

A photograph of a person's back, seen from behind, with their hands resting on their shoulders. The person's hair is tied up in a bun. The background is a deep blue. A bright red glow emanates from the spine area, highlighting the text. The text 'BACK OFF!' is written in large, bold, white capital letters across the red area.

BACK OFF!

To walk on two feet is human —
but inhumane to your spine

LUCIE TURGEON

Kathleen Michaud, a mother and freelance writer who lives in St-Bruno, Que., is all too familiar with back pain. Her back first seized up in 1987 when, at age 18, she bent over and lifted a box that was much too heavy for her.

A couple of visits to an osteopath and a few days' rest were all it took back then to cure her injury. For years she had no further problems. Everything went well, in fact, until 1997 when, pregnant with her first child, she began to experience excruciating back pain. "The doctors thought that my baby, who was very big, was just badly positioned and crushing my right sciatic nerve," she says.

In Canada, an estimated 90% of people will suffer back pain at some point during their lifetimes

Your Spine at a Glance

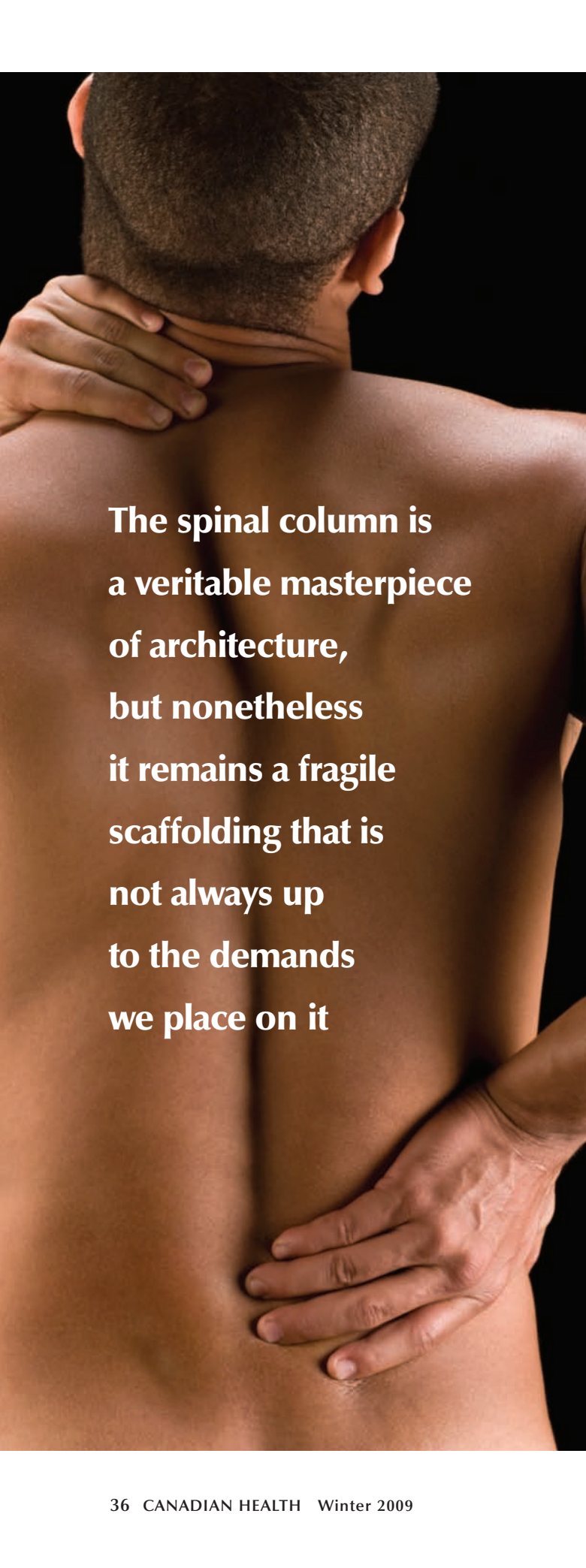
Your spinal column runs in a series of curves from the neck to the pelvis and consists of 33 bones called vertebrae — 24 separate flexible vertebrae and nine fused. Most vertebrae are separated by discs, cushion-like cartilaginous tissues that act as shock absorbers. If the fibrous outer disc material that encircles the spine (the annulus) is torn from injury or by repeated stress, the soft gel-like inner matter (the nucleus) may bulge out, causing a painful condition known as spinal disc herniation or rupture.

