RCMOS - Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

The pharmacist's role in the use of contraceptives.

Role of the pharmacist against the use of contraceptives

Jaqueline Pires da Silva, Department of Health Sciences, Pharmacy students from the Guaíra campus of the Paranaense University (UNIPAR).
Priscila Jakeline Boller, Department of Health Sciences, Pharmacy students from the Guaíra campus of the Paranaense University (UNIPAR).
Juliana Cogo, Department of Health Sciences, PhD Professor in health-related courses at Unicesumar University of Maringá (UNICESUMAR).
Rosemeire Aparecida Marques de Souza, Department of Health Sciences, Master's student in the Medicinal Plants and Phytotherapy in Primary Care at the Paranaense University, Unipar.
Daniela de Cássia Faglioni Boleta Ceranto , Department of Health Sciences, PhD Professor in the Master's Program in Medicinal Plants and Phytotherapy in Primary Care at the University of Paraná (UNIPAR).
Giuliana Zardeto, Department of Health Sciences, PhD Professor at the University of Paraná (UNIPAR).

SUMMARY

Contraceptives are a set of methods whose most common goal is to prevent pregnancy. Regarding the frequent use of hormonal contraceptive methods, some studies demonstrate that prolonged use can lead to health problems for women. In this sense, the objective of this study was to analyze the side effects, benefits, and the role of the pharmacist in guiding the safe use of contraceptives. To this end, a bibliographic survey was conducted in the Google Scholar and PubMed databases between the years 2015 and 2022. The keywords used were: Contraceptive, Menstrual cycle, Pharmaceutical guidance, Pharmaceutical care. Contraceptives emerged giving women a certain freedom regarding pregnancy and the regulation of some hormonal dysfunctions. Hormonal contraception involves the use of female sex steroid hormones, based on synthetic progesterone and estrogen, administered in the following forms: oral contraceptives, injections, implants, intrauterine devices, patches, and vaginal rings that release progesterone and/or estrogen, depending on the pharmaceutical form. Therefore, it is concluded that greater monitoring by healthcare professionals, including physicians and pharmacists directly involved in the logistical and clinical aspects of medication use is necessary. Thus, further studies on this subject are deemed necessary.

Keywords: Contraceptive, Menstrual cycle, Pharmaceutical guidance, Pharmaceutical care.

ABSTRACT

Contraceptives are a set of methods whose most common objective is to prevent pregnancy.
Regarding the frequent use of hormonal contraceptive methods, some studies show that prolonged use can cause harm to women's health. In this sense, the objective of the present study was to analyze the side effects, the benefits and the role of the pharmacist in guiding the safe use of contraceptives.
For that, a bibliographic survey was carried out in the academic Google and PubMed databases between the years 2015 to 2022. The keywords used were: Contraceptive, Menstrual cycle, pharmaceutical guidance, pharmaceutical assistance. Contraceptives emerged giving women some freedom with regard to pregnancy and the regulation of some hormonal dysfunctions. The method of hormonal contraception is the use of female sex steroid hormones, based on synthetic progesterone and estrogen, administered in the following forms: oral contraceptives, injections, implants, intrauterine devices, patches and vaginal rings that release progesterone and/or estrogen, depending on of the pharmaceutical form. Thus, it is concluded that more monitoring is needed in the use by health professionals, doctors and pharmacists who are directly linked to the logistical and clinical part of the medicines. Therefore, further studies on the subject are considered necessary.

Keywords: Contraceptive, Menstrual cycle, pharmaceutical guidance, pharmaceutical assistance.

RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

INTRODUCTION

The birth control pill was a historical, scientific, and social milestone of the 1960s. It is
It is well known that multiple factors are involved in defining whether or not a user is at risk.
hormonal contraceptives, however, the concentration of hormones found in newer generations...
The risk of contraceptive failure is proving to be increasingly low, justifying its safe use for...
women who do not have associated risk factors (ALMEIDA *et* al., 2021).

Hormonal contraception is the method of using female sex steroid hormones.
Based on synthetic progesterone and estrogen, administered in the following forms: contraceptives
oral, injections, implants, intrauterine devices, patches and vaginal rings that release
progesterone and/or estrogen, depending on the pharmaceutical form (RANG *et* al., 2012).

Among contraceptive methods, oral and injectable methods are the most common.
Oral hormonal contraceptives are reversible and effective in preventing pregnancy.
unwanted, as well as in the treatment of some uterine hormonal dysfunctions (COUTO *et* al.,
(2020). Oral contraceptives, like other medications, cause many side effects, because
For example, metabolic and vascular changes and disorders of the reproductive system (COUTO *et* al.,
2020).

However, the use of these methods can lead to several adverse effects, such as
For example, weight gain resulting from excessive appetite, depression, fatigue,
fatigue, decreased libido, appearance of blackheads and acne, breast enlargement, high blood pressure
Low-density lipoprotein (LDL) cholesterol, decreased high-density lipoprotein.
(HDL) and itching are a consequence of progestogenic effects (ALMEIDA; ASSIS, 2017) or effects
in the long term, among which we can mention immunological, metabolic, and nutritional variations,
psychiatric, gastrointestinal, hepatobiliary, cutaneous-subcutaneous, renal/urinary disorders
Central Nervous System (CNS) vascular, and Reproductive System (ALMEIDA; ASSIS, 2017).

As a specialist in drug information, the pharmacist must master techniques
pedagogical and communication skills to transmit information in an organized way, taking into account
Considering the characteristics of the recipients. Therefore, the pharmacist must clarify any doubts,
to teach and guide in following the treatment methods prescribed by qualified professionals and
avoiding complications during use (FREITAS *et* al., 2015). Therefore, the objective of the present
The work consisted of analyzing the side effects and the pharmacist's role in guiding the use of the product.
Safe contraceptives.

MATERIALS AND METHODS

This research is an integrative literature review study. According to
Souza; Silva; Carvalho (2010) state that an integrative review is a method that provides a synthesis of

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

Knowledge and the incorporation of the applicability of significant study results into practice.

It is presented in six stages: developing the guiding question, searching or sampling the literature, data collection, critical analysis of included studies, discussion of results, and presentation of integrative review.

The bibliographic survey was conducted using the SciELO *(Scientific)* database. *Electronic Library Online),* Google Scholar®, PubMed® *(United States National Library of Medicine),* as well as the manuals and resolutions of the Ministry of Health, comprising a range publications between the years 1997 and 2025, in English, Portuguese, and Spanish.

Keywords used throughout the research were: Contraceptive, Menstrual cycle, Pharmaceutical guidance, Pharmaceutical assistance.

The selection criterion was based on thematic relevance, and articles were selected. for basic and supplementary theoretical foundation. Since this is a review article, the following were not included... The selected articles for this study underwent CAPES Qualis analyses.

DEVELOPMENT

Contraceptive methods are classified as reversible (behavioral, of barrier, intrauterine devices (IUDs), hormonal and emergency contraceptives) and permanent (contraception) methods. Tubal vasectomy and tubal ligation) (PAZ; DITTERICH, 2009). Most contraceptives are intended for For women, the existing contraceptive methods are male condoms and... vasectomies (CWIAK; BERGA, 2011).

Hormonal methods include combined oral hormonal contraceptives or non-combined methods, monthly and quarterly contraceptive injections, emergency contraceptive pills, implants, vaginal rings, skin patches, and progesterone-containing IUDs (PAZ; DITTERICH, 2009). A Hormonal contraception is characterized by the use of hormones properly administered with the goal is to prevent an unwanted pregnancy (PEREIRA; TAQUETTE, 2008).

The beneficial effects include a reduction in menstrual duration and volume, and a reduction in... Excessive bleeding, cramps and premenstrual pain, reduced risk of ovarian cancer. and of the large intestine and rectum, and reduction of acne and hirsutism (increased body hair in women, for example, and in the facial area) (WANNMACHER, 2003).

