G and Your Spine

BY WES LIU, IAC 10467

DID YOU PULL +7G on your last flight? How does your back feel? Are you used to shaking off some back pain during or after a hard competition flight? We often blame the aging process, but in fact, most of the problem may be your seat and parachute.

First, a little anatomy. The spine is generally composed of 33 bones. In the model pictured, there are seven vertebrae in the cervical (upper) region, 12 in the thoracic (middle, orange) region, five in the lumbar (pink) region, five in the sacral region (not visible behind the white pelvis), and four in the coccygeal region (also not visible). In between the vertebrae are the disks. Disks are flexible shock absorbers that allow us to bend and twist.

Note an important aspect of the spine model. The spine has a natural curve. The disks are shaped correctly and comfortably when our posture allows our spine to be in its natural curve.

Which brings us to the seat back you sit against and the parachute you wear. Is your seat back flat? Does your parachute pack ride in the seat back to form a concave curve that forces the lumbar region of your spin into a curve in the opposite direction that it naturally wants to be in? Is your back sore or even painful after pulling *g*'s?

When we sit with our spines misaligned and then pull significant *g*'s, we are forcing disks that are normally relatively flat donuts into wedges and can apply pressure to nerves that will immediately send pain signals. Age makes this worse as disks shrink and become less flexible after we pass age 40. If your physician has been noting that you are getting a little shorter each annual visit, welcome to the club. And that flat seat back and the parachute pack that slumps into a curve that is the reverse of your spine's normal posture? They are not your friend.

What do we do? I fly a 1974 Pitts S-2A with a flat and upright seat back. I discovered that I had reached an age and condition where *g*'s resulted in back pain. Some research produced the answer — lumbar support! As little as a 5-inch-tall and 1-inch-thick band of medium density "astronaut" Confor foam — the width of your parachute container — can provide enough support to keep the spine in alignment under *g*. Sew a fabric sleeve around the foam and have your parachute rigger attach it with Velcro to your parachute rig. Done! No more back pain.

RIGHT: Acro Strong Parachute.

ABOVE: Softie Parachute Lumbar Support.

You may have to experiment to find the right thickness and height of material for your personal lumbar support. We are all different heights and girths. A good place to start finding what works is to roll up a towel and slide it between your parachute and the lumbar region of your back. Once you find out how much towel is comfortable, you can get with your parachute rigger and construct a more permanent pad.

I reached out to the parachute manufacturers at Strong Parachutes, Softie Parachutes, and Butler Parachutes; they all offer lumbar support pads as options for their rigs. There is no reason to accept discomfort when you fly.

See you at the box. ***IAC***

WES LIU competes in Intermediate in a 1974 Pitts S-2A. His current daytime job is building software for a medical robot used in spine surgery.