

Mechanical Plaque Control

Plaque

- Major causative factor in
 - ♦ Caries
 - ♦ Periodontal disease
- Daily removal of plaque prevents oral disease
- Mechanical plaque removal achieved by
 - ♦ Toothbrush, floss, interdental brushes (home)
 - ♦ Professional cleaning (dental professional)

Toothbrushing serves two different and important functions

- Mechanical debridement
- Delivery system – toothpaste and other agents

Mouth cleaning dates back to earliest recorded history

- First “toothbrush” introduced in the 15th Century in China
- First modern toothbrush introduced in England in 1780 by William Addis – mass produced
- Nylon toothbrush bristles in 1938 in USA (Du Pont)
- First electric toothbrush on market in 1960s (Broxodent)
- 1987 – first rotary action electric toothbrush

Our objective as oral health professionals is to encourage patients to brush regularly and effectively to prevent disease.

1986 State of the Science Workshop¹ – toothbrushing recommendations:

- Twice daily toothbrushing with a fluoridated toothpaste
- Avoid forceful brushing

- Use toothbrush with small head and soft nylon bristles
- Powerbrushing (oscillating/rotating) – more effective plaque removal

Interdental Cleaning

- Interdental space – not accessible with toothbrush
- Interdental surfaces prone to caries and at high risk for periodontal diseases
- Dental floss most effective for narrow interdental spaces
- Interdental brushes more effective for wider spaces and reaching root concavities – also for bridges, implants and orthodontic appliances

How often do Australians change their toothbrush?

- Approx 35 million toothbrushes sold/year
- Approx 1.8 brushes/person/year
- 90% manual and 10% powered

Patient toothbrushing instruction – act as a facilitator not a judge – there is no one toothbrush that is right for every patient.

Shopping Behaviour

- Toothbrush category in shops is confusing – consumers browse and spend a lot of time in the section
- Consumers consider – user (adult/child), manual vs powered, bristle strength and functional features
- Bristle strength is the most important feature in making a choice
- 50% of shoppers make product choice in store
 - ♦ Price is the most common choice driver
 - ♦ Second reason – regular/favourite brand
 - ♦ Colour and graphics influence children’s brush purchase

The Colgate logo is displayed in white text on a red background. The background consists of a red rectangle with a red ribbon-like shape extending from its bottom right corner.

References

1. Brothwell DJ et al. "An update of mechanical oral hygiene practices: Evidence based recommendations for disease prevention." J Canad Dent Assoc. 64 (4): 295-306. 1988.
2. Australian Dental Association. Dental Health Information: How to brush properly. Australian Dental Association. URL:<http://ada.org.au/oralhealth/fln/smcomm/how2brush.aspx>
3. An Update of Mechanical Oral Hygiene Practices: Evidence-based Recommendations for Disease Prevention. State of the Science Workshop. 1986
4. Goh HH. Interspace/interdental brushes for oral hygiene in orthodontic patients with fixed appliances. Cochrane Database Syst Rev. 2007 Jul 18;(3):CD005410. Review.
5. Quirynen M, de Soete M, Pauwels M, Goossens K, Teughels W, van Eldere J, van Steenberghe D. Bacterial survival rate on tooth- and interdental brushes in relation to the use of toothpaste. J Clin Periodontol. 2001 Dec;28(12):1106-14.
6. Christou V, Timmerman MF, Van der Velden U, Van der Weijden FA. Comparison of different approaches of interdental oral hygiene: interdental brushes versus dental floss. J Periodontol. 1998 Jul;69(7):759-64.
7. Kiger RD, Nylund K, Feller RP. A comparison of proximal plaque removal using floss and interdental brushes. J Clin Periodontol. 1991 Oct;18(9):681-4.
8. Abbas F, Voss S, Nijboer A, Hart AA, Van der Velden U. The effect of mechanical oral hygiene procedures on bleeding on probing. J Clin Periodontol. 1990 Mar;17(3):199-203. PMID: 2319006
9. Bergenholz A, Gustafsson LB, Segerlund N, Hagberg C, Ostby N. Role of brushing technique and toothbrush design in plaque removal. Scand J Dent Res. 1984 Aug;92(4):344-51.
10. Wolff D, Joerss D, Rau P, Dörfer CE. In vitro cleaning efficacy and resistance to insertion test of interdental brushes. Clin Oral Investig. 2006 Dec;10(4):297-304. Epub 2006 Aug 5.
11. Axelsson P, Nyström B, Lindhe J. The long-term effect of a plaque control program on tooth mortality, caries and periodontal disease in adults. Results after 30 years of maintenance. J Clin Periodontol. 2004 Sep;31(9):749-57.
12. Ciancio S. Improving oral health: current considerations. J Clin Periodontol. 2003;30 Suppl 5:4-6.
13. Haugejorden O. Efficacy of interdental cleaning devices. J Clin Periodontol. 1994 Oct;21(9):641.
14. Kleisner J, Imfeld T. Evaluation of the efficacy of interdental cleaning devices. How to design a clinical study. J Clin Periodontol. 1993 Nov;20(10):707-13.
15. Caton JG, Blieden TM, Lowenguth RA, Frantz BJ, Wagener CJ, Doblin JM, Stein SH, Proskin HM. Comparison between mechanical cleaning and an antimicrobial rinse for the treatment and prevention of interdental gingivitis. J Clin Periodontol. 1993 Mar;20(3):172-8.



Head to www.colgateprofessional.com.au/students for more information on products, references, resources, competitions and prizes