

## BACKGROUND

The UK National Child Measurement Programme 2016-17 data show 34.2% of 11-year-olds are overweight and 20.0% are obese<sup>1</sup>. The UK ranks 9th for prevalence of overweight and obesity in children aged 2 to 19 years out of the 34 countries that form the Organisation for Economic Cooperation and Development<sup>2</sup>.

The current incidence of childhood obesity and the burden of perioperative complications in children presenting to UK hospitals for surgery is largely unknown. There is little published UK data relating to anaesthetic and perioperative implications of childhood obesity. In retrospective studies from the United States, overweight and obesity has been shown to occur in up to one third of paediatric patients<sup>3</sup>. It is perceived that obese children present an increased anaesthetic risk throughout the perioperative period. Previous non-UK studies suggest they require longer in the post-operative anaesthetic care unit (PACU), require more antiemetics and are at greater risk of airway complications<sup>3 4 5</sup>.

## PEACHY aims

1. To establish the proportion of overweight and obese children aged 2-16 years attending hospitals for surgery across the PEACHY registered centres.
2. To establish whether obese children are at increased risk of defined adverse perioperative events as compared to their healthy weight counterparts in this study population.
3. To assess variation in perioperative paracetamol dosing for overweight and obese children in the study population.

## METHODOLOGY

All UK hospitals performing general anaesthesia for children aged 2-16 years will be invited to take part in this study. Invitations to participate will be sent out to representatives on the PATRN database and Clinical Research Networks. Centres will need to conduct a feasibility assessment and submit an online registration form detailing a Lead Local Consultant and contact in their hospital's R&D department. The Local Lead Consultant will require Good Clinical Practice training (GCP).

Local HRA approvals must be sought prior to recruitment (data collection). The recruitment period for this study is one week (7 consecutive days). This will be confined to a 4-week window from **9<sup>th</sup> September** to **6<sup>th</sup> October 2019**. This allows individual hospitals to choose the most suitable 7-day window.

Data will be collected for all children aged 2-16 years and weighing >12kg presenting for a procedure involving general anaesthesia during the defined study period. This includes elective cases, day cases, and emergency cases. MRI, radiology, oncology and dental cases will be included provided the patient receives a general anaesthetic. Sedation or local anaesthetic cases will be excluded, as will children aged <2 years and weighing <12kg.

Data will be collected using a single data sheet per patient (case reference form/CRF). This will be initiated by the anaesthetist in the operating theatre and completed by recovery staff in PACU. Individual centres will be responsible for uploading anonymised data directly to the REDCap data collection system by **8<sup>th</sup> November 2019**.

## REFERENCES

1. Statistics N. National Child Measurement Programme England, 2016/17 school year: NHS Digital, 2017.
2. England PH. Child obesity international comparisons data factsheet. In: Intelligence PHEORF, ed., 2016:1-12.
3. Nafiu OO, Reynolds PI, Bamgbade OA, et al. Childhood body mass index and perioperative complications. *Paediatr Anaesth* 2007;17(5):426-30. doi: 10.1111/j.1460-9592.2006.02140.x [published Online First: 2007/05/04]
4. Tait AR, Voepel-Lewis T, Burke C, et al. Incidence and risk factors for perioperative adverse respiratory events in children who are obese. *Anesthesiology* 2008;108(3):375-80. doi: 10.1097/ALN.0b013e318164ca9b [published Online First: 2008/02/23]
5. El-Metainy S, Ghoneim T, Arida E, et al. Incidence of perioperative adverse events in obese children undergoing elective general surgery. *Br J Anaesth* 2011;106(3):359-63. doi: 10.1093/bja/aeq368 [published Online First: 2010/12/15]

