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level education. Average HP index was 5.78 (moderate income level). Average activity level was 440 METs. 27% had low well-being, with 59% being the average score. Results of the regression analysis showed the following to have significant effect on well-being: fibre ($B = 0.074$, $p=0.018$), Magnesium ($B=0.084$, $p=0.009$), Niacin ($B=0.092$, $p=0.004$), thiamine ($B=0.073$, $p=0.018$) and folate ($b=0.077$, $p=0.024$).

CONCLUSION: Nutrition and well-being appear to be related in early pregnancy, and may play a key role in creating a favourable in utero environment. The findings support research on the gut-brain axis demonstrating fibre can modulate gut microbial health, a determinant of well-being. Fibre and Magnesium are principle nutrients in both the DASH and Mediterranean diets, which have can improve mental health. These data suggest nutritional intervention strategies may improve mental and physical health in mothers which may in turn benefit offspring.

437 Maternal inflammation, maternal and fetal metabolism, pregnancy outcomes and an antenatal healthy lifestyle intervention



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OBJECTIVE: Elevated maternal inflammatory markers have been linked with adverse pregnancy outcomes. Lifestyle interventions may hold potential to ameliorate these effects. In this secondary analysis of the Pregnancy Exercise And nutrition Research study (PEARs), we investigated the effect of an antenatal healthy lifestyle intervention on maternal Complement 3 (C3) and C-Reactive Protein (CRP) concentrations and assessed their relationship with pregnancy outcomes and maternal and fetal metabolism.

STUDY DESIGN: $n=406$ women with available C3 and CRP concentrations determined in early pregnancy (14-6 weeks) and/or late pregnancy (28-weeks) with corresponding glucose, insulin, c-peptide, Homeostatic Model Assessment of Insulin Resistance (HOMA2-IR) and lipid profiles were included in the analysis. Pregnancy outcomes included: diagnoses of gestational diabetes (GDM), pre-eclampsia (PET) or pregnancy induced hypertension (PIH), pre-term birth (delivery < 37 weeks), low birth weight defined as birth weight $< 2500g$, intra-uterine growth restriction (IUGR) defined as estimated fetal weight (EFW) < 10 th centile and cord blood measures of glucose and lipid metabolism.

RESULTS: There were no differences in maternal C3 or CRP concentrations between study groups, or based on diagnosis of PET, PIH or GDM. Maternal C3 was higher in those who experienced pre-term birth ($p=0.04$) or delivered a low birth weight infant ($p=0.02$). In early pregnancy, maternal C3 was a small but significant predictor of maternal insulin ($\beta = 0.021$, $p= 0.03$) and total cholesterol ($\beta = 0.005$, $p= 0.026$) and LDL-C cholesterol in late pregnancy ($\beta = 0.01$, $p= 0.003$). Maternal C3 concentration in late pregnancy was a small but significant predictor or insulin ($\beta = 0.043$, $p= 0.014$) and insulin resistance ($\beta = 0.007$, $p= 0.002$) in late pregnancy. No relationship between maternal C3 or CRP and fetal glucose or lipids were observed

CONCLUSION: Higher maternal C3 concentration was associated with maternal insulin resistance and un-favourable lipid profile. Levels of

maternal C3 were higher in those who experienced pre-term birth or low birth weight.

438 Pregnant smokers' confidence in quitting is related to their level of nicotine addiction



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OBJECTIVE: Cigarette smoking in pregnancy negatively impacts maternal and fetal health. Smoking cessation improves pregnancy outcomes, but rates of successful cessation remain low. We investigated the links between socioeconomic factors, depression scores, nicotine addiction measured via Fagerström score with confidence in quitting smoking and motivation to quit.

STUDY DESIGN: This is a study within a trial, conducted within the Smoking cessation Through Optimisation of clinical care in Pregnancy (STOP) pragmatic randomised controlled trial. This is an RCT of the use of a dedicated smoking cessation antenatal clinic. At time of randomisation, current smokers complete an extensive behavioural questionnaire which forms the basis for this analysis. Groups were compared using Kendall rank correlation coefficient and ordered logistic regression.

