Contraception
Contraception

EDITED BY

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Series Foreword

In recent decades, massive advances in medical science and technology have caused an explosion of information available to the practitioner. In the modern information age, it is not unusual for physicians to have a computer in their offices with the capability of accessing medical databases and literature searches. On the other hand, however, there is always a need for concise, readable, and highly practicable written resources. The purpose of this series is to fulfill this need in the field of gynecology.

The Gynecology in Practice series aims to present practical clinical guidance on effective patient care for the busy gynecologist. The goal of each volume is to provide an evidence-based approach for specific gynecologic problems. “Evidence at a glance” features in the text provide summaries of key trials or landmark papers that guide practice, and a selected bibliography at the end of each chapter provides a springboard for deeper reading. Even with a practical approach, it is important to review the crucial basic science necessary for effective diagnosis and management. This is reinforced by “Science revisited” boxes that remind readers of crucial anatomic, physiologic or pharmacologic principles for practice.

Each volume is edited by outstanding international experts who have brought together truly gifted clinicians to address many relevant clinical questions in their chapters. The first volumes in the series are on Chronic Pelvic Pain, one of the most challenging problems in gynecology, Disorders of Menstruation, Infertility, and Contraception. These will be followed by volumes on Sexually Transmitted Diseases, Menopause, Urinary Incontinence, Endoscopic Surgeries, and Fibroids, to name a few. I would like to express my gratitude to all the editors and authors, who, despite their other responsibilities, have contributed their time, effort, and expertise to this series.

Finally, I greatly appreciate the support of the staff at Wiley-Blackwell for their outstanding editorial competence. My special thanks go to Martin Sugden, PhD; without his vision and perseverance, this series would not have come to life. My sincere hope is that this novel and exciting series will serve women and their physicians well, and will be part of the diagnostic and therapeutic armamentarium of practicing gynecologists.

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Preface

When scanning for topics related to world population it is not surprising that family planning is the first entry. This entry, however, is followed by overpopulation, overconsumption, water crisis, sustainable development, food security, green revolution, world energy resources and consumption. An article entitled “The Day of Six Billion” reviews the world population that reached 1 billion in 1804, 2 billion in 1927, 3 billion in 1960, 4 billion in 1974, 5 billion in 1987, and 6 billion in 1999. Some estimates project that the world will reach 7 billion in 2011–12, 8 billion in 2025, 9 billion in 2040, and 10 billion in 2061. These enormous growths in population would place tremendous strains on world energy and food supplies and incite economical and political conflict.

There is evidence, however, that efforts to curb the population explosion have been effective and that another scenario may instead unfold. The global population growth rate, which reached a peak in 1963 (2.2%), has since been steadily slowing and by 2008 was cut by half. While growth rates remain high in Latin America, the Middle East and Sub-Saharan Africa, some countries, especially in central and eastern Europe, have a negative population growth. Within the next 10 years, Japan and some countries in western Europe are expected to have a negative population growth. If these trends continue, the world growth rate may diminish to zero. Addressing these very different possible scenarios, the United Nation’s projections for world population in 2050 ranged from 8 billion to 10.5 billion.

Developed countries have traditionally had much lower fertility rates than developing countries, due to a combination of factors relating to greater wealth, education, and urbanization. Although mortality rates are generally lower in developed countries, birth control options are well known and accessible. Many reproductive-aged women in these countries are motivated to use contraceptive methods as they pursue education or job goals or wish to control spacing and number of children. A variety of private and public sector programs help defray the costs of contraceptives for those with limited financial means, and a barrage of mass media advertisements help educate the general public on contraceptive options.

Advances in contraceptive technology, worldwide availability, and effective dissemination of information regarding contraceptive options will continue to play a vital role in the world’s economic and political wellbeing. This book is dedicated to those individuals and organizations that have tirelessly advanced these goals around the world. Over the next decade, the impact of their hard work and dedication will continue to show impact and will help to determine which of the scenarios presented above will unfold.

This book is also dedicated to the authors who were willing to take the time to share their expertise. The authors were asked to write a clinically pertinent chapter and include a list of references at the end of the chapter that could be used by interested readers to further expand their knowledge on particular topics. These authors represent a variety of titles, practices, academic backgrounds, and areas of expertise.

