term labour arrested by tocolysis. This trial sought to test that hypothesis.

STUDY DESIGN: This open-label multicentre randomised controlled trial took place at 13 French university hospitals and included women with singleton pregnancies admitted at 24+0 through 31+6 weeks of gestation with a cervical length <25 mm for an episode of preterm labour that was then successfully arrested by tocolytic treatment. A course of betamethasone 12 mg, repeated after 24 hours, was given intramuscularly in all patients. Women were randomly assigned (by a centralised, computer-generated randomisation process) in a 1:1 ratio to receive either 500 mg of intramuscular 17 alpha-hydroxyprogesterone caproate (17P), started after tocolysis ended and repeated twice weekly until 36 weeks or until preterm delivery, or no treatment with 17P. Additional management in the two arms was left to the discretion of the attending physician, except that progesterone was not allowed in the control group. The primary outcome was time from randomisation to delivery, assessed according to the intention-to-treat principle.

RESULTS: A total of 188 women were randomised. The two groups were similar with respect to baseline characteristics. Outcome data were available for 184 women. There was no significant difference between the 17P and control groups in median [Q1-Q3] time to delivery (64 [42-79] and 67 [46-83] days, respectively; mean difference, -2; 95% confidence interval, -9 to +6) or in the rates of delivery before 37 (39% and 38%, p>0.99), 34 (16% and 20%, p=0.57), or 32 (9% vs 14%, p=0.35) weeks of gestation. Finally, rates of adverse perinatal outcomes did not differ significantly between the groups.

CONCLUSION: Biweekly injections of 500 mg of 17P did not prolong pregnancy significantly in women with an episode of preterm labour successfully arrested by tocolytic treatment.

4 Molecular inflammation in early pregnancy precedes structural remodeling of adipose tissue

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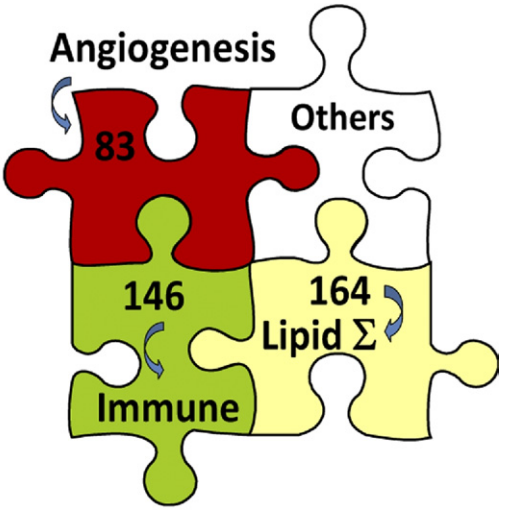
OBJECTIVE: Adipose tissue (AT) remodeling contributes to adaptations of maternal metabolic homeostasis during pregnancy. Early gestation is an anabolic condition with accrual of maternal adipose stores to meet the feto-placental and maternal later energy demands. The aim of this study was to characterize the molecular mechanisms responsible for adipose tissue remodeling in early pregnancy.

STUDY DESIGN: Women with healthy pregnancies were recruited pregravid (P) and followed-up in early (8-12 weeks) and late (36-38 weeks) pregnancy. The metabolic profile and body composition were obtained pre-gravid (P), in early (E) and late (L) pregnancy. AT biopsies were by liposuction in the subcutaneous gluteal depot. The AT transcriptome was examined by microarray profiling and RT-PCR.

RESULTS: BMI, fat mass, adipocyte volume, adipocyte cellularity and insulin resistance index were increased at L (p<0.001) and unchanged at E compared to P. The AT transcriptome encompassed 7612 genes among the 22,278 genes surveyed. The AT transcriptome exhibited significant modification at E compared to P with 15 % genes showing changes in their level of expression (645 increased and 641 decreased) between 1.5 and 10-fold. A strong activation of lipogenic pathways was indicated by genes in the lipid cluster (ATP citrate lyase, stearoyl-CoA desaturase, fatty acid synthase, lipoprotein lipase). Immune related genes pointed to the recruitment of LPS-sensing pathways (lipopolysaccharide binding protein, CD14, Toll-like receptor 4, NFkB) and macrophage activation (CD68, IL6, CSF). Enhanced angiogenesis was suggested by increased in angiopoietin, VEGFA, VCAM-1, MMP14, fibronectin.

