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The Effect of Green Tea and Soy Milk Drinks on the BMI of Obese Implant Acceptors at the Yasmin Pratama Clinic, South Jakarta, in 2025

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ABSTRACT

Overweight or obesity is a condition in which a person's weight is greater than the average weight. Being overweight or obese increases a woman's relative risk of suffering from diabetes mellitus, the relative risk of developing cardiovascular diseases such as high blood pressure, can further increase risk factors for coronary heart disease. Thus, giving soy milk and green tea can help lose weight due to weight gain that exceeds BMI caused by the hormone birth control implant. To find out the effect of green tea and soy milk drinks on BMI of implant birth control acceptors with obesity at Yasmin primary clinic, South Jakarta in 2025. The research employed a qualitative approach with a case study design involving two respondents who were implant contraceptive users with obesity. The first respondent received an intervention of consuming 200 ml of soy milk twice daily before meals, while the second respondent consumed 100 ml of green tea twice daily after meals for 14 days. Data were collected through observation using the SOAP format (Subjective, Objective, Assessment, and Plan) and analyzed using descriptive qualitative analysis. The results showed that soy milk consumption reduced body weight from 64 kg (BMI 26.0) to 61 kg (BMI 24.7), while green tea consumption reduced body weight from 61 kg (BMI 25.7) to 56 kg (BMI 23.6). Both interventions effectively reduced body weight and improved BMI to the normal category. However, a more significant reduction was observed in the respondents who consumed green tea. Thus, it can be concluded that green tea is more effective than soy milk in reducing body weight and improving BMI among implant contraceptive users with obesity.

Keywords: green tea, soy milk, obesity, contraceptive implants, body mass index.

INTRODUCTION

An implant is a long-acting, low-dose, reversible progestin-only contraceptive method for women. It is a type of contraception made of hormone-containing silastic rubber, inserted into the upper arm. It can be used for up to five years and is reversible. This contraceptive implant is inserted at least four weeks after delivery. Weight gain in users of the implant is caused by the hormone progesterone facilitating the conversion of carbohydrates and sugars into fat, resulting in increased subcutaneous fat. Furthermore, progesterone also increases appetite and decreases physical activity, resulting in weight gain.(Silvia Fransina Sopacua & Kamidah Kamidah, 2024).

The 2019-2020 Indonesian Demographic and Health Survey (SDKI) showed that the proportion of family planning participants for all was recorded at 60.3%. If further detailed, the proportion of participants with the largest number of family planning methods was injections (27.8%), followed by pills (13.2%), IUDs (6.2%), implants or contraceptive implants (4.3%), female sterilization (3.7%), condoms (0.9%), male sterilization (0.4%), LAM (Lactational Amenorrhea Method) (0.1%), and the remainder were participants with simple family planning methods without devices, each using the periodic abstinence method (1.6%), coitus withdrawal (1.5%), and other methods (0.5%).(Silvia Fransina Sopacua & Kamidah Kamidah, 2024).

Body Mass Index (BMI) is a parameter established by the WHO (World Health Organization) as a ratio of body weight to the square of body height. BMI is determined by measuring weight and height separately, then dividing the weight and height values to obtain a BMI value in kg/m2. BMI values are given based on five criteria, namely: severely underweight (27 kg/m2), mild underweight (17.0–18.4 kg/m2), normal (18.5–25.0 kg/m2), mild obesity (25.1–27.0 kg/m2) and severe obesity (> 27 kg/m2). BMI is often considered an indicator of body fatness (obesity), measuring excess weight rather than excess body fat.(Pratama & Zulfahmidah, 2021).

*Overweight*Obesity or overweight is a condition in which a person's weight is greater than the average weight. According to WHO data, more than 1.9 billion adults aged 18 years and over are overweight, which means that one in every seven people they meet has a weight problem. According to WHO, 2.8 million people die each year due to being overweight.

Overweight individuals aged 18 years and over account for 39% of the global adult population. The total male population is 38%, and the female population is 40%.(Andi Paraqleta Nur Eli et al., 2023).

Obesity can cause hypertension through various mechanisms, both directly and indirectly. Directly, obesity can increase cardiac output. This is because greater body mass increases the amount of circulating blood, which increases cardiac output. Indirectly, obesity occurs through stimulation of the sympathetic nervous system and the Renin-Angiotensin-Aldosterone System (RAAS) by mediators such as cytokines, hormones, and adipokines. Aldosterone is a hormone closely related to water and sodium retention, which can increase blood volume.(Tiara, 2020).

Green tea is a medicinal plant that has pharmacological effects including weight loss, lowering cholesterol, triglycerides, and glucose, preventing dental caries, antimutagenic, antioxidant, and antibacterial. Green tea has been proven to reduce weight. In healthy young men who were given green tea extract containing isoflavones, which include catechins and polyphenols, especially EGCG, an increase in energy expenditure was found for 24 hours, because EGCG stimulates thermogenesis and fat oxidation, which has implications for weight loss. EGCG inhibits the activity of acetyl CoA carboxylase in the fatty acid biosynthesis cycle, thereby reducing the accumulation of triacylglycerols (triglycerides) in fat tissue.(Nugroho & Kurniawati, 2020).

