Since 2005, the Maternal and Fetal Health Research Group (MFHRG), led by Professor Fionnuala McAuliffe, has been internationally recognised for its research in prenatal diagnosis and prenatal ultrasound, diabetes and nutrition in pregnancy.

The MFHRG, based at the National Maternity Hospital, Holles St, coordinates national and international collaborative research into maternal nutrition and diabetes and its effects on adverse pregnancy and neonatal outcomes. The group comprises researchers with backgrounds ranging from clinical obstetrics, paediatrics, and dietetics to economics. All of this research has been funded by grants from the Health Research Board (HRB), National Maternity Hospital, Holles St, and European Union.

In September 2012, results from the ‘Low glycaemic index diet in pregnancy to prevent macrosomia (ROLO)’ study were published in the British Medical Journal. This was a large RCT of 800 women which assessed whether the implementation of a low GI diet in pregnancy reduced the incidence of macrosomia. Whilst this diet had no effect on birthweight, it had a positive effect on maternal gestational weight gain and glucose intolerance. Achievements of the ROLO study were recognized in February 2012 with first prize at the 33rd annual meeting of the Society of Maternal and Fetal Medicine held in San Francisco.

The ROLO kids study is a longitudinal follow-up study to the original ROLO randomised control trial. Mothers and children from the ROLO study are being followed up at 6 months, 2 years and 5 years of age in order to determine whether maternal nutrition/low GI diet in pregnancy had an effect on childhood weight or adiposity but also to study the growth and development of a cohort of Irish children and the effect of environment on growth and adiposity. Anthropometry, lifestyle and eating habits are being examined.

Women with a BMI of greater than 25 kg/m2 have a higher risk of developing Gestational Diabetes. A low glycaemic index diet in pregnancy has shown to lower glucose intolerance. As a natural progression from the ROLO study, the Pregnancy Exercise and Nutrition research study (PEARS) was designed to assess the impact of a low glycaemic index (GI) dietary and exercise intervention compared to regular lifestyle on the incidence of gestational diabetes at 29 weeks in an overweight and obese pregnant population. This is a randomized controlled trial of 500 women of which recruitment is ongoing.

The Probiotics in Pregnancy (ProP) study is a double-blind, placebo-controlled randomised trial which is investigating the effects of a probiotic capsule intervention on maternal fasting glucose and other indices of maternal metabolism including insulin, c-peptide, lipids and CRP. There are two separate cohorts of pregnant women: 1. obese women who receive the intervention prior to screening for gestational diabetes (GDM); 2. women diagnosed with GDM. Recruitment and follow-up of the obese cohort is now complete (N=138) and publication of results are pending. Recruitment of the GDM cohort is ongoing with a target of 100 women.

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Grants:

Title: ROLCO kids
Funder: European Union FP7-2007-2013 Call for Proposals
Start/End Dates: Feb 2012 - Feb 2017
Amount: €1,563,500 across 30 Consortium members, PI McAuliffe portion €165,500
Title: Heart function in offspring of Diabetic mothers
Funder: UCD College of Life Sciences
Start/End Dates: 01-JUL-05 / 30-JUN-15
Amount: €13,000
Title: Randomised control trial of low glycaemic index diet to prevent macrosomia.
Funder: HRP
Start/End Dates: 2008-2014
Amount: €188,500
Title: Health Research Centre for diet, nutrition and diabetes. Total €490,000, PI McAuliffe portion €187,500
Start/End Dates: 2011-2014
Amount: €360,000
Title: Metabolic profiles in women at risk of macrosomia
Funder: National Maternity Hospital Medical Fund
Start/End Dates: 2011-2012
Amount: €16,000
Title: Pregnancy exercise and nutrition research study – smart phone app development
Funder: Atlantic Philanthropies
Start/End Dates: 2012
Amount: €41,000
Title: Economics of childbirth
Funder: National Maternity Hospital Medical Fund
Start/End Dates: 2012-2013
Amount: €23,000
Title: Probiotics in pregnancy, a randomised control trial PROPs
Funder: National Maternity Hospital Medical Fund
Start/End Dates: 2012-2013
Amount: €70,000
Title: Does promoting increased awareness of decreased fetal movements prevent stillbirth?
Funder: Chief Scientist Office, Scottish Government Health Directorates, Scotland
Start/End Dates: 2012-2015
Amount: £23,000, Fiona McAuliffe co-applicant

Publications:


30. Unterscheider J, Geary MF, Daly S, McAuliffe FM, Kennelly MM, Dorman J.


