What should happen?

There are 3 alternatives:

- Do nothing at all. The idea here is that whatever damage exists is what you will end up with and nothing will alter that. It is not a view I hold with completely.
- Non operative treatment. This may involve long term antibiotics, bladder training and other measure to prevent UTIs. Follow-up tests are done to make sure no further damage occurs. The idea is that if you keep the child free of infection, then no further harm can come. Generally I think some variation on this is best.
- Surgery to correct the reflux. Two operative approaches are currently available - both involve a general anaesthetic:

Endoscopic

Using a telescope and a flexible needle, a small injection (implant) is placed under the bladder lining just beneath the ureter. No cuts are made. The implant is semi-permanent though some of the liquid it is injected with gets absorbed. The procedure is performed on a day stay basis. The success rate is about 80%

Open

This involves a cut in the lower abdomen and moving the ureter(s) across the bladder, underneath the lining. It involves 4-5 days in hospital with a success rate of >95%.

Vesico-Ureteric Reflux

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Whether your child has had this diagnosis made because of a urine infection or because of follow-up of an abnormal ultrasound or other test does not change any of what we will now discuss.

There are three separate things that people talk about and get confused about when discussing urinary reflux: urine infection, urinary reflux itself and kidney damage. Their relationship is difficult to understand and is frequently argued about by experts!

*How about we start with a few **definitions:***

Reflux

Urine is continually made by the kidneys and passes down tubes (called 'ureters') into the bladder. The bladder stores the urine till it's full then squeezes to push the wee out. Normally this is a one way street. Doctors use Latin nouns for some things and call this 'vesico' (to do with the bladder) – 'ureteric' (to do with the ureters) reflux. The amount of urine passing backwards varies and is sometimes given a grade from 1 to 5 (grade 1 being a little and grade 5 being a lot). Children are usually born with reflux but a few children with severe bladder problems can develop reflux. There are some hereditary factors but no single cause has been found. About 1/3 –1/2 of children with kidney scarring will have brothers or sisters with reflux. Reflux tends to get better with age, especially in young children. It does not get better if there are significant bladder problems.

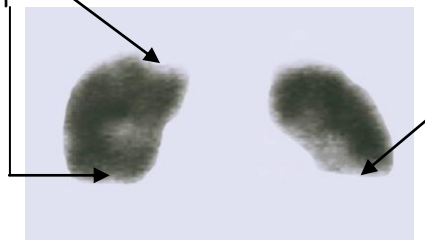
Urine infection

Believe it or not, there can be doubt as to whether a test shows a definite urine infection. It's possible to reduce that doubt by: collecting a *urine sample as free as possible from skin germs* and *getting it tested before bugs either die or grow in it.*

You can achieve this by:
….. collecting the wee sample after the wee has been coming out for a bit. We call that "midstream". The wee MUST not stop before the sample starts. ….. In babies or other children not able to wee on command, we either go for "ultraclean" urine by taking it directly from the bladder using a catheter put into the bladder from below or waiting patiently to get a "midstream" as above.
Sometimes it's not possible to get urine these ways. It's then collected by using a self-adhesive plastic bag put over the genitals. 'Bag urines' are really only helpful if they don't grow anything. However we tend to act on them if they are not too doubtful!
….. Whichever way you get it, take the sample to the laboratory as fast as possible or refrigerate it for 1 or 2 hours until it's convenient. Overnight refrigeration may give unreliable results.

Scarring

Kidney scarring means that there's damage to the kidney. It usually only affects part of one kidney but can affect both kidneys in varying degrees. Kidney scarring is seen in about 1/3 -1/2 of children with reflux. Most children with scarring will have no problems at all. A few with significant scarring will develop blood pressure problems as teenagers or adults and only a very small number with really bad damage to both kidneys will ever get kidney failure. The scan below shows areas of scarring on the top and bottom of the kidney on the left and on the bottom of the right.



How are all these things related?

The following statements are true under most normal conditions - ***unless I tell you otherwise, they are true for your child.***

- ***Urine infections do not cause reflux.***

- ***Reflux does not cause urine infections*****.....** so fixing reflux won't stop your child from getting urine infections. That's a bit complicated, though ☺

- ***Reflux does not cause new scarring to develop****.*

WELL, what is the bottom line on scarring?

We used to believe that you were born with it. A later theory was that you developed it after your first urine infection. We know that both of these are true to some extent in different people. We also know that it is *extremely unlikely that you will get scarring in the future if you haven't got it with your first infection.* If you do have scarring, you *may* get further scarring with more infections but again this seems unusual.