

# Are contraceptives causing the bedroom blues? The effect of contraceptive implants on sexual desire in women



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## ABSTRACT

**Background:** In the United States, an estimated 51% of pregnancies are unwanted (Sanders *et al.*, 2014). High rates of unwanted pregnancy can be reduced by the use of various contraceptives. Hormonal contraceptives are a popular choice among fertile women and have been shown to effectively prevent pregnancy. Contraceptive implants are a type of progestogen-only birth control. The implant is a single rod that is inserted subdermally into the upper arm. It has 68 mg of active compound and is effective in preventing pregnancy for up to 3 years (Gezginc *et al.*, 2007). **Objective:** Examine if contraceptive implants decrease a woman's sexual desire via a literature review. **Methods:** A structured literature review was conducted. Articles related to the effect of implant contraceptives on sexual libido were considered. Scopus, Medline, and PubMed were used to find related literature. Peer reviewed studies containing one or more of the keywords: contraceptive drug implants, sexual dysfunction, libido or sexual behaviour were included in the review. Animal studies, non-English studies, studies on menopausal women, and studies on endometriosis and gynaecological cancers were excluded. **Results:** Six articles that met the criteria were selected. The degree of the relationship between use of an implant and decreased sexual libido varied between studies. A general decrease in sexual libido was reported. **Conclusion:** The evidence demonstrated a decrease in sexual desire with the use of contraceptive implants. Further research excluding other side effects and focusing only on libido is needed to further explore causative effects.

## BACKGROUND

The availability of various contraceptives enables both men and women to not only prevent unintended pregnancies, but to empower them to foster healthy sexual relationships and to create a positive sexual experience (Sanders *et al.*, 2014). The choice of what birth control to use varies between women depending on their personal preferences. Hormonal contraceptives, such as contraceptive implants, are a common choice among fertile women and have been shown to be effective in preventing unwanted pregnancies. The literature often focuses on the negative side effects of hormonal contraceptives such as bleeding irregularities, headaches, and mood changes (Wong *et al.*, 2009). Side effects less often examined include loss of libido and sexual desire that some women experience when using hormonal contraceptives. Contraceptive implants are a progestogen-only birth control method which has been proven to prevent pregnancies up to three years after insertion (Gezginc *et al.*, 2007). Loss of sexual desire has been reported in women using contraceptive implants and this review examines to which degree women are negatively affected. Alternative forms of contraception such as implants are not well known and researched as much as more common forms, such as oral contraceptives. Implants could have potential benefits that the more common oral contraceptive does not have, such as being relieved from the task of daily administration of the contraceptive. The implant has the potential to become a more common method of contraception. Research demonstrating fewer negative side effects and highlighting the positive effects of an implant birth control could encourage more common prescriptions of the implant by medical professionals. Current research on contraceptive implants primarily focuses on the negative physiological side effects. This structured literature review focuses on the woman's sexual experience while using contraceptive implants. More information about the potential positive side effects of contraceptive implants could allow women to make more informed decisions about their reproductive health. The research could also provide medical professionals with the tools to better understand the quality of life and sexual side effects experienced by women using contraceptive implants.

## RESEARCH QUESTION

Is sexual desire in fertile women reduced by the use of contraceptive implants?



## REFERENCES

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Sanders, J., Smith, N., & Higgins, J. (2014). The Intimate Link: A Systematic Review of Highly Effective Reversible Contraception and Women's Sexual Experience. *Clinical Obstetrics and Gynecology*, 57(4), 777-789. <http://doi.org/10.1097/GRF.0000000000000058>  
Wong, R., Bell, R., Thumguntha, K., McNamee, K., & Vollenhoven, B. (2009). Implanon users are less likely to be satisfied with their contraception after 6 months than IUD users. *Contraception*, 80(5), 452-456. <http://doi.org/10.1016/j.contraception.2009.03.021>

## METHODS

Potential articles identified through PubMed, Medline, and Scopus. (n=140)



Refined search using keywords: Female, Human, Fertile and English. Refined to the past 10 years. (n=54)



