

# **Benefits of Yoga in Increasing Lactating Mother's Breast Milk Production**

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**Abstract:** *Breast Milk (ASI) is the best food for infants. Considering that the level of benefits of breastfeeding and the importance of exclusive breastfeeding, it is necessary to take a series of efforts to increase breast milk production of lactating mothers. One way that can be used is by doing Yoga exercises. This research aimed to determine the effect of Yoga in increasing breast milk production of mothers breastfeeding infants aged 1 to 6 months. The research used pre experiment method with one group pretest-posttest design. Sampling used simple random sampling, and the number of samples was 30 respondents. The results of statistical test of t-test ( $p < 0.004$ ), meaning that there was an effect of Yoga exercises in increasing breast milk production of lactating mothers. This happens because Yoga can affect the mind, soul and spirit of the mothers, in which Yoga gives peace of mind, relaxation and a sense of comfort as well as increasing mothers' confidence, so this affects the release of prolactin and oxytocin hormones for breast milk production.*

**Keywords:** *Yoga, Breast Milk, Lactating Mother's.*

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## **I. Introduction**

Breast Milk (ASI) is the best food to meet the nutritional needs of infants. Breast Milk composition is suitable for the growth and development of infants because it contains protective substances that can protect infants from infectious diseases (Cadwell and Maffei, 2011). Breastfeeding has a tremendous emotional effect which affects the inner relationship between mother and child as well as the child's mental development. There are a lot of benefits of breastfeeding; in addition to maternal and infant health aspect, breastfeeding is also beneficial in social, cultural, economic, and educational aspects. Given the level of benefits of breastfeeding, it is necessary to take a series of continuous efforts to increase breastfeeding (Sofyan, et.al, 2006).

Data on Indonesia Health Profile in 2013 showed that the coverage of exclusive breastfeeding target set by Ministry of Health is 80%, and until now it still has not been reached (Kementerian Kesehatan RI, 2014). It indicates that the coverage of exclusive breastfeeding in Indonesia is still very low. There are various factors that influence the failure of exclusive breastfeeding. More than 80% of failure in lactating mothers is caused by psychological conditions of lactating mothers. Stress in lactating mothers will make the amount of oxytocin hormone production (the hormone that serves to produce breast milk) lower (Yuliarti, 2010). This leads to incomplete desire of a mother to breastfeed her baby since the milk production is not running smoothly or even no milk comes out at all; this is the so-called lactation failure (Eveline & Abubakar, 2010). Failure of exclusive breastfeeding will cause the reduced number of brain cells by 15-20%, so it inhibits the baby's intellectual development at a later stage (Sari, 2008).

There are several ways to increase milk production, one of which is by doing Yoga exercise. Yoga is a unique combination of useful movement to improve physical health and way of breathing and meditation that can provide peace of mind (Sindhu, 2013).

According to Wiadnyana (2011), Yoga exercises for breastfeeding mothers include: 1) Exercise the muscles around the breast; this has benefits to: improve blood circulation around the breasts, strengthen the supporting muscles of breasts, strengthen the supporting muscles for respiration, and open the chest cavity in all directions. 2) Asana Movement; this the movement that focuses on stretching particular body parts and helps blood flow and stimulates hormonal glands (endocrine) in the body. Most importantly, Asana Yoga is useful to strengthen and purify the nervous system, especially in the spine, so it will be able to improve health and sense of wellbeing not only in the body even also the mind and emotion/mentality. 3) Pranayama Movement; it is the breathing technique in Yoga. Breathing technique is very important because the positions in pranayama will maximize the capacity of the lungs during breathing and keep the air flow in the body run smoothly, so this can improve the strength and malleability of the body, relieve tension, increase the peace and generate new energy. 4) Relaxation; the relaxation phase is useful to raise self-awareness. While doing one of the postures in savasana relaxation, the gently pressed glands while doing asana will produce its hormones more stably, blood circulation becomes runs more smoothly, the body will break down its muscle tension, the mind becomes calmer, and the feeling becomes more peaceful, 5) Meditation; it is a state where "the body is still and quiet with total conscious mind of being here, now. The effects obtained from meditation are senses of calm, peacefulness, safeness, comfort, serenity, resignation, and acceptance of what is available (Sindhu, 2013).

Yoga is easy to be done by lactating mothers because it does not require expensive cost, can be done at home and can provide relaxation for mothers. Yoga in lactating mothers is useful to facilitate the production of breast milk because Yoga movements can stimulate the pituitary gland to stimulate an increase in prolactin hormone to produce more breast milk and can simultaneously meet the nutritional needs of infants. The main Yoga exercises for lactating mothers are those for the area around the breasts; the Movement for breast exercise is more powerful when done on the basis of complete respiration or *Ujajyi* as well as relaxation and meditation (Wiadnyana, 2011). These movements will provide relaxation and a feeling of confidence in the mother for successful breastfeeding.

**General Objectives:** To identify and analyze the effect of Yoga on the production of breast milk in lactating mothers.

