16th Edition

Managing Contraception

for your pocket

Mimi Zieman
Robert A. Hatcher
Ariel Z. Allen
Lisa Haddad

COPYRIGHT INFORMATION

Suggested formal citation:
Zieman M, Hatcher RA., Allen A. Z., Haddad L, Managing Contraception 16th ed.

IMPORTANT DISCLAIMER

The authors remind readers that this book is intended to educate health care providers, not guide individual therapy. The authors advise a person with a particular problem to consult a primary-care clinician or a specialist in obstetrics, gynecology, or urology (depending on the problem or the contraceptive) as well as the product package insert and other references before diagnosing, managing, or treating the problem. Under no circumstances should the reader use this handbook in lieu of or to override the judgment of the treating clinician. The order in which diagnostic or therapeutic measures appear in this text is not necessarily the order that clinicians should follow in each case. The authors and staff are not liable for errors or omissions.

Sixteenth Edition
ISBN 978-1-7329884-4-6
Printed in the United States of America
Managing Contraception, LLC

16th Edition

Managing Contraception

for your pocket

Mimi Zieman, MD
President, SageMed, LLC
Founding Director, Fellowship in Family Planning
Emory University School of Medicine

Robert A. Hatcher, MD, MPH
Professor Emeritus of Gynecology and Obstetrics
Emory University School of Medicine

Ariel Z. Allen, MD
Urology, Albert Einstein College of Medicine

Lisa B. Haddad, MD, MS, MPH
Medical Director
Center for Biomedical Research
Population Council

Kelly Cleland, MPA, MPH
Proofreader

Technical and Computer Support for *Managing Contraception:*
DID Media, LLC., Cornelia, Georgia
Jason Blackburn
706-776-2918
jason@didmedia.com

Check out the Q&A archives on
www.managingcontraception.com

New questions may be submitted to
www.mimiziemanmd.com

OUR MISSION

The mission of Bridging The Gap Foundation is to improve reproductive health and contraceptive decision-making of women and men by providing up-to-date educational resources to the physicians, nurses and public health leaders of tomorrow.

OUR VISION

Our vision is to provide educational resources to the health care providers of tomorrow, to help ensure informed choices, better service, access to effective contraceptive methods, happier and more successful contraceptors, competent clinicians, fewer unintended pregnancies and disease prevention.

We hope this book will make important information accessible to more people.

Please consider making a contribution to this 501-C-3 organization:

The Bridging the Gap Foundation • Atlanta, Georgia • PO Box 79299 • Atlanta, GA 30357

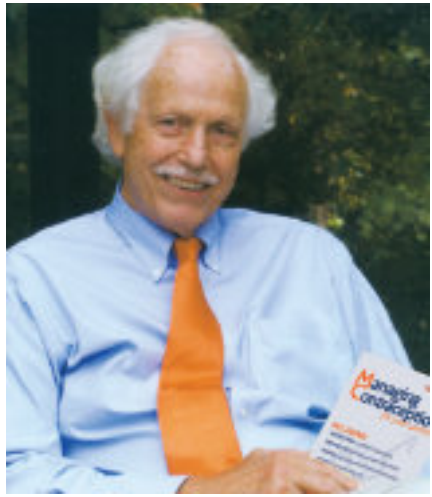
The extent to which we can make this 16th edition of *Managing Contraception* available to medical students, residents and family planning programs internationally depends on contributions from people like you. Since the first edition of Managing Contraception, over 1,115,000 copies of this book have been given away at no cost to medical students, residents, nursing and nurse midwifery students and nurse practioners through the support of both the David and Lucille Packard Foundation and an anonymous foundation.

NOTE

We use the term "women" and the pronouns "she / her" in this book to describe those seeking female contraceptive methods or other healthcare. When possible, we also use "individual" to be inclusive. We recognize that not all people capable of pregnancy or seeking gynecological care identify as women.

On 256 pages, we cannot possibly provide you with all the information you might want or need about contraception. However, many of the questions clinicians ask are answered in this book, *Managing Contraception* 16th edition.

DEDICATION



The authors of *Managing Contraception* other than Dr. Hatcher, dedicate this edition to him: Dr. Robert A. Hatcher for his outstanding accomplishments in Family Planning and his commitment to disseminating evidence-based information. Dr. Bob, as he is fondly called, has mentored scores of health care providers including all three of us personally, and he continues to inspire us with his dedication, warmth, creativity, and enthusiasm.

Dr. Bob first had the idea for Managing Contraception as a pocket-sized Family Planning resource for health care providers to carry into clinical settings. He enlisted Mimi Zieman, then Director of the Division of Family Planning at Emory, and a student, Rachel Blankstein, to draft the first pilot edition published in 1999. Rachel is now an assistant professor at the University of Maryland School of Nursing, and conducts research in maternal health. We have continued to publish updated, timely editions ever since. Dr. Hatcher's vision was that every medical student and resident in OB/GYN, nursing students and others would receive a free copy of this book, to compensate for the little time spent teaching contraception and Family Planning in medical, nursing, and other schools. Several years of grants from the David and Lucille Packard Foundation and others helped us distribute over one million copies of *Managing Contraception* to professionals in training over the years. Now available at a low cost, we continue to aim for wide access to this portable source of up-to-date information.

