

Contraception

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Disclosures

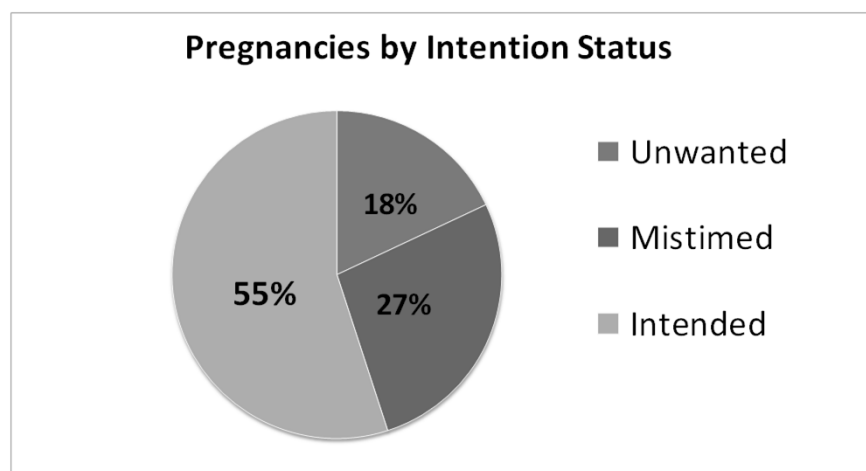
- **Trainer for Nexplanon (Merck)**

Who needs contraception?

- 61 million U.S. women in their child bearing years (15-44)
 - 43 million (70%) are at risk of unintended pregnancy
- 11% of these women are not using any form of birth control
- The average couple not using contraception has about an 85% chance of pregnancy in a year

Guttmacher Institute. Contraceptive Use in the United States. September 2016

Unintended Pregnancy in the US

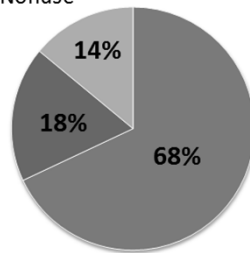


Guttmacher Institute. Unintended Pregnancy in the United States. September 2016

Contraceptive Use and Unintended Pregnancy

Contraceptive use among women at risk of unintended pregnancy

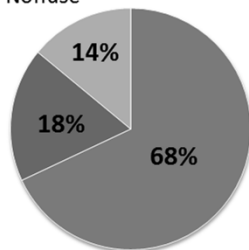
- Consistent use
- Inconsistent use
- Nonuse



Contraceptive Use and Unintended Pregnancy

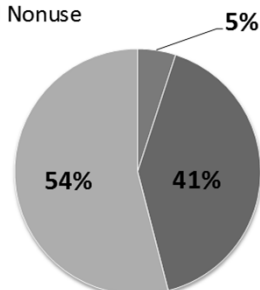
Contraceptive use among women at risk of unintended pregnancy