The book is divided into three sections. The first section includes chapters on appropriate selection of contraceptive options and cost comparison of contraceptives. Chapter 1 introduces the new Centers for Disease Control and Prevention medical eligibility criteria adaptation for the United States (the US MEC). Chapter 2 presents a comparison of the 1-, 5-, and 10-year present values of the contraceptives available in the United States. These values include the cost of the method, the medical costs of obtaining the method, and the cost of pregnancy as a result of method failure.

The second section of the book includes chapters on the contraceptive options currently available in the United States, with sections on method of action, good candidates, poor candidates, medical eligibility criteria, advantages, noncontraceptive benefits, risks and side effects, patient counseling, available options, new products, supplying the method, and management of
problems. Each of the following methods is addressed separately:

• oral contraceptives
• progestin only contraceptives
• contraceptive implants
• contraceptive vaginal ring
• contraceptive patch
• progestin injectables
• intrauterine devices
• spermicides
• vaginal barriers: diaphragm, cervical cap, and female condom
• male condoms
• emergency contraception
• tubal sterilization

The third section of the book includes chapters on various medical conditions and the risks and benefits associated with various contraceptive options:

• postpartum
• adolescents: compliance, ethical and STD issues
• women 35 years and older: safety issues
• perimenopausal contraception—staging of reproductive aging in women
• medical eligibility criteria—WHO MEC and US MEC
• hormonal contraception and mood—depressive disorders, PMDD and PMS, major depressive disorders, postpartum depression, schizophrenia, bipolar, anxiety and panic disorder
• abnormal uterine bleeding—uniform terminology, structural and nonstructural etiologies
• hirsutism and acne—causes and patient evaluation, diagnosis and treatment
• HIV and other sexually transmitted infections—antiretroviral interactions with hormonal contraceptives, reducing transmission to partners and fetus
• contraception following ectopic pregnancy or spontaneous or induced abortion.

This book is designed to highlight the important issues surrounding contraceptive technology including safety, lifestyle, costs of method, costs of method failure, noncontraceptive benefits, interaction with various medical conditions, and managing side effects. There is an important emphasis on the WHO MEC and CDC modifications as these are the guidelines important to clinicians.

A final tribute is given to those who excel in contraceptive technology and in all areas of human endeavors.

This comprehensive book includes topics on:

• All of the currently available contraceptive methods in the US including those recently introduced
• WHO Medical Eligibility Criteria for contraceptives and CDC modifications
• Selecting contraceptive methods for women with bleeding problems, previous ectopic pregnancy, mood and depressive disorders, hirsutism and acne, perimenopausal women, women with HIV and other STIs.

An important and useful reference for:

• Contraceptive Healthcare Providers
• Gynecologists
• Family Medicine Physicians
• Nurse practitioners
• Internists
• Physician Assistants

Donna Shoupe

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Section 1

Overview
Contraceptive Use: Guidelines and Effectiveness

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Introduction
Clinicians are now able to rely on evidence-based guidelines to efficiently incorporate scientific evidence into clinical practice regarding appropriate selection and use of specific contraceptive methods.

Contraceptive effectiveness is also an important factor in contraceptive choice; tools are available to assist providers in communicating contraceptive effectiveness to family planning patients.

Evidence-based guidelines
As the volume of scientific literature rapidly expands, it has become increasingly difficult for individual clinicians to keep up with finding, reading, and interpreting new evidence to put into practice. A PubMed search using the terms “contraception” and “family planning” yielded an average of 130 new articles per month in 2010. Many clinicians rely on evidence-based guidelines to efficiently use the best scientific evidence when making decisions about patient care.

Clinical practice guidelines have been defined by the Institute of Medicine as “systematically developed statements to assist practitioner and patient decisions about appropriate healthcare for specific clinical circumstances.”

EVIDENCE AT A GLANCE
• The World Health Organization’s evidence-based guidance on contraceptive use (WHO Medical Eligibility Criteria for Contraceptive Use (MEC)) is used around the world and has been adapted by several countries, including the United States.
• The Centers for Disease Control and Prevention (CDC) has recently adapted the WHO MEC for use in the United States (US MEC). While the vast majority of the CDC recommendations are identical to the WHO recommendations, some adaptations were made to more accurately focus on methods currently available in the USA, and to better reflect the surgical and medical practices of the USA (see also Chapter 21).
• Additional sources of guidance include the National Guidelines Clearinghouse, professional organizations, and international groups.