### Specific Objectives

1. Identify breast milk production of lactating mothers before doing yoga.
2. Identify breast milk production of lactating mothers after doing yoga.
3. To analyze the effect of Yoga in increasing breast milk production of lactating mothers.

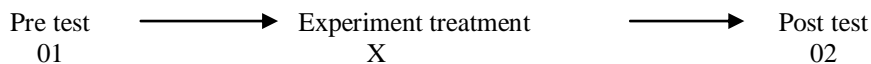
### Benefits

1. For the community; this study can be used as information for breastfeeding mothers who have problem of low breast milk production in order that they do yoga to increase breast milk production to meet the baby nutritional needs.
2. For health personnel; this study can be used as information that Yoga is an alternative therapy to overcome the failure in breastfeeding/lactation and to increase breast milk production.

## II. Methods

### Design

This study used Pre Experimental method with "One group pretest-posttest design". In the research, respondent mothers who breastfed infants aged 1 to 6 months were observed. Breast milk production in lactating mothers was measured before doing yoga and then measured again after doing yoga. The design of this research is described as follows:



Description:

01 : measurement of breast milk production before doing Yoga

02 : measurement of breast milk production after doing Yoga

X : treatment by Yoga exercises therapy for 6 days in row.

**Figure: (1) One group pretest-posttest design research**

### Research Samples

The samples in this research were mothers breastfeeding infants aged 1 to 6 months, who gave only breast milk without any additional food, in the area of *Puskesmas* (Public Health Center) Tegalampel, Bondowoso Regency, East Java Province. The total sample was 30 lactating mothers.

### Sampling Techniques

Sampling technique in this research used probability sampling with type of simple random sampling, that is, a sampling method by random manner without considering the strata that existed in population. (Notoatmodjo, 2012). The inclusive criteria for the samples were:

- 1) Mothers breastfeeding infants aged 1 to 6 months
- 2) Mothers breastfeeding without complementary food (MP-ASI)
- 3) Mothers willing to become respondents by signing a letter of consent.

While exclusion criteria in this samples were:

- 1) Lactating mothers who experienced complications; sore nipples, swollen breasts, mothers birthing by Sectio Caesaria.
- 2) Mothers with unstable psychological condition.
- 3) Mothers with incorrect skills of breastfeeding

**Research Variables**

**1. Independent Variable**

Independent variable is the variable whose values determine other variables; independent variable is usually manipulated, observed and measured to identify its relationship or effect on other variables (Nursalam, 2009). The independent variable of this research was Yoga.

**2. Dependent Variable**

Dependent variable is variable that is affected by independent variables (Notoatmodjo, 2012). The dependent variable of this research was breast milk production of lactating mothers.

**Research Hypothesis**

A hypothesis is a temporary answer of a research, benchmark assumption or temporary proposition whose truth will be proved in the research (Notoatmodjo, 2012). The hypothesis in this research was (Ha): There was an effect of Yoga exercises on the increase in breast milk production of lactating mothers.

**Data Analysis**

Because this research made a comparison test between two paired observation values with one sample (each element had two observation values) and research data are quantitative with ratio scale, then to test the hypothesis, a comparative analysis was conducted to distinguish breast milk production before and after doing Yoga with a statistical of paired samples (t-test).

**III. Results and Discussion**

**The effect of Yoga on increasing breast milk production of lactating mothers.**

**Table 1 Breast milk production before and after doing Yoga**

Respondent	Breast milk production in each breastfeeding (ml)		Difference
	Before Yoga	After Yoga	
01	25	180	155
02	60	45	-15
03	30	25	-5
04	80	115	35
05	55	100	45
06	25	910	885
07	270	250	-20
08	15	170	155
09	170	130	-40
10	35	605	570
11	225	180	-45
12	70	285	215
13	101	385	284
14	150	140	-10
15	225	115	-110
16	80	340	260
17	30	220	190
18	25	5	-20
19	50	245	195
20	30	140	110
21	50	80	30
22	70	180	110
23	60	110	50
24	20	100	80
25	60	90	30
26	95	115	20
27	75	155	80
28	90	115	25
29	140	205	65
30	115	120	5
TOTAL	2526	5855	3329
AVERAGE	84.2	195.17	110.97

t = -3.090                      p = 0.004

Table (1) shows an average increase in breast milk production before and after doing Yoga by 110.97 ml. Furthermore, the results of statistical test of paired samples (t-test) with  $\alpha = 0.05$  gain probability value of (0,004). Since the probability value  $<0.05$ , it means that there was an effect of Yoga on breast milk production of lactating mothers. More clearly, it shows that after doing Yoga, there was an increase in breast milk production of the lactating mothers.

