The safety question
Power toothbrush effectiveness is seldom debated, but are safety concerns involved? Could the documented connection between power toothbrushing and greater patient compliance lead to more gingival abrasion caused by longer brushing times or increased brushing frequency? Does power toothbrushing result in more hard tissue wear compared to manual brushing? Will enthusiastic power brush users apply too much force and compromise their gingival tissues or promote recession?

The goal should be evidence-based recommendations as opposed to speculation, but keeping up with all of the literature and assessing the quality and relevance of each individual power toothbrush study requires a significant commitment of time and effort for profession-als who already have a lot on their plates.

In search of an answer
Systematic reviews of health topics (see sidebar) can be a great asset to busy professionals who don’t have the time to comb through the literature themselves. To address the power toothbrush safety question, a recently published systematic review in the Journal of Periodontology considered theoretical safety concerns over power versus manual toothbrushes through a comprehensive analysis of all relevant published reports. The Cochrane Group concluded that one brush type produced statistically significantly superior results. "Powered toothbrushes are here to stay," they recommended.7

The safety question
What was power research included? O-R power toothbrush safety research was chosen for comparison to manual toothbrushes based on the Cochrane findings.7 All published English language titles and abstracts through May 2010 were included in a full search of three major databases (e.g., PubMed-Medline), resulting in 899 potential publications. The research was focused, with 55 meeting all predetermined eligibility criteria. The 55 studies in the final review were designed to measure soft and/or hard tissue safety by tracking either primary (gingival recession) or secondary parameters (observed or reported adverse events or hard tissue effects), or a surrogate parameter (stained gingival abrasion or brushing force).

What patients and tooth-brushes were involved? There was considerable diversity among the nearly 2,000 patients included in the 55 randomized and blinded human subject clinical trials, which ranged from four days to three years. These included adults with and without elevated plaque, gingivitis and/or bleeding, children with and without orthodontia, and periodontal pa-tients. Braun/Oral-B or Philips/Jordan manufactured the power brushes in the reviewed studies, while 10 various comparator manual brushes were also represented. The majority of toothbrushing was unsupervised in the home setting.

What was O-R power toothbrushes associated with more gingival recession? No. A meta-analysis of the published reports de-monstrated that O-R power brushes when used at the same brushing force. Four in vitro (laboratory) inves-tigations not eligibility criteria and were included in the review. The three trials evaluating hu-man dentin found similar or less wear with use of the O-R power toothbrushes, compared with manual brushes used under simulated clinical conditions. The authors of the fourth study suggested that boron enamel loss after an acidic attack may be increased with use of cer-tain power toothbrushes when used at the same brushing force. But understanding the clinical impli-cations is difficult, given that toothbrushing forces have been
Oral Probiotics—Overview

By Victoria Wilson, UK

• Oral probiotics are live bacteria that are similar (or identical) to the beneficial microorganisms found naturally in the oral cavity. The addition of oral probiotics to an oral hygiene program can help restore the natural balance of beneficial bacteria, which can be depleted by diet, stress, medication, illness, or other factors. Oral probiotics support tooth and gum health, whiten teeth and freshen breath.

• How on earth did the words “brush” and “floss” come to define our entire profession? Did we spend almost 5,000 grueling hours learning only how to teach people to brush “n’ floss” the same way over and over—to become really great at explaining the mechanical removal of plaque.

• To start your own neurogenesis mission, obey the brush/floss default story. Focus on the term biofilm management instead.

• Simply brush and then talk to your patients about biofilms. Then talk about how oral probiotics can reduce oral biofilm, particularly in the secret spots where a brush and floss cannot reach. All probiotics work in the same biofilm system, but only a few can function in the first six inches of the mouth.

Oral probiotics are a little different than their counterparts. Probiotics for the gut must make it past the hostile environment of the stomach. For example, yogurts are generally ensheathed with excessive numbers of live bacteria. This is so an appropriate number of live bacteria can make it to the intestines where they can do their work. Probiotic tablets are used to help them stay together until they get to the right part of the digestive system, where the friendly bacteria are released. Oral probiotics must be activated in the mouth. Most people immediately think that the tablets or capsules are teensie with mouth biologist. Not so! The bacteria are freeze-dried so that they can reanimate under moist conditions.

When using products containing freeze-dried oral probiotics in the mouth, start with their activation with the release of live, active bacteria that attaches itself to the surface of the teeth and deep beneath the gum line. These colonies become the biofilm of beneficial bacteria to support oral health. With daily replenishment, these probiotic bacteria re-establish the natural microclimate in the mouth and create whiter teeth, fresher breath and healthful tooth enamel.

