Fertility Education and Natural Family Planning

A vital and cheap resource to offer sub-fertile couples, breastfeeding mothers and couples seeking non-invasive contraception

Introduction

It has been my experience, during 20 years of counselling on fertility, that couples know more about cars, computers and microwave ovens than they do about their own fertility. This ignorance creates a doctor-dependent mentality in all matters relating to fertility, from which some clinicians acquire fame, and the pharmaceutical companies a fortune. Having worked in fertility education and natural family planning (NFP) both in the UK and abroad, I would like to challenge the wisdom of allowing such a policy to continue into the next millennium. The dependency mentality limits people's choice to what the provider sees fit to offer and it shifts the burden of responsibility for success or failure from the couple to the doctor, who is thereby exposed to litigation risks. It has also given rise to spiralling costs and unrealistic expectations by couples.

I would like to show how, by offering an education programme in fertility, I have seen couples, both fertile and sub-fertile, grow confident, happy and autonomous in their ability to control their fertility, empowered to plan, space and ultimately limit the births of their children, with no health risks or side effects incurred, using newly acquired knowledge and skills - and all this with minimal cost to the general practitioner surgery and the National Health Service. I would like to demonstrate from my experience that there is a great need for such education, and considerable benefit to be gained by both the doctor and the patient.

Fertility Facts

A fertility education programme needs visual material, simple language and no medical jargon. The basic facts to be conveyed are:

1. *That a man is, in theory, fertile all the time.*
2. *That a woman produces usually only <u>one egg</u> per cycle which is fertilisable for no more than* 12 *hours after release.*
3. *That for about* 6 *days <u>before</u> ovulation, the cervix opens and produces a fertile mucus secretion which keeps sperm alive for* 3-6 *days, enabling them to survive inside the woman until the egg is released.*
4. *That a woman is fertile due to this mucus for about 6 days before ovulation and only* 2 *days after, allowing for the release and life of the egg.*
5. *That all the rest of the time she is infertile because the cervix is sealed with a sticky mucus plug which blocks the passage of sperm.*

The Role of Cervical Mucus

Mucus is produced from cell glands in the cervical crypts in response to hormonal changes (Billings *et al.1972*). It appears in two forms commonly referred to as 'the mesh mucus' and 'the motorway mucus' (Fig. 1). The mesh mucus traps the sperm and destroys them by acidity, whereas the alkaline motorway mucus just before ovulation entices, nourishes, energises and transports the sperm into the cervical crypts where they can survive for several days. Odeblad (1997) has shown there is also a filtration mechanism built into the fertile mucus for filtering out abnormal spermatozoa.

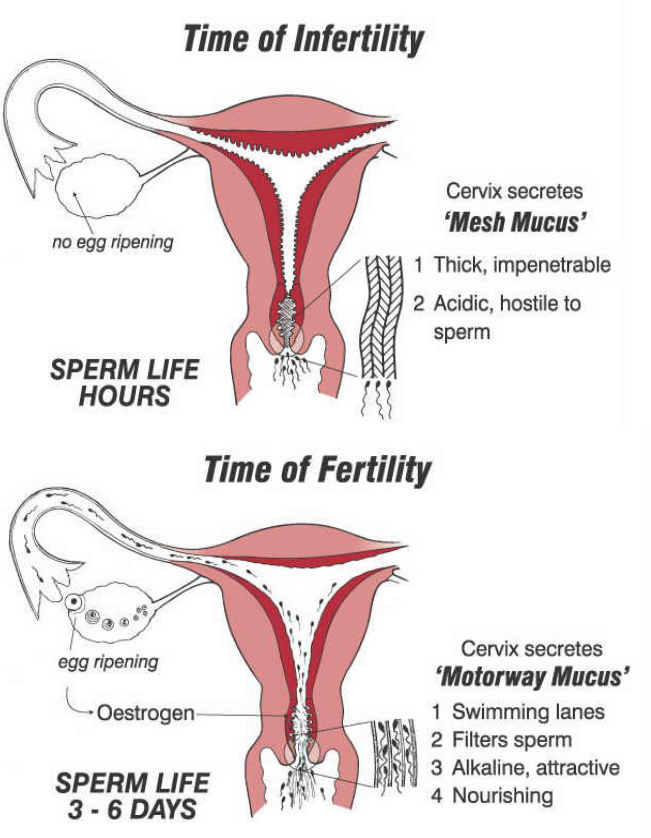


Fig. 1

This is the clinician's view of cervical mucus, but the woman translates it into her daily observations. For her, the mesh mucus is white and creamy, producing a dry feeling at the vulva, while the fertile, motorway mucus is clearer, has the texture of raw egg-white and produces a marked feeling of wetness and lubrication at the vulva. It is universal to all fertile women regardless of race and is easily understood.

