

# Helping to Prevent Poor Use in School

## *Helping to Prevent Poor Use in School Details of a New Pilot Study Conducted in Ireland*

Mary Murphy, Jan van Haaren, Richard Brennan, Kathy Diviney, Seán Leonard

by Richard Brennan

Most preschool children have healthy posture with a lengthened spine and free movement, yet in industrialized civilizations, the majority of teenagers and young adults develop poor posture, which is apparent in their slouched appearance, including rounded shoulders and overly curved backs. Poor posture can cause back and neck pain and a multitude of other musculoskeletal problems. It can affect the way a child breathes because the ribcage is constricted, and therefore there is less space for lung movement. Decreased oxygen can compromise the child's overall health and learning ability.

It is important to identify the main factors contributing to the deterioration of children's posture as they progress through the school years into adolescence. There has been much discussion in recent years about whether children at school spend too much time sitting, and there have been many attempts to introduce more physical exercise and activity to help deal with this problem.

Is it possible that the school chair could be a major factor in postural deterioration? According to a report published in 2005 by the United Kingdom's National Back Pain Association (BackCare),<sup>1</sup> a backward sloping seat does not promote good posture while sitting, as it results in children being "pulled" backward while at the same time they are instructed to lean forward to write at their desks. This pilot study was designed to answer some of these questions. This article summarizes the study and its findings.

### **Evolution of an Idea**

I came to the Alexander Technique because of a serious back problem that developed after working as a driving instructor, sitting for over 10 years on backward-sloping car seats. My first Alexander Technique teacher altered the angle of my car seat so that the base was flat. I could feel an immediate improvement: my back pain was much reduced.

When I began to teach, I shared this idea with my pupils, especially if they suffered from lower back pain. I cannot think of a single person who was not helped by sitting on a forward-sloping wedge, even though many found it strange at first and needed time to get used to it. When my children started school, I noticed that all the school chairs sloped backward a great deal, and when I made inquiries, I was told that it was standard for school chairs to slope backward by at least five degrees (5°), so that they could be stacked safely.

In 1998 I began trying to make the Department of Education in Ireland more aware of the issue of children's school chairs and their effect on posture and comfort. Eventually, after more than ten years, I was invited to join a team of people who set the

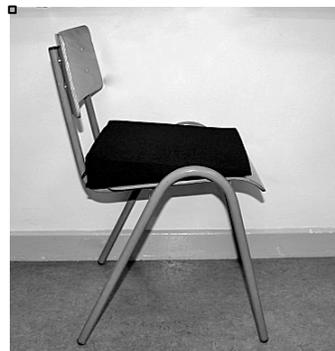
European standards for school furniture. At a European standards meeting in Copenhagen in the summer of 2013, I demonstrated the detrimental effects of backward-sloping furniture on the human spine. This led to a change in the specification of school chairs, so now all schools in Europe are free to use chairs with a seat that can slope between five degrees (5°) backward to eight degrees (8°) forward.<sup>3</sup>



*School chair without cushion*

After the lecture about chairs that Galen Cranz gave at the 2015 Congress in Limerick,<sup>4</sup> Mary Murphy, a student from the training course in Galway, was inspired to do something about the fact that many schools in Ireland are still using backward-sloping chairs. She discussed her idea with Kathy Diviney, who had been the deputy principal at the Claddagh School before she trained as an Alexander Technique teacher. Kathy approached the current principal and vice-principal at Claddagh School

with a proposal for a research project, and they agreed to a pilot study with one class of primary school children. The project, called "Can the Seated Posture of School Children Be Improved by a Wedge-Shaped Cushion?," was conducted between October 19, 2015 and June 14, 2016.



*School chair with cushion*

The study was undertaken by the Alexander Technique teachers in Galway and the third-year students on the Alexander Technique teacher training course in Galway. Previous studies had identified postural benefits of chairs with a forward-sloping seat base with older children,<sup>5</sup> but this new study involved 10-year-olds.

