

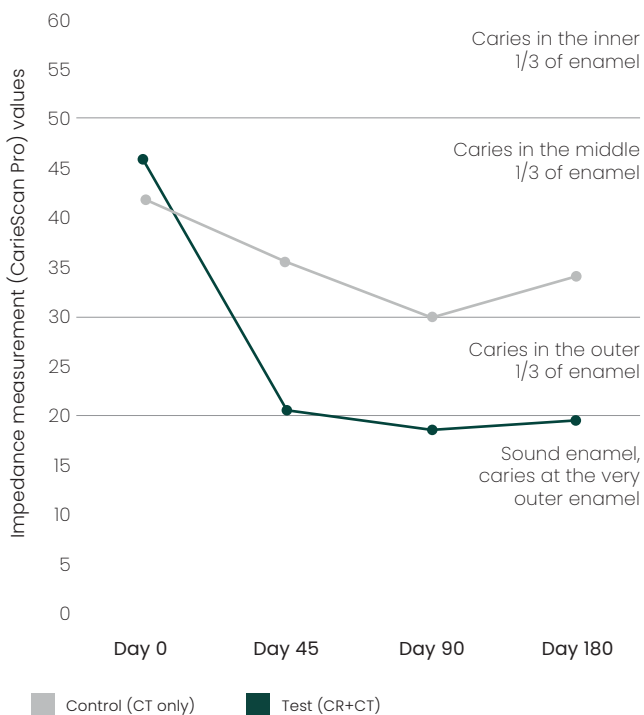


## Significantly greater regression of orthodontic treatment-induced early caries with Curodont™ Repair (CR) than with conventional treatment (CT)

### RESULTS

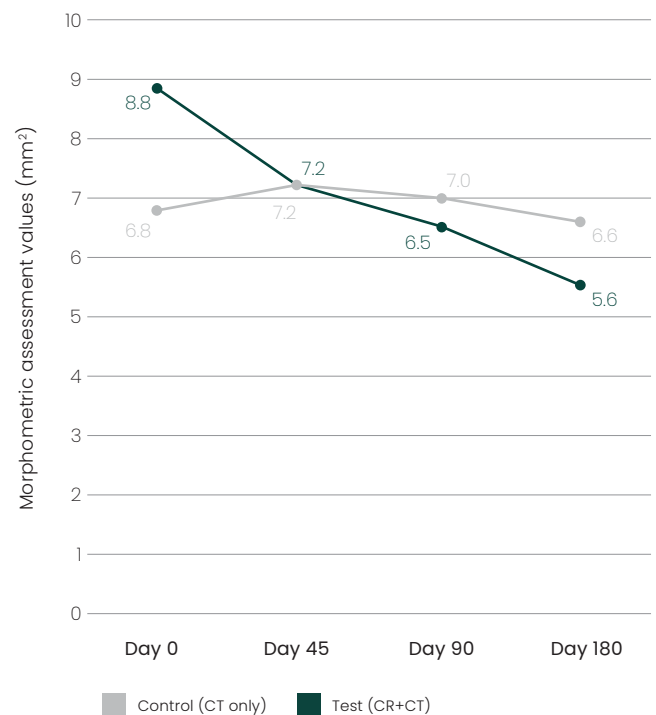
On impedance measurement and morphometric assessment (in mm<sup>2</sup>), early caries treated with CR, followed by CT with fluoride-based professional prophylaxis paste and home care toothpaste, demonstrated significantly greater regression than those receiving CT only. The greater reduction in impedance values confirmed that CR regenerates the mineral structure of enamel in the lesion body and not just on the surface.

#### CARIES REGRESSION



Significantly greater caries regression at all follow-up visits for lesions in the test group, than those in the control group ( $P < 0.01$ ). At day 180, the caries had regressed into the very outer enamel. (responses adjusted for baseline values).

#### LESION SIZE REDUCTION



Sizes of lesions in the test group, reduced significantly ( $P = 0.004$ ) more than that of those in the control group, at the end of 6 months (responses adjusted for baseline values).