Dr. Hatcher began his remarkable career of scholarship and service at Williams college, graduating Phi Beta Kappa. He was also a fierce athlete– serving as co-captain of the Williams track team, was New England wrestling champion in 1957 and 1959, and was tight end and fullback on the football team.

He received his medical degree from Cornell University, with the "Good Physician Award," bestowed by his classmates. He completed a residency in pediatrics at Grady Hospital in Atlanta, then served as an Epidemic Intelligence Officer with the CDC, and received an MPH from University of California, Berkeley.

Dedicated to educating future leaders, he created the Emory University Summer Program in Family Planning and Human Sexuality which ran from 1966-1998. Many students who studied with him went on to have successful scientific careers. He served as Professor of Gynecology and Obstetrics, Emory University School of Medicine and Director of Family Planning. He was devoted to helping shape "humane and responsible reproductive health policies," and he provided expert and compassionate care for thousands of patients, educated generations of physicians, and published extensively.

Dr. Hatcher became known internationally for authoring the comprehensive textbook on family planning, *Contraceptive Technology*, now in its twenty-first edition. He has done extensive international work including as a senior author of two editions of Family Planning Methods and Practices: Africa.

He has served on numerous boards including the Planned Parenthood Federation of America, the National Family Planning and Reproductive Health Association, and the Center for Populations Options. In addition to his many professional affiliations, he is a tireless citizen in his North Georgia community, has many friends, and is active in the Rotary Club and Faith, an organization that offers programs addressing the needs of victims of abuse and violence. One of his proudest achievements is that he is one of two individuals who founded the first Atlanta chapter of the "I have a Dream," nonprofit. An entire class of students adopted in fifth grade were guaranteed college funding.

He has received countless awards including the Rockefeller Public Service Award in 1981 for service to Families and Youth. As recipients of his kind mentorship, we are most proud of the award created in his honor by the Society of Family Planning: The Robert A. Hatcher Award for Outstanding Mentorship.

Dr. Hatcher's creativity knows no bounds whether making connections with his complex thinking, writing, or designing blooming flowers in his garden. He keeps a large journal to write ideas, to scribble, and to count things. He loves numbers. And we love nothing more than an escape to visit Bob, his wife Maggie, their dog Jack, and to take a walk on the trail he built with his bare hands and hear updates about their children and grandchildren. Sometimes we're lucky enough to eat a fresh apple straight from the tree, or berries from his bushes. He bubbles with optimism and enthusiasm discussing the natural world around him with its magnificent scenery, or his community in Tiger Georgia, or how we can work together for a better world. Bob is so committed to positivity, he accumulated stories of people caring for others and compiled them in an annual calendar / book called *Something Nice to Do 365 Days a Year*. He is a loving and dedicated family man, and we consider ourselves fortunate to be part of his extended family.

IMPORTANT CONTACTS AND WEBSITES

TOPIC	ORGANIZATION	PHONE NUMBER	WEBSITE
Abortion	**National Abortion Federation** **Abortion Hotline**	**202-667-5881** **800-772-9100**	www.prochoice.org www.ipas.org www.earlyoptionpill.com
Abstinence			www.sexrespect.com
	Managing Contraception		www.managingcontraception.com
Abuse / Rape	National Domestic Violence Hotline	800-799-SAFE	www.thehotline.org www.ndvh.org
	Prevent Child Abuse America	312-663-3520	www.preventchildabuse.org
Adolescent Reproductive Health			www.teenpregnancy.org www.advocatesforyouth.org
Adoption	Adopt a Special Kid-America Adoptive Families Magazine	800-4-A-CHILD 800-372-3300	
Breastfeeding	La Leche League	800-LA-LECHE	www.lalecheleague.org www.ilca.org
Cancer / HPV			www.asccp.org www.cancer.org
COCs	Managing Contraception Planned Parenthood Federation of America	 800-230-PLAN	www.managingcontraception.com www.plannedparenthood.org
Condoms			condomania.com askdurex.com www.ppfa.org
Contraception	 Contraceptive Technology Managing Contraception Planned Parenthood Federation of America Family Health International World Health Organization Assoc. of Reproductive Health Professionals (ARHP) Contemporary Forums	 800-230-PLAN 919-544-7040 202-466-3825 800-377-7707	www.conrad.org www.contraceptivetechnology.com www.managingcontraception.com www.plannedparenthood.org www.fhi360.org www.who.int www.cforums.com www.ippfwhr.org www.engenderhealth.org www.bedsider.org
Counseling	Depression and Bipolar Support Alliance	800-826-3632	www.dbsalliance.org www.gmhc.org
Education			www.siecus.org www.cdc.gov
Emergency contraception			www.planbonestep.com
Female Barrier Methods	 Planned Parenthood Federation of America	 800-230-PLAN	www.femalehealth.com www.femcap.com www.plannedparenthood.org
Fertility Awarenes Methods			www.cyclebeads.com www.irh.org

