

Barrier Contraceptives and Spermicides

Their role in
family planning care



WORLD
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Preface

Many established family planning programmes include barrier contraceptives and spermicides as an integral part of a broad mix of contraceptive services and products. Barrier contraceptives have a significant contribution to make to contraceptive services because they are effective and safe and can be distributed widely through community-based women's groups, social organizations, health workers, and commercial retail outlets, as well as clinics concerned with family planning and maternal and child health. They thus extend accessibility and awareness of contraceptives to a greater number of people than would ordinarily be reached by the formal health care system.

For the inclusion of barrier contraceptives in a programme, it may often be necessary to solicit strong political support from legislators and from various ministries and departments in order to facilitate their import, distribution, and promotion. It is essential to obtain such support in order to remove financial or procedural impediments to the import of barrier contraceptives or their production within the country and ensure that the social acceptability of these products and awareness of their availability are widely promoted.

This publication has been compiled for those who are involved in the development and management of family planning services as a part of health care programmes. If used correctly and consistently, barrier contraceptives and spermicides can be highly effective and have an important place in national family planning or family health programmes.

The aim of these guidelines is to present the advantages and the disadvantages of barrier contraceptives and spermicides. In addition, they are intended to provide information to health care administrators and planners who include, or intend to include, these products in their

programmes, whether they are distributed through health clinics, community-based services, or commercial distribution systems. Emphasis is laid on the important role of barrier contraceptives and spermicides in making users less dependent on the formal health system.

This document does not attempt to lay down rigid guidelines. Rather, it raises and discusses specific issues that must be taken into account in the planning and administration of services in which the relevant types of contraceptive may be provided.

To be effective, barrier contraceptives and spermicides must be used consistently and correctly. Special emphasis is placed on counselling and on instructions to users.

The views summarized here are based on a critical review of a number of clinical and scientific studies as well as field trials. This publication is part of a WHO series of technical guidelines for the provision of contraceptive services: the others have been concerned with female sterilization,¹ induced abortion,² oral contraceptives,³ injectable contraceptives,⁴ and intrauterine devices.⁵ Guidelines on vasectomy are in preparation.

Comments and queries on this publication should be addressed to: Maternal and Child Health, World Health Organization, 1211 Geneva 27, Switzerland.

¹ *Female sterilization: guidelines for the development of services.* Geneva, World Health Organization, 1976 (WHO Offset Publication No. 26)

² *Induced abortion: guidelines for the provision of care and services.* Geneva, World Health Organization, 1979 (WHO Offset Publication No. 49)

³ *Oral contraceptives: technical and safety aspects.* Geneva, World Health Organization, 1982 (WHO Offset Publication No. 64)

⁴ *Injectable hormonal contraceptives: technical and safety aspects.* Geneva, World Health Organization, 1982 (WHO Offset Publication No. 65)

⁵ *Intrauterine devices: their role in family planning care.* Geneva, World Health Organization, 1982 (WHO Offset Publication No. 75)

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1. Review of barrier methods of contraception

Each approach to fertility control has its advantages and disadvantages. None is perfect for everyone; none is perfect for every clinical setting; and none is acceptable in every culture. Only three types of contraceptive—condoms, foaming tablets, and suppositories—are appropriate for inclusion in every distribution scheme. Any one of these may be the most suitable contraceptive for a particular couple, under certain circumstances, at some point in their lives.

For the purposes of these guidelines, barrier methods may be defined as contraceptive techniques that prevent sperm in the ejaculate from entering either the vagina or the cervical os, by either mechanical or chemical means, or both. The methods that will be reviewed are:

- “Male” method: use of condoms
- “Female” methods: use of
 - diaphragm;
 - cervical cap;
 - spermicidal foam;
 - spermicidal suppositories and foaming tablets;
 - spermicidal creams and jellies;
 - sponge.

Effectiveness

Contraceptive effectiveness is an extremely important issue when it comes to developing family planning programmes

and when the time comes for an individual or a couple to decide which method to use.

"Will it work?" is the question most frequently asked about any birth control method. In fact the question really being asked is "How well will it work for me?" Since this question cannot be answered with certainty for any individual woman or couple, most clinicians believe it wise to reply by stating both the failure rate for couples who use the method consistently and correctly, and the failure rate for typical users of the method (Table 1). This is the approach suggested for clinicians and counsellors.

