Orthostatic Proteinuria

Normal kidney function
Each kidney is made up of about 1 million tiny filters. The filters remove waste products from the blood and keep the important parts like cells and proteins that flow in the blood. Under normal conditions, urine may contain a small amount of protein.

Proteinuria is an increased protein in the urine. Proteinuria can be a sign of swelling or scarring of the kidneys filters. However, most of the time, increased protein in the urine is not an abnormal condition, nor is it linked to an increased risk of kidney disease.

How is protein measured in urine?
Urine is checked at the office for protein, blood, and sugar using a test strip called a dipstick. The dipstick has colored squares that when dipped into urine, change color depending on the amounts of protein in the urine. The strip are compared to standard values and read as “negative”, “trace”, 1+, 2+, 3+, or 4+. A small amount of protein in the urine is normal. “Negative” and “trace” protein are considered normal.

After dipstick screening, your child may be asked to collect another urine collection in a container to take to the lab to measure the exact amount of the protein. Because position (e.g. standing or lying down) can change the amount of protein in the urine (see below), this urine test is done immediately upon arising in the morning.

Orthostatic or Postural Proteinuria?
For reasons that are not well understood, some people have increased protein in their urine when sitting or standing, but normal protein in their urine when lying down.

This phenomena is known as “Orthostatic” or “Postural” Proteinuria. This is mainly common in adolescents and young adults. About 15% of adolescent girls will test 1+ or greater protein in their urine when collected while standing. The condition usually disappears over time. Most importantly, Orthostatic Proteinuria does not relate to kidney disease.
Testing for Orthostatic Proteinuria
Testing is simple process, but needs to be followed exactly, as change can effect the test results.

1. Before going to bed your child must go to the bathroom and then go directly to bed.

2. Upon arising in the morning, your child should immediately void a small amount of urine in a specimen cup. (Often 2 or 3 first morning urine specimens are requested. The specimens should be labeled with the name, date of birth, & date & time of collection, and then refrigerated until they are brought to the lab).

3. When all the specimens are collected, the containers of urine, and the laboratory order for testing should be brought to the lab. The laboratory will measure protein and creatinine.

Creatinine is a natural body substance that is only excreted in the urine. It measures how dilute or concentrated the urine may be. The results of the protein divided by the creatinine in your child’s urine are compared to normals. Children with normal urine protein in the first morning specimens have Orthostatic Proteinuria.

What if my child still has proteinuria on the morning specimens?
The urine may have been collected incorrectly and we may ask to repeat the collection. Proteinuria can be a sign of inflammation or scarring of the filters of the kidney. Persons with increased urine protein on first morning specimens require additional evaluation. This will include blood tests, and will be explained to you by your child’s Nephrologist.

What if my child has Orthostatic Proteinuria?
As noted above, this is not an abnormal condition. It will likely disappear over time. No additional testing is necessary. If your child requires urine testing in the future for school or athletic participation, that testing should be done on a first morning urine specimen.

For more information about Pediatric Nephrology at Upstate Golisano Children’s Hospital, call (315) 464-6340 or go to www.upstate.edu.