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(Accepted: 2017) Maternal fatty fish intake prior to and during pregnancy and risk of adverse birth outcomes: findings from a low risk British birth cohort. In: 30th SPER Annual Meeting, 19-20 Jun 2017, Seattle, Washington.

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This is an author produced abstract of a presentation delivered at SPER 2017 - Seattle, WA. Available in its published format online;  
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## CARE Fish abstract

Maternal fatty fish intake prior to and during pregnancy and risk of adverse birth outcomes: findings from a low risk British birth cohort

Nykjaer, C, Higgs, C, Cade, JE, Greenwood, DC, Simpson, NAB and Alwan, NA

### Background

Essential fatty acids are vital for fetal growth and development. Fish, in particular fatty fish, are important sources of essential fatty acids. This study aimed to investigate the association between fatty fish consumption before and during pregnancy with preterm birth and size at birth in a British prospective cohort of 1,208 low risk pregnant women aged 18-45 years.

### Methods

Preconception and trimester-specific fatty fish consumption was assessed using self-reported frequency questionnaires. Additional dietary data from multiple 24 hour recalls during pregnancy were used to estimate an average fatty fish portion size. Intake was classified as  $\leq 2$  portions/week and  $>2$  portions/week with a no fish category as referent. This was related to size at birth and preterm delivery ( $<37$  weeks gestation), adjusting for known confounders including salivary cotinine as a biomarker of smoking status.

### Results

Over 40% of women reported no fatty fish consumption prior to and throughout pregnancy. Mean intakes were considerably lower than the recommended two portions/week, with the lowest intake observed in the 1st trimester (106 g/week, 95% CI: 98.9, 112.9). In univariable analysis, compared to mothers consuming no fatty fish in trimester 1, mothers consuming up to 2 portions of fatty fish/week as well as  $>2$  portions/week had lower odds of having babies born preterm (odds ratio (OR): 0.5, 95% CI: 0.3, 1.0 & OR: 0.3, 95% CI: 0.1, 1.1 respectively,  $P_{trend}$ : 0.05). This association however was attenuated in adjusted analysis (OR: 0.6, 95% CI: 0.3, 1.3 & OR: 0.3, 95% CI: 0.1, 1.3 respectively,  $P_{trend}$ : 0.2). No association was observed between intakes of fatty fish before or during pregnancy with size at birth.

### Conclusion

There was a low prevalence of fish consumption in this inner-city UK population. Consumption of fatty fish prior to and/or during pregnancy did not influence birth weight or gestational length, when taking into account known confounders.