ONE TO ONE INJURY & PAIN CLINIC

144 MAIN ST. N. SUITE 207, MARKHAM, ONT. L3P 5T3

Dec. 17, 1995

NADA-
2448 Larpenteur Avenue
St Paul, MN, U.S.A.

RE: **Nada-Chair *Back-Up*** ®

I am a physical rehabilitation and registered massage therapist who is a primary care practitioner and is licensed in the province of Ontario, Canada. My specialty is low back dysfunction and related concerns.

I purchased your back support device at a trade show in Toronto recently. I must say that I am extremely impressed by it, as are my patients. One of the toughest aspects of treatment is reducing factors which aggravate or perpetuate an individual's condition, such as prolonged sitting. This is especially true if prolonged sitting is a requirement for employment. The back support device called ***Back-Up*** distributed by your company addresses this concern perfectly.

To understand why this product is so effective we must first understand some important aspects of low back pain.

- the cause of low back pain is almost always (90%+) muscular;
- when there is another source for some of the pain such as facet, ligament, disc or nerve, this dysfunction is almost always (95%+) secondary to (caused by) muscular dysfunction;
- of the muscles that cause low back pain the ILIOPSOAS muscle is almost always the muscle that is the primary source of pain;
- when other low back muscles are the primary source of pain, almost always the ILIOPSOAS started the sequence of events that lead to those muscles being dysfunctional;
- muscles are like ropes, they can pull but never push.

Info about the ILIOPSOAS (ILL-E-O-SO-AZ)

The ILIOPSOAS muscle is made from two muscles, the PSOAS MAJOR and the ILIACUS. These muscles have common action and insertion points and are therefore commonly referred together as the ILIOPSOAS.

The ILIACUS muscle attaches itself to the inside rim of your pelvis or hip bones on both the left and right side and inserts into the top of the femur. The femur is the long bone that is between your knee and hip.

The PSOAS MAJOR muscle attaches itself on the left and right side to ALL of your lumbar vertebrae plus one thoracic vertebrae (all of the spine in your low back).

The combination of the two muscles that make the ILIOPSOAS have specific function and use. When the ILIOPSOAS muscle contracts it flexes your leg (brings your knee toward your chest or if you are lying down, it brings your chest toward your knee). It is the main muscle that contracts when you are doing a sit-up,

When you are sitting on a backless chair, your ILIOPSOAS is the main muscle you are using to maintain your lumbar curve. If you relax your ILIOPSOAS, YOU will lose your lumbar curve and if you then contract it again YOU will gain back your lumbar curve, When you do not have a proper lumbar curve, you are slouching (try it).

Disturbance of the ILIOPSOAS is the primary cause of low back dysfunction and starts a sequence of events that can lead to chronic, widespread low back pain.

All of the nerve fibers that leave your lumbar spine travel through the PSOAS MAJOR. Among others, these nerves combine to make your Obtuator, Femoral and Sciatic nerves. When your PSOAS MAJOR is tight, normal nerve function can be disturbed. This can display as tingling, numbness and/or pain along the course of these nerves. This may explain why a hypertonic (tight) ILIOPSOAS muscle has been sighted as one of the primary causes of male sexual impotence when there is no disease state present.

At the risk of getting a bit too complex here is the sequence of events that classically leads to "chronic low back pain":

1) due primarily to prolonged sitting, the ILIOPSOAS maintains a shortened position; and due to it constantly contracting to maintain your proper posture, it becomes overworked;

2) overworking any muscle causes inflammation; inflammation always makes a muscle hypertonic (tight) and often sore;

3) you now have a short, tight ILIOPSOAS which causes the muscle to lose strength and endurance. It becomes inflamed which then leads to a host of other problems;

4) when you stand, this muscle pulls your entire lumbar spine inward and causes a hyperlordotic curve in your low back (sway-back effect);

THE CHRONIC PAIN CYCLE

5) this causes your pelvis to tilt forward (this causes your hamstrinq and abdominal muscles to become stretched tight, also femoris, your quadratus erector spinae and one of your quads, the rectus ferm oris becomes short and tight);

6) when your pelvis tilts forward, your sacro-iliac (S.I.) joints become locked. (These S.I. joints are what attach your pelvis to your spine. When you walk, the S.I.joints allow a 9° rotation of your torso);

7) if your S.I. joints are locked, the normal 9° rotation of your torso that occurs when you walk now occurs at your L4,5 disc site and causes a high level of wear and tear; (and people wonder why there are so many L4,5 disc herniations!)