- Consistent use
- Inconsistent use
- Nonuse

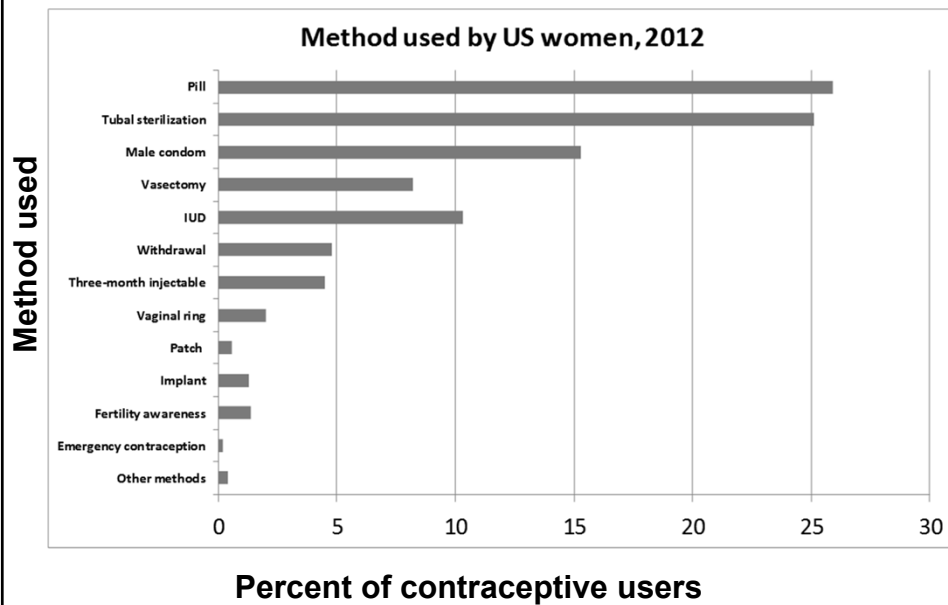


Contraceptive use among women experiencing unintended pregnancies

- Consistent use
- Inconsistent use
- Nonuse



What contraceptives do women use?

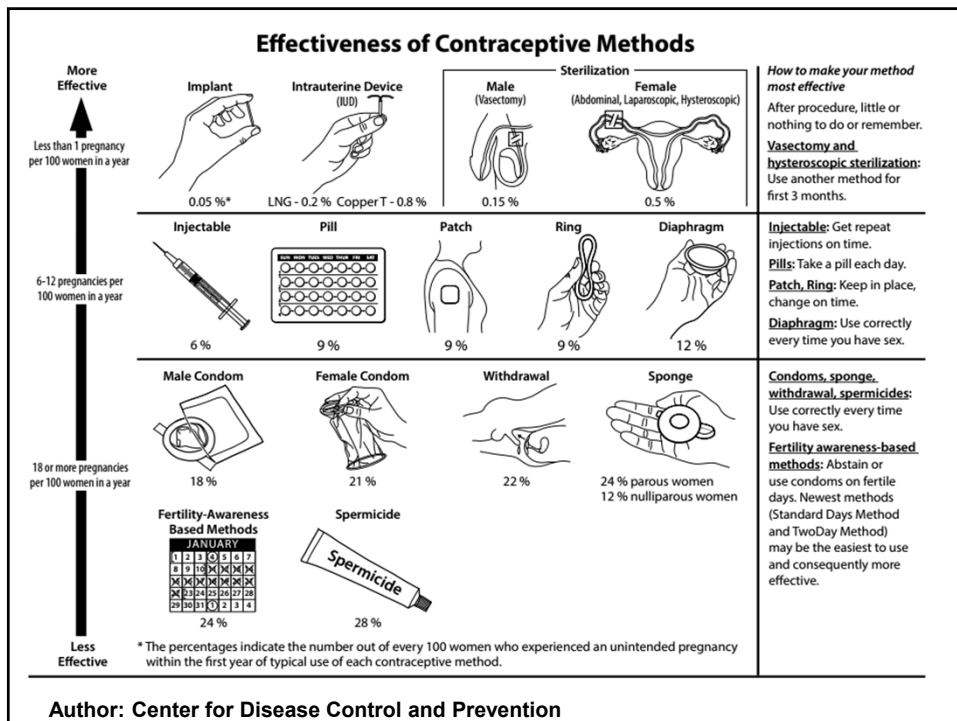


Percentage of women experiencing an unintended pregnancy during the first year of use

Method	Typical Use	Perfect Use
Copper IUD	0.8%	0.6%
LNG-IUD	0.2%	0.2%
Implant	0.05%	0.05%
3-month injectable	6%	0.3%
Ring	9%	0.3%
Patch	9%	0.3%
Pills	9%	0.3%
Male condom	15%	2%

Contraceptive Efficacy

Most effective	Very effective	Moderately effective	Effective
Prevents pregnancy >99% of the time	Prevents pregnancy ~91-99% of the time	Prevents pregnancy ~81-90% of the time	Prevents pregnancy up to 80% of the time
Male/Female Sterilization IUD Implants	Pills Injectable Patch Ring	Male/Female Condom Diaphragm	Fertility awareness Spermicide



Long-acting reversible contraception (LARC)

**Most
Effective**

- IUDs and implants
- Highly effective (pregnancy rates < 1%/yr)
 - High rates of satisfaction and continuation
- LARC methods eliminate the problem of inconsistent method use, which can lead to unintended pregnancy

LARC - Advantages

**Most
Effective**

- Do not require frequent visits for re-supply
- No additional costs once placed
- Highly cost effective
- Reversible, with rapid return to fertility after removal
- Long acting (3-10 years)
- In-office procedure

