Babies Gone Wild:
How Infant Power Mobility Could Change the Face of Rehab
Cole Galloway, PT, PhD, Infant Behavior Lab, Univ. of Delaware

APTA Student Conclave 2010
Mission:
That infants explore their world every day

infants explore their world every day

http://www.youtube.com/watch?v=8vNxjwt2AqY&feature=related

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Mission:

1) Stop what you are doing --- come work with me

2) Don’t take a job --- come work with me

3) If you take a job --- take one that lets you work with me

4) Challenge you on who you work for and how you conduct your work

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Reality

- Whose: not yours
- Where: not where you live, work, play
- How: not how you would do it
- Why: not for the reasons you think
- When: before you think you would

Blind spots
Opportunities

“If you had _____, what would you want you to focus on to study, assess, treat?”

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Why researchers shouldn’t ask clinical questions
Why clinicians shouldn’t make client goals.

1) Basic researcher is proxy for Clinical researcher

2) Clinical researcher is proxy for Clinical Professional

3) Clinical Professional is proxy for Family and Client
Set goals, assessment focus, intervention focus, followup
Physical Environment

Person

Social Environment

Each has inter dependent & independent aspects
Independent Mobility

‘Everything changes’

‘the good stuff’

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Mobility Impacts Early Life

- **Attention & ‘Cognition’**

- **Spatial awareness**

- **Visual perception and postural responses**

- **Social & emotional development**
  (Bertenthal & Campos, 1984; Bertenthal et al, 1984; Campos & Bertenthal, 1987; Uchiyama, et al, in press)

APTA Student Conclave 2010
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travel Broadens the Mind</strong></td>
<td>Joseph J. Campos; David I. Anderson; Marianne A. Barbu-Roth; Edward M. Hubbard; Matthew J. Hertenstein; David Witherington</td>
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<tr>
<td></td>
<td>Infancy, 1532-7078, Volume 1, Issue 2, 2000, Pages 149 – 219</td>
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<tr>
<td><strong>Motor Development</strong></td>
<td>Karen E. Adolph, Sarah E. Berger</td>
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</tbody>
</table>

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Why are we all waiting years to put young children into power mobility devices?
Barriers to early power mobility

1) Not smart enough to learn to drive
Barriers to early power mobility

2) Won’t follow adult commands

(i.e. Safety)
Think about this….

If we treated typically developing infants like we treat infants with immobility…..

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Barriers to early power mobility

3) No Device

4) Prevailing MYTH:

*Power mobility = one purpose, permanent option*

*Temporary*
*Advance Development*
*With locomotor Rx*

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Barriers to early power mobility

5) *Power mobility selected over walking*

1. Power mobility as tool
2. Increases options
3. Increases daily exploration

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Babies Driving Robots!
Since 2007: Moving at the speed of…..

FUNDING
• 2008-2010: National Science Foundation
• 2009-2011: NIH: NICHD
• 2009-2011: NIH NICHD ARRA Supplement

TECHNOLOGY TRANSFER
• Patents pending
• Business Plans
• Industry Interest

PUBLICATIONS
• LYNCH, A., AGRAWAL, S., GALLOWAY, JC (under review) The effect of enhanced mobility on development in typically developing infants. Child Development.
• RAGONESI C, CHEN X, AGRAWAL S, GALLOWAY JC Power Mobility and Socialization in Preschool 2: A Follow-up Case Study of a Child With Cerebral Palsy Pediatric Physical Therapy.

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A typical day of study 1

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Robot enhanced power mobility

Typical Training Day

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Mobile Robots: Bench side to Playground

6 months old: Indoor Robot Training

16 months old Playground 3:47, 10:42
Mobile robots in Education

Classroom

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Mobile Robots living with Families

Will & Family at Delaware Natural History Museum

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Mobile Robots living with Families

Riley 1

Riley 2

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Mobile Robots Intensive Training

Early Training  Late Training

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Don’t ‘give up on walking’

150-210 lbs
- Ramps
- Van
- Home Remodel

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Power Chair – Power Assist Walker

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Spread the word!
Kids are driving in Delaware!
Come, Visit, Work with Us

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