

AVN TREATMENT
by  ilaya

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A BREAKTHROUGH IN AVN THERAPY AN ALTERNATIVE TO CONVENTIONAL SURGERY

Avascular necrosis, or AVN, is the death of bone cells due to a lack of blood supply.

Cell death can lead to a collapse of the bone, causing severe pain in the affected area, most commonly, the hip.

While the causes of AVN aren't fully understood, we know there are two major forms: traumatic and non-traumatic.

Traumatic AVN is usually caused by a hip fracture or dislocation.

While the majority of AVN related cases fall into the category of non-traumatic AVN, as mentioned above the etiology of the disease is not well understood. Known risk factors for non-traumatic AVN include steroid medications, excessive alcohol consumption, blood clotting disorders, scuba diving and smoking.

Around 20,000 people in the U.S. are diagnosed with AVN of the hip every year. Many of them aren't diagnosed in the early stages, making it more likely that surgery will eventually be needed.

Although largely unsuccessful, the current surgical method for treating AVN looks is as follows:

- 1. Access the area through an incision, using fluoroscopic guidance**
- 2. Decompress the femoral head using a drill.**
- 3. Remove the dead bone from the area.**
- 4. Fill the empty space with an injectable graft**

Our innovative stem-cell-based method uses steps 1, 2 and 3. But we add two additional steps at the beginning, and we replace step 4, with the implantation of our populated stem cells.

First, we take stem cells from the patient's body. (Many people don't know this, but every adult body still has stem cells, in areas including fatty tissue.)

Then, using our patented technology, we replicate the stem cells in a laboratory, increasing the number of cells available to the level needed for a robust repair process. This is where our method differs from other stem-cell treatments. We don't just inject the stem cells back into the patient; we grow new ones.

After we've cultivated enough stem cells, which usually takes less than a month, we then performing surgery, doing steps 1, 2 and 3.

After step 3, instead of an injectable graft, we inject the stem cells. This leads to regeneration of the bone in the area where the dead tissue has been removed. Our treatment provides the opportunity to let the patient's own cells heal the AVN.

We're already using our method in Ukraine, where we hold a patent, and we've filed an international application for patent recognition, No. PCT/UA2016/000128

HERE'S WHY OUR METHOD IS BETTER THAN CONVENTIONAL TREATMENTS:

- The patient makes full recovery of their own hip
- The recovery time is shorter
- The patient's own cells are used for the repair process (no bridges are burned)
- Our method of treatment provides a more biological solution than a prosthesis does (please note that the majority of the AVN patients later end up having further surgery: a complete hip joint replacement)
- The patient can live a more normal life without the complications of having a hip replacement (prosthesis)
- By using the body's own cells, there is NO risk of rejection or allergic reactions.

Using current methods, many patients' condition worsens over time, because there is no robust solution for AVN; our method can not only eliminate the need for multiple surgeries, but can also, by applying the treatment early in the disease, reduce the lengthy disease process can be shortened, with a desirable outcome.

WE EXPECT TO ACHIEVE THE FOLLOWING GOALS:

- Cut the cost of medical procedures
- Our method is less invasive than a hip replacement, so more doctors can be trained to perform the procedure
- It will free up hospital beds and other medical resources for other patients
- Above all, it will allow more people return to the workforce faster, without the complications of having a hip replacement, and regain the quality of life they had before AVN