

The Birth Control Pill [1]

By: Raup, Christina Keywords: [Contraception](#) [2] [Reproductive rights](#) [3]

The “birth control pill,” more commonly known as “the pill,” is a form of [contraception](#) [4] taken daily in pill form and consisting of synthetic [hormones](#) [5] formulated to prevent [ovulation](#) [6], [fertilization](#) [7], and [implantation](#) [8] of a [fertilized egg](#) [9]. The US [Food and Drug Administration](#) [10] (FDA) approved the first [birth control](#) [11] pill, [Enovid](#) [12], in June 1960. It was the first contraceptive pill marketed worldwide. Since then a number of different pills have been developed, which differ in [hormone](#) [13] type and dosage, and whether they contain one [hormone](#) [13] (the minipill) or two (the combination pill). The development of an effective oral contraceptive was an enormous step in the [reproductive rights](#) [14] movement, as contraceptives provided women and couples a means of planning families and limiting the number of children they had.

During the 1930s, research on steroid [hormones](#) [5] in the human body led scientists to consider the potential of [hormone therapy](#) [15] for maladies such as menstrual irregularity and [infertility](#) [16], but it was not until 1939 that the technology for obtaining [hormones](#) [5] became cost-effective enough to allow for wide-scale research. [Russell Marker](#) [17], a chemist at Pennsylvania State University, devised a procedure for synthesizing [hormones](#) [5] in plants. This technique is still used today to produce synthetic [hormones](#) [5] like those used in [birth control](#) [11] pills.

With the development of cheaper synthetic [hormones](#) [5], research into [hormone](#) [13]-based [contraception](#) [4] was made possible. Prominent family-planning advocate and eugenicist Margaret Sanger had long been an advocate of more effective methods of [contraception](#) [4]; at the time, people relied primarily on diaphragms and spermicides. Together with her patron Katharine Dexter McCormick, Sanger recruited steroid researcher Gregory Pincus of the [Worcester Foundation for Experimental Biology](#) [18] in Shrewsbury, Massachusetts, to develop a [hormone](#) [13]-based [oral contraceptive pill](#) [19]. Pincus had previously done experiments delivering [progesterone](#) [20] to rabbits and mice, and had determined that the [hormone](#) [13] suspended [ovulation](#) [6] in these mammals. He worked with [infertility](#) [16] doctor John Rock of the [Free Hospital for Women](#) [21] in Brookline, Massachusetts, who had already been experimenting with using [progesterone](#) [20] in female patients. Rock was attempting to suspend [ovulation](#) [6] in women struggling to conceive, with the hope that their fertility would improve when [ovulation](#) [6] recommenced. The following year Rock and Pincus administered synthetic [progesterone](#) [20] to fifty women for three months. During that time, the patients ceased ovulating; regular [ovulation](#) [6] resumed when the therapy was withdrawn.

Many of the clinical trials were performed in San Juan, Puerto Rico, because anti-birth-control laws in many states including Massachusetts made it impossible for Rock to perform the large-scale studies required by the FDA for drug approval. These trials began in 1956, and in 1957 Pincus began additional trials in Haiti and Mexico City. The first contraceptive pill, called [Enovid](#) [12], was designed by the pharmaceutical company G. D. Searle. [Enovid](#) [12] was first approved by the FDA in the summer of 1957 for use in treating severe menstrual disorders. The FDA stipulated that the label must warn women that [Enovid](#) [12] prevents [ovulation](#) [6]. By late 1959, over half a million American women were using the drug, an unexpectedly high number. It has been speculated that many of these women had asked to be placed on the drug for the contraceptive benefits it conferred.

With further study it was found that a certain amount of [estrogen](#) [22] was needed to prevent patients from having breakthrough bleeding, or bleeding when they were not menstruating, during the course of therapy. Thus the combination pill contains both [synthetic estrogen](#) [23] and [progesterone](#) [20], and was the first type of [birth control](#) [11] pill approved by the FDA. However, these early oral contraceptives contained doses of [estrogen](#) [22] that were too high, resulting in such side effects as weight gain, bloating, edema, painful swelling in the breasts, profuse and irregular vaginal bleeding, and [hyperplasia](#) [24], an overgrowth of the uterine lining that can lead to cancer.

In 1973 combination pills began containing progressively smaller doses of [estrogen](#) [22] to alleviate the health risks associated with the [hormone](#) [13]; eventually they contained the lowest possible dose of [estrogen](#) [22] while still preventing [conception](#) [25]. The minipill was also approved in 1973, serving as a [progestin](#) [26]-only alternative to combination pills. Despite the side effects associated with [estrogen](#) [22], the combination pill is still the more common of the two types of pill, as it has a lower incidental [pregnancy](#) [27] rate.

The [birth control](#) [11] pill functions primarily by preventing [ovulation](#) [6]. The pill elevates the body’s levels of [progesterone](#) [20], which mimics [pregnancy](#) [27]. The body behaves as though it is pregnant, disrupting the normal menstrual cycle and the release of additional [hormones](#) [5] that cause a woman to ovulate. Progestin also thickens cervical mucus, which helps prevent [sperm](#) [28] from entering the [uterus](#) [29]. It may also prevent fertilized eggs from implanting properly in the lining of the [uterus](#) [29].

Prescriptions for the pill can be obtained from both private practice physicians and [family planning](#) [30] clinics such as Planned Parenthood. It is considered 100% effective when taken correctly: combination pills must be taken every day, and the minipill

must be taken at the same time every day. The pill has been shown to decrease the incidence of endometrial and ovarian cancers, benign cysts in the breast and ovaries, and [pelvic inflammatory disease](#)^[31]. It also regulates the menstrual cycle and eliminates heavy, irregular bleeding in women with [endometriosis](#)^[32]. Its side effects can include nausea, mood changes, weight gain, breakthrough bleeding, and breast tenderness, though these usually only last during the first three months of use.

Though complications are rare in healthy patients, the pill has been linked to heart attack, stroke, and blood clots. Women who smoke while taking the pill increase their chance of heart cardiovascular disease. Additionally, women with high blood pressure may be advised not to take the pill. Rifampin, a drug taken only by patients with tuberculosis, has been shown to decrease the pill's effectiveness in preventing [ovulation](#)^[6]; large-scale studies have not found this decrease in effectiveness for any other antibiotic.

The [birth control](#)^[11] pill is one of the most effective methods of [contraception](#)^[4] when used properly. The FDA estimates that 1.2 million American women were using the pill within two years of its inception, and as of 2009 over 100 million women worldwide rely on oral contraceptives. The [birth control](#)^[11] pill enables millions of women and couples to safely and effectively decide when they want to conceive.

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