

**Motor skills in children are no longer influenced by the existence of congenital heart defect**

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**Introduction:** This study aims to compare sport motor skills of children with and without congenital heart defect (CHD). In addition, both the influence of sex and the severity of heart defect on motor skills were examined. Physical activity has cardiovascular, muscular, functional and psychological benefits on children with CHD. Without adequate exercise during childhood the patients can suffer from poor physical and mental health.

**Methods:** Sport motor skills of 205 children aged between 4 and 13 years were examined. 102 patients were divided into three groups depending on the severity of their heart defect (simple, moderate or great complexity). The remaining 103 healthy children served as control group. All children were tested in the areas of strength, speed, reaction time, mobility, coordination under time pressure, and balance. The test battery consisted of various parts of the German motor ability test, the Eurofit, "Motorik-Modul", "Kindergarten Mobil" and further tests using a pressure plate or the talent-diagnose-system.

**Results:** Sport motor performance of children with CHD cannot generally be classified as better or worse than the performance of healthy counterparts. Children with CHD dominated some reaction tests and sprint, while healthy children demonstrated their superiority in shoulder flexibility, coordination under time pressure, simple reaction and in the height of jump (all  $p < .05$ ).

Children with CHD revealed a consistent level of performance in nearly all tests regardless of the severity of their heart defect.

However, a gender-based analysis depending on health demonstrated worse performance results of girls with CHD compared to that of healthy girls, who dominated shoulder flexibility ( $p = .004$ ), simple reaction ( $p = .003$ ), jumping height ( $p < .001$ ) and jumping distance ( $p = .010$ ). Boys with CHD had the same performance level than their healthy controls. In fact, they were even better at sprint ( $p < .001$ ).

**Conclusion:** Nowadays, boys with CHD seem to have caught up on healthy boys and show normal motor skills. Girls with CHD, however, lack competence in certain motor skills. Thus, recommendation of an active lifestyle seems to show positive effects. Individualized intervention, however, should be focused especially on girls. The severity of heart defect appears to have no major additional influence.