Carpal tunnel syndrome is a compression of the median nerve at the wrist and is the most common cause of nerve compression in the arm. The compression is caused by increased pressure within the carpal tunnel, which decreases blood flow to the nerve. This decreased blood flow causes symptoms of pain, numbness and tingling to the fingers (usually the thumb, index and middle) and weakness in the hand. The lack of blood flow can also cause permanent nerve damage if not treated appropriately.

Diagnosis is made by examination and history consistent with nerve compression and confirmed with nerve conduction studies. Treatment options include splint, non-steroidal anti-inflammatory medications, steroids, therapy and surgery. Conservative management is used in early stages or mild symptoms but is often not effective in more severe compression or for persistent or recurrent symptoms.

Research has demonstrated an increased risk of permanent nerve damage with prolonged nerve compression, therefore earlier surgical intervention is often required if symptoms continue beyond 2 months. Surgical treatment involves the open approach with a large incision and the endoscopic approach, which allows the surgeon to divide the thick tissue over the nerve through a minimal incision. The endoscopic procedures available release the thick transverse carpal ligament from within the carpal tunnel. This often causes some temporary numbness because of the increased pressure on the nerve while dividing this tissue. There has also been an increased chance of injury to nerves, blood vessels and tendons due to the very limited visualization of these structures.

Dr. Fitzmaurice has developed the patent-pending EndoView™ nerve release system, the most advanced and safest treatment option for nerve compression syndromes including carpal tunnel, cubital tunnel and pronator tunnel syndrome. This unique system combines the benefits of the open technique such as excellent visualization with the significant improvement in recovery and minimal pain seen with endoscopic
techniques.

The nerve is easily identified before dividing the thick tissue causing compression, which significantly decreases any risk of injury to the nerve. Other endoscopic techniques have reports of nerve, tendon and blood vessel injury, usually due to poor visualization. This unique view of the nerve also allows visualization and removal of scar tissue over the nerve, which significantly increases the success rate.

The device is placed above the carpal tunnel rather than within the tunnel like typical endoscopic techniques, therefore, does not increase pressure on the nerve while performing the procedure. This increased pressure on the nerve has caused prolonged loss of sensation after surgery. One of the most common causes of persistent symptoms is an incomplete release of the distal transverse carpal ligament (located in the palm). The unique instrumentation allows complete visualization of the entire band of tissue causing pressure so a complete release can be performed. This significantly reduces any chance of recurrent or persistent symptoms requiring a second surgery.

The patent-pending design protects the strong bands of tissue in the palm between the thumb and small finger muscles (interthenar fascia). This fascia does not cause pressure on the nerve and protection of this vital structure allows significantly greater strength and minimizes recovery so patients can resume normal activity at a much faster rate than typical carpal tunnel surgery. Patients can move the wrist immediately and often return to work in 1-2 weeks. There are also numerous small nerve fibers throughout the region of this fascia that are often cut with typical open and to a lesser extent endoscopic procedures. This causes pain in the palm area often seen after surgery, which can limit return to activity. The EndoView™ release protects these nerve fibers to minimize any chance of injury and has documented the lowest rate of post-operative pain compared to other treatment options for carpal tunnel surgery.

Proper nutritional support is critical for complete nerve recovery, regeneration and to minimize any pain allowing earlier return to activity. Dr. Fitzmaurice has a masters degree in biomedical science and spent several years performing research on nutritional supplementation to enhance nerve function and maximize recovery from compression, injuries and decline in cognitive function. Bio-MedRx™
Nutrition was formed to continue these research efforts and has recently developed NeuroGen®, the most advanced nerve support supplement available. This unique formulation has demonstrated increased nerve regeneration and reduced swelling after surgery with less pain and earlier return to activity compared to groups who did not take the supplement. This product is available for all patients whom Dr. Fitzmaurice performs surgery for nerve compression.

Benefits of the EndoView™ Endoscopic Carpal Tunnel Release

<table>
<thead>
<tr>
<th></th>
<th>EndoView™</th>
<th>Endoscopic (Brown procedure, etc)</th>
<th>Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recurrence rate</td>
<td>&lt; 1%</td>
<td>3.7-15%</td>
<td>Up to 57%</td>
</tr>
<tr>
<td>Persistent symptoms</td>
<td>&lt; 1%</td>
<td>7-20%</td>
<td>7-20%</td>
</tr>
</tbody>
</table>

Michael Fitzmaurice, M.D. is one of the most experienced endoscopic hand surgeons in the country. Experience level of the surgeon correlates with the success of the minimally invasive surgery. The risk of injury and incomplete release requiring another operation is decreased with experience level of the surgeon.

The combination of EndoView™ nerve release system and NeuroGen® nerve support supplement along with the significant experience level of Dr. Fitzmaurice offers the most advanced treatment option for carpal tunnel syndrome.

Michael J. Fitzmaurice, MD, MS
Fitzmaurice Hand Institute
19820 N 7th Street, Suite 115
Phoenix, AZ 85024
480 719-4750 www.Fitz.md