The pilot study explored the impact on a child's posture of sitting on an eight degree (8°) forward-sloping wedge cushion. A marked improvement in posture was noted by trained observers (Alexander Technique teachers and third-year trainees) during the school year following the introduction of the wedge cushions. Photographic evidence, comments from children, and the class teacher's report all corroborated the findings of the observers.

### **The Study**

Nineteen 4<sup>th</sup> class pupils (approximately 10 years old) were provided with firm wedge-shaped cushions made of 8 lb. chip foam. The wedge had an angle of eight degrees (8°) and its dimensions were 35.5 cm x 35.5 cm (approx. 14 in. x 14 in). As the school chairs were sloping back by five degrees (5°), the children were really only sitting on a gentle slope of three degrees (3°).

On the day the wedges were introduced into the classroom, I gave the children a short presentation about the Alexander Technique in relation to sitting at a school desk. The

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Observed Postures	Pre Yes	Pre No	Post Yes	Post No
1. The back is straight and the hip joints are bending	3	16	14	5
2. Both feet are flat on the ground	2	17	5	14

*Figure 1*

presentation included simple anatomy of the pelvis and spine, information on how children's posture often changes from toddler to teenager, and how the school chair contributes to this change in posture. A model spine was brought in to show the children how balancing on their sit-bones (ischial tuberosities) helps promote good posture when seated. Following the presentation, the children were divided into groups of four to work with the trainees, and two STAT-qualified Alexander Technique teachers were present to oversee and advise the trainees. The children were each given a wedge and shown how to correctly position it on the chair. The trainees showed the children how to find their hip joints and their sit-bones, how to balance on the sit-bones to help the spine stay lengthened when working at their desks, and how to place the feet flat on the floor to promote good posture. The children were also shown how they could rock forward on the sit-bones instead of bending the upper spine to lean forward at their desks.

The trainees recorded their observations of the children's postures on two occasions: November 4, 2015 (at the beginning of the study) and June 14, 2016 (the last day of the study). They paid special attention to whether the children's backs were straight, whether they were bending at the hip joints, and whether their feet were flat on the ground. In addition, the class teacher took photographs of the students during the period of the study. As a "control group," the teacher also photographed a second class that had *not* been provided with wedges. Finally, the children in the experimental group were asked to comment on the wedge, and the class teacher wrote up a short report on his observations.

### Results

The major finding of the study was a marked increase in the number of pupils who were sitting more upright and moving from their sitting bones, as well as a small increase in the number of children placing their feet flat on the floor. (See figure 1.)

### Children's Comments

At the end of the study, June 14, 2016, the children were asked to complete a form, and trainees observed the way they were sitting as they completed this task. All of the children commented very positively on the use of the wedges. The following are some of the children's comments:

- I think the cushion is comfortable and helpful.
- If I did not have the cushion my back would be sore and with this cushion it feels good.
- It's comfortable, and it is way better than the chair.

- I think it is very helpful and I feel very straight.
- I've not been slouching; I've not been uncomfortable; I sit up straight without even knowing.
- It is nice, comfortable, relaxing and great.
- I can reach the table easier.
- I like it. It is very comfortable and it definitely changed the way I sit.
- Can I keep the cushion and take it home?
- I think that the cushion is wonderful.

### Teacher's Report

Seán Leonard, the class teacher, wrote a short report on his personal observations. I think it important to record his full report:

*The children of my class were very excited about the prospect of getting their wedge cushions at the outset of this project, and were unanimously positive about them upon receiving them.*

*Having taught for a number of years, I assumed that this was childish excitement at the novelty of getting something new and different. Strikingly, and surprisingly, rather than diminishing with familiarity, the children's attachment to, and appreciation of, the cushions only grew as the year continued. I have not experienced one instance of a child removing a cushion to sit on a chair without it. Indeed, if a child's cushion had been misplaced from their chair, they would insist upon locating it before sitting down. At the end of the study period, the universal concern among the children was that their cushions were going to be taken away.*

