Potassium Chloride Sensitivity Test

The Potassium Chloride Sensitivity Test (PST) consists of instilling a solution of potassium chloride (known chemically as KCl) into the bladder via urinary catheter. It has been suggested for two uses:

- Diagnostic test for IC.
- Predictive test for response to IC-specific medicines, such as pentosan polysulfate sodium (Elmiron) and other heparinoids, that are thought to work by coating the bladder lining.

Some common questions about the PST are addressed below:

Is the PST an accurate diagnostic test?
The PST was originally designed as a possible diagnostic test for IC. However, there are questions about the accuracy of this test. One study found the PST to be 75 percent accurate, which means that if 100 IC patients are given this test, only 75 of these patients will be diagnosed accurately. Another study found the test to be 60 percent accurate in the diagnosis of IC.

Is the PST an accurate predictive test?
The PST is being evaluated as a predictive test. The test is thought to be able to gauge the permeability of the glycosaminoglycans (GAG) layer of the bladder, which may be defective in some IC patients. Some investigators believe that IC patients who respond positively to the test will be more likely to be helped by a specific class of IC treatments—the mucosal surface protectants (or heparinoids), such as oral Elmiron and intravesical heparin. However, its usefulness as a predictor of response to heparinoids has not been substantiated.

Is the PST painful?
During the test, patients are asked to report the degree of severity of pain and urgency that they experience while the KCl solution is in the bladder. This pain response may be present not only during, but after the test, and can last as long as days to weeks following the procedure. And, it may be difficult for patients to accurately quantify an increase in pain when they may already be in considerable pain prior to administration of the test. It has been suggested that long-acting anesthetics such as bupivacaine hydrochloride (Marcaine) and heparin be instilled into the bladder immediately after the PST, so that the potential for a painful flare-up is reduced.

Can the PST be misinterpreted?
The PST is not specific for IC. Patients with acute urinary tract infection, radiation cystitis, other inflammatory conditions of the bladder, and those receiving chemotherapy for bladder cancer may also have a positive response to the test. Also, the test may be negative, even if a patient has IC, if the patient:

- Has recently received DMSO or heparin intravesical instillations.
- Has recently undergone hydrodistention.
- Has been taking Elmiron.
- Does not exhibit bladder permeability as a part of their IC.

Talk to my doctor about the PST
If your doctor feels it is necessary to administer the PST as a diagnostic test for IC, ask about:

False negatives: Let your doctor know that the medical literature reports a 40 percent false negative rate. This means that for every 100 people with IC undergoing the test, 40 of these people will have no response to the test solution placed in their bladders. Again, this does not mean that you do not have IC. It is a limitation of the test itself.

Post test pain treatments: Ask about a solution of Marcaine to reduce the painful symptoms that may occur minutes to hours after the test is given. Also, ask about a prescription for pain medication, since this test can trigger a flare in symptoms.
In a recent issue of the *Journal of Urology*, Lowell Parsons, MD and Philip Hanno, MD offered opposing views about the PST. Here’s an overview of what they think. Many patients report discomfort and burning after administration of the PST.

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<th>PROS</th>
<th>CONS</th>
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<td>C. Lowell Parsons, MD  &lt;br&gt;<em>Division of Urology, University of California, San Diego</em></td>
<td>Philip Hanno, MD  &lt;br&gt;<em>Division of Urology, University of Pennsylvania</em></td>
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<td>It is a quick, relatively painless test. About the same discomfort level as other urologic office procedures.</td>
<td>It does not accurately identify all persons with IC. Sometimes persons with IC can still have a negative PST.</td>
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<td>It is more effective in identifying IC than the gold standard NIDDK criteria. NIDDK criteria fail to identify as many as 40% of persons with IC.</td>
<td>The PST cannot tell the difference between IC and some other disorders (such as overactive bladder). This could result in a false positive for IC (i.e. test scores indicate you have IC when you actually don’t).</td>
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<td>It can help doctors, especially gynecologists, identify unrecognized bladder problems as the source of pain.</td>
<td>False negatives increase in people with associated disorders (such as overactive bladder, urinary tract infections, or non-bacterial prostatitis/chronic pelvic pain syndrome).</td>
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<td>It may not assist doctors in developing a successful treatment plan. Not all people with a positive PST will react to drugs and other treatment techniques in the same way.</td>
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The ICA provides advocacy, research funding, and education to ensure early diagnosis and optimal care with dignity for people affected by IC.

Your donation dollars also enable the ICA to continue to fund new IC research projects, as well as work closely with Congress to ensure ongoing IC-specific research funding at the federal level.

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