

Mind Your Backs Now

by Jerry Watson, Dentist

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Have you ever sat in your surgery and day dreamed about what you are going to do when you retire? I know that my father who was a dentist did and on the due date the boat was bought and the new golf clubs unwrapped. However, like for so many it didn't go according to plan as, since retiring, he has spent a huge percentage of his time either wracked with pain or in hospital having back operations. The boat has gone and even I can beat him at golf!

All this caused by chronic degenerating discs caused by poor posture in practice. The real irony is that while he was trying to prevent caries and periodontal disease (a frustratingly simple message) he was causing himself this preventable condition from which he now suffers. So when I told him that I am developing a stoop and suffering from mild sciatica on long journeys in the car the alarm bells began to ring.

So how bad is the problem?

The department of Social Security figures show a staggering 115.97 million days of certified sickness caused by back trouble in 1994-5, causing a loss to industry of £5.1 billion in lost production and a cost to the N.H.S. of £480 million.

A survey of Australian dentists in Queensland revealed that out of 78 dentists, 86 percent experienced pain in either the neck, shoulders or lower back with 22% having to take time off as a result of the pain. The worrying fact is that only 22% were taking the time off and the other 78% masking the symptoms with analgesics due to the pressure of having to keep working. Of the group that experienced the pain, 81% practised dentistry in the sitting position for more than 90% of the time. The survey concluded that dentistry demands high precision and is often performed with the arms abducted and unsupported and the cervical spine flexed forward and rotated. (Gree and Brown, 1963)

A high static load is induced on the shoulder-neck region and shoulder joint by this posture. In addition, dentistry work leads itself to a tendency to bend forwards from the waist instead of the hips (Wilee, 1967) whether in a standing or seated position.

This places a high degree of stress on the lower spine and it may accelerate degenerative changes in the intervertebral disc or strain the spinal ligaments. This is addition to the general belief that static work is generally recognised as more arduous and fatiguing than dynamic work (Grandjean, 1993) suggests that dentists are particularly prone to musculoskeletal disorders generally and in particular in the regions of the lower back, neck

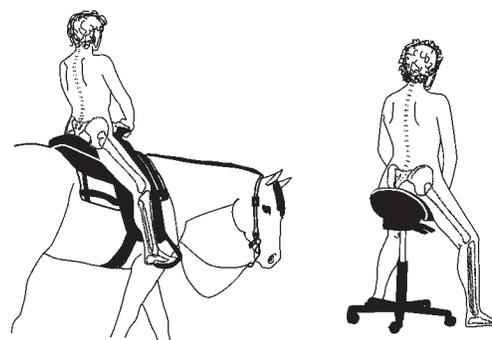
and shoulders. The study did not produce any new information. It did confirm just how big a problem this is for dentists, and that since seated dentistry has become fashionable, the problem does not seem to be getting any better.

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The Saddle Seat solution

Conventional seating arrangements suggest that the ideal seating height is with the thighs parallel to the floor. However, this still tends to roll the pelvis backwards increasing the pressure on the spinal discs. Indeed when working on a flat chair and bent forward, the lumbar portion of the spine is brought into a rounded position and the spine adopts the shape of a large letter 'C' and this is held for the entire time the person is working. When a person is standing the pressure on the spinal discs is 100 kilos. In conventional seating on a flat chair it is 140 kilos and if he or she bends forward this increases to 175 kilos, almost the same weight as lifting.

The answer to this seating problem I believe is to be found in the new generation of seats, the Saddle Seats.



The idea for these seats is traced back to work with rehabilitating people who have suffered brain damage as a result of stroke, or meningitis, or trauma. The greatest problem with these people is maintaining balance and many were not able to sit or stand without a support. An important part of their treatment consisted of horse riding, as it was found that people who normally could not sit on a chair were able to sit on a horse without support (hence the riding for the disabled programme).

Dr. A.C. Mandal, a Danish consultant surgeon, researched this area and he found the best sitting position one can adopt is that on the back of a horse.

The hips are then at their most relaxed position at an angle of 45°. This maintains the oscillating movements of the lumbar region of the lower spine. The Saddle Seats are simple in their design mimicking the position you adopt on a horse. As can be seen from the diagrams the hips are rotated forward and all bending can come from the hip region. You will notice that you sit higher than on a conventional flat seat, and when designing a surgery this is very important, as everything needs to be designed around the seated operator.

I have been using one of these seats for about two months now. People within the surgery have commented on my better posture and certainly my back feels better and the sciatica has gone. I will have to raise my work surface height (a good excuse to go shopping!). Unfortunately, the only "proof of the pudding" will be seen in the future. Will I have the boat and will my golf handicap go down? All I am sure of is that the alternative, chronic back trouble, is too high a price for any of us to pay, so anything that helps is considered essential. So my advice is, "Ride 'em cowboy!"



The Bambach Saddle Seat Design Concept

The idea for the Bambach Saddle Seat came to occupational therapist and horsewoman Mary Gale in treating patients who could not sit unsupported on an ordinary seat or wheelchair. Mary found that the same patients could balance quite independently on horseback and assume a symmetrical posture.

It occurred to Mary that if she could replicate the 'saddle position', where the spine is able to assume its natural curves, she would create an ideal seat for therapy as well as for task seating.

A review of literature showed work of Dr. A.C. Mandel, who noted that the ideal sitting posture for the human spine is achieved on horseback. Other researchers also concluded that ordinary furniture removes the natural curves from the spine and places great stress on the spinal discs.

Anecdotal reports from horse riders who suffered severe back pain on the ground, yet who gained marked relief when mounted in the saddle, were also noted. Several years of experimentation resulted in the Bambach Saddle Seat, deceptively simple in design but incorporating refinements and features that permit sitting for extended periods without loss of a healthy spinal curve. The proof is that the Bambach Saddle Seat is enabling many people who suffer disabling back pain to return to work. The seat also offers the opportunity for normal adults and children to sit to work independently in correct posture and maintaining mobility, but it is especially valuable for many who are physically impaired.



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**For more information contact:
Bambach Saddle Seat Pty. Ltd.**

102 Old Pittwater Rd

Brookvale, NSW, Australia 2100

Phone: 61 2 9939 8325, Fax: 61 2 9907 3584

Email: bambach@bambach.com www.bambach.com

United States Health by Design

PO Box 1526, Novato, CA 94948-1526, USA

Phone: (415) 883-4550, (888) 909-3746 Toll-free

Fax: (415) 883-4551 Email: info@healthydesign.com

www.healthydesign.com

United Kingdom Bambach Saddle Seat (Europe)

Unit A2, Seedbed Centre, Langston Road

Loughton, Essex IG103TQ, U.K.

Phone: 181 787 7051 Fax: 181 787 7074

Email: bambach.europe@virgin.net