Introduction: The induction of anesthesia is very stressful for children and approximately 20% will exhibit extreme adverse behaviours (crying, kicking and screaming) at this time (1). Although a number of studies have identified risk factors for adverse behaviors, there is currently no reliable method to predict which children are likely to display such conduct. A major concern is that anesthesiologists may be unnecessarily sedating children who are at low risk for adverse behaviours to avoid any possibility of a negative induction experience.

Preoperative sedation must be balanced with medication side effects which include adverse drug reactions, paradoxical excitement, delayed recovery, nightmares, food rejection and anxiety (2,3). Development of an effective clinical prediction tool would allow for preoperative sedation to be delivered only to those children who really require it. The purpose of the current investigation was to develop a short parental questionnaire to predict which children are highly likely to demonstrate adverse behaviours at the induction of anesthesia.

Methods: Following consultation with an expert in questionnaire development and extensive literature searches on risk factors for adverse behaviours and clinical tools for measuring child characteristics, we developed the Induction Questionnaire for children (IQ-C). This short questionnaire (8 yes/no questions) focuses on specific behavioural, psychological and situational characteristics of a child. Following Institutional Ethics Board approval and signed informed consent, the questionnaire was administered to the parent(s) of children presenting for ambulatory ear, nose & throat, orthopedic and urologic surgery at our day surgery facility. Thirty-eight children (aged 2-13) were included in this pilot study. All presented to the operating room without preoperative sedation. The results of our questionnaire were correlated with the Induction Compliance Checklist (ICC), a validated tool that measures compliance behavior of children at the time of anesthetic induction.

Results: The IQ-C had a Pearson Product Moment correlation of -.41 (p = .018) with the ICC, which indicates a strong correlation. Cronbach’s Alpha, which indicates internal reliability for the IQ-C was 0.73. Both parents independently completed the IQ-C for their child in 15 cases. The Pearson correlation between parents’ responses was 0.80 (p=.001).

Discussion: The IQ-C is a promising new tool that will help guide anesthesiologists’ decision to provide preoperative sedation to healthy children presenting for day surgery. The IQ-C shows a strong correlation with induction compliance given the sample size and significant interrater reliability between parents of the same child. The next step is to expand this pilot study to include more children and then refine the IQ-C to improve the predictive power.

References: 1. Anest Analg 107(2):413-21
2. Pediatrics 118(2):651-659
3. Anest Analg 88:1042–7