OBJECTIVE
• To test whether low attained height is due to episodes of faltering and interrupted growth trajectories, as opposed to continuously slower growth every month, among at-risk children in rural Burkina Faso.

METHODS
• We collected monthly length data from 5,039 children aged 6-27 months during a food aid trial from August 2014 to December 2016.
• We estimated the smoothness of each child’s growth along their own individual trajectory using the R² of a spline regression of length on age.
• We examined the significance of smoothness for attained height by regressing height at 27 months on the R² of each child’s trajectory, then adding in growth curve parameters of child’s initial length and velocity in each age range up to 27 months.

RESULTS
• Growth faltering manifests as both episodes of interrupted growth and also continuously lower growth velocity.
• Attained height at 27 months is most sensitive to velocity in the 9–11 month period, but initial length at 6 months and velocity in all periods are significant, as is the smoothness of growth from month to month.
• Low attained height in this setting is only partly due to episodic growth; as such intervention must target underlying conditions that reduce growth velocity continuously in every month.