Colonoscopy is a procedure performed in hospitals and freestanding clinics to diagnose and evaluate the health status of the bowel. The goal of the procedure is to reach an anatomic landmark called the ileocecal valve, thus allowing for complete evaluation and treatment of colonic disease states and detection and removal of pre-cancerous polyps.

As part of the procedure, endoscopy personnel are required to press firmly on the abdomen.

Abdominal pressure applied by the nurse or assistant provides countertraction to aid in the prevention and management of scope loop formation. (Fig 1)

Without this assistance, reaching the target can be exceptionally difficult to achieve by the endoscopist.

Techniques for counter pressure have been well described in the literature, and include closed hand, open hand and forearm methods. Each has its advantages and disadvantages.

In the closed hand method the fist is used at various points on the abdomen. The ability to feel loop formation with the fingertips is lost and the shoulder and neck muscles provide the force necessary. Extension of the forearm places stress on the triceps and shoulder, while during the open handed method, where the senses of touch are most acute, the wrist is hyperextended.

**The Problem**

While one of the above methods, or a combination of them, may be preferable to a particular individual, they all have one thing in common: these repeated stresses on joints, muscles and ligaments result in fatigue and micro-tears resulting in soft tissue injuries (STIs).
Scope and Prevalence of the Problem

STIs are the most common work related injuries, accounting for millions of dollars in lost time at work, pain and reduced quality of life. The hospital industry is the third most expensive of 313 U.S. industries resulting in 900 million dollars in cost of work-related injury and illness in 1993. [Waehrer]

Endoscopy personnel become afflicted with acute and chronic injuries to the soft tissues of the hand, arm, shoulder and neck as a result of assisting with colonoscopy. [Drysdale]

A number of studies examine the incidence, disabilities and quality of life as a result of soft tissue injuries (STI).

The DASH Questionnaire is a scoring method that is widely utilized by orthopedic surgeons to determine disability of the shoulder, arm and hand. The questionnaire, once scored, helps determine the limitations in activity and quality of life. The score range is 0-100. The general population has a DASH score 8.8. The mean DASH score for the Canadian endoscopy study group was 15.8. This finding was confirmed by Drysdale in the US questionnaire.

The following facts have been established:

1) 36% of endoscopy nurses have or have had acute or chronic STI.
2) 59.9% see a doctor because of pain in the hands, wrists, shoulders and neck.
3) Up to 45% take over-the-counter non-steroidal medications to treat said pain.
4) 32.7% of sick time used by the nurses in the study (n=147) was because of STI/pain issues.
5) Mean hands-on pressure is delivered for 6.3 minutes per case.

While the above figures are alarming, the extent of STI on endoscopy personnel is not fully known, as it is suspected to be under reported.

An endoscopy nurse or assistant may assist with up to 50 colonoscopies per week — the equivalent of holding a push up position for 5 hours!

In addition to applying hand and/or forearm pressure, the nurse or assistant is also required to aid the sedated patient to move into different positions as an additional method for loop control, incurring back stress in the process. Sedated patients may be moved 2-3 times per case and moving a sedated patient during colonoscopy can injure back muscles.

Clearly, there is a huge need to address the problem. Ideally, the solution would involve less hands-on time, and less repositioning.
The Solution

A unique device called the N-Doe Pillow™ has been developed to meet this challenge.

It was invented by a 30 year veteran of endoscopy nursing whose own injuries were severe enough that he feared a career change may be necessary. He searched for a tool that would aid him but found no device to address these issues.

After experimenting for almost a year, he developed a soft but firm device that uses a combination of the patient’s body weight and leveraging to safely and effectively allow compression in the right areas without requiring pressure form the nurse or assistant’s hands.

Using this innovative device, his DASH score improved by 50% in one month.

The device was introduced to the public as the N-Doe Pillow™.

How It Works

The N-Doe Pillow is designed to provide focal pressure to the abdomen, rather than pressure provided by the endoscopy assistant.

After the patient is sedated and positioned, the N-Doe Pillow is used to compress three different zones, singularly or in combination, to control loop by counter traction. The patient’s own body weight helps to keep the device in place.

By using the N-Doe Pillow as directed, the nurse or assistant’s hands are free to be used for palpation instead of pressure, and patient position changes are rare.

The N-Doe Pillow is easy to use, affordable and reusable.

For a VIDEO demonstration of the N-DOE PILLOW™ visit www.nmbco.com/pillow.html