

ILCA CONFERENCE REPORT by Crystal Zimmerman
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The Epidemic of Obesity and Diabetes: Their Effect on Breastfeeding and Lactation by Marsha Walker, RN, IBCLC.

Lecture started out with various definitions and brief review of “the very busy fat cell”. Fat tissue is the body’s largest endocrine organ and is metabolically active in the uptake, synthesis, storage and mobilization of lipids. Fat cells actively sense changes in energy availability sending signals to the brain and other tissues to regulate feeding and cellular processes. Fat cells make and secrete > 25 signaling compounds and proteins such as leptin, resistin, and adiponectin. Leptin is released from fat cells after a meal signaling the appetite control center in the brain to stop eating. It is produced by mammary epithelial cells and is secreted into breast milk, may program the brain’s circuitry for appetite control, and may be necessary for milk production. Resistin is related to how obesity might trigger insulin resistance and type 2 diabetes – 80% of people with type 2 diabetes are overweight. Adiponectin affects how the body processes sugars and lipids and may be involved in the metabolic programming of infants. Exposures to these “programming” proteins during early periods of rapid growth and development could wire the brain and create the relationship between human milk components, later metabolism, and adult disease.

Studies since 1999 show the odds of being overweight are about 21-34% lower in children who have been breastfed. Risk factors include a genetic component and the critical periods for excess weight gain are infancy, adolescence, and pregnancy. She discussed a study from 2003 that tracked the changing prevalence of adipose values between breast and formula fed infants. There were no difference in BMI at birth, at 1 month BF babies were somewhat fatter than FF babies, at 2-3 months FF babies developed increased BMI, and at 18 months BMI of FF babies shows a steep increase while BF babies increase slowly. WOP growth charts are to be out in October! Many mechanisms of protection from obesity were discussed. For example, as breast milk energy density increases, milk intake decreases showing self-regulation of breastfed babies to match energy needs. FF babies consume 66-77% more protein than BF infants 3-6 months old. Higher protein intake stimulates higher insulin secretion, which stimulates more fat deposition.

Obese mothers experience delayed onset of lactogenesis II and reduced milk transfer at 60 hours postpartum, breastfeeding durations decrease as maternal BMI increases, obesity alters the 24 hour spontaneous release of prolactin, and prolactin response to sucking is blunted in obese mothers during the first 7-10 days and need close follow-up after hospital discharge.

Lactation after bariatric surgery was discussed though little data is available. There is a risk of vitamin B12 deficiency in maternal milk and in infant, which can result in developmental delay, FTT, apathy, hypotonia, hyper reflexive, and slow head growth. Mother may need B12 injections along with other supplements and infants may need B12, folate, iron, and should start solids at 6 months.

Next diabetes and breastfeeding was discussed. Increased risk for IDDM is consistently detectable in infants exposed to breast milk substitutes before 3 months of age. Mothers with IDDM and gestational diabetes often have 15-28 hour delay in lactogenesis II. The breast contains insulin sensitive tissue that requires insulin to help initiate copious milk production and the mother’s body competes for available insulin contributing to the delay. These mothers need to nurse within an hour of birth and 10-12 times each 24 hours until lactogenesis occurs. They may be more susceptible to infections so watch for yeast, nipple trauma, and mastitis. The infants should be closely assessed for milk transfer, output, and weight gain. Hypoglycemia in the infant can be minimized by breastfeeding within one hour of birth and hourly for 3-4 feeding until blood glucose is stable and then every 2-3 hours until 12 hours old. Keep mother and baby together to reduce thermal stress and crying as these burn glycogen stores rapidly.

There is an extensive 3 ½ page bibliography for this session.