In Indonesia, approximately 83.7% of soybeans are used as food ingredients, primarily in the form of tempeh and tofu with a consumption rate of 14.13 kg/capita/year, 14.7% for soy sauce and tauco, the rest for soy milk, sprouts, and others. The isoflavone content in soybeans varies between 128 to 380 mg/100 g. With high antioxidant properties, soy milk contains flavonoids, namely isoflavones in soybeans, which play a role in preventing lipid peroxidation. Isoflavones are primary antioxidants that work as free radical acceptors. So they can inhibit free radical reactions in lipid oxidation, for weight loss.(Mandasari, Agrina, 2020).

Thus, administering soy milk and green tea may help reduce weight gain above BMI caused by the hormonal contraceptive implant. This study aimed to evaluate the effectiveness of administering soy milk containing isoflavones and green tea on excess weight loss.

Based on the description above, the researcher is interested in conducting research on "The Effect of Green Tea and Soy Milk Drinks on the BMI of Obese KB Implant Acceptors at the Pratama Yasmin Clinic, South Jakarta in 2025".

METHOD

This study used a qualitative approach with a case study design to deeply understand the phenomenon of weight gain in contraceptive implant users at the Yasmin Pratama Clinic. The case study was chosen because it allows researchers to obtain a contextual and comprehensive picture of the conditions experienced by respondents in real life. The study was conducted from August–October 2025, with a population of all contraceptive implant users at the Yasmin Pratama Clinic. The sample consisted of two contraceptive implant users who experienced side effects in the form of obesity and were selected based on inclusion criteria. The first respondent was given an intervention of consuming soy milk, while the second respondent was given an intervention of consuming green tea.

The research procedure began with obtaining research permits from the University of Indonesia Maju (UI) and the clinic, followed by an explanation of the research objectives to the respondents and the completion of informed consent forms. The intervention was conducted for 14 days with four developmental observations using the SOAP (Subjective, Objective, Assessment, and Plan) format. The first respondent consumed 200 ml of soy milk twice daily before meals, while the second respondent consumed 100 ml of green tea twice daily after meals. The research instruments, an informed consent form and an observation sheet, were used to monitor weight changes. Data were analyzed descriptively and qualitatively by comparing the results of observations and developmental notes based on theory and scientific evidence to assess the effectiveness of the intervention on weight loss in obese contraceptive implant users.

RESULTS

Table 1. Comparison of Midwifery Care Results between Respondent I and Respondent II

No.	Intervention	Visit 1 (Day 3)		Visit 2 (Day 7)		Visit 3 (Day 14)	
		BB	BMI	BB	BMI	BB	BMI
1	Respondent I TB: 157 Weight: 64 kg BMI: 26.0 (Soy milk)	64	26.0	63	25.6	61	24.7
2	Respondent II TB: 154 Weight: 61 kg BMI: 25.7 (Green tea)	60	25.3	59	24.9	56	23.6

The table above shows differences in midwifery care outcomes for obese contraceptive implant recipients who were given soy milk and green tea. These results indicate that obese contraceptive implant recipients who were given green tea experienced faster weight loss than those who were given soy milk.

DISCUSSION

This study compared respondents 1 and 2 with different interventions, namely the provision of soy milk and green tea consumed for 14 days regularly to reduce excess weight (obesity) at the Yasmin Pratama Clinic in 2025. Based on the results of the intervention carried out on KB implant acceptors, respondents 1 and 2 experienced weight loss and were in accordance with normal BMI. However, weight loss was more effective by consuming green tea compared to soy milk. Weight loss before consuming soy milk was 64 kg, and after consuming soy milk it became 61 kg, which was a decrease of 3 kg with a BMI of 24.7 (normal). Weight loss before consuming green tea was 61 kg, and after consuming green tea it became 56 kg, which was a decrease of 5 kg with a BMI of 23.6 (normal).

Respondent I with Soy Milk Intervention

The research conducted showed that respondents experienced weight loss starting from the 2nd visit, namely day 7, to the 3rd visit, namely day 14, with a total weight loss of 3 kg with a BMI of 24.6.

Soy milk can help reduce weight because it contains flavonoids called isoflavones. Isoflavones are bioactive compounds that exhibit biological activity similar to estrogen, thus they are often referred to as phytoestrogens. The circulation of isoflavones in the blood is complex, as some are fat-soluble and others are weakly bound to proteins. The extent to which isoflavones enter the bloodstream is influenced by several factors, such as the time of consumption, the person's age, and the amount of isoflavones consumed.The mechanism of action of isoflavones is by reducing the absorption of cholesterol and bile acids in the small intestine, inducing an increase in fecal excretion of bile acids and steroids.(Mandasari, Agrina, 2020).

This research aligns with a 2020 study by Mandasari Agrina, entitled "The Effect of Soybean Isoflavones on Weight Loss." The method used in this study was a literature review of various national and international journals. It can also be stated that fermented soybeans contain higher isoflavones, especially the isoflavone genistein, which plays an important role in regulating body fat. Isoflavones cause weight loss by increasing levels of the digestive hormone cholecystokinin (CSC). Previous research conducted on normal male Wistar rats found that soybean seed protein extract 1 was the best for reducing food intake, Wilis soybean tempeh protein extract was the best for reducing weight, and Wilis soybean tempeh methanol extract was the best for increasing plasma CSC levels.(Mandasari, Agrina, 2020).