In the oral cavity, harmful bacteria convert sugar and carbohydrates into lactic acid. Lactic acid is the bacterial byproduct which is responsible for dental caries and the erosion of tooth enamel. Without requiring lifestyle changes, the addition of oral probiotics can positively affect the long-term health and wellness of the mouth and the other health systems dependent on oral health.

Some oral probiotic strains are beneficial in promoting health, particularly in countering the acid that is responsible for dental disease. Harnessing this pH characteristic of biofilms gives right up into the face of traditional biofilm management strategies. Adjusting the pH allows your patients to manage their biofilms without having the dexterity and labor-intensive education of a dental hygienist. This pH alteration is energized by one particular friendly bacteria in the Proliferus family, Streptococcus oris KJ3 and Streptococcus uberis KJ2 give off hydrogen peroxide. Take a shade guide picture before starting your patients on these probiotics and see if you notice a difference. Are the teeth brighter?

In the early days of caries bacterial studies, it was learned that when Streptococcus mutans was fed sucrose, they would excrete massive amounts of the acid that is responsible for dental decay. The pH of the biofilm is the primary player in this process. A biofilm can be destroyed by such things as antibiotics, toothbrushes, and floss. Supplying the mouth with the Proliferus complex populates the niche previously inhabited by the deleterious and disease-promoting organisms. This is a simple way to provide a healthier, faster than Strep, mutans can.

References
8. Floss in the mouth, saliva causes their activation with the release of hydrogen peroxide. Take a shade guide picture before starting your patients on these probiotics and see if you notice a difference. Are the teeth brighter?

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PRECISION CLEAN BRUSH HEAD PROVIDES

UP TO 5x

GREATER REDUCTION

IN PLAQUE BIOFILM ALONG THE GUMLINE

5x

* vs. a regular manual toothbrush

Oral-B, most Dentist Recommended Toothbrush Brand worldwide

#1

continuing the care that starts in your chair
The story of oral probiotics gets better! This way of biofilm management is not the wave of the future any longer.

Recommended oral probiotics work on the microorganisms in healthy mouths may be the tick-tock for patients who cannot or will not remove their own biofilm to dental hygiene standards.

When giving brush ‘n’ floss directions, we end up focusing only on the teeth, and we miss the elephant in the room – the tongue. Tongue coating is not innocuous, nor is it only a cosmetic concern. Biofilm on the tongue releases planktonic bacteria in what’s called a planktonic storm.

A coated tongue sends new biofilm to the rest of the mouth.

So it’s time for the tongue to be included in discussions about biofilm management and prophylaxis and it is time that probiotics play a very important role due to their activity in all oral biofilm.

**Gum and Tooth Health**

If harmful, disease-causing bacteria are allowed to colonize in the periodontal pocket, the result is advanced periodontal disease. To address this, it is increasingly more common as well as very painful to have dentists clean teeth below the gum line. Research has revealed that even after the aggressive process of scaling to clean out the periodontal pockets, the future oral health of the patient is determined by the type of bacteria that colonizes first in the base of the gum line.

Furthermore, the bacteriological agent is easily washed from the mouth while the probiotic bacteria have high survivability; i.e., they have a prolonged duration of contact with disease-susceptible surfaces in the mouth and thus the prolonged beneficial activity.

Oral care products and foods developed using this probiotic approach can safely maintain and promote oral health by normalizing the balance of the indigenous flora in favor of microorganisms associated with both healthy teeth and periodontal and gum tissues.

As a leading dental company, KaVo is offering comprehensive, all-inclusive infection protection and more security for the patient and dental practice team. All KaVo units have an automatic ongoing and intensive sterilisation function which ensures the continuous germ reduction of the systems which eliminates water and prevents the formation of microorganisms in peri-odontal stagnation.

In addition, the dental instrument rinsing function ensures that all tools are rinsed before beginning treatment and after each patient treatment automation is taking place in a BKA compliant manner. Of course, handles, instrument shelves, spittoon bowls and suction cannulas can be removed easily and without difficulty for cleaning and disinfection.

The smooth, closed and hygienically-surface of the dental units also play a role in reducing the infection risk.

The KaVo ESTETICA E70 and E80 dental units also have with OXIMat and DEKamat a fully automatic hygiene system: The manual, time-consuming mix- ting or refilling sterilisation and disinfectants are thereby a thing of the past. In the KaVo ESTETICA E50, the optionally available CENTRAMAT takes over the central supply of the unit with DEKASEPTOL gel which ensures high-efficiency cleaning and disinfection of the suction or drainage system which is subject to contamination. With OXYGENAL 6, KaVo also offers an environmentally friendly and harmless product based on hydrogen peroxide which has proven its effectiveness, material compatibility and user-friendliness in daily practice.

