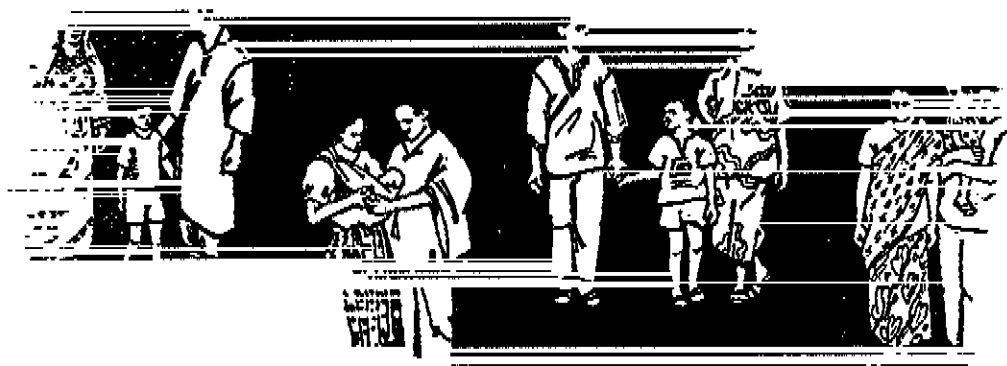


Natural family planning

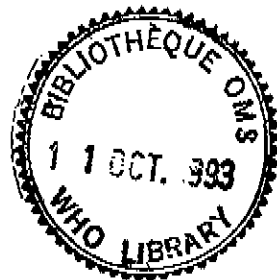


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NATURAL FAMILY PLANNING

What health workers need to know



Family Planning and Population
Division of Family Health
World Health Organization
Geneva
1993

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Comments and queries related to this document should be addressed to the Unit of Family Planning and Population, Division of Family Health, World Health Organization, 1211 Geneva 27, Switzerland.

INTRODUCTION

Couples vary in their family planning needs and preferences. Therefore, it is important for family planning programmes to offer as many different methods of fertility regulation as possible so people can choose the method most suited to their needs. Natural Family Planning (NFP) can be an effective option. It is particularly appropriate for people who do not wish to use other methods for medical reasons or because of religious or personal beliefs.

To provide NFP services effectively, health workers need to have a good knowledge of NFP methods. The purpose of this booklet is to give health workers a clear understanding of:

- what NFP is,
- how the methods work,
- how effective they are,
- the risks and benefits of NFP,
- the advantages and disadvantages of NFP, and
- how they, as health workers, can communicate this information to their clients in a way that is acceptable and understandable.

It is hoped that with the information contained in this booklet, health workers will be able to educate and counsel women and couples about their fertility, help them make informed decisions about using NFP, and assist them in using NFP correctly if they choose to plan their families with natural methods.

Finally, recognizing that to provide NFP services of the highest quality, health workers will need additional information and, preferably, training by a qualified NFP trainer, this booklet also includes a short list of publications and other sources of information on NFP methods.

WHAT IS NATURAL FAMILY PLANNING?

Natural Family Planning (NFP) refers to "methods for planning and preventing pregnancies by observation of the naturally occurring signs and symptoms of the fertile and infertile phases of the menstrual cycle, with the avoidance of intercourse during the fertile phase if pregnancy is to be avoided" (World Health Organization, 1982). Other groups have expanded this definition to include the identification of other times when observing natural signs can indicate prolonged periods of infertility, such as during breast-feeding. It includes several methods of determining the fertile and infertile phases of a woman's menstrual cycle. The methods are based on:

- a scientific knowledge of the structure and functioning of the male and female reproductive systems, and
- understanding of the signs and symptoms that occur naturally during the woman's menstrual cycle. These signs and symptoms indicate when during her cycle a woman is fertile and when she is infertile.

When a couple has this information, they can decide whether or not to have sexual intercourse during the fertile phase of the woman's cycle, depending on their family planning intention.

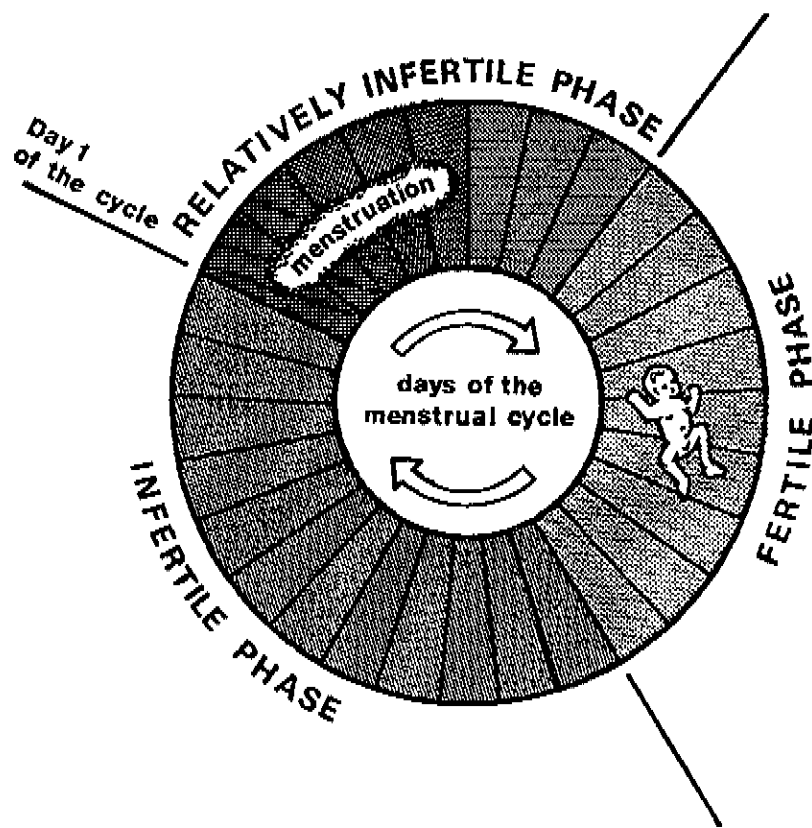


Fig. 1. There are three different phases of the menstrual cycle: the relatively infertile phase at the beginning of the cycle (before she ovulates) when a woman is very unlikely to become pregnant; the fertile phase before, during and immediately after a woman ovulates when she is most likely to become pregnant; and the infertile phase after ovulation when a woman cannot become pregnant.

Menstrual cycle - the entire cycle of physical changes from the beginning of one menstruation to the beginning of the next. During the cycle, the woman's ovaries produce hormones, naturally occurring chemical substances which circulate through her body in the blood stream. Hormones cause a variety of signs and symptoms, which change throughout the menstrual cycle and can tell a woman whether she is fertile or infertile.

Fertile - able to reproduce. If a man is fertile, he is able to produce the male sex cells (sperm) necessary to father a child. If a woman is fertile, she is able to produce the female sex cells (eggs), become pregnant, and carry the pregnancy to live birth.

Ovulation - the release of an egg, or ovum, from the ovary. At the beginning of each menstrual cycle, several eggs begin to grow in a woman's ovaries. Her ovaries produce hormones which cause the eggs to mature. About 12-16 days before she begins her next menstrual cycle, a woman's ovary releases one of the maturing eggs. The egg is picked up by her fallopian tube, where it can be fertilized by a sperm. The egg can be fertilized for up to 24 hours after it is released from the ovary.

The structure and functioning of the male and female reproductive systems are described in Appendices 1 and 2. The menstrual cycle is illustrated in Appendix 3.

WHAT ARE THE NATURALLY OCCURRING SIGNS AND SYMPTOMS A WOMAN CAN OBSERVE TO TELL WHEN SHE IS FERTILE OR INFERTILE?

The three main naturally occurring signs and symptoms of a woman's fertility are her cervical mucus, her basal body temperature, and her cervix.

Cervical mucus is a fluid of varying consistency produced by the cervix. The secretion of cervical mucus is controlled by the hormones oestrogen and progesterone. Changes in cervical mucus can be used to determine the beginning and the end of the fertile days.

Basal body temperature is the temperature of the body at rest. Because it rises slightly after ovulation, changes in basal body temperature can be used to determine when a woman has ovulated and her fertile days have passed.

Changes in her cervix can give a woman additional information about the beginning and end of her fertile days.

A woman cannot use these signs to determine the exact day she is ovulating. However, by observing, recording, and interpreting correctly the changes in these signs and symptoms, she can identify her early infertile phase, her fertile phase, and her late infertile phase.

During breast-feeding, the three main signs predicting fertility return are (1) return of the menstrual cycle, (2) giving the infant any regular feedings other than breast-feeds, and (3) the age of the infant.

DOES A MAN ALSO HAVE SIGNS AND SYMPTOMS OF FERTILITY?

Unlike women, men do not have cycles of fertility and infertility. Instead, most men are fertile from the time of puberty until about the age of 70. During this time, they continuously produce sperm, or male sex cells, which can fertilize the woman's eggs. Current research indicates that after sperm have been ejaculated from the man's penis into the woman's vagina, they can fertilize an egg for approximately 3 days (in some cases, sperm may live up to 5 days).

Thus, unless there is some medical evidence that a man is not fertile, or does not produce sperm that are capable of fertilizing an egg, it should be assumed that he is always fertile.

To understand how pregnancy occurs, and how it can be achieved or avoided, both the man's and the woman's fertility must be considered.

Man's Fertility:

- Men produce sperm continuously.
- When the man's sperm is ejaculated into the woman's vagina, it can live for up to 120 hours (5 days).

