Evidence-based Orthodontic Treatment: What Is the Evidence?

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Irregularities of the teeth and unacceptable facial appearance have been human concerns since the Greek and Roman periods. The word "orthodontics" was first used in a book published in the late 18th century by Pierre Fauchard. Norman Kingsley published a book entitled "Treatise of oral deformities as a branch of mechanical surgery" in 1880 in which he introduced the mechanics of tooth movement and its biological tissue reaction. More recently, Edward Angle had a great influence on modern orthodontics. While orthodontic clinical treatment has been built on these and other forefathers, patient care in 2020 and beyond demands more than historical precedent.

Currently the terms "evidence-based orthodontics" and "evidence-based treatment" are often used in orthodontic clinical and research publications to validate a particular therapeutic approach. What is the actual "evidence" for what we do as orthodontists and where does it come from? Development of knowledge in the areas of molecular biology, craniofacial growth and development, histological tissue reaction, dental materials, as well as the improved use of statistics have supported the current theoretical basis for orthodontic treatment. As a result, there has been increased development of technical procedures for patient care.

Looking to the future, we need to focus on individual patient variables by better monitoring differences in the biological and psycho-social backgrounds among patients. Future clinicians considering orthodontic treatment planning will need to cultivate an "individualized diagnostic eye," based on improved understanding of more broadly based and identified patient characteristics.