

# What is the best treatment for children with vesicoureteral reflux?

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Children with vesicoureteral reflux (VUR), in which urine flows backwards into the kidneys from the bladder, have been treated in the past with surgery or antibiotic therapy. Although this condition can lead to renal damage, there have been few controlled studies to help determine the most effective treatment of young children. A study, part of the Swedish Reflux Trial, is scheduled for publication in the July 2010 issue of the *Journal of Urology*.

Investigators from the Pediatric Uro-Nephrologic Center, The Queen Silvia Children's Hospital, University of Gothenburg, Sweden, led a national study in which 203 [children](#) with VUR were followed in a [randomized clinical trial](#) (128 girls and 75 boys). One-third received prophylactic antibiotics, one-third received endoscopic intervention and one-third was observed with no treatment.

"Controlled studies are needed to provide an evidence base for treatment in children with VUR," according to lead investigator Sverker Hansson, MD. "The Swedish Reflux Trial was set up as a RCT to compare long-term antibiotic prophylaxis, endoscopic correction and surveillance as the control group in children with dilating VUR in regard to the febrile UTI rate, and kidney and VUR status at 2 years. Secondary outcomes were complications and the impact of factors such as VUR grade, gender and bladder dysfunction. In the current report we analyzed the progression of renal defects present at entry and the development of new renal damage in the 3 treatment groups."

The researchers found that the rate of new renal damage in boys was low, with only one boy who received endoscopic treatment and one on surveillance having further damage. In girls the rate was higher (13 or 10%) and there was a significant difference between treatment groups with new damage most common in controls on surveillance. New damage was observed in 19% of girls on surveillance, 12% who received endoscopic treatment and in none on prophylaxis.

There was a strong association between recurrent febrile urinary tract infections (UTI) and new renal damage in girls but recurrent UTIs and new damage were unusual in boys. The febrile UTI rate differed significantly between treatment groups in girls, including a recurrence rate of 57% in the surveillance, 23% in the endoscopic and 19% in the prophylactic groups.

Dr. Hansson and co-investigators state, "An interesting finding was that new damage as well as the progression of previously observed renal uptake defects was only seen in kidneys drained by ureters with dilating VUR with 1 exception. There was no difference in this respect whether VUR was grade III or IV at study entry. Previously unscarred kidneys were as vulnerable to new renal damage as those with uptake defects at entry."

**More information:** The article is "The Swedish Reflux Trial in Children: IV. Renal Damage" by Per Brandström, Tryggve Nevéus, Rune Sixt, Eira Stokland, Ulf Jodal and Sverker Hansson. It is published online ([DOI:10.1016/j.juro.2009.12.021](https://doi.org/10.1016/j.juro.2009.12.021)) and will appear in the Journal of Urology, Volume 184 Issue 1 (July 2010).

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