Woman's fertility:

- Women ovulate only once during each menstrual cycle.
- After ovulation, the woman's egg lives for up to 24 hours. (Very rarely, a second ovulation occurs within 24 hours of the first ovulation.)

The length of time a sperm can live, and whether or not it can fertilize the egg, depend mainly on the kind of cervical mucus the woman is producing when the sperm is ejaculated into her vagina.

- Women usually do not ovulate or have a fertile cycle during full lactational amenorrhoea during at least the first 6 months' postpartum.

WHAT ARE THE NATURAL FAMILY METHODS AND HOW DO THEY WORK?

Currently, there are four natural methods of family planning: the rhythm method, the cervical mucus method, the basal body temperature method, and the symptothermal method.

Rhythm Method:

The rhythm method is based on the fact that most women ovulate, or produce a mature egg, approximately two weeks before each menstruation, regardless of the length of their menstrual cycles. A woman who wants to use this method should know the length of her previous 6-12 menstrual cycles. She can expect that her current menstrual cycle probably will be similar in length to her previous ones. If she subtracts 18 days from the length of her shortest previous cycle, she will know which day of her current cycle is the first day on which she is fertile. If she subtracts 11 days from the length of her longest previous cycle, she will know which day is the last day on which she is fertile. During her fertile days, the couple abstains from sexual intercourse if they do not want a pregnancy. If they do want a pregnancy, they have intercourse at this time.

Many people around the world use the rhythm method or, more likely, they do not have sexual intercourse on the days they believe the woman is most likely to become pregnant, without making any actual calculations. However, most family planning programmes do not teach the rhythm method. This is because it provides only a very rough estimate of the fertile time. Thus, it is generally believed that the rhythm method is not as reliable as more modern NFP methods. Nonetheless, if a woman has regular menstrual cycles and wishes to avoid pregnancy, by using the rhythm method correctly she can reduce substantially the likelihood that she will become pregnant.

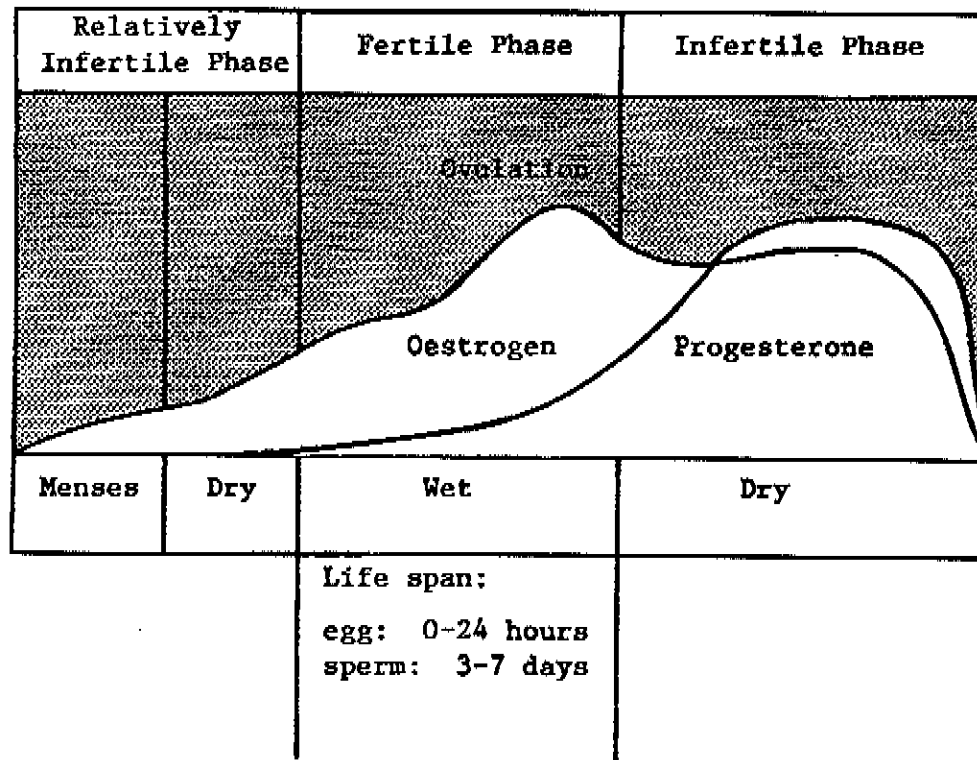


Fig. 2. The man's and woman's combined fertility is based on the phases of the woman's menstrual cycle, her signs and symptoms of fertility, and the length of time the sperm and egg live.

A woman who uses the rhythm method keeps a record of when her menstrual bleeding begins so she can calculate the days when she is fertile and infertile.

Cervical Mucus Method:

To use the cervical mucus method, a woman must learn to recognize the changes in her cervical mucus discharge during her menstrual cycle. During the cycle, the mucus changes in colour, amount, and the way it feels to the touch. A typical mucus pattern is as follows:

- After menstrual bleeding ends, most women have one to a few days in which no mucus is observed and the vaginal area feels dry. These are called dry days.
- After her dry days, a woman begins to see a mucus discharge from her vagina. This mucus may be sticky, pasty, or crumbly. Its colour may be yellow or white. Since this mucus has very little moisture, the woman's vaginal area continues to feel dry or somewhat sticky. When the woman observes any type of mucus before she ovulates, she should realize that she may be fertile because the mucus signals that ovulation is approaching.
- Just before a woman ovulates, her mucus changes again. It increases in amount and become clearer in colour. This mucus resembles raw egg white, and can be stretched slowly between two fingers. Most women notice a wet feeling in the vaginal area during this time. These are called wet days. The last day of wet mucus is called the "peak day".
- After a woman ovulates, her mucus becomes sticky and pasty and decreases in amount. Her vagina feels dry. This type of mucus helps to prevent sperm from entering the uterus. Some women have no mucus for the remainder of their menstrual cycle (see Fig. 2).

A couple using the cervical mucus method to avoid pregnancy abstains from intercourse on the days of the woman's menstrual cycle when her mucus indicates that she is fertile. In the early infertile phase, they do not have intercourse on:

- days of menstrual bleeding. This is because the woman's cycle may be short, with mucus present at the same time she is bleeding.
- every other (alternate) dry day, when the woman has two or more dry days in a row. This is because if a woman has intercourse every day when she thinks she is dry, she may actually be producing mucus but confusing it with the semen, or the fluid that carries the sperm, that remains in her vagina after intercourse.

As soon as a woman observes wet cervical mucus, she knows she is in the fertile phase of her cycle. The couple must not have intercourse during the fertile phase. They continue not to have intercourse for three more days after the last day of the woman's wet mucus, or peak day. Beginning with the fourth day after her mucus has stopped, they can have intercourse again until her next menstrual bleeding begins.

Couples who use the cervical mucus method observe the changes in the woman's cervical mucus and keep a careful record of them (see Fig. 3). There are several different ways to record this information. The World Health Organization's *Educational Handbook, Family Fertility Education Resource Package*, the 5th edition of the *Billings Atlas of the Ovulation Method*, and the *Guide for Natural Family Planning Trainers* by the Institute for International Studies in Natural Family Planning, contain examples of the most widely used systems for recording cervical mucus changes. These systems can be used in their current form or adapted to local needs.

A number of NFP programmes are attempting to simplify the cervical mucus method and develop a modified method which requires less observation and charting as well as fewer days in which the couple cannot have intercourse. Preliminary results of these efforts suggest that while these modified methods are very acceptable to users, they are somewhat less effective than the standard cervical mucus method. Because much testing and adjustment remains to be done, further discussion of these modified methods is not included here.

Basal Body Temperature Method:

During a woman's menstrual cycle, her basal body temperature (the temperature of her body when she is at rest) rises from a lower level to a higher level of at least 0.4°F or 0.2°C. This change occurs shortly after a woman has ovulated. After she ovulates, a woman's body temperature rises and remains at the higher level until she begins to menstruate again.

A woman who uses this method takes her temperature every day before she rises in the morning so she can see when her temperature rises. She records her temperature carefully on a chart.

The basal body temperature method cannot be used to identify the woman's early infertile days or when the fertile phase begins. It can only be used to tell when the late infertile phase begins. Thus, when a couple is using this method to avoid pregnancy, they must not have intercourse from the beginning of the woman's menstrual bleeding until the third day after her temperature rises. This method will not be useful if a couple wants to achieve pregnancy because it can only tell them when the woman's fertile phase already has passed.



Fig. 4. Visual materials can be useful in promoting understanding of NFP methods.