Copper IUD

**Most
Effective**

- 10 year duration
- Typical use failure rate= 0.8%
- Mechanism of action:
 - Local sterile, inflammatory reaction within the uterus - spermicidal
- Hormone free
- Potential for heavier menses
- Can be used for emergency contraception

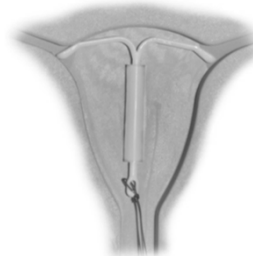


Author: ASwann at English Wikipedia

Levonorgestrel (LNG) IUD

**Most
Effective**

- 5 year duration of action
- Locally acting with minimal systemic effects
- Typical use failure rate: 0.2%
- Mechanism of action:
 - Thickens cervical mucous, prevents entry of sperm into upper genital tract
 - Endometrial suppression



Author: Hic et nunc

Timing of IUD Insertion

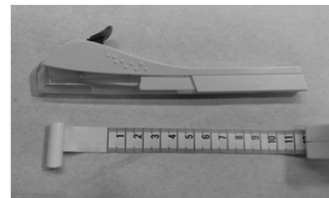
Most
Effective

- During menstruation
- Any time of menstrual cycle if pregnancy ruled out
- Postpartum
 - Immediate (within 10 minutes of placenta delivery) → higher expulsion rate
 - Or after 6 weeks
- Post-abortion (immediately after) → slightly higher expulsion rate

Progestin-Only Subdermal Implant

Most
Effective

- 3 year duration of action
- Single rod, 4cm placed subdermally
 - Etonogestrel containing reservoir
 - Typical use failure rate: 0.05%
- Mechanism of action
 - Inhibits ovulation
 - Thickens cervical mucous
- Potential for irregular menses, amenorrhea



Author: Vera de Kok
(CC BY-SA 4.0)

LARC use and adolescents

**Most
Effective**

- **ACOG recommendation October 2012**
 - **Implants and IUDs should be first-line methods for sexually active adolescents**
- **Do not increase an adolescent's risk of PID and STIs**
- **Do not affect the future fertility of adolescent users**

IUD use and Nulliparous Women

**Most
Effective**

- **IUDs can (and should) be offered to nulliparous women**
- **In studies, nulliparous women report high satisfaction rates and high continuation rates**
- **Complication rates (expulsion and perforation) are no different between parous and nulliparous women**

ACOG Practice Bulletin 121: Long-acting reversible contraception: Implants and intrauterine devices, July 2011.

Permanent sterilization

Most
Effective

- Vasectomy – surgical interruption of vas deferens
- Tubal ligation – occlusion or removal of fallopian tubes
 - Postpartum
 - Laparoscopic
 - Transcervical



Depot Medroxyprogesterone Acetate ("depo" or DMPA)

Very
Effective

- IM or SQ shot, given every 3 months
- Typical use failure rate: 6%
- Mechanism of action: inhibition of ovulation



DMPA – counseling points

**Very
Effective**

- **High safety**
- **Oligomenorrhea or amenorrhea**
 - **potential for irregular menses**
- **1 in 4 women may experience weight gain**
- **Resumption of ovulation can lag**
- **Reversible decrease in bone density**
 - **Complete reversal once medication is discontinued**

Progestin only contraceptive Pill

**Very
Effective**

- **Contains Norethindrone**
- **Take daily at the same time**
- **Mechanism of action**
 - **Thickens cervical mucous, decreases tubal motility, thins endometrium**
 - **Doesn't reliably inhibit ovulation**
- **Common to get irregular bleeding**
- **Higher safety than estrogen containing, lower effectiveness**

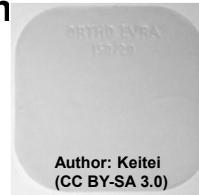


Combined hormonal contraceptives

- **The Pill**
 - Oral absorption
 - Taken daily
- **The Patch**
 - Transdermal absorption
 - Applied weekly
- **The Ring**
 - Vaginally absorbed
 - Monthly removal and insertion



Author: BetteDavisEyes at English Wikipedia



Author: Keitei
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Author: Sakky

**Very
Effective**

Non-contraceptive benefits of combined contraceptives

- **Reduction of menstrual blood loss**
- **Reduction of dysmenorrhea**
- **Decreased risk of ovarian cysts**
- **Decreased acne**
- **Reduction in physical and emotional changes around the menstrual cycle**
- **Reduction in ovarian and endometrial cancer risk**

**Very
Effective**

Contraindications to estrogen containing contraceptives

- Estrogen increases risk of VTE
- DVT or PE
- Migraine with aura
- Smoker over 35
- MI, CVA, hypertension
- Pregnancy increases VTE risk much more!