CONCLUSION: Early pregnancy is characterized by a combination of molecular events which precedes the phenotypic changes of adipose tissue and body composition. The activation of immune pathways and angiogenic networks are novel findings. Our data suggest that early inflammation and vascular growth prepare AT remodeling in order to meet nutritional needs of mother and fetus at later stages of pregnancy. Supported by NICHD-22965-19



Gene categories over-represented
>1.5 fold in E vs. P (p<0.001)

5 Pregnancy after LEEP: results of a multicenter study

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OBJECTIVE: To assess the association between pre-pregnancy LEEP, pregnancy loss prior to 20 weeks and preterm birth.

STUDY DESIGN: A 7-year, multicenter cohort study of reproductive-aged women who underwent LEEP, PAP smear, or cervical punch biopsy without LEEP between 2000-2006. Subjects were identified by review of pathology records at 9 hospitals (both community and tertiary). Pathology records for all procedures were obtained, and all medical records for pregnancy (pre and post LEEP/Pap/punch biopsy) were obtained and reviewed in detail. Trained research nurses conducted closed-ended phone interviews with all subjects to complete historical and medical data extraction unavailable in charts. Pregnancy outcomes of women with prior LEEP were compared to 2 control groups: 1) prior Pap-only, 2) prior cervical punch biopsy using standard bivariate and multivariate techniques. We estimated a priori that we would need at least 600 women per group, based on an incidence of preterm birth <34 weeks of 4%, alpha error=0.05, beta error= 0.2, and a minimum detectable relative risk of 2.0.

RESULTS: We enrolled 625 women with a prior LEEP, 602 with a prior cervical punch biopsy, and 616 with a prior Pap smear. There were 45/616 (7.3%), 48/625 (7.7%) and 33/602 (5.5%) preterm births <34 weeks in the Pap, LEEP and punch biopsy groups respectively. There was no association between LEEP and loss prior to 20 weeks or preterm birth (Table), even after adjusting for (age, ethnicity, BMI, smoking, and prior preterm delivery).

CONCLUSION: Contrary to prior publications, in this large, well-characterized, generalizable cohort, LEEP is not associated with subsequent adverse pregnancy outcome. Subjects with prior LEEP do not

require increased surveillance or intervention for the prevention of preterm birth or early pregnancy loss. (Supported by RO1 CA109186).

	Pap only N = 616	Adjusted OR (95% CI) for LEEP vs PAP only	LEEP N= 625	Adjusted OR (95% CI) for LEEP vs punch biopsy	Cervical punch biopsy N= 602
Preg loss < 20 weeks	4.2%	1.2 (0.7-2.1)	5.9%	1.2 (0.7-2.1)	3.6%
Preterm birth < 37 weeks	17.2%	1.0 (0.7-1.5)	19%	1.2 (0.8-1.6)	16.6%
Preterm birth < 34 weeks	7.3%	1.1 (0.6-1.8)	7.7%	1.6 (0.9-2.7)	5.5%
Preterm birth < 32 weeks	5.0%	0.9 (0.4-1.7)	3.1%	1.6 (0.8-3.2)	3.1%

6 Can differences in obstetric outcomes be explained by differences in the care provided?

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OBJECTIVE: Although many obstetric outcomes have been suggested as quality indicators, there is little direct evidence that institutional differences in these indicators are related to differences in the care provided. The objective of this study was to determine whether variation in the frequency of potential quality indicators could be related to differences in care.

STUDY DESIGN: Data were obtained by trained abstractors, with ongoing data edits and audits, from all deliveries on 365 randomly selected days at 25 hospitals over a three-year period. Four outcome measures, selected a priori and rigorously defined, were chosen as potential quality indicators: severe postpartum hemorrhage (PPH), maternal peripartum infection (INF), perineal trauma (3rd or 4th degree laceration) at SVD (LAC), and a composite adverse neonatal outcome (NEO). Because the frequency of outcomes may be related to other patient, physician (e.g. years of experience), and institutional (e.g. in-house obstetrician 24 hours daily) factors, these characteristics were assessed for their associations with the above outcomes of interest through the use of hierarchical logistic regression, which was used to account for potential confounding and clustering of observations. Selected care processes were then placed into the model to assess whether these were independently associated with the outcomes.

