

Is Balance Predictive Of Independent Cycling in Preschool Children?

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Background

Cycling is a milestone for children. Learning to ride a bike is an acquired skill, often obtained with difficulty.

Fundamental movement skills (FMS) are generally developed in early childhood. Children have the developmental potential to progress to the mature stage of most FMS by the age of 6, at which point they are able to combine FMS to produce specialised skills in sports and recreational activities like cycling .

Balance, a subset of FMS, has often thought to be essential in cycling. However, there is no empirical evidence to support this statement.

Aim

To asses if balance at pre-intervention influences the ability to cycle independently at post-intervention in pre-school children.



Methods

72 preschool children (3.7 ± 0.5) were assessed pre and post a 5 week cycling intervention. The cycling intervention consisted of 10 sessions on a balance bike over 5 weeks.

Measures

Balance ability and FMS (Pre Intervention)

The Movement Assessment Battery for Children, second edition (MABC-2) was used to assess the children's Balance and other FMS.

Ability to cycle independently (Post Intervention)

If the child was able to cycle without assistance (tester holding onto bike) they were given a score of 1 and if they could not a score of 0.

Statistical Analysis

A linear regression was used to assess if balance (at pre-intervention) was able to predict if the children learnt to cycle independently after the intervention. Additional linear regressions were used to asses how additional FMS predicted cycling independently.

Results

Balance ability at pre-intervention did not predict if the children would cycling independently post intervention ($r^2 = .004$, $p > .05$).

Fine motor skill ($r^2 = .001$) and object control ($r^2 = .018$,) did not predict cycling independently ($p > .05$).

Discussion

The current results would suggest that the FMS skill of balance is not a contributing factor to learning to cycle.

This result, while in contrast to the general assumption, is not surprising as most children do not reach the mastery level of FMS until the age of 6. Therefore, between 3 and 5 years, when children generally learn to cycle, they may not yet be at the phase of refining FMS to produce sport specific skills.

It has recently been proposed to add cycling into the motor development model as a foundational movement skill alongside traditional FMS (Hulteen et al., 2018). The current results demonstrate that learning to cycle independently does not rely on high levels of balance or other FMS. Instead learning to cycle independently on a constrained bike (balance bike or training wheels) and subsequent independent cycling can occur simultaneously to mastery of FMS.

References

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