Background and Aims Epidemiological studies suggest that breastfeeding could be beneficial for child cognitive development, but pathways involved remain to be elucidated. We aimed to investigate the potential role of breast milk content in polyunsaturated fatty acids (PUFAs), by studying their associations with later cognitive development.

Methods We analyzed lipid contents of colostrum samples collected from 613 breastfeeding mothers of the EDEN mother-child cohort. Cognitive development at 3 years was assessed with the Ages and Stages Questionnaire (ASQ, score between 0 and 300). We investigated associations between colostrum PUFAs and ASQ score using multiple linear regressions adjusted for centre, child’s age, gender and gestational age, maternal tobacco and alcohol consumptions, parental education, siblings, caregivers, preschool attendance and exclusive breastfeeding duration.

Results Mean ASQ score was 274.2 (±25.1). Total PUFAs and n-6 PUFAs means were respectively 14.3% (±2.0) and 12.1% (±1.9) of total lipids in colostrum. Mean n-6/n-3 ratio was 5.7 (±1.3). After adjustment, ASQ score was negatively associated with total PUFAs (β= –1.8 [-2.8, –0.8]), n-6 PUFAs (β= -1.95 [-3.0, –0.9]) and n-6/n-3 ratio (β= –1.7 [-3.3, –0.2]). No association was found with n-3 PUFAs. Associations did not differ according to breastfeeding duration (Pinteraction >0.57).

Conclusions After adjustment for confounders, especially maternal education, colostrum content in n-6 PUFAs was negatively associated with child cognitive development, independently of exclusive breastfeeding duration. These results suggest that n-6 PUFAs provided in excess might compete with n-3 PUFAs biosynthesis necessary for early brain maturation and impact negatively on later cognitive development.

Aim To evaluate the efficacy of an intervention with day care providers on volume and intensity of PA, motor skill development, and body mass index (BMI) in 3–5 year old children attending daycares.

Methods A randomized controlled trial comparing children (n=40) whose daycare providers received intervention designed to promote PA versus children (n=43) whose providers implemented the normal preschool curriculum. Intervention included two, 3-hour workshops plus 12 bi-monthly “booster” sessions. Children were assessed at baseline and 3-months, with a plan to collect data at 6-months. PA was measured objectively using accelerometry. Motor skills were measured using the Test of Gross Motor Development-2. BMI was assessed by measured heights and weights (kg/metres²).

Results Compared to controls, the intervention produced greater increases in mean steps/day (–83 vs +1,185, p<0.01), gross motor percentile scores (+6 vs +16, p<0.05) and reductions in BMI (+.21 vs –0.22, p<0.01) at 3-months but not moderate to vigorous PA (MVPA).

Conclusions Intervening with daycare providers may be an efficacious method of increasing preschoolers’ volume of PA, promoting motor skill development that is critical to PA and sport participation later in life, and reducing adiposity.