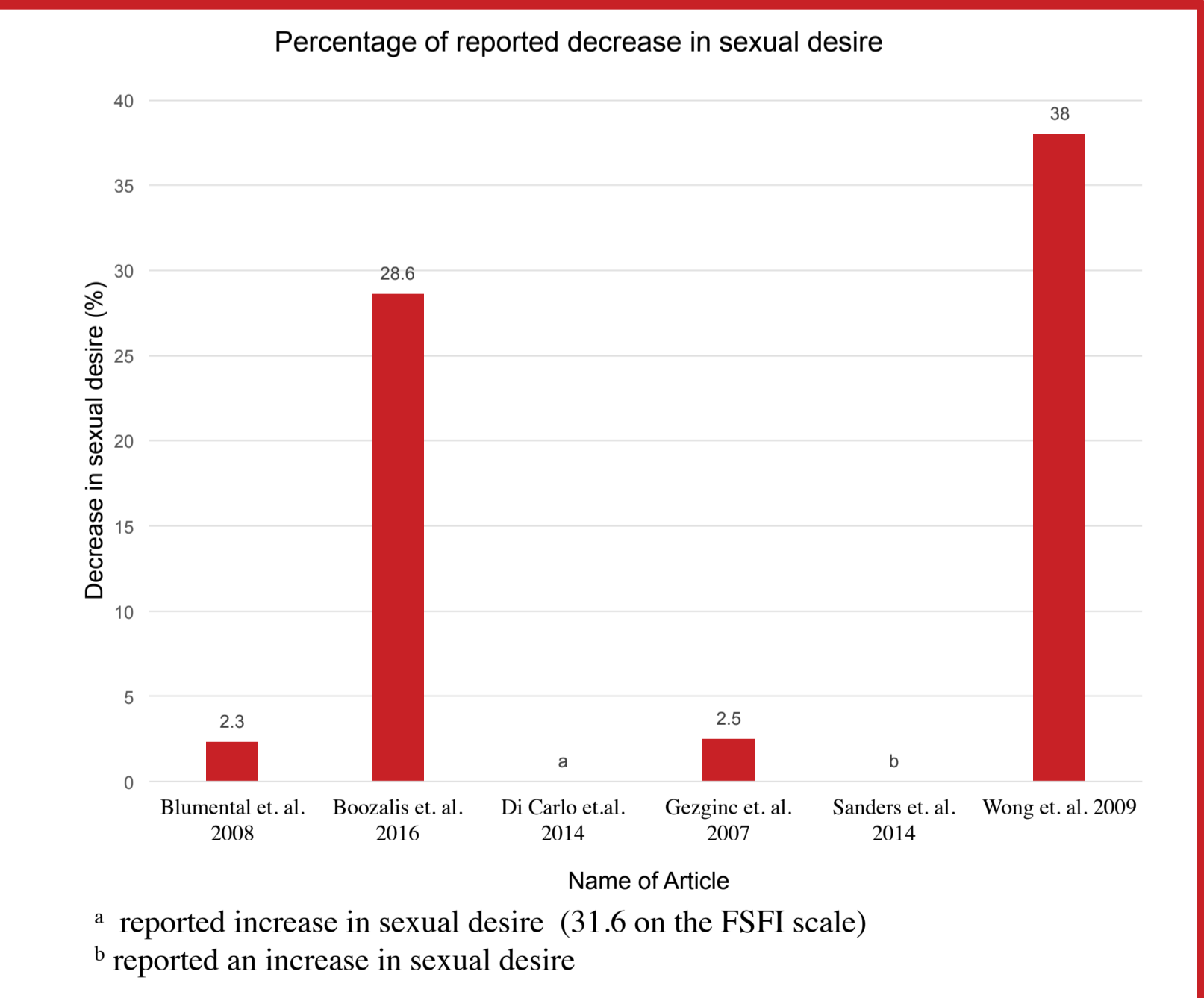
Refined search excluding: Menopause, endometriosis, gynecological cancers, and duplicates. (n=20)



Critical appraisal criteria for relevance provided by Greenburg *et al.* Medical Epidemiology Fourth Edition. (n=6)

PubMed, Medline, and Scopus were searched for relevant articles. "Contraceptive implants" and "libido" were initially searched under the PubMed database. "Contraception" and "drug implants" combined with "sexual dysfunction" or "libido" or "sexual behaviour" was searched on the Medline database. On Scopus, "contraceptive implants" and "female" and "libido" were searched. From here, inclusion factors "human", "female", "fertile", and "English" were applied. All commercial brands of the contraceptive implant such as "Implanon", "Nexplanon", and "Norplant" were included. Only articles from the past 10 years were considered. Upon review of the abstracts, any studies including "menopause", "endometriosis", or "gynaecological cancers" were removed. Duplicates were also excluded. The remaining 20 articles were critically appraised using the Greenburg *et al.* criteria found in the Medical Epidemiology Fourth Edition textbook. This left 6 relevant articles that met all the criteria. Cohens Kappa was computed and agreement was of K=94%

