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**This article is based on the Campbell Review:**

Ekeland E, Heian F, Hagen KB, Abbott J, Nordheim L: *Exercise to improve self-esteem in children and young people*. The Campbell Collaboration 2004. The review is also published in Cochrane Library.

*This article is written by the Nordic Campbell Centre. The article has been approved by the authors of the review.  
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## **Exercise improves self-esteem in children and young people**

*Exercise may improve self-esteem in children and young people. A systematic Campbell/Cochrane review indicates that at-risk children especially may benefit from physical exercise.*

### **Exercise may build self-esteem among adolescents**

At least 10 per cent of children and young people suffer from behavioural and psychological problems. The figures indicate that approximately one child in twenty needs psychological treatment. A number of studies suggest that physical activity has positive effects on depression, anxiety and behavioural problems in children and young people. In order to determine whether the beneficial effect of exercise can be linked directly with self-perception in children and young people researchers have reviewed the best studies in the field. On the basis of 23 international trials they sought to determine whether exercise has beneficial effects on self-esteem in children and young people aged 3-20.

The finding of the systematic review is that exercise has a short term positive effect on self-esteem in children and young people. However, documentation of any long-term effects is lacking. The researchers conclude nonetheless that physical activities may be an important measure in improving youth self-esteem, especially considering that exercise has no known negative effects but many positive effects on physical health.

The type of exercise addressed by the systematic review involves the so-called gross motor activities such as running, swimming, ball games, outdoor play and strength training. The review finds no indication that different activities produce different results. It therefore recommends no activities in preference to others.

### **Ideal for at-risk children and young people**

The researchers conclude that the positive effect on self-esteem appears to be greater in children and young people with learning and behavioural problems than in well-functioning youth. This is the case in measures where the physical exercise is just one element in a more comprehensive programme.

The researchers ascertain the difference between the two groups by comparing studies of children and young people with learning and behavioural difficulties with studies of normal children and young people. However, the majority of the studies included in the review belong to the normal group.

**Facts about the systematic review**

The systematic Campbell/Cochrane review has compiled the best studies evaluating the effect of physical activity on self-esteem in children and young people. By conducting an international literature search, the researchers have found 23 randomized controlled trials. The trials are primarily from the USA, but with a few from Canada, Nigeria and Australia.

The 23 studies are all based on children and young people aged 3-20. However, the studies are very different. There are differences in their participants, types of treatment programmes and not least, how they measure the effect of exercise. This makes it difficult to draw conclusions from across the studies. Besides, each of them is small-scale, representing a total of just 1,821 children and young people aged 3-20. Consequently, the researchers' conclusions are subject to a number of reservations.

The 23 studies are divided into two groups. One half concerns programmes dedicated to physical exercise. The other half involves exercise as part of a more comprehensive programme for children and young people. A common denominator in all the studies is that the physical activity component lasted for at least four weeks.

The effect of the physical activities is measured in relation to control groups. The control groups are offered no exercise programmes other than compulsory physical education in school. There has been no subsequent follow-up on the findings in any of the studies, which means it is not possible to comment on the long-term effect of the exercise programmes.

**Recommendations for future research**

The researchers' hesitant conclusions reflect the lack of research evaluating the effect of exercise on self-esteem in children and young people. They recommend further randomised controlled trials in this area. In addition, there is a need for follow-ups on exercise programmes in order to assess the potential long-term effects of the programmes on self-esteem in children and young people.