TOPIC	ORGANIZATION	PHONE NUMBER	WEBSITE
HIV/AIDS	Ntl. HIV/AIDS Clinicians' Consultation Center	800-933-3413	www.nccc.ucsf.edu www.cdc.gov/hiv www.cdc.gov/nchstp/dstd/dstdp.htm
IUC			www.popcouncil.org www.engenderhealth.org www.bayer.com www.paragard.com
Menopause			www.menopause.org www.nams.org
Natural Family			www.canfp.org
Ordering Devices			www.nexplanon.com www.mirena-us.com www.paragard.com
POPs	Managing Contraception		www.managingcontraception.com
Pregnancy	Lamaze International Depression After Delivery	202-367-1128 800-944-4773	www.lamaze.org www.postpartum.net
Pregnancy Planning	 Planned Parenthood Federation of America	 800-230-PLAN	www.irh.org www.ccli.org www.aidsinfo.nih.gov www.nichd.nih.gov www.plannedparenthood.org
Pregnancy Testing	Planned Parenthood Federation of America	800-230-PLAN	www.plannedparenthood.org www.ovulation.com
Postpartum Contraception			www.avsc.org www.fhi.org
Public Health / Population Organizations			www.popcouncil.org www.prb.org www.undp.org www.population.org
Professional Organizations	 Planned Parenthood Federation of America	 800-230-PLAN	www.acog.org www.fda.gov www.fhi.org www.jsi.com www.NPWH.org www.plannedparenthood.org www.societyfp.org www.who.int
Reproductive Health			www.guttmacher.org
Research			www.fhi.org
STIs	CDC Sexually Transmitted Disease Hotline	800-CDC-INFO	www.cdc.gov
Sterilization	 Planned Parenthood Federation of America	 800-230-PLAN	www.engenderhealth.org www.plannedparenthood.org www.essure.com
Withdrawal			www.managingcontraception.com

