

# The Correlation Between Patient's Resting Heart Rate Prior to Being Given Non-IV Sedation Medication for Dental Procedures and Procedural Behavior in the Pediatric Population

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## INTRODUCTION

This study is being conducted to evaluate the correlation between patient's resting heart rate prior to being given non-iv sedation medication for dental procedures and sedation level in the pediatric population. The pediatric population to be evaluated will consist of children ages 4 to 6 years old, gender considerations will be noted. Non-iv sedation is becoming a lost art in the pediatric dental community; however, if used appropriately, it can offer a comfortable means of completing dental treatment in the appropriate patient. Anxiety, fear, parent expectations, and poor behavior validate the need for conscious sedation in pediatric dentistry.<sup>1</sup> This study may give the surgical operator an additional criteria for patient selection to anticipate success in non-iv sedation.

Previous studies have been conducted observing patients respiratory rates during sedations for medical procedures using a modified observer scale (2). The study concluded that no correlations could be made but called for further studies to verify. This study will allow for further pre vital statistics to aide in determining if sedation success can be better predicted.

## INCLUSION/EXCLUSION CRITERIA

- Inclusion
  - 4 to 6 year olds requiring oral conscious sedation for dental rehabilton consisting of 4 or more teeth.
- Exclusion
  - Children with cognitive disorders effecting behavior such as ASD.
  - Inability to willfully drink liquid sedation medications

## METHODS

Hydroxyzine and meperidine (2mg/kg) will be administered 20-30 min before the procedure takes place, allowing onset of the medications. Local anesthesia will be administered using 2% lidocaine with 1:100,000 epinephrine and/or 4% septocaine with 1:100,000 epinephrine. Full mouth rehabilitations will be conducted consisting of composite and amalgam restorations, stainless steel and zirconia crowns, pulp therapies, simple extractions, dental prophylaxis, and space maintenance. Behavioral management interventions include medical restraint using papoose board, mouth props, isolite and dental assistants holding hands and legs for limited medical immobilization.

Ramsay Sedation Scale will be used to assess sedation levels. Pulse rates will be taken at treatment planning appointments, pre op, and at twenty minute intervals during the procedure.

## RAMSAY SEDATION SCALE

- 1- Awake; agitated or restless or both
- 2-Awake; cooperative, oriented, and tranquil
- 3-Awake; but responds to commands only
- 4-Asleep; brisk response to light glabellar tap or loud auditory stimulus
- 5-Asleep; sluggish response to light glabellar tap or loud auditory stimulus
- 6-Asleep; no response to glabellar tap or loud auditory stimulus

## RESULTS

Two patients came followed up for study  
Patient 1- Heart rate was 110-Ramsay Scale 1  
Patient 2-Heart rate was 85-Ramsay Scale 1

Study is still ongoing.

## CONCLUSIONS

Two patients have returned for treatment. No correlation between heart rate and sedation levels have been noted. The study will be continued by future residents.

## REFERENCES

- 1.Eslaamizaad, S, Toopchi, S. Sedation in Pediatric Dentistry. *ACTN Scientific Dental Sciences*.3 (11) Feb 2019.
- Callahan, S., Silverstri, L, Pastis, Nicholas. Correlation Between Vital Signs and Depth of Sedation Determined by Modified Observer's Assessment of Alertness and Sedation Score. *Chest*. Oct 2017 Accessed via web <https://journal.chestnet.org/action/showPdf?pii=S0012-3692%2817%2932438-8>