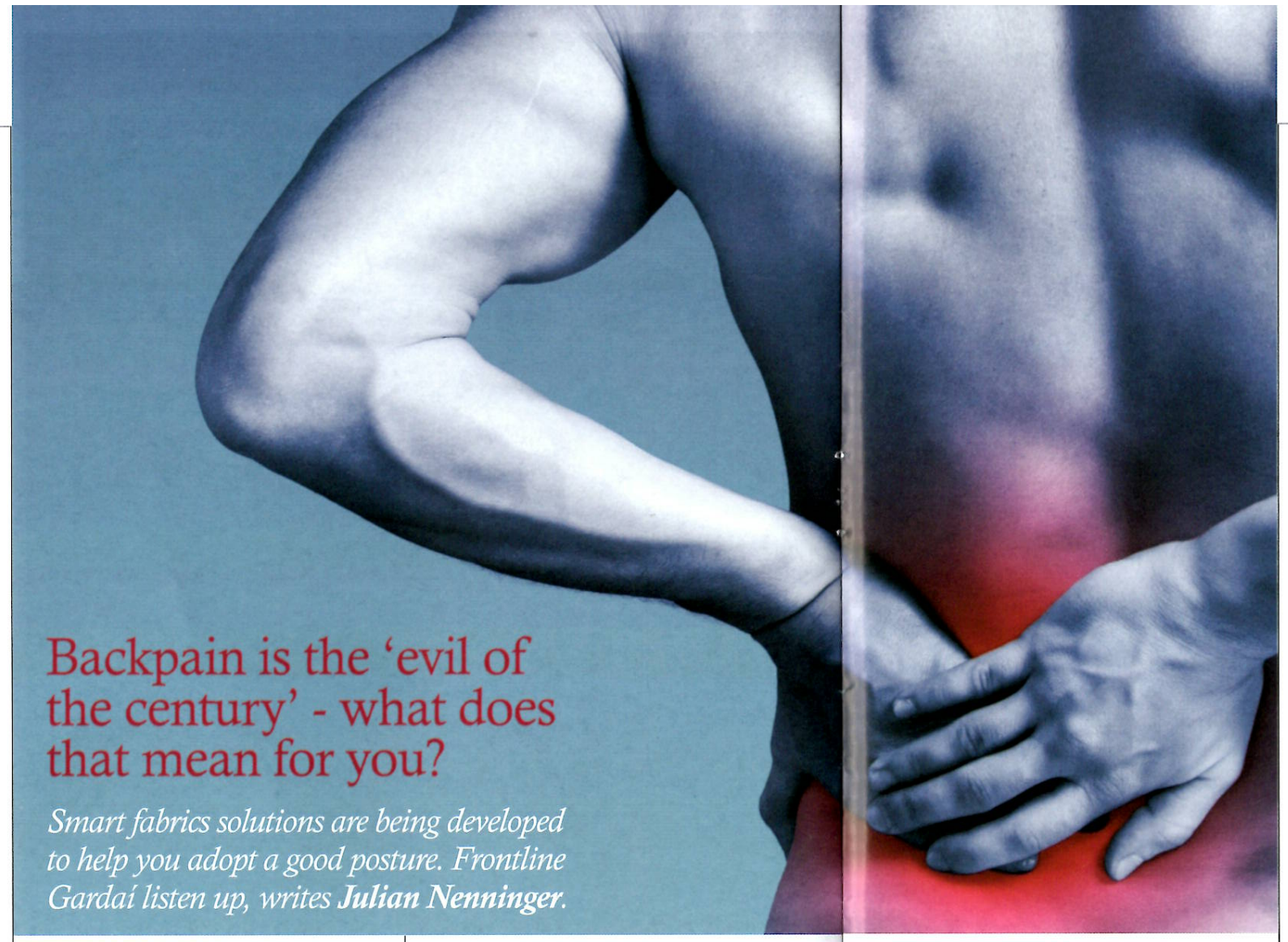

Backpain is the 'evil of the century' - what does that mean for you?

Smart fabrics solutions are being developed to help you adopt a good posture. Frontline Gardaí listen up, writes ***Julian Nenninger.***

Back pain is something you want to avoid but your lifestyle and especially your work don't make it that straightforward. Indeed, in your day-to-day life you constantly put your back under some pressure. Being active and using your lumbar muscles should not be a problem, it becomes one when you are using them the wrong way.

You can be a victim of back pain in any kind of duty: during desk or station duty, standing on your feet during regular beat duty, working in a Traffic Unit (driving a car, riding a bicycle or a motorbike), staying in body armour for hours, standing up during a Public Order Unit intervention, sitting at a desk in forensics or using door-breakers to gain access with force.

