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## Statement on Barrier Methods of Contraception

### Introduction

Two types of barrier methods of contraception are available:

1. Physical barrier methods, such as condoms, diaphragms, and cervical caps, that prevent pregnancy by blocking the entry of sperm into the upper genital tract;
2. Chemical barrier methods (spermicides) that kill or inactivate sperm on contact.

*Physical* barrier methods, although possibly less effective than hormonal methods, intrauterine devices, or sterilisation, can offer effective and acceptable contraception to individuals who use them consistently and correctly. They are the only methods of contraception that protect, in varying degrees, against sexually transmitted infections (STIs). Such protection is greatest with condoms, which are also the only contraceptive method proven to protect against HIV infection. Therefore condoms, used on their own or in combination with another method of contraception, should be promoted and provided for dual protection – that is, to protect against STIs (including HIV) as well as against unwanted pregnancy.

The effectiveness of *chemical* barrier methods against pregnancy is substantially lower than that of physical barriers. Therefore they should only be used in combination with a physical barrier method. They should not be recommended for STI/HIV prevention.

Barrier methods can be used as a temporary alternative or as a back-up to other contraceptive methods. Condoms and spermicides have the advantage that they can be distributed through non-clinical services.

### Counselling

Counselling for clients intending to use a barrier method of contraception should include discussion of effectiveness against unwanted pregnancy, the differing degrees of protection that these methods offer against STIs, and the importance of consistent and correct use. Clients should be given clear instructions on the proper use of the method, including a demonstration, together with advice on storage and care. They should also be advised on the possibility of emergency contraception if they have intercourse without using the method or if they have reason to think that the method has failed. Hormonal pills for emergency contraception can be offered for them to keep as a back-up.

## Male condoms

Male latex condoms are effective against both unwanted pregnancy and STI/HIV infection if used correctly with every act of intercourse. In practice, pregnancy rates range between 3 and 14 per 100 women per year. For a couple, condoms offer the man a way to share actively in responsibility for fertility regulation. They are also one of the most important methods of contraception for adolescents (see *IMAP Statement on Contraception and STI/HIV Prevention for Adolescents* and *IMAP Statement on Dual Protection*). Condom use should be promoted in sexual and reproductive health / family planning programmes.

The many different kinds and brands of condom vary in features such as shape, size, colour, lubrication, thickness, texture, and whether or not they are coated with spermicide (usually nonoxynol-9 or menfegol). Service providers should be aware of the characteristics of all types of condom available in their programme and advise clients accordingly, giving explicit instructions about their correct and consistent use. The assumption that all men know how to use a condom correctly is wrong. Incorrect use of the condom is the most common cause of breakage and slippage. Clients therefore require education on the matter, including a demonstration of how to wear, use, and dispose of them. A new condom must be worn for each act of intercourse and it should be put on before any genital contact.

If a condom breaks or tears during intercourse, emergency (postcoital) contraception should be used to reduce the risk of pregnancy.

Male condoms made of synthetic materials, such as polyurethane, offer an alternative for individuals who are allergic or sensitive to latex. They have the potential advantage of maintaining structural integrity for longer under a broad range of storage conditions. However, breakage and slippage rates are higher and they are more expensive than latex condoms. More research is needed on the effectiveness of non-latex condoms against both pregnancy and STIs, and on their acceptability.

## Female condom

The female condom, made of soft pliable polyurethane prelubricated with a silicone-based substance (dimethicone), is inserted into the vagina before sexual intercourse. An inner ring is used for insertion and holds the condom in place high in the vagina, and an outer ring lies flat and covers the labia during sexual intercourse. After ejaculation, the female condom retains the seminal fluid, preventing it from coming into contact with the cervix.

The contraceptive use-effectiveness of the female condom is within the wide range quoted for other barrier methods, but lower than that of male condoms. Pregnancy rates for the female condom range between 5 and 21 per 100 women per year.

