

Strain, pain associated with low coordination kids

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Heart rate and blood lactate were significantly higher in the boys with developmental coordination disorder. Credit: John R Hofmann

Children with developmental coordination disorder (DCD) experience greater stress and strain on their bodies while running according to research by sports scientists.

In the research they also experienced greater sensitivity to pain both at rest and after exercise, than typically developing children.

DCD is a condition that involves marked impairment of a child's fine and gross motor skills, impacting upon their daily activities including participation in games and sport.

PhD student Esther Chia from UWA's School of Sport Science, Exercise and Health, was interested in investigating the underlying factors behind the poor running performance in children with DCD.

"It's been suggested that the inability to perform these skills well may lead to a decrease in participation in physical activity," Ms Chia says.

"However, it's also possible these children avoid participation in physical activity as they require more energy to run [than their peers].

"My study aimed to compare the oxygen required to produce energy to run at specific speeds in [boys](#) with and without DCD."

Thirty boys aged 7–10 years participated in the study; 14 boys with DCD were recruited from UWA's Unigym Program and matched in age, body mass and height with 16 controls recruited from the community.

The researchers analysed the oxygen consumption of both groups while running on a treadmill at 7.2km/hr, 8.0km/hr and 8.8km/hr for four minutes each.

Heart rate, blood lactate and salivary alpha amylase were also measured pre and post run, and a pressure threshold algometer was used to measure participants' pain threshold.

While there were no differences in the amount of oxygen required to run at the three speeds between the two groups, the other physiological measures – heart rate and blood lactate – were significantly higher in the boys with DCD.

"This suggests there is greater strain on the body, with a requirement for the heart to beat faster and more energy to be produced from the lactic acid energy system," Ms Chia says.

"In addition, the boys with DCD exhibited higher saliva alpha amylase activity in response to the faster running speeds, indicating they were experiencing higher stress levels in response to running.

"The boys with DCD were more sensitive to pain than their peers, both at rest and after exercise."

As this is the first study to provide evidence of higher [pain](#) sensitivity in this population, Ms Chia emphasises the importance of further research to explore how exercise may impact other aspects of sensory deficits in children with DCD.

More information: [www.sciencedirect.com/science/...
ii/S0891422213001273](http://www.sciencedirect.com/science/article/pii/S0891422213001273)

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