## RESULTS



- 6 articles met all the criteria and were considered in this systematic literature review.
- 4 articles reported a reduction in sexual libido. The degree of loss of sexual desire varied between studies. The methods used to collect information also varied between studies, which could account for these differences.
- 3 of the 6 studies focused solely on sexual desire, while the others took all potential side effects into consideration.
- Not all studies control for sexual desire using tools such as FSFI and SF-36.
- Not all studies control for confounding variables such as marital status, social economic status, age, ethnicity, weight, or other variables.
- 2 studies observed a general increase in libido. This is believed to be correlated with a more comfortable and worry free sex life.
- The decrease in sexual libido found in 4 of the studies could be related to the interaction of hormones released from the implant on the body
- Significant decreases in sexual desire was reported when comparing the implant to an IUD.
- All other studies that look only at the implant report minor/insignificant findings (2.5%) or an actual increase in sexual desire
- Result may be inconclusive on the actual degree of loss in sexual desire

Name of the Study	Type of Study
Blumenthal et al., 2008	Literature Review
Boozalis et al., 2016	Cross-sectional Analysis
Di Carlo et al., 2014	Prospective Study
Gezginc et al., 2007	Prospective Study
Sanders et al., 2014	Systematic Review
Wong et al., 2009	Non-randomized Cohort Study

## DISCUSSION

- The main finding of the structured literature review was a decrease in sexual desire in women using contraceptive implants. However the studies did not provide satisfactory evidence to draw a confident conclusion.
- The Di Carlo and Sanders articles used the "Female Sexual Function Index" (FSFI) and the "Short Form-36" (SF-36) as a tool to measure sexual desire. All other articles failed to explicitly indicate the controls and measures used to determine libido.
- Two articles described an increase in sexual desire while the remaining four reported a decrease. The increases were believed to be reported because of the women experienced more control over their fertility and sexual experiences.
- The Blumenthal and Gezginc articles reported a slight decrease in sexual desire. The results may have been attributed to other factors that were not controlled such stress, age, and relationship status, amongst other variables.
- None of the articles provide an explanation for the progestogen-only contraceptive effects and the potential benefits of administering a birth control methods that does not include estrogen.
- Specific biological markers were not discussed in any of the articles. Blood hormone concentrations would be beneficial to collect. This would allow the researcher to examine increases and decreases in blood hormone concentrations and if it correlated with the self-reported sexual desire in women.
- Although the cost of biological studies are more expensive, it would decrease the subjectivity that is present in the current selected articles.
- If more research yields similar results that show a decrease in sexual libido while using the implant, women may be less inclined to choose this as their contraceptive method. However, if future research is conducted using proper controls, it could lessen the degree of variation in reported loss of libido and provide more information about the effects.

### Limitations:

- The Boozalis study considered confounding variables. Stress, age, socioeconomic status and mental health commonly affect sexual desire in women. Control for these confounding variables in all studies may yield different results.
- Self-reports, which were used in every study, are sensitive to subjectivity and bias, therefore the results of each study may not be representative of the actual effects of the contraceptive implants.
- Only the Blumenthal study tracked the menstrual cycles of the women. However specific characteristic of the cycles were not specified in this study. Monitoring levels of libido at various stages in the menstrual cycle could provide useful insight detecting fluctuations in sexual desire throughout the cycle.
- Sexual desire as the primary research focus was only studied in the Wong, Di Carlo and Sanders articles. Current research about contraceptive implants focuses primarily on safety and efficacy.
- Now that implants have proven to be safe and effective in preventing pregnancy, further research exploring the experience and quality of life of women using the implant could help them make an informed decisions about what form of contraception is best for the individual.

## CONCLUSION

- The use of contraceptive implants could reduce a woman's sexual desire, but the results from this review were inconclusive. A general decrease was reported, but the strength of the studies are not adequate enough to make a confident conclusion.
- Two of the studies report a general increase in sexual desire which weakens the association of the findings. Most studies do report a decrease in libido, but the lack of statistical significance in the self-reports and the absence of biological markers and controls for confounding variables make the results inconclusive.
- The implications of these results could affect a woman's choice in which contraceptive method to select.
- Many studies report a minor decrease in sexual desire and do not consider the psychosocial influences on desire. The results of these studies do not report a significant decrease in libido and thus do not provide a strong relationship between sexual desire and contraceptive implants.

### Future Research:

- In the future, focusing only on the effects of contraceptive implants on libido instead of the various possible side effects is necessary. Understanding the biological effects of the contraceptive implant on sexual desire could provide a more concrete overview of the exact mechanisms of this effect.
- Controls such as age, socioeconomic status, and mental health should be accounted for when measuring sexual desire. Using a more reliable method of measurement to assess the individuals to reduce the subjectivity of the findings is recommended.
- Monitoring libido levels of the various stages of the menstrual cycle is also recommended.