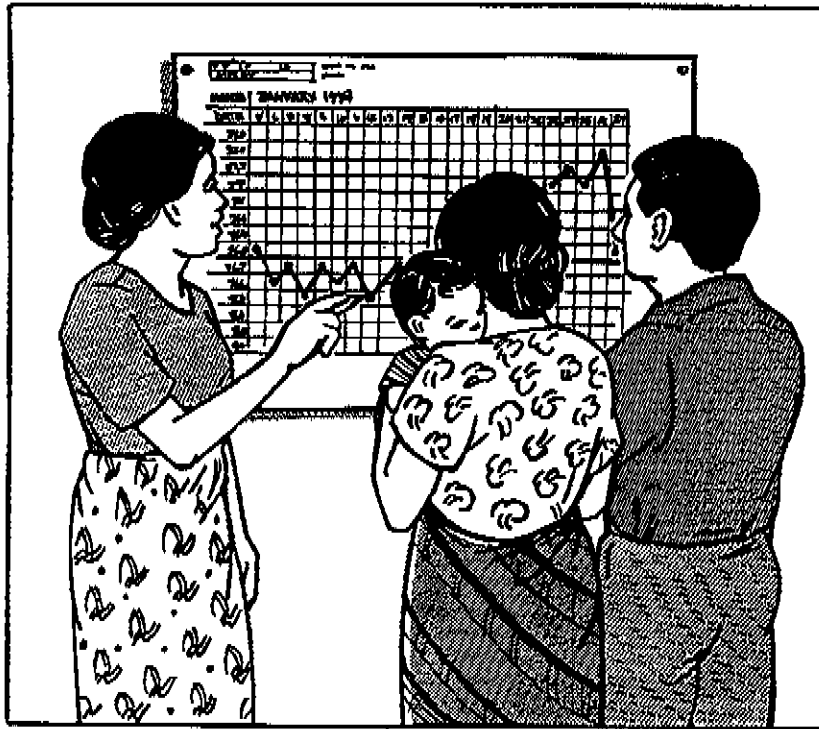


Fig. 5. By taking her temperature every day at the same time and recording it carefully, a woman can tell when she has ovulated and is in the infertile phase of her menstrual cycle.

Symptothermal Method:

The symptothermal method of NFP is based on the changes that occur during a woman's menstrual cycle in her cervical mucus, her basal body temperature, and her other fertility signs (such as tenderness in her breasts, pain in her lower abdomen during the middle part of her menstrual cycle, light spotting or bleeding that is not her menstrual bleeding, a heavy or bloated feeling in her abdomen, etc).

Some women who use this method also observe the changes that occur in the cervix, or neck of the uterus, during their menstrual cycle. To observe these changes, the woman inserts her finger into her vagina and touches her cervix. During the relatively infertile phase prior to ovulation, her cervix is firm and closed. Just before she ovulates and during her fertile phase, her cervix rises and becomes softer and more open. During her infertile phase after ovulation, her cervix again becomes firmer, lower, and closed. This prevents sperm from passing through the cervix.

To use the symptothermal method, a woman observes her cervical mucus and temperature changes as well as any changes in other fertility signs which may help her determine whether or not she is fertile.

If a couple is using the symptothermal method to avoid pregnancy, they will not have intercourse on:

- every other (alternate) dry day during the woman's early infertile phase, until her cervical mucus begins; and
- all days of her fertile phase, beginning with her first day of mucus.

They can have intercourse again during her infertile phase after ovulation. This phase will begin on the fourth day after her peak day of wet mucus or the third day after her temperature rises, whichever one happens later. If a couple using this method wants a pregnancy, they have intercourse during the fertile phase of the woman's menstrual cycle (see Fig. 6).

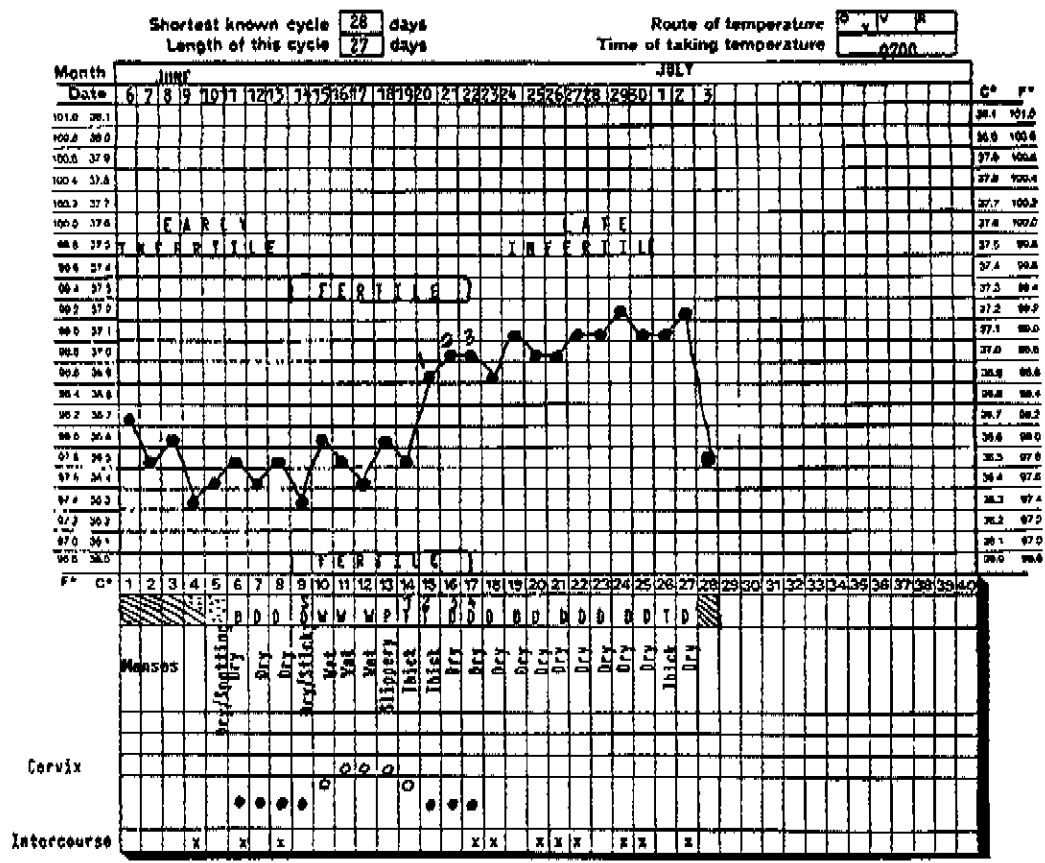


Fig. 6. Example of a chart completed for a 27-day cycle, using the sympto-thermal method. To use the sympto-thermal method, a woman records her fertility signs and symptoms on a special chart. With this information, she can tell which days are fertile and which are infertile. The couple decides whether to have intercourse depending on their family planning intentions.

As with the cervical mucus method, there are several different ways for a woman to record her fertility signs and symptoms. The World Health Organization's *Educational Handbook, Family Fertility Education Resource Package*, and the *Guide for Natural Family Planning Trainers* by the Institute for International Studies in Natural Family Planning give examples of charts for recording fertility signs and symptoms.

Lactational Amenorrhoea Method (LAM):

The lactational amenorrhoea method is based on scientific evidence that a woman is not fertile and unlikely to become pregnant during full lactational amenorrhoea until her baby is six months old.

Full lactation describes breast-feeding when no regular supplemental feedings of any type are given (not even water) and the infant is feeding both day and night with little separation from the mother. Amenorrhoea means menstrual bleeding has not resumed.

The method is dependent on women knowing the three parameters (1) full lactation, (2) amenorrhoea, (3) six months, and beginning to use another family planning method at the indicated time (when supplements begin, when menses return or at six months postpartum, whichever comes first). See Fig. 7.

Ask the mother:

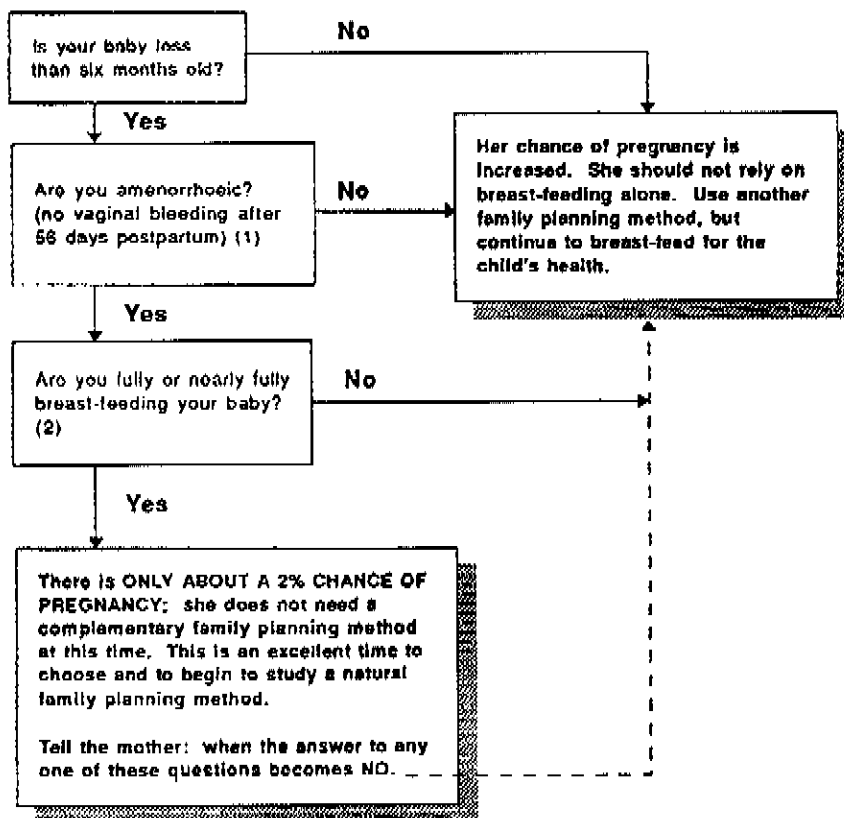


Fig. 7. Use of lactational amenorrhoea method (LAM) for child spacing during the first 6 months' postpartum. (It must be noted that these guidelines are conservative. Women who follow these guidelines after six months postpartum, or who have experienced only one vaginal bleed, may still have some decreased fertility if optimal breast-feeding behaviours are followed. Furthermore, in many areas of the world, women may breast-feed for 18-24 months and may remain infertile for 12-15 months postpartum.