The spine has four regions. The **cervical spine** consists of seven flexible neck vertebrae, which support the skull. The **thoracic spine** is made up of 12 chest vertebrae, each of which supports a pair of ribs. The **lumbar spine** in the lower back has five vertebrae, and these are the largest and strongest of all. They bear the weight and motion of the entire upper body and are by far the most common sites of back pain. The spinal column is completed by the five fused bones of the **sacrum** (the triangular bone in the hip region that forms the back wall of the pelvis) and the four fused bones of the **coccyx** (tailbone).

Each region of the normal spine has its own unique curvature, either concave or convex. Viewed from the side, the spine appears curved in an almost S-like shape. The skull-supporting cervical spine has a lordotic (inward) curve; the thoracic region has a kyphotic (outward) curve, which accommodates the chest organs. The lumbar region just above the buttocks curves inward, and the sacral spine curves slightly outward.

— Diana Swift





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Tests done postpartum revealed that she, in fact, had a herniated vertebral disc in her lower back between lumbar vertebrae 4 and 5 (see “Your Spine at a Glance,” p. 35).

Kathleen took anti-inflammatory drugs and consulted an osteopath, and three years went by without incident. But in 2001, pregnant with her fourth child, she once again experienced severe back pain. “It was so bad that my entire right leg was devoid of sensation,” she says.

She consulted a neurosurgeon, who prescribed a strict regimen that included osteopathic treatment, physiotherapy and, several times a week, acupuncture. Her regimen also included a rigorous exercise program to loosen up her back and strengthen the muscles around the spinalcolumn. “It was either that or spend the last five months of my pregnancy in bed,” she says.

These measures proved beneficial for Kathleen, and she managed to avoid surgery — even though she was diagnosed after the birth of her child with a second herniated disc — this time between lumbar 5 and sacral 1 (at the point where the lumbar spine joins the sacrum, the large triangular bone at the base of the spine above the buttocks).

Today, Kathleen is in good shape and is able to do anything she wishes — provided she respects her limits. “My back is fragile, so I have to pay attention to it and listen to my body’s signals,” she says. Among other strategies, she’s improved her usual posture and motions with a view to sparing her back. Now, for example, she always bends her knees when she has to lift a heavy object or pick up one of her children. When she sits working at the computer for long periods, she takes rest breaks very 30 minutes to stretch and keep her back loose. She distributes the weight evenly when she carries bags of groceries.

THE HIGH PRICE OF BIPEDALISM

Kathleen is far from alone in suffering from back problems. Just ask your friends, neighbours and co-workers; they’ll confirm that back pain afflicts just about everyone. In Canada, an estimated 90% of people will suffer back pain at some point during their lifetimes. For many, daily life comes down to three big pains: the daily commute, the workplace grind and agonizing backs.

But why does the human back give us so much trouble? According to Dr. Gilles Maurais, chief of orthopaedics at Montreal’s Sacré-Coeur Hospital, it’s because we’re the only mammals to walk exclusively on two paws. “Being upright places severe stress on the vertebral column, especially at the level of the lower back because this area supports the entire weight of the upper body.” That largely explains why lumbar pain is the most common (see “Your Spine at a Glance,” p. 35).

Prevention: Your Best Ally

Back problems aren't inevitable; you can prevent most of them by correcting your usual posture and moves — for example, bending your knees before lifting or shovelling, pushing rather than dragging heavy objects and maintaining an erect posture at all times. And, above all, exercising. An estimated 80% of back pain can be attributed to physical inactivity. It's especially important to strengthen the spine-protecting muscles of the abdomen and the lower back. Here are four exercises suggested by University of Montreal kinesiologist Alexandre Paré.