3.1. Contraceptives

The invention of the contraceptive pill in 1960 was a major advance for women's health, Because of this evolution, women have gained a voice in family planning issues. On August 18, 1960, Enovid-10, the first oral contraceptive (OC), was launched. Norethisterone, as an active ingredient, discovered by scientist Gregory, was approved in the United States. United States, and soon after it was approved as a hormonal contraceptive in the United Kingdom (MENGUE *et*

RCMOS - Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

al., 2016; SANTOS; CABRAL, 2017).

In 1663, John Rock, Gregory Pincus, and Celso-Ramon Garcia conducted a study on the use of progesterone in infertile women, and based on the analysis of this study, ovulation may be suppressed at the desired time and with stability, leading to other studies, such as the use of hormones to control fertility (SOUZA, 2015).

The birth control pill has become a breakthrough in women's health, being the main An alternative for family planning. Its commercialization began in Brazil in the 1960s. Distributed in pharmacies, bringing a sense of freedom to women who choose to use it. not only to avoid unwanted pregnancy, but also to signify that sex was not not only for fertility, but for re-signification and pleasure for individuals and couples (LOYOLA, (2000). Around 1965, birth control pills began to be distributed free of charge. by medical prescription (SILVA, 2017).

Initially, the active ingredient in oral contraceptives (OCs) was mestranol, the first... The hormonal estrogen in the composition of oral contraceptives, and years later, the use of ethinylestradiol. Over time, the contraceptive formula changed its composition to use estradiol valerate, a Natural estrogen, in varying doses and decreasing during the monthly treatment period. (FRUZZETI *et* al., 2010).

The contraceptive method contains estrogen and progesterone in its hormonal component. responsible for the effect of preventing ovulation in women, and can be used alone or in combination (ALMEIDA; ASSIS, 2017). The basic principle of female contraceptives is to prevent the sperm and the oocyte (egg) from meeting, thus preventing ovulation (BRITO; NOBRE; VIEIRA, 2011).

In 2019, it is estimated that 23% of women of reproductive age use contraceptives. CO (hormonal contraceptive) in Brazil (OLIVEIRA *et* al., 2019). In developed countries around 18% use the method and developing countries around 75% (ALMEIDA; ASSIS, 2017).

According to Lima (2017), the birth control pill is the most widely used contraceptive method. because it is effective in inhibiting egg fertilization, but only by around 96-99%, a percentage that It differs according to the pharmaceutical formulation. However, they can be used for certain hormonal treatments.

3.2. Types of contraceptives

3.2.1. Injectable Contraceptive (IC)

Injectable contraceptives (ICs) are being made available in two forms, which are: for monthly or quarterly use; and consist essentially of isolated or combined progestogens.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

They work by inhibiting ovulation and increasing the viscosity of cervical mucus, making it more difficult to conceive. They are similar to estrogen.
the passage of sperm through the uterus (SILVA, 2006).

Intracots (ICs) are typically used when the patient does not tolerate the combined oral contraceptive pill, because if
They forget to take them daily or due to gastrointestinal intolerance to hormones, as CI
They do not have a first-pass effect in the liver (BORGES *et* al., 2021).

The monthly injection formulation may contain norethisterone enanthate and valerate.
Estradiol. They should be administered intramuscularly, preferably in the first or fifth dose.
day of the menstrual cycle. Applications should be made within 30 days after the first one. It should be noted that
The estrogenic phase of the cycle occurs between injections, as the progestin in the formula is metabolized.
more rapidly in the body (POLI MEH, 1997).

The quarterly injectable formula contains medroxyprogesterone acetate, which makes it difficult to...
ovulation occurs and they adhere to cervical mucus. This option may be suitable for breastfeeding women.
altering the menstrual cycle and flow during the first few months of use, as well as causing amenorrhea,
Headache and increased time to regain fertility. The prescription is 150 mg orally.
Intramuscular injection every 90 days. The injection site should not be massaged (POLI MEH, 1997).

When the use of quarterly inhaled corticosteroids is discontinued, hormonal suppression disappears after...
approximately 6 to 8 months, and this period is longer in overweight patients. This suppression
Hormonal issues also occur with monthly injections, due to the presence of ethinylestradiol, which affects the...
The renin-angiotensin-aldosterone system (RAAS) causes fluid retention due to...
mineralocorticoid (SANTOS *et* al., 2012; BORGES *et* al., 2021).

Among the various adverse effects described in the literature are headache, increased
Weight gain and changes in the menstrual cycle (increased flow and amenorrhea) can also affect weight.
Symptoms should occur approximately 60 days after the last injectable application. Inhaled corticosteroids (ICS) should always be used under the supervision of doctors.
Medical supervision, in accordance with the Medical Eligibility Criteria for the use of the methods.
contraceptives (CME), from the World Health Organization (WHO) (ALMEIDA *et* al., 2018).

The benefits of this progestin-only CI method are related to...
reproductive system and the menstrual cycle, such as increased vaginal lubrication, postpartum use
to reduce the risk of iron deficiency anemia, reduce menstrual pain, and prevent
of endometrial and ovarian cancers. Inhibitors are highly acceptable because they are effective, as
They allow for a smooth and slow release. Their use can be interrupted at any time.
Currently, fertility returns within a short period of time, and CIs do not have a cumulative effect.
after several injections (FARIAS *et* al., 2018).

This combined CI method carries risks of thromboembolism and myocardial infarction.
High blood pressure and stroke, depending on the type of hormone used.
depending on the dosage and the patient's medical history. There are also complications such as

RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

Irregularities in the menstrual cycle and flow, which can cause amenorrhea, fluid retention, and acne.
The act of application is also painful, and therefore less acceptable to some women, and because
Periodic changes in bleeding. These changes are usually caused by interruption of the
The use of this method can lead to some adverse effects, such as weight gain and...
mastalgia (CASTRO; GODINHO, 2015; LIMA *et* al., 2015).

3.2.2. Skin contraceptive patch

Cutaneous contraception, also called transdermal contraception, is the hormonal method of choice.
for women who do not prefer the oral pill. The patches are small strips applied to the skin that
They consist of 750 ÿg of ethinylestradiol and 6.0 mg (6,000 ÿg) which are converted to levonorgestrel after
metabolization by the liver (HOFMANN *et* al., 2014; COSTA, LIMA, 2017).

The adhesive can be applied to four locations: the forearms, abdomen, buttocks, and...
back. These specific amounts of estrogen and progestin are released into the bloodstream.
throughout the day, but the body only absorbs 20 ÿg of ethinylestradiol and 150 ÿg of norelgestromin which
are transferred directly into the systemic circulation (HOFMANN *et* al., 2014; COSTA; LIMA,
2017).

The adhesive consists of four layers, the first of which consists of a film of
colorless polyester, the second layer contains the drug estradiol, the third layer forms a film.
ethylene-co-vinyl acetate copolymer, which serves to control the release of the drug and
The last layer is the adhesive layer (LANZILLOTI, 2012).

The patches need to be changed weekly, with a 7-day interval, and used
A maximum of 3, totaling a period of 21 days. Since there is no primary metabolism, the effect on coagulation is
reduced. It is indicated for women who do not adapt to other methods.
hormonal contraceptives, in the presence of multiple medications, side effects or discomfort (SILVA; ARAÚJO,
2020).

Transdermal administration presents the same risks of thrombosis as oral administration.
Oral, with a daily release of 20 ÿg of ethinylestradiol compared to 35 ÿg/day from pills.
Combined COÿ (BITTENCOURT *et* al., 2017).

The advantage of transdermal contraceptives is that, like inhaled corticosteroids (ICS), they have no side effect.
First-pass metabolism in the liver. In addition to the hormone concentration being constant, it brings as
The advantage lies in the ease of use and, in relation to plasma levels, they are more stable without
peaks or falls, which is a solution for people who have difficulty swallowing and also
For women with intestinal malabsorption syndrome, this method offers comfortable application and
painless (BERMUDEZ *et* al., 2018).