Table 1. First-year failure rates for different birth control methods^a

Method	Lowest observed failure rate ^b (%)	Failure rate in typical users ^c (%)
tubal ligation	0.04	0.04
vasectomy	0.15	0.15
injectable progestogen	0.25	0.25
estrogen-progestogen hormonal birth control pills	0.5	2
progestogen-only pill	1	2.5
intrauterine device (IUD)	1.5	5
condom	2	10
diaphragm (with spermicide)	2	19
sponge (with spermicide) ^d	—	10–20
cervical cap	2	13
foams, creams, jellies, and vaginal suppositories	3–5	18
coitus interruptus	16	23
fertility awareness techniques (basal body temperature, mucus method, calendar, and "rhythm")	2–20	24
douche	—	40
chance (no method of birth control)	90	90

^a The source of this table is: HATCHER, R. A. ET AL. *Contraceptive technology, 1984–1985*, New York, Irvington Publishers, 1984, which furnishes extensive references for effectiveness studies of barrier contraceptives, spermicides, and other approaches to birth control.

^b Based on the number of pregnancies occurring among 100 users who employ a given method correctly and consistently for one year.

^c Based on the number of pregnancies in one year per 100 typical users of a given method. The source for many of these failure rates is: SCHIRM, A. ET AL. *Contraceptive failure in the United States. The impact of social, economic and demographic factors. Family planning perspectives*, 14: 68–75 (1982).

^d In the absence of adequate data, it is not yet possible to state the lowest observed failure rate for this new method of birth control.

As family planning workers attempt to fulfil their responsibility for providing users with both optimal and typical failure data, they must also cope with an even more serious source of confusion. If one reliable researcher reports that a method is 98% effective in the first year of use and another claims that it is 75% effective, which is to be believed?

Both family planning providers and the public can be aided in understanding the reasons for such differences and in making an informed choice based on reported research, if it is pointed out that both the design and implementation of studies affect the results. Important factors include: size of sample population studied, characteristics of the study population (such as age, education, motivation, and socioeconomic status), method of data collection (prospective or retrospective), method of computing results, and integrity of the researchers involved.

In choosing the effectiveness values given here, large prospective studies of the effectiveness of various birth control methods were analysed by means of life-table techniques; however, it was not always possible to find ideal studies of each method. Failure rates for a given contraceptive method are based on the answer to the question: "Of 100 women who start and continue to use the method, how many will become pregnant in the first year?"

The effectiveness of a contraceptive is not solely the responsibility of the individual or the couple. The managers or administrators of programmes can improve effectiveness rates and encourage continued use by ensuring:

- a dependable flow of supplies;
- the provision of adequate supplies at each visit;
- accurate counselling devoid of bias;
- the quality of the supplies.

Deciding on a contraceptive method

Two major sets of considerations influence the choice of a contraceptive: personal considerations affecting the individual or the couple and considerations relating to the programme.

Individuals and couples are influenced by considerations such as:

- effectiveness
- safety
- past experience
- acceptability of the method
- fear of the method (rational or irrational)
- confidence in the method
- cultural or religious influences
- ability to seek help should a complication occur
- willingness to use a back-up contraceptive
- known contraindications to the method
- partner's reactions to various possibilities
- the popularity of the method among friends and/or family members
- availability and costs of method at a given location

Programmes take account of criteria such as:

- effectiveness
- safety
- side-effects
- user acceptability
- cultural acceptability
- storage requirements (space, environmental conditions)
- transportation requirements
- local availability and local production
- cost
- manpower requirements
- legal restrictions

Responsibilities of the male

The role of the male in family planning is extremely important. At times it has received inadequate attention since many of the effective methods developed over the past 25 years have been designed for use by females alone. Moreover, since it is the woman who must undergo the pregnancy, bear the child, nurse it, and in most instances feed it, women have had greater motivation to take control of their reproductive destiny. In the ideal situation, couples should share the choice of the contraceptive and the responsibility for its use and should together be aware of, and alert to, possible side-effects. The proportion of women using contraceptive methods relying on the cooperation of the man varies from country to country and culture to culture and, to a certain extent, according to the age of the couple.

