Arthritis is inflammation (itis) of a joint, although not all types of arthritis involve inflammation. In inflammatory arthritis, there is an increase in the activity of the immune system. It is this overactive immune system that results in the joint lining (also called the synovium) becoming inflamed. This inflammation may be treated with medication, the use of ice, rest, and/or cortisone injections.

While most joint inflammation settles down with treatment, in some people, long-standing stubborn inflammation in a joint such as a knee may result in extra growth of a joint lining. This lining grows thick and becomes more inflamed despite various types of treatment. At first, a type of surgery (Surgical Synovectomy) was performed to reduce the overgrown thick lining back to normal size. Over the last 25 years, another procedure called a Radioactive Synovectomy has been safely used.

Radioactive Synovectomy is the injection of Yttrium, a radioactive material, into a joint such as the knee. Yttrium works by reducing the number of cells in the joint lining to a normal level. This reduction in joint lining results in a decreased inflammation which may last a minimum of 6 months to a year in some and longer in others. This goal of this procedure is less pain and more movement.

Advantages of a Radioactive Synovectomy over Surgical Synovectomy are:
1) No General Anaesthetic and its associated risks
2) Only 5 days off one’s feet (for a knee) with Radioactive Synovectomy versus up to 4 weeks recovery time, after surgery.
3) Surgery is a stress to the body. A good outcome is less predictable with Surgical Synovectomy than with Radioactive Synovectomy.

Yttrium, the radioactive material used at Southlake Regional Health Centre has been selected for its safety record.

Safety features include:
- Low radioactive energy level
- Preference to stay where it is injected
- A “stickiness to” the joint lining
- Its ability to disappear very quickly from the body

This procedure is available in the Nuclear Medicine section of the Diagnostic Imaging Department (X-Ray). It is performed by a Rheumatologist who is experienced in the technique.
How is a Radioactive Synovectomy Done?

In this procedure, the skin is cleaned, a small needle is inserted to freeze the skin and the joint lining. Extra joint fluid is then withdrawn and sent to the laboratory for analysis. With the same needle (no extra needle in an out), Yttrium is then injected into the joint space. Following this, cortisone is also injected to reduce any inflammatory reaction that may occur. The needle is removed and a bandage applied. Next, the knee is moved through the range of motion to distribute the radioactive liquid around the knee joint. A tensor bandage will then be applied to keep the knee straight and to serve as a reminder that you are not to bend the knee. You will leave the tensor bandage on for a full 24 hours and throughout each of the next 4 days. You may remove it for the subsequent nights, while you are sleeping, if you wish.

You will be given an appointment at the Diagnostic Imaging Department (X-Ray) – second floor (one floor above Rehab, east wing). You are to arrive for the Radioactive Synovectomy with a set of crutches of your own or a pain that you have borrowed (a deposit is required for borrowing crutches) from our Rehabilitation Department which is located on the main floor, east wing. You will be required to use these crutches for bathroom privileges (the only suggested activity for movement) because you are not to put any weight on or bend your injected leg for a full five days after procedure. The purpose of this is to be sure that the radioactive material stays in the joint. To check, we will follow your progress five days after the procedure with a nuclear medicine scan to determine if there is any “leakage” from the joint into the surrounding tissue (this is very rare). Leakage out of the injection site during the procedure does not occur. After staying off your feet for 5 days and having your recheck appointment with the Nuclear Medicine Department, you may begin to walk without restrictions. An appointment with your Rheumatologist to review the benefit of the Radioactive Synovectomy will be arranged for approximately 6 to 8 weeks after the procedure.

How long before I feel the benefit?

It may take up to the full six weeks for you to feel the difference, although it is often noticed sooner. Rarely, people may experience an increase in pain and swelling during this time. If this occurs, please contact your Rheumatologist for assessment and advice.

If you have any further questions, please contact your Rheumatologist, a member of the Department of Nuclear Medicine at Southlake Regional Health Centre at 905-895-4521 Ext or a member of The Arthritis Program at the Tannery Mall Suite 403 at 905-895-4521 Ext 2345.

This information sheet is a collaborative effort of Rheumatologists Dr Thorne, Dr Aubrey, Dr Ng, the Department of Nuclear Medicine at Southlake Regional Health Centre and The Arthritis Program located at the Tannery Mall Suite 403.(Draft Aug 10/07)