

# well & you

a better way to care

## Genicular Artery Embolization Patient Journey



Scan the QR Code for a video  
explaining your Genicular Artery  
Embolization Treatment Journey

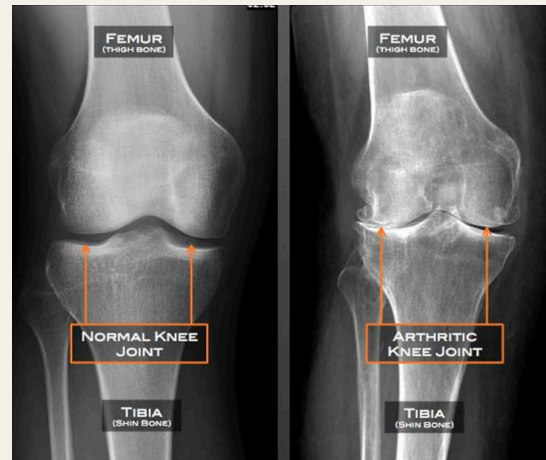


# Osteoarthritis & Genicular Artery Embolization (GAE)

## What is Osteoarthritis of the Knee?

Osteoarthritis is when the cartilage in your knee wears down, leading to:

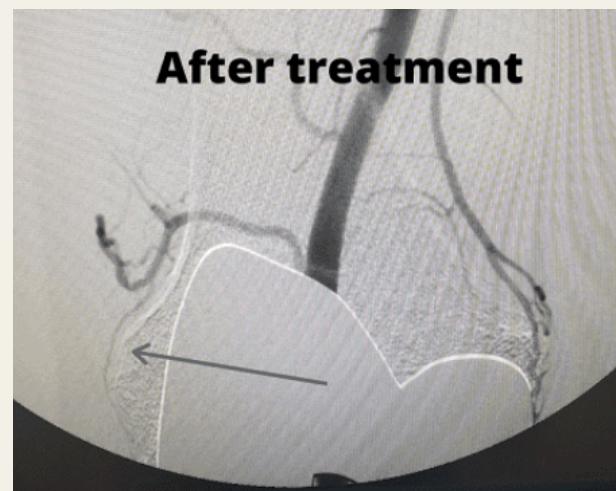
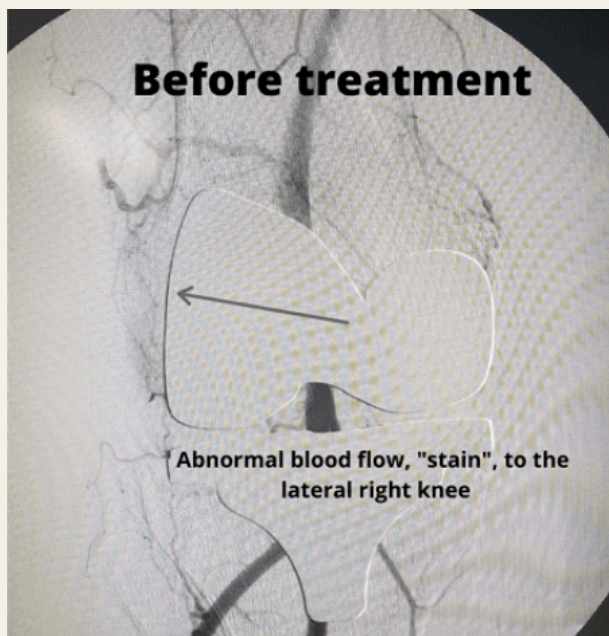
- Pain and stiffness.
- Inflammation caused by extra blood vessels forming in response to joint damage.



## What is GAE?

Genicular Artery Embolization (GAE) is a minimally invasive procedure to reduce knee pain from osteoarthritis.

- The genicular artery supplies blood to your knee.
- Osteoarthritis creates abnormal arteries that worsen inflammation and pain.
- GAE blocks (embolizes) these abnormal arteries to lower inflammation and ease pain.



