Reply

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We are grateful to the Editors for giving us the opportunity to reply to the comments by David Sandberg on our paper [1]. First of all, we want to emphasise that our concern was to establish any QOL benefit of GH for *children with GH deficiency*. This focus distinguishes our work from most previous studies cited in the Commentary which have involved children who are small but do not have GH deficiency [2–5]. This distinction between children with GH deficiency and those who are small but do not have GH deficiency is critical. We completely share the concern of the Commentary about the prescription of GH for idiopathic short stature without data to support improved QOL. We fully endorse the use of prospective RCTs in this context and would not envisage difficulties in obtaining ethical approval to conduct such studies.

The situation for children who have GH deficiency is quite different. In these cases, it is important to be able to address parents' expectations as to any benefits of GH. In the particular case of children treated for malignancy, families have previously experienced lengthy and difficult treatment and do want reassurance that further interventions will be of value. There are clear metabolic benefits for this group. These children often have a relatively short window in which to complete their growth before their epiphyses fuse. Delaying treatment even for 6 months may increase the risk of long-term harm. In addition, these children have a range of problems including poor muscle tone, low energy levels or bone density. GH may be prescribed as much to address these problems as to improve height [6, 7].

It is especially for these reasons that our study focused on the effect of GH on QOL and not the effect of improved height on QOL. We very much support the assertion of the Commentary that QOL should be a central part of evaluation of GHT and may supplement growth/height as primary outcomes in ascertaining the efficacy of GHT.

Despite the methodological shortcomings of our study, we were able to report improved QOL at least for those treated for malignancies. The fact that these results contrast with the negative findings reported for those with id-

ioopathic short stature [3–5] suggest that implications of GH treatment for QOL will depend on the aetiology of the presenting condition, and inconsistencies in the literature are inevitable unless aetiology is taken into account.

These results make it more important to establish robust outcome studies in the area. Even so, careful consideration needs to be given to questions about measurement of QOL. Decisions about choice of measure, timing of assessments, and informant (parent or child) remain to be resolved. We hope our paper and the subsequent discussion will result in greater awareness of the methodological issues involved in this kind of work.

References

- 1 Sheppard L, Eiser C, Davies HA, Carney S, Clarke SA, Urquhart T, Ryder MJ, Stoner A, Wright NP, Butler G: The effects of growth hormone treatment on health-related quality of life in children. *Horm Res* 2006;65:243–249.
- 2 Sandberg DE: Health-related quality of life as a primary endpoint for growth hormone therapy. *Horm Res* 2006;65:250–252.
- 3 Ross JL, Sandberg DE, Rose SR, Leschek EW, Baron J, Chipman JJ, et al: Psychological adaptation in children with idiopathic short stature treated with growth hormone or placebo. *J Clin Endocrinol Metabol* 2004;89:4873–4878.
- 4 Downie AB, Mulligan J, McCaughey ES, Stratford RJ, Betts PR, Voss LD: Psychological response to growth hormone treatment in short normal children. *Arch Dis Childhood* 1996;75:32–35.
- 5 Theunissen NC, Kamp GA, Koopman HM, Zwinderman KA, Vogels T, Wit JM: Quality of life and self-esteem in children treated for idiopathic short stature. *J Pediatr* 2002;140:507–515.
- 6 Spoudeas H: Growth and endocrine function after chemotherapy and radiotherapy in childhood. *Eur J Cancer* 2002;38:1748–1759.
- 7 Sklar CA: Overview of the effects of cancer therapies: the nature, scale and breadth of the problem. *Acta Paediatr Suppl* 1999;88:1–4.

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