

8. Delaire J, Verdon P, Flour J. Ziele und Ergebnisse extraoraler Züge in postero-anteriorer Richtung in Anwendung einer orthopädischen Maske bei der Behandlung von Fallen der Klasse III. *Fortschr Kieferorthop* 1976; **37**: 247-262.
9. Petit H. Adaptations following accelerated facial mask therapy. In: McNamara JA Jr, Ribbens KA, Howe RP (eds), *Clinical alteration of the growing face. Monograph 14, Craniofacial Growth Series, Center for Human Growth and Development*. University of Michigan, Ann Arbor, Mich., 1983.
10. Tindlund RS. Orthopaedic protraction of the midface in the deciduous dentition. *J Craniomaxillofac Surg* 1989; **17**: 17-19.
11. Oppenheim A. A possibility for physiologic orthodontic movement. *Am J Orthod* 1944; **30**: 345-368.
12. Thilander B. Treatment of Angle Class III malocclusion with chin-cap. *Trans Eur Orthod Soc* 1963; 384-397.
13. Tollaro I, Baccetti T, Franchi L. Mandibular skeletal changes induced by early functional treatment of Class III malocclusion: a superimposition study. *Am J Orthod Dentofacial Orthop* 1995; **108**: 525-532.
14. Tollaro I, Baccetti T, Franchi L. Craniofacial changes induced by early functional treatment of Class III malocclusion. *Am J Orthod Dentofacial Orthop* 1996; **109**: 310-318.
15. Catania JA, Cohen BD, Deeney MR. The use of labial root torque and the tie-forward technique in the treatment of maxillary skeletal retrusion and severe arch length discrepancy. *Am J Orthod Dentofacial Orthop* 1990; **98**: 12-18.
16. McNamara JA Jr. An orthopedic approach to Class III malocclusion in growing children. *J Clin Orthod* 1987; **21**: 598-608.
17. Sakamoto M, Sugawara J, Umemori M, et al. Craniofacial growth of mandibular prognathism during pubertal growth period in Japanese boys – Longitudinal study from 10 to 15 years of age. *J Jpn Orthod Soc* 1996; **55**: 372-386.
18. Kim J-H, Viana MAG, Graber TM, Omerza FF, BeGole EA. The effectiveness of protraction facemask therapy: A meta-analysis. *Am J Orthod Dentofacial Orthop* 1999; **115**: 675-685.
19. Itoh T, Chaconas SJ, Caputo AA, Matyas J. Photoelastic effects of maxillary protraction on the craniofacial complex. *Am J Orthod* 1985; **88**: 117-124.
20. Hata S, Itoh T, Nakagawa M, et al. Biomechanical effects of maxillary protraction on the craniofacial complex. *Am J Orthod Dentofacial Orthop* 1987; **91**: 305-311.
21. Tanne K, Sakuda M. Biomechanical and clinical changes of the craniofacial complex from orthopedic maxillary protraction. *Angle Orthod* 1991; **61**: 145-152.
22. McNamara JA Jr, Brudon WL. Orthodontic and orthopedic treatment in the mixed dentition. Ann Arbor, Mich.: Needham Press, 1993.
23. Stambach H, Bayne D, Cleall J, Subtelny JD. Facioskeletal and dental changes resulting from rapid maxillary expansion. *Angle Orthod* 1966; **36**: 152-164.
24. Turley P. Orthopedic correction of Class III malocclusion with palatal expansion and custom protraction headgear. *J Clin Orthod* 1988; **5**: 314-325.
25. Gardner GE, Kronman JH. Cranioskeletal displacements caused by rapid palatal expansion in the rhesus monkey. *Am J Orthod* 1971; **59**: 146-155.
26. Silva Filho OG, Magro AC, Capelozza Filho L. Rapid maxillary expansion in the deciduous and mixed dentitions: a cephalometric evaluation. *Am J Orthod Dentofacial Orthop* 1991; **100**: 171-181.
27. Silva Filho OG, Magro AC, Capelozza Filho L. Early treatment of the Class III malocclusion with rapid maxillary expansion and maxillary protraction. *Am J Orthod Dentofacial Orthop* 1998; **113**: 196-203.
28. Tanne K, Hiraga J, Sakuda M. Effects of directions of maxillary protraction forces on biomechanical changes in the craniofacial complex. *Eur J Orthod* 1989; **11**: 382-391.
29. Baik HS. Clinical results of maxillary protraction in Korean children. *Am J Orthod Dentofacial Orthop* 1995; **108**: 583-592.
30. Spillane LM, McNamara JA. Maxillary adaptation to expansion in the mixed dentition. *Semin Orthod* 1995; **1**: 176-187.
31. Ngan P, Hagg U, Yiu C, Merwin D, Wei HYW. Soft tissue and dentoskeletal profile changes associated with maxillary expansion and protraction headgear treatment. *Am J Orthod Dentofacial Orthop* 1996; **109**: 38-49.
32. Wertz RA. Skeletal and dental changes accompanying rapid midpalatal suture opening. *Am J Orthod* 1970; **58**: 41-66.
33. Sandstrom RA, Klapper L, Papaconstantinou S. Expansion of the lower arch concurrent with rapid maxillary expansion. *Am J Orthod Dentofacial Orthop* 1988; **94**: 296-302.
34. Potpeschnigg. *Deutsch Viertel Jahrschrift fur Zahnheilkunde. Month Rev Dent Surg* 1875; **3**: 464-465.
35. Ishii H, Morita S, Takeuchi Y, Nakamura S. Treatment effect of combined maxillary protraction and chin-cap therapy in severe skeletal Class III cases. *Am J Orthod Dentofacial Orthop* 1987; **92**: 304-312.
36. Campbell PM. The dilemma of Class III treatment. *Angle Orthod* 1983; **53**: 175-191.
37. Nanda R, Hickory WV. Zygomaticomaxillary suture adaptations incident to anteriorly-directed forces in Rhesus monkeys. *Angle Orthod* 1984; **54**: 199-210.
38. Stensland A, Wisth PJ, Boe OE. Dentofacial changes in children with negative overjet treated by a combined orthodontic and orthopaedic approach. *Eur J Orthod* 1988; **10**: 39-51.
39. Battagel JM, Orton HS. A comparative study of the effects of the customised facemask therapy or headgear to the lower arch on the developing class III face. *Eur J Orthod* 1995; **17**: 467-482.
40. McNamara JA Jr, McGill JS. Treatment effects produced by facial mask therapy in young Class III patients. *Eur J Orthod* 1995; **17**: 354 (Abstract).
41. McNamara JA Jr. Mixed dentition treatment. In: Graber TM, Vanarsdall RL, eds. *Orthodontics – Current Principles and Techniques*. St. Louis: Mosby Year-Book, 1994; p.508.
42. Proffit WR. *Contemporary Orthodontics*. St. Louis: CV Mosby, 1992.
43. Takada K, Petdachai S, Sakuda M. Changes in dentofacial morphology in skeletal class III children treated by a modified maxillary protraction headgear and chin cup: a longitudinal study. *Eur J Orthod* 1993; **15**: 211-221.
44. Cederquist R. Degree of stability following experimental alteration of midfacial growth with heavy intermittent force. *Proc Inst Med Chicago* 1987; **32(3)**: 50-51.
45. Wisth PJ, Tritrapunt A, Rygh P, et al. The effect of maxillary protraction on front occlusion and facial morphology. *Acta Odontol Scand* 1987; **45**: 227-237.
46. Jackson GVV, Kokich VG, Shapiro PA. Experimental response to anteriorly directed extraoral force in young *Macaca nemestrina*. *Am J Orthod* 1979; **75**: 319-333.
47. Stockfisch H. Rapid expansion of the maxilla – success and relapse. *Rep Congr Eur Orthod Soc* 1969; 469-481.
48. Timms DJ. Scope and limitations of rapid lateral maxillary expansion. *Orthodontist* 1969; 239-253.
49. Linder-Aronson S, Lindgren. The skeletal and dental effects of rapid maxillary expansion. *Br J Orthod* 1979; **6**: 26-29.