The risks that the adhesive may entail are due to the fact that they are visually...
uncomfortable, the detachment during the day or week, which compromises the effect.

RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

Contraceptive, allergy or redness at the injection site, weight changes due to fluid retention.
liquids and the inability to act against sexually transmitted infections (STIs), as well as
in all pharmaceutical forms (FINOTTI, 2015).

Adverse effects may include increased plasma levels of ethinylestradiol in the blood.
because they generally occur with concomitant use with other medications (interactions).
(medicinal), such as paracetamol, ascorbic acid, inhibitors of the cytochrome P450 3A4 enzyme
(CYP3A4), itraconazole, ketoconazole, fluconazole, some protease inhibitors (indinavir, atazanavir)
and inhibitors of the HMG-CoA reductase enzyme (atorvastatin and rosuvastatin) (FINOTTI, 2015).

3.2.3. Subcutaneous implants

Subcutaneous implants (SIs), also called the subcutaneous method, suppress the
Ovulation occurs by increasing the viscosity of cervical mucus and inhibiting sperm penetration.
(TRUSSEL, 2008), is classified as a long-acting contraceptive method consisting of
different hormones, including etonogestrel, levonorgestrel, elcometrine or nestorone and
nomesgetrol and are implanted under the skin, inside the woman's non-dominant arm.
(WANNMACHER, 2006; ARIE *et* al., 2007).

Inhaled vaginal discharge (IS) is cited as an interesting form of pregnancy prevention for
adolescents seeking a long-term preventative method. Its high cost influences the choice, in addition to...
This arrangement is made difficult by the requirement of a trained professional for the placement and removal of the implant.
(CARDOSO *et* al., 2019).

Local anesthesia is used, the entire procedure takes an average of 15 minutes, and is painless.
It can remain in a woman's body for up to three years, and local anesthesia should also be used.
for its removal. Once the implant is removed, the ovaries return to their normal function.
(WANNMACHER, 2006; ARIE *et* al., 2007).

The benefits of this type of implant include a reduction in menstrual flow and the number of days.
bleeding, reduction of anemia, dysmenorrhea, risk of uterine cancer (HATCHER *et* al.,
(2018). Implants have a lower incidence of amenorrhea and no negative impact on
Lactation. In addition to the above, the risk of ectopic pregnancy is lower in users of implants.
intradermal (HATCHER *et* al., 2018).

Adverse effects include causing headaches, ovarian enlargement, and sensitivity.
Breast pain, anxiety, acne, nausea, dermatitis, breast discharge, changes in appetite, and weight gain.
(HATCHER *et* al., 2018).

3.2.4. Vaginal Pills

This contraceptive method uses artificial hormones to prevent women from ovulating.
Since the pill is absorbed through the vaginal mucosa, the gastric problems that are more common in women are less likely.

RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

In women, the effects are considerably reduced, since they do not have first-pass effects.
by the liver (ARIE *et* al., 2007).

The pill should be administered vaginally daily and there is no need for a
period of sexual abstinence; ovarian function is restored immediately after cessation of
The use of the pill regulates menstrual cycles, reducing menstrual flow and cramps. Its
Efficacy is comparable to other pills (95 to 97%) (ARIE *et* al., 2007).

Care should be taken in how the pill is inserted into the vagina, as the woman
You should remain in a resting position on your back for 30 minutes every day until...
The pill is absorbed. Sexual intercourse is possible within one hour of insertion. However,
If vaginal infections are present, the patient should discontinue use (ARIE *et* al., 2007).

The vaginal pill has side effects such as increased appetite and weight gain, and should not be...
indicated for women over 35 years of age and not indicated for smokers (ARIE *et* al.,
2007).

3.2.5. Vaginal Ring or Nuvaring

The vaginal ring, also known by the trade name Nuvaringÿÿ, is a method
contraceptive in which small amounts of etonogestrel and ethinylestradiol are slowly and
Gradually released into the bloodstream. This method releases small doses of hormones.
and is considered to have fewer hormones and fewer side effects (ANVISA, 2017).

Even when used for three consecutive weeks, the effect is similar to the hormone.
combined. However, in addition to the contraceptive effect, other benefits may also be
expected. One of them is the reduction in the risk of anemia, due to a shorter menstrual period and the
Decreased flow intensity. Menstrual cramps are less intense or even stop.
(ANVISA, 2017). Its adverse effects include contraindication for women who have or
They have already had venous thrombosis, women with a history of heart disease and stroke (ANVISA, 2017).

3.2.6. Intrauterine Device (IUD)

The IUD is an appropriate method for patients who desire effective reversible contraception.
practical, long-lasting, and easily removable. Furthermore, women with problems with
hormonal methods for treating conditions such as heart disease, epilepsy, migraines, high blood pressure, or other illnesses.
hepatic (PINTER, 2002).

3.2.6.1. Copper-coated intrauterine devices

Copper-coated IUDs are plastic (polyethylene) devices coated with copper filaments.
copper. The most commonly used in Brazil are the TCu 380 A (314 mm2 copper filaments on the vertical axis).
and 33 mm2 on each cross arm) and Multiload 375 (375 mm2 filaments and copper on the vertical axis)
(BRAZIL, 2009), which is the least commercialized in the country.

RCMOS - Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

Studies have shown that the contraceptive action of the copper IUD is due to a
The combination of the device and the local inflammatory response to copper ions causes it to...
fertilization was prevented by an increase in the concentration of leukocytes and prostaglandins, in addition to altering
the transport of sperm, interfering with sperm motility and survival, and
ovum, thus preventing fertilization (CURITIBA, 2002).

The TCu 380 A IUD is the most effective copper IUD and lasts 10 years after insertion. The rate of
The failure rate of contraception is 0.6 to 0.8 per 100 women during the first year of use.
Subsequent annual pregnancy rates are even lower (BRAZIL, 2009). After the removal of
With IUDs, copper concentrations in the upper reproductive organs decrease rapidly and...
Fertility is restored (BRAZIL, 2009).

3.2.6.2. Hormonal intrauterine device

The levonorgestrel (LNG) IUD consists of a T-shaped polyethylene structure, with
a cylinder 3.2 cm in diameter at its vertical stem covered with a polydimethylsiloxane membrane that
regulates the release of levonorgestrel (POLI *et* al., 2009). The device inserted into the uterus releases 2
micrograms of levonorgestrel for a maximum period of five years. The action is localized,
causing endometrial atrophy and changes in cervical mucus, with thickening of the mucus,
thus preventing the penetration of sperm and suppressing ovulation (POLI *et* al., 2009).

The cumulative pregnancy rate over up to five years is 0 to 0.2 per 100 women with an IUD.
levonorgestrel. The effectiveness of this method is similar to surgical sterilization (BRAZIL, 2010).

The main risks associated with the use of IUDs are: pain during insertion, reaction
vagal (which can be mild and transient and resolve spontaneously); uterine perforation;
Hemorrhage; cervical laceration and transient bacteremia. However, these risks may be
prevented, by technical rigor in insertion (POLI *et* al., 2009).

Uterine perforation is undoubtedly the most serious complication and can have long-term consequences.
serious, especially if left undiagnosed, resulting in the placement of instruments in inappropriate locations.
of the uterine cavity (POLI *et* al., 2009). This requires the use of materials that interact with
safe forms that are compatible with the body and physiologically acceptable, such as biomaterials (POLY).
et al., 2009).

3.2.7. Oral contraceptives (OCs)

This method is so named because of the hormones in its composition. The pills
Combined contraceptives contain two hormones in their formulations, one being...
estrogen and progestin, and isolated pills called mini-pills, which contain only progestin.
(COUTO *et* al., 2020).

Estrogen and progestogen are responsible for the mechanism of action where they prevent...

RCMOS - Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

ovulation, and can be found together or in isolation (ALMEIDA; ASSIS, 2017).