- (1) Spotting that occurs during the first 56 days is not considered to be menses.
- (2) "Full" breast-feeding includes exclusive or almost exclusive breast-feeding (occasional tastes of ritual foods or water), day and night; "nearly full" breast-feeding means that occasional non-breast feeds are given.

HOW EFFECTIVE ARE NFP METHODS?

NFP methods are very effective methods of family planning for couples wishing to avoid pregnancy if they understand how to use NFP and do not have intercourse during the fertile phase of the woman's menstrual cycle. Evidence about the effectiveness of NFP for helping couples achieve pregnancy is much less clear. Anecdotal data from NFP teachers suggest that the waiting time to conception for couples using NFP to achieve pregnancy is less than for couples who do not know how to determine when the woman is fertile.

The World Health Organization has studied the effectiveness of the cervical mucus method in five countries: El Salvador, India, Ireland, New Zealand, and the Philippines. 94% of the women in the study were able to observe and record their cervical mucus symptoms correctly and to determine their fertile phase during the first cycle in which they were using the method. For couples who used the method correctly, it was 97% effective. This means that for every 100 couples using the method correctly for 12 cycles, or one year, only 3 women became pregnant.

However, as is the case with any family planning method that relies on the user to understand the method and use it correctly, there were a number of couples in the WHO study who were not able to use NFP successfully. Thus, in the study, 86% of the women who used NFP incorrectly became pregnant during the 12 month period. Overall, the effectiveness rate for all couples in the study was 78%. This means that for all couples, including those who used NFP correctly and those who did not, 22% became pregnant during one year. Lactational amenorrhoea method (LAM) users are even less likely to become pregnant.

Numerous other studies of NFP effectiveness have shown similar results: depending on the knowledge and motivation of couples using the method, effectiveness rates of NFP range between 80% and 90%.

Clearly, for NFP to be effective, it is necessary for couples to thoroughly understand the method and to be motivated to adapt their sexual behaviour according to their fertility and their family planning intention.

The effectiveness of a family planning method is described as how many women, out of 100 women using the method, will become pregnant during 12 months of method use. A family planning method may be very effective in theory. That is, it would be very effective if it were used exactly as intended. On the other hand, it may be less effective in actual practice because it may be used incorrectly. NFP, like all methods that depend on the user's skill and motivation, is more effective in theory than it is in actual use. Nonetheless, it is very effective for couples who understand their fertility and are committed to using this information to avoid pregnancy.

WHO CAN USE NFP?

Virtually all couples who want to plan their families can use NFP. However, a couple's chance of using NFP successfully increases if both the man and the woman are highly motivated and if they are able to communicate well with each other. NFP methods are particularly appropriate for couples who:

- want to take responsibility for their own fertility,
- cannot or do not wish to use drugs, devices, chemicals, or surgical sterilization to avoid pregnancy, or
- prefer natural methods for religious or personal reasons.

Studies have shown that couples from various cultural, socioeconomic, and educational backgrounds can use NFP successfully. For example, WHO's five-country study of the cervical mucus method found that a woman's level of education did not affect her ability to recognize and interpret her cervical mucus patterns. Religious motivation also was not an important factor in the successful use of NFP. (Other studies have found that religion has little impact on either choice or successful use of NFP.)

Thus, while NFP is an appropriate method for many couples, there are some couple characteristics which may affect its successful use. These include:

- An ability to communicate with each other about sexual matters. Although helping couples communicate is part of NFP teaching, it is important that a couple have a basic desire to communicate.
- A relatively stable relationship. An unstable relationship and the tensions this may produce could have a negative effect on the couple's ability to use NFP, particularly on their ability not to have intercourse during the woman's fertile phase.

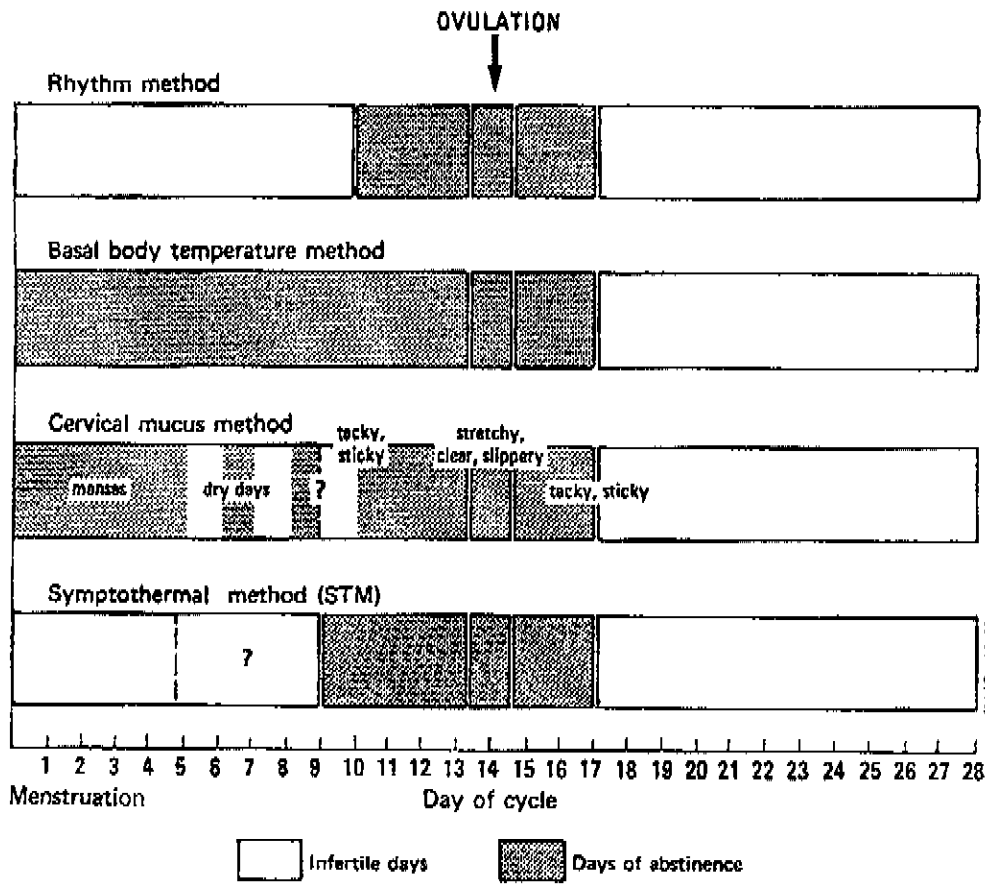


Fig. 8. Approximate length of abstinence required by different NFP methods for a 28-day cycle. No abstinence is required for the use of LAM.

- A fairly regular menstrual cycle. Although modern NFP methods can be used by women with irregular cycles, some women with irregular cycles may have difficulty learning NFP and using it successfully. (However, some women with irregular cycles may find that observing their signs and symptoms of fertility can be useful in identifying the cause of their irregularity.)
- An ability and willingness to observe, record, and interpret fertility signs and symptoms. Couples who consider using NFP should realize that depending on the method they choose, proper, effective use of the methods requires the woman to check her cervical mucus, take her temperature at the same time each day, and/or observe other fertility signs. They will also need to keep a careful record of these signs and symptoms and be able to interpret them correctly to determine the fertile and infertile phases of the woman's cycle.
- An ability and willingness not to have sexual intercourse during the fertile phase of the woman's cycle as required by the method they choose. When NFP is used to avoid pregnancy, it requires couples to abstain from intercourse during this time. Couples who want to have intercourse during the fertile phase may wish to use some form of contraception during this time. (See fig. 8, and for example: *Barrier contraceptives and spermicides. Their role in family planning care.* Geneva, World Health Organization, 1987.)

Some women may have difficulty using NFP because of special circumstances, which affect their menstrual cycles or their fertility signs and symptom. The most common special circumstances and their effect on NFP use are:

Adolescence

- When a young girl first begins to menstruate, her cycles may be very irregular. Often, she does not ovulate during her first few cycles. This may be a very good time for her to begin learning about her fertility signs and symptoms, but the irregularity of her cycles, as well as a number of socio-cultural factors, may cause difficulties in actual NFP use.



Fig. 9. NFP methods can be taught in a variety of situations and by people who are not medically qualified as well as by health professionals.

Pre-menopause

- As a woman gets older, she eventually stops menstruating. The end of menstruation is called the menopause. Typically, this does not occur suddenly. Instead, during the last years before her menopause, a woman's ovaries begin to produce smaller amounts of hormones. Her menstrual cycles may become less regular, and her signs and symptoms of fertility may become less clear. Many women find that observing their fertility signs and symptoms helps them recognize their approaching menopause. However, this may be a difficult time for women to actually use NFP to avoid pregnancy, particularly if they are not already experienced NFP users.

Breast-feeding

- Several studies show that breast-feeding delays the woman's return to fertility during the post-partum period. That is, women who are breast-feeding their babies are much less fertile, and therefore much less likely to become pregnant, than women who are not breast-feeding. (See *Breast-feeding and Child spacing. What Health Workers Need to Know*, Geneva, World Health Organization, 1988.) The mechanisms by which breast-feeding delays the return of fertility are not completely understood. However, the stimulation of the breast and nipple by the infant during suckling appears to interfere indirectly with the production of the hormones that are necessary for ovulation. As a result, women who are breast-feeding do not have regular menstrual cycles. Often, women do not ovulate during their first post-partum menstrual cycles, especially if they begin menstruating before their sixth post-partum month.

