

Post-Coital Oral Emergency Contraception ^[1]

By: Ly, Sarah Keywords: Contraception ^[2]

Post-coital oral emergency [contraception](#) ^[4] is used for the prevention of [pregnancy](#) ^[5] after intercourse. The [contraception](#) ^[4] comes in the form of pills, often collectively referred to as morning-after pills. Post-coital use of morning-after pills separates them from traditional [contraception](#) ^[4] which is either a continual preventative process, such as the [birth control](#) ^[6] pill, or used during intercourse, such as condoms. Oral emergency [contraception](#) ^[4] is important to [embryology](#) ^[7] because it represents a significant accomplishment in the human ability to manipulate the process of embryonic development and [pregnancy](#) ^[5]. Though there are still many misunderstandings about the morning-after pills as a contraceptive method, the continued efforts of scientists to carry out research on emergency [contraception](#) ^[4] suggests that the technology may continue to improve and grow into more widespread use.

The origin of emergency [contraception](#) ^[4] can be traced back to the 1920s when scientists first showed that post-coital [contraception](#) ^[4] could work in mammalian animals. Dogs and horses were brought into clinics shortly after mating and were administered small doses of extracted ovarian [estrogen](#) ^[8]. The treatment prevented the animals from becoming pregnant. Veterinary physicians quickly embraced the scientific findings and began putting them into practice, creating a radical new development in contraceptive technology.

Some reports of human trials can be traced back to the 1940s, but it was not until the 1960s that physicians officially documented the first successful case of human emergency [contraception](#) ^[4]. The study, from the Netherlands, documented a group of medical practitioners successfully executing the same animal-tested method of treatment performing emergency [contraception](#) ^[4] on a thirteen year-old rape victim. Meanwhile, US scientists were also gathering positive findings about the role of [estrogen](#) ^[8] treatments in [pregnancy](#) ^[5] prevention. In 1974, [Albert Yuzpe](#) ^[9] developed a specific cocktail of the [hormones](#) ^[10] [estrogen](#) ^[8] ethinyl [estradiol](#) ^[11] and [progesterin](#) ^[12]. This cocktail displayed high efficacy and low side effects, and was later coined the Yuzpe Regimen. From that point on, emergency [contraception](#) ^[4] became a focus for scientists who would later develop more effective variations of the treatment as well as test the efficacy and safety of emergency [contraception](#) ^[4]

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In 1997 The US [Food and Drug Administration](#) ^[13] (FDA) officially announced the safety and efficacy of oral emergency contraceptive pills. However, this approval only affects a physician's right to prescribe the morning-after pills to patients for emergency [contraception](#) ^[4]. In fact, not a single drug company has yet to apply for FDA approval to officially market and advertise morning-after pills for postcoital [contraception](#) ^[4].

Scientists have developed many varied [hormone](#) ^[14] formulas for emergency contraceptive pills since the 1960s, which have led to a large variety of different oral contraceptive treatment courses. In the US, there are currently eighteen commercial brands of emergency contraceptive pills available to the public. These include Plan-B, Seasonale, and Ovral. The

Yuzpe method remains the most commonly used [hormone](#) [14] cocktail in pills today. The Yuzpe method is the most thoroughly studied method, and boasts a seventy-five percent rate [reduction](#) [15] of unplanned pregnancies. It should be noted that this value does not represent the success rate of the drug, but rather, compares the difference in number of pregnancies that would be seen without treatment versus with treatment. For example, within a finite population of women who have unprotected sex, a given proportion of them would become pregnant. If they all received the morning-after pill, the number of pregnant woman would be only one-fourth of the original statistic.

The title of the morning-after pill is misleading in several ways. First, the morning-after pill encompasses an entire course of treatment which generally involves multiple pills taken in two dosages, rather than a single pill taken just once. The prescribed dosages can be as large as twenty pills, and are consumed by the individual twelve hours apart from each other. Additionally, in contrast to what the phrase "morning-after" would suggest, women do not have to wait until the morning subsequent to unprotected intercourse to take the pill. Also, the effectiveness of the pill does not expire after one day. In fact, the morning-after pill is intended to be effective if taken up to seventy-two hours after intercourse. Scientific studies illustrate the fact that this established time frame does not represent a maximum time for the drug's efficacy, as treatments induced as late as 120 hours after unprotected sex have been successful in preventing [pregnancy](#) [5]. These results underlie the fact that the prescribed limitations of the pill may not be as absolute as they seem and that further studies could change the official treatment guidelines of the morning-after pill.

Although the exact mechanism of [contraception](#) [4] enacted by emergency contraceptive pills has not been concretely established, different studies support several plausible physiological explanations for the drug's effectiveness. For example, much research has shown that ingestion of the morning-after pill can stall [ovulation](#) [16], which corresponds to the fact that the morning-after pill is most effective when taken before [ovulation](#) [16]. Other researchers observe that the morning-after pill induces changes in the [endometrium](#) [17], or inner lining of the [uterus](#) [18] that influences a woman's ability to conceive during, and after, the course of treatment, though these observations have been contradicted by other scientists. Some other ideas regarding the mechanism of [pregnancy](#) [5] prevention include changes to the cervical mucus, intervention of embryo transport, and direct [fertilization](#) [19] interference.

Although the mechanism has not been found, numerous scientific studies attest to the safety of the morning-after pill. But like any drug, there are documented side effects. The most prominent warning that accompanies emergency [contraception](#) [4] is that it should not be administered after a woman becomes pregnant. However, even so, studies reveal no evidence of [birth defects](#) [20] in children born to mothers who took the morning-after pill while unaware that they were already pregnant. Common side effects related to emergency contraceptive pills include nausea, dizziness, abdominal pain, and fatigue.

Despite its long history of being used and the many studies that confirm its safety, oral emergency [contraception](#) [4] remains attached to multiple stigmas. Some opponents of morning-after pills suggest that post-coital use of the pills encourages unsafe sexual practices. Additionally, surveys often find that many individuals equate the morning-after pill to [abortion](#) [21], though the pill prevents the occurrence of [pregnancy](#) [5] rather than interrupting it during the process of [embryogenesis](#) [22]. Oral emergency contraceptives are an important milestone in the history of [embryology](#) [7] and fertility because their use symbolizes the human desire to manipulate and predict [pregnancy](#) [5].

Sources

1. Ellerston, Charlotte. "History and Efficacy of Emergency Contraception: Beyond Coca-Cola," *International Family Planning Perspectives* 22 (1996): 52-56.
2. Grimes, David. "Emergency Contraception," *Annals of Internal Medicine* 137 (2002): 187-189.
3. Trussel, James. "The Role of Emergency Contraception," *American Journal of Obstetrics and Gynecology* 190 (2004): 30-38.

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