According to the researchers' assumptions, based on the results of a study of mothers receiving birth control implants who were given soy milk for 14 days, a significant reduction in body weight was observed. This is because soy milk contains isoflavones, which regulate estrogen levels, making it beneficial for weight loss.

Respondent II with Green Tea Intervention

The research conducted showed that respondents experienced weight loss starting from the 1st visit, namely day 3, to the 3rd visit, namely day 14, with a total weight loss of 5 kg with a BMI of 23.7.

Green tea can help reduce weight because it contains flavonoids called catechins. When brewed with hot water, about one-third of green tea is made up of polyphenols, commonly known as catechins. The main polyphenols in tea are (-)-epigallocatechin-3-gallate (EGCG), (-)-epigallocatechin (EGC), (-)-epicatechin-3-gallate (ECG), and (-)-epicatechin (EC). EGCG accounts for 50-75% of the total catechins, with the remainder consisting of EGC, ECG, EC, and other minor catechins. Therefore, a cup of freshly brewed green tea can contain 130-180 mg of EGCG. Some researchers suspect that polyphenols, particularly catechins, are responsible for the fat-burning process. Therefore, it can be said that green tea extract (Camellia Sinensis) can increase metabolism and help burn fat.(Trivana et al., 2023).

This research is in line with the research conducted by Devira Herwinashanti, Linda Weni, and Juniarti in 2024 entitled The Effect of Green Tea (Camellia sinensis) on the Lipid Profile of YARSI Medical Faculty Students in Obese and Normal Nutritional Status. This research was conducted on Medical Faculty students at YARSI University. Based on the Independent T-test, the effect of green tea on reducing cholesterol levels in the control and treatment groups obtained a significance value or p-value (2-tailed) = 0.535, meaning that there was no significant decrease after consuming green tea in either the control or treatment groups.(Herwinashanti et al., 2024).

According to researchers, based on the results of a study of mothers receiving birth control implants who were given green tea for 14 days, a significant reduction in body weight was observed. This is because green tea (Camellia sinensis) contains polyphenols, commonly known as catechins, which help burn fat, making it a good weight loss supplement.

Comparison of Soy Milk and Green Tea Administration on the BMI of Obese Contraceptive Implant Acceptors at the Yasmin Pratama Clinic, South Jakarta, in 2025

Based on the research results, it was proven that there was a difference in birth control implant acceptors who were given soy milk and green tea. There was a more significant change in weight loss in respondents who consumed green tea compared to those who consumed soy milk. This can be seen from the results of the 14-day (2-week) study and observations of development records conducted on days 3, 7, and 14.

The first respondent weighed 64 kg before consuming soy milk, and the second respondent weighed 61 kg before consuming green tea. After 3 days of intervention, the first respondent had not experienced any weight loss, and the second respondent experienced a weight loss of 1 kg. In the first respondent, there was a weight loss during the second observation (day 7) of 1 kg, and the second respondent experienced a weight loss of 2 kg. And in the third observation (day 14) the first respondent experienced a weight loss of 2 kg, and the second respondent experienced a weight loss of 3 kg. After 14 days (2 weeks) the results of the observations carried out were that the first respondent experienced a weight loss of 3 kg in total, while the second respondent experienced a weight loss of 5 kg in total. This research aligns with the 2024 study by Devira Herwinashanti, Linda Weni, and Juniarti, entitled "The Effect of Green Tea (Camellia sinensis) on the Lipid Profile of YARSI Medical Faculty Students with Obesity and Normal Nutritional Status." Green tea (Camellia sinensis) extract can boost metabolism and help burn fat.Based on the Independent T-test, the effect of green tea on reducing cholesterol levels in the control and treatment groups obtained a significance value or p-value (2-tailed) = 0.535, meaning that there was no significant decrease after consuming green tea in either the control or treatment groups.

Researchers believe green tea is far more effective in weight loss. This is because green tea contains flavonoids, specifically catechins, which help burn body fat. Soy milk, on the other hand, contains flavonoids, specifically isoflavones, which only function to regulate hormone balance.

CONCLUSION

Based on the results of the study on "The Effect of Green Tea and Soy Milk Drinks on Body Mass Index (BMI) of Obese KB Implant Acceptors at the Pratama Yasmin Clinic, South Jakarta in 2025", it can be concluded that both soy milk and green tea can reduce body weight and BMI values in obese KB implant acceptors. Weight loss in respondents given soy milk occurred from 64 kg (BMI 26.0) to 61 kg (BMI 24.7) after a 14-day intervention. Meanwhile, in respondents given green tea, there was a decrease from 61 kg (BMI 25.7) to 56 kg (BMI 23.6) in the same time period. Thus, it can be concluded that green tea

consumption is more effective in reducing weight and improving BMI compared to soy milk consumption in obese KB implant acceptors.

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