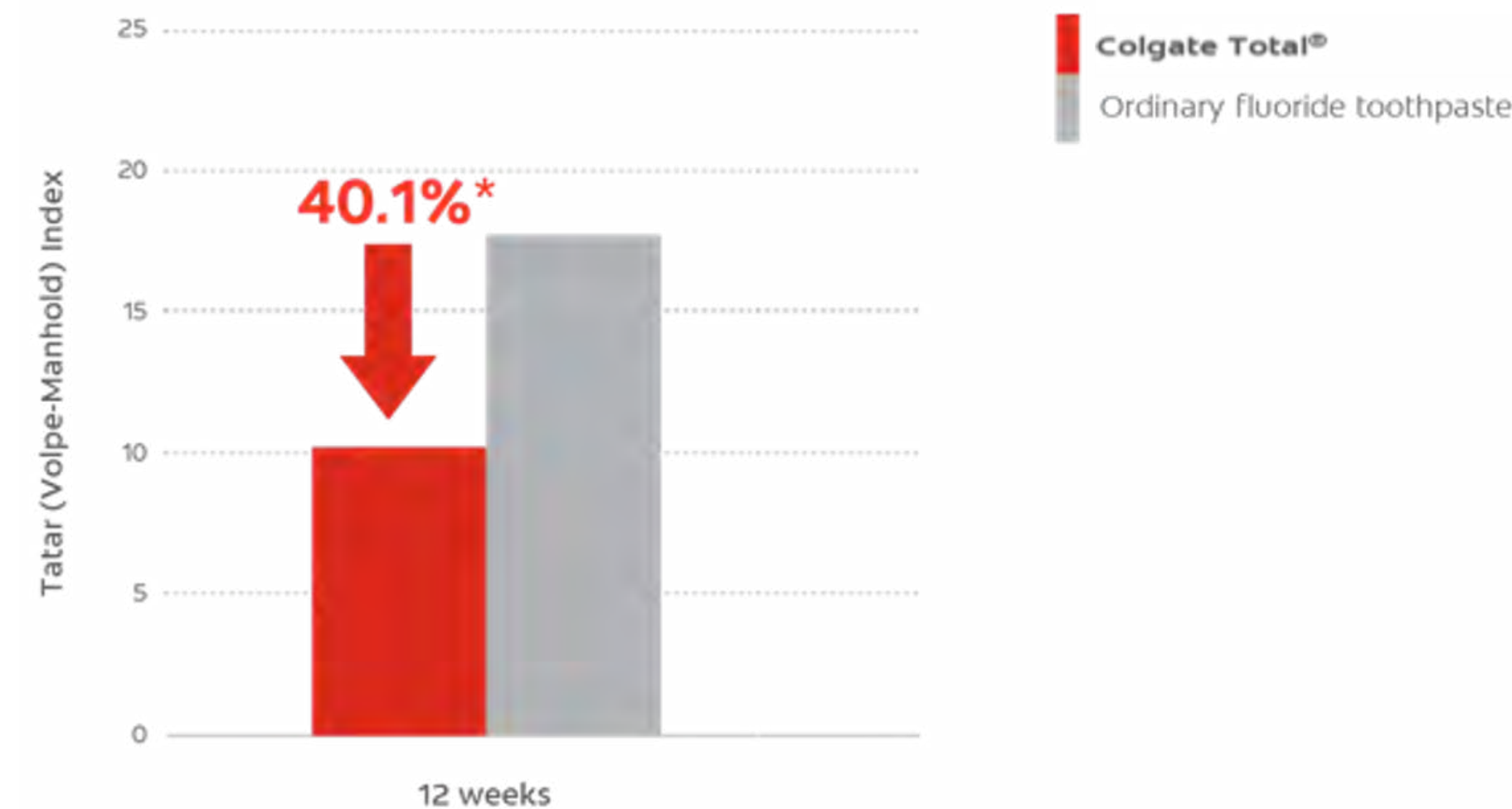
COLGATE TOTAL® PROVIDES SUPERIOR TARTAR CONTROL

40.1%*

Reduction in Tartar



VOLPE-MANHOLD CALCULUS INDEX



Randomized, double-blind, parallel group, clinical study

100 subjects

Duration: 5 month, assessments after 8 weeks of control brushing, evaluation of reduction after 12 weeks

Volpe Manhold Calculus Index

Subjects brushed twice/day for 1 min with their assigned toothpaste

*Statistically significant reductions vs non-antibacterial fluoride toothpaste (p<0.001).
Seriwatanachai & Mateo, Data on File, Colgate Palmolive Technology Cente, September 2016.

