

# **Urinary Tract Infection/Pyelonephritis**

# What is the urinary tract?

The urinary tract consists of the *kidneys*, each of which drains into the *ureters*, and finally the urine drains from the ureters into the *bladder*. A urinary tract infection can impact the bladder and/or kidneys.

# What is a urinary tract infection?

A urinary tract infection is inflammation of the bladder and/or the kidneys almost always caused by bacteria that moves up the urethra and into the bladder. If the bacteria stay in the bladder, this is a bladder infection. If the bacteria go up to the kidneys, it is called a kidney infection or pyelonephritis. Viruses and fungus can also cause a urinary tract infection, but quite rarely.

# What are the signs of a urinary tract infection?

In babies, the most common signs include fever, irritability, vomiting and diarrhea, poor feeding, and failure to gain weight, but most babies will just have a high fever without any other symptoms. In older children, common signs include burning or pain with urination, frequent or urgent urination, fever, lower abdominal pain, new or more frequent incontinence, side or back pain, or blood in the urine. A urinary tract infection is treated with either intravenous or oral antibiotics.

# What is the difference between a bladder and a kidney infection?

Regardless of age, a bladder infection is not usually associated with a fever, and generally does not produce any long-term damage to the bladder or kidneys. However, a kidney infection (pyelonephritis) is usually associated with a high fever and may produce permanent damage or scarring of the kidney even after only one infection.

# How can you tell if your child has a urinary tract infection?

If your child has symptoms of a urinary tract infection, a urine sample will be collected by catheterizing the bladder, placing a bag over the genital area, or having your child urinate in a cup. This sample is then sent for urinalysis

and urine culture to determine if there are enough bacteria in the urine to confirm infection.

# Does my child need any further testing?

Children with a history of urinary tract infection may require further imaging such as a renal and bladder ultrasound (see Renal and Bladder Ultrasound section) or a Voiding Cystourethrogram (VCUG) (see Voiding Cystourethrogram section). We will gather all pertinent information about your child's history and discuss with you whether we recommend either of these tests.

# For further information on Urinary Tract Infection:

http://www.urologyhealth.org/urologic-conditions/urinary-tract-infections-in-children

See the next page for contact information.

Laurence S. Baskin, MD Hillary Copp, MD, MS Michael DiSandro, MD Anne Arnhym, CPNP Angelique Champeau, CPNP

#### **Contact Information:**

#### Laurence S. Baskin, MD

http://urology.ucsf.edu/people/laurence-s-baskin#

## Hillary Copp, MD, MS

http://urology.ucsf.edu/people/hillary-l-copp

## Michael DiSandro, MD

http://urology.ucsf.edu/people/michael-j-disandro

## **Appointments & Location**

Mission Bay Benioff Children's Hospital (Surgical Admissions) 1975 4th Street San Francisco, CA 94143 415.353.2200 (Phone) 415.353.2480 (Fax)

Children's Hospital & Research Center Oakland 747 52nd Street Ambulatory Care 4th Oakland, CA 94609 510.428.3402 (Phone)

#### PEDIATRIC NURSE PRACTITIONERS

# Anne Arnhym, CPNP

Certified Pediatric Nurse Practitioner Anne.Arnhym@ucsf.edu

# Angelique Champeau, CPNP

Certified Pediatric Nurse Practitioner Angelique.Champeau@ucsf.edu