3.2.7.1. Combined oral hormonal contraceptive

Combined oral hormonal contraceptives contain the synthetic hormone estrogen.
and progesterone, which work together to suppress ovulation (BRAZIL, 2005). These are
subdivided into two types: combined hormonal contraceptives, monophasic, where are
(administered equal daily doses of estrogen and progesterone) and multiphasic, where the dose of
Estrogen levels change in the 21-day cycle, followed by a seven-day break to allow for bleeding.
by suppression that is similar to the normal menstrual cycle (RANG *et* al., 2012).

3.2.7.2. Progesterone-only contraceptive pill

These medications have four generations; the first-generation ones are the oldest.
and are no longer commercially available due to the high estrogen dosage they contained.
The formulation uses mestranol as estrogen and norethisterone as progestogen. Meanwhile, the pills of
Second-generation contraceptives contain ethinylestradiol (EE) at doses of 30 to 50 ÿg and use ethinylestradiol as a progestogen.
Levonorgestrel, whose main trade names are Ciclo21®, Level®, and Microvlar®, still has a high incidence of use
due to its accessibility through the Unified Health System (SUS) (FERREIRA; PAIXÃO, 2021).

Progestogens can be divided into the following hormones: norethisterone, levonorgestrel,
ethynodiol, in the third generation of tablets we have other compounds such as desogestrel or
gestodene, with less androgenic action and alterations in the metabolism of lipoproteins more
efficient. The fourth generation is more recent and was introduced to the market around the year 2000.
having drospirenone as the progestogen, and EE less than 20 ÿg, which are referenced in
market by Yaz® and Yasmin® (RANG *et* al., 2001).

Since ovulation is suppressed during the use of the progestogen-only pill,
Contraceptive effectiveness is variable and unreliable (BRAZIL, 2005). Reported side effects
These are: menstrual disorders, with the occurrence of irregular bleeding. It is observed that only
A small proportion of women choose to use it without any knowledge of the risks.
long-term effects of its use (RANG *et* al., 2001). According to Korolkovas et al. (2010) some
Oral contraceptives containing only progestogen, for oral use, are: Micronor® and Nortrel®.

3.2.7.3. Mini-pills The

mini-pill is a type of contraceptive that does not inhibit ovulation, but it can prevent it.
an unwanted pregnancy. This should be administered daily and continuously; its composition is...
A low-dose progestin (norethisterone) should be started on the first day of the cycle.
menstrual and throughout the entire period in order to avoid pregnancy (SILVA, 2006).

The mini-pill can be used during breastfeeding because it does not contain estrogen.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

hindering the formation of breast milk (MONZU, 1992). It can be started six weeks after
This medication is for continuous use and comes in blister packs containing 35 tablets.
(BRAZIL, 2006).

The side effects described with the use of the mini-pill are: in its first three months of
Use may cause nausea, vomiting, headache, and weight gain (JÚNIOR *et* al., 2008).

If symptoms persist or worsen, use should be discontinued. Other side effects that
Other possible side effects include decreased vaginal discharge, cramps, hair loss, fatigue, and depression, which should be carefully monitored by a healthcare professional (JÚNIOR *et* al.,
2008).

3.2.7.4. Emergency Contraceptive Pill (ECP)

Commonly referred to as the morning-after pill (MAP), it is a pill based on
Levonorgestrel is a progestogen-only method and does not contain estrogen. It is a self-contained contraceptive method and can be...
used by women with a history of hypertension and diabetes mellitus (LIMA et al., 2019).

The first dose of 0.75 mg of levonorgestrel up to 72 hours after unprotected sex, with
A second dose of 0.75 mg 12 hours later. There is a single tablet containing 1.5 mg of
levonorgestrel, which is equivalent to two doses of 0.75 mg (TRUSSELL; RAYMOND, 2011). Efficacy
It increases when used for less than 72 hours. In the first 24 hours of use, studies
Studies have shown that a single dose of levonorgestrel is approximately 95% effective (FIGUEIREDO; PEÑA, 2002).

Emergency contraceptive pills (ECPs) prevent or delay ovulation and reduce the ability of sperm to fertilize an egg. They are contraindicated as a method of contraception.
Continuous use is recommended only in emergency situations due to the high dose.
hormonal (BRAZIL, 2006).

With regard to menstruation, some women may experience delays or irregular periods.
Early onset when using the morning-after pill. Frequent or repeated use can therefore make
It is difficult to identify the menstrual cycle and fertile period, and this can cause abnormal menstruation.
(FREITAS; CERON; NOWACKI, 2019).

The most common side effects are nausea, fatigue, headache, vomiting, and pain.
abdominal pain, light bleeding, irregular menstruation, dysentery, breast tenderness, changes in
mood swings, bleeding outside of the menstrual period (GIRALDO *et* al., 2019). Long-term use of
This medication may increase the risk of developing breast cancer, cervical cancer, and...
vagina. Therefore, high doses also present risks, such as drug-related disorders.
which lead to characteristic symptoms, such as nausea and vomiting (LEAL; RODRIGUES, 2019).

It is a method proposed as a last resort and is not continuous, and should only be used as a last resort.
only in emergency cases. Its advantage is that it can prevent unwanted pregnancy due to...

RCMOS - Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

failure of the first-choice method or an urgent reason such as sexual violence (LIMA *et* al., 2019).

There are risks similar to those of progestin-only oral contraceptives, such as forgetting to take the medication. Taking the pill, not taking it at the indicated time, nausea, vomiting, taking the pill too late. 120 hours after sexual intercourse, and risks associated with venous thromboembolism (SANTOS *et al.* al., 2017).

Regarding the mechanism of action of this class of drugs, they contain estrogens and Synthetic progestogens that reach the hypothalamus and pituitary gland, causing a reduction in the release of... GnRH (Gonadotropin-releasing hormone) hormone is produced by the hypothalamus and LH (Hyperthyroidism) hormone is produced by the hormone GnRH. Luteinizing hormone) and FSH (follicle-stimulating hormone) are produced by the pituitary gland. Reduced FSH levels will cause Inhibition of follicular growth, hindering the natural increase in estrogen, preventing the endometrial development (ROCHA, 2021).

3.3. Long-term adverse effects of contraceptives

According to Siqueira, Sato and Santiago (2017), several women present Symptoms such as mood swings, nausea, and headaches after starting to use Oral contraceptives (OCs). Other side effects include weight gain and abnormal bleeding. They were also reported.

Women with a predisposition to cardiovascular disease who use Hormonal contraceptives carry an increased risk of arterial thrombosis. This risk is directly related to... related to the estrogens contained in the composition of these drugs (ALMEIDA; ASSIS, 2017).

3.3.1. Risks associated with the circulatory system

The use of oral contraceptives can cause metabolic and vascular changes, worsening the circulatory system, and have serious consequences for users (ROCHA, 2021).

Among the various dysfunctions of the circulatory system, cerebrovascular disease (CVE) Commonly known as a stroke, it is the third leading cause of death. Globally, after cancer and acute myocardial infarction (AMI) (CARVALHO; DEODATO, 2016; ARAÚJO *et* al., 2017). Sudden onset of the disease in the brain region, characterized by Blockage of blood flow in the affected area, causing neurological damage and brain lesions, which They can be caused by vascular rupture or obstruction (CARVALHO; DEODATO, 2016).

EVD is classified as hemorrhagic or ischemic. The former arises from the rupture of a blood vessel. Blood extravasation into structural areas of the nervous system, while ischemic occurs when blood leaks into structural areas of the nervous system. To impede blood flow in blood vessels, preventing the supply of nutrients and oxygen. The use of oral contraceptives increases the risk of inducing epilepsy, mainly due to... amount of estrogen contained in the preparations (ROCHA, 2021).

RCMOS - Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

According to Pietczak and Gomes (2020), this condition is mainly caused by factors predisposing factors, such as the formation of thrombi that impede adequate blood flow, such as History of high blood pressure or smoking.