ABSTRACT

OTHER COUNTRIES FIND ENDODONTICS DIFFICULT AS WELL

Quality Evaluation of Process of Root Canal Treatments Performed on Young Adults in Finnish Public Oral Health Service. S.E. Helminen, M. Vehkalahti, E. Kerosuo and H. Murtomaa. *Journal of Dentistry* 2000; **28**: 227-232. The quality of endodontic treatment carried out in the United Kingdom has frequently been called into question. This paper presents the results of a

survey carried out in Finland, with disturbingly similar conclusions.

The records relating to 148 root canal treatments carried out in general dental practice were examined. In 60% of the cases no reason was given for carrying out the endodontic treatment, and almost a quarter contained little clinical information regarding canal lengths, sizing, etc. Only 34% had a pre-operative radiograph, and only 52% had a post-operative film, in both of which almost one-fifth were not of a diagnostic quality. It was thus impossible to assess the quality of the treatment in over one half

of the cases. In those where it was possible, 48% showed an unacceptable result. The authors had a list of criteria for optimal treatment, and not one case achieved a full score.

No reasons are postulated for the differences found between actual practice and clinical guidelines, but the authors conclude with the profound understatement that *the solution for how to overcome this gap would appear to be the master key to good quality root canal treatments.*

**Peter Carrotte
Glasgow Dental School**