

# THE GAE PROCEDURE

## Procedural Details

- 1 The Interventional Radiologist makes a small needle puncture in to a blood vessel at the top of the leg and guides a microcatheter (similar to thin spaghetti) in to the blood vessels that supply the inflamed part of the knee. The procedure is performed under a 'twilight sleep' and should be relatively painless.
- 2 Microscopic beads are injected in to the areas with abnormal increased flow and the abnormal blood vessels so these are reduced, while normal flow remains to the knee joint. The main arteries to the knee remain open after the procedure.

## What are

# THE ADVANTAGES OF GENICULAR ARTERY EMBOLIZATION?

- 1 No surgical incision or injection in to the knee joint
- 2 Performed in an outpatient setting under a 'twilight sleep' without the need for general anesthesia
- 3 Painless procedure lasting about 1 hour
- 4 Typically return to work within a day or two without the need for a lengthy recovery
- 5 Very low complication rate without any affect on future knee replacement (when performed with our technique)
- 6 Symptom improvement usually within 1-3 weeks

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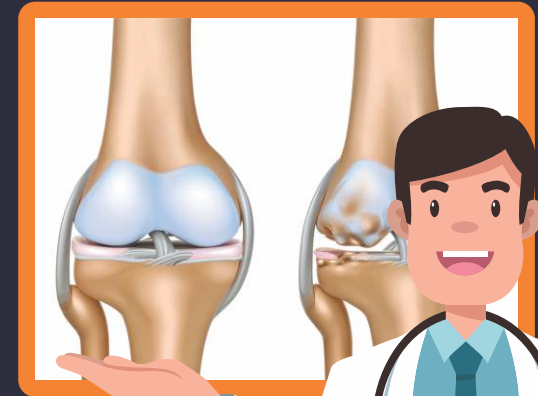
## OUR TEAM

Our Vascular Interventional Radiologists are National Leaders & Experts in the field of Embolization. The team has led numerous clinical trials, pioneering novel techniques for the treatment of several medical conditions, specifically evaluating Embolization and its application for many novel medical applications. For more information about our expert physicians, please visit our website.



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LEADING MINIMALLY INVASIVE HEALTHCARE

# KNEE PAIN ARTHRITIS

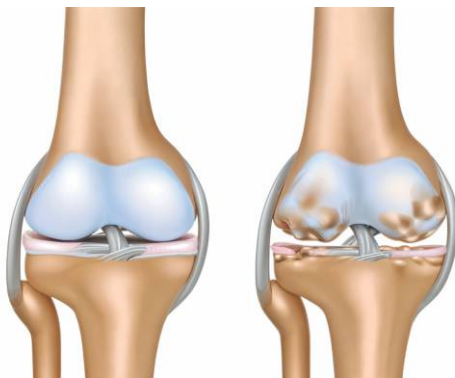


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## What is

# KNEE OSTEOARTHRITIS (OA)?

Osteoarthritis (OA) is a condition that is caused by repetitive wear and tear of the joints. Damage to the cartilage results in persistent inflammation that causes tiny new blood vessels and nerves to grow within the knee joint.



Healthy knee joint

Osteoarthritis

There are new blood vessels and nerves that grow within the lining of the knee joint (Synovium) that cause knee pain associated with osteoarthritis. This pain is often felt by patients when they press on their knee in certain locations or bend the knee joint.

## What are




# THE SYMPTOMS OF KNEE OA?

- 1 Pain in the knee joint
- 2 Stiffness (usually related to time of day)
- 3 Swelling of the knee joint
- 4 Difficulty walking up and down stairs
- 5 Difficult walking on flat surfaces
- 6 Tenderness in areas around the knee

There are other medical conditions or diseases than can produce similar symptoms, so it is important to undergo a complete medical examination to ensure symptoms are related only to Knee Osteoarthritis.

## How is

# KNEE OA DIAGNOSED?

-  Medical history
-  Detailed physical examination
-  X-rays and Occasionally MRI or Blood Tests

## What are

# TREATMENT OPTIONS FOR KNEE OSTEOARTHRITIS?



**WEIGHT LOSS/ PHYSICAL THERAPY**  
Reduction in weight and Physical Therapy may be associated with improvement in symptoms, however pain may limit one's ability to do so.



**MEDICATIONS/ JOINT INJECTIONS**  
Medications such as Tylenol or Ibuprofen may be effective in reducing symptoms of knee pain and swelling but can also have side effects such as gastritis, liver or kidney damage. Steroid or Lubricant Injections may act temporarily in some patients.



**SURGERY**  
Knee Replacement surgery and other variations of joint replacement are commonly performed in patients whom other measures fail.



**GENICULAR ARTERY EMBOLIZATION (GAE)**  
GAE is a minimally invasive procedure to reduce the inflammation and pain in the knee by reducing the blood supply to the lining of the knee that causes pain and tenderness

## WHEN IS THE RIGHT TIME TO HAVE GAE?

GAE is useful to relieve knee pain from OA instead of taking frequent medication or getting injections into the knee. It can also be beneficial in those who are not ready to have a knee replacement surgery. Published clinical studies by our team have demonstrated that GAE can provide pain relief without the risks associated with chronic medication or having to get repeat injections. GAE, however, is not necessarily a substitute for total knee replacement and has not been shown to negatively impact future knee replacement surgery when performed with our technique.