



RELIEF WITHOUT GOING UNDER THE KNIFE

# SKIP THE SCALPEL

**Genicular Artery Embolization  
Revolutionizes Knee Arthritis Relief**

BY PUSHPINDER (MAKKU) SIVIA, MD FACS  
OF EMPIRE VEIN & VASCULAR SPECIALISTS



**Meet Your GAE Expert**

# Dr. Sivia

Board-certified vascular surgeon with over 15 years of experience in the treatment of vascular and venous disorders.



Dr. P. Sivia is a recognized expert in genicular artery embolization (GAE) for knee arthritis and has performed thousands of advanced vascular procedures with a focus on improving patient outcomes and quality of life.

In addition to his clinical expertise, Dr. Sivia has published research in leading medical journals and presented at national vascular conferences, contributing to the advancement of vascular surgery. He currently serves as President of Empire Vein & Vascular Specialists and as Head of Vascular Surgery at Eisenhower Health, where he leads with innovation and excellence in patient care.

In 2025, Dr. Sivia was honored as a Top Physician by Palm Springs Life Magazine, a recognition of his dedication to advancing the field and serving his community.

Dr. Sivia lives in Palm Desert with his wife, Dr. Sheena Sivia, and their two teenage daughters.

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# 1

## There's a Better Way to Relieve Knee Pain

### A Modern Alternative to Surgery

If you're living with knee pain from osteoarthritis, you've likely been through the cycle—medications, therapy, injections, and still no lasting relief. It's frustrating, and it can feel like your only option is knee replacement surgery. Do you experience:

- Pain when climbing stairs or getting up from a chair
- Stiffness in the morning that slows you down
- Discomfort playing golf, tennis, or pickleball
- Trouble sitting on the floor with your grandkids

**Genicular Artery Embolization (GAE)** is a modern, non-surgical treatment that targets the underlying cause of osteoarthritis pain. This guide will walk you through how GAE works, why it's different, and whether it might be the right fit for you.



# 2

## What's Really Causing the Pain

### The Science Behind Osteoarthritis

Osteoarthritis is the most common form of arthritis and a leading cause of knee pain. It happens when the cartilage that cushions your knee joint gradually wears away. As the cartilage thins, bones begin to rub against each other. This can cause pain, stiffness, and swelling.

But cartilage loss isn't the only reason your knee may hurt.

As the joint breaks down, your body tries to repair the damage by creating new blood vessels in the area. This process—called neovascularization—can lead to more inflammation and more pain-sensitive nerves inside the joint. These changes often make the pain worse, especially over time.



This may explain why some people with knee arthritis still have pain even after trying medications, injections, or physical therapy.

GAE is a nonsurgical treatment that targets these abnormal blood vessels—helping reduce inflammation and relieve pain at the source.

#### Fun Fact:

The tiny opening used in GAE is just 1mm—about the size of a pen tip!



# Hear From Patients



**“Choosing GAE was one of the best decisions I’ve ever made.**

I dreaded the long recovery of knee replacement surgery, so finding this minimally invasive option was a game-changer. Now, I’m climbing stairs with ease and embracing life without the burden of pain medications. GAE gave me my active lifestyle back!”

**- Mary T.**  
*EVVS Patient*

# 3

## Latest Research Supporting GAE

### What Studies Show

Clinical research has shown that GAE can significantly reduce knee pain and improve mobility in people with osteoarthritis. It works by targeting small arteries around the knee that contribute to inflammation and pain—something other treatments don't address directly.

#### Reported outcomes:

- Less pain during walking, standing, or climbing stairs
- Better flexibility and joint stability
- Increased ability to perform daily tasks without discomfort

#### Timeline of relief:

- Most people begin to notice improvement within 2-4 weeks
- Benefits often last 24-36 months; some patients report longer relief

#### Findings from clinical trials:

- **Success rates over 75%** across multiple studies
- Consistent improvements in pain scores and joint mobility
- Low complication rates, with most side effects mild and temporary

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## Why GAE?

