Period-specific growth, overweight and modification by breastfeeding in the GINI and LISA birth cohorts up to age 6 years.

Children's weight/growth development is age-specific and may be influenced by breastfeeding. We therefore assessed velocities of weight, length, body-mass-index and overweight/obesity development from birth up to age 6 years overall and in relation to breastfeeding. The method of this study is based on pooled data of the birth-cohorts GINI-plus and LISA-plus and follows 7,643 healthy full-term neonates in four study-centers in Germany. Up to nine anthropometric measurements are available. Overweight/obesity is percentile-defined according to WHO-Child-Growth-Standards. Fully-breastfed is defined as breastfed for at least 4 months. Piecewise-linear -random-coefficient-models were applied to assess growth trajectories and velocities between 0-3, 3-6, 6-12, 12-24 and beyond 24th months. Velocities for weight-, length- and BMI-development are highest in the first 3 months after birth and diminish, with differing pace, in the periods that follow. For overweight and obesity, peak-velocities are estimated in periods 6-12 and 3-6 months. The difference in the velocity of weight gain for breastfed vs. other children is -18 g/month in the first 3 month, -93 g/month between month 3 and 6, -14 g/month between month 6 and 12 and -3 g/month beyond the 24th month. Velocities in length are not different.
between breastfed and non-breastfed children. Over time, a slightly lower risk (difference < 2%) of being overweight was estimated for breastfed children, after adjustment for study-center, socio-economic-status and maternal smoking in pregnancy. Infants fully-breastfed gain less weight, but grow equally in length in the first 12 months of life versus mixed or formula-fed children. The protective effect of breastfeeding on becoming overweight is related to its weight-velocity-modifying-effect in early infancy.