Progressive, paralyzed, protected, perplexed? What are we doing? by Jean Suvan and Francesco D'Aiuto

In 1992, David Sackett, one of the fathers of evidence based healthcare, highlighted the challenge of clinical decision making when faced with many treatment or preventive options. Clinicians have choices and make decisions everyday as they provide care for patients. Some of the options may be evidence based, some not. Together with advances in electronic and scientific technologies has come an explosion of evidence. It is well known that not all evidence is created equal. Evidence based healthcare methodologies have focused on meaningful ways to critically appraise, summarise and synthesize multiple pieces of evidence. With the goal to provide clear guidance for clinical decision making, numerous systematic reviews (research synthesis based on a systematic defined approach) have been published over the last decade. Conceivably, with increased understanding of oral health promotion (including prevention and treatment), we are able to remain constantly progressive as a result. Some would say the contrary. Some oral hygiene procedures have been suggested to be outdated or inefficient, however clinicians continue to recommend them routinely. Is it protection or are we paralyzed by tradition? Are we simply perplexed reverting back to the familiar and safe. Are these suggestions or criticisms merited? This issue contains 5 systematic reviews, the gold standard of evidence based healthcare for guiding clinical practice. Each review focuses on an element of oral hygiene. Consideration of each individual review or of all as a group of reviews addressing oral hygiene issues provides some interesting food for thought.

Berchier and coworkers investigated the efficacy of dental floss as an adjunct to toothbrushing on plaque and parameters of gingival inflammation. Following the electronic search and screening steps, 11 full text articles were eligible for inclusion in the review. The authors found the 11 included studies varied substantially in key elements of study design including the very important element of choice of subjects and outcome indices. Author conclusions were that there is a lack of evidence to support ''routine recommendation of the use of dental floss'' and that ''the dental professional should determine on an individual basis whether high quality flossing is an achievable goal''.

In the next review, Slot *et al.* evaluate the efficacy of interdental brushes on plaque and the parameters of periodontal inflammation. 9 studies were eligible to be included in the review. Studies varied considerably in design. Descriptive results indicated that interdental brushes together with brushing removed more plaque than brushing alone but no difference was shown in gingival inflammation measures. However, authors clarify that it is not appropriate to suggest interdental brush use in areas where the gingival papilla fills the interdental space.

A subsequent review by Hoenderdos *et al.* describes evidence of the efficacy of woodsticks on plaque and gingival inflammation. 7 studies were eligible for inclusion. Results demonstrated that the woodsticks did not remove more plaque than toothbrushing alone, however, did decrease gingival inflammation more than toothbrusing alone.

Haps *et al.* addressed the question of the effect of cetylpiridinium chloride containing mouthrinses as adjuncts to toothbrushing on plaque and parameters of gingival inflammation. The authors conclude that there is evidence of an additional benefit in terms of plaque removal and decrease in gingival inflammation when CPC rinse is used as an adjunct to oral hygiene routines. However, the authors caution that it is not appropriate for all patients.

The last review by Husseini and co-workers considers the effect of oral irrigation in addition to a toothbrush on the clinical parameters of periodontal inflammation. Results from 7 eligible studies again differ for plaque versus gingival inflammation showing no benefit in plaque levels with adjunctive use of an oral irrigator, however, reporting a tendency toward a beneficial effect on gingival health.

In each of the reviews, conclusions suggested a lack of evidence to support use of the device in some situations depending on the outcome considered and appropriate recommended use. So, what now? What do clinicians do when there is too little evidence? The evidence presented suggests that a given oral hygiene adjunct may be suitable in some cases but not in others. Does this mean it is effective or not effective?

Evidence based research methodologies help synthesize evidence for the reader. However, systematic review findings do not provide ''**answers",** but rather, they are a tool, a form of information and guidance based on research evidence that assist the clinician in formulating **"the answer"** appropriate for each individual patient. It is important to interpret results of

all research in the context it was performed. In the case of a systematic review, a lack of high quality, homogeneous evidence can result in lack of conclusive findings. In the presented reviews, the high levels of heterogeneity between study designs poses problems in reaching clear clinical recommendations. The reviews have been conducted and presented well, however, as with all systematic reviews, there are no magic bullets. A review is only as good or complete as its components. The conclusions are limited by quality and degree of heterogeneity in the original studies. For example, there are many ways to measure the outcomes of plaque and gingivitis. This alone can create confusion and limit comparability of individual study results

To be progressive, clinicians must continue to learn throughout a life-time, amending ideas and philosophies as evidence becomes available. To apply any evidence to clinical practice, communication with the patient and use of clinical judgment and common sense are key steps. Likewise, in the absence of evidence, communication with the patient, clinical judgment based on clinician knowledge, experience, and common sense are all part of working with the patient to agree on the best care for their case. What does this mean for oral hygiene recommendations? Should we recommend floss or not? Should we recommend only interdental brushes?

The heterogeneity found in each of these systematic reviews highlight the challenge of clinical research in this area. Many factors are known to affect the compliance and efficiency of individuals following health behaviour advice such as oral homecare recommendations. There is not one aid that works for all. There is not one aid that does not work for anyone. Best care for each patient rests neither in clinician judgment nor scientific evidence but rather in the art of combining the two through interaction with the patient to find the best option for each individual. The reviews provide a summary of the theoretical efficacy of many oral hygiene measures adjunctive to brushing. However, equally important to the clinician is the practical efficacy. Evidence of practical efficacy is lacking and may continue to be limited due to the challenge of designing studies to address these areas.

Are we progressive, or paralyzed by tradition? What are we doing? What is the ''state of the art'' routine to recommend? It is that which you, together with your patient, decide upon for each as a unique individual. It is not the recommendation of the same for all.

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