

2001: A study to evaluate the normal tooth brushing habits of children

E. Newby, S. Ashburner* and ML. Bosma

GlaxoSmithKline Consumer Healthcare, Weybridge, UK



Introduction

The general consensus amongst oral healthcare professionals is to spend at least 2 minutes brushing your teeth. For example, the British Dental Association provides advice to parents on brushing technique and time for children and states that thorough brushing takes 2-3 minutes¹. However a home-use study of Beals *et al*² determined an average brushing time of 46 seconds in 173 US adults.

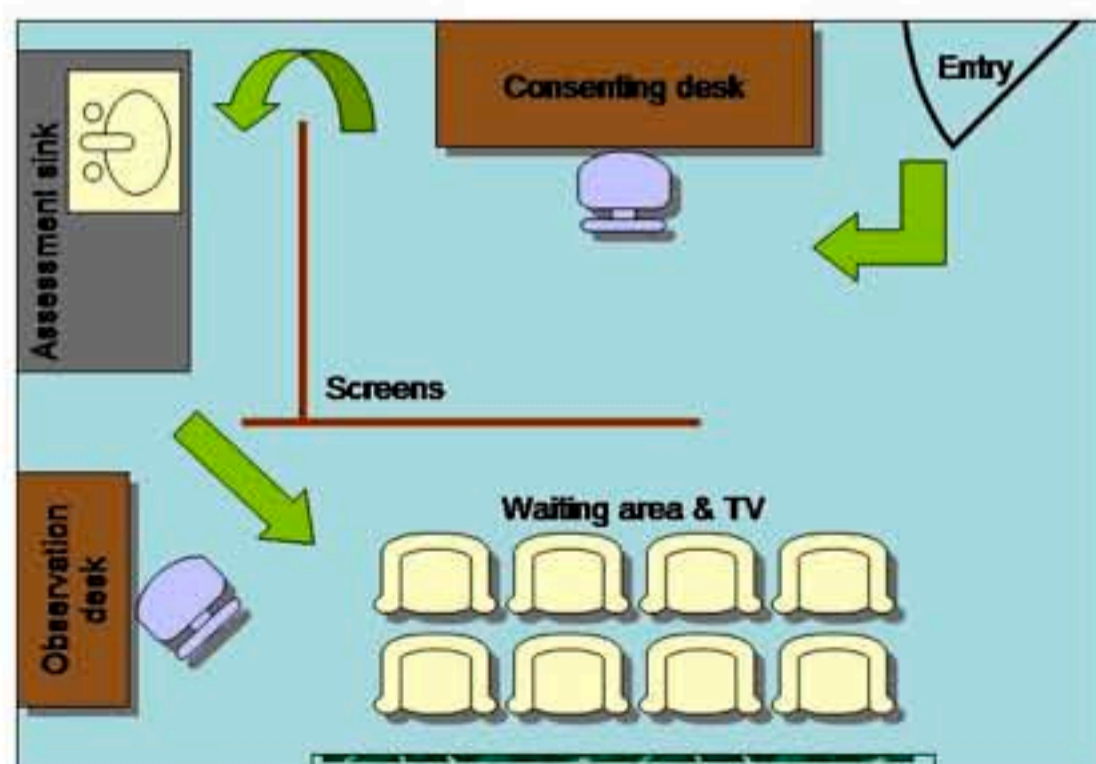
The purpose of this study was to understand how long children spent brushing their teeth when uninstructed. The study was performed in a controlled manner to enable accurate recording of brushing time without influencing the normal brushing behaviour of the subject.

Methods

One hundred and sixty six subjects, aged 7-11 years, participated in this study conducted over two days at a primary school in Surrey, UK. Prior to the study day subjects provided their own written consent and written consent of a parent or guardian.

Subjects presented at the study room one class at a time according to a timetable determined by the school. Subjects were told that the purpose of the study was to obtain information on the way that they brush their teeth; they were not told that brushing time would be recorded. The brushing area was concealed by screening panels to prevent observation by the other subjects.

Figure 1 – Study Room Layout



Each subject was asked in turn by a member of the study team to confirm their consent. On approaching the sink subjects were supplied with a new Macleans Sensitive toothbrush and a tube of Aquafresh Mild & Minty toothpaste. This toothbrush was chosen as the head size was considered appropriate for the age of the subjects taking part. Subjects were instructed to dispense the paste onto the brush and brush their teeth in their usual manner. No further instructions were provided.

A separate member of the study staff unobtrusively observing from a distance of approximately 2 meters to record the brushing time. Brushing time was recorded from the moment the subject started brushing and stopped when the paste was expectorated. The stopwatch was concealed from view throughout the study.

When subjects had completed their brushing, the toothbrush was discarded. Subjects were questioned at the Observation Desk to ensure they had not experienced any difficulties during the brushing before returning to the Waiting Area.

Subjects waiting for their turn in the Waiting Area were distracted by watching an entertainment DVD.

Statistical Methods

The mean, median and range of brushing times in seconds (s) were calculated for all subjects and summarised according to age group.

