

STEVEN CHUDIK MD

SHOULDER, KNEE & SPORTS MEDICINE

**Percutaneous Drilling (Stimulation) for Stress Fractures
and/or Avascular Necrosis of the Knee**

Indications for Surgery

Stress fractures are small cracks in the bone which are typically caused by overuse and repetitive activity. This fracturing (breaking) of the bone is associated with symptoms of pain with weightbearing, stiffness and swelling.

Avascular necrosis (AVN), or osteonecrosis, is a condition where a portion of the bone dies because its blood supply is interrupted by injury, clotting disorders (sickle cell anemia, systemic lupus erythematosus), medications/drugs (steroids/alcohol), or other medical conditions that increase the risk for AVN. After the vascular insult, the bone attempts to heal and repair itself and sometimes can with rest and avoiding weightbearing. However, just like stress fractures of the bone, if activity isn't restricted, AVN causes the bone to fracture (crack/break), collapse and resorb.



MRI of stress fracture of medial femoral condyle.

AVN looks similar on MRI and may also reveal areas of dead necrotic bone with separation from the surrounding bone.



STEVEN CHUDIK MD

SHOULDER, KNEE & SPORTS MEDICINE

For AVN and stress fractures that occur near the joint surface of a bone, it is important to get them to heal or the bone will collapse, resorb, and leave the overlying cartilage joint surface unsupported. When the cartilage joint surface loses the support of the bone beneath it (subchondral bone), the cartilage joint surface fails which can ruin the joint and require joint replacement surgery to restore the joint and relieve symptoms.

When AVN and stress fractures of the subchondral bone, the bone underneath the cartilage, do not heal with conservative treatment, minimally invasive surgery is recommended to repair or stimulate the bone to heal. Dr. Chudik performs this procedure percutaneously without incisions or through a very limited incision in the skin under x-ray guidance.

Contraindications to Surgery

- Infection of the knee
- Inability or unwillingness to complete an appropriate postoperative rehabilitation program

Potential Surgical Risks and Complications

- Infection
- Knee stiffness (loss of knee motion)
- Continued pain or persistent swelling
- Weakness of the quadriceps muscles if proper rehabilitation is not performed

Hospitalization and Anesthesia

- Outpatient surgery (you go home the same day)
- IV sedation or light general anesthesia with local numbing medicine injected around the knee

General Surgical Technique

Dr. Chudik addresses subchondral stress fractures and AVN lesions of the bone with a minimally invasive technique using fluoroscopy (live intraoperative x-ray). Through a percutaneous approach without incisions or a very limited small skin incision, Dr. Chudik visualizes the bone with fluoroscopy and stimulates the nonhealing bone by carefully drilling it with a small pin or tunnelling to and bone grafting the area. After surgery, weightbearing on the area of the bone is restricted for typically 6 to 8 weeks followed by another 6 to 8 weeks of a gradual resumption of weightbearing activities to allow the stimulated or repaired bone to heal.

Post-Operative Course

- Keep the wound clean and dry for the three days following surgery, then you may shower but not submerge the wounds for three weeks
- You will use crutches for approximately 6 to 8 weeks depending on the severity of the bone damage



STEVEN CHUDIK MD

SHOULDER, KNEE & SPORTS MEDICINE

- Physical therapy should begin two to three days after surgery and continue for approximately three to six months depending on severity. It is crucial to follow through on and maintain a proper therapy schedule.
- After weightbearing is allowed, standing and walking should be minimized and gradually progressed over another 6 to 8 weeks.

Return to Activity

You may return to sports and activities when there is no pain and when full knee range of motion, muscle strength and endurance, and functional use has been restored. This usually requires at least 3 to 6 months or more following surgery depending on the size and extent of the bone injury.

Preoperative Instructions

- Discontinue birth control pills
- Stop blood thinners such as aspirin, Coumadin[®], Lovenox[®], Xarelto[®], Eliquis[®] according to the prescribing doctor's directions
- Stop anti-inflammatory medicines such as ibuprofen, Advil[®], Motrin[®], Naprosyn[®], Alleve[®], etc.)
- Stop nutritional supplements and drinks like Vitamin C, ginseng, ginkgo biloba, etc.
- Stop smoking for surgery and during the first six weeks postoperatively to allow proper tissue healing

Do not eat or drink anything from midnight, the evening before surgery

Scheduling Surgery

Call Dr. Chudik's surgery scheduler at 630-324-0402, or email contactus@chudikmd.com to:

- Schedule the date and location of surgery
- Schedule an appointment with Dr. Chudik's PA to complete pre-operative surgical education and other requirements
- Schedule a post-operative appointment with Dr. Chudik's team to remove sutures and review post-op instructions

Notify My Office if Symptoms Worsen

