

Progesterone and progestogens

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I am concerned by the ambiguity about progesterone/progestogen in the article ‘Hormonal contraception and mood disorders’.¹ The summary correctly states ‘The link between oral contraceptive pills and depression relates to the amount and type of progestogen contained in these pills’, but the article subsequently says that progesterone can worsen mood symptoms. Plausible links are said to include progesterone augmentation of GABA-induced inhibition of glutamate transmission, and progesterone increasing the concentrations of monoamine oxidase, resulting in decreased serotonin concentrations. However, these links should be referring to progestogen rather than progesterone. To my knowledge (and according to all the given references,) progesterone is neuroprotective, whereas progestogen is not. It is the progestogen in oral contraceptive pills that has been linked to depressive mood.

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REFERENCE

1. Mu E, Kulkarni J. Hormonal contraception and mood disorders. *Aust Prescr* 2022;45:75-9. <https://doi.org/10.18773/austprescr.2022.025>

Eveline Mu and Jayashri Kulkarni, the authors of the article, comment:



As we referenced in our paper¹ – progestogens in oral contraceptive pills can contribute to the worsening of mood symptoms in susceptible women. This is evidenced by the worsening of mood symptoms in women who use progestogen-only forms of contraception such as the progestogen-only pill and the levonorgestrel intrauterine device.²

Regarding endogenous progesterones, it is believed that women with premenstrual dysphoric disorder have an abnormal GABA response to changes in allopregnanolone levels (a metabolite of progesterone) across the menstrual cycle, contributing to negative mood symptoms.³ As more studies examine the role of allopregnanolone and its metabolite progesterone their neuroprotective effects may be clearer.

Lipinski is correct that the two terms were used interchangeably in the article. We agree that progestogens are more likely to be implicated in depressed mood, but as we learn more about progesterone, the impact of this endogenous hormone on mood is yet to be fully determined.

REFERENCES

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3. Chavez C, Hollaus M, Scarr E, Pavey G, Gogos A, van den Buuse M. The effect of estrogen on dopamine and serotonin receptor and transporter levels in the brain: an autoradiography study. *Brain Res* 2010;1321:51-9. <https://doi.org/10.1016/j.brainres.2009.12.093>