

Fixed appliances best and cheapest

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Society could save millions of crowns each year if more children were fitted with fixed appliances. This is shown in unique studies performed by Sofia Petrén, a dentist and orthodontic specialist at the Department of Orthodontics at Malmö University in Sweden.

Calculations indicate that at least ten percent of all eight- and nine-year-olds in Sweden have so-called crossbite.

This means that the children's upper and lower jaws are different in width and do not line up against each other when they bite their jaws together. If this problem is not corrected, the children can experience pain in the jaw, facial muscles, and jaw joints. Their face can also become asymmetrical.

In randomized studies, Sofia Petrén investigated four methods of treatment: fixed appliance (Quad Helix), removable appliance (expansion plate), composite construction on the molars of the lower jaw, and no action in the hope that the problem will straighten itself out. A total of 70 children were involved in the four groups.

The results show that neither the composite construction nor no action has any effect on crossbite. The other two treatments are effective, both in the short and long term, but the fixed appliance yielded clearly superior results.

"The fixed appliance entail that the children are treated 24 hours a day. The removable plate means that the children need the help of their

parents, and it happens that they forget it sometimes, which affects the outcome of treatment," says Sofia Petrén.

There's a big difference in the cost of the various treatment methods, both direct and indirect, according to Sofia Petrén, who arrived at these results in her dissertation *Correction of Unilateral Posterior Crossbite in the Mixed Dentition*, submitted to the Faculty of Odontology at Malmö University.

The fixed appliance is also the cheapest. Sofia Petrén compared the costs, both direct and indirect, and found that society could save SEK 32 million per year if all children with unilateral crossbite were treated with fixed braces. Part of the difference is due to the fact that children who are treated with removable [appliances](#) sometimes need to be treated again because the treatment failed.

But even if all treatments with removable appliances were successful, the annual cost would still be more than SEK 12 million compared with fixed braces.

"Today both treatments are equally common in clinics, but I maintain we should use the method that works best, has a lasting effect, and is most cost-effective."

Even though orthodontic appliances have been used for more than 100 years, the scientific evidence for different treatments is very patchy, something that SBU, the Swedish Council on Health Technology Assessment, drew attention to in a 2005 report.

Sofia Petrén's dissertation fills a gap in our knowledge that will probably lead to changes in treatment routines. The finding that children's bite problems do not sort themselves out spontaneously means that county councils that postpone treatment to save money will be facing even

higher costs in the long run.

"When [children](#) are treated in their teens, the treatment is more complicated and costly," says Sofia Petré, who wants to study how children's quality of life is affected during and after treatment.

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