

Dying for a seat – part 5

DIABETES, heart disease, obesity and systemic catabolic failure can all be placed at the door marked “conventional seating”, but what else can we expect to suffer as a result of sitting passively in the right-angled, flat seat that was once the throne of kings but is now the ubiquitous torture instrument of the Western world?

Make no mistake: all of us who have spent too many hours seated, crouched over our work, have experienced the almost crippling back pains that result.

Artists including John Everett Millais and Degas have created beautiful works of art depicting women arching their backs while trying to ease the pain of toil or too many hours seated at the loom.

Their artistic vision is actually geared around enjoying the line of a naturally S-shaped curve in a healthy spine, but the conditions leading to such back pain are very real, can have chronic effects in the longer term and prove detrimental in quite a short period of time.

Posturing to prevent pain

Back pain can be alleviated and even prevented by maintaining good posture, meaning that the least strain is placed on supporting muscles and ligaments during movement, standing or sitting.

Good posture requires us to keep bones and joints in the correct

alignment so that muscles are being used properly. It helps reduce the abnormal wearing of joint surfaces that could result in arthritis, and decreases stress on the ligaments holding the vertebrae of the spine together.

Holding the correct posture prevents the spine from becoming fixed in abnormal positions and reduces fatigue because the back muscles are being used more efficiently.

Strain and back pain can be prevented and a better posture presents a healthier, more attractive appearance to the world. It's evident that the better our posture the better we look and feel, so why don't we all take a, literally, healthier stance on the subject?

Increasingly we see people with curvature of the thoracic spine caused by hours of passively sitting in a conventional right-angled chair while leaning forward to get on with their work. Instead of a healthy upright pose, sufferers demonstrate a C-shaped spine, their shoulder slumped, the head and neck jutting forwards.

Research and RULA

A. Gandavadi, J. R. E. Ramsey and F. J. T. Burke of the University of Birmingham carried out an assessment of dental students' posture in two seating conditions, the conventional right-angled flat seat and a Bambach Saddle Seat.

The reason the researchers worked

with dental students is thanks to the fact that, in recent times, dentistry has been recognised as “a demanding profession due to its need for acute concentration and precision”.

Work-related musculoskeletal disorders, especially of the neck and upper

limbs, have become a common cause of premature retirement.

Sixty students who were attending their first classes in the phantom head laboratory were selected at random and half were given conventional right-angled seats from which to do their work while the rest used saddle seats.

After 10 weeks the students were observed and photographs were taken during their practical sessions in the lab. These photographs were then assessed using Rapid Upper Limb Assessment (RULA) parameters.

The RULA method uses diagrams of body postures and three scoring tables to provide an evaluation of exposure to postural risk factors. These risk scores were then used for statistical analysis.

The results for the conventional seats were poor, recording significantly higher risk scores. The students demonstrated poor posture and an unacceptable position in the observed joints.

In fact their working posture had noticeably deteriorated over the 10 weeks, putting pressure on the intervertebral discs and static load on the spinal extensor muscles.

The study concluded that the students in the conventional seats were highly at risk of developing musculoskeletal disorders, or, put simply, this type of seating is causing actual physical damage to the sitter.

My back's killing me

Further research has shown that any work associated with long-term passive sitting in a conventional, flat office seat, which includes so-called ergonomic chairs with curved backs in which the sitter is meant to press back for a healthier posture, are detrimental to health.

The sitter's pelvis is tilted back and healthy S-shaped spinal curves are lost, while the head and neck are distorted out of the optimum, upright, neutral position.

The sitter is now in a position of postural stress resulting in back and shoulder pain, even agony in the spine's support muscles.

This condition is something that countless numbers of people accept

as part of the workplace environment – if they sit down long enough they will get back pain. It becomes a part of the job.

But should it be and need it be? I have discussed this situation over the last five months, not in order to put the fear of God into anyone who has to take a seat, but to highlight the fact that traditional right-angled seats are outdated and actively dangerous.

This is not solely my opinion but is supported by independent researchers from universities and medical facilities all over the globe.

Work has been done to find ways to overcome the problem, and the approach to finding an effective solution has been to work with the fact that people need to take a seat to get on with their jobs, but it needn't be in a seat that will do them harm at best and lead to an early death at worst.

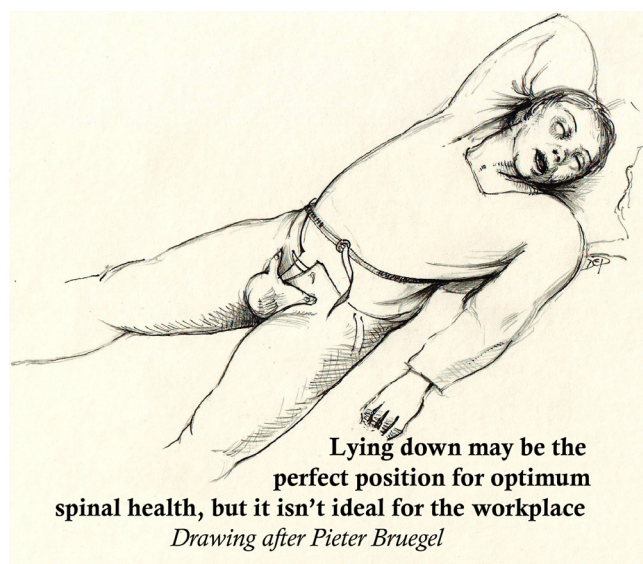
Researchers went back to basics, asking: how can we find a way of sitting that doesn't incite all the systemic failures inherent in using a flat seat and also promotes a good, healthy upright posture?

The human skeleton is least stressed when lying down and at its highest level of stress when sitting in a flat seat and leaning forwards to work, but lying down to get on with your day's work is not practical, and if the flat seat is a no-no, what is the alternative?

For some the answer has been the standing office; standing is the second least stressful position for the skeleton and results in none of the killer symptoms, but after a while stress will start to affect a worker's legs and hips and they will need to take a rest, and many professions require people to be seated, so realistically we need to have our cake and eat it too.

I will explain how this can be done successfully in my concluding article in the next issue.

Chris Langham is a specialist in ergonomic seating technology and the MD of Bambach Saddle Seat (Europe) Ltd. For more information visit www.bambach.co.uk



Lying down may be the perfect position for optimum spinal health, but it isn't ideal for the workplace

Drawing after Pieter Bruegel