The hormones which cause the changes in cervical mucus are simply illustrated in Fig. 2 below.

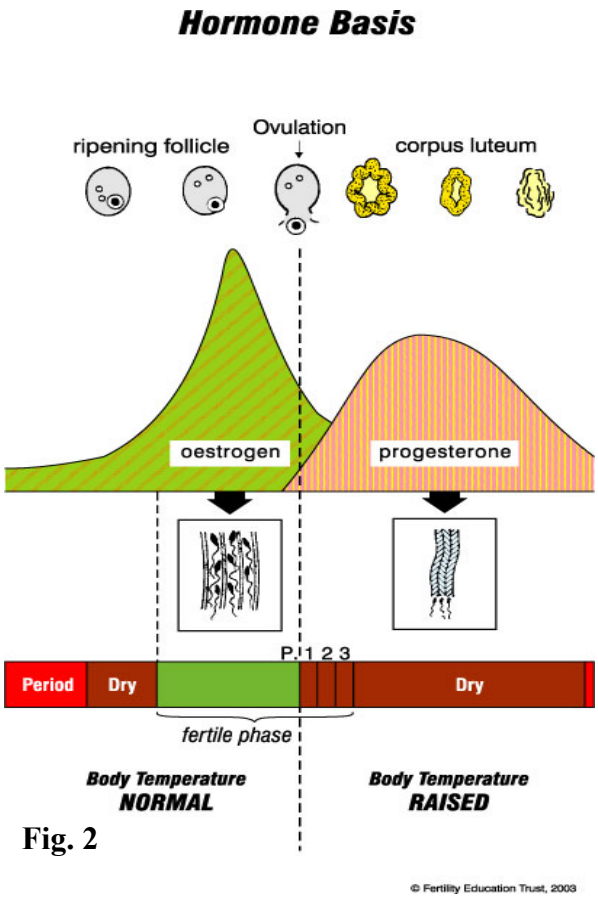


Fig. 2

If GP surgeries and family planning clinics made this information routinely available to all couples, their choices in family planning would be broadened. If we start, however, by looking at those experiencing sub-fertility, I would argue that the results could be instantly measurable. Waiting lists could be shortened because many couples would conceive through better timed intercourse, and resources could be targeted at those who really need them.

Instead, out-dated calendar calculations are perpetuated, which rarely work and lead to inaccurate timing both of intercourse by the couple, and tests by the doctor. Money, time and energy are wasted for want of an indicator as precise as cervical mucus.

Myths of the menstrual cycle

My criticism of using calculations stems from the fact that most literature limits ovulation to 14 days before menses, which presumes that every corpus luteum has a fixed predictable life of two weeks. In fact the corpus luteum survives from 10 to 16 days, with different women having their own individual pattern. This means that even in a group of women with regular 28 day cycles, there is a considerable individual variation in the time of ovulation, as shown in the diagram below.

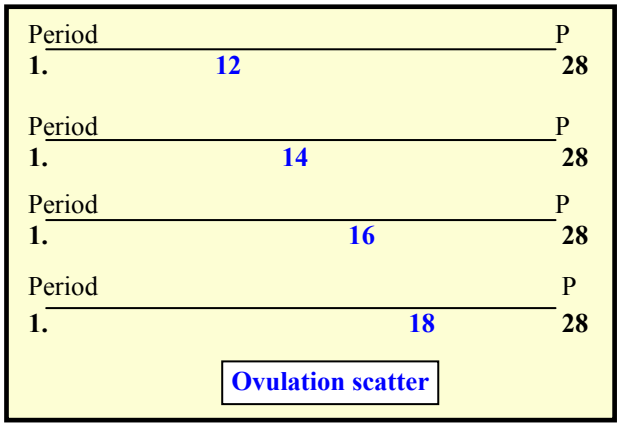


Fig. 3 *Varying patterns of ovulation in women with "regular 28 day cycles"*

Counting the start of the period as Day 1 of a cycle, some may ovulate as early as Day 12 and menstruate 16 days later. Others have the text book cycle of "mid-cycle ovulation" on Day 14, while others may ovulate on Day 16 with a 12 day gap before the next period. The last group may ovulate as late as Day 18 with only a 10 day gap to menses. A short luteal phase on its own is no cause for anxiety because the woman is still fertile. However, one can see that in the last example, a post-coital test done on day 13 will have unfavourable results, simply because it was done too early for the belated ovulation on day 18. Similarly, ovulation/LH test kits currently on the market also fail in these patients because they tell a woman with a 28 day cycle to begin testing on Day 11 and the limited number of test sticks are used up before the LH surge occurs probably around Day 17.