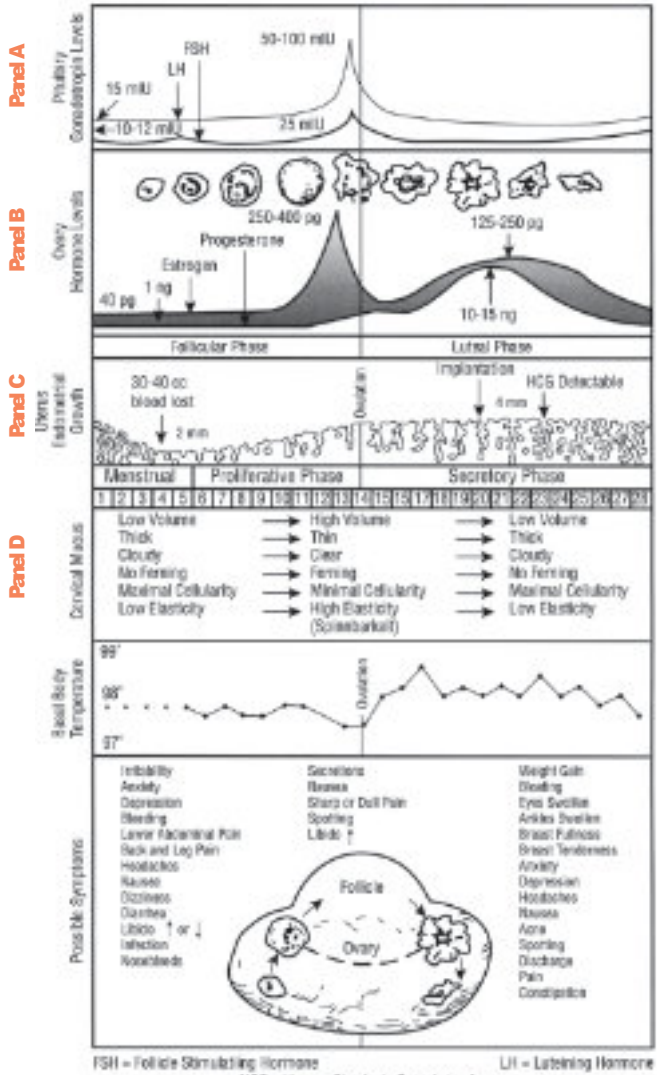
ABBREVIATIONS USED IN THIS BOOK

ACOG	American College of Obstetricians & Gynecologists
AIDS	Acquired immunodeficiency syndrome
AMA	American Medical Association
ASAP	As soon as possible
BBT	Basal body temperature
BCA	Bichloroacetic acid
BID	Twice daily
BMI	Body Mass Index
BP	Blood pressure
BTB	Breakthrough bleeding
BTL	Bilateral tubal ligation
BV	Bacterial vaginosis
Bx	Biopsy
CA	Cancer (if not California)
CDC	Centers for Disease Control and Prevention
COC	Combined oral contraceptives (estrogen & progestin)
CHC	Combined Hormonal Contraceptives
CMV	Cytomegalovirus
CT	Chlamydia trachomatis
CuIUD	Copper containing IUD
CVD	Cardiovascular disease
D & C	Dilation and curettage
D & E	Dilation and evacuation
DCBE	Double contrast barium enema
DM	Diabetes Mellitus
DMPA	Depot-medroxyprogesterone acetate (Depo-Provera)
DUB	Dysfunctional uterine bleeding
DVT	Deep vein thrombosis
Dx	Diagnosis
Dz	Disease
E	Estrogen
EC	Emergency contraception
ECPs	Emergency contraceptive pills ("morning-after pills")
ED	Erectile dysfunction
E_2	Estradiol
EE	Ethinyl estradiol
ENG	Etonorgestrel
EPA	Environmental Protection Agency
EPT	Estrogen-progestin therapy
ET	Estrogen therapy
EVA	Ethylene vinyl acetate
FAM	Fertility awareness methods
FDA	Food and Drug Administration
FH	Family History
FSH	Follicle stimulating hormone
GAPS	Guidelines for Adolescent Preventive Services
GC	Gonococcus/gonorrhea
GI	Gastrointestinal
GnRH	Gonadotrophin-releasing hormone
H/O	History of
HBsAg	Hepatitis B surface antigen
HAV	Hepatitis A virus
HBV	Hepatitis B virus
HCG	Human chorionic gonadotrophin
HCV	Hepatitis C virus
HDL	High density lipoprotein
HIV	Human immunodeficiency virus
HMB	Heavy menstrual bleeding
HPV	Human papillomavirus
HSG	Hysterosalpingogram
HSV	Herpes simplex virus (I or II)
H(R)T	Hormone (replacement) therapy
Hx	History
IM	Intramuscular
IPPF	International Planned Parenthood Federation
IUC	Intrauterine contraceptive
IUD	Intrauterine device
IUP	Intrauterine pregnancy
IUS	Intrauterine system
IV	Intravenous
KOH	Potassium hydroxide
LARC	Long acting reversible contraception

LAM	Lactational amenorrhea method
LARC	Long acting reversible contraceptives
LDL	Low-density lipoprotein
LGV	Lymphogranuloma venereum
LH	Luteinizing hormone
LMP	Last menstrual period
LNG-IUD	Levonorgestrel IUD
MEC	Medical Eligibilty Criteria
MI	Myocardial infarction
MIS	Misoprostol
MMG	Mammogram
MMPI	Minnesota Multiphasic Personality Inventory
MMR	Mumps Measles Rubella
MMWR	Mortality and Morbidity Weekly Report
MPA	Medroxyprogesterone acetate
MPT	Multipurpose Prevention Technology
MRI	Magnetic resonance imaging
MSM	Men who have sex with men
MTX	Methotrexate
MVA	Manual vacuum aspiration
N-9	Nonoxynol-9
NFP	Natural family planning
NSAID	Nonsteroidal anti-inflammatory drug
OA	Overeaters Anonymous
OB/GYN	Obstetrics & Gynecology
OC	Oral contraceptive
OR	Operating Room
OTC	Over the counter
P	Progesterone or progestin
Pap	Papanicolaou
PCOS	Polycystic ovarian syndrome
PE	Pulmonary embolism
PET	Polyesther (fibers)
PG	Prostaglandin
pH	Hydrogen ion concentration
PCO	Polycystic ovarian syndrome
PID	Pelvic inflammatory disease
PLISSIT	Permission giving Limited information Simple suggestions Intensive Therapy
PMDD	Premenstrual dysphoric disorder
PMS	Premenstrual syndrome
po	Latin: "per os"; orally, by mouth
POCs	Progestin-only contraceptives
POP	Progestin-only pill (minipill)
PP	Postpartum
PPFA	Planned Parenthood Federation of America
PRN	As needed
PUL	Pregnancy of Unknown Location
Q	Every
qd	Once daily
qid	Four times a day
R/O	Rule out
RR	Relative risk
Rx	Prescription or therapy
SAB	Spontaneous abortion
SHBG	Sex hormone binding globulin
SPR	Selected Practice Recommendations
SPT	Spotting
SSRI	Selective Serotonin Reuptake Inhibitors
STD	Sexually transmitted disease
STI	Sexually transmitted infection
Sx	Symptoms
TAB	Therapeutic abortion/elective abortion
TB	Tuberculosis
TCA	Trichloroacetic acid
TFT	Thyroid function test
tid	Three times a day
TSS	Toxic shock syndrome
TVU	Transvaginal ultrasound
UPA	Ulipristal acetate
URI	Upper respiratory infection
U.S. MEC	U.S. Medical Eligibility Criteria
USPSTF	U.S. Preventive Services Task Force
UTI	Urinary tract infection
VTE	Venous thromboembolism
VVC	Vulvovaginal candidiasis
WHO	World Health Organization
Y/O	Years old
ZDV	Zidovudine

FIGURE 1.1 MENSTRUAL CYCLE EVENTS: IDEALIZED 28 DAY CYCLE

[Hatcher 2018]



FSH = Follicle Stimulating Hormone LH = Luteining Hormone

HCG = Human Chorionic Gonadotropin

CHAPTER 1

THE MENSTRUAL CYCLE

The natural menstrual cycle is the vital sign of a woman's reproductive system, i.e., regular cyclic periods, in the absence of exogenous hormones, convey health.

Use of exogeneous hormonal contraception disrupts the natural cycle and may alter the natural bleeding pattern. When use of oral contraceptive pills mimics monthly bleeding, this results in a "pill period."