Same area after treatment (occlusion with beads). The abnormal blood flow, "stain," is no longer present.

## Why Consider GAE?

- Less invasive than knee surgery, with a similar success rate (about 85%).
- Faster recovery with immediate and lasting pain relief for most patients.

## Your Knee Pain Journey



### Step 1: Initial Evaluation

Goal: Confirm osteoarthritis is causing your knee pain.

- A physical exam and a review of your X-ray (or a new one if needed).
- Check for conditions that might make the procedure unsafe, like:
  - Severe kidney issues.
  - Allergies to iodine or contrast dye.

### Step 2: Eligibility for GAE

- If osteoarthritis is confirmed and you're safe to proceed, you'll move forward with GAE.
- If GAE isn't an option (e.g., due to vascular or kidney issues), other treatments like steroid injections or nerve stimulation may be recommended.

### Step 3: Pre-Procedure Testing

- If there's a risk of arterial disease, an ultrasound might be done to ensure safety.

### Step 4: Scheduling

- GAE is typically scheduled within 4 weeks.
- Instructions:
  - Fast for 8 hours before the procedure.
  - Continue regular medications unless told otherwise.
  - A nurse will call with detailed pre- and post-op instructions.

### Step 5: The GAE Procedure

- During GAE you'll get light sedation to stay comfortable during your 65–75 minute procedure, with 20 minutes of prep and up to 2 hours for recovery.
- Most patients leave with much less pain than they arrived with.

### Step 6: After the Procedure

- Activity Restrictions:
  - No heavy lifting or straining for a week.
  - Stay out of pools, hot tubs, and lakes to prevent infection.
  - Avoid intense exercise for 7 days.
- Expected Results:
  - Significant pain reduction, often lasting between 2-7 years.

### Step 7: Follow-Up

- A follow-up appointment will be scheduled about 2 weeks later to check your progress.

# GAE: Role in Knee Hemarthrosis & Osteoarthritis

**Geniculate artery embolization (GAE)**

- ✓ Minimally invasive
- ✓ Improved pain, function, QoL
- ✓ Clinical success rate: 89.4%
- ✓ Relief duration: 6-24 months

Recurrent hemarthrosis/mechanical damage

**GAE**

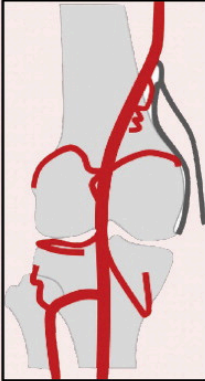
Angiogenesis

Inflammation


Cartilage destruction

Sensory nerve growth

\*QoL = quality of life

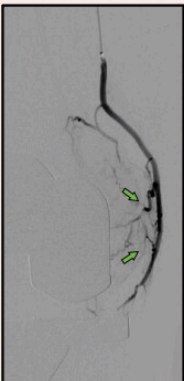


Anatomy of descending GAE



Synovial blush in hemarthrosis

Selective particle embolization



↓ Synovial blush

The diagram illustrates the pathophysiology of knee hemarthrosis and osteoarthritis, and the role of GAE. It shows a flowchart where recurrent hemarthrosis/mechanical damage leads to angiogenesis and inflammation, which in turn cause cartilage destruction and sensory nerve growth. GAE is shown as an intervention that blocks this path. The anatomical diagrams show the descending geniculate artery (GAE) and the resulting reduction in synovial blush after selective particle embolization.

# Genicular Artery Embolization: FAQs

## What happens at my first appointment?

We'll thoroughly evaluate your knee pain to see if osteoarthritis is the cause.