Coping with irregular cycles

Once the woman is irregular, the scenario becomes even worse. Women have been called in for "Day 21" progesterone tests when they haven't even ovulated, which has proved so problematic that it is routine not to process the sample until the woman confirms the arrival of her period. If it is outside the range, the sample is poured away, the test repeated with no greater hope of success and the couple's stress increases.

The Temperature Method

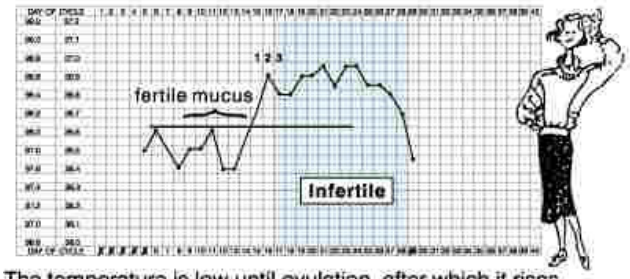
To overcome these problems, some clinics offer temperature charting which is far superior to calculations but has its limitations. As Fig.4. shows, progesterone, released after ovulation, raises body heat for 10-16 days. As the corpus luteum fades and progesterone levels fall, the temperature falls with onset of menstruation. When pregnancy is achieved, progesterone remains high and so does the temperature, for 9 months! To achieve good charts, rules must be understood and applied.

1. The temperature must be taken in bed on waking, ***at about the same time*** each morning, using the same route, after a reasonable night's sleep.

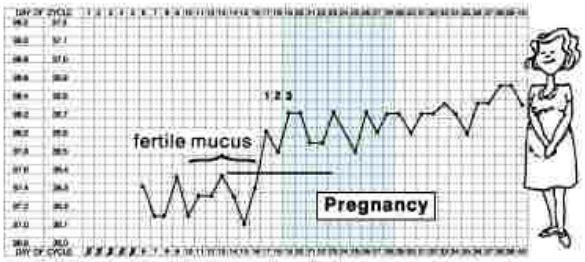
2. A mercury thermometer must be left in place for 5 minutes orally. Digital ones requires less time.

3. False rises are caused by:
   - Alcohol the night before,
   - Fever, migraines
   - Taking it at differing times

These disturbances must be recorded and the reading discounted, otherwise the chart becomes unreadable. An oversleep of two hours could look like an ovulation rise unless explained, which led to one patient being told she seemed to have an ovulation rise every weekend!



The temperature is low until ovulation, after which it rises for 10-16 days, and drops back with onset of period.



If pregnancy is achieved, no period arrives, and the temperature remains up throughout pregnancy.

Just as a hen sits on her eggs to keep them warm,
Just as the farmer uses an incubator to keep eggs warm,

So, the woman's temperature rises after ovulation,
as if to keep the egg warm!

Fig. 4

Mistakes in interpreting charts

Even in good charts, confusion arises from loose terminology. Some couples are told that the temperature rises "**at**" ovulation and to concentrate intercourse after the temperature shift. A book written by a well-known television personality perpetuates this myth and marks the first 10 high readings as "fertile", in total disregard of the fact that the egg is viable for approx.12 hours after release! Since the temperature shift occurs up to 48 hours ***after*** ovulation, only the first two high readings are considered *potentially* fertile. After the third genuine high reading, Tietze showed that the pregnancy rate from intercourse in the remainder of the luteal phase is comparable only to female sterilisation.

The most fertile days

The most fertile days on the chart are ***the last 3 low temperatures before the shift, when the 'motorway mucus' is at its peak.*** Unless mucus observation is taught, how can a woman know which are her last three low readings in irregular cycles? The temperature rise confirms ovulation, but only retrospectively, and is therefore little help in the timing of intercourse in irregular cycles.

The worst case of misinformation I saw was of a woman whose husband had low sperm count and had been told to avoid intercourse for several days before the temperature rise, to build up sperm count. They were to resume only when the temperature was high. The woman duly waited for a "really high" reading, often on my calculation her third high reading. It meant for 18 months of trying to become pregnant, she had unwittingly avoided her fertile mucus phase and the actual ovulation, resuming only at the time of absolute infertility.