THE MENSTRUAL CYCLE

Results from a complex orchestration between the hypothalamic -pituitary-ovarian (H-P-O) axis

Hypothalamus:

- Secretes GnRH to stimulate the pituitary

Pituitary: *(see panel A of Fig. 1.1)*

- Secretes FSH to stimulate the ovaries to produce follicles and secrete estradiol
- Secretes LH to stimulate ovulation and progesterone secretion

Estradiol:

- Causes endometrium to proliferate *(see panel C of Fig. 1.1)*
- Causes thinning of cervical mucus, at the time of the LH surge, to facilitate sperm transport *(see panel D of Fig. 1.1)*

Initiation of each menstrual cycle is due to atrophy of the corpus luteum, days 26-28 previous cycle *(see panel B of Fig. 1.1)*:

- Decreased estrogen secretion from ovary
- Increased FSH secretion from pituitary, which causes a new group of follicles to develop
- The follicles secrete estradiol, which raises serum levels again
- The follicles also secrete inhibin B which is a negative feedback to decrease FSH

A dominant follicle emerges:

- It has more granulosa cells and more FSH receptors per granulosa cell, and increased blood flow
- Therefore it "escapes" the effects of falling FSH before ovulation (caused by inhibin B)
- The dominant follicle secretes estradiol
- When E2 sustained at about 200 pg/ml for more than 50 hours, negative feedback of E2 on LH reverses to positive feedback, resulting in the LH surge *(see panel A, B of Fig. 1.1)*
- The dominant follicle grows with the LH surge and 10-12 hours later extrudes an oocyte, known as ovulation *(see panel B of Fig. 1.1)*
- The other non-dominant follicles undergo atresia
- The dominant follicle collapses and transforms into the corpus luteum, which secretes estrogen and progesterone to promote implantation / support pregnancy

If no implantation occurs, hormone levels fall and the endometrium sloughs resulting in menstrual bleeding

TO ORDER ADDITIONAL COPIES OF MANAGING CONTRACEPTION OR OTHER CONTRACEPTIVE RESOURCES

go to *managingcontraception.com* or
email info@managingcontraception.com or call 404-875-5001

CHAPTER 2

COUNSELING AND CHOOSING A METHOD

THE BEST METHOD IS THE ONE THAT IS MEDICALLY APPROPRIATE AND IS USED EVERY TIME BY SOMEONE SATISFIED WITH THE METHOD

- Each contraceptive method has both advantages and disadvantages
- Be prepared to discuss all methods, even those you may not use in your own practice
- When counseling someone, be aware of your own biases
- Ask client their choice of pronoun and add this question to your intake form

ATTRIBUTES OF METHODS THAT INFLUENCE CLIENTS CHOICE OF METHOD:

- ***Safety***. U.S. Medical Eligibility Criteria (MEC) rates appropriateness of method based on health conditions
- ***Effectiveness:*** motivation to prevent pregnancy
- ***Convenience*** and ability to use method correctly. This also influences effectiveness
- ***Protection against STIs / HIV*** for individuals at risk
- ***Menstrual effects*** of method
- ***Ability to negotiate*** use of method with partner
- ***Cost:*** insurance status and access
- ***Personal influences:*** religion, privacy, friend's advice, mother's opinion, frequency of sex, involvement and support of partner
  For example: Will partner help pay for contraceptives, sterilization, or abortion if needed?

HOW TO USE U.S. MEC

MEC categories for methods:

1	No restrictions (method can be used)
2	Advantages generally outweigh theoretical or proven risks
3	Theoretical or proven risks usually outweigh the advantages
4	Unacceptable health risk (method not to be used)

Simplified 2-category system for methods

To make clinical judgment, the MEC 4-category classification system can be simplified into a 2-category system.

MEC Category	With Clinical Judgment	With Limited Clinical Judgment
1	Use the method in any circumstances	Use the method
2	Generally use the method	
3	Use of the method not usually recommended unless other, more appropriate methods are not available or acceptable	Do not use the method
4	Method not to be used	

To download most recent 2016 Medical Eligibility Criteria goto: www.cdc.gov

2020 U.S. MEC UPDATE: Depo-Provera injection and all IUDs are safe for use without restrictions by women at high risk for HIV infection. U.S. MEC 1

When counseling about the safety of method use, assess risk of method against risk of pregnancy. Recognize medical conditions that pose high risks if an individual becomes pregnant and CDC recommendation that long-acting reversible contraception (LARC) might be the best choice.*

Conditions associated with increased risk for adverse health events as a result of pregnancy*

- Breast cancer
- Complicated valvular heart disease
- Cystic fibrosis
- Diabetes: insulin dependent; with nephropathy, retinopathy, or neuropathy or other vascular disease; or of >20 years' duration
- Endometrial or ovarian cancer
- Epilepsy
- Hypertension (systolic ≥160 mm Hg or diastolic ≥100 mm Hg)
- History of bariatric surgery within the past 2 years
- HIV: not clinically well or not receiving antiretroviral therapy
- Ischemic heart disease
- Gestational trophoblastic disease
- Hepatocellular adenoma and malignant liver tumors (hepatoma)
- Peripartum cardiomyopathy
- Schistosomiasis with fibrosis of the liver
- Severe (decompensated) cirrhosis
- Sickle cell disease
- Solid organ transplantation within the past 2 years
- Stroke
- Systemic lupus erythematosus
- Thrombogenic mutations
- Tuberculosis

**Long-acting, highly effective contraceptive methods might be the best choice for women with conditions that are associated with increased risk for adverse health events as a result of pregnancy. These women should be advised that sole use of barrier methods for contraception and behavior-based methods of contraception might not be the most appropriate choice because of their relatively higher typical-use rates of failure.*

APPROACHES TO COUNSELING

Personalized counseling with shared decision-making: collaborative approach where the best available evidence is integrated with client's values and preferences.