Use of condoms and withdrawal, two "male" methods, are among the oldest contraceptive techniques. The importance of these two methods is suggested by the accompanying tables. In Table 2, findings by the World Fertility Survey¹ demonstrate that, in the developed countries represented, from 14 % (USA) to 29 % (Great Britain and France) of women planning their families rely on *male* methods (use of condom and withdrawal). For the developing countries represented, the proportion ranges from

Table 2. Proportion of all married women practising family planning who use reversible methods that depend on the cooperation of their partner

	Proportion of women practising contraception ^a	Proportion of those women using reversible methods that depend on partner's cooperation				Total
		Use of condom	Rhythm	Withdrawal	Abstinence	
Bangladesh ^b	10.4	8.6	13.5	5.8	14.4	42.3
Colombia ^b	51.8	4.1	12.0	11.2	2.1	29.4
Dominican Republic ^b	41.6	4.8	3.8	11.8	—	20.4
France ^b	71.0	23.0	1.0	6.0	0.0	30.0
Hungary ^c	74.0	5.0	5.0	23.0	0.0	33.0
Indonesia ^b	36.9	7.0	3.3	1.4	3.8	15.5
Jamaica ^b	46.7	16.3	0.9	3.6	3.0	23.8
Jordan ^b	37.9	5.5	8.2	12.9	1.6	28.2
Mexico ^b	41.7	20.4	10.1	12.0	—	24.5
Philippines ^b	47.8	9.8	23.6	26.1	5.0	64.5
Thailand ^b	45.3	1.3	2.6	2.6	2.0	8.5
United Kingdom ^c	77.0	23.0	1.0	6.0	0.0	30.0
USA ^c	70.0	11.0	5.0	3.0	0.0	19.0

^a In no country did the proportion of these women using vaginal spermicides, diaphragms, creams, gels, or suppositories exceed 4.6 %; in most, it was 1–2 %.

^b Adapted from: CARRASCO, E. *Contraceptive practice*. London, World Fertility Survey, 1981 (Comparative Studies, No. 9).

^c Adapted from: BERENT, J. *ECE analysis of World Fertility Survey in Europe and USA*. London, World Fertility Survey, 1982 (Comparative Studies, No. 20).

¹ The World Fertility Survey was an international research programme, undertaken by the International Statistical Institute in cooperation with the International Union for the Scientific Study of Population, and with the collaboration of the United Nations, to assess the state of human fertility throughout the world.

4 % (Thailand) to 36 % (Philippines). A comparison between Table 2 and Table 3 makes it clear that younger women are generally more dependent than older women on "male" methods.

Table 3. Proportion of young married women (aged 15-19 years) practising family planning who use reversible methods that depend on the cooperation of their partners^a

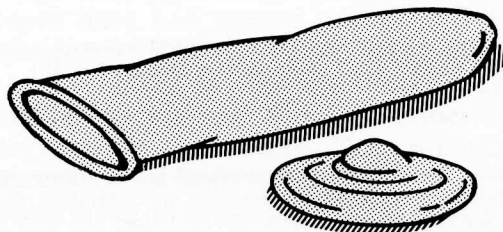
	Proportion of young married women practising contraception ^b	Proportion of these women using methods that depend on partner's cooperation				
		Use of condom	Rhythm	With-drawal	Absti-nence	Total
Bangladesh	4.9	20.4	8.2	14.3	24.5	67.4
Colombia	37.9	6.3	10.3	6.3	0.0	22.9
Dominican Republic	20.1	9.0	0.0	22.9	—	31.9
Indonesia	16.2	4.9	0.0	3.7	3.1	11.7
Jamaica	37.3	34.6	0.0	2.7	0.0	37.3
Jordan	13.4	6.7	3.7	17.9	0.0	32.0
Mexico	21.1	1.4	3.3	12.8	—	17.5
Philippines	22.6	11.1	22.1	40.7	2.2	76.1
Thailand	22.7	0.0	4.8	5.3	2.6	12.7

^a Adapted from CARRASCO, E. *Contraceptive practice*. London, World Fertility Survey, 1981 (Comparative Studies, No. 9).

^b In no country did the proportion of these women using vaginal spermicides, diaphragms, creams, gels, or suppositories exceed 1.7 %; in most, it was 1 % or less.
— Not asked.

