References

1. Massler M, Frankel JM. Prevalence of malocclusion in children age 14 to 18 years. Am J Orthod 1951;37:751-768.
2. Altemus LA. A frequency of the incidence of malocclusion in American Negro children ages 12 to 16. Angle Orthod 1959;29:189-200.
3. Kelly JE, Sanchez SM, Van Kirk LE. An assessment of the occlusion of the teeth of children 6-11 years. DHEW Publication No (HRA) 74-1612. Washington, DC: National Center for Health Statistics; 1973.
4. Infante PF. Malocclusion in the deciduous dentition in white, black, and Apache Indian children. Angle Orthod 1975;45:213-218.
5. Moyers RE. *Handbook of Orthodontics.* 4th ed. Chicago-London-Boca Raton: Year Book Medical Publishers, Inc; 1988:577.
6. Friel S. The development of ideal occlusion of the gum pads and the teeth. Am J Orthod 1954;40:196-227.
7. Vaughn MD, Harris H. Deciduous tooth size standards for American blacks. J Tenn Dent Assoc 1992;72:30-33.
8. Moorrees CFA, Thomsen S, Jensen E, Kai-jen Yen P. Mesiodistal crown diameters of the deciduous and permanent teeth in individuals. J Dent Res 1957;36:39-47.
9. Moyers RE, Van der Linden FPGM, Riolo ML, et al. *Standards of Human Occlusal Development.* Ann Arbor, Mich: Center for Human Growth and Development, University of Michigan; 1978.
10. Moorrees CFA. *The Dentition of the Growing Child: A Longitudinal Study of Dental Development Between 3 and 18 Years of Age.* Cambridge, Mass: Harvard University Press; 1959:245.
11. Garn SM, Keresky RS. Genetic control of sexual dimorphism in tooth size. J Dent Res 1967;46:963-972.
12. Richardson ER, Malhotra SK. Mesiodistal crown dimension of the permanent dentition of American Negroes. Am J Orthod 1975;68:157-164.
13. Seipel CM. Variation of tooth position. Svensk Tandl-Tidskrift 1946;39(suppl).
14. Fearne JM. Small primary tooth-crown size in low birthweight children. Early Hum Dev 1993;33:81-90.
15. Garn SM, Walenga AJ. Evidence for a secular trend in tooth size over two generations. J Dent Res 1968;47:503.
16. Dempsey PJ, Townsend GC. Genetic and environmental contributions to variation in human tooth size. Heredity 2001;86:685-693.

Abstract of the Scientific Literature

Duration of Restorations in Teeth Injured by Trauma

Unfortunately, dental trauma of the child and young adult is something that we as practicing clinicians are confronted with constantly. In dental traumatology, it is very important to understand which material is best to use and when is the right time to replace the restoration before it loses function and, consequently, leads to complications.

The purpose of this study was a long-term (7-year) clinical evaluation of resin-based composite restorations and original fragment reattachments. The sample size of this study was: (1) 60 patients aged 8 to 18 years who had 90 injured dental crowns; and (2) 20 subjects with crown injuries who served as a validity sample and were treated by different practitioners. Of the 90 selected teeth in the first group, 70 had direct composite restorations and 20 had original fragment reattachments. These teeth were divided according to traditional classifications (Aandreasen, Ellis) and also a new (Spinas-Piroddi) classification, which takes into account material type used in restorations as well as outcomes in long-term follow-up. All restorations were evaluated over a 7-year period. By 3 years postoperative, most restorations needed some form of repair, ranging from a simple polishing to complete replacement. The examiners found that a restoration can be replaced only 3 to 4 times before the tooth shows a severe reduction of its adhesive properties.

Comments: Tooth fracture is a fairly common event, as more sport activities are organized for today's youth. This article should first serve to heighten our awareness in promoting the fact that mouthguards are necessary, with a need to educate parents and patients about their importance. This article reaffirms that when a dental crown injury occurs, composite restorations and original fragment reattachments are the treatment of choice in patients who have not yet achieved their complete dental/skeletal growth. The authors state that resin restorations cannot be used for long-term repair and that prosthetic restoration (crown or veneer) must be used when the subject has completed his/her growth. The repeated injury of a previously traumatized tooth will certainly lessen the chances that a conservative repair using resin will last. Although the prosthetic option eventually may be the case, it would best serve pediatric clinicians to inform parents and patients of this possible outcome and only resort to that step when actually needed. **GM**

Address correspondence to Dr. Enrico Spinas, c.so Vittorio Emaniele, 340-09123 Cagliari, Italy.

Spinas E. Longevity of composite restorations of traumatically injured teeth. Am J Dent 2004;17:407-411.
42 references