

EDITOR'S FOCUS

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Early Career Investigator



Congratulations to Marc Beltempo, the Early Career Investigator for August 2021. Dr Beltempo grew up in Montreal, Canada, where he completed medical school. As a medical student, he was already captivated by neonatology. Early research projects, under the supervision of Bruno Piedboeuf, convinced him of the seminal role of research and data in improving clinical outcomes. After receiving a master's degree in health administration–systems analysis from the University of Montreal, he completed a research fellowship with the Canadian Neonatal Network under the mentorship of Prakesh Shah. His current research focuses on identifying care practices associated with better outcomes in preterm infants. In this issue, he and colleagues show that cumulative fluid balance is a simple, noninvasive measure of fluid status that correlates with death or bronchopulmonary dysplasia in preterm infants. In an accompanying Comment, Sharma and Bhandari point out the challenges of managing water and sodium intake in the tiniest of babies. Dr. Beltempo emphasizes the importance of building support systems to help researchers persevere and succeed. [See pages 236, 353, and 240](#)

COVID-19 in pediatric patients and research



In this issue of *Pediatric Research*, several articles and commentaries address COVID-19 in children or in pediatric research. Zhou et al. reviewed 52 case reports of children with COVID-19 (comprising 203 children). They identified age, comorbidity, cough, dyspnea or tachypnea, and levels of C-reactive protein and lactate dehydrogenase as risk factors for severe illness in children and developed a nomogram. A related Comment by Shah provides background on the burden of COVID-19 in children and the ramifications of vaccination hesitancy. Fleming et al. review pediatric research conducted during the COVID-19 pandemic. They describe direct and indirect consequences, for both children's health and pediatric research, and they advocate streamlined and efficient approaches to pediatric research in general, as well as data sharing, as has shown to be possible in this pandemic. Cooperation, sharing, and learning with and from one another across borders is more important now than ever. In a Comment, Teach and St. Geme address the indirect as well as the direct sequelae of COVID-19 and stress the importance of non-COVID-19-related pediatric research, for the benefit not only of children suffering from those diseases but also for researchers in

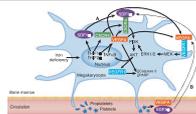
the field. Bourgeois et al. provide recommendations for research coordination based on experiences with pediatric research during the pandemic. Knight and Deep warn that acute kidney injury and kidney replacement therapy may not be receiving sufficient attention in studies in children with COVID-19. [See pages 347, 237, 267, 246, 250, and 253](#)

Influence of BPD precursors on neurodevelopmental outcome in preterm infants



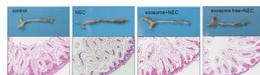
Grelli et al. studied the possible association of respiratory indicators of bronchopulmonary dysplasia (BPD) with white matter injury (WMI) and neurodevelopment in 87 children <32 weeks' gestation born in their center. Cumulative supplemental oxygen (CSO) and cumulative mean airway pressure (CMAP) in the neonatal period were associated with WMI and BPD. Higher CSO was associated with poorer language and cognitive performance at 30 months adjusted. This suggests that early need for greater respiratory support may predict neurodevelopmental impairment. Whether there is a causal relationship remains to be established. In their Comment, Baehl Voller and Porta note that these findings support optimization, not minimization, of respiratory support. (Photo: Perboget/Getty.) [See pages 359 and 242](#)

Angiogenesis drives thrombocytosis associated with iron deficiency anemia



Garcia et al. sought to solve the puzzle of iron deficiency anemia–induced reactive thrombocytosis. They confirmed that thrombopoietin is not the major driver. Instead, their findings support a key role for angiogenesis. This discovery may lead to new targets in treating symptomatic reactive thrombocytosis. The related Insights Image illustrates the mechanistic pathway of angiogenesis driving thrombocytosis. [See pages 341 and 492](#)

Human breast milk–derived exosomes and intestinal epithelial barrier integrity



He et al. studied the effect of human breast milk–derived exosomes both in vitro and in a mouse model. No

difference in the level of exosomes in preterm versus term breast milk was observed. They found that these exosomes could help sustain several epithelial tight-junction proteins in vitro. In the mouse model, administering exosomes resulted in milder intestinal injury and higher levels of epithelial tight-junction proteins after induction of necrotizing enterocolitis (NEC). These results suggest that exosomes may be a mechanism through which human breast milk protects against NEC. In a related Comment, Madden summarizes the benefits of human breast milk. She wonders whether the presence of exosomes might be the missing piece of the puzzle in the way human milk protects against NEC. [See pages 366 and 244](#)

Cerebral oxygen saturation during hypotension in extremely preterm infants



Thewissen et al. investigated the impact of hypotension and its treatment on regional cerebral oxygenation saturation (rScO₂) and autoregulation capacity (CAR). They studied a cohort of 89 extremely preterm infants, randomized to dopamine or placebo. Dopamine treatment significantly increased mean arterial blood pressure, but no differences in rScO₂ was observed. Hypotension resulted in higher duration of cerebral hypoxia and reduced cerebral autoregulatory capacity compared with normotension, although mean rScO₂ was not different. Duration of cerebral hypoxia and hypotension were associated with increased risk of intraventricular hemorrhage or death. In a related Comment, Geisen discusses approaches to protecting the premature brain. [See pages 373 and 248](#)

Use of a cartoon questionnaire for the consent process in children



Qiu et al. performed a survey among children 7–18 years of age admitted to pediatric surgical wards. Blood and urine samples are collected routinely in such children, and they are often asked to donate residual material for research. To improve the likelihood of obtaining truly informed consent in this age category, the authors compared responses to an audio and animated cartoon questionnaire (AACQ) with those to a standard text questionnaire. The use of the AACQ resulted in higher overall preference and a greater understanding with regard to biospecimen donation. [See page 411](#)