

The Importance of a Healthy Lifestyle in Patients with Congenital Anomalies of Kidney and Urinary Tract

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We aim pointing the attention to an important issue—but often under-recognized—in adolescent medicine, namely the lifestyle. Adolescents establish patterns of behavior and make lifestyle choices that affect their future health during their sensitive transition from childhood to adulthood. Indeed, they struggle with behaviors, such as physical activity and nutrition, which will affect their risk of developing chronic diseases in adulthood.

As pediatric nephrologists and urologists, it is imperative to care also of this aspect of the lives of patients with congenital anomalies of the kidney and urinary tract (CAKUT). In fact, CAKUT represents a principal risk factor for chronic kidney disease (CKD), and primary prevention strategies supporting a healthy lifestyle with the prevention of obesity and cigarette use might reduce the risk of CKD development. Among modifiable factors, both obesity¹ and cigarette smoking² have been linked to estimated glomerular filtration rate (eGFR) decline and kidney injury (defined as reduced eGFR and/or hypertension and/or proteinuria), respectively, in children and young adults with congenital solitary functioning kidney (CSFK). Moreover, as it occurs in children and young adults without CAKUT,^{3,4} the duration of obesity also plays an important role in the decline of renal function in children and young adults with CSFK.^{1,2,5,6} Indeed, large pediatric studies have supported the negative effect of a high body mass index on renal injury development in children with CSFK,^{1,2,5,6} by underscoring the need for a strict lifestyle-monitoring program in these patients.⁵

Similarly, the duration of cigarette smoking and being a heavy smoker (≥ 25 cigarettes/day)² might affect the renal health of CSFK young adults.²

A preschool child with obesity has been found to have an increased risk to be an adult with obesity later in life,⁷ with an expected long duration of obesity and with a subsequent expected negative effect on kidney health. Considering that prenatal diagnoses of CAKUT are constantly increasing, pediatricians, pediatric nephrologists, and pediatric urologists very frequently take care of patients with CAKUT since the first months of life. For this reason, it is mandatory to carefully inform families of patients with CAKUT about the importance of a healthy lifestyle with the aim to prevent obesity or to promote weight loss in children with obesity in the first years of life. Moreover, in late childhood and before the entry into the adolescence age, it could be useful to carefully inform patients with CAKUT about the risks in terms of poor renal prognosis of cigarette smoking in order to prevent this harmful habit.

In conclusion, patients with CAKUT are born with a variable reduction of nephronic mass due to a variable entity of unilateral or bilateral congenital renal dysplasia and/or reduced nephronic endowment. This represents a non-modifiable risk factor for CKD and we do not have much possibilities of action. On the other hand, regarding modifiable risk factors (such as obesity, cigarettes, etc.), we can interfere by promoting a healthy lifestyle through continuous medical education during the periodic follow-up visits.

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REFERENCES

1. La Scola C, Guarino S, Pasini A, et al. Effect of body mass index on estimated glomerular filtration rate levels in children With congenital solitary kidney: a cross-sectional multicenter study. *J Ren Nutr.* 2020;30(3):261-267. [\[CrossRef\]](#)
2. Marzuillo P, Guarino S, Di Sessa A, et al. Congenital solitary kidney from birth to adulthood. *J Urol.* 2021;205(5):1466-1475. [\[CrossRef\]](#)
3. Sarathy H, Henriquez G, Abramowitz MK, et al. Abdominal obesity, race and chronic kidney disease in young adults: results from NHANES 1999-2010. *PLoS One.* 2016;11(5):e0153588. [\[CrossRef\]](#)
4. Marzuillo P, Grandone A, Di Sessa A, et al., Anthropometric and biochemical determinants of estimated glomerular filtration rate in a large cohort of obese children. *J Ren Nutr.* 2018;28(5):359-362. [\[CrossRef\]](#)
5. Alfandary H, Haskin O, Goldberg O, et al. Is the prognosis of congenital single functioning kidney benign? A population-based study. *Pediatr Nephrol.* 2021;36(9):2837-2845. [\[CrossRef\]](#)
6. Groen In't Woud S, van der Zanden LFM, Schreuder MF. Risk stratification for children with a solitary functioning kidney. *Pediatr Nephrol.* 2021;36(11):3499-3503. [\[CrossRef\]](#)
7. Serdula MK, Ivery D, Coates RJ, Freedman DS, Williamson DF, Byers T. Do obese children become obese adults? A review of the literature. *Prev Med (Baltim).* 1993;22:167-177. [\[CrossRef\]](#)