

If the destruction of the dental tissue is too rapid, the odontoblasts begin to die off. Rotary instruments remove dental tissues extremely rapidly.

A diamond cutting head rotating at 25,000 r.p.m. can remove more tissue than necessary in a matter of seconds and may be quite difficult to control accurately. The hypsodont teeth of a horse are designed to wear and it is the differential wear of the enamel, cementum and dentine that gives rise to the rough herbivorous occlusal table. This is an essential part of the horse's digestive apparatus. A rotating instrument will remove all three hard tissues evenly. To render the entire occlusal table smooth and "human-like" is to destroy the roughness and does the horse a disservice.

In short, I can see no advantage either to the equine dentist or to the horse of the use of rapidly rotating dental instruments whether water-cooled or not, but particularly non-water-cooled. It still remains to be proven quantitatively how much of a thermal insult is afforded teeth by these instruments as used on horses as against human teeth as no research has been undertaken. However it should be obvious to all who are familiar with the dentition of the horse that the life and condition of the animal is determined by its ability to chew. It requires vital molar teeth with a rough occlusal architecture to do this.

Further research is needed in this area as the horse tooth does differ in several anatomical aspects from the human tooth. It may be possible to develop an instrument without the disadvantages mentioned' above, but to date there is nothing that is satisfactory for the purpose.