Page notes

In a randomized, double-blind, parallel, 20 weeks clinical study 100 adult subjects were enrolled with an initial Volpe-Manhold Calculus Index score of at least 7.0.

At start all subjects had their tartar removed properly followed by a 8 week wash-in phase. After that they were split into two randomized groups before started a 12 week test phase, where they brushed their teeth 2 times a day with either Colgate Total® or a negative control toothpaste (non-antibacterial fluoride toothpaste).

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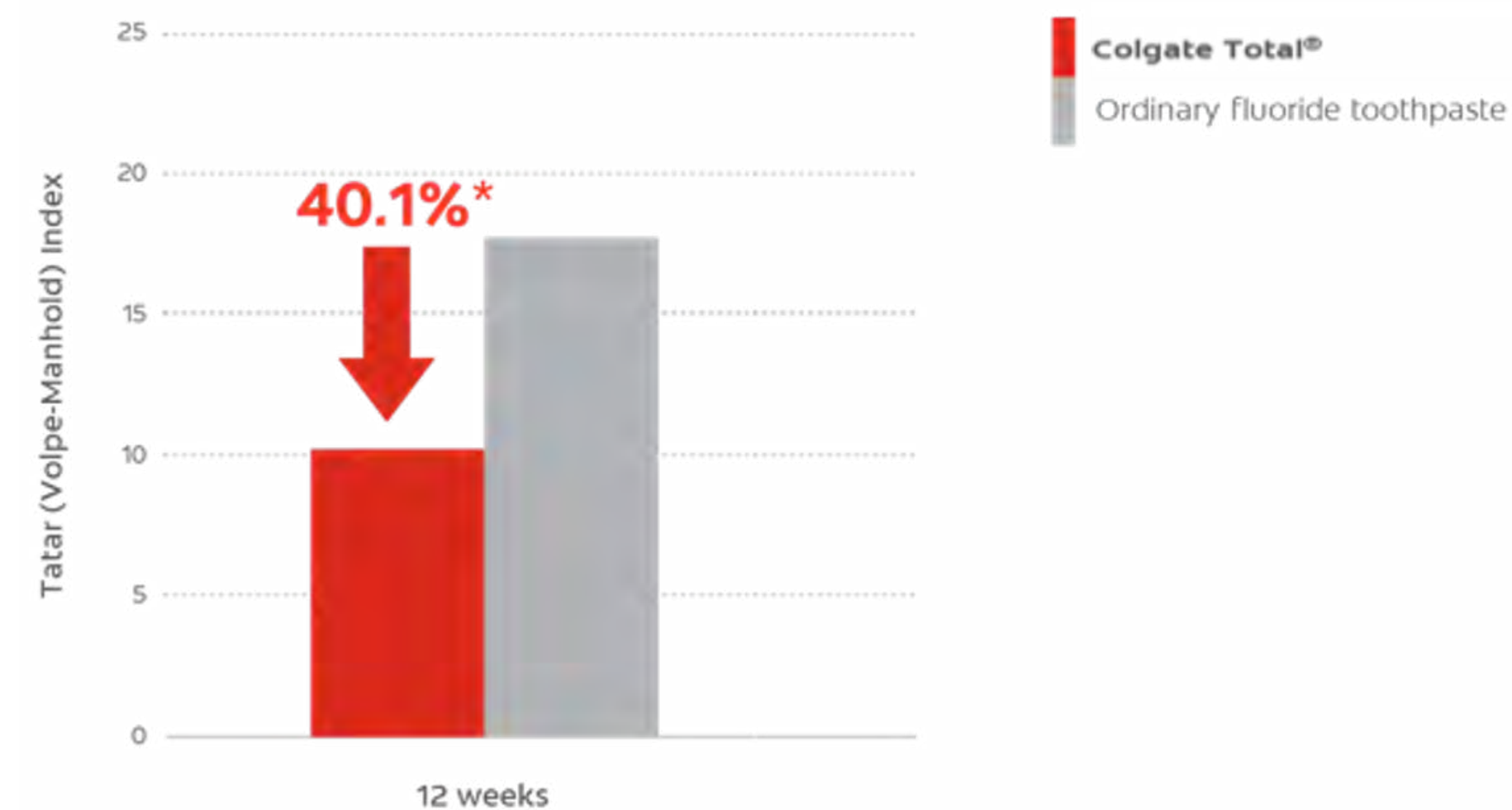
COLGATE TOTAL® PROVIDES SUPERIOR TARTAR CONTROL

40.1%*

Reduction in Tartar



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Seriwatanachai & Mateo, Data on File, Colgate Palmolive Technology Cente, September 2016.

Page notes

After 12 weeks of product use, Colgate Total® users had 40.1 % less supra gingival tartar formation compared to the subjects using a regular fluoride toothpaste.



