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# **SEDATION REGIMENS for paediatric dental treatment**



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# Background

The coping skills of children are often not sufficient to deal with dental treatment and sedation is advised when non-pharmacological behavioral strategies alone have failed. The need for safe dental sedation is growing with the increasing incidence of dental disease in children.



# Literature Review

Ideally sedation induce sleepiness, euphoria, analgesia and muscular relaxation but not full anesthesia. Sedation of children with different drug regimens for the delivery of dental care has been successfully executed. Examples of regimens are: nitrous oxide inhalation sedation, oral midazolam, Benzodiazepines , chloral hydrate , hydroxyzine , Promazine , Fentanyl ,intramuscular ketamine and intravenous propofol.

Drugs administered intramuscular or intravenous are very effective but invasive and therefore less popular for paediatric patients. The potency of these drugs also require active monitoring. The popularity and usage



# Literature Review

of oral Midazolam (oral dosage of 0.3 to 0.7mg/kg, and a maximum dose of 10mg for older children) has increased in the past decade due to its safety record and short acting nature, however there has been reports of unpredictable paradoxical results.

Nitrous oxide inhalation sedation is preferred for of its ability to be titrated or reversed if necessary but lack in potency . A combination of the two regimes has proven to be even more very effective causing a synergistic effect . A concentration of 50% N<sub>2</sub>O/50% oxygen provides a safe anxiolytic/analgesic effect by activating the opioid and gamma-aminobutyric acid receptor .



# Conclusion

Nitrous oxide inhalation sedation with oxygen, midazolam or the combination of both techniques are the most popular sedation modalities used by paediatric dentists and considered to be the closest to the ideal for sedation in paediatric dentistry. Safety remains a concern with any form of sedation and it is imperative that all practitioners should be qualified and experienced in the techniques they use.