The Benefits Over Surgery or Injections



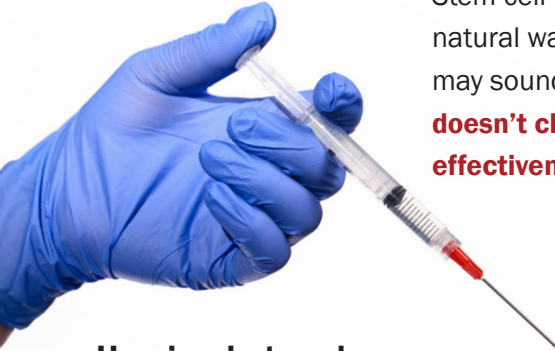
When it comes to treating knee pain from osteoarthritis, there are several options—each with its own risks, benefits, and limitations. The table below compares GAE with steroid or stem cell injections and traditional knee surgery, helping you see how these treatments differ in terms of recovery, outcomes, and long-term value.

Category	GAE	Steroid/Stem Cell Injections	Knee Surgery
Minimally Invasive	Yes	Yes	No
Provides Long-Term Pain Relief	Yes	No	Yes
Preserves Knee Cartilage	Yes	No	No
Recovery Time	Days	Days	Months
Requires Hospital Stay	No	No	Yes
Risk of Major Complications	Low	Low	Higher
Suitable for Patients Avoiding Surgery	Yes	Yes	No

# 5

## Does Stem Cell Therapy Really Work?

### A Closer Look at the Evidence



Stem cell therapy is often promoted as a natural way to relieve joint pain. While it may sound promising, **current research doesn't clearly support its long-term effectiveness for knee osteoarthritis.**

#### Here's what we know:

- **Evidence is mixed.** Some patients report short-term relief, but results are inconsistent.
- **It's still experimental.** Most major health organizations do not recommend stem cell therapy for routine use.
- **It doesn't rebuild cartilage.** There's no strong evidence that it can repair joint damage.
- **Many patients move on.** When symptoms return, some go on to surgery—or consider GAE.
- **It's not covered by insurance.** Because it's considered experimental, it isn't covered by insurance and can frequently cost over \$5000.

**By contrast, GAE has been studied in clinical trials. It consistently shows reduced pain, better function, and a strong safety profile.**

If you're exploring nonsurgical options, it's important to choose a treatment backed by reliable data. Ask your provider which options are proven to help—and which are still being studied.

# 6

## Is GAE Right for You?

### Who Should Consider GAE

GAE may be a good option if you're dealing with moderate to severe knee pain from osteoarthritis and haven't found lasting relief through other treatments.

#### **You may be a candidate if you:**

- Have tried medications, injections, or physical therapy without success
- Aren't ready for or don't want joint replacement surgery
- Want a minimally invasive option with shorter recovery time
- Are looking for longer-lasting results than temporary pain relief methods
- Not a candidate for knee surgery due to age, medical conditions such as heart disease, COPD, obesity

GAE works best for people whose imaging shows signs of inflammation around the knee joint. A specialist will review your medical history and imaging to see if the procedure is appropriate for you.

While not right for everyone, GAE offers an option between short-term fixes and major surgery. If you're exploring what comes next in your treatment plan, this may be a meaningful next step.



Talk with your provider to see if you're a good fit. Reach out to the board certified physicians specialists at Empire Vein and Vascular Specialists. Call **1-800-KNEE-CARE** (1-800-563-3227) or visit **EmpireVein.com**.

# How to Get Started in 3 Easy Steps



## 1

### **Schedule your consultation**

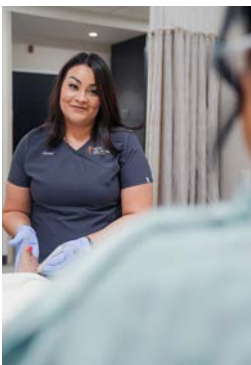
Call 1-800-Knee-Care (1-800-563-3227) or visit [EmpireVein.com](http://EmpireVein.com) or on Facebook to book your appointment with a specialist at Empire Vein & Vascular.



## 2

### **Meet your specialist**

We'll review your symptoms and x-rays, explain the GAE procedure, and walk through your options. You'll have time to ask questions and feel confident in your next step.



## 3

### **Have your outpatient procedure**

GAE is performed at a surgery center, with no general anesthesia or hospital stay. Patients go home within a few hours and resume light activity the same day.

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## How GAE Works

### A Minimally Invasive Breakthrough

GAE is a nonsurgical procedure that helps relieve knee pain from osteoarthritis. It works by blocking the small arteries that supply inflamed areas in the knee joint.

