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1 **Effects of maternal omega-3 fatty acids supplementation during**
2 **pregnancy/lactation on body composition of the offspring: a**
3 **systematic review and meta-analysis**

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12 **Abstract:**

13 Background and aims: The effect of maternal omega-3 fatty acids intake on the body composition
14 of the offspring is unclear. The aim of this study was to conduct a systematic review and
15 meta-analysis to confirm the effects of omega-3 fatty acids supplementation during pregnancy
16 and/or lactation on body weight, body length, body mass index (BMI), waist circumference, fat
17 mass and sum of skinfold thicknesses of offspring.

18 Methods: Human intervention studies were selected by a systematic search of PubMed, Web of
19 Science, the Cochrane Library and references of related reviews and studies. Randomized
20 controlled trials of maternal omega-3 fatty acids intake during pregnancy or lactation for offspring's
21 growth were included. The data were analysed with RevMan 5.3 and Stata 12.0. Effect sizes were
22 presented as weighted mean differences (WMD) or standardized mean difference (SMD) with 95%
23 confidence intervals (95% CI).

24 Results: Twenty-six studies comprising 10970 participants were included. Significant increases
25 were found in birth weight (WMD=42.55 g, 95% CI: 21.25, 63.85) and waist circumference
26 (WMD=0.35 cm, 95% CI: 0.04, 0.67) in the omega-3 fatty acids group. There were no effects on
27 birth length (WMD=0.09cm, 95% CI: -0.03, 0.21), postnatal length (WMD=0.13cm, 95% CI: -0.11,
28 0.36), postnatal weight (WMD=0.04kg, 95% CI: -0.07, 0.14), BMI (WMD=0.09, 95% CI: -0.05,

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