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Supplemental Table 5. List of principal site investigators of the Chronic Kidney Disease in Children (CKiD) cohort study.

Supplemental Table 1. Distribution of diagnoses within non-glomerular and glomerular participants

Non-Glomerular diagnoses			Glomerular diagnoses		
Primary diagnosis	N	%	Primary Diagnosis	N	%
Aplastic/hypoplastic/dysplastic kidneys	197	24.5	Focal segmental glomerulosclerosis	79	28.8
Obstructive uropathy	192	23.9	Hemolytic uremic syndrome	52	19.0
Reflux nephropathy	140	17.4	Systemic immunological disease (including SLE)	37	13.5
Congenital Urologic Disease (Bilateral Hydronephrosis)	52	6.5	Chronic glomerulonephritis	22	8.0
Non-Glomerular Other	50	6.2	Familial nephritis (Alport's)	19	6.9
Polycystic kidney disease (Autosomal recessive)	38	4.7	IgA Nephropathy (Berger's)	17	6.2
Renal infarct	27	3.4	Membranoproliferative glomerulonephritis type I	12	4.4
Cystinosis	19	2.4	Henoch schonlein nephritis	9	3.3
Pyelonephritis/Interstitial nephritis	15	1.9	Other glomerular diagnosis	8	2.9
Perinatal Asphyxia	14	1.7	Idiopathic crescentic glomerulonephritis	7	2.6
Medullary cystic disease/Juvenile nephronophthisis	12	1.5	Membranous nephropathy	4	1.5
Syndrome of agenesis of abdominal musculature	11	1.4	Congenital nephrotic syndrome	4	1.5
Vactrel or Vater Syndrome	9	1.2	Membranoproliferative glomerulonephritis type II	3	1.1
Wilms' tumor	8	1.0	Sickle cell nephropathy	1	0.4
Branchio-oto-Renal Disease/Syndrome	7	0.9			
Polycystic kidney disease (Autosomal dominant)	7	0.9			
Methylmalonic Acidemia	5	0.6			
Oxalosis	2	0.2			

Supplemental Table 2. Unadjusted, partially adjusted, and fully adjusted models of height z-score on serum bicarbonate, using a categorical predictor **AMONG NON-rGH users**. Missing data were imputed for covariates in the partially and fully adjusted models.

Serum Bicarbonate (mEq/L)	N	Unadjusted Mean (95% CI)	Partially Adjusted Mean ¹ (95% CI)	Fully Adjusted Mean ² (95% CI)
Non-Glomerular Diagnosis	2635			
>22		Reference	Reference	Reference
19-22		-0.30 (-0.45, -0.15)	-0.22 (-0.34, -0.09)	-0.21 (-0.33, -0.08)
≤18		-0.53 (-0.75, -0.32)	-0.34 (-0.53, -0.15)	-0.31 (-0.51, -0.12)
Glomerular Diagnosis ³	800			
>22		Reference	Reference	Reference
≤22		-0.21 (-0.45, 0.03)	-0.03 (-0.22, 0.16)	-0.02 (-0.20, 0.17)

¹ Adjusted for age, sex, abnormal birth history, mid-parental height, and previous levels of eGFR and UP/C

² Adjusted for age, sex, abnormal birth history, mid-parental height, and previous levels of eGFR, UP/C, calcium, phosphate, iPTH and CKD duration in years.

³ For those with glomerular diagnoses, serum bicarbonate was dichotomized at 22mEq/L because there were n= 225 and 575 person-visits for those less than 45 ml/min|1.73m² and greater than 45 ml/min|1.73m², respectively

Supplemental Table 3. Unadjusted, minimally adjusted, and fully adjusted models of height z-score on previous visits' serum bicarbonate. Generalized estimating equations used to account for repeated measures within an individual.

