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revitalise – bounce – be healthy

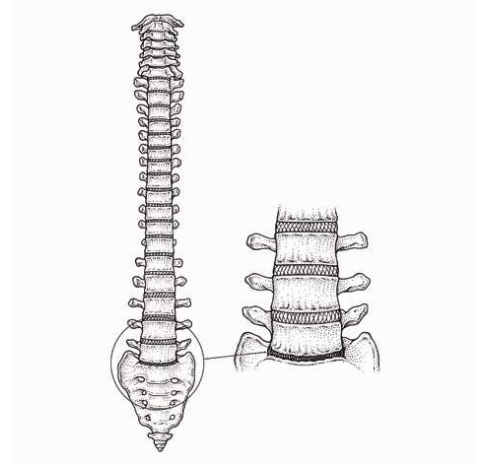
Stage 1:

The Stiff Spinal Segment

“The first stage in the breakdown of the spine”

What is a stiff spinal segment (SSS)?

A stiff spinal segment is a sluggish vertebra which participates less willingly than the others in the overall spinal movement. More often than not, the SSS causes no trouble but it's usually compensated for by its neighboring segments. In the low back, the stiffest segment is considered to be the L5 vertebra. Immediately, above that, you get the most mobile segment in the low back otherwise known as the L4 vertebra. Thus, L5 is the most likely segment to become stiff leading the L4 vertebra to suffer from over-mobility problems.



Causes of Segmental Stiffness

1. The disc loses water and becomes thinner
 - Gravity squeezes fluid from the discs as they are squashed at the bottom of the stack.
 - As the discs lose fluid, they become stiffer, the lower ones faster than the upper ones, and the vertebrae sitting on top lose freedom to move.
 - The less mobile segment becomes an easy target for trauma because it cannot absorb shock as easily as the rest.
2. Poor movement prevents fluid replacement and discs flatten with inactivity

Discs hydrate themselves by using grand-scale spinal activity to pull themselves apart, thus creating a suction effect to attract fluids from neighboring vertebral bodies. So if they are squashed more than they are sucked apart then there will be a net loss of fluid from the discs as they gradually dry out.

- Rejuvenation of discs becomes incomplete if we do not routinely bend and stretch throughout the daylight hours.
- With low activity levels, our muscles and soft tissues become less yielding and stretchable thus increasing compression of the discs.

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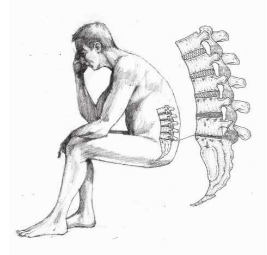
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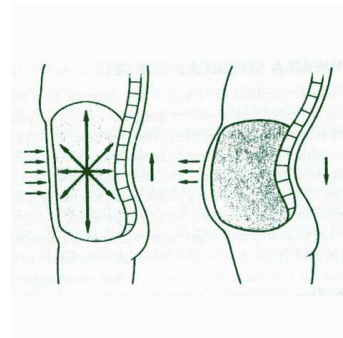
3. Sitting compresses the base of the spine

- The pressure inside the discs is higher with sitting than standing or lying.
- Greatest fluid loss is while sitting; we lose approx. 10% of fluid within the first two hours and 2cm loss in height by the end of the day.
- If long hours of sitting are combined with low levels of activity the lowest discs never properly reflate.



4. Abdominal weakness allows the spine to “sink”.

- The lumbar segments will succumb to downward forces as the weak abdominal wall cannot generate a sufficient counteracting up thrust
- The low intra abdominal pressure cannot lift the spine and interrupt the bearing down pressures at the base of the spine.
- The multi-segmented column ploughs down ever more firmly onto the sacrum and increases the pressure on the lower discs.



Symptoms

The acute phase- inflammation of a spinal segment

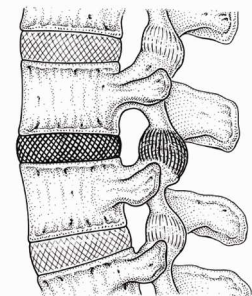
- Intense aching soreness right across the centre of the back which is often too tender to touch
- Back to sensitive to light touch
- Pain increases with prolonged standing
- Sitting can become uncomfortable and your spine does not like being compressed.

The sub-acute phase- The lumbar spine is permanently clenched

- Low back discomfort is bearable
- Discomfort with prolonged positions relieved by moving about
- Aching in the low back can be relieved by heat
- Movement can be painful due to muscle stiffness
- Discomfort with prolonged standing, backs feels brittle as you attempt to sit down
- The pain pattern fluctuates between short painful episodes and remissions.

The chronic phase- Pain is provoked by the stiff disc wall and shortened supporting spinal ligaments being stretched

- Deep, aching stiffness across your low back
- Arching backwards gives relief, but bending forward is always awkward and stiff
- Stiff in the AM, back tends to get looser throughout the day



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What can you do about it?

Aims of self treatment for segmental stiffness

- Reduce the compression of your basal spinal segments to let the discs rehydrate.
- Loosen the stiff segments with the Backblock and doing squatting exercises.
- Reduce muscle spasm by stretching it through bouncing the knees to the chest, breaking up the brittleness of the segments by rolling back and forth over the low back.
- “Switching off” the back muscles by strengthening their counterpart tummy muscles through reverse curls.
- Re-educate spinal intrinsic muscles to control segmental shear forces.
- Adopt a proper sitting posture at work.

*Acknowledgement to Sarah Keys (pictures & content)

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