Guidelines that are based on a critical appraisal of the scientific literature, most often through systematic reviews and meta-analyses, are considered “evidence-based guidelines,” and have the advantage of

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Vlayen et al. have proposed 10 dimensions to be considered in any guideline appraisal instrument. We have adapted those 10 dimensions to suggest elements that individual practitioners may want to consider when assessing clinical guidelines for use in their practice (Table 1.1).

Family planning providers frequently face difficult decisions with their patients in the provision of contraceptive methods and management of their use. Because of these challenges, there is a critical need for the use of evidence-based medicine and decision-making in the field of family planning practice.

**Development of WHO evidence-based guidance for contraceptive use**

In the early 1990s, the Department of Reproductive Health and Research at WHO began address-
ing the need for evidence-based contraceptive guidance. WHO, the US Agency for International Development (USAID) and others were concerned about unnecessary medical barriers to contraceptive access that were not based on scientific evidence. There was particular concern about medical conditions or other characteristics that were unjustifiably perceived by providers as contraindications to contraceptive use. To address these issues, WHO developed the Medical Eligibility Criteria for Contraceptive Use (WHO MEC), first published in 1996, with the intent of improving access to, and quality of, family planning services. This guidance document is currently in its fourth edition and provides recommendations on whether women and men with specific medical conditions and characteristics can safely use various contraceptive methods; for example, whether a woman with hypertension can use combined oral contraceptives or an adolescent can use depot medroxyprogesterone acetate (DMPA).

Currently, the WHO MEC contains recommendations for 18 contraceptive methods and over 160 medical conditions or characteristics. Each medical condition and contraceptive method combination is given a classification from 1 to 4 (Table 1.2), denoting whether or not the contraceptive method is safe to use for women or men with that medical condition or characteristic.

WHO also publishes the Selected Practice Recommendations for Contraceptive Use (WHO SPR) that addresses common clinical management questions for contraception. The WHO SPR currently contains 33 evidence-based questions and answers, such as when a woman can start a contraceptive method and when she needs to use a back-up method, what a woman can do if she misses oral contraceptive pills, and what tests or examinations need to be done prior to initiating a method of contraception.

In addition to these two evidence-based guidance documents, WHO also developed two documents that are intended for direct use by family planning providers.

- The Decision-Making Tool for Family Planning Clients and Providers is a flip chart meant to assist clients and providers in choosing a method of contraception.

### Table 1.2 US Medical Eligibility Criteria for Contraceptive Use Classifications

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No restriction for the use of the contraceptive method</td>
</tr>
<tr>
<td>2</td>
<td>The advantages of using the method generally outweigh the theoretical or proven risks</td>
</tr>
<tr>
<td>3</td>
<td>The theoretical or proven risks usually outweigh the advantages of using the method</td>
</tr>
<tr>
<td>4</td>
<td>An unacceptable health risk if the contraceptive method is used</td>
</tr>
</tbody>
</table>


- **Family Planning: A Global Handbook for Family Planning Providers** provides a wide range of technical information to assist providers in delivering quality family planning services.

These four documents make up WHO’s Four Cornerstones of Family Planning Guidance.

### EVIDENCE AT A GLANCE

Both the WHO MEC and the WHO SPR are meant to be used by policy-makers and program managers when developing local clinical guidelines and protocols.

From the beginning, WHO had a vision of guidance based on the best available scientific evidence. The Centers for Disease Control and Prevention (CDC) has worked closely with WHO in identifying the evidence on which the guidance is based. In 2002, WHO, CDC, and the Johns Hopkins Bloomberg School of Public Health developed the Continuous Identification of Research Evidence (CIRE) system to facilitate ongoing identification of scientific evidence relevant to the WHO guidance, conduct of systematic reviews and meta-analyses, and peer review. The CIRE system enables WHO to meet the need of keeping up with the enormous amount of evidence that is produced, but, more
importantly, it allows WHO to have an ongoing assessment of whether its recommendations remain consistent with the scientific evidence and facilitates updating the guidance when the evidence warrants.

**CDC adaptation of WHO evidence-based guidance for contraceptive use**

More recently, CDC has adapted the WHO MEC for use in the United States (US MEC). WHO has always intended for its global guidance to be adapted at the local level for best implementation. Many countries have undertaken various degrees of adaptation, with the United Kingdom as one example of a country having undergone a formal adaptation process.

