



## Navigating the Paths *to Pain Relief*

Doctor and patient alike find that an FDA-approved injection procedure called viscosupplementation—providing lubrication between bones and cartilage—frequently offers significant, long-term pain relief of osteoarthritis of the knee.

**“HEALTHY CARTILAGE ACTS AS A ‘SHOCK ABSORBER’ AND PREVENTS BONES FROM TAKING THE FULL IMPACT OF EVERYDAY LIFE: WALKING, RUNNING, TWISTS AND FALLS.”**

**D**r. Catherine Duncan, an acknowledged master of a variety of pain-relief procedures (see box—“*Stalking Pain*”), often supplements her work with patients by relying on the expertise of a variety of support professionals, including chiropractors, physical therapists, nutritionists and others.

“Such basics as weight loss, when needed, and appropriate exercise programs are very often vital steps along the path of long-term relief of pain,” she notes.

“Within our practice, we also offer a relatively new treatment for osteoarthritis of the knee, called viscosupplementation—which we find often provides pain relief for as long as six months, before the treatment may need to be repeated.”

Osteoarthritis (OA), she notes, “is the most common form of arthritis, affecting more than 27 million people in the United States. It is sometimes called a degenerative

joint disease because it is caused by the wear-and-tear of a joint’s cartilage, the tissue that covers the ends of bones and provides cushion over many years of use. It is a condition that can also result from injury to the joint, obesity, or simply genetics.”

Healthy cartilage, explains the doctor, acts as a “shock absorber” and prevents bones from taking the full impact of everyday life: walking, running, twists and falls.

“A healthy knee also contains sufficient synovial fluid, a thick, gel-like liquid that reduces friction in the joint. A substance in the synovial fluid called hyaluronic acid acts as the joint’s ‘grease’ and provides lubrication between bones and cartilage.”

### WEARING AWAY

“As cartilage begins to wear away,” explains Dr. Duncan, “and the amount of synovial fluid in the joint decreases, symptoms of OA often emerge: pain at the joint, tenderness, stiffness, and loss of flexibility. Over time and without treatment, the symptoms often become more severe, sometimes causing loss of motion and bone spurs. In the most severe cases, cartilage can disappear entirely—resulting in a very painful form of OA that typically can only be treated with total knee replacement.”

Initially, Dr. Duncan may ask a patient with these symptoms to begin treatment with a very conservative approach: “first,” she says, “to try exercise, physical therapy, and even weight loss to reduce the pain and inflammation. If these treatments prove ineffective, we may together decide to proceed with lubrication injections—called viscosupplementation—in effect, doses of hyaluronic acid that are injected into the knee and into the synovial fluid. This is a relatively new—and often effective—treatment for knee OA. The first step in this process with a new patient is a very thorough exam of the presenting condition.

“What we are finding is that the additional hyaluronic acid fills the joint area and increases lubrication in the joint, making joint movement much easier. And researchers believe the injection of hyaluronic acid may stimulate the body to produce more of its own hyaluronic acid, which will further cushion the joint and make the effects of the injection last longer.”

On the other side of treatment, she notes, “Patients most often will have less pain

with better function, which will encourage them to exercise and, if needed, lose weight.”

In a first visit, new patients may be pleasantly surprised at the intimacy of the practice. Dr. Duncan, a rehabilitation specialist, directs healing activities in a relatively small, intimate setting where new patients—especially those in severe pain—are often seen on the same day of their initial request. In subsequent visits, they will also always see Dr. Duncan, who is the sole owner of the practice. **h&h**

### MANY PATHS TO PAIN RELIEF

**D**r. Duncan offers many approaches to help patients overcome pain, including:

- **Radiofrequency ablation:** An electrical current produced by a radio wave to heat up a small area of nerve tissue, thereby decreasing pain signals from that specific area.
- **Botox injections** for the treatment and prevention of migraine headaches.
- **Electromyography (EMG)**, to measure muscle response or electrical activity in response to a nerve’s stimulation of the muscle. The test is used to help detect neuromuscular abnormalities.
- **Epidural Steroid Injections (ESIs)**, a common method of treating inflammation associated with low-back-related leg pain, or neck-related arm pain.
- **FACET Joint Injections** of a steroid medication to reduce inflammation in the small joints at each segment of the spine that provide stability and help guide motion.
- **Spinal Cord Stimulation**, applying an electrical current to the source of chronic pain. This creates a pleasant sensation that blocks the brain’s ability to sense the previously perceived pain.
- **Viscosupplementation:** an injection of hyaluronic acid into the knee and into the synovial fluid for the treatment of knee osteoarthritis—to increase lubrication in the joint, making joint movement much easier.
- **Prolotherapy:** an injection technique that stimulates growth of cells and tissue that stabilize and strengthen weakened joints, cartilage, ligaments and tendons.
- **A sacroiliac (SI) joint injection**—also called a sacroiliac joint block—primarily used to diagnose or treat low back pain and/or sciatica symptoms associated with sacroiliac joint dysfunction.

### STALKING PAIN FOR DECADES

**D**r. Duncan, a graduate of the Ohio University College of Osteopathic Medicine, completed the residency program in physical medicine and rehabilitation at Case Western Reserve University, aligned with the MetroHealth Medical Center in Cleveland.

She is board certified by the American Board of Physical Medicine and Rehabilitation, the American Osteopathic Board of Rehabilitation Medicine, and in the subspecialty of Pain Medicine, and is a member in good standing of the American Academy of Physical Medicine and Rehabilitation, the American Osteopathic College of Physical Medicine and Rehabilitation, the American Osteopathic Association, and the International Spine Intervention Society.

For more information about resolution of pain issues, contact:

**ATLANTIC SPINE AND PAIN  
Catherine A. Duncan, DO**

**1031 West Williams Street, Suite 102  
Apex, NC 27502  
Telephone: (919) 439-7867  
www.atlanticspinepain.com**