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**Cryosurgery** (cryoablation) is the use of extreme cold to destroy targeted tissue. While it is a surgery, it is a minor surgery. You come to the Rockyview Hospital the morning of the procedure, fasting (nothing to eat or drink after midnight). You are then brought to the operating room.

The procedure is done using a spinal anaesthetic (a needle in your back that freezes you from the waist down). You don't feel anything. You are placed on the operating room table on your back with your legs in stirrups (as though you are going to have a baby). The first part is to put a tube (catheter) into your bladder through the skin in your lower tummy. It is above the pubic hair, so we call it a suprapubic. I make a tiny 1/8 inch cut in the skin, (you don't feel it because it is frozen) and then put the tube in and leave it in place. When frozen, your prostate swells and blocks the urethra (water pipe) and you cannot void. It takes two to three weeks to reduce the swelling enough for you to void through the penis. In the meantime, we have to get the urine out of you. It is much more comfortable for you to have a suprapubic than to have a catheter coming out through the penis for that length of time. The suprapubic has a little tap on it, you are able to control it, and you hardly know it is there.

Once the suprapubic is in place, an ultrasound probe is placed into your rectum; just like when you had your biopsy done, but you don't feel it because you are frozen. It puts a picture on a TV screen for me and then using that as a guide I pass needles through the skin behind the testicles, into the prostate. The top of those needles freezes to minus 173° Celsius. Using these needles, I am able to build a block of ice that completely encompasses the full prostate. The ice is what destroys the cancer cells. The prostate is frozen, thawed, frozen, again, and then the needles are taken out. It takes about 2 hours. You are kept in the hospital that night and sent home the next day. It is not a painful procedure. It is not a risky procedure. There is no bleeding. There is no stitching. You will have your supper that night and you will walk out of the hospital the next day.

I ask you to take it easy for the next two to three weeks. Do nothing heavy or strenuous. I also would like you to lie down flat in your bed with your head on a pillow for about two or three hours each afternoon. After two to three weeks you can get back to your normal activity.

### **What are the side effects?**

In the short term, you could experience an attack of piles, which settles quickly. Also, in some men, the penis and testicles may swell, in the first two weeks. This is a reaction to the cold, and is not a problem. It settles with bed rest, and cold compresses to the sac. It is not painful.

### **Because of the swollen prostate you are not able to void at first.**

Once the swelling goes down you begin to void through your penis. At first you pass small amounts and you go fairly frequently. However, as the days and weeks go by, that gets better and better. Two or three months later you are usually back to normal. The men who have had it done fall into three different groups: 1/3 are voiding the same as they did before; 1/3 void better than they did before; but 1/3 are not voiding as well as they did before. Men in this group may find they are going more often, or they are going more urgently, or when they go the stream or the flow is not as good as before, it's weaker. For this group of men it is not a big problem. They just know where the bathrooms are and they spend a little bit longer in the bathroom.

### **Leakage of urine or what we call incontinence.**

The risk of this is low (about 5%). The type of leakage is minimal (stress incontinence). It is not as though you are going to be dripping all over the floor. If this side effect develops, you would be dry, but if you have a full bladder and you suddenly increase the pressure in your tummy (cough, sneeze, lift a heavy weight, bend down to pick something up off the floor) a couple of drops could leak out. Usually not enough to stain your trousers but enough to put a stain on your shorts. That's the type of leakage. The risk of that is about 5%.

### **Loss of ability to have an erection.**

The risk is 100%. If I do my job right the erection nerves are frozen. Those nerves can re-grow but they take at least a year or longer and they only re-grow in 30% of men. They do not re-grow in 70% of cases. There are treatments that can help you have an erection, and intercourse (vacuum device, injections, tablets).

### **Sloughing**

When the prostate is frozen, it is killed. The tissue is dead. Your body's immune system should then absorb the dead tissue and replace it with scar tissue. It does this in the vast majority of patients. In 2% or 3% of people it does not. The dead tissue just sits there. If that happens, then later, the dead tissue can actually block the water pipe and make it difficult for you to void. If that happens I have to bring you to the operating room, give you another spinal anaesthetic, put a telescope in through the penis and scrape out the dead tissue. You stay in the hospital overnight. The risk is low at 2% to 3%.