CASE STUDY

Nº 13

Name: Danielle Tibbs

Age: 8

Occupation: Student

Location: Cairns, Queensland, Australia

Symptoms

A birth injury (intracranial bleed) has produced left hemiplegia with low muscle tone and some spacticity in Danielle's left side.

Danielle finds some difficulty in maintaining her posture as the spasticity in her left side tends to make her asymmetrical. She also has a problem with her balance. The classroom chair she is provided at school causes her pelvis to be tilted backwards; her spine is, therefore, deformed into a 'C' shape, the lumbar curve is flattened, the thoracic and cervical curves stressed as they are now out of their normal curvature. Her shoulder girdle is weak, so in this position her ability to sit in a correct position means that she has to use her limited muscular resources to correct the distortion caused by the classroom seat. This is extremely difficult for a small girl like Danielle. As she tires, she droops forward and to the left side, her right shoulder hitches up, and she has to prop herself on her desk. If she stays in this position, eventually she may develop a scoliosis. Danielle fatigues 20 minutes after the start of class.

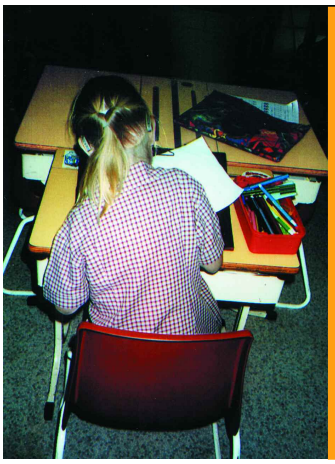
Introduction to the Saddle seat

Danielle's physiotherapist and occupational therapist recommended the Bambach Saddle Seat. She is using a reduced abduction seat with back, an 80 mm drop-through gas lift, with standard castors. The therapist was on hand to position Danielle correctly at her desk and to advise on any modifications.

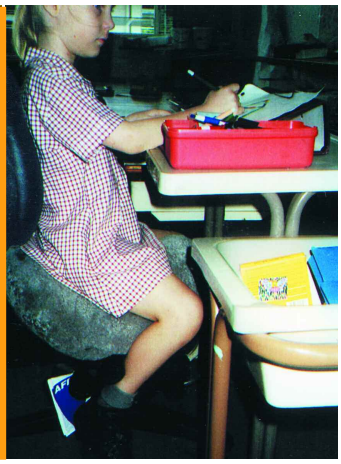
Result

The Bambach Saddle Seat allows the pelvis to adopt a stable, neutral position which enables the spinal curves to assume and maintain their normal positions even when sitting.

Danielle is a quiet, gentle little girl, highly cooperative, and she is motivated to try hard at her work. Her work will be greatly facilitated if she doesn't have to use energy and concentration just to sit up in



Above and right: Danielle using a conventional classroom chair, showing how she has to move the edge of her seat to perform work. This position is one of postural stress, with her spine in a collapsed 'C'.



Above and right: Danielle's posture corrected: pelvis upright and neck in normal position, improved functional ability, less postural fatigue.

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a functional position. On the Bambach Saddle Seat Danielle assumes a comfortable, relaxed position with improved postural symmetry.

It was noted that when on the Bambach Saddle Seat Danielle was more likely to place her left arm and hand on the desk when sitting, which gives her more use of her right hand. Gaining and maintaining symmetry relaxes her shoulder girdle and puts her spine into its natural curves, which will reduce her risk of developing a scoliosis as well as improving her ability to perform her schoolwork better, with less fatigue.

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'.

THE BAMBACH SADDLE SEAT™

4B 3-9 KENNETH RD, MANLY VALE 2093 NSW AUSTRALIA
PO BOX 914 BROOKVALE NSW 2100
PHONE (61 2) 8966 4800 **FAX:** (61 2) 9948 9834
WEBSITE www.bambach.com.au **EMAIL** bambach@bambach.com.au