



Wilhelmina Children's Hospital

# Intra-individual Motor Trajectories of Very Preterm Born Infants through to Fifteen Months CA

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LNF, March 21<sup>st</sup> 2014



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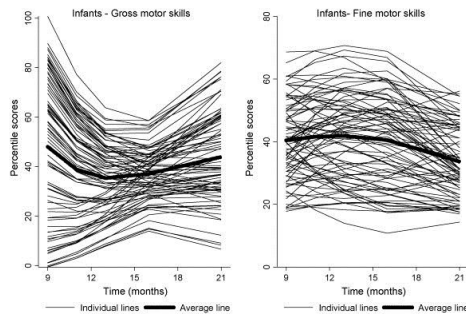
Prediction of gross motor development and independent walking in infants born very preterm using the Test of Infant Motor Performance and the Alberta Infant Motor Scale

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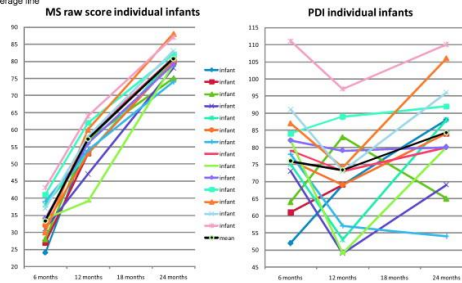
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## Background



Trajectories of serial motor scores of typically developing infants  
Darrah et al. 2009

Unstable longitudinal motor performance in preterm infants  
Janssen et al. 2011



## Participants

Inclusion:

[between 2009-2011]

- Admission WKZ within 1 wk PP
- GA <30.0 wk or BW <1000 grs



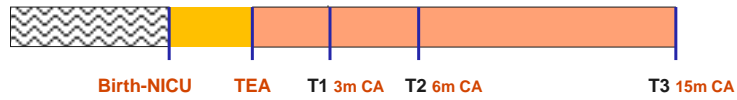
Exclusion:

Congenital or serious neurological conditions



## Method

Time line



Included: n=112 (53.6% boys)  
 Mean GA (SD) = 28 (1.57) wks  
 Mean BW (SD) = 1064 (241) grs

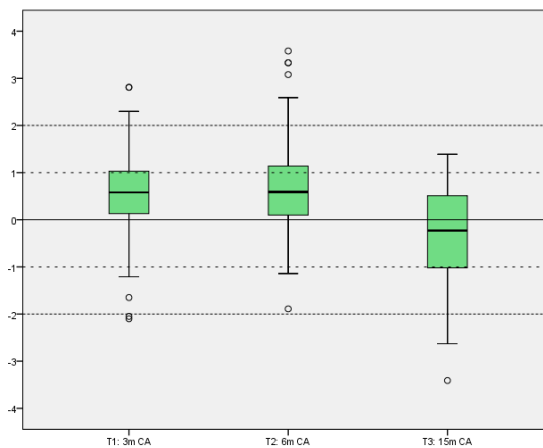
Excluded: n=17 abnormal medical condition

Alberta Infant Motor Scale (AIMS); single construct: Gross motor maturity;  
 Preterm norm values (van Haastert et al. 2005)



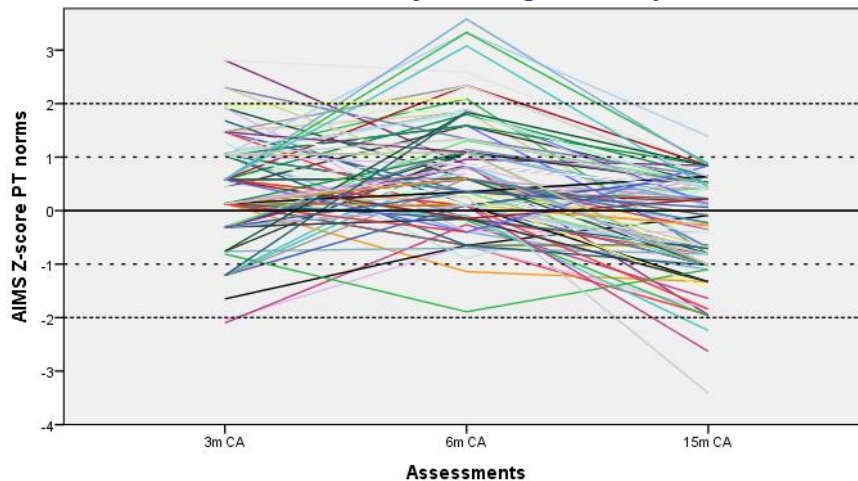
## Results Group level

Z-scores AIMS (PT norms) within-group cross-sectional



## Results Individual level

Z-scores AIMS within-subject longitudinally



## Results Mean differences and model

Within-subject differences in AIMS Z-scores over time (paired T-test)

Interval	Mean difference	95% CI	SD	Min.	Max.
T2-T1	0.21	-0.009 to +0.436	1.126	-2.32	3.00
T3-T1	-0.75*	-0.986 to -0.511	1.201	-4.76	1.85
T3-T2	-0.96*	-1.148 to -0.776	0.942	-3.67	1.32

\*P<0,05

**Best fit: Linear mixed effects model ARH(1)**

→ Correlation T1-T3 < dan T1-T2 en T2-T3



## Conclusion

- The value of early prediction of gross motor developmental problems is restricted due to within-subject variability.
- The variability in intra-individual gross motor trajectories advocates a developmental surveillance during a neonatal follow-up program to determine the need of early intervention, instead of decisions on single point assessment



## Future research



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