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## A study of early weaning determinants in Ireland based on a cross-sectional analysis of the Growing Up in Ireland infant cohort. The role of maternal Body Mass Index and formula feeding commencement on early weaning

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The introduction of solids into an infant’s diet is an important process not only for development and growth reasons but also because of its potential long term effects on health. Early complimentary feeding has been shown to increase the risk of overweight, obesity and chronic diseases later in life<sup>(1–3)</sup>. The new Infant Feeding Guidelines released by the Food Safety Authority of Ireland (FSAI) in November 2012 advise commencing weaning near 6 months of age following World Health Organization (WHO) recommendations. Poor compliance with guidelines has been reported by Irish studies<sup>(4)</sup>. The identification of predictors of early weaning will enable us to identify those groups in greater need of dietary intervention as well as help health professionals to provide effective advice.

The aim of this study is therefore to explore the predictors of early weaning by studying cross-sectional patterns in the first wave of the national longitudinal study Growing Up in Ireland (GUI) infant cohort. Several independent variables were analyzed using cross-tabulations and  $\chi^2$  statistical test as well as multivariate binary logistic regression.

	Total		Weaning Age*				Unadjusted <sup>b</sup>	Adjusted <sup>c</sup>	95% CI		p	
	n	%	<17 weeks		≥17 weeks				OR	p		OR
			n	%	n	%						
<b>Characteristics Maternal BMI (kg/m<sup>2</sup>)</b>												
Underweight <18.5	278	2.5	33	11.9	246	88.1	0.924	0.702		0.47	1.049	0.085
Healthy range 18.5–25	5288	48.5	629	12.8	4694	87.2	1.0 <sup>d</sup>	1.0 <sup>d</sup>				
Overweight >25	3064	28.1	431	14.3	2619	85.7	1.138	1.154	1.006	1.322	0.04	
Obese >30	1730	15.9	297	18.5	1372	81.5	1.549	1.379	1.18	1.613	<0.001	
Not reported	546	5	79	15.8	468	84.2	1.267	<0.001	1.173	0.895	1.537	0.246
<b>Formula feeding commencement</b>												
<2	8350	76.6	1335	16.7	6640	83.3	1.0 <sup>d</sup>	1.0 <sup>d</sup>				
2–4 months	1001	9.2	88	8.2	988	91.8	0.451	0.607	0.473	0.779	<0.001	
>4 months	1206	11.1	29	2.1	1382	97.9	0.091	0.116	0.072	0.186	<0.001	
Not reported	349	3.2	17	4.2	389	95.8	0.22	<0.001	0.343	0.201	0.586	<0.001

\*Bivariate analysis is using  $\chi^2$  statistical tests to compare maternal BMI and Formula Feeding Commencement in the <17 weeks and ≥17 weeks groups.

OR denotes Odds Ratio. CI denotes Confidence Interval.

<sup>b</sup>Values are OR that were obtained from individual bivariate analysis of independent variables when compared to the <17 weeks and ≥17 weeks groups.

<sup>c</sup>Values are OR obtained from the final binary logistic regression model.

1.0<sup>d</sup> denotes the reference group.

Maternal Body Mass Index (BMI) and timing of Formula feeding commencement resulted as strong predictors of early weaning in the unadjusted and adjusted models ( $p < 0.001$ ) respectively. The relationship between maternal BMI and early weaning disappeared when bivariate analysis was carried out controlling for formula feeding commencement ( $p < 0.001$ ; data not shown). Overweight and obese women have been found to be at higher risk of early breastfeeding termination<sup>(5,6)</sup>. Therefore, being overweight or obese could potentially be a confounder in the relationship between formula feeding commencement and early weaning.

It can be concluded that not only is high social support for overweight and obese women with new-born infants needed, but that the promotion of a healthy weight among women in their reproductive years is also pivotal.

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