

Anxiety disorders are common in our society. They are characterized by endless worries about any given topic, a difficulty to stop worrying and physical symptoms such as constant tiredness. Women are particularly at risk of developing anxiety disorders. Previous studies show that anxiety symptoms are related to hormonal levels, however this relation and its precise mechanism is still understudied. Women experience hormonal fluctuations with their levels of estradiol and progesterone varying through the course of the menstrual cycle. Since those hormonal fluctuations happen every month from women's teenage years to middle age, their impact on anxiety levels should be considered. Moreover, a lot of women use hormonal contraception and its effects on mental health are still not fully well-known. What we know for now is that oral contraceptives have an impact on mood and cognitive functions, especially on the efficacy of executive functions which are a set of mental abilities that allow us to retain information, focus our attention or use self-control. Those executive functions are impaired in people suffering from anxiety disorders.

The aim of the study is to analyze the relationship between the menstrual cycle, anxiety and executive functions in women who take the birth control pill and in those who do not. We will be testing whether there are differences in anxiety levels and executive functions between women who take oral contraceptives and those who do not and whether those differences fluctuate throughout the course of the menstrual cycle. We will also be studying if women's anxiety levels and executive functioning change according to their levels of estradiol and progesterone and whether oral contraceptives moderate the relationship between the menstrual cycle and anxiety levels as well as executive functioning.

Since there has been no recent major advance in the treatment of anxiety disorders and we still do not know enough about the impact of oral contraceptives on mental health, exploring the impact of female hormones will allow for a better understanding of anxiety symptoms and executive functions in women. This study could also allow to develop better treatments for women suffering from anxiety. Possibly therapy treatment could be tailored to different phases of the menstrual cycle, hormonal supplementation could help improve therapy outcomes or focusing on certain executive functions could be useful in trainings aimed at reducing anxiety symptoms. Further possible use of the results of the project could be to create a smartphone application to help women with anxiety adapt their lifestyle according to their menstrual cycle to reduce their symptoms.