directed? Did the methodology allow sufficient challenge for the participants to learn how to adapt to environmental demands, pay attention to critical features, and actively engage in practice. Acquiring skill does not only mean to repeat and consolidate but also to invent and progress (Whiting 1980); practice is a particular type of repetition without repetition (Bernstein 1967). Did they practise moving at different speeds, were they encouraged to push themselves to their 'limits'? Did they have the chance to make mistakes – making errors is part of learning.

Interestingly, it seems that the results of this study support the principle of specificity of training. The study has also opened up a most interesting area of investigation, and we are sure the article will stimulate considerable interest as it has for us.

Janet Carr and Roberta Shepherd
Faculty of Health Sciences, The University of Sydney, Australia

References

Bernstein N (1967) The coordination and regulation of movement. London: Pergamon.

Crosbie J, Shepherd RB, Squire T (1995) Postural and voluntary movement during reaching in sitting: the role of the lower limbs. *Journal of Human Movement Studies* 28: 103–126.

Dean C, Shepherd RB, Adams RD (1999) Sitting balance 11: reach direction and thigh support affect the contribution of the lower limbs when reaching in sitting. *Gait and Posture* 10: 147–153.

Gentile AM (2000) Skill acquisition: action, movement and neuromotor processes. In: Carr JH, Shepherd RB (Eds) Movement science: Foundations for physical therapy in rehabilitation (2nd ed). Rockville: Aspen, pp. 111–187.

Ghez C (1991) Posture. In: Kandel ER, Schwartz JH, Jessell TM (Eds) Principles of neural science (3rd Edn). Norwalk: Appleton & Lange, pp. 596–608.

Harvey LA et al (2011) Training unsupported sitting does not improve ability to sit in people with recently acquired paraplegia: a randomised trial. *Journal of Physiotherapy* 57: 83–90.

Massion J, Woollacott M (1996) Normal balance and postural control. In: Bronstein AM, Brandt T, Woollacott M (Eds) Clinical aspects of balance and gait disorders. London: Edward Arnold, pp. 1–18.

Melville-Jones G (2000) Posture. In: Kandel ER, Schwartz JH, Jessell TM (Eds) Principles of neural science (4th Edn). New York: McGraw-Hill, pp. 816–831.

Sekiya N, Takahashi M (2001) Control of lateral weight-transfer initiation during sitting. *Perceptual Motor Skills* 99: 291–304.

Whiting HTA (1980) Dimensions of control in motor learning. In Stelmark GE, Requin J (Eds) Tutorials in motor behaviour. New York: North Holland, pp. 537–550.

Response

We thank Professors Shepherd and Carr for their letter and interest in our paper (Harvey et al 2011). We largely agree with their insightful comments and interpretation of the literature.

We have three brief comments in response to their discussion:

1. We should have clarified that by 'unsupported sitting' we were referring to sitting without trunk support. As Shepherd and Carr rightly point out, it is not possible to sit (or stand) without some sort of support.
2. We are aware that a couple of participants from the Sydney study site commented that the training was tedious, which may have prompted Professors Shepherd and Carr to question the structure of our training. That is, they questioned whether the training could have been better structured to make it less tedious for participants and hence more effective. We would challenge any therapist to achieve the same intensity of training for 6 weeks as we achieved for one specific motor task in this clientele without a couple of participants passing comment about the repetitious nature of the training. This is particularly so for this consecutive sample of predominantly 18 to 25 year old males admitted to a government-funded spinal unit. Our therapists were highly experienced in working with this clientele and set goals, progressed training, provided variety, and set up a motivating training environment appropriate for this age group.
3. In a parallel trial, we used exactly the same training strategy and demonstrated a treatment effect (Boswell-Ruys et al 2010). The only differences between the studies were that participants had chronic spinal cord injury and were not concurrently receiving training for functional activities. This prompted us to conclude that intensive and specific training for unsupported sitting (that is, without trunk support) in people with recent spinal cord injury is redundant if they are concurrently receiving intensive training for functional activities. We stand (or sit) by this conclusion.

Lisa A Harvey, Donna Ristev, Mohammad S Hossain, Mohommad A Hossain, Jocelyn L Bowden, Claire L Boswell-Ruys, Hohammad M Hossain and Marsha Ben

References

Boswell-Ruys CL et al (2010) *Spinal Cord* 48: 138–143.

Harvey LA et al (2011) *Journal of Physiotherapy* 57: 83–90.