- Consider the specific counseling needs of transgender and nonbinary individuals
- The goal of contraceptive counseling is to help individuals reach their desired reproductive outcomes
- If interested primarily in effectiveness, use the tiered-effectiveness model *(see page 6)*

May use the GATHER guide to structure counseling visit:

- **Greet** client in a friendly manner and establish rapport *(see page 18)*
- **Ask** open questions to discover what client is looking for and listen closely
- **Tell** the client relevant information about methods
- **Help** the client think through her choice and reflect what she is saying back to her as a question to make sure everything is clear
- **Explain** how to use the method and explain side effects. Ask client to repeat back method instructions
- **Return:** Encourage client to return if she has any questions or for any other needs
- For assessing client's contraceptive needs, consider the questions below:

KEY QUESTIONS while counseling about method choice start with "one key question"

Option 1: "Would you like to become pregnant in the upcoming year?" This question identifies the need for contraception and / or preconception health as stated from the CDC Reproductive Life Plan approach.

OR

Option 2: "Do you want to prevent pregnancy now?" This question identifies those at risk who want to discuss options.

Method Related Questions:

- What method are you using, if any?
- What have you used in the past?
- Have you ever used emergency contraception (EC)?
- Did you use birth control at last sexual encounter?
- What difficulties have you experienced with prior methods (if any)?
- Do you have a specific method in mind?
- Have you discussed method with your partner, and does he/she have any preferences?
- ***Last Question:*** What is important to you about your method? This helps provider counsel about noncontraceptive benefits, side effects and effectiveness, etc.

Regardless of the patient's final choice for birth control, mention using condoms during every act of intercourse to avoid the transmission of STIs if at risk and provide further contraceptive benefit.

Tiered-Efficacy Model: presents birth control options from the most effective to least

- ***Key question:*** When individual identifies protection against pregnancy as her most important goal.
- LARCs (IUDs and implants) are given priority / discussed first.
- Studies have found patients find efficacy-based visual aids to be the most easily understandable.

Example of success with this model is **The Contraceptive CHOICE Project:**

- a prospective cohort study of 9,256 women in St. Louis
- contraceptives given at no cost, and LARCs were promoted as first-line (a LARC first script).

Results:

- 75% of women chose LARC methods (vs. the national average of ~10% in 2011).
- teen pregnancy rate fell to 3.4% and abortion rate dropped.
- Satisfaction and continuation with each method in the CHOICE Cohort

Method	Continuation 1 year (%)	Satisfaction 1 year (%)	Continuation 2 year (%)	Continuation 3 year (%)
Copper IUD	84	>80	77	70
LNG-IUD	88	>80	79	70
Implant	83	80	69	56
Short acting (Pills, Patch, Ring)	50-60	53	40-43	31

Criticism / pitfalls of tiered effectiveness counseling:

- Potential to be coercive. Providers should be aware of biases such as thinking LARC is best for everyone
- If a provider wants to promote LARC use, patients may feel pressured to satisfy the provider's first choice
- LARC more difficult to terminate on own, decreasing autonomy over method
- Important to be aware of history of contraceptive provision, which, at times, has been coercive, especially towards people of color and low-income communities.

WHAT WE MEAN BY EFFECTIVENESS:

It is important for patients to understand how we determine effectiveness.

Effectiveness may be measured in 2 ways *(see Table 2.1 page 9)*:

1. ***Typical use first year failure rates:*** The percentage of women who become pregnant during their first year of use. This number reflects pregnancies in both couples who use the method perfectly and of those who do not. Most contraceptors are "typical" not "perfect" users.
   The typical use failure rate is generally the number to use when counseling new start users.
2. ***Perfect (or correct and consistent) use first year failure rate:*** The percentage of women who become pregnant during their first year of use when they use the method **perfectly.**

- In spite of very effective options, the U.S. has a high rate of unintended pregnancy.
- Just under 50% of all pregnancies in the U.S. are not planned. This is because most people are typical users or non-users of contraceptives.

Counseling about effectiveness:

- Methods are divided into 3 groups:
  A. Highly effective: female and male sterilization, implants, and IUDs (LARC)
  B. Moderately effective: pills (COCs and POPs), ring, patch, and Depo injections
  C. Less effective: male latex condoms, female condoms, diaphragm, cervical cap, spermicides (gel, foam, suppository, film), withdrawal, and natural family planning (calendar, temperature, cervical mucus)

Caution in comparing effectiveness between methods using different efficacy indices.

