* Corresponding author.

**Rationale:** Evidence suggests that the origins of childhood obesity can be found on the "first 1000 days", since the conception period to the age of 2 years. The aim of the present study is to evaluate some of these potential early risk factors on later childhood obesity development.
**Methods:** A total 312 healthy women participating in the NUHEAL study were randomized to receive supplements of fish-oil (500mg DHA+150mg EPA/day), 400mg of 5-metyltetrahydrofolate (5-MTHF), both or placebo from mid-gestation till delivery. Maternal Body Mass Index (BMI) at delivery and neonatal Ponderal Index (PI) at birth were measured. Children were followed up taking different anthropometric measurements at 4, 5.5, 6.5, 8 and 9.5 years. Correlation analysis was performed and adjusted by *maternal age at delivery, maternal cultural level, parity, placenta weight, sex, and neonatal gestational age*. R-study software was used in statistical analysis.
**Results:** No association between maternal BMI at delivery ($r = 0.141$; $p = 0.532$) and neonatal PI was found. However, maternal BMI at delivery was significantly associated to their offspring z-scores of BMI at different growth stages (Table 1)

**Table 1**
Associations between maternal BMI and their offspring BMI during childhood

| | Maternal BMI (At delivery) | |
|---|---|---|
| *Children z-scoce* | r | P |
| PI at Birth | 0.141 | 0.532 |
| BMI at 4 y | 0.490* | 0.021 |
| BMI at 5.5 y | 0.427* | 0.048 |
| BMI at 6.5 y | 0.516* | 0.014 |
| BMI at 8 y | 0.567** | 0.006 |
| BMI at 9.5 y | 0.470* | 0.027 |

Adjusted by: Parity, placenta weight, sex, neonatal gestational age, maternal age at delivery and cultural level. r: Correlation level; P: level of significance. *p<0.05; **p<0.01.

**Conclusions:** Our results demonstrate the associations between maternal BMI at delivery and their children BMI. It is suggested that maternal BMI at delivery should be considered as biomarker of obesity risk; new strategies during sensitive periods of growth may be developed based on these concepts to prevent obesity in later life.
**Disclosure of interest**: None declared.

## PT05.4
## VALIDATION STUDY OF ESPEN MALNUTRITION CRITERIA IN A LIVER SURGERY POPULATION

P. Probst [1,2], J. Fuchs [2,*], M.R. Schoen [3], P. Knebel [1,2], K. Hoffmann [1]. [1] *Department of General, Visceral and Transplantation Surgery, Germany;* [2] *Study Center of the German Surgical Society (SDGC), University of Heidelberg, Heidelberg, Germany;* [3] *Department of General and Visceral Surgery, Städtisches Klinikum Karlsruhe, Karlsruhe, Germany*

* Corresponding author.

**Rationale:** In 2015, the ESPEN formulated a consensus-based minimum set of criteria for a universally applicable diagnosis of malnutrition. The aim of this study was to validate the ESPEN malnutrition criteria in in a population of patients undergoing liver resection for the first time.
**Methods:** The day before surgery, a nutritional assessment was performed in patients scheduled for liver resection at the university hospital of Heidelberg and the municipal hospital of Karlsruhe. Apart from the ESPEN malnutrition criteria, the nutritional risk score 2002 (NRS), subjective global assessment (SGA) and mini nutritional assessment (MNA) were included in the assessment. The diagnosis of malnutrition according to the ESPEN malnutrition criteria was compared to NRS, SGA and MNA. Sensitivity, specificity and diagnostic odds ratio (OR) were calculated and tested in a chi-squared test at a level of significance of 5%.
**Results:** A total of 106 men and 76 women were included into the study between August 2016 and February 2018. Mean age and BMI of the cohort were 59 years and 26.8 kg/m$^2$, respectively. At risk for malnutrition were 10 of 182 patients (5%; ESPEN), 25 of 182 patients (14%; NRS), 9 of 182 patients (5%; SGA) and 4 of 182 patients (2%; MNA). The sensitivity of ESPEN malnutrition criteria was 40% (NRS), 67% (SGA) and 75% (MNA). Specificity was 100% (NRS), 98% (SGA) and 96% (MNA). The OR was 105 (NRS; $p < 0.01$), 85 (SGA; $p < 0.01$) and 73 (MNA; $p < 0.01$).
**Conclusions:** The ESPEN malnutrition criteria seem to have a good specificity but poorer sensitivity compared to existing nutritional assessment scores. The population at risk for malnutrition according to the ESPEN malnutrition criteria is significantly associated with the population at risk according to the NRS 2002, the SGA and the MNA. Further studies have to be done for validation of the ESPEN malnutrition criteria on clinical endpoints in the liver surgery population.
**Disclosure of interest**: None declared.