CDC began its adaptation process by convening a small group of US family planning experts to discuss the need for an adaptation for the United States, the process for such an adaptation, and the scope of the adaptation.

**EVIDENCE AT A GLANCE**

Because the scientific evidence is the same globally and because CDC had collaborated closely with WHO in the development of the WHO guidance, CDC decided that most of the WHO guidance would be taken directly for use in the United States. Only those recommendations for which there was a compelling reason, either based on new scientific evidence or on the context of family planning provision in the United States, would be considered for adaptation.

The addition of new medical conditions was also considered. Based on a review of existing guidance on medical eligibility criteria from professional and service organizations in the United States, input from key family planning providers, and careful review of the WHO guidance by a small group of experts, six existing WHO recommendations for possible adaptation and six additional medical conditions that could be added were identified. Systematic reviews of the scientific evidence on these 12 topics were conducted and peer reviewed by experts in the United States. CDC then convened a larger meeting of experts, during which the scientific evidence was discussed and draft recommendations were made. Research gaps in the areas addressed were also identified.

The outcome of this meeting was the US Medical Eligibility Criteria for Contraceptive Use, 2010 (US MEC), published in the series of CDC Morbidity and Mortality Weekly Report (MMWR) Recommendations and Reports.

The vast majority of the CDC recommendations are identical to the WHO recommendations; an example of the guidance is given in Table 1.3. However, some adaptation was made for each of the existing recommendations considered and new recommendations were added for each of the new topics discussed (Table 1.4).

In addition, recommendations for contraceptive methods not currently available in the United States (i.e., levonorgestrel implants, combined injectables, and norethisterone enantate injectables) were removed. Specific recommendations around appropriate settings for female and male sterilization were removed, as many of these do not apply to surgical practice in the United States, although general text about sterilization is included.

Once a clinical guideline is produced, dissemination, implementation, and evaluation of the guideline are essential. A critical component of CDC’s dissemination and implementation plan was working closely with partners who provide family planning services or who represent family planning providers in order to effectively disseminate and implement this new guidance.

**TIPS & TRICKS**

The US MEC is available on CDC’s website (Table 1.5) in several different formats, along with tools and job aids for providers, speaker presentations, and any updates that are made based on new scientific evidence.

Additional implementation activities include the development of training curricula for different providers and incorporating the guidance into existing clinical standards and guidelines used by various organizations.

Evaluation activities include baseline and follow-up surveys of attitudes and practices among family planning providers, keeping track of where the guidance has been incorporated.
Finally, as with any evidence-based guidance, many of the recommendations could benefit from more or higher-quality evidence. Research gaps pertaining to the WHO and US MEC have been identified and hopefully new research will be conducted to answer these critical questions.

**Sources of evidence-based guidelines**

There are several additional sources of contraceptive guidance that family planning providers may find useful (Table 1.5).

- The National Guidance Clearinghouse, an initiative of the Agency for Healthcare Research and Quality (AHRQ), is a publicly available and searchable repository for evidence-based guidelines. A recent search using the term “contraception” yielded 114 guidance documents.
- Professional organizations in the United States, such as the American College of Obstetricians and Gynecologists (ACOG), develop guidance for their members and can be a source of guidance for providers.
- In addition, several professional organizations in other countries have evidence-based guidance that may be useful for US providers. For example, the Faculty of Sexual and Reproductive Healthcare in the United Kingdom has several evidence-based guidance documents, in addition to its own adaptations of WHO guidance.
Table 1.5  Websites for sources of evidence-based guidelines