### STUDY ESSENTIALS



23 patients



Randomized, treatment-controlled, split-mouth, clinical trial



6 Months



University Medicine Greifswald, Germany

### How can you use these results in your practice?

- Patients undergoing fixed orthodontic therapy are at a high risk of caries.
- CR can treat early carious lesions, as soon as they are identified, without the need to debond the brackets.

## STUDY INFORMATION

**Title:** Effect of self-assembling peptide P11-4 on orthodontic-treatment induced carious lesions\*



### Treatments Tested:

- **Test:** Curodont™ Repair (CR), followed by conventional treatment (CT) with fluoride-based professional prophylaxis paste and home care toothpaste
- **Control:** CT only



### Scope & Methodology:

The efficacy of CR in treating post-orthodontic early buccal caries lesions was compared with CT over a 6-month period. Assessments were done at day 0, day 45, day 90, and day 180 using the following techniques:

- Impedance measurement, using CarieScan Pro (Orangedental, Germany)

Measurement values used (per manufacturer):

- I. 0 = sound
- II. 1–20 = Sound enamel, caries at the very outer enamel
- III. 21–30 = caries in the outer 1/3 of the enamel
- IV. 31–50 = caries in the middle 1/3 of the enamel
- V. 51–90 = caries in the inner 1/3 of the enamel
- VI. 91–99 = caries at the dentine enamel junction
- VII. 100 = established dentine caries



### Study participants:

- Morphometric assessment (size of WSL in mm<sup>2</sup>), using ShadePilot (Degudent, Germany)
- 23 patients (average age: 15.4 years), each having at least 2 teeth with active buccal surface caries after removal of fixed orthodontic appliances.



### Procedure:

Two days after debonding, one tooth in each tooth pair received treatment with CR + CT (test) and the other, only CT(control).

### Test group:

2 days before baseline	Day 0 (Baseline)	Day 45	Day 90	Day 180
<ul style="list-style-type: none"> <li>• Debonding</li> </ul>	<ul style="list-style-type: none"> <li>• Oral prophylaxis</li> <li>• Caries assessment</li> <li>• Application of CR</li> </ul>	<ul style="list-style-type: none"> <li>• Oral prophylaxis</li> <li>• Caries assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Oral prophylaxis</li> <li>• Caries assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Oral prophylaxis</li> <li>• Caries assessment</li> </ul>

### Control group:

2 days before baseline	Day 0 (Baseline)	Day 45	Day 90	Day 180
<ul style="list-style-type: none"> <li>• Debonding</li> </ul>	<ul style="list-style-type: none"> <li>• Oral prophylaxis</li> <li>• Caries assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Oral prophylaxis</li> <li>• Caries assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Oral prophylaxis</li> <li>• Caries assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Oral prophylaxis</li> <li>• Caries assessment</li> </ul>



**Conclusion:** The treatment of post-orthodontic early caries with CR leads to superior regression and reduction in lesion size compared with CT only with fluoride-based professional prophylaxis paste and home care toothpaste.

### References

- \* Welk, A., Ratzmann, A., Reich, M. et al. Effect of self-assembling peptide P11-4 on orthodontic treatment-induced carious lesions. Sci Rep 10, 6819 (2020).  
Supporting studies  
1. Doberdoli, D. et al (2020) "Randomized Clinical Trial investigating Self-Assembling Peptide P11-4 for Treatment of Early Occlusal Caries" Scientific Rep  
2. Alkilzy M, Tarabai A, Santamaria RM, Splieth CH. Self-assembling Peptide P11-4 and Fluoride for Regenerating Enamel. J Dent Res. 2018 Feb;97(2):148-154.  
3. Sedlakova Kondelova P, Mannaa A, Bommer C, Abdelaziz M, Daeniker L, di Bella E, Krejci I. Efficacy of P11-4 for the treatment of initial buccal caries: a randomized clinical trial. Sci Rep 2020;10:20211