

# **Factors Affecting Mothers' Milk Volumes and Mothers' Perceptions of Their Milk Supplies**

## **Introduction**

Interest in hormonal contraceptive use during breastfeeding has a long history. The research on the effects of contraceptives during lactation has included studies comparing combined hormonal contraceptives with progestin-only or non-hormonal methods on breastfeeding duration, milk volume, and infant growth [9, 13]. Other studies have compared the amount of contraceptive medication found in mothers' plasma and infants' urine [5, 11], the amount of medication found in the breast milk<sup>9</sup>, and breastfeeding rates at intervals postpartum [3]. However, a meta-analysis of studies comparing combined hormonal contraceptives with progestin-only methods found that "evidence from randomized controlled trials on the effect of hormonal contraceptives during lactation is limited and of poor quality" [14], and concluded that "the existing randomized controlled trials are insufficient to establish an effect of hormonal contraception, if any, on milk quality and quantity" [14].

To our knowledge, no research has examined mothers' perceptions of their milk volume after beginning any of the various methods of contraception. Mothers' perceptions of low milk supply, substantiated or not, is the most commonly reported reason for giving up breastfeeding [1, 8, 10]. Given the health risks to both infant [6, 12] and mother [4, 7] of not breastfeeding, both mothers' actual and perceived milk supplies are important public health concerns.

Anecdotal reports of detrimental effects of progestin-only contraceptive methods (particularly progestin-only IUDs) on milk volume during lactation are common, but to-date have not been substantiated. One small study comparing combined birth control pills with progestin-only pills found declines in milk volume of 41.9% and 12% respectively, as compared with 6% in the control group [13]. Many factors including breastfeeding management, mothers' anatomy and physiology, infants' anatomy and physiology, and use of certain medications and herbs are all known to influence mothers' milk supplies<sup>1</sup>, so when a mother experiences a reduction in supply, there may often be several factors contributing to the decrease.

We propose a study designed to examine how mothers' milk volumes and mothers' perceptions of their milk supplies may be influenced by many factors including breastfeeding management practices, mothers' anatomy and physiology, infants' anatomy and physiology, events during and after the birth, and the use of medications, in particular progestin-only contraceptives.

## **Factors Affecting Mothers' Milk Volume and Mothers' Perceptions of Breast Milk Supply: Do Progestin-Only Contraceptives Have An Influence?**

No research of which we are aware has examined breast milk volume after initiation of progestin-only contraception, or mothers' perceptions of their milk supply after initiation of progestin-only contraception. However, some studies looking at breastfeeding duration following progestin-only contraception have found no effect on breastfeeding duration<sup>9</sup> while others have noted shorter breastfeeding duration [3].

## **Overview**

For this investigation, a study will be conducted to examine how breastfeeding management practices (in particular breastfeeding frequency), mothers' anatomy and physiology, infants' anatomy and physiology, events during and after the birth, and use of medications, in particular progestin-only contraceptives, may influence mothers' milk volume during breastfeeding, and how the use of these contraceptives may influence mothers' perceptions of their milk supplies. We plan to pay particular attention to mothers who are partially or exclusively pumping during their initiation of use of hormonal contraceptives because we theorize that their perceptions of their milk supplies (since they can visualize milk volume when they pump) will be a semi-reliable gauge for milk volume.

For this study, we predict that well-known factors (including time of initiation of breastfeeding, frequency of breast stimulation and milk removal, obesity and others) will be predictive of mothers' milk supplies, perception of adequate supply and breastfeeding duration. We predict that mothers who initiate the use of progestin-only contraceptives early into breastfeeding will be more likely to experience a decrease in milk supply than those who initiate later or not at all. We also predict that mothers using progestin-only contraceptives who experience a decrease in supply will have more independent risk factors for low supply than women who do not experience a decrease.

## **Sample and Procedure**

Approximately 2,000 American, Canadian, Australian, New Zealand, European (and possibly other nationalities) mothers who are breastfeeding or have recently breastfed a child who is currently 18 months old or younger will voluntarily participate in this study with no compensation. Each participant will complete a questionnaire containing multiple choice questions about her birth, breastfeeding, relevant health history for both mother and infant, and contraceptive use. (See Appendix II) In addition participants will be asked some demographic questions.

## **Data Analysis**

Regression analyses will be conducted to determine which factors predict milk supply and perceptions of milk supply. (See Appendix I for detail)

## **References**

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## Appendix I

1. Descriptive statistics (Mean, Median, Mode, Frequency Distribution - depending on data type) for all variables.
2. Correlations between all other variables and questions: 33 (How would you describe your milk supply? 4 point likert scale) and Contraception and Milk Supply question 57 (Within the first month of beginning contraception did your milk supply... 5 point likert scale).
3. Logistic regressions of most highly correlated factors on dichotomous variables created using the likert scales for question 33 and question 57 of the Contraception and Milk Supply section.
4. Possible creation of factors (exploratory and confirmatory factor analysis), and then use of factors in logistic regression on dichotomous variables created using the likert scales for

question 33 and question 57 of the Contraception and Milk Supply section.

5. Examination of any moderators of the relationship between predictor variables and mothers' perceived milk supply (e.g., use of herbs or medications, extra pumping, and/or support from a lactation consultant or other knowledgeable person) to counteract effects of contraception)

## **Appendix II**

Participants will be:

1. Female
2. Currently have a baby 18 months or under
3. Be fully or partially breastfeeding, or have breastfed within the last year

## **Appendix III**

Please see attached for proposed survey questions.