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Physics on the Dental Admissions Test (DAT): An argument for why the test should gradually incorporate this subject into the evaluation of pre-dental applicants

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Abstract

Although physics is a pre-requisite for dental students prior to matriculation it is not tested on the DAT, unlike the medical college admissions test (MCAT). Medicine, unlike dentistry, has taken full advantage of its principles and thus remains at the forefront of technologic advancements in the health care profession. By incorporating and testing its concepts, dental students will be better equipped to relate physics to their field and help advance it. Our presentation will focus on concepts already taught in dentistry, and explore how physics principles apply to several of them. We want to emphasize the importance of physics and how testing even the most basic concepts will help prepare students to "think outside the box". Classical physics, specifically Newtonian Mechanics, has several applications in nearly all areas of dentistry: restorative, orthodontics, prosthodontics, and surgery. The testing of basic formulas studied in the pre-requisite physics classes will help ease the transition from college to dental school. Modern physics, namely Quantum Mechanics, also plays a significant role in current dental diagnostics and therapeutics. Light and wave properties will be discussed in reference to their significance within dentistry, and how they can be used to advance the field. It is important to note that scientific changes occurring in the health sciences almost mandates students be familiar with concepts rooted in physics. It is our proposal that physics be incorporated into the exam, either with the natural sciences or within the quantitative reasoning section, preparing future dentists for changes in the medical sciences.

Biography

Dr. Rahul Tandon has a degree in mathematics, and further supplemented his education by taking classes on advanced topics in physics. A 2011 graduate from the University of Kentucky College of Dentistry, he is currently serving in his 3rd year as the Boyne/Geistlich Research Fellow at Loma Linda University. He has authored or co-authored nearly 12 publications and 4 book chapters during this time, and currently serves as a program committee member for the SPIE society on optical engineering and osseous surgery. His research mainly focuses on the incorporation of physics principles into dentistry and oral & maxillofacial surgery.