3.3.2. Risks associated with the cardiovascular system

High blood pressure is a chronic condition defined by elevated blood pressure levels. Hypertension is a condition that can be caused by a number of genetic, social, and environmental factors. defined as a systolic blood pressure maintained above 140 mmHg and a blood pressure diastolic blood pressure above 90 mmHg and not controlled by medication (BARROSO *et* al., 2021).

It has been scientifically documented in the literature that the Renin-Angiotensin System-Aldosterone (RAAS) is activated in patients using oral contraceptives, causing fluid retention. sodium and water. This is due to the high potency of ethinylestradiol administered through the use of A pill that intensifies the production of hepatic angiotensinogen, thus increasing blood pressure. (OLIVEIRA; TREVISAN, 2021).

The use of this medication can increase blood pressure levels and cause more complications, such as acute myocardial infarction (AMI) and ventricular dysfunction (VD). The risk is even greater if... The patient may have hypertension and use oral contraceptives, but there is evidence that women with previous hypertension may also benefit from this. Normotensive individuals may experience changes in blood pressure levels (SANTOS *et* al., 2021).

Another important cardiovascular injury is acute myocardial infarction (AMI), one of the leading causes of morbidity and mortality worldwide (SBC, 2022). This condition is caused by blockage of blood flow to an undetermined area of the heart, but is It is generally associated with coronary artery flow. There are numerous contributing factors. for AMI, but the main ones are: heredity, high blood pressure, sedentary lifestyle, dyslipidemia and stress (CASCALDI *et* al., 2014). Costa (2011) points out that this clinical condition may be associated with the use of oral contraceptives along with smoking, hypertension, or diabetes mellitus such as risk factors, particularly in women aged 35 and older.

3.3.3. Risks associated with the coagulation system

Thromboembolism is the formation of blood clots due to the use of Hormonal oral contraceptives, cited by almost all authors. The development of the thrombus. It can be understood in terms of a coagulation cascade stimulated by extrinsic pathways. intrinsic and common (SANTOS, 2017).

In the intrinsic pathway, it is initiated by contact between the blood clot and factor XII; whereas in the extrinsic pathway, it is initiated by factor III (tissue factor) from the damaged tissue, activating Factor VII, which receives stimuli from factor Xa, acts on the prothrombin (II) and thrombin (IIa) pathway. The coagulation cascade is converted into a single pathway, called the common pathway, starting from the

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

which factor X is converted into Xa; this is the basic factor for clot formation (SANTOS, 2017; SILVA, 2017).

The coagulation cascade can be divided into four phases: initiation, amplification, propagation, and termination. It is initiated when the vascular endothelium and blood cells are... disturbed and tissue factor (TF) binds to factor VII present in the blood, where it is activated, triggering the formation of the FVIIa/FT complex, which is involved in the activation of factors IX and X. The binding of factors Xa and Va results in the transformation of prothrombin (II) into thrombin (IIa). (OLIVEIRA, 2018).

The amplification phase begins when vascular injury occurs and platelets gain access to Factor VIII is involved in the extravascular division, where it interacts with thrombin to activate factors V and VIII. and XI on the surface of activated platelets. The proliferative phase is determined by the involvement of a large number of platelets at the adhesion site; factor IXa binds to factor VIIIa to form the The tenase complex generates factor Xa, which binds to factor Va to form the prothrombinase complex. (conversion of prothrombin into thrombin) and breaks down fibrinogen into fibrin molecules, thus forming the first platelet plug (SILVA, 2017; OLIVEIRA, 2018).

Finally, as a final step, the action of natural anticoagulants, such as: pathway inhibitors Tissue-modified protease inhibitors (TFPI), protein C, protein S, and antithrombin (AT), to prevent vessel closure by within the thrombi. From here, proteins S and C inactivate the procoagulant factors Va and VIIIa, while antithrombin inhibits the action of thrombin (SANTOS, 2017; OLIVEIRA, 2018).

Venous or arterial thrombosis is characterized by the formation of clots (thrombi) in the blood vessels. blood vessels, which can be formed spontaneously by trauma or by some predisposing factor, such as a family history of thrombosis, smoking, or associated with medications that may lead to cause (SILVA, 2017). According to Pinto (2020), at least two of the factors of Virchow's Triad: Hypercoagulability, blood stasis, and endothelial injury must be present for a thrombus to form. graduate.

Blood must maintain homeostasis for reasonable flow to occur; otherwise, it promotes... Blood coagulation, in which platelets aggregate, causes disorders and fibrin to form. With this, the Blood hardens in the vessels, forming a thrombus and preventing some or all of the blood from flowing. (ALMEIDA, 2021).

Oliveira and Arruda (2012) clearly demonstrate that the use of oral contraceptives Combined anticoagulants (CABG) increase the risk of developing venous and arterial thromboembolism. Ethinylestradiol increases coagulation factors (e.g., fibrinogen) and decreases inhibitors. Natural coagulation hormones (antithrombin and protein S) result in a procoagulant effect. As As a result, higher doses of ethinylestradiol increase the risk of developing venous and arterial thromboembolism.

RCMOS - Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

According to Almeida (2021), third-generation contraceptives increase the risk of Thrombosis is twice as likely, compared to second-generation devices. It has been shown that concentrations Ethinylestradiol levels exceeding 50 ÿg increase the risk of thrombotic events by up to two times. For this reason, contraceptives with lower concentrations of estrogen have been developed. for generations (SILVA, 2017).

Reducing estrogen levels was primarily necessary to improve the Side effects in patients related to thrombosis. Hormonal contraceptives with Doses up to 20 ÿg have little effect on coagulation system parameters (ALMEIDA, 2021; FERREIRA; PAIXÃO, 2021). Furthermore, the use of hormonal oral contraceptives has been linked to... to the occurrence of thromboembolism, due to the hormones present in the drugs (ROCHA, 2021).

3.4. The pharmacist's role in pharmaceutical care

Pharmaceutical guidance is of great importance in providing care. pharmaceutical, linked to ethical values, prevention and health guidance (VIEIRA *et* al., 2018). According to Resolution No. 596 of the Federal Council of Pharmacy (CFF) of February 21, In 2014, pharmaceutical professionals were required to perform all activities pertaining to the field. Professional, contribute to prevention and educational actions in order to promote health (CFF, 2014).

It is the pharmacist's role to provide guidance regarding the pharmacotherapy prescribed by the physician. checking patients' needs and identifying difficulties related to medications. Consolidating the relationship between the pharmacist's theory and practice, providing health, safety and efficacy (SOUSA SILVA *et* al., 2017).

The presence of a professional during the counseling and dispensing of contraceptives. Oral hormonal therapy (OHT) is fundamental and necessary, as it may be the only healthcare professional available. that women can have easy access to information (FREITAS *et* al., 2015). The pharmacist as As a member of the healthcare team, it is a professional duty to provide information on the use of healthcare products. adequate and safe CO (SILVA; BONAN, 2017).

COs are sold without a prescription, allowing the patient to choose the... A method, but without any pharmacological criteria, following the advice of friends or family. Other hormonal methods, such as injections, are prescribed by qualified healthcare professionals. Pharmacological guidance is necessary in the patient-medication relationship to ensure that it does not self-medication occurs (FREITAS *et* al., 2015).

It will be during the dispensing process that the pharmacist will convey the instructions so that... The patient must understand how to ingest the CO (ingest only with water, starting on the 1st day). (Regarding menstrual bleeding, for 21 days at the same time, at the end of the pack there will be a 7-day break and a new pack will be started on the 8th day) (FERREIRA; PAIXÃO, 2021), which is of great importance. Please mention the contraindications and adverse effects (headache, nausea, vomiting, stomach discomfort, etc.).