In addition to the treatment units, the tool portfolio of KaVo is also appealing due to numerous hygiene effects: effective reduction steps, for example, prevent contamination of the inside of the tools and thereby support hygiene safety. The Plaque & Biofilm coating of the tools not only offers excellent gripping properties but is also easy to clean. For decades, KaVo tools and turbines are thermally disinfectable and sterilizable. Minimal gap dimensions also make hygiene safer and more efficient.

With the OXIMAT MC 2000, KaVo offers an excellent tool for a validated, all-incom- patible cost-efficient interior cleaning and the maintenance of instruments. Because: to effec- tively prevent infections, den- tal transfer elements must be cleaned and disinfectd interior and out.

Due to its many years of ex- perience with dental practice hygiene, the proven and coor- dinated hygiene system (BKA compliance) and proven effec- tiveness and excellent stability of the materials used, KaVo is your top choice as partner when it comes to hygiene safety, also for instruments.
There are a number of reasons to choose Philips Sonicare.

Removes up to 7x more plaque between teeth and overall

Performs up to 31k brush strokes per minute

The #1 most-recommended sonic power toothbrush by dental professionals worldwide

Ask your dentist about Philips Sonicare today!
Philips introduces its best brush yet: Sonicare DiamondClean, helping users achieve brushing brilliance every time

By Philips

Dubai, UAE - Philips is proud to present the new Sonicare DiamondClean - a brush that takes sonic tooth brushing to its most sophisticated level and which delivers Sonicare's best clean yet removing up to 100% more plaque in hard to reach places than a manual toothbrush.

Sonicare DiamondClean harnesses Philips Sonicare's patented sonic technology to produce a powerful dynamic cleaning action for a difference users can see and feel. It is gentler on teeth and gums than a manual toothbrush, helping to keep teeth stronger and healthier for longer. Philips Sonicare gently whips toothpaste into an oxygen-rich foamy liquid and directs it between and behind teeth and along the gumline where plaque bacteria flourish. Sonicare DiamondClean is clinically proven to remove up to 100% of plaque from hard to reach places and to improve gum health in just 2 weeks. It is also clinically proven to whiten teeth in 1 week; and its gentle technology actually helps protect against gum irritation and recession to help reduce sensitivity. Now is the perfect time to give your teeth the celebrity treatment and switch to Sonicare to really experience the difference.

Highly charged DiamondClean's chrome base also features a unique charging glass that can be used for mouth rinsing, but also incorporates the latest in inductive charging technology to charge the toothbrush as it rests in the glass - making it stylish enough to display in the most fashion-forward bathroom. Not only is Sonicare DiamondClean Philips' most advanced brush yet, it's also our most easy to use and stylish. DiamondClean's power handle has a ceramic finish and a chrome accent ring highlights the elegant neck of the brush. The technology in the handle is hidden so that the sleek matte finish of the brush is uncluttered by electronic visual displays. Only when the on button is pressed are the brushing modes illuminated to reveal the array of options. These are then simply selected by scrolling down using a one button action.

When travelling or on the go, Sonicare DiamondClean is designed for convenience with users being able to keep their brush fully charged using a revolutionary USB travel case that can be plugged into almost any laptop computer and saves the hassle of having to pack plugs and adaptors. But only the most intrepid travellers need worry about this advanced feature as Sonicare DiamondClean holds an impressive three weeks charge.

Brilliant cut Sonicare DiamondClean brush heads also sport a new diamond-cut tuft formation to provide you with an even more efficient brushing experience. The uniquely designed diamond bristle heads have 44% more bristles than Philips Sonicare's standard sized ProResults brush heads, providing you with both superior plaque removal and whiter teeth. The heads come in two sizes - Standard and Compact – for focused cleaning in areas of special need, for orthodontic patients and those with smaller mouths.

For more information about Philips Sonicare DiamondClean or the Philips Sonicare range, including copies of clinical studies, visit www.mea.philips.com/e/oralhealthcare/ar
Infection control in dentistry has never been more essential

By Dr. Saurur Babarain, Malaysia

The World Health Organization (WHO) has reported a rise in airborne infections worldwide. Tuberculosis in particular has increased in the developing world.[12] It has been stipulated that the risk of exposure to tuberculosis in susceptible DHCP is greater than in healthy individuals. Bennett et al. concluded that dentists and their assistants, who are exposed for approximately 15 minutes during peak aerosol concentration, have a slightly higher risk of exposure to Mycobacterium tuberculosis than the general public does.[8] During this period, the DHCP inhales about 0.014–0.12 µl of aerosolised saliva, which may contain viable pathogens that have a chance to settle on the health of susceptible DHCP.

