# EDITOR'S FOCUS

*Volume 91 No. 3 February 2022*

## EARLY CAREER INVESTIGATOR

Congratulations to Kerstin Jost, the Early Career Investigator for February 2022. Kerstin grew up in Switzerland and attended the University of Basel (UB) School of Medicine, where she began her research career on a team conducting an randomized controlled trial in newborns. Thus captured by research, she pursued a PhD in biomedical engineering at UB. As part of this work she explored vital-sign behavior in infants, using advanced mathematical analysis. She initiated the Neonatal Esophageal Observation (NEO) Tube project during her thesis work. Results from the NEO study, reported in this issue, show that multichannel esophageal signals are more accurate at measuring respiratory rate than chest impedance is. Dr Jost is currently working at the Karolinska Institute in Stockholm, where she is studying the usefulness of machine learning algorithms to support clinical decision-making. Her advice to other young scientists is to stay curious and dare to question the way things are done. See pages 481 and 572

## EVOLVING URINARY METABOLIC PATTERNS IN NEONATAL ENCEPHALOPATHY
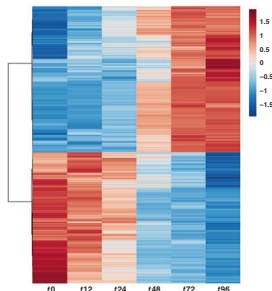


Piñeiro-Ramos et al. collected urine from 55 infants with perinatal asphyxia and neonatal encephalopathy who qualified for therapeutic hypothermia. Urine samples were extensively analyzed via mass spectroscopy to determine the metabolome. Stable disease patterns were noted. Characteristic metabolomic fingerprints were observed for different injury patterns found on magnetic resonance imaging. In an accompanying Comment, Wusthoff discusses the need for such biomarkers to identify infants who would benefit from cooling. Also in this issue, Winter reflects on the impact that hypoxic–ischemic encephalopathy has had on her family. See pages 598, 490, and 705

## CLINICAL PRESENTATION OF CHILDREN WITH COVID-19
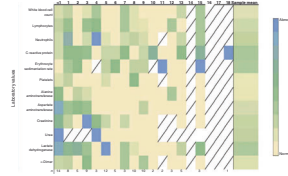


In a review of 22 eligible studies done in the spring of 2020, 123 pediatric patients (median age of 5 years) were identified with COVID-19. Surprisingly, most were asymptomatic or had only one, non-respiratory symptom. It remains to be seen whether similar results will be found among children with the delta and omicron variants. See page 494

## PERSISTENT ORGANIC POLLUTANTS IN PREGNANT WOMEN AFFECT CHILD DEVELOPMENT AND THYROID STATUS
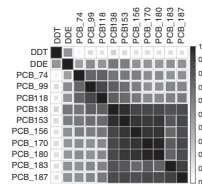


In a study of 324 pregnant women, Krönke et al. determined that maternal serum $p,p'$-DDE and polychlorinated biphenyls (PCBs) showed a negative correlation with maternal free triiodothyronine levels. Body length at birth was negatively correlated with maternal serum PCB 183. The authors conclude that exposure to persistent organic pollutants affects pre- and postnatal development of children and thyroid status of both mother and child. See page 690

## PROTON MR SPECTROSCOPY METABOLITE RATIOS HAVE HIGH PREDICTIVE VALUE FOR NEONATAL HIE OUTCOME
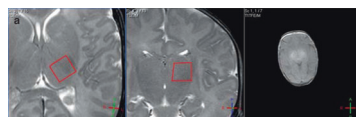


In a retrospective study, Barta et al. studied 169 newborns with moderate to severe hypoxic–ischemic encephalopathy (HIE) who had both a proton magnetic resonance spectroscopy scan and known neurodevelopmental delay. They found that the *N*-acetyl-aspartate-to-creatinine ratio and the myo-inositol-to-NAA ratio consistently had the highest positive predictive values, particularly when obtained between postnatal days 7 and 14. In an accompanying Comment, Waddell describes the difficulties of finding a reliable predictor of outcome in HIE and the possible implications for mechanisms and interventions by identifying these metabolites. See pages 581 and 486

## UTILITY OF CURRENT DEFINITIONS OF NEC
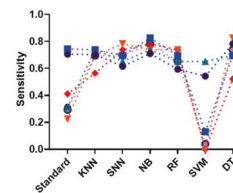


Lueschow et al. report a retrospective study of 219 infants with necrotizing enterocolitis (NEC), intestinal perforation or 'concern for NEC'. Machine learning was used to test the sensitivity and specificity of seven definitions of NEC to identify the disorder. The authors found that the newer, non-Bell NEC definitions may be better at diagnosing NEC. In a related Comment, Martin notes that none of the models performed well for sensitivity and specificity and reviews their limitations. See pages 590 and 488

## TELOMERE LENGTH IN SICKLE CELL DISEASE IN SAUDI ARABIA
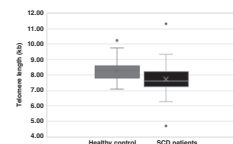


Telomere length in 90 Saudi children with sickle cell disease (SCD) was compared with that in 26 control children (1–15 years old). Telomeres were significantly shorter in the children with SCD. Hydroxyurea had no effect on telomere length. The results pave the way for studies with larger, more diverse samples of children with SCD to determine the generalizability of these findings. See page 539