Because of the effect of breast-feeding on the hormones and, thus, on menstrual cycles and fertility signs, NFP use during breast-feeding is somewhat different from NFP use by non-breast-feeding women. However, a woman who is breast-feeding can use NFP to identify the return of her fertility.

Studies show that a woman who is fully breast-feeding her baby day and night, is less than six months post-partum, and has not begun to have her menstruation again is highly

unlikely to become pregnant. When this information is used as a method of child spacing, it is called LAM (see Fig. 7). While some women in this situation may choose to observe and record their fertility signs and symptoms as a way of knowing whether their fertility is returning, it is highly unlikely that sexual intercourse during this time will result in pregnancy. When a woman begins to regularly supplement breast-feeding by giving her baby food or liquid other than breast milk, is more than six months post-partum, or has begun to menstruate again, it is important for her to use a family planning method if she wishes to avoid pregnancy.

If a woman wishes to rely on breast-feeding after supplementation begins or after six months, she should be informed that her chance of pregnancy is increased.

Vaginal infections

- It is not at all uncommon for women to have vaginal infections from time to time. The infection may be caused by a virus or by bacteria. It can produce an abnormal vaginal discharge. Often the discharge is whitish or yellow and may have an unpleasant odour. If a woman has a vaginal discharge, she may have difficulty observing changes in her cervical mucus. She may not even be able to tell the difference between her mucus and the discharge. This is particularly true for women who are just learning to use NFP and are not completely accustomed to their cervical mucus changes.

Any woman in special circumstances who chooses to use NFP will need special help from her NFP teacher in order to use the method correctly. Because avoiding pregnancy may be particularly important for adolescents, premenopausal women, breast-feeding mothers, and women with vaginal infections, it is essential that they receive the instruction and support they need.

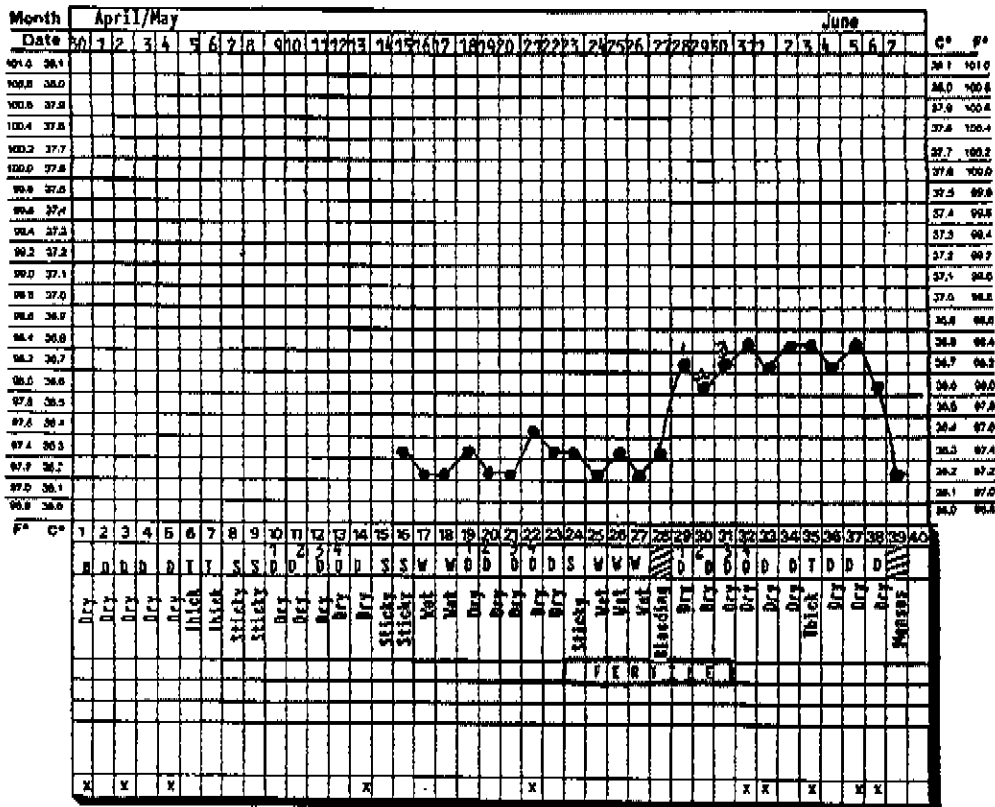


Fig. 11. Return of fertility: NFP and partial breast-feeding pattern.

WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF NFP?

To use NFP effectively, most couples will need to adapt their sexual behaviour. The woman must observe her fertility signs every day and record them according to a standard system. The couple must communicate with each other to establish their family planning intention, acknowledge the woman's fertile time, and abstain from sexual intercourse when the woman is fertile if they want to avoid pregnancy.

While some of these changes in behaviour may be considered by some people to be advantages of NFP, other people may consider them disadvantages. Thus, the following list of advantages and disadvantages should be reviewed carefully in the light of the couple's particular beliefs and needs.

Advantages:

- NFP can be used either to avoid or to achieve pregnancy.
- There are no physical side-effects of NFP.
- Use of NFP can increase self-awareness and knowledge.
- NFP users develop self-reliance when they have learned to use the method correctly and do not need to depend on a family planning programme or other source to provide contraceptives.
- There is no financial cost in using NFP once the couple has learned to use the method.
- NFP can increase the man's involvement in family planning.
- While NFP services must be provided by trained NFP teachers, it is not necessary for NFP providers to be highly skilled medical personnel.
- Women who use LAM, practise improved breast-feeding patterns which also are important for the health of the infant.

Disadvantages:

- Most couples require at least 3 cycles to be able to use NFP correctly. During this time, frequent contact with the NFP teacher is needed.
- The commitment, motivation, and cooperation of both partners are important.
- The woman must keep daily records of her fertility signs and symptoms, at least during the first few cycles.
- When NFP is used to avoid pregnancy, some couples experience emotional stress as a result of not being able to have intercourse for between 8 and 16 days of the woman's menstrual cycle.
- NFP is not as effective in actual use as some other methods of family planning.
- LAM use requires full breast-feeding with at least one night time feeding. This pattern may not be possible for all women.

ARE THERE ANY RISKS, OR POSSIBLE HARMFUL EFFECTS OF USING NFP?

Because NFP does not involve any drugs, devices, chemicals, or surgery to avoid pregnancy, it does not have the health risks or possible side effects of other family planning methods. However, if the couple who is using NFP to avoid pregnancy does not use it correctly - that is, if they do not correctly observe, record and interpret that woman's fertility signs, or if they do not abstain from intercourse during the woman's fertile phase - there is a risk that the woman may become pregnant. If pregnancy occurs when a couple is using NFP, the risks to the woman's health are the same as with any other pregnancy.

Recent evidence also shows that babies born to couples using NFP are at no greater risk of abnormalities than babies born to other couples.

WHO CAN TEACH COUPLES TO USE NFP?

NFP can be taught by many different kinds of people - health care professionals, educators, and NFP users. Several studies have been conducted to determine the characteristics of successful NFP teachers. Results of these studies are quite varied. In some NFP programmes, it has been found that education level, marital status, age, and length of NFP use are important factors in NFP teacher success. In other programmes, these factors appear to be relatively unimportant.

What is essential is that the person teaching NFP:

- thoroughly understands the method,
- is able to communicate well with NFP users and potential users, and
- is available to assist couples with the method.

It is important for each programme that provides NFP services to establish and maintain standards for the NFP teachers.

A thorough understanding of NFP includes scientific knowledge about the structure and functioning of the male and female reproductive systems as well as about the woman's signs and symptoms of fertility (the core concepts are presented in Appendices 1 and 2 of this brochure). It also includes information about the behavioral and psychosocial aspects of NFP and about how NFP can be used most successfully.

To communicate with NFP users and potential users, NFP teachers must be able to present information clearly, logically, and in an interesting manner. They also must be attentive to the needs, concerns, and interests of the people they teach. They should reinforce the information and concepts they present by encouraging the people they teach to express their own ideas, ask questions, repeat key information, and practise skills such as recording fertility signs and identifying fertile and

infertile phases of the menstrual cycle. (See for example, the *Guide for Natural Family Planning Trainers*, Washington D.C., Institute for International Studies in Natural Family Planning, 1990.)

Teaching NFP requires time as well as interest and commitment. NFP teachers are most successful when they are able to spend adequate time with the people they teach and to assist couples when they need additional help in using NFP.



Fig. 12. NFP teachers must understand the methods thoroughly, be able to communicate well, and have the time to assist couples use the methods successfully.

HOW DO HEALTH WORKERS HELP COUPLES TO USE NFP?

There are several steps health workers should follow to help couples use NFP.

Step 1: Provide basic information

The health worker's first step is to help the couple decide whether they want to use NFP. The health worker discusses with the couple the basic information about fertility as well as the requirements of NFP (particularly observation and recording of the woman's fertility signs and abstaining from intercourse during her fertile phase).

As part of this discussion, the health worker also talks with the couple about the advantages and disadvantages of NFP, carefully considering the couple's needs and concerns.

This information must be communicated to the couple according to their ability to understand the concepts and in a culturally appropriate way. For example, couples who have higher levels of education may already know much of the basic information about reproduction. Other couples may require more explanation but, at the same time may not be interested in or readily able to understand some of the more complex concepts.

In some settings, graphic illustrations of male and female sexual organs may be helpful teaching tools, while in other settings they may be inappropriate. Many materials have been developed in NFP programmes in many different countries (see list of materials and resources). These materials may be adapted to the needs of the couples.