▶ LUMBAR EXTENSION

POSITION Stretch out on your belly face down with your neck and head in a straight line (this is the neutral position, in which the head is neither raised nor turned to one side or the other). Place your arms alongside your body with your palms facing the ceiling.

MOVEMENT Gently raise your head and shoulders, being careful not to overextend your neck muscles. Hold this position

for 10 seconds, then slowly go back down without placing your head on the floor. Do two sets of five repetitions (beginners) or three sets of 20 repetitions (advanced).



◀ HIP FLEXION-EXTENSION

POSITION Stand with your feet a few inches from a wall and your knees slightly bent. Place your hands on your thighs and press your buttocks against the wall.

MOVEMENT Keeping your back very straight, bend your chest forward until it reaches an angle of 30 degrees from the wall. Then return slowly to your starting position. Do two sets of five repetitions (beginners) or three sets of 20 repetitions (advanced).

▶ SLIDING HALF SIT-UP

POSITION Stretch out on your back with your weight on your shoulders and your knees bent at an angle of

120 degrees. Your feet should be planted on the floor and your arms should be resting at the top of your thighs.

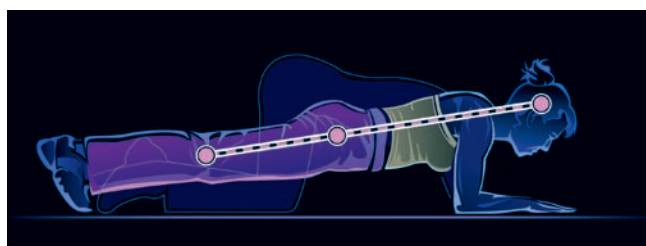
MOVEMENT Lift up your torso while sliding your hands along your thighs as far as your knees but not past them. Return to your starting position without putting your head down on the floor. Do two sets of 10 repetitions (beginners) or three sets of 20 repetitions (advanced).

