

Effects of Diapers on Infant Walking

Whitney G. Cole, Jesse M. Lingeman & Karen E. Adolph

wgcole@nyu.edu

New York University

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Background

- Child-rearing practices such as handling affect motor development
- Heavy clothing constrains motor development
- **What about diapers?**

Method

- 30 13-mo-olds & 30 19-mo-olds
- Walk 6 times in 3 conditions over GaitRite carpet



Naked Disposable Cloth

Typical Footprint Paths



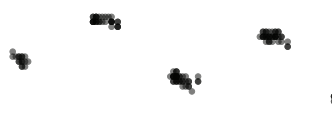
Naked



Disposable



Cloth



Disruptions

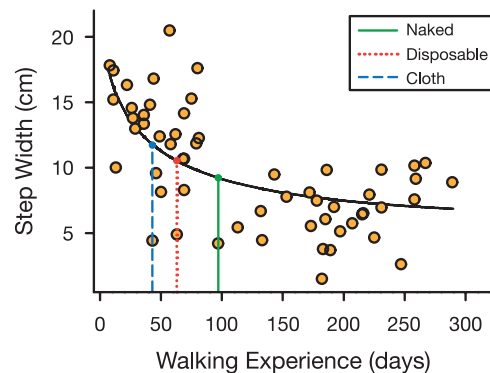
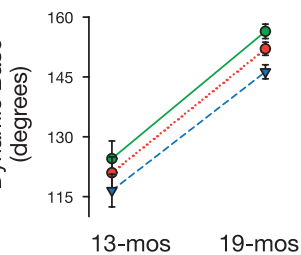
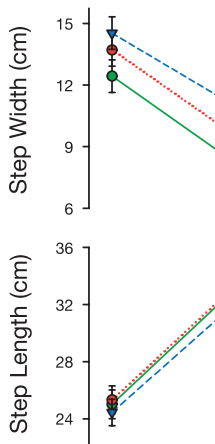
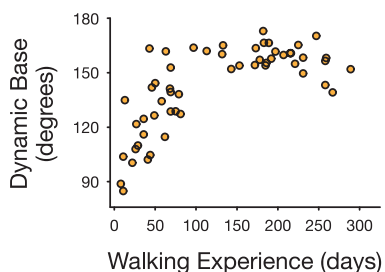
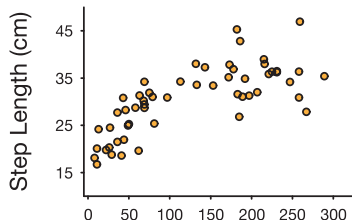
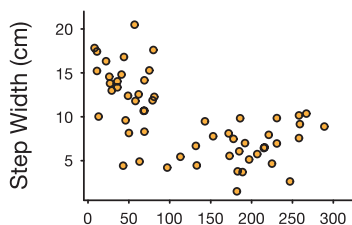
13-mos 19-mos

9% trials 2% trials

15% trials 2% trials

17% trials 5% trials

Gait Parameters



- Diapers increase step width
- Diapers decrease step length and dynamic base angle
- The cost of wearing a cloth diaper on step width is equivalent to losing 7.7 weeks of walking experience

Effects of Experience

Infants learn to walk in the context of a significant biomechanical perturbation.