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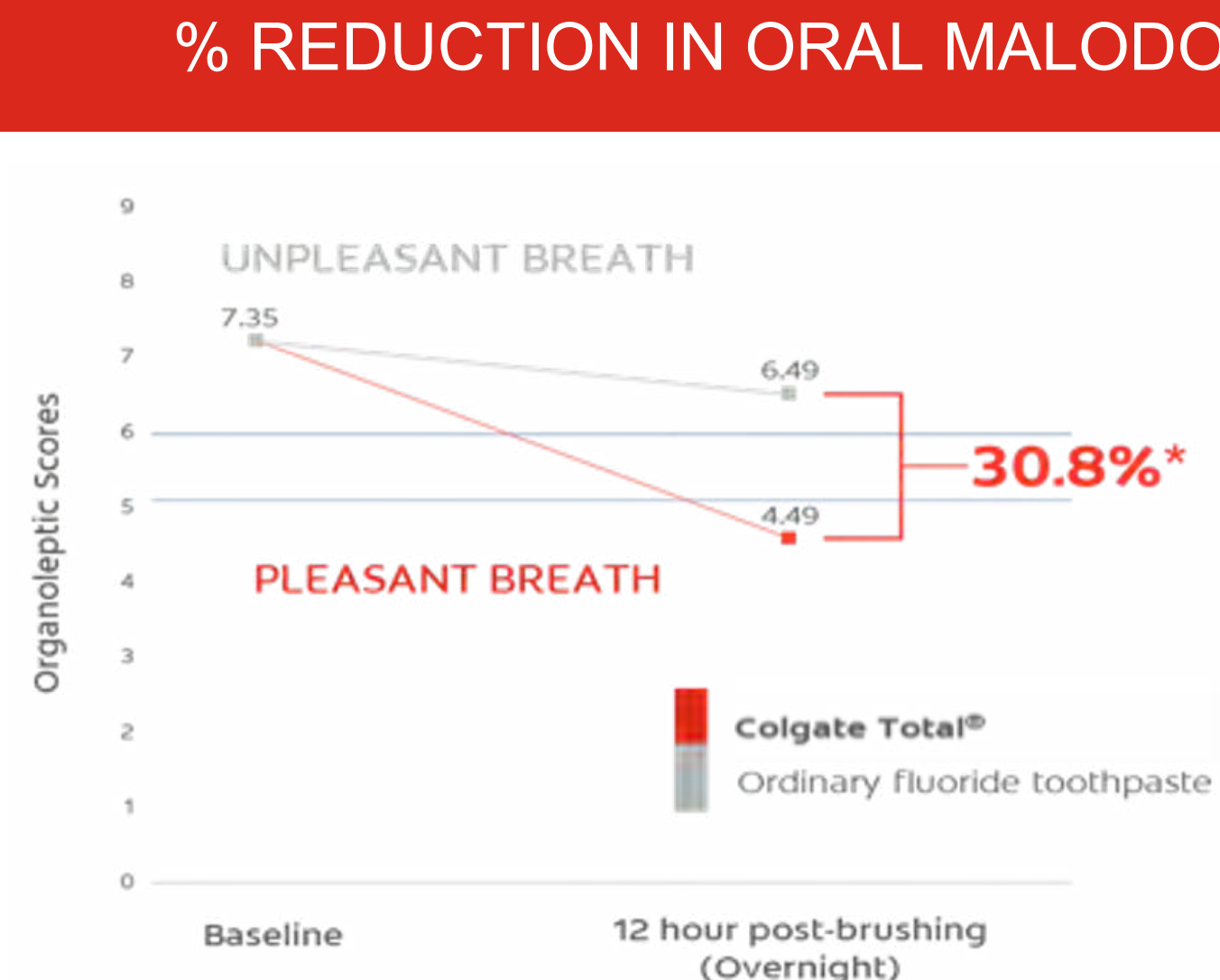


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COLGATE TOTAL® SIGNIFICANTLY REDUCES ORAL MALODOR

30.8%*

Reduction in oral malodor at 3 weeks



Randomized, double-blind, parallel group, clinical study

80 subjects

Duration: 3 weeks

Assessment of oral malodour via an organoleptic hedonic scale 12 hrs post-brushing (overnight)

Subjects brushed twice/day with their assigned toothpaste

*Statistically significant reductions vs non-antibacterial fluoride toothpaste (p<0.001);
Hu D et al., J Clin Dent 2018;29 (Spec Iss A).

Page notes

This double-blind randomized control study demonstrated that 90% of subjects using Colgate Total® had fresher breath 12 hours overnight measured after 3 weeks. In contrast, 95% of subjects for the control group remained in the unpleasant range.