Condoms

The vast majority of condoms, or sheaths, are of rubber (only 1 % are skin condoms made of processed collagenous tissue from the caeca of young lambs). The condom fits



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over the erect penis and acts as a barrier to the transmission of semen into the vagina.

Condoms are not identical. While the "average" condom is about 19cm long and 2.5cm wide, is lubricated, and is a dull tan colour, a certain amount of imagination has been employed to produce a variety of condoms catering to different tastes. Among the factors that vary in the production of condoms are:

- length;
- width;
- thickness of material;
- presence of powders and/or lubricants on the surface;
- addition of a spermicide to the lubricant;
- colour;
- shape, ridges, tapered sides, reservoir at end;
- designs on surface;
- packaging.

Certain brands of condom contain spermicide. The most commonly used technique is to add 0.5 g of the spermicide nonoxynol-9 to the lubricant. The spermicide is distributed with the lubricant over both the inner and outer surfaces of the condom. However, the effectiveness of spermicides on the outside of a condom, should it rupture or have a hole, has not yet been evaluated. Nor has there been any evaluation of the effectiveness of spermicides in condoms in the prevention or treatment of sexually transmitted infections, although it has been established that the spermicide added to condom lubricants is lethal to a number of agents capable of causing sexually transmitted diseases.

Advantages and disadvantages of the condom

Advantages

- safe;
- effective (probably more effective than any other barrier or spermicide);
- more self-explanatory than some methods;
- male is involved in contraceptive decision-making and practice;
- not bulky;
- inexpensive;
- can be distributed by nonmedical and untrained personnel;
- can be obtained from commercial outlets.

Disadvantages

- sexual intercourse must be interrupted after erection has occurred while the condom is placed on the penis;
- unacceptable to some men and women because of the lack of genital contact;
- in some cultures condoms are popularly associated with illicit sexual activities;
- condoms are often traditionally associated with extramarital sex and the prevention of sexually transmitted disease;
- condoms may reduce, or be perceived to reduce, a man's or a woman's enjoyment of intercourse;
- the requirement for male cooperation may be a disadvantage in some circumstances;
- men and women may be irritated by, or allergic to, the spermicide added to some condoms;
- condoms are considered "messy" by some men and women and must be disposed of after use;
- condoms can be torn by a fingernail or other sharp object which renders them useless.

Noncontraceptive benefits

1. Condoms can play a major role in the prevention of sexually transmitted diseases.
2. By lessening the risk of sexually transmitted infections, the condom can reduce the likelihood of infertility or cervical cancer in some women. Condoms also offer protection against acquired immunodeficiency syndrome (see Annex 1).
3. Occasionally, men are unable to maintain an erection during intercourse—for instance, older men or those who have undergone certain types of lower abdominal surgery.

The rim of the condom may have a slight tourniquet effect, thus helping to maintain an erection.

4. Lubricated condoms can reduce mechanical friction and irritation of the penis or vagina and enhance sexual pleasure.
5. It has been found that infertility in some couples results from the fact that the woman's body produces antibodies to her partner's sperm. In such couples, the use of condoms for 3–6 months (the length of time depends on the level of the antibody titre and how long it remains elevated) can prevent the release of sperm antigens into the vagina.
6. Women have occasionally been allergic to their partner's sperm and/or semen; urticarial and even anaphylactic reactions have occurred. Condoms would prevent these allergic reactions.
7. Some women and men do not wish to have the penis in direct contact with the vagina. The condom offers a solution to this problem.
8. Condoms have been used in the treatment of premature ejaculation, since they reduce sensitivity of the glans during intercourse.

Side-effects

The major complaint of condom users is that sensitivity is reduced. Some men are unable to enjoy intercourse or even maintain an erection while wearing a condom. To increase sensitivity, natural-skin-textured or lubricated condoms may be used. Some people object to the interruption necessary in order to put on the condom; the female can, however, be encouraged to put the condom on the male as part of foreplay. A very small number of people are allergic to rubber condoms; they should try using natural-skin condoms. The most common recurrent problem that discourages couples from adopting the condom as their standard method of contraception is failure to use it consistently, the result being pregnancy.

Diaphragms

The diaphragm is a dome-shaped rubber cup with a flexible rim. It is inserted into the vagina in such a way