Note: At this point you usually have pain/discomfort that is central and in the lower part of your low back (L4.5 area). The pain/discomfort increases if you lie down flat on a floor with your legs straight and then decreases if you bend your knees. Pain/discomfort also tends to worsen after about l0-15 minutes into a walk. Sciatica (sciatic nerve pain down the leg) may develop.

8) this dysfunction can cause a host of other side effects such as facet irritation, ligament stress, decreased blood flow to and from the effected area, nerve irritation, joint subluxation/ dysfunction, inflammation and muscular balance changes;

9) about this time your brain senses that something is wrong and responds by "guarding" the area;

10) your brain tells numerous muscles in your low back area to become very tight so as to cause an artificial splint and guard or protect the effected area from possibly damaging movements;

11) to make a long story a little shorter, this causes widespread muscular dysfunction such as the possible development of trigger points, fibrosing (massing of non-functional muscle fibers), tissue adhesions, some muscles become too long or too short, almost all muscles in the area become weakened etc.;

12) this leads to the spine becoming dysfunctional, a hip hike (one leg becomes artificially shorter), sacral misalignment, gait abnormalities, more widespread pain, more frequent flare-ups and muscle spasms, digestive disturbances, sexual dysfunction, upper back and neck pain etc.;

THE CHRONIC PAIN CYCLE

13) pain leads to ***inflammation*** that leads to ***muscle tightness and weakness*** that leads to ***muscle and tissue irritation*** that leads to ***more pain*** that leads to ***more inflammation*** and so on and so on in an ongoing cycle that becomes ever worse;

14)when muscles become weakened, other muscles try to compensate and then become overworked themselves;

15) and #13 and #14 are why dysfunction usually leads to more dysfunction!

The Back-Up is effective primarily, because it allows the ILIOPSOAS muscle to relax. It takes the job over for this muscle and helps put a stop to this potentially serious sequence of events.

In a nutshell, the ***Back-Up:***

- primarily allows the ILIOPSOAS to relax by taking over it's job; increases blood
- flow through the relaxed musculature;
- decreases overuse of musculature especially the ILIOPSOAS and thus allows an individual all of the benefits that are secondary to not over fatiguing such as less inflammation, less hypertonicity, less pain etc.;
- decreases S.I. joint pressure;
- increases S.I. joint and vertebral support;
- helps with proper vertebral alignment;
- helps maintain a proper lumbar curve;
- helps to maintain proper sitting posture & symmetry while forcing you to sit on your ischial tuberosities (like YOU are supposed to);
- helps in the training or re-training of proper sitting posture; may make
- certain Chiropractic adjustments easier;
- helps break the chronic pain cycle;
- helps decrease the pain associated with muscle spasm or fatigue; helps
- reduce pressure on trigger points, scar tissue, adhesions or other muscular disturbances;
- reduces ligament stress;
- may relieve facet irritation;

- may reduce lumbar nerve irritation and related concerns;
- under most situations can be used in acute, sub-acute or chronic stages of trauma;
- can be a source of compression to the lumbar area such as in acute trauma to the low back were rest, ice and compression is commonly prescribed;
- can be used to perform "counterstrain" techniques to the ILIOPSOAS muscle;
- allows relaxation of various other important muscles such as the rectus femoris abdominals, T.F.L., sartorius, lumbar paravertebral muscles etc.;
- has both short and long term benefits;
- can offer ***instant*** relief;
- there may also be other benefits that I have not considered.

I now recommend to all my patients that if they must sit for prolonged periods that they use the ***Back-Up*** support. I also recommend that for every hour of sitting that they stretch their iliopsoas and rectus femoris for a minimum of 30 seconds each.

So in conclusion I would just like to say that while drafting this letter at my computer, I have been wearing the ***Back-Up*** support and my back feels great!

If you have any questions, please feel free to call.

Sincerely,

Simon Wakefield R.M.T.
Rehabilitation Therapist