The aim of preventive cardiology is to reduce or eliminate the risk factors that lead to cardiovascular disease while encouraging behaviors and interventions that improve cardiovascular health. Interventions designed to reduce total cholesterol, systolic blood pressure, smoking prevalence, overweight/obesity, diabetes mellitus, and physical inactivity can have a profound and favorable impact on decreasing the incidence of initial and recurrent cardiovascular events in adults. However, cardiovascular disease is a process that starts in childhood. Cardiovascular risk factors in childhood predict early subclinical atherosclerosis and adult cardiovascular morbidity and mortality. Factors such as the pediatric overweight/obesity epidemic have shifted patterns of chronic disease to earlier ages, making primordial prevention strategies in the pediatric population integral in efforts to improve cardiovascular health in all stages of life.

The primary goal of this issue of Pediatric Annals is to provide the practicing pediatrician with the framework for evaluation of cardiovascular risk factors as well some strategies and interventions designed to promote cardiovascular health.

In the first article, “Preserving Optimal Cardiovascular Health in Children,” Drs. Amanda M. Perak and Irwin Benuck review the American Heart Association’s “cardiovascular health” construct as a plan for clear, concise, and consistent evaluation of risk factors throughout childhood. The construct has been evaluated in the pediatric population and predicts adult cardiovascular health. It provides clinicians with an age-appropriate scoring system for factors that affect cardiovascular health: diet, physical activity and screen time, sleep, smoking exposure, body mass index, blood pressure, cholesterol, and glucose. The article provides evidence-based interventions to assist pediatricians in targeting these risk factors in the clinical setting.

In the second article, “Percent Body Fat Measurement in the Medical Management of Children with Obesity,” Dr. Maheen Quadri and colleagues discuss their experience with using body composition measurement with bioelectrical impedance analysis in their weight management clinic. Although the prevalence of pediatric obesity appears to have plateaued, it has plateaued at remarkably high levels (16.9% in youth and 34.9% in adults). This remains a critical issue with significant implications in the trajectory of the cardiovascular health in our population. The group provides illustrative cases designed to illustrate how measurement of bioelectrical impedance analysis can provide another tool for individualized interventions aimed at sustaining weight loss.

Encouraging physical activity and limiting sedentary behavior are important components in interventions designed to improve cardiovascular health. In the next article, “The Role of Exercise Prescription in Pediatric Preventive Cardiology Program,” Drs. Sean D. Connolly and Kendra M. Ward discuss the role of physical activity and exercise prescriptions on dyslipidemia, hypertension, and obesity. The article discusses how exercise prescriptions can assist with recommendations for the optimal type, duration, and intensity of physical activity. This approach provides an individualized assessment of cardiovascular fitness along with targeted, longitudinal guidance for interventions from an exercise physiologist. This is one of the many examples of a multidisciplinary approach to improving cardiovascular health.

The American Academy of Pediatrics recently released new guidelines for the screening and management of high blood pressure in children and adolescents. The prevalence of high blood pressure and hypertension in children continued to increase in the past decades, 15% to 19% in boys, 7% to 12% in girls, and significantly higher in those with certain chronic diseases and risk factors including prematurity, chronic kidney disease, aortic arch abnormalities, sleep-disordered breathing, and overweight/obesity. In the final article, “Pediatric Hypertension,” Dr.
Debora Matossian discusses the clinical impact of some of the most significant changes in the guidelines, including (1) new terminology, (2) new normative pediatric data, (3) simplified screening, (4) simplified classification, (5) recommendations for timing of screening, and (6) screening modalities/testing.

We hope this issue provides useful resources for the practicing clinician. The prevention and treatment of cardiovascular disease as well as the promotion of cardiovascular health is a perfect opportunity for collaboration between the primary care provider and the subspecialist. This partnership is critical to addressing a disease process that begins in childhood and continues through adulthood.

REFERENCES

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About the Guest Editors

**Guilherme Baptista de Faria, MD, FAAP**, is a Pediatric Cardiologist at Ann & Robert H. Lurie Children’s Hospital of Chicago, and an Instructor of Pediatrics (Cardiology) and Preventive Medicine at Northwestern University Feinberg School of Medicine. His clinical and research interests include the effects of obesity on cardiac geometry and function, dyslipidemia, and hypertension.

Address correspondence to Guilherme Baptista de Faria, MD, FAAP, via email at gbaptista@luriechildrens.org.

**Stuart Berger, MD**, is a Pediatric Cardiologist at Ann & Robert H. Lurie Children’s Hospital of Chicago. He is Professor of Pediatrics (Cardiology) at Northwestern University Feinberg School of Medicine, where he serves as the Vice Chair for Clinical Affairs in the Department of Pediatrics. Dr. Berger is the Executive Director of the Willis J. Potts Heart Center. He has lectured extensively nationally and abroad and holds leadership roles with the American Heart Association and American Academy of Pediatrics. He is considered a leader in the field of sudden cardiac arrest and sudden cardiac death in children. In this work, he has launched a national program to teach warning signs of sudden cardiac death in youth and to expand access to automated external defibrillators. His other clinical and research interests include congenital heart disease, pulmonary hypertension, heart failure, and interventional cardiac catheterization in children.

Address correspondence to Stuart Berger, MD, via email at StBerger@luriechildrens.org.