The effect of Yoga on breast milk production of breastfeeding mothers is evidenced by the results of studies showing an increase in the average breast milk production from 84.2 ml before doing Yoga to 195.17 ml after doing Yoga. This is because the movement of Yoga can improve the function of the endocrine glands in the body as well as improve blood circulation throughout the body and brain. Muscle exercises around the breast have the benefits in increasing the blood circulation around the breasts, strengthen the supporting muscles of breasts, strengthen muscles of respiration, and open the chest cavity in all directions (Wiadnyana, 2011). Meanwhile, the yoga posture (*asana*) helps stretch and build muscles, and strengthen bones and loosen joints. Asana stimulates the secretion of endorphin hormone - the feel good hormone - which creates feeling of comfort to the body. Furthermore, breathing by Yoga breathing techniques can increase lung capacity in order that the breathing process becomes more optimal.

The breathing techniques in (*pranayama*) movement also help strengthen the body's internal organs, enhance emotional control, and give the sensation of deep relaxation. In addition to the movements of *asana*, *pranayama*, there is a relaxation where body rest in (*savasana*) position (corpse posture) after doing *asana* which will increase the feeling of comfort and relaxation to the body, smoothen blood circulation, and restore the body in a stable condition. *Asana* exercise accompanied with *pranayama* and meditation will get rid of negative thoughts and emotions as well as increase confidence. The meditation itself will guide the mind to more deeply come into the self-realization (Sindhu, 2013).

The comfortable condition of mother can stimulate the nerve center in hypothalamus in the brain and causes the anterior pituitary cells to release prolactin hormone. This hormone stimulates the alveoli cells which serve to make milk. Along with the establishment of prolactin by adenohypofise (anterior pituitary), the stimulation is continued to neurohypofise (posterior pituitary), which then releases oxytocin. Oxytocin is secreted by the neuron cell bodies in paraventricular and supraoptic nucleus of the hypothalamus. Oxytocin flows through nerve fibers to the posterior pituitary and is released into the bloodstream when the nerves are stimulated. Through the bloodstream, these hormones are transported to the alveoli and will affect mioepithelium cells to contract. Contraction of cells will squeeze breast milk that has been made of the alveoli and go into the ductulus system which further flows through the lactiferous ducts into the baby's mouth (Manuaba, 2007).

If we compare the current state of the mothers before doing Yoga, the mothers had not received the stimulation to create a sense of calm and comfort in themselves, which is the determinant of lactation. It was that at the time before Yoga, the breast milk production of lactating mothers was under normal circumstance. However, after Yoga, there was an increase in breast milk production, the average increase in milk production before and after Yoga was 110.97 grams. The breast milk production was obtained after the breastfeeding mothers did Yoga for 6 consecutive days, in which when doing Yoga, mothers could feel inner peace and gave relaxation in the mother's body and mind. Yoga exercises done by lactating mothers consisted of muscle exercises around the breasts, postpartum Yoga consisting of asana and pranayama, complete yoga breathing, relaxation and meditation (Wiadnyana, 2011). This shows that the breast milk production can be increased optimally after doing Yoga.

The importance of considering the condition of breastfeeding mothers, in addition to affecting the smoothness of breast milk, will certainly affect the baby; when mother is in peaceful condition, the baby goes quiet, so that the baby can be breastfed comfortably and get enough milk from his/her mother; the consequences will affect back to the mother. Mother will feel better; if the mother is relaxed, the condition goes back to the infants that will also feel good, and so on, where it will be an uninterrupted circle. If breastfeeding mothers do yoga, there will be an increase in breast milk production and at the same this helps mothers to breastfeed successfully and increases the chance for exclusive breastfeeding for babies.

From the description above, it is shown that Yoga can give peace of mind that is needed by breastfeeding mother, so it increases mother's confidence and makes her feel much more relaxed for nursing and caring the baby for successful lactation.

#### **IV. Conclusions and Recommendation**

##### **Conclusion**

1. Average breast milk production of lactating mothers before doing Yoga is 84.2 ml. The production shows normal volume of breast milk when breastfeeding.
2. The average breast milk production of lactating mothers after doing Yoga is 195.17 ml. Breast milk production is obtained after breastfeeding mothers do Yoga for 6 days consecutive.

3. Yoga has an effect on the increase in breast milk production of lactating mothers, where after doing Yoga exercises for 6 days in a row, an average breast milk production has increased by 110.97 ml each breastfeeding. This is because yoga can give peace of mind that is needed for breastfeeding mothers, so this can increase mothers' confidence and makes them more relaxed for nursing and caring for the baby which then influences the lactation. Yoga also stimulates the secretion of endorphin hormone that creates a feeling of comfort to the body and thereby stimulates the release of prolactin and oxytocin hormones for milk production.

### **Recommendation**

1. For health workers; it is expected that health workers hold a Yoga exercise program for breastfeeding mothers and provide motivation to lactating mothers to follow Yoga as one of the alternatives that can be performed to facilitate the production of breast milk.
2. For community members; this research can be used as information for community members, especially for lactating mothers, to do Yoga as an alternative way to facilitate the production of breast milk.
3. For further research; this research can be used as a reference for similar studies with more representative number of samples, in a longer time to control other factors that affect breast milk production of lactating mothers, such as intake of food consumed by mothers.

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