## PT05.5
## OPENING THE BLACK BOX: GASTRIC MOTILITY, AS ASSESSED BY THE NOVEL VIPUN GASTRIC MONITORING SYSTEM, IS A SURROGATE MEASUREMENT FOR GASTRIC EMPTYING

N. Goelen [1,*], J. Morales [2], C. Varon [2], S. Van Huffel [2], P. Augustijns [3], R. Mols [3], T. Vanuytsel [1,4], J. de Hoon [5], M. Herbots [5], J. Tack [1], P. Janssen [1]. [1] *Translational Research Center for Gastrointestinal Disorders, Belgium;* [2] *Department of Electrical Engineering, STADIUS Center for Dynamical Systems, Signal Processing and Data Analytics, Belgium;* [3] *Drug Delivery and Disposition, Department of Pharmaceutical and Pharmacological Sciences, KU Leuven, Belgium;* [4] *Leuven Intestinal Failure and Transplantation, Belgium;* [5] *Center for Clinical Pharmacology, Leuven University Hospital, Leuven, Belgium*

* Corresponding author.

**Rationale:** No technique exists to adequately monitor gastric motility. Impaired gastric motility complicates enteral nutrition, often resulting in intolerance. A novel nasogastric feeding catheter with integrated intragastric balloon was developed and used to continuously assess gastric motility after placebo or codeine administration.
**Methods:** The VIPUN Gastric Monitoring System comprises a double-lumen nasogastric balloon catheter and a monitoring unit. The catheter was positioned in the stomach of healthy subjects after a 12-hour fast. The balloon was connected to an external pressure sensor and inflated with 180 ml air. Motility-induced pressure changes were recorded for 6 hours. The first 2 hours a liquid meal (225 kcal) was infused (75 ml/h). Gastric emptying rate of this meal was assessed with the $^{13}$C-octanoate breath test and expressed as gastric half-emptying time (GET½). In a crossover design subjects were randomly assigned to placebo (PL) or 60 mg codeine (CO). An algorithm converted pressure changes to a gastric balloon motility index (GB-MI). Data are presented as mean ± standard deviation. Paired t-tests and Pearson correlation were used.
**Results:** GB-MI and emptying rate were reduced after codeine treatment: GB-MI decreased from 0.49 ± 0.17 (PL) to 0.32 ± 0.20 (CO; $p < 0.01$), GET½ increased from 173 ± 12.7 (PL) to 241 ± 59.6 min (CO; $p < 0.001$). Within-subject GET½ change correlated with GB-MI change ($r = -0.652$, $p < 0.01$, $n = 17$).
**Conclusions:** Codeine decreased both gastric emptying and motility. This study shows that the VIPUN Gastric Monitoring System can be used to assess gastric motility and that motility correlated well with gastric emptying. This innovative device has the potential to become a minimally invasive surrogate marker for (delayed) gastric emptying and gastrointestinal intolerance. We are currently initiating a clinical study in critically ill patients.
**Disclosure of interest:** None declared.

## PT05.6
## PERFORMANCE OF A STANDING SEGMENTAL BIOIMPEDANCE DEVICE IN SCREENING FOR LOW MUSCLE MASS

O. Wallengren*, I. Bosaeus. *Clinical Nutrition Unit, Sahlgrenska University Hospital, Gothenburg, Sweden*

* Corresponding author.