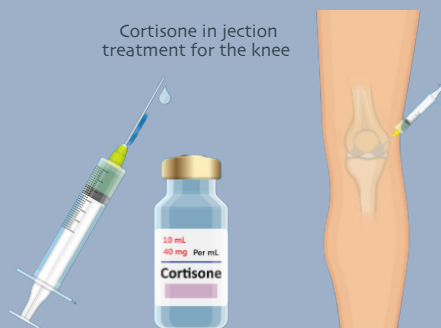
- Includes a physical exam and reviewing (or scheduling) an X-ray.
- We'll check for issues like kidney problems, vascular disease, or dye allergies that might affect your treatment options.

## What's diagnosed at the first appointment?

We'll confirm whether osteoarthritis is causing your knee pain through an exam and X-ray. We'll also screen for conditions like kidney or vascular disease that could impact your treatment plan.

## What happens after diagnosis?

- If osteoarthritis is confirmed and you're safe for IV contrast dye: You'll move forward with GAE.
- If GAE isn't an option (e.g., due to other conditions): Alternatives like steroid injections or nerve stimulation may be offered.



- If you're at higher risk for arterial disease: An ultrasound might be done before proceeding.

## How long do diagnostic tests take?

- X-ray: About 15–30 minutes.
- Arterial ultrasound (if needed): 30–60 minutes.

## What procedures might I get?

- GAE: A minimally invasive procedure to block abnormal blood vessels causing knee inflammation, reducing pain.
- Steroid Injection: A temporary pain-relief option using a corticosteroid to reduce inflammation.

## How do I prepare?

- For GAE: Don't eat for 8 hours before. Continue medications unless told otherwise.

## How long does each procedure take?

- GAE: About 65–75 minutes, with 20 minutes for prep and 20 minutes to 2 hours for recovery.
- Steroid Injection: Typically 15–30 minutes.

## Will the procedure hurt?

- During GAE: Minimal discomfort due to sedation. Some temporary discomfort may occur when locating abnormal arteries.
- After GAE: Mild soreness at the catheter site.

## Is anesthesia used?

- GAE: Moderate sedation and local anesthesia to numb the insertion site.
- Steroid Injection: Local anesthesia may be used.

# Genicular Artery Embolization: FAQs

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## When will I feel relief?

- GAE: Many feel pain relief immediately, with results lasting 2+ years in successful cases.
- Steroid Injection: Relief usually starts in a few days and lasts weeks to months.

## What are the risks?

- GAE: Mild soreness or bruising is common. Infection, bleeding, allergic reaction, or serious complications like heart attack or stroke is rare.
- Steroid Injection: Temporary pain increase, stiffness, or rare infection.

## How long is recovery?

Avoid heavy lifting, strenuous activity, or soaking in water for 1 week. Be cautious with stairs for 7 days.

## What happens if I don't treat this?

Osteoarthritis may worsen, causing:

- More pain, reduced mobility, and chronic inflammation.
- Higher chances of needing knee replacement surgery.

## What if GAE doesn't work?

Alternative treatments, like steroid injections or nerve stimulators, may be recommended.

## Can I get a knee replacement after GAE?

Yes, one advantage of GAE is that it does not "burn any bridges."

## How will I know if GAE worked?

- Success Signs: Pain relief within hours to days, better mobility, and less reliance on pain meds.
- Failure Signs: Persistent or worsening pain after the procedure.

## How many follow-ups will I have?

- One follow-up around 2 weeks after the procedure to assess results.
- Additional visits may be scheduled if needed (e.g., for persistent pain or alternative treatments).

## What happens at follow-ups?

- We'll check your pain levels, mobility, and overall progress.
- If GAE isn't effective, we'll discuss next steps like steroid injections or nerve stimulators.

## Understanding Pain and Sedation During Your Procedure

Everyone experiences pain and sedation differently, and your comfort level during the procedure can depend on several factors, including your body's response to anesthesia. For example, individuals who regularly consume alcohol or those living with chronic pain may require adjustments to achieve the right level of sedation.

Our goal is to ensure you are as comfortable as possible while keeping your safety our top priority. While we aim to provide effective pain relief, it's important to recognize that over-sedation carries certain risks, which our medical team carefully monitors and manages.