If the health worker has been trained as an NFP teacher, he or she could proceed to Step 2. However, if the health worker does not have this training, it would be preferable to refer the couple to a trained NFP teacher at this point.

It is important to remember that couples need sufficient information about NFP to help them decide whether they want to use a natural method. However, it is equally important not to give them so much information that it becomes confusing and frustrating. If they choose to use NFP, there will be plenty of time in later teaching sessions to provide them with additional information.

Step 2: **Conduct initial teaching sessions**

Once the couple has decided to use NFP, the health worker helps them learn about their fertility and how to use this information in deciding when to have intercourse. The health worker also helps the couple select the NFP method most appropriate for them. This is based on such factors as the couple's interests and concerns, and the woman's health and reproductive status (months post-partum, breast-feeding, age, and vaginal infections).

During this initial instruction, the health worker sees clients individually or in small groups. He or she provides a general description of fertility patterns and NFP methods, discusses the importance of the male partner's involvement in using NFP, and teaches the couple how to observe and record the fertility signs according to the particular NFP method they have chosen. The health worker also provides materials, such as charts, written instruction, and thermometers, as needed. Generally, couples who are using NFP to avoid pregnancy are advised to postpone intercourse until the woman's infertile phase during her first cycle has been confirmed by the health worker. The health worker also makes sure that there is a record of the couple's address, telephone number and any other information needed to allow him or her to continue to help the couple in learning to use NFP.

Following are instructions for clients who choose to use the Cervical Mucus Method, the Basal Body Temperature Method, or the Symptothermal Method.

CERVICAL MUCUS METHOD: A woman may need one or more menstrual cycles of observing her cervical mucus and assessing her vaginal sensations before she feels confident in using the Cervical Mucus Method to avoid pregnancy. The presence of semen in the vagina will make this process difficult. Thus, most NFP teachers recommend that the couple abstain from intercourse until the woman has learned about her mucus pattern well enough to use the method successfully.

To determine the days on which she can and cannot become pregnant, a woman who is using the Cervical Mucus Method observes and records her cervical mucus on a daily basis, beginning with the day after menstruation ends. She continues charting her mucus pattern for at least 8 to 10 days after the last day on which she observes cervical mucus. She begins checking mucus again when her next menstrual period ends.

The Cervical Mucus Method Rules for avoiding pregnancy are as follows:

- The couple must not have intercourse during days of menstrual bleeding.

During the early infertile phase (before ovulation), the couple can have intercourse on the evening of every other (alternate) dry day (dry days are days when the woman does not have any cervical mucus or feel any vaginal wetness). This is called the Alternate Dry Day Rule.

- The first day the woman has any cervical mucus or notices any vaginal wetness is the beginning of the fertile phase. The couple should not have intercourse from the beginning of cervical mucus or vaginal wetness until the fertile phase ends. This is called the Early Mucus Rule.

- The last day a woman has wet cervical mucus and/or vaginal wetness is called her peak day. When she stops having wet cervical mucus and experiencing vaginal wetness, the couple should continue not having intercourse for 3 more days.
- On the morning after the third day of no wet cervical mucus or wet vaginal sensation, the late infertile phase begins. After the third day of no wet cervical mucus or wet vaginal sensation, the couple can have intercourse again until the woman's next menstrual bleeding starts.

BASAL BODY TEMPERATURE METHOD: During a woman's menstrual cycle, her basal body temperature (the temperature of her body at rest) rises from a lower level to a higher level of at least .4°F or .2°C. This rise is called the thermal shift. Ovulation most often occurs on the day of the thermal shift, 1-2 days before the shift, or the day after.

The rules for using the Basal Body Temperature Method are as follows:

- Couples must not have intercourse from the first day of the woman's menstrual bleeding until the Thermal Shift Rule has been applied.

To apply the Thermal Shift Rule, a woman must:

- for the first 10 days of her menstrual cycle, take her temperature before rising each morning (at about the same time), and record her temperature on the chart provided by the NFP teacher; use the temperatures recorded on the chart to find the highest of the normal, low temperatures during the first 10 days of the menstrual cycle (any temperatures that are abnormally high due to fever or other disruptions should be disregarded);
- draw a line .1°C or .15°F above the highest of these 10 temperatures. This line is called the cover line or the temperature line. The fertile phase continues

until the evening of the third consecutive temperature recorded above the cover line.

- The couple must not have intercourse until the woman has 3 days in which her temperature is above the cover line.
- The infertile phase begins on the evening of the third consecutive temperature recorded above the cover line. The couple may have intercourse any time during the infertile phase.

SYMPTOTHERMAL METHOD: To use the Symptothermal Method, the woman observes her cervical mucus, basal body temperature and other fertility signs.

The rules for using the method are as follows:

- The couple can have intercourse at any time during the first 5 days of the woman's menstrual cycle, even during the days of her menstrual bleeding. This is called the Menses Rule.
- After her menstrual bleeding stops, the couple can have intercourse in the evening of every other (alternate) dry day during the relatively infertile phase. This is the Alternate Dry Day Rule, the same rule as the one used with the Cervical Mucus Method.
- The fertile phase begins when the woman has wet vaginal sensations or any type of cervical mucus. The couple begins not having intercourse as soon as the fertile phase begins.
- The couple continues not having intercourse until both the Peak Day Rule and the Thermal Shift Rule have been applied.

The rules listed above are the basic instructions for using each NFP method. Please refer to the sources listed in the bibliography for additional information about teaching NFP to women in special circumstances (i.e. adolescents, women

who are breast-feeding, pre-menopausal, or women with vaginal infections, etc.), and about helping women and couples who have difficulty observing and interpreting fertility signs. These rules should be given to the couple during the initial teaching session with the health worker. In most cases, the health worker will need to review these rules and instructions carefully with the couple later to be sure they understand them and can use them to successfully achieve their family planning goal.

LACTATIONAL AMENORRHOEA METHOD: During the time when a woman is fully breast-feeding her baby, her menstrual periods have not resumed, and she is less than 6 months postpartum, she is unlikely to get pregnant (see Fig. 7). Sexual intercourse may continue until one of these parameters changes. At that point, another family planning method is needed to avoid pregnancy.

Step 3: Provide follow-up.

To help couples use NFP successfully, it is very important for the health worker to meet with them several times during the woman's first few cycles. During the follow-up meetings, the health worker may meet with one couple or a small group, with the woman only or with both the man and the woman. This depends on many factors such as the number of couples learning the method at the same time, the availability of the men to participate in the meeting, and people's attitudes about discussing sexual matters with others.

In follow-up meetings, the health worker reviews the couple's observations and the records they have kept about fertility signs, the fertile and infertile phases of the menstrual cycle, and other information. For example, if the couple is using the Cervical Mucus Method, the health worker should make sure that the woman has observed her cervical mucus and recorded on her chart how the mucus has changed during her cycle. He or she should check to see if the woman observed and recorded 2-5 days of mucus before the peak day. He or she should note how the woman observed her mucus and ensure that the information the woman has

recorded on her chart correctly shows what she observed. The health worker should also ask the couple about why they are using family planning. Does the couple want to space births? avoid any more pregnancies? achieve a pregnancy?

The health worker should also review how the couple is practising the method particularly to be sure that:

- they can identify the beginning and end of the fertile period; and
- they are not having intercourse on the fertile days if they want to avoid pregnancy.

At this time, the health worker should also discuss with the couple whether they are happy with their NFP method, what they like about it, and whether using the method is causing any difficulty for either partner, particularly in abstaining from intercourse during the woman's fertile phase.

Another very important point for the health worker to consider is that when the woman is observing her fertility signs, she actually is monitoring her general reproductive health. When the health worker reviews the woman's charts, he or she may notice symptoms of health problems. This could include symptoms of a vaginal infection when the woman observes her cervical mucus changes, symptoms of chronic illness when the woman takes and records her temperature, or symptoms of a potential problem with the functioning of the woman's ovaries. If the health worker detects symptoms of a health problem, he or she should provide the proper care to the woman or refer her to an appropriate health professional.

When the health worker reviews the woman's NFP chart, if it appears that the woman might be pregnant (if she has not had menstrual bleeding within 12-16 days after her ovulation), he or she should refer the woman to a health care facility for prenatal care as soon as possible.

WHAT OTHER ADVICE ABOUT NFP CAN HEALTH WORKERS GIVE TO COUPLES WHO WANT TO PLAN THEIR FAMILIES?

Health workers have many responsibilities and concerns in addition to family planning. The couple's health, particularly their reproductive health, and the health of their children are of primary importance. Although, as explained earlier, NFP does not have the health risks or possible side effects of other family planning methods, health workers may need to provide special guidance to couples who choose to use NFP.

As described earlier, women who are breast-feeding may have more difficulty using NFP than women who are not breast-feeding. Unless she has help and advice from a health worker, a woman may decide to stop breast-feeding so she will be able to use NFP more easily. However, because breast-feeding is so important for the health of the infant and has so many advantages over bottle feeding, women should be encouraged to continue breast-feeding for as long as possible. The health worker will need to provide additional support and guidance to breast-feeding women to assist them with using NFP.

Couples who choose to use NFP should be advised that natural methods do not protect the man or the woman against sexually transmitted diseases, including AIDS. If either partner is concerned about AIDS or any other sexually transmitted disease, or if the health worker observes that the man or woman may be infected, the couple should be referred to an appropriate health professional for further guidance.

