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## FELINE SUBCUTANEOUS URETERAL BYPASS DEVICE (SUB)

6995 East Kemper Rd. • Cincinnati, OH 45249 • P: 513.530.0911 • F: 513.530.0811  
6405 Clyo Rd. • Centerville, OH 45459 • P: 937.428.0911 • F: 937.428.6667

[carecentervets.com](http://carecentervets.com)

### What is a SUB?

SUB stands for Subcutaneous Ureteral Bypass Device. It is a catheter inserted into the kidney to collect urine and transport it through a shunting device surgically placed under the skin to a catheter that empties into the urinary bladder.

### Why does my cat need a SUB?

A SUB is often needed when urine is unable to get from the kidney to the bladder. A kidney/ureter can become obstructed because of stones (the most common cause), ureteral stricture (25%), blood clots (8%), or a tumor. The aim of SUB placement is to bypass the obstruction and divert urine from the obstructed kidney into the urinary bladder.

### What will happen before SUB placement in my cat?

Prior to the procedure, a full diagnostic work-up of blood work, ultrasound, X-rays, urinalysis, urine culture, and blood pressure will be performed. Most patients will also require 24-48 hours of aggressive fluid therapy prior to the procedure. During this initial 1-2 days between 8% and 17% of cats will pass a stone and then no longer require a SUB. If both kidneys are obstructed and the patient is unable to produce urine, then an emergency SUB procedure will need to be done, with no time for medical management ahead of time.

### Will my cat need both kidneys treated?

At the time of diagnosis, between 15% and 20% of cats will be found to have both kidneys obstructed. Those with an obstruction on only one side may later develop an obstruction on the other side and need further treatment. This occurs in about 5% of cases.

### What are the potential risks and complications?

#### ► **During the procedure there is less than 5% risk of:**

- Catheter kinking
- Bleeding during kidney tube placement
- Inability to place the SUB
- Death

#### ► **Within the first week after the procedure there is a less than 5% risk of:**

- Urine leakage (which can be resolved with a new device)
- Overhydration
- System blockage
- Failure of creatinine to improve
- Death

#### ► **Short-term complications (one week–one month):**

- Seroma, which is a collection of fluid that builds up under the skin's surface after surgery (1%)
- Straining to urinate (2%)
- Loss or lack of appetite (25%, usually temporary)

#### ► **Long-term complications (beyond one month):**

- Urinary tract infections (15%)
- System obstruction (20% of stone cases—with repeated device flushing, it is less common; 1% in stricture cases)
- Straining to urinate (2%)

Please note: In patients not eating prior to a SUB placement, we often place a feeding tube at the end of the procedure to ensure adequate nutritional support. This tube also makes giving medications and fluids easier when the patient goes home.

### **What is the expected outcome?**

With no major complications, the prognosis is good. Most cats treated with a SUB will live for several years and only 20% of cats will pass away from kidney-related issues. The median survival time for those succumbing to their kidney disease is over 4 years.

### **What is the long-term follow-up?**

The urine will need to be cultured every three to six months to ensure no infections are developing. For the first two years, the SUB will need to be flushed at Care Center every three months. Beyond that it will need to be flushed every six months. A special needle, called a huber needle, is the ONLY type of needle that can be used to flush a SUB, so NEVER have the system flushed by someone untrained in the procedure.