

TALK

ENVIRONMENTAL SENSITIVITY AND TWIN TYPE INFLUENCE ANXIETY RESPONSES IN THE DENTAL SETTING

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ABSTRACT

Emotions trigger physiological changes, including skin temperature variations and behavioral responses. The dental environment is a well-known source of anxiety across age groups worldwide. This response may be related to Environmental Sensitivity (ES) — the degree to which individuals perceive and react to environmental stimuli — a trait with an estimated heritability of around 47%. Twin studies offer a unique approach to examining behavioral and physiological responses, as Monozygotic twins share 100% of their DNA, while Dizygotic twins share approximately 50%. The necessity for dental procedures was evaluated in 34 pairs of twin children across two visits (an initial evaluation and a follow-up six months later). Linear models were adjusted for anxiety and temperature variations by type of twins, ES, and treatment-related variables. Anxiety was evaluated via facial thermography and the Modified Child Dental Anxiety Scale (MCDAS); ES and zygosity via questionnaires. The best-fitting model, based on the Akaike Information Criterion, indicated effects of twin types and their interaction with ES on the children's reaction to being evaluated by a dentist. Greater ES increased anxiety; the tip of the nose best predicted anxiety levels. More sensitive individuals tended to present a minor variation in the temperature of the nose and ear. However, the interaction effect of ES and twin type suggests a modification in this direction. Visit order (first vs. second) showed a limited effect, suggesting familiarity did not explain less anxiety. A better understanding of factors influencing children's responses requires further evaluation, such as treatment, age, or number of experienced visits.