The overall results support the conclusion that a Dual-Zinc plus Arginine dentifrice containing zinc (zinc oxide, zinc citrate) 0.96%, 1.5% arginine, and 1450 ppm fluoride as sodium fluoride provides a significantly greater reduction in oral malodor as compared to a regular fluoride dentifrice, 12 hours post-brushing (overnight) after 3 weeks of product use.



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WHAT DO DENTISTS THINK ABOUT COLGATE TOTAL®?



89% of dentists likely to recommend
Colgate Total®

Source: UK Colgate Total® Experience Programme, data as at June 2019. n=347 dentists; n=483 patients.

Page notes

Colgate Total® is indeed the next generation of every-day prevention according to the feedback of dentists who used it themselves and with their patients. 89% of these dentists said that they were likely to recommend Colgate Total® after experiencing it for themselves.



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WHAT DO DENTISTS THINK ABOUT COLGATE TOTAL®?



9 out of 10 dentists
believe Colgate Total® best meets their
needs for an everyday prevention toothpaste

Source: UK Colgate Total® Experience Programme, data as at June 2019. n=347 dentists; n=483 patients.

Page notes

In addition, 9 out of 10 dentists believe that Colgate Total® best meets their needs for an everyday prevention toothpaste.



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PATIENTS ALSO APPRECIATE COLGATE TOTAL®

“Helps improve
the health of
my mouth”

“Makes brushing
more enjoyable”

“Better overall
mouthfeel”

“Leaves a deep
clean sensation”

“Stronger
flavour appeal”

“Leaves my
mouth feeling
clean & fresh”

“More modern
& up to date”

Source: UK Colgate Total® Experience Programme, data as at June 2019. n=347 dentists; n=483 patients.



Page notes

And patients are finding Colgate Total® to be a positive brushing experience too!



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COLGATE TOTAL® SUPERIOR BIOFILM CONTROL FOR WHOLE MOUTH HEALTH*

Reduces bacteria in the whole mouth*, on both hard and soft tissue



Reduces plaque & gum problems

Reduces malodour

Reduces tartar build-up

Prevents cavities

Protects enamel

Cares for sensitive teeth

Reduces stain

*defined as teeth, tongue, cheeks and gums.

Page notes

The Colgate Total® formulation also delivers comprehensive benefits for the whole mouth, as demonstrated by the numerous additional studies on caries, enamel protection sensitivity and whitening. These results complement the benefits of superior biofilm control and demonstrate the value of Colgate Total® with Dual-Zinc and Arginine for the everyday prevention.



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Colgate Total® With Dual-Zinc + Arginine for **Whole Mouth Health***



* defined as teeth, tongue, cheeks and gums.

Page notes

Colgate Total® with Dual-Zinc plus Arginine is the next generation of everyday proactive protection, supported by robust research and appreciated by fellow dental professionals. You can be comfortable recommending a technology that will help your patients achieve Whole Mouth Health.



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Page notes

Thank you for taking the time to review this ECPD module.

Please click below and complete the short questionnaire to:

- Receive your ECPD certificate
- Request patient toothpaste samples

[CLICK HERE](#)



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REFERENCES

- Mager, Haffajee , Socransky et al. J Clin Periodontol. 2003; 30: 644-654.
- Collins and Dawes, J Dent Res 1987, Mager et al. J Clin Periodontol. 2003.
- Manus LM et al, Enhanced in vitro zinc bioavailability through rational design of a dual zinc plus arginine dentifrice. J Clin Dent 2018;29(Spec Iss A)
- Daep et al, Data on File, Colgate Palmolive Technology Center, 2019
- Li X, et al. Clinical Investigation of Dual Zinc Plus Arginine Dentifrice in Reducing Plaque and Gingivitis, J Dent Res 2019;98(Spec Iss A):3444,
- Prasad KVV et al, The effects of two new dual zinc plus arginine dentifrices in reducing oral bacteria in multiple locations in the mouth: 12-hour whole mouth antibacterial protection for whole mouth health. J Clin Dent 2018; 29(Spec Iss A)
- Delgado E et al, A clinical investigation of a dual zinc plus arginine dentifrice in reducing established dental plaque and gingivitis over a six-month period of product use. J Clin Dent 2018;29(Spec Iss A)
- Seriwatanachai & Mateo, Data on File, Colgate Palmolive Technology Center, September 2016
- Garcia-Godoy & Mateo, February 2017, data on file.
- Hu D et al, A clinical investigation of the efficacy of a dual zinc plus arginine dentifrice for controlling oral malodor. J Clin Dent 2018;29(Spec Iss A)

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