RESULTS: 436 women were randomised to the trial, of which 275 completed the behavioural questionnaire appropriately. There is a significant inverse relationship between confidence in quitting and Fagerström score, $\tau b = -0.39$, $p < 0.01$, suggesting that greater addiction to nicotine is associated with less confidence in quitting. There was no correlation with motivation to quit. On an ordered logistic regression analysis, confidence in quitting correlates with spend per week on tobacco, having smoked in a previous pregnancy, and educational level achieved. There was no correlation between depression scores and either confidence or motivation to quit.

CONCLUSION: Women who are more addicted to nicotine are less confident in quitting, however they remain motivated to quit. Their confidence in quitting is also affected by their education level and having smoked in a previous pregnancy, but not by depression. This information can help in targeting future clinical trials in smoking cessation for pregnant women.

439 Health-related quality of life and quality of care in perinatal women during the COVID-19 pandemic



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OBJECTIVE: The physical, psychological and emotional toll of the COVID-19 pandemic is as of yet unknown. With rising incidence of cases and the threat of resurgence the impact of COVID-19 has been felt worldwide, in particular among vulnerable and high-risk cohorts such as pregnant women. We aimed to conduct a prospective case-control study to compare self-reported health related quality of life (HRQoL) and quality of care (QoC) received between pregnant and postnatal women during the COVID-19 pandemic at an Irish tertiary maternity unit.

STUDY DESIGN: 18 perinatal women who tested positive for SARS-CoV-2 and 20 asymptomatic control perinatal women were recruited. Demographic characteristics were collected and all participants completed the Short Form (SF-12), Clinical Outcomes in Routine Evaluation-Outcome Measure (CORE-OM) and Quality

from the Patient's Perspective (QPP). Pregnant women, ≥ 18 years of age, with capacity, who spoke English, and attended the tertiary unit during the pandemic were eligible for inclusion in the study. Main outcome measures of the study were physical and mental function, psychological distress, HRQoL and QoC. Mean scores in both cohorts were compared.

RESULTS: 95% of the Non-COVID cohort were Caucasian, while 67% of the pregnant women who had COVID-19 were not Caucasian ($\chi^2=16.01$, $p<0.0001$). The mean SF-12 for physical health and functionality in the COVID cohort had significantly lower scores (36.54 vs 49.21, 95% CI [6.9 to 20.2], $p<0.0002$). There was no difference in mental health and wellbeing scores between the COVID and Non-COVID cohorts. The QoC experienced by both cohorts was similar and very positive.

CONCLUSION: Among pregnant women who tested positive for COVID-19, there was a significant greater burden on the women's physical health. Mental health and psychological status was similar in both groups. High quality of care during a pandemic is possible to deliver in a maternity setting, irrespective of the patient's COVID status.

Table 1. Patient demographics by COVID and Non-COVID cohort, with chi-squared analysis of relation, using a significance level of 0.05. Age was analysed by a comparison of the mean using t-test. Significance of $p<0.0001$, $\chi^2=16.01$ was seen between cohorts for ethnicity. Key: COVID – Coronavirus Disease 2019.

Demographics	Non-COVID	COVID	
Number (n)	20	18	
Age mean, (SD)	32.6 (7.6)	31.3 (5.542)	$p = 0.583$
Ethnicity (n)			
Caucasian	19	6	$p<0.0001^{***}$ $\chi^2 = 16.01$
Other	1	12	
Parity (n)			
Primigravida	4	6	$p = 0.351$ $\chi^2 = 0.868$
Multiparous	16	12	
Marital Status (n)			
Single	1	3	$p = 0.162$ $\chi^2 = 5.123$
Married	7	11	
Partnership/Co-habiting	11	4	
Divorced/Widowed	1	0	
Education (n)			
None	0	1	$p = 0.858$ $\chi^2 = 0.305$
Secondary Level	5	3	
Higher Level	15	14	
Income (n)			
Comfortable	11	10	$p = 0.989$ $\chi^2 = 0.022$
Coping	8	8	
Difficult	1	0	
General Health (n)			
Very good	15	15	$p = 0.529$ $\chi^2 = 0.395$
Good	5	3	
Bad	0	0	

Table 3. Mean (\pm SD) results for QPP Questionnaire in COVID and Non-COVID women, analysis by parametric comparison of the means using unpaired t-tests. Scores range from 1 to 4, with 4 (very good) being the highest rating for the quality of care received. QPP = Quality from the Patient's Perspective questionnaire.

