

## Letters

### Author of "Thyroid administration" article responds to commentary

First, I would like to emphasize that I am unclear on the precise mechanism that causes reduced root resorption, or even a "filling in" of "moth eaten" root structures, when a small dose of thyroid is given during orthodontic treatment. (Loberg EL, Engstrom C. Thyroid administration to reduce root resorption. *Angle Orthod* 1994; 64(5)395-400.) More study at the molecular and cellular levels is needed to determine this mechanism. I am also uncertain as to what the optimum dosage should be to obtain the desired effect. Perhaps a quarter-gram of thyroid would be as effective as half a gram. Nevertheless, a half-gram dose has been shown to be effective both experimentally and clinically without any discernible side effects.

In his commentary following my case report, (*Angle Orthod* 1994; 64(5)399-400), Dr. Christiansen expressed concern about

Thyroxine's effect on bone density, and his concern is valid. However, the results of the studies he cited were from long-term, large-dose administrations of Thyroxine. These studies do not begin to approach the parameters of the short-term, low-dose therapy that we found to be effective. I question whether a short-term, small dose of Thyroxine is clinically significant in reducing bone density. In fact, radiographically, the bone density routinely appears to be greater after treatment with Thyroxine.

In response to Dr. Christiansen's concern for bone collagen breakdown in adults with overactive thyroid glands or those who are on long-term T4 replacement therapy, I feel the length of therapy and amount of Thyroxine administered in the studies mentioned are significantly different from what I am prescribing. I have used a half-gram dose for adults undergoing orthodontic treatment and I have seen equal success in effecting root resorption in adults and adolescents at this low dosage. I have not seen progressive periodontal breakdown in adult or adolescent patients while under orthodontic treatment.

There is no question that a multitude of factors are involved in root resorption. But, in selected individuals, short-term, low-dose Thyroxine administration seems to have a positive effect on root resorption. There is plenty of room for further study on this clinical issue. But, as Samuel Johnson put it, "Nothing will ever be attempted if all possible objections must first be overcome."

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#### **Your Letter to the Editor is welcome**

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