

Fissurit F – Retention rate

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Fissure sealing has been successfully utilized for many years as one of the pillars of prophylaxis. In comparison to composites in filling treatment, a characteristic of some fissure sealants is that they are applied without a bond. How this factor affects the retention rates was analyzed in a study at the University of Ankara (Turkey).^[1]

The retention rates were analyzed for two different products: Fissurit F (VOCO) and Dyract Seal (Dentsply). Fissurit F is a fissure sealant that is used without bonding; Dyract Seal, the compomer, was bonded with Prime&Bond NT (Kerr).

30 children participated in the study each aged 6-7 or 9 years old. The freshly erupted first molars were treated in the younger group: The teeth were still in the phase of enamel maturation in this test group. The first molars in the group of 9 year olds were likewise treated: It was assumed that the enamel maturation was already complete in this group.

Results of the analysis

The results of the interim examinations of the group of 6-7 year olds are shown in Figure 1. A new sealing was placed if a partial or total loss was diagnosed in a follow-up examination. The increasing retention rates in the course of the analysis are explained in light of this.

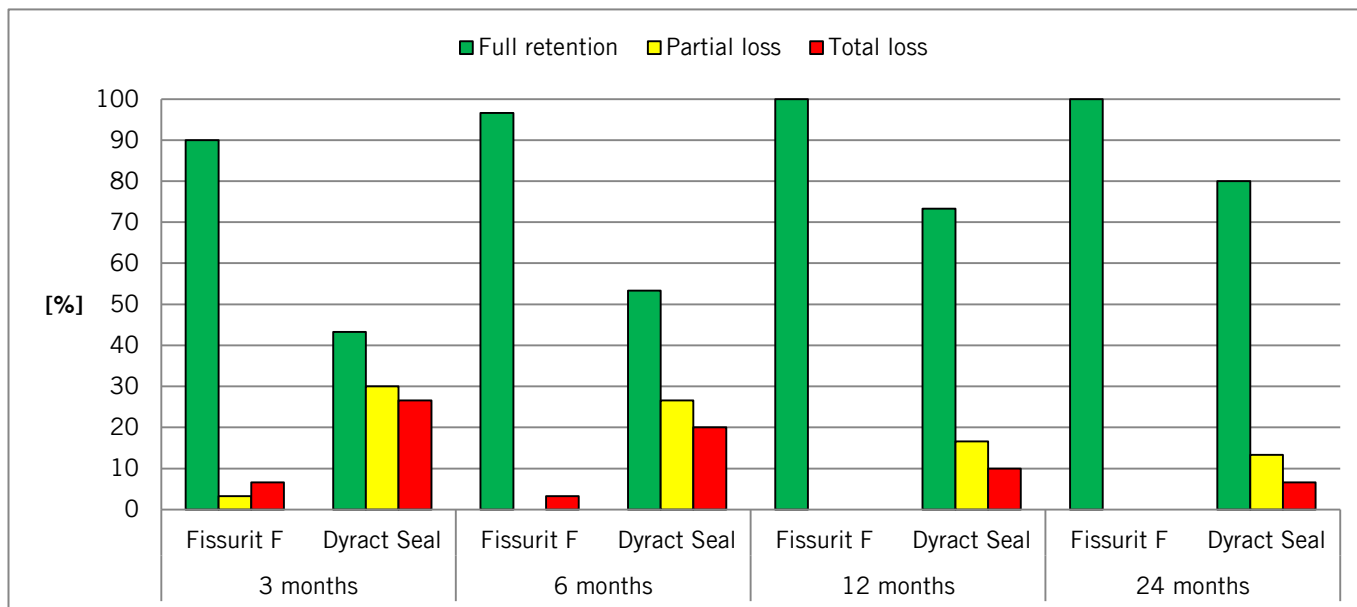


Figure 1: Results of the re-examination of 6-7 year olds

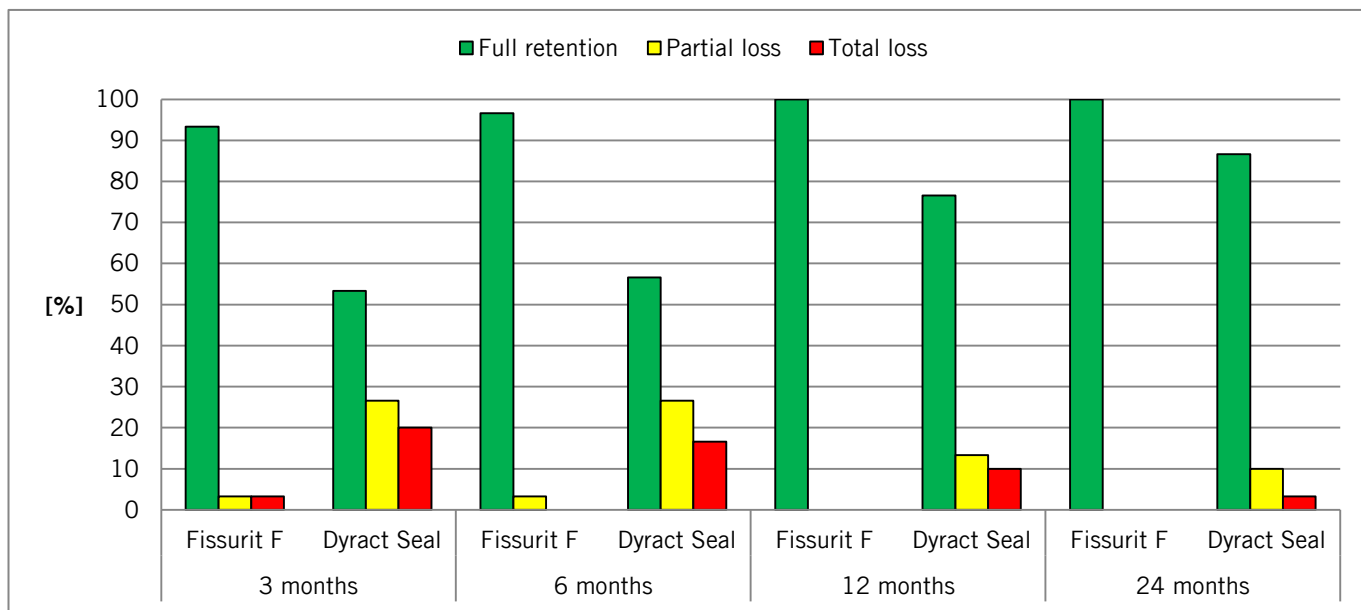