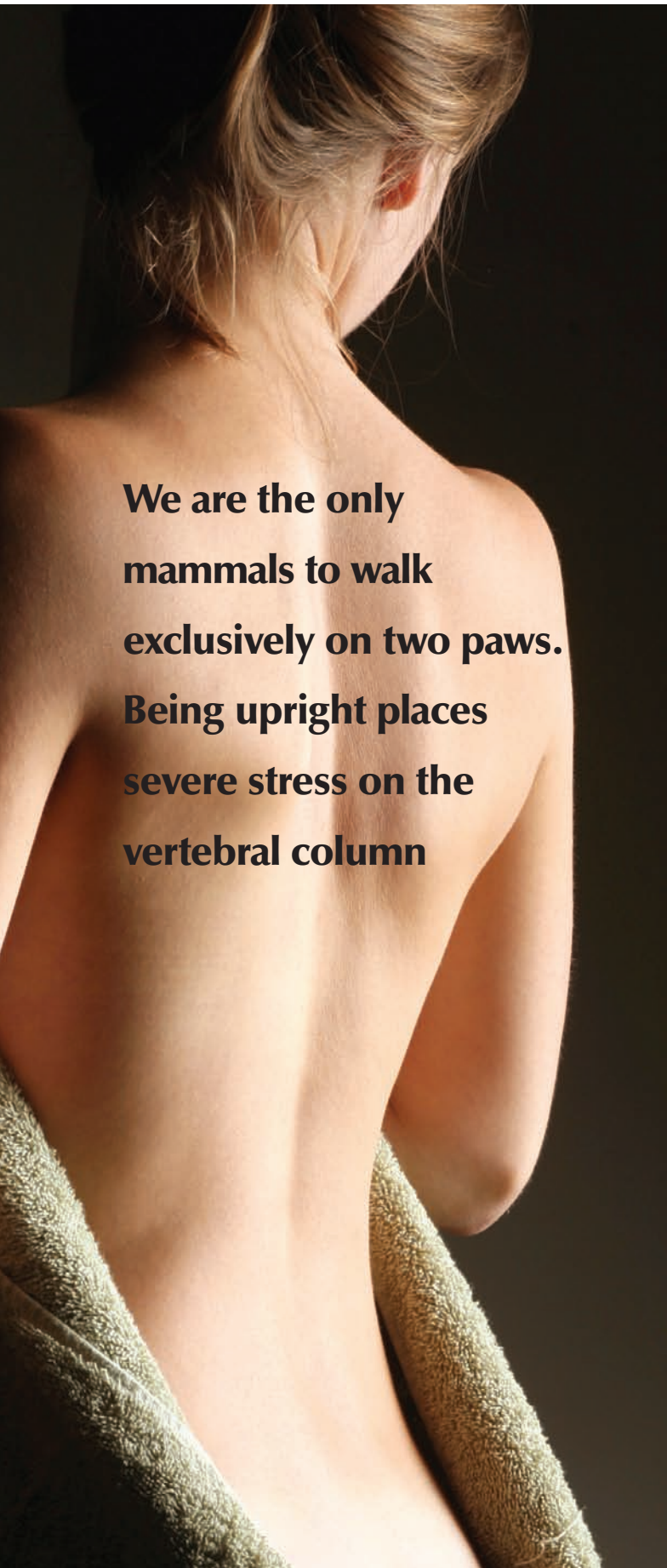


◀ THE PLANK

POSITION Head down, get on your knees and place your weight on your forearms.

MOVEMENT Rising up on your toes, contract your abdominal muscles, then lower your pelvis in a near-straight line between your head, pelvis and knees. Hold for 10 seconds (beginners) to 60 seconds (advanced).





We are the only mammals to walk exclusively on two paws. Being upright places severe stress on the vertebral column

In addition, the lumbar region is also the most mobile area of the spine — it's involved in most of the movements of the torso — and is, therefore, the most stressed. In a word, with its 33 vertebrae, the spinal column is a veritable masterpiece of architecture but it remains nonetheless a fragile scaffolding that is not always up to the demands we place on it.

LIFESTYLE FACTORS

Our biped state, however, is not the only explanation for the current epidemic of back pain. “Our mode of living has the effect of causing humans a lot more back problems now than in earlier times,” says Maurais. Obesity and poor fitness levels are two main factors that contribute to the development of severe back pain. And our fast-paced lifestyle limits the time devoted to physical activity, resulting in low fitness levels and a consequent weakening of the back and abdominal muscles.

Over time, this deterioration of the muscles, combined with weight gain, induces poor posture — an unhealthy combination that predisposes us to back pain.

Certain muscles of the body act, in fact, as natural corsets for other muscles. “For example, the multifidus muscle of the back and the transverse muscles of the abdomen play supportive roles for the deep abdominal muscles and also the longissimus muscle of the back,” explains Alexandre Paré, a professor in the department of kinesiology at the University of Montreal and founder of Ataraxia, a physical fitness consulting group.

These muscle groups in the lower back and the abdomen work to maintain spinal stability. When these groups are strong, you have optimal vertebral stability, and the body is sufficiently supported in the majority of its daily motions and in sports activities. If these muscles are weak, posture deteriorates and the risk of back injury increases.

Finally, it's important to note that the seated position — though seemingly relaxing — is actually one of the most challenging for the spinal column. As soon as you sit down, the pressure on your vertebral discs increases significantly. And according to the Canadian Centre of Occupational Health and Safety, spending long periods sitting down can restrict blood flow to the lower back and upper thighs, thereby increasing the risk of back discomfort. “In our modern society, where we spend more and more time sitting down, it's not surprising that people suffer from back pain,” says Maurais.

As for modern footwear, it, too, can be problematic. Worn frequently, high-heeled shoes can exacerbate back discomfort. “When a woman wears high heels, her upper body is thrust forward,” says Paré. “To compensate for this imbalance, she pulls back her shoulders, thereby accentuating the lumbar curve and causing pain.” ❧