### Before Your Procedure

#### **Consultation**

You'll meet with a specialist to review your symptoms, imaging, and medical history

#### **Medication Review**

You may be asked to pause certain medications before your procedure

#### **Preparation**

No fasting or special prep is required for most patients

#### **Questions**

You'll have time to ask questions and understand what to expect

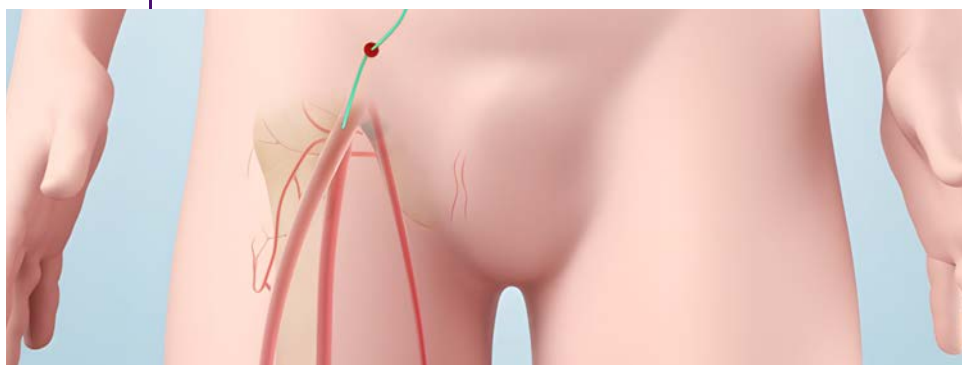
## During Your Procedure

### Mapping

First, imaging is used to identify the arteries contributing to your pain

### Anesthesia

A local anesthetic numbs the area. You stay awake and comfortable



### Catheter Placement

A thin, flexible tube is inserted through a tiny 1 mm skin puncture near the groin



### Embolization

Tiny particles are released through the catheter to block the abnormal vessels



## After Your Procedure

The procedure takes less than two hours and is performed in a our state-of-the-art surgery center—no hospitalization required.

By reducing blood flow to the painful areas, GAE helps decrease inflammation and interrupt pain signals, without the risks or downtime of surgery.

### **Discharge**

You'll rest briefly in recovery, then go home the same day

### **Activity**

You can usually return to light activity the same day

### **Side Effects**

You may have mild soreness or bruising near the entry site

### **Follow-Up**

A team member will check in and schedule any needed follow-up

### **Results**

Pain relief often begins within a few weeks and continues to improve

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## Why Choose Empire Vein & Vascular Specialists?

### Specialized Treatment, Tailored Care



### Trusted experts with a proven track record

At EVVS, your care is in the hands of board-certified vascular surgeons with extensive experience in image-guided procedures. With over 25,000 procedures performed and more than 500 five-star reviews on Google, our team has earned the trust of patients across Southern California. This expertise means safer procedures, faster recoveries, and care that's tailored to you.



**1,600+**  
**Verified Reviews**

## Relief that's targeted and personalized

We specialize in GAE—a treatment for knee pain that's covered by insurance, including Medicare, IEHP, and most PPO and Medicare Advantage plans. Each treatment is guided by detailed imaging and personalized to your anatomy and symptoms, helping you avoid unnecessary steps and get back to what matters faster.



IEHP

Cigna®

aetna®



BlueCross  
BlueShield

### Yes! GAE is covered by insurance.

We accept Medicare, IEHP, many PPOs, and Medicare Advantage plans. If you're unsure about your coverage, give us a call—we're happy to help you check your benefits and walk you through the next steps.

## Support that doesn't stop after your visit

From your first call to your final follow-up, we're here for you. Scheduling is simple, our GAE FAQs are available online, and our team is committed to making sure you feel informed, heard, and confident every step of the way. After your procedure, we stay connected to ensure your recovery stays on track and your results last.



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## Take the Next Step

### Find Relief Today

If you've been managing knee pain with short-term fixes, or feel unsure about surgery, it may be time to explore another option. GAE is a minimally invasive procedure that's helped many patients find lasting relief—without a long recovery or hospital stay.

Scheduling a consultation is the best way to learn whether GAE is right for you. We'll review your symptoms, walk you through the details, and answer any questions you may have.

Call or Text:

**1-800-KNEE-CARE** (1-800-563-3227)

Find us online:

**EmpireVein.com**



### Knee Pain Analyzer

Scan the QR code for our online quiz. Check if your symptoms might be a good fit for GAE treatment.



Board-Certified Specialists for Vascular and  
Vein treatments in Southern California.



**EMPIRE VEIN**  
& Vascular Specialists

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