

# New guidelines for dentists in controlling anxiety using responsive sedation

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New guidelines<sup>1</sup> were approved by the Board of the South African Dental Association in March this year. This is indeed an historic milestone for SADA and indeed for all South African dentists. To put the matter in perspective, a brief resumé of the history of anaesthesia and conscious sedation may be appropriate.

Few realise the prominent role that dentists have played as the actual pioneers in the fields of both anaesthesia and conscious sedation. In both cases we did the seminal work. It was dentists who were responsible for introducing the wonders of both general anaesthesia and conscious (also now called procedural) sedation to mankind.

Horace Wells, a dentist, was acknowledged posthumously by the American Dental Association in 1864 and the American Medical Association in 1870 as the “discoverer of practical anaesthesia” (sic).<sup>2</sup> Interestingly, the honour had been bestowed on him previously, in 1848, by the Parisian Medical Society in France.<sup>1</sup>



**Figure 1:** Etching of Horace Wells by Henry Bryan Hall

In spite of this clear-cut attribution to Wells, based on carefully researched historical data, the medical profession has a tendency to wrongly acknowledge William Morton, a physician, as the discoverer of anaesthesia.<sup>3</sup>

In fact Wells demonstrated nitrous oxide anaesthesia in 1845, a year prior to Morton's ether demonstration in 1846.<sup>3,4</sup> Indeed, the first witnessed surgical extraction using nitrous oxide occurred even earlier, for in 1844 Dr Riggs had extracted one of Wells' own wisdom teeth under nitrous oxide anaesthesia.<sup>2</sup> Ironically, Morton was a dentist at the time of his demonstration, although he was also studying medicine.<sup>3</sup>

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Today, the discovery is commonly, but inaccurately, attributed to Morton by leading authorities, with Wells' work consigned to a passing reference.<sup>3</sup> However, research published in a prestigious anaesthetic journal,<sup>5</sup> supported by an editorial stressing the historical accuracy of that research<sup>6</sup> clearly puts paid to the myth that Morton rather than Wells discovered surgical anaesthesia.

Even today, many members of the medical and dental professions are unaware that surgical anaesthesia, and the resultant advances in modern surgery, were due to the inventive mind of a dentist... Horace Wells.

Conscious intravenous sedation was also the brainchild of a dentist, ...Niels Bjorn Jorgensen. In 1945, he brought intravenous conscious sedation to dentistry, medicine and mankind, in the form of 'The Jorgensen Technique'.<sup>7-10</sup> He is the first person to have been recorded to have administered a mixture of intravenous agents for conscious sedation.<sup>4,7</sup>



**Figure 2:** Photograph of Niels Bjorn Jorgensen

According to a recent paper,<sup>11</sup> procedural sedation (alias conscious sedation) only began in the 1980's, ignoring the ground-breaking contribution of the dental profession, which had pioneered and developed the technique at least three decades earlier. It is therefore fair to say that Jorgensen, a dentist, is truly the father of procedural sedation in dentistry and medicine.<sup>4,7</sup>



It was Harry Langa, also a dentist, who in 1936 started using low-dose subanaesthetic nitrous oxide mixed with high concentrations of oxygen to produce conscious sedation. From 1949 onwards, Langa conducted a high quality course in conscious sedation with nitrous oxide which he termed relative analgesia. His work on nitrous oxide culminated in 1976 with the publication of his classic book: "Relative Analgesia in Dental Practice: Inhalation Analgesia and Sedation with Nitrous Oxide".<sup>4,11</sup> This book was the standard reference guide for many decades.

It is ironic that the medical profession has taken almost complete possession of our discoveries and have conveniently ignored our seminal role in these fields.

This seems to confirm the truth of what Winston Churchill is purported to have said, 'History is written by the victors.' For these reasons we need at last, to fully recognise the role that the dental profession has taken in bringing painless dentistry, and as a by-product, painless surgical procedures, to humanity. We as the dental profession can be justly proud of our contributions in the field of conscious sedation and anaesthesia. However, there is also a responsibility for us to take possession of our contributions, at least as far it impacts on our profession.

We must take the reins of controlling all aspects of our profession firmly in hand and this is exactly what SADA has now done by approving these new guidelines as they apply to dentistry. Up to now, we dentists have abdicated our responsibility for designing guidelines for conscious sedation to another profession. For years now, we have requested guidelines from a profession, which, although highly skilled, has little idea of the special needs of our own profession. Until now we have gladly allowed and indeed encouraged them to dictate these guidelines. At last we are now taking responsibility and are formulating our own guidelines which are appropriate to our needs and are true to the historical facts.

Below you will find the crucial points covered in the Summary and Conclusion of these guidelines, which will soon appear in their totality, on the SADA website:

1. The dentist should have undergone proper tuition in both theoretical aspects and in practical hands-on application, properly supervised.
2. If the operator-sedationist is going to use intravenous sedation, the simplest approach must be adopted.
  - a. Where possible, only intravenous midazolam should be used according to the procedure outlined.
  - b. Should any additional analgesics be required, the drug chosen should not have respiratory depressant properties - hence no opioids should be used. Either IV paracetamol 1000mg should be administered slowly before the midazolam or an intravenous non-steroidal anti-inflammatory can be used intra-operatively. However, it must be very clear that local anaesthesia is the mainstay of pain control in the dental procedure.
  - c. Inhalation sedation with nitrous oxide may be used (on its own or with local anaesthesia, or as an adjunct to intravenous sedation, mainly to facilitate the venepuncture. In cases where it is used for venepuncture, nitrous oxide administration should be terminated once the intravenous technique is started.
3. A dentist acting as a dedicated sedationist and wishing to use a multidrug technique, including the use of opioids, should have undergone further training.

The new guidelines conclude:

Sedation, in the hands of a trained, caring practitioner, offers a very safe, affordable solution for those patients who are apprehensive, have had previous traumatic dental experiences or who are due to undergo surgical procedures that might cause discomfort and pain.



The emphasis remains on proper training, continual attendance at workshops to update one's knowledge of procedures and an awareness of the potential problems which may occur and how to handle these.

Bearing all of the above in mind, sedation does afford one the opportunity to provide a service which was summed up thus by Carl Buechner:

"They may forget what you said but they will never forget how you made them feel".

#### Conflict of interest

Since 2003 Prof Gillman has been the Medical Adviser to Sedatek, a company that sells conscious sedation equipment. He has no shareholding in Sedatek. Dr Lang declares no conflict of interest.

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