<table>
<thead>
<tr>
<th>Website</th>
<th>Website Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States Medical Eligibility Criteria for Contraceptive Use</td>
<td><a href="http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/USMEC.htm">www.cdc.gov/reproductivehealth/UnintendedPregnancy/USMEC.htm</a></td>
</tr>
<tr>
<td>National Guidelines Clearinghouse</td>
<td><a href="http://www.guideline.gov">www.guideline.gov</a></td>
</tr>
<tr>
<td>American College of Obstetricians and Gynecologists</td>
<td><a href="http://www.acog.org">www.acog.org</a></td>
</tr>
<tr>
<td>Faculty of Family Planning and Reproductive Health Care of the Royal College of Obstetricians and Gynecologists, United Kingdom</td>
<td><a href="http://www.ffprhc.org.uk/">www.ffprhc.org.uk/</a></td>
</tr>
<tr>
<td>Society of Obstetricians and Gynaecologists of Canada</td>
<td><a href="http://www.sogc.org/guidelines/#Contraception">www.sogc.org/guidelines/#Contraception</a></td>
</tr>
<tr>
<td>Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents</td>
<td><a href="http://aidsinfo.nih.gov/contentfiles/AdultandAdolescentGL.pdf">http://aidsinfo.nih.gov/contentfiles/AdultandAdolescentGL.pdf</a></td>
</tr>
<tr>
<td>HIV Drug Interactions, University of Liverpool, United Kingdom</td>
<td><a href="http://www.hiv-druginteractions.org">www.hiv-druginteractions.org</a></td>
</tr>
</tbody>
</table>

- The Society of Obstetricians and Gynaecologists of Canada recently developed guidance for missed hormonal contraceptives.
- Finally, there are other resources that address specific concerns regarding contraceptive use for women with specific medical conditions, such as drug interactions between hormonal contraceptives and antiretroviral therapies among women with HIV/AIDS.

**Contraceptive effectiveness**

Medical eligibility is only one factor among many that women, couples, and their providers need to consider when choosing a contraceptive method. Cost, risk of sexually transmitted infections, future fertility desires, and patient preference must all be considered as well. One of the most important factors to consider is the effectiveness of the contraceptive method. Any method that is chosen, if not effective for that particular woman, may lead to an unintended pregnancy.

**EVIDENCE AT A GLANCE**

- Contraceptive effectiveness has been shown to be one of the most important factors considered by women when choosing a method of contraception.

The terms “efficacy” and “effectiveness” are often used interchangeably, but they refer to different concepts. The *efficacy* of a method refers to the reduction in pregnancy caused by use of the method under ideal circumstances and reflects properties of the method itself. The *effectiveness* of a method refers to the reduction in pregnancy caused by use of the method in the real world and reflects properties of the method as well as the user. Both measures need to be considered; however, for the woman facing the contraceptive choice, effectiveness is likely to be the more relevant concern. This does not necessarily imply failure of the method, however.

Almost half of unintended pregnancies result while women are using contraception. The effectiveness of a method is reported as the pregnancy rate during use of that method and is influenced by four factors: (1) capacity to conceive, (2) frequency and timing of intercourse, (3) degree of compliance (i.e., correct and consistent use), and (4) inherent protection of the method. All of these factors should be taken into consideration when discussing method choice for a particular woman.

The distinction between perfect use and typical use is important when assessing the efficacy and effectiveness of contraceptive methods. Perfect use describes the correct and consistent use of the method. Typical use describes how the method is used in the real world. Table 1.6 shows the percentage of women using each method who experienced an unintended pregnancy.
### Table 1.6

Percentage of women in the United States experiencing an unintended pregnancy during the first year of typical use and the first year of perfect use of contraception and the percentage continuing use at the end of the first year.

<table>
<thead>
<tr>
<th>Method</th>
<th>% of women experiencing an unintended pregnancy within the first year of use</th>
<th>% of women continuing use at 1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Typical use(^a)</td>
<td>Perfect use(^b)</td>
</tr>
<tr>
<td>No method(^d)</td>
<td>85</td>
<td>85</td>
</tr>
<tr>
<td>Spermicides(^e)</td>
<td>29</td>
<td>18</td>
</tr>
<tr>
<td>Withdraw</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>Fertility awareness-based methods(^f)</td>
<td>25</td>
<td>—</td>
</tr>
<tr>
<td>Standard Days method</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>TwoDay method</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Ovulation method</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Sponge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parous women</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td>Nulliparous women</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Diaphragm(^g)</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Condom(^i)</td>
<td></td>
<td></td>
</tr>
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<td>Female (Reality)</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Combined pill and progestin-only pill</td>
<td>8</td>
<td>0.3</td>
</tr>
<tr>
<td>Evra patch</td>
<td>8</td>
<td>0.3</td>
</tr>
<tr>
<td>NuvaRing</td>
<td>8</td>
<td>0.3</td>
</tr>
<tr>
<td>Depo-Provera</td>
<td>3</td>
<td>0.3</td>
</tr>
<tr>
<td>IUD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ParaGard (copper T)</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Mirena (LNG-IUS)</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Implanon</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Female sterilization</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Male sterilization</td>
<td>0.15</td>
<td>0.10</td>
</tr>
<tr>
<td>Emergency contraceptive pills(^j)</td>
<td>Treatment initiated within 72 hours after unprotected intercourse reduces the risk of pregnancy by at least 75%</td>
<td></td>
</tr>
<tr>
<td>Lactational amenorrhea method(^k)</td>
<td>LAM is a highly effective, temporary method of contraception.</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Among typical couples who initiate use of a method (not necessarily for the first time), the percentage who experience an accidental pregnancy during the first year if they do not stop use for any other reason. Estimates of the probability of pregnancy during the first year of typical use for spermicides, withdrawal, fertility awareness-based methods, the diaphragm, the male condom, the pill, and Depo-Provera are taken from the 1995 National Survey of Family Growth corrected for under-reporting of abortion; see the text for the derivation of estimates for the other methods.