Figure 2: Results of the re-examination of 9 year olds

The result of the test group with the completed enamel maturation is displayed in Figure 2. The distinctions also turned out to be significant here. While only two partial and one total loss occurred with Fissurit F, a different picture resulted for Dyract Seal. Only just under half of the sealings were intact after 3 and 6 months in each case and additional losses occurred after 12 and 24 months.

The degree of enamel maturation did not have a significant influence on the retention rate of either material. A clear difference, however, can be observed between the two materials. Fissurit F exhibited significantly better retention values than Dyract Seal, even without the use of a bond. Replaced sealings were included in the subsequent examinations: Dyract Seal also achieved a retention rate of just below 90 % after 24 months for this reason only. An evaluation that included the intact sealings over the full two years showed the difference between the materials even more strikingly (Figure 3). While the retention rate was 90 % for both groups over 2 years with Fissurit F, Dyract Seal only achieved a retention rate of 33 % and 40 % respectively.

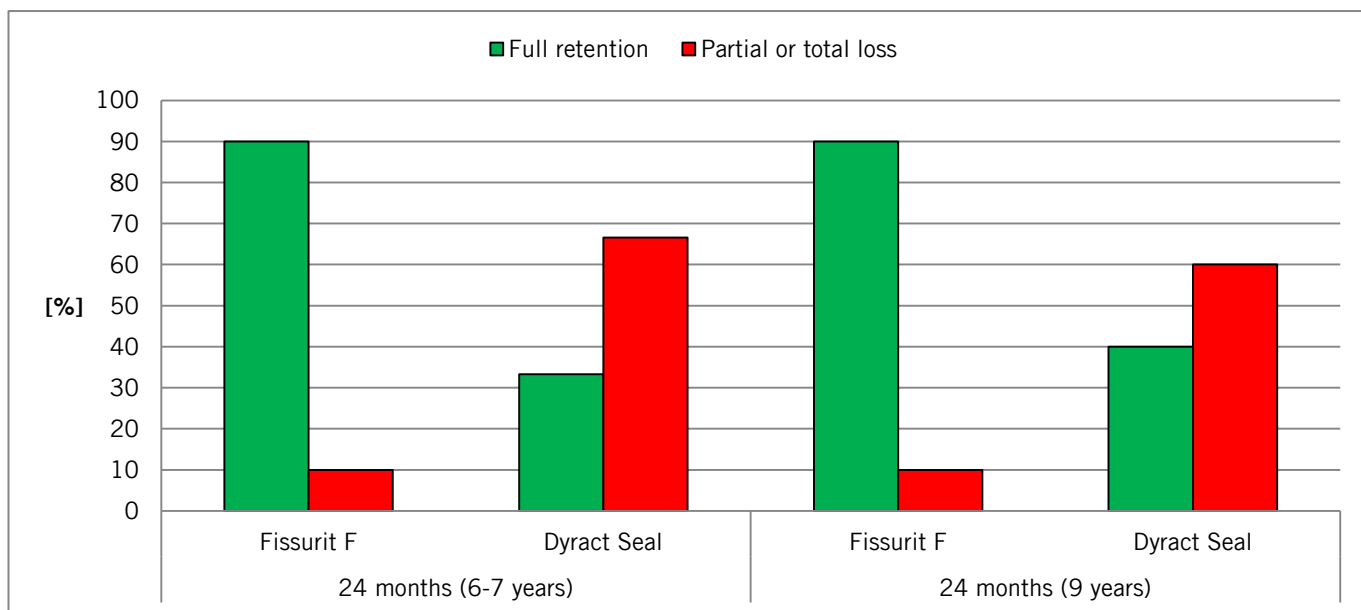


Figure 3: Cumulative examination after 24 months

Conclusion: Fissurit F exhibits outstanding retention rates, irrespective of degree of the enamel maturation of the treated teeth.

[1] N. Yakut, H. Sönmez, *J. Clin. Pediatr. Dent.* **2006**, 30, 215-218.