Laboratory studies have shown that the female condom is an effective barrier not only to sperm but also to bacteria and viruses including HIV. However, there is little information on its clinical effectiveness in preventing STI/HIV transmission. Female condoms offer an alternative to male condoms which can be initiated by women. This

is particularly important when the woman perceives a risk of HIV infection but has difficulty negotiating male condom use.

There are no published reports of serious adverse events or allergic reactions caused by use of the female condom.

The female condom is now available in many countries, but uptake is limited by its high cost. There are reports of women re-using the female condom. At a programmatic level this has been considered as one approach to make the female condom more cost-effective. The safety and feasibility of re-use is currently the subject of research. More evidence must be obtained and, if it is positive, guidelines must then be developed and tested. Meanwhile, re-use of female condoms is not recommended.

## Diaphragms

The diaphragm is a latex dome-shaped device. When inserted into the vagina the dome covers the cervix. Pregnancy rates range between 4 and 18 per 100 women per year. The current recommendation is to use the diaphragm in combination with a spermicide. This is based on an assumption, rather than evidence, that the spermicide will add to its contraceptive efficacy. Clients should be advised that, although the diaphragm offers some defence against upper genital tract STIs, its ability to protect against HIV is unknown.

Relative contraindications to the use of diaphragms include allergic reactions to latex, repeated urinary tract infections, and conditions that prevent adequate fitting (such as uterine prolapse).

Diaphragms should be fitted by a trained provider. The client needs to be instructed on how to insert and remove the diaphragm and to be offered an opportunity to practise in private before leaving the health facility. She should also be given information on proper care of the diaphragm. A second visit can be scheduled to check her ability to use the diaphragm correctly. Diaphragm size should be rechecked after childbirth or when there has been substantial gain or loss in bodyweight.

## Spermicides

Spermicides are chemicals that inactivate or kill sperm. The principal spermicidal agents are surfactants such as nonoxynol-9, menfegol, and benzalkonium chloride. These are contained in products such as creams, jellies, films, foams in pressurized containers, foaming tablets, and suppositories. When used on their own they are less effective than other barrier contraceptives, pregnancy rates ranging from 6 to 36 per 100 women per year.

Laboratory studies suggest that some spermicides, including nonoxynol-9, could offer protection against HIV and other STIs. However, such protection has not been proved in human beings; furthermore, there is some evidence that frequent use of nonoxynol-9 (twice a day or more) increases rather than reduces the chance of HIV transmission, perhaps by irritating the vaginal and cervical mucosa. For the above reasons,

spermicides are not recommended for protection against HIV or other STIs. For this purpose, condoms are the method of choice.

If a spermicidal method is chosen, the client should be advised to use it only in combination with a physical barrier method; she should also receive specific instruction on how to use the preparation she has selected.

## Cervical cap

The cervical cap fits over the cervix and is held in place by suction produced by the rim of the cap. It is more difficult to insert than the diaphragm and therefore not widely used. Provision should be confined to family planning clinics where staff are specifically trained in fitting it. Pregnancy rates range between 4 and 36 per 100 women per year.

Attempts to develop more efficient versions of the cap have proved disappointing.

## Quality control, storage, and distribution

The effectiveness of barrier contraceptives depends not only on their individual characteristics but also on their quality - both at the point of manufacture and after storage. Any programme offering barrier methods must have a system to ensure that the products are of acceptable quality. Barrier methods should be stored and distributed under conditions that avoid deterioration. A system should be in place to ensure that the products are not used after their recommended shelf-life has elapsed.

Clinics should consider installing easily accessible condom dispensers that will allow clients to obtain condoms without seeing a service provider. Such supplies of condoms should be accompanied with written information on correct condom use. Where possible, clients should be given whatever number of condoms they request.

*This Statement was updated by the International Medical Advisory Panel (IMAP) at its meeting in Tokyo in May 2001. Replaces the Statement on Barrier Methods of Contraception which was first adopted by Central Council in November 1983, amended by Central Council in November 1984 and last updated in October 1993. IMAP reserves the right to amend this Statement in the light of further developments in this field.*

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