\(^b\) Among couples who initiate use of a method (not necessarily for the first time) and who use it perfectly (both consistently and correctly), the percentage who experience an accidental pregnancy during the first year if they do not stop use for any other reason. See the text for the derivation of the estimate for each method.

(Continued)
Among couples attempting to avoid pregnancy, the percentage who continue to use a method for 1 year.

The percentages becoming pregnant in columns 2 and 3 are based on data from populations where contraception is not used and from women who cease using contraception in order to become pregnant. Among such populations, about 89% become pregnant within 1 year. This estimate was lowered slightly (to 85%) to represent the percentage who would become pregnant within 1 year among women now relying on reversible methods of contraception if they abandoned contraception altogether.

Foams, creams, gels, vaginal suppositories, and vaginal film.

The Ovulation and TwoDay methods are based on evaluation of cervical mucus. The Standard Days method avoids intercourse on cycle days 8–19.

With spermicidal cream or jelly.

Without spermicides.

The treatment schedule is one dose within 120 hours after unprotected intercourse, and a second dose 12 hours after the first dose. Both doses of Plan B can be taken at the same time. Plan B (1 dose is 1 white pill) is the only dedicated product specifically marketed for emergency contraception. The Food and Drug Administration has in addition declared the following 22 brands of oral contraceptives to be safe and effective for emergency contraception: Ogestrel or Ovral (1 dose is 2 white pills), Levlen or Nordette (1 dose is 4 light-orange pills), Cryselle, Levora, Low-Ogestrel, Lo/Ovral, or Quasence (1 dose is 4 white pills), Tri-Levlen or Triphasil (1 dose is 4 yellow pills), Joless, Portia, Seasonale, or Trivora (1 dose is 4 pink pills), Seasonique (1 dose is 4 light-blue-green pills), Empresse (one dose is 4 orange pills), Alesse, Lessina, or Levlue, (1 dose is 5 pink pills), Avian (one dose is 5 orange pills), and Lutera (one dose is 5 white pills).

However, to maintain effective protection against pregnancy, another method of contraception must be used as soon as menstruation resumes, the frequency or duration of breastfeeds is reduced, bottle feeds are introduced, or the baby reaches 6 months of age.


Table 1.6 Footnote continued

The treatment schedule is one dose within 120 hours after unprotected intercourse, and a second dose 12 hours after the first dose. Both doses of Plan B can be taken at the same time. Plan B (1 dose is 1 white pill) is the only dedicated product specifically marketed for emergency contraception. The Food and Drug Administration has in addition declared the following 22 brands of oral contraceptives to be safe and effective for emergency contraception: Ogestrel or Ovral (1 dose is 2 white pills), Levlen or Nordette (1 dose is 4 light-orange pills), Cryselle, Levora, Low-Ogestrel, Lo/Ovral, or Quasence (1 dose is 4 white pills), Tri-Levlen or Triphasil (1 dose is 4 yellow pills), Joless, Portia, Seasonale, or Trivora (1 dose is 4 pink pills), Seasonique (1 dose is 4 light-blue-green pills), Empresse (one dose is 4 orange pills), Alesse, Lessina, or Levlue, (1 dose is 5 pink pills), Avian (one dose is 5 orange pills), and Lutera (one dose is 5 white pills).

