

STRONG CHILDREN'S RESEARCH CENTER

Summer 2013 Research Scholar

Name: Taylor Streeter
School: Tougaloo College
Mentor: Ruth A. Lawrence, MD

ABSTRACT

Title: *Effect of Quiet or Listening to Music while Breastfeeding on the Production and Lipid and Sodium Content of the Milk.*

Background: Studies show that calming music can increase the flow and fat content of breast milk (Kieth et al, 2012). Increased levels of sodium in breast milk is associated with less successful breastfeeding, and increased levels of fat in breast milk is associated with more successful breastfeeding (Morten, 1994; Jensen et al., 1978). We do not believe that there are any published studies on how live, recorded, or no music can affect the flow, sodium, and fat content of breast milk. We hypothesize that a mother listening to music while pumping her breasts will produce more milk and her milk will have higher fat content and lower sodium content than a mother not listening to music. We also hypothesize that a mother listening to live music will produce more milk than a mother listening to recorded music.

Objective: This pilot study will investigate the feasibility of measuring the flow, lipid, and sodium content of milk produced by mothers who are pumping breast milk for their preterm infant under one of three conditions: (1) when a music practitioner is playing background harp music, (2) when a CD is playing exactly the same background harp music, or (3) when no background music is being played.

Methods: First time mothers between the ages of 18 and 45 who have delivered at Strong Memorial Hospital are recruited to participate in the study. During the first session (orientation), recorded music will be played as the mother pumps one or both of her breasts. The third female playing the recorded music will sit behind a privacy screen. After 15 minutes, the research assistant will record how much milk is produced. At the end of the pumping session a 1 cc sample will be taken if 10 cc were produced in 15 minutes and if there is sufficient milk for 24 hours of infant feeding. Sessions 2 – 7 will be randomized for 2 sessions of live, recorded, and no music. The previous conditions of the first session will be repeated for sessions 2 -7. The third person behind the privacy screen will play harp music, play recorded music, or sit quietly. At the end of each session, if the correct conditions are met, a 1 cc sample will be taken and sent to a lab to measure the triglycerides, cholesterol, and sodium in the milk. The volume, sodium, triglycerides, and cholesterol from the two sessions of each music condition will be averaged to represent the result of the music condition for each mother.

Preliminary Results: Only one mother has currently been enrolled in the study. Her results are as follows: The music conditions did not significantly affect the volume of milk produced during each session. Sodium was significantly higher in the milk during live music versus recorded or no music. Interestingly, the fat (cholesterol and triglycerides) content of the milk increased substantially from no music to recorded music to live music. Hopefully this trend of the fat content of milk can continue in future patients.

Conclusion: No conclusion about the effect of quiet or music on the production and content of breast milk can be drawn from one person. It is important for this research to continue because determining the optimum music condition while breastfeeding can lead to more successful breastfeeding rates and experiences for the mother and her infant.