

It is really unfortunate that the manufacturers fail to mention the pH and ingredients on the label of baby shampoos to enable us to choose a good shampoo for the newborn. Consumer activation is essential to make a change.

The correct composition of vernix caseosa should read 9% lipids, 81% water and 10% proteins which makes a total of 100% (1).

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Effect of Backpack Weight on Postural Angles in Pre-adolescent Children: Can it Predict Long Term Morbidity?

We read the article on "Effect of backpack weight on postural angles in preadolescent children" by Ramprasad, *et al*(1) with interest. We appreciate the effort of the authors. We would like to raise certain points regarding the study.

1. A single time measurement after a backpack challenge would give an idea of postural compensation during that point in time. Changes in these angles are a measure of body's self regulatory response to stabilize the posture when challenged with back pack load(2). Once the backpack is removed, the angles come back to normal. So, the long term outcome cannot be predicted with this alone and conclusions cannot be drawn.
2. A better measure of predicting long term morbidity than the 'weight of backpack' is the 'duration of carriage'. Logically, longer duration of carriage can theoretically have an effect on the musculoskeletal system. Authors have not mentioned anywhere regarding the 'duration of carriage' and its effect on the angles and outcome.
3. Justification for choosing 'backpack weight in

relation to bodyweight' rather than absolute weight is not clear. The change in postural angles to backpacks are influenced by height rather than weight of a child. In an obese child, this would have led to a challenge with comparatively more heavy backpack and vice versa. Therefore, the values obtained are not comparable.

4. Malnutrition (both underweight and obesity) would have significantly altered the subcutaneous fat and would have influenced the values of angles.
5. The term 'back pain' is too nonspecific. The authors should have mentioned about the possible specific structures which could get injured with carrying back packs.
6. Authors have also mentioned that 'musculoskeletal problems associated with carrying heavy backpack'. They must clearly specify what 'problems' they mean with references.

Carrying backpacks have not been conclusively proven to cause any long term morbidity(3). Weight recommendations, carrying behaviors and outcome are not consistently correlated in any recent studies(4). Long term effects if any can be found by observing the 'backpack weight' and duration of carriage in long term prospective trials.

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Reply

We express thanks for the special interest and the questions raised pertaining to our article. With a cross-sectional design, our study explored the relationship between putative cause and effect i.e., backpack weight and postural angles in conveniently selected population. The population was stratified, excluded for larger measurement variability and represented homo-genous postural stability for a complex functional task (functional reach) than simple loading task measured in our study set-up. This reduces the impact of anthropometric confounding factors such as subcutaneous fat and height and their influence on postural angles in present study. Moreover good precision obtained in measured postural angles dictates good reproducibility with a valid ImageTool for the measurements taken.

To put clearly, data only on backpack weight and postural angles would not allow the role of duration of the carriage, predicting morbidity, or of other causes, to be explored.

Studies have reported that heavier backpack carriage in school children associated with fatigue symptoms(1), dorsal and low back pain(2), significant increase in disc compression and lumbar curvature(3), unable to recover from backpack

induced lumbar lordosis following the removal of the backpack load(4), shoulder, neck and back pain and combination of bodily pain(5). Contrary to above findings, studies have also reported no independent relationship between backpack use and back pain(6), and active form of carrying backpack may decrease the odds of getting neck and back pain(7). Some authors have suggested regular optimal spinal backpack loading for healthier back and they cautioned back pain in children should be viewed from a biopsychosocial behavioral model rather than pure mechanical model similar to adult back pain(8,9).

Various factors such as physical, mechanical, psychological, social, environmental, ergonomic, socioeconomic, anthropometric and demographic characteristics are need to be examined before predicting backpack related morbidity in this population.

Although more studies are needed to explore to find a causal link between backpack use and back and neck pain due to heavier backpack carriage, the major unanimous concern is an urgent need to conduct longitudinal and prospective studies so that various confounding factors associated with nonspecific low back pain in children can be explored.

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