

Rubber dam hazards?

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Fig. 1

The September issue of *Oral Health* included an article by Dr Ellis Neiburger entitled *Rubber dam hazards*. The contextual inaccuracy, skewed perspective and postulatory bias of the author was disingenuous at best and horrifying at its worst. I'm not certain how it managed to secret itself into our beloved centenarian journal, but it did. Before I comment on the text, I'd like to share a scientific article with you published by Smith and Pell in the *British Medical Journal* in 2003 (entitled *Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials*) to give my concern about this article's publication an element of *gravitas*. The abstract reads:

Objectives: To determine whether parachutes are effective in preventing major trauma related to gravitational challenge.

Design systematic: Review of randomised controlled trials.

Data sources: Medline, Web of Science, Embase, and the Cochrane Library databases; appropriate Internet sites and citation lists.

Study selection: Studies showing the effects of using a parachute during free fall.

Main outcome measure: Death or major trauma, defined as an injury severity score > 15.

Results: We were unable to identify any randomised controlled trials of parachute intervention.

Conclusions: As with many interventions intended to prevent ill health, the effectiveness of parachutes has not

been subjected to rigorous evaluation by using randomised controlled trials. Advocates of evidence-based medicine have criticised the adoption of interventions evaluated by using only observational data. We think that everyone might benefit if the most radical protagonists of evidence-based medicine organised and participated in a double blind, randomised, placebo-controlled, cross-over trial of the parachute.

Not wishing to misjudge nor malign the author, I searched the many publications attributed to Dr Neiburger in the literature using Google Scholar. My personal favourite was *Similar mandibular osseous lesions in Tyrannosaurus Rex and man*,¹ followed closely by *Voodoo Barbie and the dental office*,² not to be outdone by *Water line biofilm dangers—A tempest in a teapot*.³ Of note, none of the references pertaining to the hazards were dated beyond 1990.

As to the inaccuracies, rather than repeating the text, I'll answer the "factoids": rubber dam is routinely used in the vast majority of endodontic and restorative procedures by contemporary dentists; sterilisation of the rubber dam can be done readily; reuse is the most scurrilous of the factoids proposed; colour is not an issue, in fact it can be used to enhance photographic documentation; the physical and chemical properties of the dam enable it to be used with most if not all dental materials and its strength cannot be in dispute, as the average endodontic procedure does not require multiple replacement; damage from clamps occurs because of improper placement; the sheer enormity of clamp sizes and design allows for literally any clinical situation with tissue injury essentially non-existent; there are a raft of alternatives to clamp placement (Fig. 1); the issues pertaining to time for placement, phobias, material residue in pockets anon ... even providing a rebuttal to the text gives it a undeserved credibility.

Dentistry is perched on a slippery slope. In North America alone, it represents a silo of approximately \$60 billion. Evidence-based science has been replaced by eminence-based science and the concept of "non-fiduciary advocacy" has been lost in the ether. I wish I possessed Randy Lang's erudition and Will Rogers' wit. His recent editorial on a specific orthodontic band of dubious value beyond the strength of its marketing showcased the fact that even amongst those whose

focus is narrowed by a specialty, a segment can be catalysed through market forces to recognise something as the holy grail, when another faction sees the same product as having the value of a Gwyneth Paltrow GOOP-substantiated cleanse.

In my own area of interest, a recent article by one of the better-known clinicians questioned the value of the wealth of new endodontic products coming to market, especially the latest NiTi iteration that reintroduced reciprocation. The essence of the article was, "if it ain't broke, don't fix it", which then included the take-away message that the product long associated with the reputation of the author had served the discipline well and it too required only a paucity of instruments to achieve 100% predictable clinical success.

To bring this to a purposeful conclusion, I would encourage you to google Bayes' theorem. It is in essence an equation and depending upon whether you are a frequentist, a subjectivist or an objectivist, the theorem suggests that if we assign some *a priori* probabilities and then compute *a posteriori* probabilities, the degree of confidence in some hypotheses can be conditioned by the new data that becomes available. For example, the Venn diagram (Fig. 2) relates to a population, the number expected to have a type of cancer, the number that are indeed positive for the cancer and the number that show a false positive by virtue of a test for markers. Alter the variable, consider the efficacy of lasers by way of example, the degree of penetration into the dental profession, the advocacy of those that use them and the perception of the value inherent based upon their need to see viable applications and substantiated results. It is a technology that will inevitably prove to be an invaluable tool, albeit currently in its infancy. Read all publications with extreme caution—think HealOzone.

