Uses for Hormonal Contraception Beyond Prevention of Pregnancy

It's a common occurrence to meet a young girl, not sexually active, on birth control. At first, this may seem like unnecessary medication. If oral contraceptives are made to prevent conception, why would a young teen who is not interested in becoming sexually active be taking these medications? Although these medications were made for preventing pregnancy, there are many other conditions that birth control is FDA approved to treat, as well as conditions that are treated off-book.

The magic of birth control is in its hormones. The oestrogen in birth control suppresses natural oestrogen production, reducing symptom-causing hormonal fluctuations. Progestins prevent implantation which prevents pregnancy, and also play a role in inhibiting ovulation, which can reduce symptoms of some gynecological disorders. Therapeutic uses for hormonal contraceptives include acne, polycystic ovary syndrome (PCOS), pre-menstrual dysphoric disorder (PMDD), endometriosis, adenomyosis, dysmenorrhea, ovarian cysts, and more. (Shirtliff, A. 2025) In this paper, and in my STEAM project, I will focus on the following 4:

Endometriosis:

Endometriosis is one the most common gynecological issues in women. It is prevalent in about 10-15% of women. People who have endometriosis have endometrium-like tissue outside the normal lining of the uterine cavity. People with endometriosis suffer from symptoms such as dysmenorrhea, severe and extremely painful uterine cramps during menstruation, dyspareunia, or pain during or after sex, or Dyschezia, or painful or difficult bowel movements. The most common symptom associated with endometriosis is debilitatingly painful periods. (Mayo Foundation 2024) Hormonal therapy is the most common method of treating this condition. It is less invasive than surgery, and since the disease is estrogen dependent, hormonal therapy is thought to help at the pathological level. Combined oral contraceptives are used primarily as a first step in treatment, and can be used long term if successful. These help symptoms by suppressing ovulation and regulating/ stabilizing hormones, which helps thin the endometrial lining. Hormonal birth controls are used to treat cycle related symptoms. (Piriyev E et. al, 2025)

Acne:

Combined contraception, which contains oestrogen and progestin, comes in forms of pills, patches, vaginal rings. Oestregen stimulates sex hormone binding globulin liver synthesis, which in turn induces oestrogen receptor expression. This will feedback to the hypothalamus and decrease LH levels. All of this will result in a lower amount of testosterone in the body, which is shown to reduce acne. (Słopień R et al, 2018)

Endometrial and Ovarian Cancer

Some studies have shown that by the prevention of ovulation, birth control can reduce the risk of hereditary ovarian cancer in women with the BRCA1 and the BRCA2 gene mutation by up to 50%. When no ovulation occurs, there is no rupture in the ovary, and therefore no repair. This minimizes the trauma to the tissue and the inflammation that occurs during this time. Hormonal contraceptives also regulate the hormones in the endometrium. This suppresses cell proliferation and significantly reduces the risk of cancer. (Xia YY et al, 2022)

Infertility:

IVF, or in vitro fertilization, is a medically assisted way of conceiving a child. This is a delicate process. Oftentimes, in order to prepare an otherwise “hostile” uterus, oral contraceptives will be used for a few cycles to prepare the uterus, ovaries and sex/reproductive hormones for implantation and conception. This pre-treatment is used for menstrual cycle control, preparation for egg retrieval, and suppression of cysts forming. As counter intuitive as it sounds, taking birth control is actually a very important tool in conception for a lot of women. (Practice Committee of the American Society for Reproductive Medicine 2024)

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Picture of me completing project

