Background and study aims

Adolescents are an at-risk population for caries and gingivitis by virtue of converging challenges common to this age group: lessening parental oversight of oral hygiene, frequent consumption of high sugar and acidic drinks and snacks, and increased social and academic demands and distractions that can impact motivation to perform regular, conscientious toothbrushing. Individually and collectively, these factors can contribute to greater levels of undisturbed dental plaque, which could promote caries formation and gingival disease. Combining oral hygiene aids with advanced technology-based features that resonate with the teen demographic is a novel way of encouraging toothbrushing.

The objective of this study was to evaluate the plaque removal efficacy of an interactive electric toothbrush in combination with the use of a smartphone application versus a regular manual brush in an adolescent population over a period of 2 weeks.

Who could participate?

Generally healthy volunteers aged 13-17 with evidence of dental plaque indicating the need for improvement in oral hygiene.

What did the study involve?

Participants were randomly allocated to either the test group (interactive electric toothbrush connected to a smartphone app) or the control group (regular manual toothbrush). Both groups used a standard anti-cavity toothpaste.

Participants were requested to use their assigned products twice daily at home for the duration of the study. At the start of the study and at week 2 participants received oral exams, a dental plaque measurement and their brushing time was recorded.

What were the possible benefits and risks of participating?

The study was designed to assess if the participants in the test group experience an improvement in oral health.

The participating received information and education by dental professionals about the weaknesses in their oral hygiene routine and in detail on which tooth surfaces they need to pay more attention when brushing. In addition, their participation helped in the development of products that aim to improve oral health. There were no notable risks involved with participating.

Where was the study run from?

Universitätsmedizin der Johannes Gutenberg Universität Mainz (Germany).

When was the study starting and how long was it expected to run for?

February to March 2015

Who was funding the study?

Procter and Gamble Company (USA

Who is the main contact?

Dr. Christina Erbe