RESULTS: Data were collected on 115,502 women. After adjustment for patient, physician, and institutional characteristics, differential use of labor induction, cesarean delivery, and episiotomy, were associated with the outcomes of interest (Table).

CONCLUSION: After controlling for differences in patients, physicians, and institutional factors, several care processes were found to be associated with variation in predefined adverse outcomes. These associations support the use of these outcomes as quality indicators, and also may suggest process measures that also are reasonable to use as quality indicators.

	Induction	Cesarean delivery	Episiotomy
PPH	1.4 (1.2-1.6)	6.0 (5.3-6.7)	----------
Infection	1.2 (1.2-1.3)	2.0 (1.9-2.1)	----------
LAC	1.0 (0.9-1.2)	----------	2.5 (2.1-2.8)
NEO	1.2 (1.1-1.3)	----------	----------

All data presented as OR (95% CI)

7 ROLO study: a randomized control trial of low glycemic index diet to prevent macrosomia in euglycemic women

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OBJECTIVE: The macrosomic fetus is predisposed to a variety of adverse obstetric and neonatal outcomes, and significantly increases the risk of birth complications for the mother. In the long term, infants that are at the highest end of the distribution for weight are more likely to be obese in childhood. Eating primarily a high glycaemic carbohydrate diet can result in feto-placental overgrowth, excessive maternal weight gain and fetal macrosomia. Our hypothesis was that altering the source of maternal dietary carbohydrate could prevent macrosomia in euglycemic women.

STUDY DESIGN: This is a randomised control intervention trial of 720 secundigravid women whose first baby was macrosomic (birth weight >4.0 Kg). Women were randomized to receive either no dietary intervention or a low glycemic index (GI) diet from early pregnancy. Those with pre-existing or previous gestational diabetes were excluded. The low GI group attended a small group dietetic session at 14-18 weeks' gestation and continued the diet until term with written information and regular re-enforcement. The primary endpoint of the study was the difference in birth weight. Secondary outcomes included gestational weight gain and the development of glucose intolerance.

RESULTS: There was no difference between the control and intervention groups in birthweight, customized birthweight centile or birthweight z-score. Fetal macrosomia recurred in 51% (n=184) of the intervention group and in 52 % (n=187) of controls. Women in the low GI group had significantly less gestational weight gain than those without any dietary intervention. (12.2kg vs 13.6kg p = 0.01). The incidence of glucose intolerance was also significantly less in the low GI arm with 16.7% having a glucose challenge test result of >7.8 mmol/L compared with 23.4% of controls (p=0.04).

CONCLUSION: Infant birthweight is a complex interplay of environmental and genetic factors. Despite a significant reduction in maternal gestational weight gain and glucose intolerance, a low GI diet in pregnancy has no effect on infant birthweight.

8 A primate epigenome-wide custom array of 244K reveals that a maternal high fat (HF) diet discriminately alters the fetal liver methylome in a primate model of maternal obesity

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OBJECTIVE: In accordance with Barker's hypothesis, in utero perturbations lead to adult disease and are accompanied by persistent yet modifiable fetal epigenomic alterations. We have demonstrated that this primarily occurs via covalent histone modifications (H3K14ac) to allow for heritable gene regulation. We hypothesized that with a maternal HF diet the fetal methylome would be discriminately altered. We aimed to generate a robust primate platform and analysis tools in order to reliably interrogate both global and discriminate DNA methylation (meCpG).

STUDY DESIGN: Matched dams on control (13%) or 35% high-fat (HF) breeder diets were mated annually with additional cohorts emerging after 8 years: naturally occurring non-obese and obese (diet-resistant [HFDR] vs sensitive [HFDS]) and obese reversed to control diet (REV). A custom whole methylome array (meCpG244K) was gener-