In this book we cite effectiveness from various sources that may not be directly comparable, e.g., the Trussell chart *(page9)*, package inserts or recent clinical trials. Recent trials may have higher failure rates due to inclusion of more diverse populations and other methodological factors.

Figure 21 Effectiveness of family planning methods

Sources: Adapted from World Health Organization (WHO) Department of Reproductive Health and Research, Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP). Knowledge for health project. Family planning: a global handbook for providers (2011 update). Baltimore, MD; Geneva, Switzerland: CCP and WHO; 2011; and Trussell J. Contraceptive failure in the United States. Contraception 2011;83:397–404.

* The percentages indicate the number out of every 100 women who experienced an unintended pregnancy within the first year of typical use of each contraceptive method.

Table 2.1 Percentage of women experiencing an unintended pregnancy within the first year of typical use and the first year of perfect use and the percentage continuing use at the end of the first year: United States*

	% of Women Experiencing an Unintended Pregnancy within the First Year of Use		% of Women Continuing Use at One Year[1]
Method	**Typical Use[2]**	**Perfect Use[3]**	
Male Sterilization	0.15	0.10	100
Female Sterilization	0.5	0.5	100
Nexplanon	0.1	0.1	89
Intrauterine contraceptives			
Paragard (copper T)	0.8	0.6	78
Mirena / Liletta (LNG)	0.1	0.1	80
Depo-Provera	4	0.2	56
NuvaRing*	7	0.3	67
Evra patch*	7	0.3	67
Combined pill & Progestin-only pills	7	0.3	67
Diaphragm	17	16	57
Condom[8]			
Female (fc)	21	5	41
Male	13	2	43
Sponge			36
Parous women	27	20	
Nulliparous women	14	9	
Withdrawal	20	4	46
Fertility awareness-based methods	15		47
Standard Days method[6]	12	5	
TwoDay method[6]	14	4	
Ovulation method[6]	23	3	
Symptothermal method[6]	2	0.4	
Spermicides[5]	21	16	42
No Method[4]	85	85	

Emergency Contraceptive Pills: Treatment with COCs initiated within 120 hours after unprotected intercourse reduces the risk of pregnancy by at least 60-75%[9]. Pregnancy rates lower if initiated in first 12 hours. Progestin-only EC reduces pregnancy risk by 89%.

Lactational Amenorrhea Method: LAM is a highly effective, temporary method of contraception.[10]

Notes:

1 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 oral contraceptive pill, and Depo-Provera are taken from the 1995 National Survey of Family Growth corrected for underreporting of abortion; see the text for the derivation of estimates for the other methods.

2 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.

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

4 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.

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

6 The Ovulation and TwoDay methods are based on evaluation of cervical mucus. The Standard Days method avoids intercourse on cycle days 8 through 19. The Symptothermal method is a double-check method based on evaluation of cervical mucus to determine the first fertile day and evaluation of cervical mucus and temperature to determine the last fertile day.

7 Without spermicides.

8 With spermicidal cream or jelly.

9 ella, Plan B One-Step and Next Choice are the only dedicated products specifically marketed for emergency contraception. The label for Plan B One-Step (one dose is 1 white pill) says to take the pill within 72 hours after unprotected intercourse. Research has shown that all of the brands listed here are effective when used within 120 hours after unprotected sex. The label for Next Choice (one dose is 1 peach pill) says to take 1 pill within 72 hours after unprotected intercourse and another pill 12 hours later. Research has shown that both pills can be taken at the same time with no decrease in efficacy or increase in side effects and that they are effective when used within 120 hours after unprotected sex. The Food and Drug Administration has in addition declared the following 19 brands of oral contraceptives to be safe and effective for emergency contraception: Ogestrel (1 dose is 2 white pills), Nordette (1 dose is 4 light-orange pills), Cryselle, Levora, Low-Ogestrel, Lo/Ovral, or Quasense (1 dose is 4 white pills), Jolessa, Portia, Seasonale or Trivora (1 dose is 4 pink pills), Seasonique (1 dose is 4 light-blue-green pills), Enpresse (one dose is 4 orange pills), Lessina (1 dose is 5 pink pills), Aviane or LoSeasonique (one dose is 5 orange pills), Luteraor Sronyx (one dose is 5 white pills), and Lybrel (one dose is 6 yellow pills).

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

*Adapted from Trussell J, Kowal D. The essentials of contraception. In: Hatcher RA, et al. Contraceptive Technology, 21th ed., 2018 (page 100)

*Numbers for typical use failure of Ortho Evra and NuvaRing are not based on data. They are estimates based on pill data.

Thank you, James Trussell, for this remarkable table!