	N	Unadjusted Mean (95% CI)	Partially Adjusted Mean ¹ (95% CI)	Fully Adjusted Mean ² (95% CI)
Previous Serum Bicarbonate, per 1 mEq/L increase				
Non-glomerular diagnosis	3239	-0.003 (-0.03, 0.02)	-0.001 (-0.02, 0.02)	0.01 (-0.01, 0.03)
Glomerular diagnosis	853	-0.01 (-0.07, 0.04)	0.02 (-0.04, 0.08)	0.03 (-0.03, 0.09)

¹ Adjusted for age, sex, abnormal birth history, mid-parental height, and previous levels of eGFR and UP/C

² Adjusted for age, sex, abnormal birth history, mid-parental height, and previous levels of eGFR, UP/C, calcium, phosphate, iPTH and CKD duration in years

Supplemental Table 4a (among children <13 years as a classification for prepubescent children). Unadjusted, partially adjusted, and fully adjusted models of height z-score on serum bicarbonate, using a categorical predictor **among person visits with age < 13 with adjustment of glomerular/non-glomerular diagnosis as a covariate and eGFR**. Missing data were imputed for covariates in the partially and fully adjusted models.

Serum Bicarbonate (mEq/L)	N	Unadjusted Mean (95% CI)	Partially Adjusted Mean ¹ (95% CI)	Fully Adjusted Mean ² (95% CI)
>22	1150	Reference	Reference	Reference
19-22	606	-0.21 (-0.35, -0.07)	-0.09 (-0.21, 0.04)	-0.09 (-0.21, 0.03)
≤18	139	-0.49 (-0.75, -0.22)	-0.25 (-0.49, 0.00)	-0.25 (-0.50, -0.01)

¹ Adjusted for diagnosis, age, sex, abnormal birth history, mid-parental height, and previous levels of eGFR and UP/C

² Adjusted for diagnosis, age, sex, abnormal birth history, mid-parental height, and previous levels of eGFR, UP/C, calcium, phosphate, iPTH and CKD duration in years.

Supplemental Table 4b (among children <13 years as a classification for prepubescent children). Unadjusted, partially adjusted, and fully adjusted models of height z-score on serum bicarbonate, using a categorical predictor **among person visits with age < 13 with adjustment of glomerular/non-glomerular diagnosis as a covariate and measured GFR**. Missing data were imputed for covariates in the partially and fully adjusted models.

Serum Bicarbonate (mEq/L)	N	Unadjusted Mean (95% CI)	Partially Adjusted Mean ¹ (95% CI)	Fully Adjusted Mean ² (95% CI)
>22	544	Reference	Reference	Reference
19-22	261	-0.28 (-0.47, -0.09)	-0.18 (-0.36, 0.00)	-0.19 (-0.36, -0.01)
≤18	61	-0.53 (-0.87, -0.19)	-0.37 (-0.67, -0.07)	-0.39 (-0.69, -0.09)

¹ Adjusted for diagnosis, age, sex, abnormal birth history, mid-parental height, and previous levels of GFR and UP/C

² Adjusted for diagnosis, age, sex, abnormal birth history, mid-parental height, and previous levels of GFR, UP/C, calcium, phosphate, iPTH and CKD duration in years.

Supplemental Table 5. List of principal site investigators of the Chronic Kidney Disease in Children (CKiD) cohort study.

Study Investigator(s)	Institution	City	State/Province
Sahar Fathallah-Shaykh, MD	University of Alabama at Birmingham (Children's of Alabama)	Birmingham	AL
Anjali Nayak, MD; Martin Turman, MD	Phoenix Children's Hospital	Phoenix	AZ
Tom Blydt-Hansen, MD, FRCPC	British Columbia Children's Hospital	Vancouver	British Columbia, Canada
Cynthia Wong, MD; Steve Alexander, MD	Stanford University Medical Center	Palo Alto	CA
Ora Yadin, MD	University of California – Los Angeles (UCLA)	Los Angeles	CA
Elizabeth Ingulli, MD; Robert Mak, MD, PhD	University of California – San Diego (UCSD)	San Diego	CA
Cheryl Sanchez-Kazi, MD	Loma Linda University	Loma Linda	CA
Asha Moudgil, MD	Children's National Medical Center	Washington	DC
Caroline Gluck, MD	Nemours/Alfred I. duPont Hospital for Children	Wilmington	DE
Carolyn Abitbol, MD; Marissa DeFietas, MD; Chryso Katsoufis, MD; Wacharee Secherunvong, MD	University of Miami	Miami	FL
Larry Greenbaum, MD, PhD	Children's Healthcare of Atlanta / Emory University	Atlanta	GA
Lyndsay Harshman, MD	University of Iowa	Iowa City	IA
Craig Langman, MD	Ann & Robert H. Lurie Children's Hospital of Chicago	Chicago	IL
Sonia Krishnan, MD	University of Illinois at Chicago	Chicago	IL
Amy Wilson, MD	Riley Hospital for Children at Indiana University Health	Indianapolis	IN
Stefan Kiessling, MD; Margaret Murphy, PhD	University of Kentucky	Lexington	KY
Siddharth Shah, MD, Janice Sullivan, MD; Sushil Gupta, MD	University of Louisville (Novak Center for Children's Health)	Louisville	KY
Samir El-Dahr, MD; Stacy Drury, MD	Tulane University	New Orleans	LA
Nancy Rodig, MD	Boston Children's Hospital	Boston	MA
Allison Dart, MD MSc, FRCPC	University of Manitoba (Children's Hospital Research Institute of Manitoba)	Winnipeg	Manitoba, Canada
Meredith Atkinson, MD	Johns Hopkins University (Johns Hopkins Children's Center)	Baltimore	MD
Arlene Gerson, PhD		Baltimore	MD
Tej Matoo, MD	Children's Hospital of Michigan / Wayne State University	Detroit	MI
Zubin Modi, MD	University of Michigan	Ann Arbor	MI
Alejandro Quiroga, MD	Spectrum Health Hospitals / Helen DeVos Children's Hospital	Grand Rapids	MI

