



# Mental Health and Hormonal Birth Control

By: **Olivia Marshall**

## ABSTRACT

This infographic presents research on the potential consequences that hormonal contraceptives could have on a woman's mental health. This analysis presents evidence that women of all ages taking hormonal birth control are at a higher risk for experiencing depressive symptoms at some point in their lives.

Access a high quality version of the infographic: [Mental Health and Hormonal Birth Control](#).



## About the Author



*Olivia Marshall*

My name is Olivia Marshall, and I am studying Health Science with an emphasis in Health and Wellness Services. I am a member of the Golden Girls dance team as well as a member of the Delta Delta Delta chapter at the University of Missouri. I am involved in the Pre-Physician Assistant Club and the School of Health Professions Student Council. I intend to pursue a masters in physician assistant studies after graduating with my bachelors in May of 2023. I am passionate about women's health and hope to practice obstetrics and gynecology in the future.

### MENTAL HEALTH AND HORMONAL BIRTH CONTROL

**12%** of all women will experience depression at some point in their life. Women, in comparison to men, have a **70%** greater chance of experiencing depression.

Of the women who are using contraception, **43%** of them are using **HORMONAL CONTRACEPTIONS**.

#### TYPES

Pill, Intrauterine devices (IUD), injections, arm implants, patches, and vaginal rings

#### HOW THEY WORK

They secrete hormones into the body that stop the release of an egg, prevent sperm from getting into the uterus, and make the uterus less suitable for fertilization.

#### HORMONES AND THE BRAIN

The hormones in many forms of birth control, estradiol and progesterone, have been found to affect the parts of the brain responsible for regulating mood and behavior.

#### RISK FOR DEPRESSION IS INCREASED

In order to measure depression, researchers use the **Beck Depression Inventory (BDI)** assessment. Women who were currently using hormonal contraceptives or have ever used hormonal contraceptives were asked to complete this assessment. Researchers found that these women had **higher BDI scores** as compared to women who have never taken hormonal contraceptives. Also, the women who were using hormonal contraceptives for a **longer period of time** had higher scores on the BDI scale. After beginning hormonal contraceptives, symptoms among women with Major Depressive Disorder (MDD) were more severe.

#### SUICIDE RATES AMONG WOMEN

An unfortunate result of depression is **suicide**. Researchers examined whether or not there was a link between hormonal contraceptive use and suicide attempt. These women were 15 years old and had not been using hormonal contraceptives prior to the start of the study. They studied these women until the age of 33. They found that the women who started using hormonal contraceptives during the study had a **higher rate** of suicide attempts than those who did not take birth control. Adolescents between the ages of 15-19 who were taking hormonal contraceptives had the highest suicide attempt rate.

### ESTROGEN VS. PROGESTERONE

There are different combinations of hormones found in birth control. The two most common types are an **estrogen-progestin** combination and a **progestin-only** form. When estrogen and progesterone are combined, women have less severe depressive symptoms, greater physical health, and fewer anxiety-related problems. **Estrogen is the key**. Estrogen has been known to help regulate serotonin levels, whereas progestin has the opposite effect. Therefore, a progestin-only contraceptive can lead people to have more severe depressive symptoms. Taking a combination of estrogen and progesterone can still cause depression, but the severity is lessened.

### RISK FOR ADOLESCENTS

Children between the ages of **10-19** are at a greater risk for experiencing depressive episodes at some point in their life when taking hormonal contraception. Adolescents who use birth control are at a **greater risk** because parts of their brains, such as the amygdala, hippocampus, and prefrontal cortex, are all still developing. These parts of the brain regulate **emotion**, and the hormones found in contraception are known to affect these areas and **hinder their development**. Women who start taking hormonal contraceptives during adolescence show lower levels of cortisol responses, meaning that they are unable to respond well to stress. Low reactivity to stress can be a **risk factor for depression**. Additionally, these teenagers' hippocampus had **more** white matter and myelination than normal, which is linked to poorer cognitive function and depressed symptoms. Teenagers are more susceptible to depression the longer they use hormonal birth control.

### WHAT CAN WE DO?

**Birth control** is not only used for preventing pregnancy. Women use birth control to help regulate their menstrual cycle, treat acne, endometriosis, and to help prevent certain cancers. Physicians should take into account a woman's mental health history before prescribing hormonal birth control. If a woman has a history of depression, then they should not be prescribed a progesterone only contraception. There are combination pills that contain estradiol that have shown to be less likely to cause changes in mood. Doctors should also screen patients for depression regularly while they are on hormonal birth control, especially teens.

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