RCMOS - Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

mood swings, etc.), risks in the presence of comorbidities (high blood pressure, diabetes).
mellitus, smokers, obesity, and a family history of circulatory problems), the possible risks,
stemming from possible failures of the pill (not taking the pill every day can make the treatment...)
ineffective, use any medication that may cause diarrhea or decreased blood sugar.
absorption of contraception) and also the benefits that the method provides (control of dysmenorrhea, hormonal
cycle and oily skin) (FERREIRA; PAIXÃO, 2021).

Regarding cases of drug interactions, the pharmacist instructs the patient, such as not to...
Using alcoholic beverages, antimicrobials, and other medications that may decrease absorption
of contraception, as these can interact causing loss of effectiveness of CO (HEINEN, 2018).
Thus, pharmaceutical practices based on specific knowledge of contraception will
to contribute to improving the quality of sexual life of women who seek this service (FERREIRA; PAIXÃO, 2021).

In the Unified Health System (SUS), the primary health care sector is responsible for providing
hormonal contraceptives such as combined oral hormonal contraceptives (COCs), minipills,
Monthly and quarterly CIs, and emergency contraception, by qualified professionals (PENTEADO,
(2019). Pharmaceutical guidance on contraceptives is personalized and individualized.
demonstrating the importance of proper treatment, as well as health information.
Women's reproductive health is an important educational activity. Premature sexualization and
Misinformation is a factor that should be associated with the occurrence of unwanted pregnancies.
(PEREIRA; TAQUETTE, 2008).

CONCLUSION

Through the elaboration of this study, we can conclude that it is important to highlight that
All patients must undergo a [test/test/analysis] before using any type of contraceptive.
Proper clinical evaluation is necessary to weigh the risks and benefits of its use. In this sense, it is
Closer monitoring by healthcare professionals, including doctors and pharmacists, is necessary regarding its use.
These are directly linked to the logistical and clinical aspects of medications. It can be inferred that the use
Prolonged use of oral contraceptives can cause damage to the circulatory system, such as
thromboembolism, myocardial infarction, and an increased risk of comorbidities. Therefore,
Further studies on the subject are deemed necessary.

It is extremely important not to forget that the morning-after pill should only be used when prescribed.
For emergency situations, and not as a routine use, other contraceptive methods exist.
which may be routine resources. In this sense, more studies on the subject are needed.
in order to demonstrate the benefits and drawbacks of its use.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

REFERENCES

ALMEIDA, APFD; ASSIS, MMD. Side effects and physiological changes related to the continuous use of oral hormonal contraceptives. **Electronic Journal Atualiza Saúde,** v. 5, n. 5, p. 85-93, 2017.

ALMEIDA, LMC. **Use of oral contraceptives in the incidence of thrombotic events: an integrative review.** Monograph (Graduation in Pharmacy) – AGES University Center, Paripiranga-BA, p. 41, 2021.

ALMEIDA, Letícia Magalhães et al. Knowledge and prior use of contraceptive methods by adolescents from a public school in Ubá. **Revista Científica FAGOC-Saúde,** v. 2, n. 2, p. 15-20, 2018. Available at: https://revista.unifagoc.edu.br/index.php/saude/article/view/25. Accessed on: Apr. 26, 2022.

Brazilian National Health Surveillance Agency (ANVISA). **Nuvaring (etonogestrel + ethinylestradiol).** Available at in: http://www.anvisa.gov.br/datavisa/fila_bula/frmVisualizarBula.asp?pNuTransacao=3859492013&pIdAnexo=1612850

ARAÚJO, LPG; et al. Main risk factors for stroke and its consequences: a literature review. **Revista Interdisciplinar de Pensamento Científico,** v. 1, n. 3, p. 283-296, 2017.

ARIE, Wilson Maça Yuki; FONSECA, Ângela Maggio da; ARIE, Patricia Yuki; ARIE, Maria Hermínia A.; BAGNOLI, Vicente Renato. Contraception. **Brazilian Journal of Medicine.** São Paulo, v. 64, n. 3, p.95-109, March/2007.

BARROSO, WKS; et al. Brazilian Guideline for Arterial Hypertension – 2020. **Brazilian Archives of Cardiology.** v. 116, n. 3, p. 516-658, 2021.

BERMUDEZ, Beatriz Elizabeth Bagatin Veleda. **Contraception in Adolescence. Scientific Department of Adolescence** - Brazilian Society of Pediatrics. p.7-15, 2018. Available at: https://www.sbp.com.br/fileadmin/user_upload/20290c-GPA_-Contraception in Adolescence.pdf Accessed on: April 12, 2022.

BITTENCOURT, Alyssia et al. **Contraception and obesity: a literature review.** Proceedings of the 9th International Exhibition of Teaching, Research and Extension - SIEPE. Federal University of Pampa, Santana do Livramento, vp 06-07, 2017. Available at: 2, https://guri.unipampa.edu.br/uploads/evt/arq_trabalhos/13850/seer_13850.pdf>. Accessed on: Apr. 29, 2022.

BORGES, Ana Luiza Vilela et al. Contraceptive discontinuities in the use of oral and injectable hormonal contraceptives, and male condoms. **Cadernos de Saúde Pública,** v. 37, n. 2, 2021. Available at: https://www.scielosp.org/article/csp/2021.v37n2/e0014220/. Accessed on: April 23, 2022.

BRAZIL. Ministry of Health. **Sexual rights, reproductive rights and contraceptive methods.** Brasília, 2006. Available at: https://bvsms.saude.gov.br/bvs/publicacoes/direitos_sexuais_reprodutivos_metodos_anticoncepcionais.pdf. Accessed July 22, 2022.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

BRAZIL. Ministry of Health. Secretariat of Health Care. **Sexual and Reproductive Health.**
Primary Care Notebooks. Department of Primary Care and Department of Programmatic and Strategic Actions. Brasília. Ministry of Health, p. 280, 2010. Available at: http://189.28.128.100/dab/docs/publicacoes/cadernos_ab/abcad26.pdf

BRAZIL. Ministry of Health. Syrian-Lebanese Institute for Teaching and Research. **Health care protocol** Brasília, Available at https://bvsms.saude.gov.br/bvs/publicacoes/protocolos_atencao_basica_saude_mulheres.pdf. 2016. in: **woman**

Accessed: July 23, 2022

BRITO, Milena Bastos; NOBRE, Fernando; VIEIRA, Carolina Sales. Hormonal contraception and cardiovascular system. **Arquivos Brasileiros de Cardiologia,** v. 96, n. 4, p. e81-e89, 2011.
Available at: https://www.scielo.br/j/abc/a/sNXqJVmRWLyWdQrRV78GjXC/?lang=en. Accessed on: April 23, 2022.

CARDOSO, Lucélia Caroline dos Santos et al. The use of hormonal contraceptives by adolescents and potential health risks. **Clinical & Biomedical Research,** v. 39, n. 1, p. 75-84, 2019 http://repositorio.unilasalle.edu.br/bitstream/11690/2183/1/lcscardoso.etal.pdf Accessed: September 20, 2022

CARVALHO, IA; DEODATO, LFF. Risk factors for stroke. **Scientific Journal of FASETE,** v. 1, n.1, p. 180-191, 2016.

CASCALDI, BG; et al. Acute Myocardial Infarction from the perspective of the Brazilian population. **Brazilian Journal of Cardiology,** v. 27, n. 6, p. 409-417, 2014.

CASTRO, Janice Dornelles de; GODINHO, Graça Fabiana Ramos dos Santos. Experience and reflections of young public health professionals on health economics. ***Doing in Collective Health*. 1st ed.** Porto Alegre: Rede. Available at https://www.lume.ufrgs.br/bitstream/handle/10183/183936/000977113.pdf?sequenc =1. Accessed on: August 11, 2022 2015. in: UNITED

.

Brazilian Federal Council of Pharmacy (CFF). **Code of Ethics for the Pharmaceutical Profession: Resolution No. 596, of February 21, 2014.** Brasília: CFF, 2014. Available at: https://www.cff.org.br/userfiles/file/resolucoes/596.pdf Accessed on: September 26, 2022.