Couples who are not able to follow the rule for using NFP that requires them not to have intercourse when the woman is fertile, should be advised to use another method of family planning if they want to avoid pregnancy. For many couples who are observing and charting their fertility, using barrier methods during the woman's fertile time may be acceptable and appropriate. Please refer to the WHO publication, *Barrier*

Contraceptives and Spermicide: Their Role in Family Planning Care, (Geneva, World Health Organization, 1987), for further information.

Some programmes that provide NFP services state that couples can select the sex of their child by timing intercourse according to the expected day of ovulation. Scientific evidence from carefully controlled studies indicates that this is not the case. If a couple believes they can have a child of the sex they prefer by using NFP to achieve pregnancy and timing intercourse depending on whether they want a boy or girl, they may be very disappointed if they have a child of the other sex. This could have a negative influence on the couple's relationship and, possibly, on their relationship with their child. Health workers should counsel clients carefully on this matter.

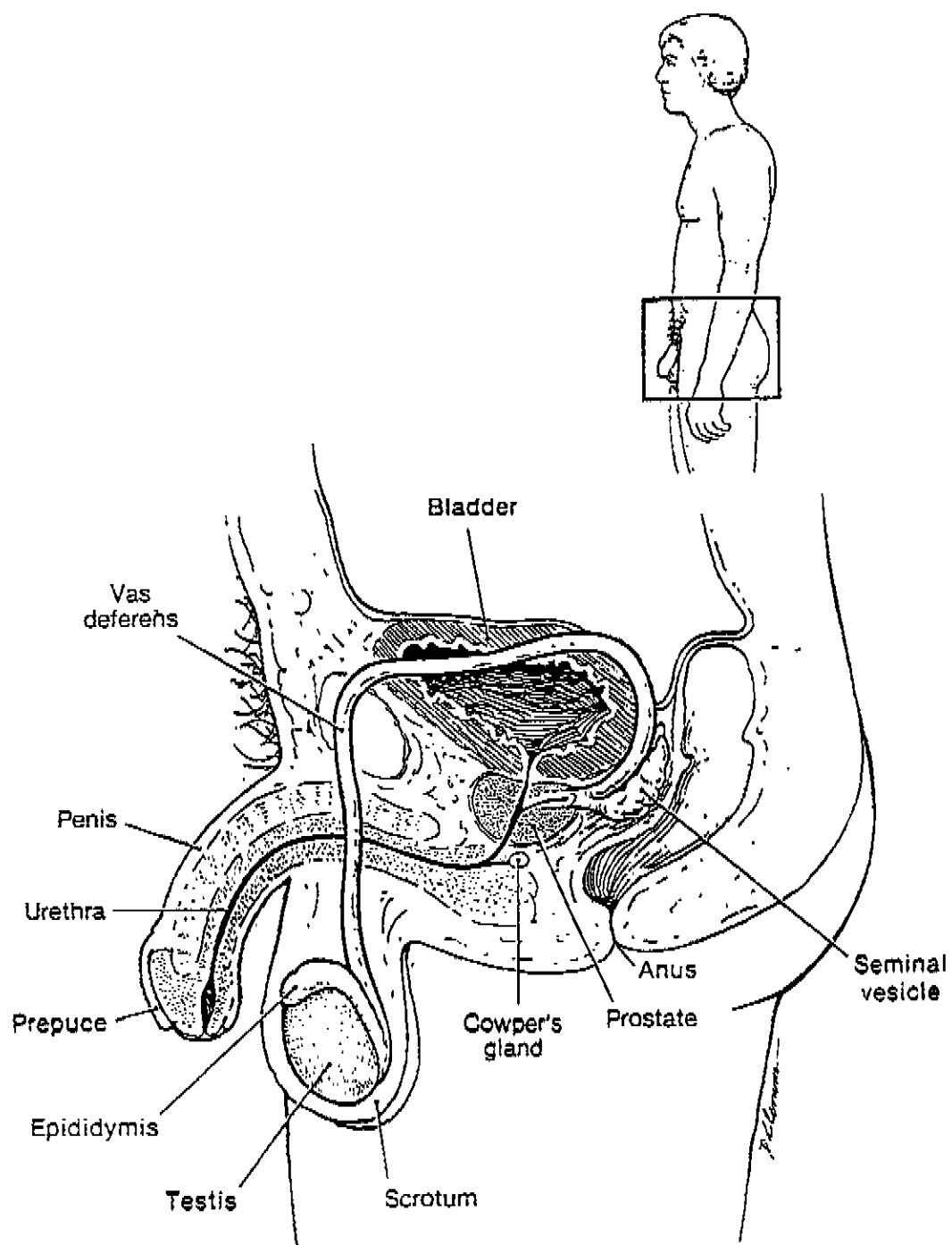
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APPENDIX 1: Male Reproductive Anatomy and Physiology

Natural Family Planning (NFP) is based partly on scientific knowledge about the function and structure of the male reproductive system. It is important for health workers to have the basic information below. Couples should be given the amount of information they can readily understand in a manner which is culturally appropriate and necessary for their family planning decision. Health workers and other NFP teachers should be careful not to confuse the couple by giving them too much information at one time or more information than they desire.

1. The testes are the pair of male sex glands that produce sperm and a hormone called testosterone. Sperm are the male sex cells. Testosterone is the major male hormone responsible for the development of sperm and secondary sex characteristics. Approximately one billion sperm are produced in the testes every day.
2. The testes are protected by a loose, thin sac of tissue called the scrotum. The scrotum and testes are located outside the man's body because body temperature is too warm for the production of sperm.
3. Once sperm are produced, they travel to the epididymis, where they become fully developed.
4. When a man ejaculates, the sperm leave the epididymis and travel through a path of tubes called the vas deferens.
5. The vas deferens carry the sperm to the seminal vesicles, which are glands that produce a fluid that enters the vas deferens to nourish the sperm.
6. After the fluid from the seminal vesicles mixes with the sperm, this mixture continues to travel through the vas deferens to the prostate gland. This gland produces a thin, milky fluid that also nourishes the sperm.



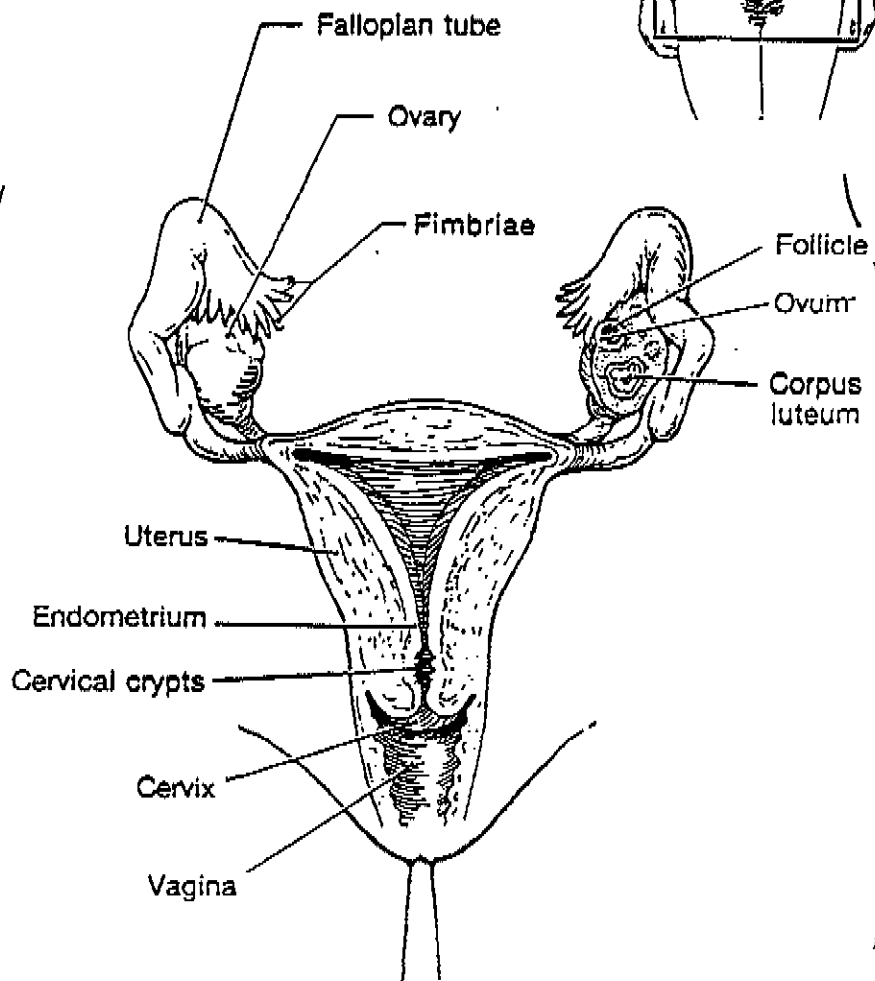
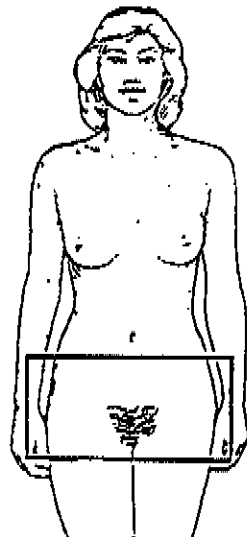
7. Sperm mixed with fluid from the seminal vesicles and the prostate gland is called semen, or seminal fluid.
8. Semen travels out of the man's body through the urethra. The urethra is the tube that runs through the centre of the penis. It also is the passageway for urine. A man cannot urinate and release semen at the same time.
9. Shortly before the semen leaves the man's reproductive system, the Cowper's gland releases a small amount of fluid. This fluid changes the environment of the urethra, so that sperm are not destroyed during ejaculation (the release of semen from the urethra).
10. The man is fertile every day from puberty - age 8 to 12 - until about the age of 70.
11. If the sperm are released from the man's penis into the woman's vagina, the woman may become pregnant.

