



Kidney Health in Premature Population

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What do the kidneys do?

The kidneys do a lot of jobs in the body including balancing electrolytes (salts) in the blood, helping with growth, controlling the blood pressure, and removing waste products and excess water (urine) from the body.

Why should I be worried about my baby's kidneys?

Just like many other organs, the kidneys are underdeveloped when a baby is born prematurely. This can cause the kidneys not to perform the jobs it is supposed to. These issues include:

- Bone problems
- Failure to grow
- High blood pressure
- Electrolyte (salt) problems
- Buildup of waste products

How does this put my child at risk?

Babies who are born prematurely have an increased risk of chronic kidney disease (CKD) and high blood pressure (hypertension). Other health conditions common to infants who spend time in the Neonatal Intensive Care Unit (NICU) may also increase this risk.

One out of every six extremely low birth weight infants born less than 28 weeks gestational age has evidence of CKD by 2 years of age. All premature infants have a lifelong risk of CKD and high blood pressure.

CKD and high blood pressure can cause damage to other important organs and progress without any outward signs.

What do I need to do?

We recommend that your child be screened before discharge from the NICU and at 2 years of age. To screen, a nurse will measure blood pressure a few times in the arm while your child is calm or asleep. We will also draw a small blood sample to test your baby's kidney function.

Blood pressure

Today, we took your child's blood pressure. It was _____.

Target/goal: Less than 100 systolic (top number) blood pressure

Kidney function

Today, we tested your child's blood and their kidney function is _____.

Target/goal: Less than or equal to 0.5mg/dL.

If any of these numbers are not normal, we will have you follow up with our kidney team at Children's of Alabama.

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We recommend that premature infants avoid certain medications that may be harmful to the kidney unless your pediatrician recommends them. Please see list below.

Common NSAIDS (Nonsteroidal Anti-Inflammatory Drugs)

Generic Name	Brand Name
Aspirin (acetylsalicylic acid)	Bufferin, Ecotrin, Bayer, Stanback Analgesic
Ibuprofen	Advil, Genpril, Midol IB, Motrin, Nuprin, Vicoprofen, Medipren, Wal-profen,
Indomethacin	Indocin, Indo-Lemmon, Indomethagan
Ketorolac	Toradol, Sprix
Meloxicam	Mobic, Recoxa, Melox, Movalis
Naproxen	Aleve, Naprosyn, Anaprox, Naprelan, Prevacid, NapraPac, Midol Extended Relief
Celecoxib	Celebrex
Diclofenac	Voltaren, Cataflam, Arthrotec, Cambria
Diflunisal	Dolobid
Etodolac	Lodine
Fenoprofen	Nalfon, Fenopron
Piroxicam	Feldene, Fexicam
Sulindac	Clinoril

*This list does not include every medication that is an NSAID. Some medications combine NSAIDs with other ingredients, so it is important to read the list of medications you give your baby.

Be sure your healthcare provider understands your child's risk for kidney disease and knows his/her kidney function before prescribing antibiotics or ordering contrast for an x-ray, CT scan or MRI. When in doubt, ask your pediatrician!

One out of every six extremely low birth weight infants (born less than 28 weeks' gestational age) has evidence of CKD by 2 years of age.

Recent consensus recommendations were published regarding follow up for at risk infants, including those with acute kidney injury, congenital heart defects and extremely low gestational age neonates (Starr et. al. Kidney Health Monitoring in Neonatal Intensive Care Unit Graduates: A Modified Delphi Consensus Statement. JAMA Netw Open. 2024 Sep 3;7(9):e2435043. doi: 10.1001/jamanetworkopen.2024.35043. PMID: 39269711).

Your patient was screened for CKD prior to discharge from the NICU and was found to have the following blood pressure and serum creatinine:

BP: _____

SCr: _____

Please measure BP and check urine for proteinuria for your patient at every well visit and more frequently if your patient has hypertension or any kidney dysfunction.

Indications for referral include any of the following:

- Serum creatinine \geq 0.5mg/dL
- Blood pressure > 90th percentile for age X 2
- Proteinuria

Please contact 205-638-9781 and ask for a provider with the division of Pediatric Nephrology at Children's of Alabama to follow up if any future blood pressures or lab values are concerning to you.