This said, you should understand why you experience back pain and learn how you can fix it, or at least avoid the worst. We all only have one back, let's take care of it!

The back, and more specifically your spine, is the main structure to which many ligaments and muscles are connected. These enable you to move, but also to straighten up and thus to maintain your body's natural balance.

In less than 100 years, we moved from a mostly standing position to a sitting one: we were homo erectus and now we are homo sedens. The problem is that our spine did not get enough time to adapt.

This change in the direction of the body's axle led to a change in the centre of gravity. Besides the well-known consequences of the erection of the human body (such as the ability to use your hand for something other than walking), this change led to an increased flexibility of the body through the development of curvatures on the spine.

Indeed, your spine is now naturally in a "W" shape:

It is fundamental to preserve those curvatures to maintain maximum shock absorption.

What is necessary to keep a strong back and prevent chronic back pain?

The modern human spine has two main characteristics: it is at the same time a static organ and a dynamic organ. Static as it supports your body weight and dynamic as the vertebrae are articulated to enable a high level of mobility. To keep the efficiency of the static organ it is fundamental to maintain strong deep muscles as they must maintain constant efforts to keep a good posture.

To preserve the dynamic organ, you have to make sure you remain flexible to avoid hurting your joints and discs. This flexibility is possible only if you keep stretching and moving your spine. This is why remaining in a static position for a long period can trigger muscle pain and back pain.

You learn two things from this, to relieve lumbar muscles pain and general back pain you have to keep a correct posture and move regularly (minimum five minutes every hour and a half).

During an eight-hour shift in a car, a whole week under kilos of equipment or even a long day in front of a computer, your spine loses its flexibility and learns bad postural habits.

When your back muscles and your legs get tired after a few hours of work, you begin to slouch and to reposition your back, which has the immediate consequence of redistributing the weight towards painless nearby muscles, but also of increasing the torsion forces and shearing on intervertebral discs (Gregory et Callaghan, 2008).

In one day, the variation on intervertebral discs can shrink your total spine height by 3cm. If you carry a load it is even worse as it sweeps the water away from the discs which increases the risk of damage.

Those adaptations place you in high-risks situations, due to an unconscious compensatory posture, that can lead to accidents or chronic pain (Au et coll., 2001). Yet, you wonder: "How do I know that I am adopting the correct posture?"

Among your family and your garda colleagues, many would visit a physiotherapist or an osteopath, which will help them but your physiotherapist won't be there every minute of the day giving you advice for your back.

Some may also try on devices such as lumbar belts, but even if it can help for short periods of physical efforts it is not a long-term solution as it can lead to muscle atrophy. Step-by-step, some brands try to develop new technological solutions to train people's back instead of replacing it.

Among them, the patented system of tensors developed by the French brand Percko offers a convenient and efficient solution. It consists of innovative fabrics that integrate tensors within the fibre.

Chronic back pain is due to the repetition of a toxic posture which does not alert you, or even worse which may seem very comfortable. By focusing on those moments during which your back is being obviously put a strain on, we forget those moments when we do not think about our posture. However, Percko products guarantee a good posture all day long.

Developed as a real "intelligent second skin" with light fibres, Percko technology can be worn very discreetly under your clothes, and fits your daily activities, even sport.

Unlike trendy connected objects, its strength comes from an ingenious system of tensors, embedded in the textile along the spine, and also located on the shoulders and the thorax.

Those tensors act in three different ways:

- Smartly, because they activate only when the person adopts a bad posture.
- They help you straightening up, thus helping thoracic opening as well.
- Against slouching, since they trigger a soft pressure on your lumbar muscles.

The Percko shirts act like a kind reminder. It encourages you to correct your posture by yourself. In the long-term, it makes you (re)learn again how to stand straight and preserve your back. Percko products trigger a supervision of your postures throughout the entire day. It enables a conscious compensatory repositioning and it maintains the centre of gravity in the right axis. This way it redistributes the weight appropriately and will reduce constraints on discs as well as muscle fatigue.

On the B2B side more than 100 firms already work with Percko to perform tests in order to deploy Percko on strategic sites (logistic, production sites, HQ). Today, Percko has the privilege to supply the SNCF (French Railway Operator) and the leading insurance company; Allianz.

In companies in which ergonomists and physiotherapists intervene, for instance, with formations about gesture and posture, they teach employees good working positions.

Percko, while stimulating posture, completes and makes their action durable.

Contrary to products such as lumbar belts, Percko solution has absolutely no medical contraindications as it doesn't put any mechanical constraints on the body and does not replace back muscles, it stimulates them to work better. GR

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