

INTRODUCTION

Tactile sensitivity is the ability to distinguish relative degrees of tooth surface roughness through the sense of touch and proprioception.¹ No published research has reported on the effects of ultrasonic or hand instrumentation on tactile sensitivity in dental hygiene students. This study will determine if time spent instrumenting a class IV calculus class client, either manually or with an ultrasonic scaler, decreases the tactile sensitivity of the dental hygienist, as well as if there is a change in index finger, middle finger, and thumb tactile sensitivity prior to and after these scaling episodes. This study will determine if tactile sensitivity is affected by continuous scaling for 45 minutes with manual instruments and ultrasonic instruments in senior dental hygiene students working on clients. Moreover, because members of the study sample had their tactile sensitivity measured in the fall 2002 as part of an earlier study², it is an opportunity to determine if tactile sensitivity changes in dental hygiene students over a one-year period of time.

PROBLEM STATEMENT

Ultrasonic instruments emit vibrations that can decrease the peripheral neural and vascular structures in the fingers and hands. The effects of manual scaling on tactile sensitivity are unknown. Major health problems associated with the use of vibrating instruments include peripheral vascular and peripheral neural disorders of the fingers and hands.³ Therefore, this study intends to answer the following questions:

- Does tactile sensitivity change over a short period of time, i.e., prior to and after a 45 minute manual or ultrasonic scaling appointment?
- Is there a difference in the tactile sensitivity of the thumb, index and middle fingers?