**Very
Effective**

US Medical Eligibility Criteria for Contraceptive Use

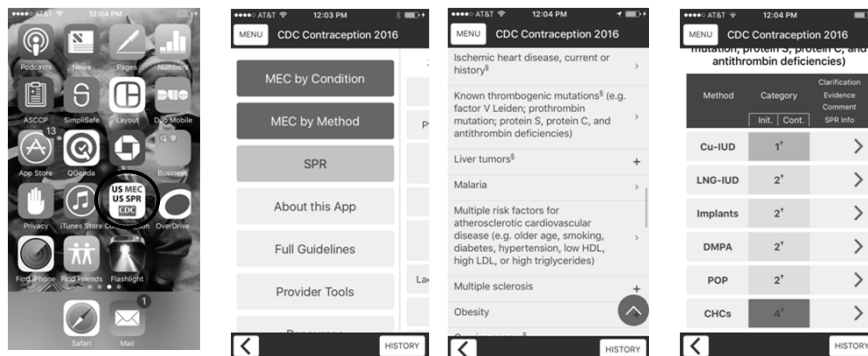
- To assist health care providers in determining safe use of contraception
- CDC website, mobile app
- Evidence based consensus driven
- Guidance only; Providers should still consider individual clinical circumstances of each patient

Classification of Medical Eligibility Criteria, 1 - 4

1. No restriction for use ☐
2. Advantages outweigh the theoretical/proven risks ☐
3. Theoretical/proven risks outweigh the advantages ☐
4. Unacceptable health risk ☐

WHO MEC, 3rd Edition, 2004

CDC MEC App



Barrier contraception

Moderately
Effective

- **Male and female condoms**
 - Latex or polyurethane
 - STI prevention
 - 12% failure
 - Encourage “dual method use”
- **Diaphragm**
 - Used with spermicide,
 - Leave in place for 6 hours after intercourse
 - 18% failure



Author: Ceridwen (CC BY-SA 2.0 FR)



Author: Axefan2

Fertility Awareness

Effective

- **Abstinence from intercourse during fertile phase of cycle**
- **Charting of cycle length, basal body temperature, and cervical mucus changes**
- **Based on 5 days sperm viability, ovum viability of 24-48 hours**



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Emergency contraception

Not recommended as replacement for other contraceptives

- Use of a medication or device to prevent pregnancy after intercourse
- Mechanism of action: delay of ovulation
- Efficacy: prevents 75% of expected pregnancies
- The sooner used the better



Emergency contraception

Not recommended as replacement for other contraceptives

Emergency contraceptive regimens:

- Insertion of a copper IUD,
- Levonorgestrel 1.5 mg (Plan B one step) OTC
- Ulipristal acetate 30 mg (Ella), prescription
- Various doses of OCPs – The Yuzpe Regimen

<http://ec.princeton.edu/questions/dose.html#dose>

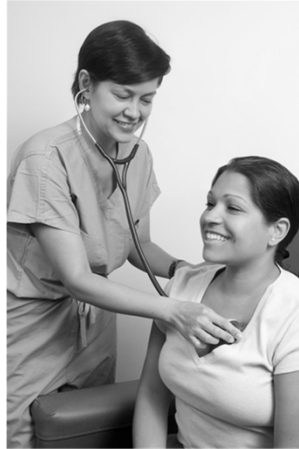


Author: ASwann at English Wikipedia



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Patient centered care



Resources

- **CDC Medical Eligibility Criteria for Contraceptive Use**
 - <https://www.cdc.gov/reproductivehealth/contraception/mmwr/mec/summary.html>
- **Mobile App**
 - <https://www.cdc.gov/mobile/mobileapp.html>
- **Patient resources**
 - Bedsider.org