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Habitual Calcium and Vitamin D Intakes in Pregnant Irish Women; Preliminary Data from the DMAT Randomised Controlled Trial

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During pregnancy, calcium and vitamin D are transported from the mother to the fetus, contributing to the mineralisation of the fetal skeleton and neonatal vitamin D status. The dietary requirements for calcium and vitamin D in non-pregnant adults have been extended to pregnancy, on the basis of insufficient evidence to support pregnancy-specific values[(1)]. However, calcium and vitamin D intakes are low in Irish women[(2)] and there is currently no recommendation for supplementation of these nutrients during pregnancy in Ireland. The aim of this study was to describe the habitual calcium and vitamin D intakes among pregnant women in Ireland using data collected from women participating in the *DMAT* randomised controlled trial (RCT) [Nutritional Requirements for Vitamin D in Pregnant Women (DMAT), NCT02506439].

Participants ($n = 100$) were healthy Caucasian women who were having a low-risk pregnancy and receiving antenatal care at the Cork University Maternity Hospital. Dietary vitamin D and calcium intakes were assessed at baseline (⩽18 weeks gestation) using a quantitative food frequency questionnaire[(3)]. Mean ± SD total calcium intake was 1227 ± 491 mg/d, and 26 % of women consumed calcium in supplemental form (dose range = 22–500 mg/d). Mean ± SD total vitamin D intake was 10·8 ± 5·3 μg/d. Sixty-eight percent of women reported taking a vitamin D-containing supplement (dose range = 2·1–10 μg/d).

Table 1. Sources of vitamin D and their contribution to total vitamin D intake

	Mean Intake (μg/d)		% Contribution to Total Vitamin D Intake	
	Users	Non-users	Users	Non-users
Meat	0·9	1·1	7·1	25·3
Eggs	0·9	1·0	6·7	23·6
Fish	0·8	1·0	5·6	19·3
Breakfast cereals	0·5	0·5	3·6	11·5
Milk	0·9	0·9	5·7	10·5
Supplements	9·0	0	68	0

The prevalence of antenatal multivitamin use was high in this sample and was the major contributor to overall vitamin D intake. Among women not consuming a vitamin D-containing supplement, mean daily intakes were approximately half the current EAR (4·9 ± 3·4 μg/d). These findings highlight the current importance of nutritional supplements to meeting dietary requirements for vitamin D in pregnancy. These data will contribute to analysis of the dose response of 25(OH)D to total vitamin D intake in the *DMAT* RCT, which aims to inform vitamin D requirements during pregnancy and the neonatal period, and will report in full during winter 2016.

1. Institute of Medicine (2011) *Dietary reference intakes for calcium and vitamin D*
2. Irish University Nutrition Alliance (2011) National Adult Nutrition Survey
3. Kiely M, Collins A, Lucey AJ *et al.* (2016) J Hum Nutr Diet