With all of this in mind, it is the responsibility of DHCP to adhere strictly to recommended infection control guidelines and policies. Several measures should be taken to reduce and control airborne contamination in the dental clinic. For example, it has been demonstrated that the use of a mouthrinse, high-volume evacuation or a combination of both methods significantly reduces the number of colony-forming units in aerosols emitted during ultrasonic.scaling.[3] Routine use of rubber dam isolation provides a clean and dry area for placement of dental restorations, prevents saliva and blood splatter, and protects the patient’s mouth and airway.

Using personal protective equipment (PPE), such as surgical masks (with at least 95% efficiency against particles 0.3–5 µm in diameter; changed for every patient or every 20 minutes in an aerosol environment or 60 minutes in a non-aerosol environment), safety glasses with lateral protection to prevent contact with eyes, as well as disposable gowns and gloves to reduce the penetration of or contact with aerosolised saliva, is vital.

Splatter consists of large particles of greater than 100 µm generated during the use of dental equipment, such as turbines, ultrasonic scalers, or water and air lines. Splatter tends to travel in a trajectory, thereby contacting objects in its path. Aerosol consists of smaller particles that can remain in the air for a long time and travel with the air stream. Most dental aerosols are less than 5 µm in diameter; therefore, they are able to penetrate and stay within the lung, causing respiratory or other health problems. Among dental professionals, the risk of infection is high. Aerosolisation of bacteria in procedures, such as the use of ultrasonic scalers, or water and air lines should be kept in closed cabinets or drawers to prevent contamination. Other important measures that must be taken to prevent cross-infection include adequate sterilisation of dental instruments, disinfection of work surfaces before and after each dental procedure, disinfection of all dental materials and work sent out to the laboratory, and regular maintenance of the dental water lines and equipment, which has the potential to harbour bacteria. All dental water lines should be flushed and disinfected at the beginning of each day for between 5 and 10 minutes and flushed thoroughly with water, as residual water may become contaminated overnight and biofilm may develop along the inner side of the tube. Purgation will result in a significant decrease in bacterial counts.[5, 10]

The Canadian Dental Association recommends rinsing high-speed handpieces for 20–30 seconds after each treatment to purge all potentially contaminated water and air lines. This procedure has been proven to reduce the bacterial load in the water line significantly.[17] Blood cells, as well as bacterial and viral particles, can survive inside handpieces even after disinfection. They must therefore be sterilised between patients.[17, 18]

Dental professionals are at high risk of cross-infection. A report published in 2003 has shown that in developing countries, for example, the number of dental staff members per patient’s treatment is increasing by almost 6 per cent each year.1 Research has shown that infectious microorganisms can be transmitted by blood or saliva via direct or indirect contact, aerosols, or contaminated instruments and equipment.[2] As stated by the US Centers for Disease Control and Prevention (CDC) in their 2005 guidelines, the transmission of infectious disease can occur in four ways: direct contact with blood or body fluids, indirect contact with contaminated objects or surfaces, contact with bacterial droplets or aerosols, and inhalation of airborne micro-organisms.[3]

The most likely mode of transmission in dentistry is through inhalation of bacterial aerosols or splatters. Their potential hazard to dental health care workers has been documented and acknowledged.[4–9] Both can be host to a large variety of microorganisms. Given this, splatter tends to travel in a trajectory, thereby contacting objects in its path. Aerosol consists of smaller particles that can remain in the air for a long time and travel with the air stream. Most dental aerosols are less than 5 µm in diameter; therefore, they are able to penetrate and stay within the lung, causing respiratory or other health problems. Among dental professionals, the risk of infection is high. Aerosolisation of bacteria in procedures, such as the use of ultrasonic scalers, or water and air lines should be kept in closed cabinets or drawers to prevent contamination. Other important measures that must be taken to prevent cross-infection include adequate sterilisation of dental instruments, disinfection of work surfaces before and after each dental procedure, disinfection of all dental materials and work sent out to the laboratory, and regular maintenance of the dental water lines and equipment, which has the potential to harbour bacteria. All dental water lines should be flushed and disinfected at the beginning of each day for between 5 and 10 minutes and flushed thoroughly with water, as residual water may become contaminated overnight and biofilm may develop along the inner side of the tube. Purgation will result in a significant decrease in bacterial counts.[5, 10]

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Diseases can spread easily if infection control measures are not adhered to. (Photo: lightpoet/Shutterstock)

The world is very small