

CASE STUDY

N° 11

Name: Ruby Neale
Age: 6
Occupation: Student
Location: Cairns, Queensland, Australia

Symptoms

Ruby has muscular atrophy, which means that she has difficulty maintaining good posture, especially for a long time. Sitting in a classroom chair puts her in such a poor posture that she is at risk of developing kyphotic/spinal deformities. In her classroom posture, Ruby's shoulders are hunched, her neck is hyperextended, and her chin protrudes in order to see and perform her work. Her spine is curved into a 'C' shape with a flattened lumbar curve. She suffers from fatigue. While sitting, functional tasks are difficult to perform. Her thoracic function is impaired because her chest is collapsed onto her abdomen, restricting the action of the diaphragm as well as the action of the ribs.

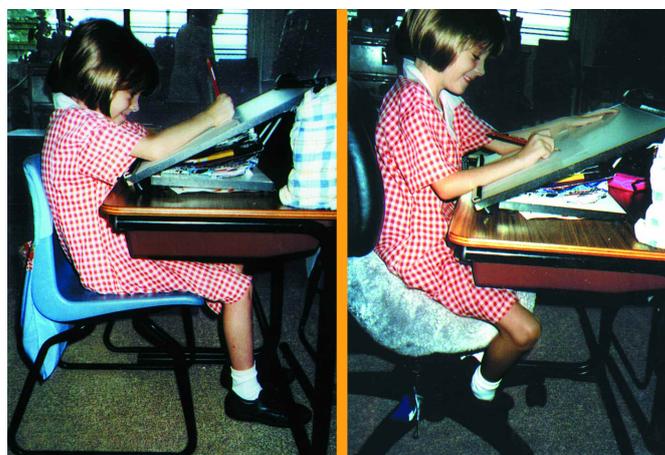
Introduction to the Saddle Seat

The Bambach Saddle Seat was recommended to Ruby by her occupational therapist. The seat tried was a reduced abduction seat with a standard back, an 80 mm drop-through gas lift,

3 locking and 2 standard castors. Ruby was at ease on the Bambach Saddle Seat from the time she first tried it. The therapist was on hand to make adjustments and recommendations for best posture and access to schoolwork.

Result

With her pelvis now in its neutral position, Ruby can assume and maintain a correct posture, which greatly improves her ability to perform functional tasks as well as working longer without fatigue. Her head, shoulders and chin are now in a comfortable position, allowing her to work and focus on her fine motor skills with the security of a stable, upright pelvis and a spine in good posture. In addition, the risk of spinal changes due to poor posture is decreased, and function of thorax and abdomen are greatly improved as the Saddle Seat position maximises the space of these cavities.



Ruby on her conventional classroom seat. Her lumbar curve is flattened, her head, neck and shoulders statically held out of natural alignment in order to work. The thoracic spine is in contact with the seat back. This is poor posture, resulting in difficulty performing fine motor tasks. Poor posture puts Ruby at risk of kyphotic spinal deformity and fatigue.

Ruby on the Bambach Saddle Seat, with pelvis secure in its natural position, which enables her spine to assume and maintain its natural curves. Her centre of gravity is now over the ischial tuberosities, her shoulders relaxed in natural alignment. She suffers less fatigue, has better function of lungs and abdomen. Her posture facilitates fine motor skill function.

The Award-winning Bambach Saddle Seat



Mary Gale

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.



NeoCon Silver Award
Design Excellence for
Desk/Workstation Task Chairs



Winner ADEX Award
for Ergonomic Task Seating

Published papers on the Bambach Saddle Seat

T. Verkindere, C. Lacombe, and J. P. Lodter, 'Electromyographic study of the dynamic sitting position suitable for dentists', *L'information Dentaire*, Vol. 80 No. 12 (March 1998)

M. Gale, S. Feather, S. Jensen, G. Coster., 'A Multi Disciplinary Approach to the Design of a Work Seat to Preserve Lumbar Lordosis'. *Australian Occupational Therapy Journal*, Vol. 36 No. 2 (June 1989)

Publication

Mary Gale, *The Seated Spine & The Bambach Saddle Seat*, Brookvale, NSW, 1997.

Research papers on the Bambach Saddle Seat have been presented at:

International Conference on Ergonomics Occupational Safety & Health & the Environment, Beijing, October 1988.

Third International Physiotherapy Congress, Hong Kong June, 1990.

The National Safety Council of Australia's Congress, 'Futuresafe', Adelaide, South Australia, May 1992.

'Tadsem', Cumberland College of Health Sciences, University of Sydney Campus, Australia, October 1992.

World Federation of Occupational Therapists Conference – The Scientific Programme Technology Seating Sessions, Imperial College, London, April 1994.

Research on the Bambach Saddle Seat has been exhibited via poster presentation at:

The World Federation of Occupational Therapists, Melbourne, Victoria, Australia, April 1990.

World Physiotherapy Congress, London, UK, September, 1990.

Unpublished papers on the Bambach Saddle Seat

A. Nicholls, Doctor of Chiropractic: 'Report; Physiological Evaluation of the Intact Column-Pelvis-Meningeal System Radiographic Outcome Findings'.

Prof. G. Schumpe, Graduate Physicist/Medical Practitioner: 'Biomechanical Study of Sitting on the 'Saddle Seat'.

M. Gale, S. Aldrich, S. Jensen, W. Gale, 'Comparison Study of a Saddle Seat with Conventional Office Work Seat'.



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