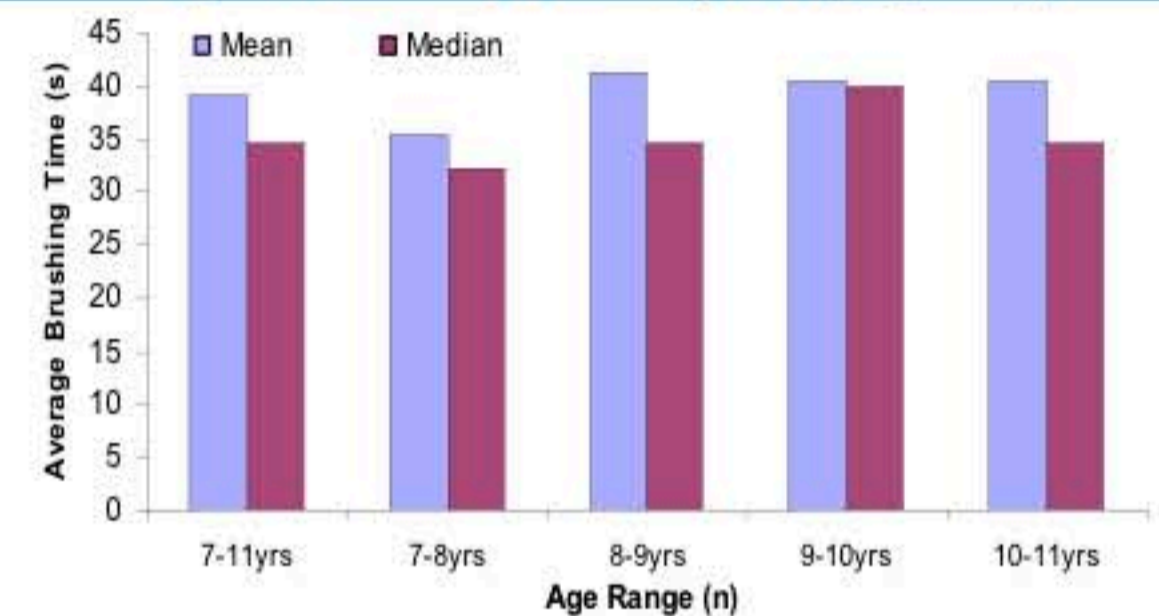
Results

The results from the study are summarised in Table 1 and Figures 2 and 3.

Table 1 – Summary of Brushing Time by Age Group

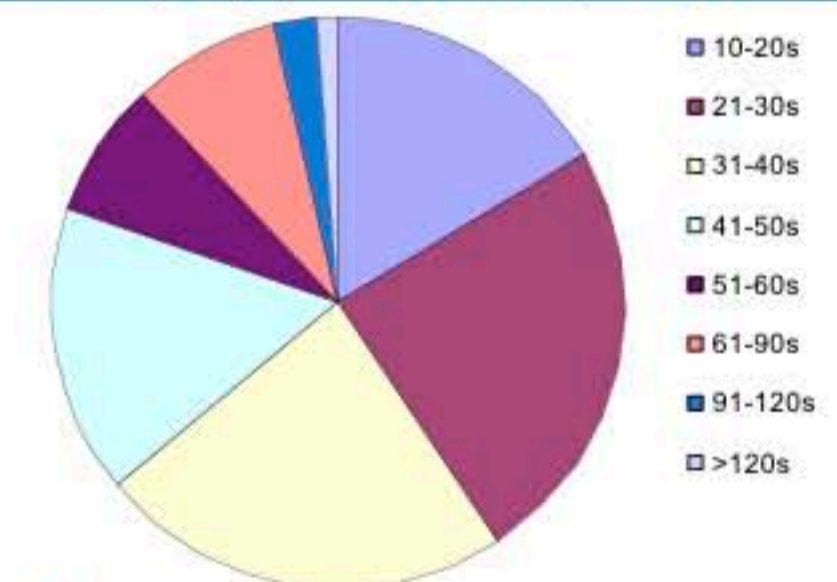
	Summary of Time Spent Brushing (seconds)				
	Overall	Year 3	Year 4	Year 5	Year 6
Age Range	7-11yrs	7-8yrs	8-9yrs	9-10yrs	10-11yrs
N	166	52	38	39	37
Mean	39.09	35.30	41.30	40.58	40.57
Median	34.70	32.11	34.58	40.02	34.68
Standard Dev	20.13	14.20	24.24	19.39	22.77
Range	11.98-130.23	13.08-65.85	15.82-122.03	13.91-94.57	11.98-130.23

Figure 2 – Summary of Brushing Time by Age Group



The relative proportions of all subjects brushing time is displayed in Figure 3. 80% of all subjects brushed for less than 50 seconds, with only 1.2% brushing for 120 seconds or longer.

Figure 3 – Summary of proportion of all subjects by brushing time range



Conclusions

Overall the mean time children aged 7-11 years spent brushing their teeth when given no instruction was 39 seconds, and the median brushing time was 35 seconds. This is consistent with the data shown in adults by Beals².

This study demonstrated that children aged 7-11 brush on average for less than a minute when not provided with specific brushing instructions.

References

- www.3dmouth.org
- Beals D, Ngo T, Feng Y, Cook D, Grau DG, Weber DA: Development and laboratory evaluation of a new toothbrush with a novel brush head design. *Am J Dent* 2000;13:Special Issue, 5A-14A