*Initially, I noticed a significant improvement in the children's seated posture, but this awareness dulled as the months wore on and I became familiar with them sitting on them every day. Indeed, perhaps typically for a teacher, I was prone to noticing only when they were not sitting well. It was when colleagues from other classes came into my room during the year and noticed the remarkable difference between the posture of the children in their rooms and the children using cushions in mine, that I realised the cushions were obviously still effective.*

*Personally, I see this as a worthy and progressive experiment, and one that has, at the very least, provided the children with a heightened awareness of the importance of good seated posture.*

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### Conclusion

All of the children without exception responded positively to the use of wedge-shaped cushions. Although not all of the children who used a wedge cushion sat well, the final overall assessment shows significant improvement in posture of children using a wedge cushion. The study also shows a degree of awareness of posture among these students. For instance, one third of the children stated that the wedge-shaped cushions made them “sit straighter.”

Perhaps the most significant remarks were made by the class teacher, who was unbiased, as he had never heard about the wedges before the study and had no idea what to expect. Other staff members also remarked on the difference in the sitting posture of children using the wedge cushion, compared to children who did not.

The results of the pilot study clearly show that the use of a wedge-shaped cushion promotes improved seated postures in 10-year-old school children. However, as the number of participants in the study was small, it would be of great value to study a larger group of children in the future.

While in the past almost all school chairs were made to slope backward so that they could be safely stacked when not in use, research and campaigning to date have achieved a change in the specifications for school chairs at the EU (European Union) level. These specifications now permit a forward-sloping seat: hence the current study to assess its effects. This policy change also underlies our recommendation, put forward in the full report on the study, calling for further research in this area, with all the probable benefits that improved posture will bring about in schools, not just for school performance, but also for the future lives of our school children.

### Endnotes

1. Backcare, *Your Back in the Future: How School Furniture is Ruining Our Children's Physical Health*, (commissioned and published by Backcare, [www.backcare.org.uk](http://www.backcare.org.uk)., October 2005), 11. To read this report, see [www.alexander.ie/pdfs/School\\_Furniture\\_Report\\_BackCare.pdf](http://www.alexander.ie/pdfs/School_Furniture_Report_BackCare.pdf).
2. Mary Murphy, Jan van Haaren, Richard Brennan, Kathy Diviney, and Seán Leonard, “Can the Seated Posture of

School Children Be Improved by a Wedge Shaped Cushion? A Pilot Study With 10 Year Olds in Claddagh School, Galway, Ireland between November 2015 and June 2016” (Ireland: The Alexander Centre, December 2016).

3. European Committee for Standardization, “Furniture—Chairs and Tables for Educational Institutions—Part 2: Safety Requirements and Test Methods,” 2013, Ref: EN 1729-2+AT2015.
4. Galen Cranz, “Anatomy of Sitting” (lecture, plenary session at the 10<sup>th</sup> International Alexander Technique Congress, Limerick, Ireland, 2015).
5. Elizabeth A. Candy, Daniel Farewell, Christina Jerosch-Herold, Lee Shepstone, Richard A. Watts, and Richard C. Stephenson, “Effect of a High-Density Foam Seating Wedge on Back Pain Intensity When Used by 14 to 16-Year-Old School Students: A Randomised Controlled Trial,” *Physiotherapy* 98, no. 4 (December 2012): 300–306, doi: [dx.doi.org/10.1016/j.physio.2011.04.353](https://doi.org/10.1016/j.physio.2011.04.353).

*Richard Brennan qualified as an Alexander Technique in 1989. He travels internationally giving talks and courses on the Technique and has taught at many schools including Galway University, Limerick University, DIT Conservatory of Music and Drama (Dublin), Dartington College of Arts (Devon), and Middlesex University (London). He was a director of the 2015 International Alexander Technique Congress in Limerick and the organizer of the 2013 and 2017 Alexander Teacher's Conventions in Dublin. He has written eight books on the Alexander Technique, which have been translated into eleven languages and are on sale world-wide. He has been the Director of the only Alexander Technique teacher training course in Ireland for the last 18 years and is the co-founder and current president of the Irish Society of Alexander Technique Teachers (ISATT).*

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