Bradley Warady, MD	Children's Mercy Hospital - Kansas City	Kansas City	MO
Rebecca Johnson, PhD	Children's Mercy Hospital	Kansas City	MO
Vikas Dharnidharka, MD	Washington University in St. Louis (St. Louis Children's Hospital)	St. Louis	MO
Stephen Hooper, PhD	University of North Carolina	Chapel Hill	NC
Susan Massengill, MD	Levine Children's Hospital	Charlottesville	NC
Liliana Gomez-Mendez, MD	East Carolina University	Greenville	NC
Matthew Hand, DO	Dartmouth-Hitchcock Medical Center	Lebanon	NH
Joann Carlson, MD	Rutgers-Robert Wood Johnson Medical School	New Brunswick	NJ
Hanan Tawadrous, MD; Roberto Jodorkovsky, MD	St. Joseph's University Medical Center	Paterson	NJ
Craig Wong, MD, MPH	University of New Mexico Health Sciences Center	Albuquerque	NM
Frederick Kaskel, MD, PhD; Shlomo Shinnar, MD, PhD	Albert Einstein College of Medicine/Montefiore Medical Center	Bronx	NY
Jeffrey Saland, MD	Icahn School of Medicine at Mount Sinai	New York	NY
Marc Lande, MD; George Schwartz, MD	University of Rochester Medical Center	Rochester	NY
Anil Mongia, MD	State University of New York, Downstate Medical Center	Brooklyn	NY
Donna Claes, MD; Mark Mitsnefes, MD	Cincinnati Children's Hospital Medical Center	Cincinnati	OH
Katherine Dell, MD	Case Western Reserve University/Cleveland Clinic Children's	Cleveland	OH
Hiren Patel, MD	Nationwide Children's Hospital	Columbus	OH
Pascale Lane, MD	Oklahoma University Health Sciences Center	Oklahoma City	OK
Rulan Parekh, MD	Hospital for Sick Children (Sick Kids)	Toronto	Ontario, Canada
Amira Al-Uzri, MD, MCR; Kelsey Richardson, MD	Oregon Health and Science University	Portland	OR
Susan Furth, MD, PhD; Larry Copelovitch, MD	Children's Hospital of Philadelphia	Philadelphia	PA
Elaine Ku, MD, MAS	University of California – San Francisco (UCSF)	San Francisco	SF
Joshua Samuels, MD	University of Texas Health Science Center at Houston	Houston	TX
Poyyapakkam Srivaths, MD	Baylor College of Medicine (Texas Children's Hospital)	Houston	TX
Samhar Al-Akash, MD	Driscoll Children's Hospital	Corpus Christi	TX
Patricia Seo-Mayer, MD	INOVA Children's Hospital / Pediatric Specialists of Virginia	Fairfax	VA
Victoria Norwood, MD	University of Virginia	Charlottesville	VA
Joseph Flynn, MD	Seattle Children's Hospital	Seattle	WA
Cynthia Pan, MD	Medical College of Wisconsin	Milwaukee	WI
Sharon Bartosh, MD	University of Wisconsin	Madison	WI