COSTA, Bagnólia Araújo, LIMA, Jade Silva. **Risk of thrombosis associated with hormonal contraceptive therapy: a literature review.** Undergraduate Thesis. Federal University of Paraíba. João Pessoa, p.28-64, 2017. Available at: https://repositorio.ufpb.br/jspui/bitstream/123456789/3542/1/JSL17072017.pdf. Accessed on: April 26, 2022.

COUTO, PLS et al. Evidence of adverse effects in the use of oral hormonal contraceptives in women. **Nursing in Focus,** v. 11, n. 4, p. 79-86, 2020. Available at: http://revista.cofen.gov.br/index.php/enfermagem/article/view/3196/955 . Accessed August 25, 2022.

Curitiba. Municipal Health Department. **Family Planning.** 2nd ed. Curitiba; 2002.

CWIAK, C.; BERGA, SL **Contraception.** ACP Medicine, Canada, p. 1-12, 2011.

DE ALMEIDA, Laisa Caroline Eleutherio et al. Pharmacology and Social Conceptions: A Review

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

about Hormonal Contraceptives. **Knowledge Hall,** v. 7, n. 7, 2021. Available at: https://publicacoeseventos.unijui.edu.br/index.php/salaoconhecimento/article/view/21031. Accessed July 21, 2022.

FARIAS, Ana Gesselena Silva, et al. Safe use of injectable hormonal contraceptives according to medical eligibility criteria. **Revista de Pesquisa: Cuidado é Fundamental Online,** v. 10, n. 2, p.

368-373, 2018. Available at: http://seer.unirio.br/index.php/cuidadofundamental/article/view/6044/pdf_1 Accessed on April 26, 2022.

FERREIRA, Bruna Barbosa Riemma; PAIXÃO, Juliana Azevedo. The relationship between the use of the contraceptive pill and the development of deep vein thrombosis in Brazil. **Revista** Disponível **Artigos.Com,** e7766-e7766, https://acervomais.com.br/index.php/artigos/article/view/7766 Accessed on: August 29, 2021. v. in: 24, 2022.

FINOTTI, M. **Manual of contraception.** 1st ed. São Paulo: Brazilian Federation of Gynecology Associations 2015. https://central3.to.gov.br/arquivo/494569. Accessed June 30, 2022. Obstetrics (FEBRASGO), Available in:

FREITAS, Erica Maria; CERON, Rafaela; NOWACKI, Luciana. Use of oral contraceptives and hormonal intrauterine device (Mirena®) related to the risk of deep vein thrombosis (DVT). **Electronic Journal of Biosciences, Biotechnology and Health,** v. 12, n. 24, p. 30-37, 2019.
Available at: https://interin.utp.br/index.php/GR1/article/view/2442. Accessed on September 3, 2022.

FREITAS, Isadora Herondina Santos de et al. **Use of oral contraceptives and the role of the pharmacist in dispensing:** development of a dispensing protocol. Undergraduate Thesis. Federal University of Campina Grande. p.10-30, 2015. Available at: http://dspace.sti.ufcg.edu.br:8080/jspui/handle/riufcg/9035. Accessed on: June 20, 2022.

FIGUEIREDO, Regina; PEÑA, Melanie. Promoting Emergency Contraception in Brazil Associated with AIDS Prevention. **Experiences in Advocacy in Sexual and Reproductive Health and Rights,** 2002. https://www.researchgate.net/profile/Regina-Figueiredo/publication/263272308_experiencias_promocao_da_contracepcao_de_emergencia_no_brasil_associada_a_prevencao_dst_aids_promotion_of_emergency_contraception_in_brazil_associated_stdaids_prevention/links/0c96053a4815c8d36e000000/experiencias-promocao-da-contracepcao-de-emergencia-no-brasil-associada-a-prevencao-dst-aids-promotion-of-emergency-contraception-in-brazil-associated-std-aids-prevention.pdf. Available in: Accessed on: September 7, 2022.

FRUZZETTI, FRANCE; BITZER, JOHANNES. Review of clinical experience with estradiol in combined oral contraceptives. **Contraception,** vol. 81, no. 1, p. 8-15, 2010.

GIRALDO, Paulo César; SOUZA, Thais Coelho; HENRIQUE, Guilherme Lindman; MONTEIRO, Ilza; AMARAL, Rose; MACHADO, Rogério Bonassi; DISCACCIATI, Michelle Garcia; & SANCHES, José Marcos. Reactional changes in short-term levonorgestrel-releasing intrauterine system (LNG-IUS) use. **Revista da Associação Médica Brasileira,** v. 65, n. 6, p. 857-863, 2019.
Available at https://www.scielo.br/j/ramb/a/DHrVh5W3cLgTmWNJcD6CsrJ/?lang=en#:~:text=CONCLUSIONS%3A,modification%20on%20cervical%20ectopy%20size. Accessed on: September 4, 2022. in:

HATCHER RA, et al. **Contraceptive Technology.** 21st ed. Atlanta: Managing Contraception, LLC; 2018.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

HEINEN, Renata Correa. Association between the use of oral contraceptives and the occurrence of thrombotic events. **Revista Saúde Física & Mental,** v. 6, n. 1, p. 41-58, 2018. Available at: https://revista.uniabeu.edu.br/index.php/SFM/article/view/2737. Accessed on: September 27, 2022.

HOFMANN, Birte et al. Pharmacokinetic overview of the dose and bioavailability of ethinylestradiol using two transdermal contraceptive systems and a standard combined oral contraceptive. **International Journal of Clinical Pharmacology and Therapeutics.** v. 52, n. 12, p. 1059-70, 2014. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4285808/ Accessed on: May 31, 2022.

JUNIOR, JD DOS S; MIRANDA, ATC DE M. Contraceptive Methods. Health of Adolescent: Competencies and Skills. **Ministry of Health,** 2008. Brasília: Ministry of Health Publishing House. Available at https://bvsms.saude.gov.br/bvs/publicacoes/saude_adolescente_competencias_habilidades.pdf. Health in: Accessed: August 17, 2022.

LANZILLOTTI, Paula Floriano. **Systems for modified drug release.** 2012. 117 p. Final Project (Specialization) - Institute of Pharmaceutical Technology/Farmanguinhos, Oswaldo Cruz Foundation, Rio de Janeiro, pp. 16-17, 2012. Available at: https://www.arca.fiocruz.br/bitstream/handle/icict/7783/31.pdf%3E;jsessionid=0327A64CF930FC46B79B734AFF578FC9?sequence=2. Accessed on: April 22, 2022.

LEAL, Amanda Vieira; RODRIGUES, Camilla Rodrigues. Pharmaceutical care in the use of emergency contraception: a brief review. **Brazilian Journal of Surgery and Clinical Research – BJSCR.** Vol.27,n.2,pp.159-163. Jun-Aug. 2019. Available at: https://www.mastereditora.com.br/periodico/20190704_103151.pdf Accessed on September 12, 2022.

LIMA, Ana Beatriz de Silva et al. Contraceptives: relationship with deep vein thrombosis. **Electronic Annals of CIC,** 2019. v. 17, n. 1, Available at in: http://www.fasb.edu.br/revista/index.php/cic/article/view/401. Accessed on: June 23, 2022.

LIMA, Patrícia Viana Carvalhêdo et al. Use of contraceptive methods by users of a basic health unit/Uso de métodos contraceptivos por usuárias de uma unidade básica de saúde/El uso de métodos anticonceptivos por los usuarios de una unidad básica de salud. **Revista de Enfermagem da UFPI,** v. 4, n. 1, p. 11-8, 2015. Available at: https://revistas.ufpi.br/index.php/reufpi/article/view/1715. Accessed on July 11, 2022.