Dentistry is getting very complicated as technology and innovation alter its construct. The one essential aspect that must never be overlooked is the need to sustain biological fundamentalism through assiduously conceived investigations and authorship that follows the Cochrane Collaborative principles. We are about to enter a decade wherein it is manifestly conceivable that teeth can be regenerated or replicated and achieve morphological and functional integration into the gnathostomatic apparatus. While it may not impact on the \$4 billion a year whitening arena of oral services, it will impact on many others. The number of rubber dam hazard articles may well breach the levees and floodgates and overwhelm the profession, decimating the landscape and relocating

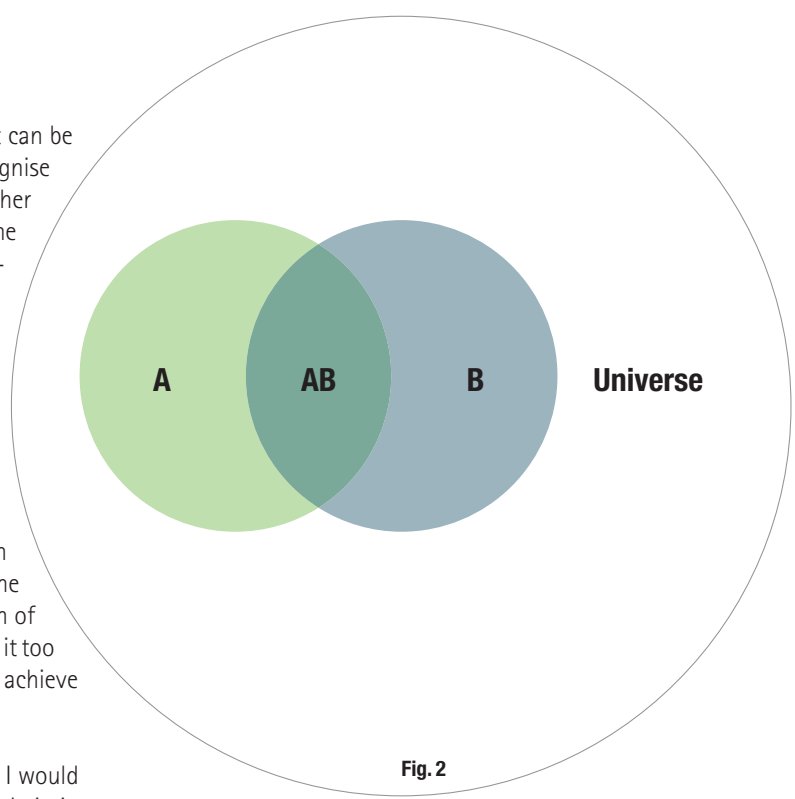



Fig. 2

the populace. It is *Oral Health's* job to stand on guard, "oh Canada, to stand on guard for thee".

References

1. Neiburger EJ. Similar mandibular osseous lesions in Tyrannosaurus rex and man. *J Mass Dent Soc.* 2005 Fall;54(3):14–7.
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3. Neiburger EJ. Water line biofilm dangers a tempest in a teapot. *J Mass Dent Soc.* 2001 Winter;49(4):20–1.

_about the author
roots



Dr Kenneth S. Serota graduated from the University of Toronto in 1973 and was awarded the George W. Switzer Memorial Key for Excellence in Prosthodontics. He received his Certificate in Endodontics and Master of Medical Sciences degree from the Harvard-Forsyth Dental Center in Boston.

A recipient of the American Association of Endodontics Memorial Research Award for his work in nuclear medicine screening procedures related to dental pathology, his passion is education, and most recently e-learning, and rich media. Dr Serota provided an interactive endodontic programme for the Ontario Dental Association from 1983 to 1997 and was awarded the ODA Award of Merit for his efforts in the provision of continuing education.

The author of more than 60 publications, Dr Serota is on the editorial board of *Endodontic Practice*, *Endo Tribune* and *Implant Tribune*. He founded ROOTS, an online educational forum for dentists from around the world who wish to learn cutting-edge endodontic therapy, and recently launched IMPLANTS (www.rximplants.com) and www.tdonline.org in order to provide dentists with a clear understanding of the endodontic–implant algorithm in foundational dentistry.