Table 22 Summary of major methods of contraception and some related safety concerns, side effects, and non-contraceptive benefits- may be useful for counseling

Trussell 2018

METHOD	NON-CONTRACEPTVE BENEFITS	SIDE EFFECTS / CAUTION	RISKS
Combined hormonal contraception (pill, patch and ring)	Decreases dysmenorrhea, menorrhagia, anemia and cyclic mood problems (PMS); protects against ectopic pregnancy, symptomatic PID, and ovarian, endometrial, and possibly colorectal cancer; reduces acne	Nausea, headaches, dizziness, spotting, weight gain, breast tenderness, chloasma	Cardiovascular complications (stroke, heart attack, blood clots, high blood pressure), depression, hepatic adenomas, increased risk of cervical and possibly liver cancers, earlier development of breast cancer in young women
Progestin-only pill	Lactation not disturbed Less nausea than with combined pills	Unscheduled spotting, breast tenderness	Efficacy dependant on daily adherence
IUD	LNG-IUDs decreases menstrual blood loss and menorrhagia and can provide progestin for hormone replacement therapy	Menstrual cramping, spotting, increased bleeding with non-progestin-releasing IUDs	Infection post insertion, uterine perforation, anemia (Copper IUD), expulsion
Male condom	Protects against STIs, including HIV; delays premature ejaculation	Decreased sensation, allergy to latex	Anaphylactic reaction to latex, slippage or breakage
Female condom	Protects against STIs	Aesthetically unappealing and awkward to use for some	None known
Implanon	Lactation not disturbed; decreases dysmenorrhea	Headache, acne, menstrual changes, weight gain, depression, emotional lability	Infection at implant site; difficult removal

METHOD	NON-CONTRACEPTVE BENEFITS	SIDE EFFECTS / CAUTION	RISKS
Depo-Provera	Lactation not disturbed; reduces risk of seizures; may protect against ovarian and endometrial cancers	Menstrual changes, weight gain, headache, adverse effects on lipids	Depression, allergic reactions, pathologic weight gain, bone loss
Sterilization	Tubal sterilization reduces risk of ovarian cancer and may protect against PID	Pain at surgical site, psychological reactions, subsequent regret that the procedure was performed	Infection; possible anesthetic or surgical complications; if pregnancy occurs after tubal sterilization, risk that it will be ectopic
Abstinence	Prevents STIs, including HIV, if anal and oral intercourse are avoided as well		
Diaphragm, Sponge with spermicide		Pelvic discomfort, vaginal irritation, vaginal discharge if left in too long, allergy	Vaginal and urinary tract infections, toxic shock syndrome; possible increase in susceptibility to HIV/AIDS acquisition if exposed to positive partner
Spermicides		Vaginal irritation, allergy	Vaginal and urinary tract infections; possible increase in susceptibility to HIV/AIDS acquisition if exposed to positive partner
Lactational Amenorrhea Method (LAM)	Provides excellent nutrition for infants under 6 months old		

TIMING *(see table 23 page 14)*:

Traditionally, clients were counseled to start a new method on the first day of their upcoming menstrual cycle; however, some women become pregnant while they wait to begin their new method. We advocate for the use of the Quick Start method, which involves the patient starting the method on the day of the clinic visit in cases when you can be reasonably certain that the patient is not pregnant.

The QuickStart approach to starting the use of pills, intrauterine devices, implants, injections is now accepted as the proper way to start most contraceptives because it eliminates delay.

How to be reasonably certain a woman is not pregnant - no symptoms and signs of pregnancy AND she meets any of following criteria:

- no intercourse since last menses (period)
- has been using a reliable method consistently and correctly
- is 7 days or less after start of normal menses (period)
- within 4 weeks postpartum
- is 7 days or less post abortion or miscarriage
- fully or near fully breastfeeding, amenorrheic and < 6 months postpartum (Some experts recommend relying on lactational amenorrhea only through 3 months because 20% of fully nursing mothers ovulate at 3 months)

CDC MMWR, June 21, 2013, Vol. 62, No. 5

Combined Hormonal Contraceptives (CHC):

- Healthy women who tolerate pills or CHC well and do not smoke can continue pills until menopause, *see page 125 (algorithm pills -> menopause)*
- No medical reason for periodic "breaks" from pils
- Extended use of combined pills with no pill free interval is an acceptable way for some women to take pills, with no increased risk of endometrial hyperplasia *[Anderson-2003]*.
- **QuickStart the method meaning**
  - Start pills, patch, or ring on day of office visit if you can be reasonably certain that she is not pregnant – *see boxabove [Westhoff-2002]*
  - If NOT within 5 days of the start of a period or miscarriage, recommend abstaining from sexual intercourse or back-up contraceptive for 7 days
  - If unprotected intercourse in preceeding 5 days offer EC.

Progestin Only Methods

- The first injection may be given at any time in the cycle if reasonably certain a woman is not pregnant *(see Boxabove)*.
- If NOT within 7 days of the start of a period or miscarriage, recommend to abstain or use back-up contraceptive for 7 days
- If unprotected intercourse in preceeding 5 days, offer EC. If QuickStart Depo-Provera with EC, repeat pregnancy test in 2-3 weeks
- Depo-Provera and progestin-only methods may be started postpartum:
  - At discharge from hospital up to 30 days: category 1 MEC non-breastfeeding, category 2 breastfeeding
  - >30 days: category 1 MEC for breastfeeding or not

IUDs

- May insert any time in a woman's menstrual cycle if reasonably certain she is not pregnant.
- If using an LNG-IUD, back-up recommended for 7 days if not inserted in the first 7 days of cycle.
- No back-up for Copper IUD because of its high efficacy as an emergency contraceptive.