LOYOLA, MARIA ANDRÉA. The anthropology of sexuality in Brazil. **Physis: Revista de Saúde Coletiva,** 10, 2000. https://www.scielo.br/j/physis/a/9tmhqWKJnD87pjMBkfdgXjh/?lang=pt. Accessed: July 25, 2022. v. n. 1, p. 143-167, Available in:

MENGUE, Sotero Serrate et al. Use of and access to oral and injectable contraceptives in Brazil. **Journal of Public Health.** São Paulo. Vol. 50, suppl. 2 (2016), p.1s-10s, 2016. Available at: https://www.redalyc.org/articulo.oa?id=67248914003. Accessed on: Apr. 27, 2022.

MONZU, M. **Sexuality and contraception.** São Paulo: Editora STS, 1992.

OLIVEIRA, KARD; SATO, MDO; SATO, RMS. Use and knowledge about contraceptives by pharmacy students. **UNIANDRADE Journal,** v. 20, n. 3, p. 115-120.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

2019. Available at: https://revista.uniandrade.br/index.php/revistauniandrade/article/view/1333. Accessed September 2, 2022.

OLIVEIRA, RPC; TREVISAN, M. Oral hormonal contraceptives and their side effects for women. **Artigos.Com,** v. 28, 2021.

OLIVEIRA, JC. **Venous thromboembolism associated with the use of combined oral contraceptives: a literature review.** 2018, 33p. Undergraduate Thesis in Pharmacy-Biochemistry – Faculty of Pharmaceutical Sciences – University of São Paulo, São Paulo, p. 33, 2018.

PAZ, ECM; DITTERICH, RG. Women's knowledge about contraceptive methods in family planning. Revista Gestão & Saúde. Curitiba, v. 1, n. 1, p. 1-10, 2009.

PENTEADO, Munisa Golin. Implementation of pharmaceutical care in the "Interlagos" family health strategy. **Successful Experiences of Pharmacists in the SUS,** v. 6, 6, 28-33, 2019. Available at in: http://www.revistas.cff.org.br/?journal=experienciasexitosas&page=article&op=view&path%5B%5D=2665. Accessed on: August 24, 2022.

PEREIRA, SM TAQUETTE, SR Unveiling myths about oral hormonal contraception in adolescence. **Adolescence & Health.** São Paulo, v.5, n. 1, p. 45-49, 2008. Available at: https://docplayer.com.br/23610798-Desvendando-mitos-sobre-anticoncepcao-hormonal-oral-na-adolescencia.html . Accessed: August 15, 2022.

PINTER, B. Continuation and compliance of contraceptive use. **Eur J Contracept Reprod Health Care,** v. 7, p. 83 – 178, 2002. Available at: https://pubmed.ncbi.nlm.nih.gov/12428939/. Accessed: August 5, 2022.

RANG, HP; DALE, MM; RITTER, JM. **Pharmacology.** Rio de Janeiro: Guanabara. Koogan, 2001.

RANG, HP et al. **The Vascular System.** Rang & Dale Pharmacology. 7th Edition. Elsevier, Rio de Janeiro, pp. 265-284, 2012.

ROCHA, ED. **Oral contraceptives and the risks to the circulatory system: an integrative review.** Undergraduate thesis (Pharmacy). AGES University Center, Paripiranga, 2021. 35p.

POLI, MEH et al. **FEBRASGO Contraception Manual.** Belo Horizonte: Febrasgo, p. 34. 2009. Available at: https://central3.to.gov.br/arquivo/494569/. Accessed: July 10, 2022.

SANTOS, Ananda Cerqueira Aleluia; CABRAL, Cristiane Silva. **"Goodbye, hormones": new conceptions about body, health and contraception from the perspective of young women.** University of São Paulo. Dissertation (Master's). Postgraduate Program. São Paulo, 2017. Available at: https://teses.usp.br/teses/disponiveis/6/6143/tde-15052018-092501/pt-br.php. Accessed on: June 18, 2022.

SANTOS, Hugo Campos Oliveira et al. Injectable hormonal contraception. **Digital Magazine.** Buenos Aires. June 2012. Available at: https://www.efdeportes.com/efd169/contracepcao-hormonal-injetavel.htm. Accessed on: July 23, 2022.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

SANTOS, TM; et al. Oral contraceptives as a cardiovascular risk factor: a narrative review. **Electronic Journal Acervo Saúde,** v. 13, n. 9, 2021.

SILVA, CVD. **Stories of the use of birth control pills in Brazil in the 1960s.** Doctoral thesis. Oswaldo Cruz Foundation (FMO). Fernandes Figueira National Institute of Women's, Children's and Adolescents' Health, 2017. Available at: <https://www.arca.fiocruz.br/bitstream/icict/25248/2/cristiane_silva_iff_mest_2017.pdf>

Accessed on: May 23, 2022.

SILVA P. **Pharmacology.** 7th ed. Rio de Janeiro: Guanabara Koogan; 2006.

SILVA, Twammy Lindicey Ribeiro da; ARAÚJO, Karla Laís Ribeiro da Costa. Educational intervention regarding contraceptive methods for men and women in the city of Sebastião Disponível Barros.

UNASUS. p.17-21, 2020. https://ares.unasus.gov.br/ in: acervo/handle/ARES/19932. Accessed: April 29, 2022.

Brazilian Society of Cardiology (SBC). Brazilian Archives of Cardiology. **V Guideline of the Brazilian Society of Cardiology on the treatment of acute myocardial infarction with ST-segment elevation,** v. 105, n. 1, 2015. Available at: http://publicacoes.cardiol.br/2014/diretrizes/2015/02_TRATAMENTO%20DO%20IAM%20COM%20SUPRADESNIVEL%20DO%20SEGMENTO%20ST.pdf

SOUSA SILVA, Natália Cristina et al. Drug interactions with oral hormonal contraceptives. **ÚNICA Cadernos Acadêmicos,** v. 3, n. 1, 2017. Available at: http://co.unicaen.com.br:89/periodicos/index.php/UNICA/%20article/view/57/51. Accessed on: August 23, 2022.

SOUZA, Lígia Kobelus. **Drug interaction between combined hormonal oral contraceptives and antibiotics.** Undergraduate Thesis. Centro Universitário De Brasília. 2015. Available at:

https://repositorio.uniceub.br/jspui/bitstream/235/6843/1/20944032.pdf Accessed on: September 8, 2022.

TRUSSELL, J; RAYMOND, E. **Emergency Contraception:** A Last Chance to Prevent Unintended Pregnancy, [S. lsn], p.1-9 June 2011. Available at: https://go.gale.com/ps/i.do?id=GALE%7CA393517912&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=19489137&p=AONE&sw=w&userGroupName=anon%7Ea6279b62. Accessed on: May 14, 2022.

TRUSSEL, J. Comparative contraceptive efficacy of the female condom and other barrier methods. **Family Planning Perspectives,** v.26, n.2, p. 45-49, 2008. Available at: https://pubmed.ncbi.nlm.nih.gov/8033980/. Accessed: August 18, 2022.

VIEIRA, Gilson Valente et al. **Factors associated with the abusive use of emergency contraception and its undesirable effects in female health science students at a college in Ariquemes, Rondônia.** Undergraduate Thesis. Faculty of Education and Environment – FAEMA. 2018. Available at: http://repositorio.faema.edu.br/handle/123456789/2359. Accessed: August 26, 2022.

WANNMACHER, Lenita. **New contraceptive options: Rational use of medicines.** Brasília, v. 3, n. 7, p. 1-6, June/2006. Available at: https://www.paho.org/bra/dmdocuments/HSE-URM_CON_0307.pdf. Accessed: September 1, 2022.

Year V, v.2 2025 | Submission: November 14, 2025 | Accepted: November 16, 2025 | Publication: November 18, 2025

WANNMACHER, L. **Rational use of oral contraceptive medications: what's new.**
Brasília, v. 1, n. 1, p. 1-6, 2003. Available at: https://
bvsms.saude.gov.br/bvs/publicacoes/uso_racional_medicamentos.pdf. Accessed July 18, 2022.