Within the first year of use, separated by perfect use and typical use. Most estimates shown in this table for typical use were derived from the 1995 National Surveys of Family Growth (NSFG) and are therefore nationally representative samples. The estimates reported for perfect use were derived from published studies of those methods. This table highlights the fact that pregnancy rates can vary widely when perfect use and typical use are compared; however, methods that are less user-dependent (such as implants, intrauterine devices, or sterilization) will have typical use rates approaching perfect use rates.

Although effectiveness is an important factor in determining a contraceptive method, many people typically do not have strong background knowledge of effectiveness. Therefore, in order that women, men, and couples truly make an informed choice, healthcare providers must communicate effectiveness in a way that maximizes understanding.

Studies examining the best way to communicate to individuals facing medical decisions have shown that simple aids perform the best. When assessing different ways to communicate contraceptive effectiveness, simple charts comparing one method to another perform better than more complicated charts showing pregnancy rates for each individual method. These charts allow women to focus on understanding the effectiveness of one method relative to another.

Figure 1.1 shows a chart developed by WHO, showing contraceptive methods on a continuum from less effective to more effective. This chart can be helpful in the decision-making process, and can be used as one piece of the larger puzzle, taking into account other factors such as medical conditions, frequency of intercourse, noncontraceptive benefits, and personal preferences. The best method of contraception for a woman is one that she will use correctly and consistently.
Comparing Effectiveness of Family Planning Methods

**More effective**
Less than 1 pregnancy per 100 women in 1 year

- Implants
- IUD
- Female sterilization
- Vasectomy

**How to make your method more effective**

- **Implants, IUD female sterilization:** After procedure, little or nothing to do or remember
- **Vasectomy:** Use another method for first 3 months
- **Injectables:** Get repeat injections on time
- **Lactational amenorrhea method, LAM (for 6 months):** Breastfeed often, day and night
- **Pills:** Take a pill each day
- **Patch, ring:** Keep in place, change on time
- **Condoms, diaphragm:** Use correctly every time you have sex
- **Fertility awareness methods:** Abstain or use condoms on fertile days. Newest methods (Standard Days Method and Two Day Method) may be easier to use.

**Less effective**
About 30 pregnancies per 100 women in 1 year

- Withdrawal
- Spermicides

**Figure 1.1** Comparing effectiveness of family planning methods. Source: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP) IP. Family Planning: A Global Handbook for Providers. Baltimore and Geneva: CCP and WHO; 2007.

Sources:
Disclaimer
The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Selected references
Cost and Availability of Contraceptive Methods

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Selecting the right contraceptive method

This chapter presents a comparison of the effectiveness and the costs of a broad selection of contraceptive methods currently available to U.S. women. Of course cost is not the only consideration in the choice of contraceptives. A typical U.S. woman spends about 40 years of her life managing her fertility. For most of these years, women are choosing a contraceptive method that fits their lifestyle, income, and age. Other considerations in this selection process may include an ever increasing list of factors including efficacy, noncontraceptive benefits, ease of use, side effects, reversibility, cooperation of a partner, religious beliefs, risk of acquiring a sexually transmitted disease (STD), availability of medical coverage, and personal medical problems. But increasingly, cost is an important consideration (Table 2.1).

EVIDENCE AT A GLANCE

The costs considered in this chapter include the initial and ongoing cost of the device and the medical services to install or prescribe as well as the expected cost of pregnancy, taking into account the probability the chosen method will not be effective. The primary conclusions, documented below, are:

- All contraceptives are cost-effective when used in a typical fashion.
- Effective methods of contraception are highly cost-effective over time.
- The consistent and proper use of any user-dependent method profoundly affects the cost-effectiveness of the method.
- For sexually active women at risk of pregnancy, using no method of contraception is the highest-cost option.

The most popular contraceptive choice for U.S. women is the oral contraceptive pill (OCP) (Table 2.2). The OCP has a high efficacy if taken properly, a well-known daily schedule of intake, and a constant monthly cost. Permanent sterilization is the second most common contraceptive method, but is limited to those women who have completed their family. The male condom is the third most widely used method of contraception: it is inexpensive to purchase and easy to find.

In a typical population, the high failure rates of the male condom and other barrier methods result in a relatively low cost-effectiveness. Even though injectable, intrauterine device (IUD), and implant methods have high efficacy, low maintenance demands, and low long-term cost, they attract a small (but growing) percentage of users.