Developmental Origins of Health
Understanding the Basis of Resilience and Vulnerability

Immunity and Developmental Health

Maternal Diet During Pregnancy and Fetal Programming
Prenatal Effects on Brain and Immune Development

- Maternal stress
- Antenatal corticosteroids
- Undernutrition (Fe)
- Maternal infection (flu)

Flu Infection and Pregnancy

Cytokine Mediation Hypothesis

Magnetic Resonance Imaging

Transplacental Iron Transfer

Brain Volume Decrement

Percent Difference

Frontal Temporal Parietal Occipital Cortical Region

GM WM

Maternal Fe Fetal Fe

Neonatal Stores & Use (ferritin & hemoglobin)
Teen pregnancies
Premature births
Multiple births
Diabetic pregnancies
Gestational hypertension

Mean Corpuscular Volume

Monitoring Placental Fe Transfer

Metabolome
Proteome
Risk Factors For IDA and Pediatric Health

Benefits of Delayed Cord Clamping
with Dr. Pamela Kling (Pediatrics)

Prenatal Stress

Undisturbed Control

Early Stress

Late Stress

50-92 ga

105-147 ga

Bifidobacteria

Lactobacilli

Canadian Institute for Advanced Research (CIFAR)