COMMENTARY

Analysis of the Golden Proportion and Width/Height Ratios of Maxillary Anterior Dentition in Patients with Lateral Incisor Agenesis¹

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The literature cites many references that use the golden proportion to design smiles.²⁻⁴ Yet, do the smiles that are actually created display the golden proportion? This article seeks to determine if a group of patients who were missing maxillary lateral incisors and were restored by either implants or had canines repositioned orthodontically and had composite restorations placed to mimic the appearance of natural lateral incisors exhibited the presence of the golden proportion between the facial view widths of the central incisors/lateral incisors and lateral incisors/canines.¹ The results demonstrated that this did not occur in the majority of cases.

Published articles have shown the presence of the golden proportion in natural teeth did not exist in a majority of patients studied.⁵ In another study, the golden proportion was not found to exist among individuals who were deemed to have an esthetically pleasing smile.⁶ The article analyzed the resulting width/length ratios of the restored or replaced lateral incisors and found that the golden proportion was also not found to be observed. Studies have suggested that a key factor in determining the smile proportion favored by dentists is the width/length ratio of the maxillary central incisors.⁷ Dentists preferred smiles with tall teeth to have wider central incisors in order to maintain a preferred 75% to 78% width/length ratio of the central incisor. With tall teeth, the central incisors are also wider and therefore occupy a greater percentage of the inter-commissural width of the smile. Less space is left for the width of the lateral incisors and canines, so the successive viewed widths of the lateral incisors and canines diminish more rapidly. If the concept of proportional smile design with a constant diminishing proportion is employed, the proportion between the viewed widths of the teeth increases as the relative tooth lengths diminish.

Professional models and movie stars were often tall and the earliest to adapt to having esthetic dental procedures performed. Therefore the early adoption of the golden proportion was established. With esthetic dental procedures becoming more mainstream, does it make sense to universally apply these proportions to all teeth including normaland short-length teeth? Studies have shown that using a fixed proportion to diminish the successive viewed widths of the maxillary teeth as you progress distally may be useful to create smiles preferred by dentists. These same studies show that the golden proportion was preferred by a majority of dentists surveyed in patients with tall teeth.⁸

Relative sizes and proportions found in nature do not adhere to a fixed proportion and are variable. Different cultures and ethnicities display varied proportions as well as preferences. Applying a fixed standard proportion may not be applicable in today's global world. The use of variable proportions which take into account the relative size, body type, and desires of the patient, as well as cultural preferences should be considered. Perhaps the golden era is over for the universal use of the golden proportion.

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This commentary is accompanied by article, "Analysis of the Golden Proportion and Width/Height Ratios of Maxillary Anterior Dentition in Patients with Lateral Incisor Agenesis" Núbia Pavesi Pini, DDS, Luciana Manzotti De-Marchi, DDS, MS, Bruno Frazão Gribel, DDS, MsC, Adriana Lemos Mori Ubaldini, DDS, Renata Corrêa Pascotto, DDS, MS, PhD, DOI 10.1111/j.1708-8240.2012.00533.x.

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