Quality from the Patient's Perspective (QPP)	Non-COVID	COVID	
QPP Medical Technical Competence mean, (SD)	3.63 (0.52)	3.72 (0.56)	$p = 0.582$
QPP Physical Technical Conditions mean, (SD)	3.4 (0.71)	4.00 (0.69)	$p<0.0037^{***}$
QPP Identity Oriented Approach mean, (SD)	3.66 (0.41)	3.69 (0.46)	$p = 0.846$
QPP Socio Cultural Atmosphere mean, (SD)	4.00 (0.38)	3.98 (0.43)	$p = 0.806$
QPP Total Patient Satisfaction Score mean, (SD)	3.67 (0.37)	3.87 (0.39)	$p = 0.804$

440 Determining the survival rates of very preterm infants with absent or reversed end diastolic flow

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OBJECTIVE: To determine the survival rates of infants diagnosed with abnormal umbilical artery doppler and delivered prior to 28+6 weeks gestation

STUDY DESIGN: This was a retrospective review of singleton pregnancies with absent end diastolic flow (AEDF) or reversed end diastolic flow (REDF) on umbilical artery dopplers (UAD), which was diagnosed between 24+0 and 28+6 weeks gestation, from January 2016 through July 2020 in a large Irish tertiary center. Data was analyzed and compared across two clinical groups; 1. Infants delivered <27+0 weeks' gestation and 2. Infants delivered from 27+0 to 28+6 weeks. Statistical analysis was performed using the Chi Square Test.

RESULTS: A total of 24 infants were included in the analysis. The median gestational age of diagnosis of doppler abnormalities was 26 weeks' gestation, of which 9/24 (37.5%) had REDF and 15/24 (62.5%) had AEDF. The median gestational at delivery was 27+2 weeks and the average birth weight (BW) was 575g. In this cohort there was an overall survival rate of 63%. There were 3/24 (12.5%) intrauterine deaths (IUDs). For infants delivered prior to 27 weeks' gestation the average BW was 462g and the survival rate was 3/7 (43%), 3 were neonatal deaths and 1IUD. For those born from 27+0 to 28+6 weeks gestation the average BW was 704g and the survival rate was 12/17 (71%), 3 were neonatal deaths and 1 IUD. There was no significant difference observed in the survival rates between the groups, $P=0.2$.

CONCLUSION: Abnormal UAD were shown to be associated with adverse outcomes in infants when diagnosed prior to 28+6 weeks gestation, with survival rates as low as 43% to 71% observed in these groups.

441 Perinatal hypoxia leads to primordial follicle activation and premature depletion of ovarian reserve: rat model

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OBJECTIVE: The human ovary contains 6-million follicles during 20th week of embryonic development and 1-million at birth. The majority of these follicles are eliminated by atresia and only ~300,000 reach reproductive age. Depletion of ovarian reserve is a serious cause for infertility and can be caused by various physiological, pathological and iatrogenic conditions. The rat ovary development at days 1-5 postpartum represents the human ovary development at the late perinatal period.

STUDY DESIGN: Newborn Sprague Dawley rat pups(n=5) were exposed to hypoxia, 5%oxygen/95% nitrogen for 10 min three times daily from day 1 to day 5 postpartum. Control pups(n=5) received no hypoxic intervention. On day 5 ovaries were harvested and embedded in paraffin. H&E staining was used for follicle counts. Ki-67 staining was performed to detect stromal cellular proliferation. Apoptosis was assessed by TUNEL staining.

RESULTS: The percentage of primordial follicles out of total follicles in ovaries of pups exposed to hypoxia was lower than in control ovaries ($76\pm 8.2\%$ and $90.33\pm 6.3\%$ respectively, $p<0.05$). The percentage of primary and secondary follicles in ovaries of pups exposed to hypoxia was higher than in control ovaries ($12.93\pm 6\%$ and $5.82\pm 3.13\%$; $10.5\pm 5.12\%$ and $3.28\pm 2.42\%$ respectively, $p<0.05$). The mean stromal Ki67 staining in ovaries of pups exposed to hypoxia was significantly lower than in the ovaries from the