These are illustrated in the following diagram.

APPENDIX 2: Female Reproductive Anatomy and Physiology

Natural family planning is also based on scientific knowledge about the function and structure of the female's reproductive system. The information below should be familiar to all health workers who provide services to women of reproductive age. Couples who want to use NFP, or women who want to know more about their bodies, should have access to this information as well. The amount of information, and the manner in which it is provided, depend on the couple or woman's ability to understand it. It is not necessary for the couple to have all this information to use NFP correctly.

1. The uterus is a small, hollow, muscular organ that serves as the place where the pregnancy develops.
2. During each menstrual cycle, the amount of blood in the lining of the uterus increases to help nourish a pregnancy. If a pregnancy does not occur, the blood and some of the lining leave the uterus. This is called menstruation.
3. Menstrual blood leaves the uterus through its bottom part, the cervix. The cervix usually looks like a small round ball. It has an opening in it that widens to enable sperm to swim into the uterus. It also widens to allow for the birth of a baby.
4. The cervix is at the back of the vaginal canal. The vaginal canal expands during sexual intercourse and during the birth of a baby.
5. Located inside the cervix are small cells that produce a fluid called cervical mucus. On some days during the woman's menstrual cycle, the mucus is fertile (the type that lets sperm live and travel in the woman's reproductive system). On other days, it is infertile (that is it does not enable sperm to live and travel).



6. The ovaries are two very small organs attached to the uterus. They are the woman's primary sex glands; when a baby girl is born, her ovaries are filled with about 2 million immature eggs (ova).
7. During the days when a woman is fertile, usually one egg will develop and be released from the ovary. The release of the egg from the ovary is called ovulation.
8. After the egg leaves the ovary, it enters one of the fallopian tubes, which are attached to the uterus.
9. An egg may be fertilized for up to 24 hours (1 day) after it enters the fallopian tube.
10. If the egg meets with a sperm, it travels down the fallopian tube to the uterus. The meeting of the sperm and the egg is called fertilization.
11. Following ovulation, the egg can live in the woman's reproductive tract for approximately 24 hours. If the sperm and egg do not meet within 24 hours, the egg is usually absorbed in the reproductive system. If pregnancy does not take place, menstruation will occur within 12-16 days after the egg leaves the ovary.
12. The sperm can live in the woman's reproductive tract for approximately 72 hours (3 days). Recent evidence suggests that in some cases, the sperm may live up to 5 days. Therefore, if the sperm is released into the woman's vagina as much as 5 days prior to ovulation, the sperm may be able to fertilize the egg and pregnancy may occur.
13. During breast-feeding, the hormones that encourage egg development and ovulation are suppressed. There is no build up of the lining of the uterus.

These are illustrated in the following diagram.

APPENDIX 3: The Menstrual Cycle

Information about the woman's menstrual cycle is also an important component of NFP. Following are the key concepts of the menstrual cycle:

1. The menstrual cycle begins on the first day of menstrual bleeding and ends the day before menstrual bleeding begins again.
2. An individual woman's menstrual cycle can normally vary a few days in length from cycle to cycle. A menstrual cycle is usually 24 to 37 days long, but some women may have somewhat shorter or longer cycles.
3. About the time menstrual bleeding begins (the beginning of the menstrual cycle), several eggs have begun to grow in the ovaries.
4. As the eggs are growing, the capsules surrounding the eggs begin to produce the hormone oestrogen. Oestrogen causes several changes to occur in the woman's body.
5. Before ovulation and as ovulation approaches, oestrogen causes several changes to take place in the woman's reproductive system:
 - The cervical mucus becomes slippery, stretchy, and wet, and vaginal sensations are wet. This type of mucus may allow sperm to travel and to live in the woman's reproductive system for up to 5 days.
 - The cervix rises, softens, and opens to help sperm travel into the uterus.
 - The basal body temperature is low.
 - The uterine lining increases with blood.
6. Ovulation can take place from a few days to several days after menstrual bleeding begins.

7. Once ovulation occurs and the egg has gone into the fallopian tube, it can be fertilized by the male sperm for only up to 1 day (24 hours).
8. Rarely, a second or third ovulation may occur. If this happens, these other eggs are probably released from the ovary within 24 hours of the first ovulation. These eggs may also be capable of being fertilized for only up to 24 hours.
9. After ovulation, the hormone called progesterone increases in amount. Progesterone causes the following changes to occur in the woman's reproductive system:
 - The cervical mucus loses its wet quality and is no longer slippery and stretchy. Vaginal sensations become dry. This type of mucus does not allow sperm to travel into the uterus and prevents sperm from living more than a few minutes to a few hours.
 - The cervix becomes firmer, lower, and closed so that sperm cannot pass through to the uterus.
 - The basal body temperature rises.
 - The uterine lining stays in place for about 12 to 16 days or until menstruation starts again.
10. If pregnancy does not occur, the amounts of oestrogen and progesterone decrease, causing the uterine lining to break down and blood to flow out of the cervix (menstrual bleeding). This happens about 12-16 days after ovulation.
11. If pregnancy does occur, oestrogen and progesterone continue to be produced, so that the uterine lining can nourish the developing pregnancy.
12. The menstrual cycle can be divided into three parts or phases:
 - the preovulatory (before ovulation) infertile phase (sometimes called the relatively or early infertile phase);

- the fertile phase, or the days when a pregnancy can occur if sperm cells are present in the woman's reproductive system; and
 - the post ovulatory (after ovulation) infertile phase, sometimes called the late infertile phase.
13. The three main naturally occurring body signs, called fertility signs, that a woman can observe to determine when she can or cannot become pregnant, are changes in the cervical mucus, in the basal body temperature, and in the cervix.
- Cervical mucus can be used to determine the beginning and end of the fertile days.
 - Basal body temperature can be used to determine when ovulation has passed and the fertile days have ended.
 - Cervical changes can provide a woman with additional information about the beginning and end of the fertile days.

In summary, as ovulation is approaching, the changes occurring in the woman's reproductive system allow pregnancy to take place. After ovulation, changes occur to protect the possible developing pregnancy. A woman cannot identify the exact day of ovulation by observing her fertility signs. Instead she can use fertility signs to identify when the fertile days begin and end.

14. During breast-feeding, there is a delay in the return to menstrual cycles. Before menstrual cycles resume, the three main naturally occurring signs that indicate an increased chance of ovulation are:
- menstrual bleeding resumes
 - regular supplementation or disruption of breast-feeding
 - six months, because at six months all infants should begin to receive regular supplemental feeds.

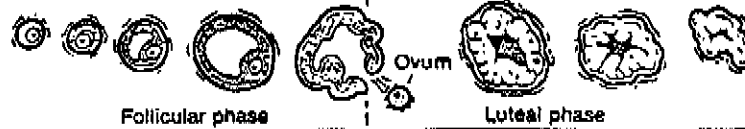
These are illustrated in the following diagram.

The Menstrual Cycle

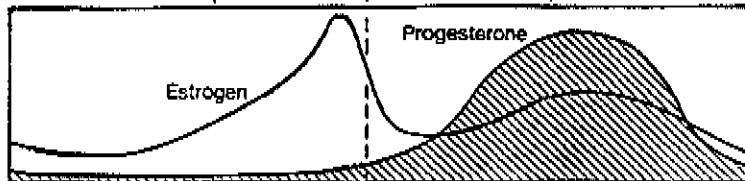
Pituitary:
Hormone
levels—
gonadotropins



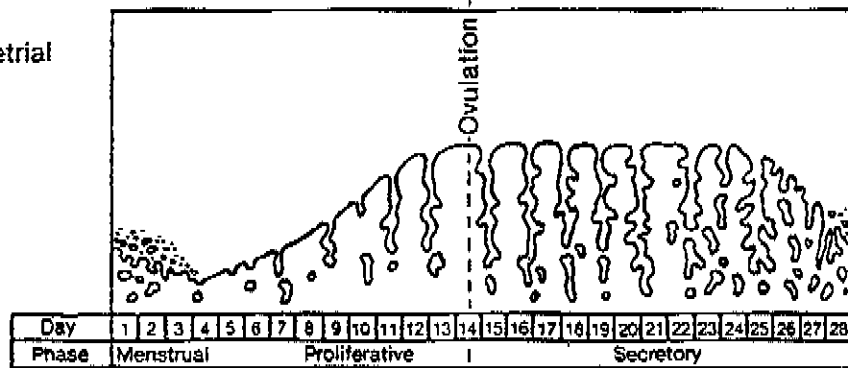
Ovary:
Ovum
development



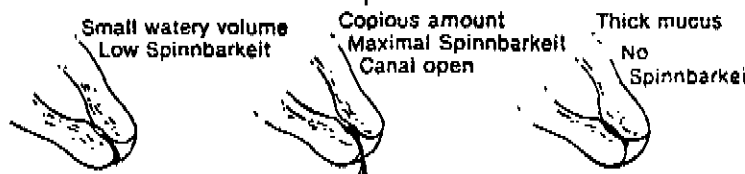
Ovary:
Steroid
hormone
levels



Uterus:
Endometrial
growth



Cervical mucus



Basal body
temperature