Success of mucus observation

Yet the facts in favour of better fertility education speak for themselves. The WHO Multi-Centre Trial showed that, after one teaching cycle, 93% of fertile women, literate or not, could accurately identify the fertile mucus phase. After 3 teaching cycles, the figure rose to 97%.

Another study, in a French infertility clinic (Fig 5), showed that out of 25 women brought in for ovulation tests based on calendar calculation, only 9 were actually successful on the first appointment. By contrast, out of 25 women, who were simply shown photos of fertile mucus and told to attend when they saw similar mucus, 20 women had successful tests on their first appointment – chosen by themselves. The financial benefits of saving

clinic time, doctor's time through an informed patient, hardly need to be stated.

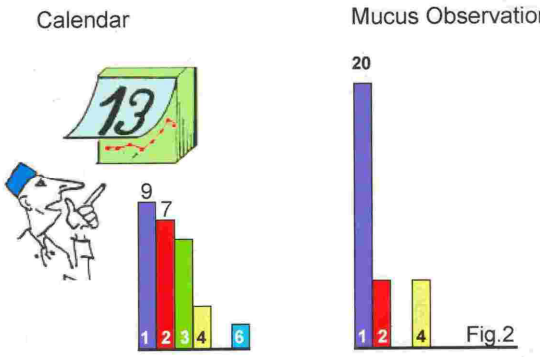


Fig. 5

Stress factors to be considered

Some consultants argue that mucus observation and temperature charts add to a couple's stress. Certainly, continuous temperature charting can be stressful, reminding the woman each day as she wakes up that she is still childless. Therefore, after the first two cycles, temperature charting is confined simply to the days around ovulation, as dictated by the mucus chart.

Mucus observation however, empowers a couple to help themselves. It can be done at any time during the day and is discontinued once ovulation is over. Like temperature charting, it is kept to the minimum time around ovulation.

Mucus testing from a woman's perspective

Many doctors see it only as a laboratory test and this is a misunderstanding. It is not the sole right of the clinician to conduct the "spinbarkheit test." A woman wiping the vulva and stretching the mucus between her fingers or toilet tissue is conducting the same scientific test. She may not see the swimming lanes that the microscope reveals, but she understands from its raw egg-white nature that ovulation is imminent. The peak mucus symptom has been shown to have the same accuracy in detecting ovulation as ultrasound and LH peak, yet costs nothing. (J. Depares et Al.)

Far from creating stress, I have found couples more motivated by a sense of greater control, being able to ensure tests were carried out at the right time, able to time intercourse more accurately and no longer subject to false hope of pregnancy from a belated menses caused by a late ovulation. I have charts of conception cycles from women who conceived on day 40 of their cycle and later, who said that, but for the mucus symptom, they would never have known when they were fertile.

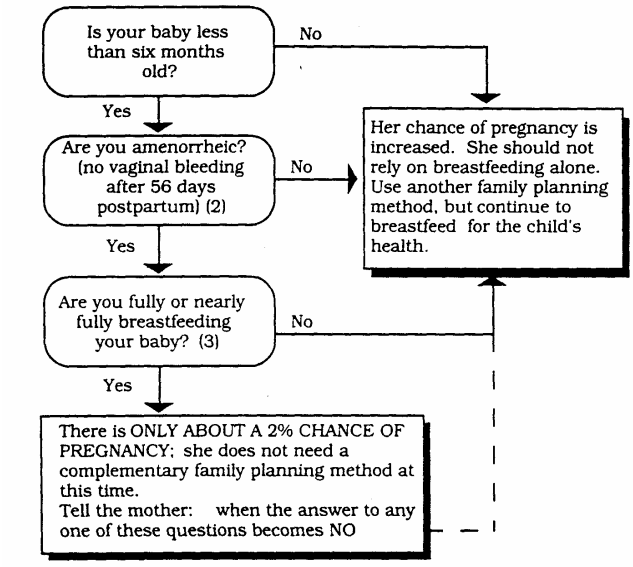
Role of the Practice Nurse

These are but a few of the many cases I have seen illustrating the need for the fertility education package associated with Natural Family Planning to be routinely available through all GP services, if only for the sub-fertility cases. Practice nurses who have learnt NFP have been excited at the scope it gave them to help patients at the first stage of fertility investigation because it needs no medical expertise. Training is not expensive and chart books are easily produced or photocopied. A "Fertility Education Clinic" can be easily set up at a surgery and its outreach broadened as expertise increases.

Extension of the service

Another group to benefit from this education are breastfeeding mothers. Here I would refer you to the sterling work of people like Professor Howie in Scotland and Miriam Labbok at Georgetown University, Washington DC and others too numerous to mention. Breast-feeding is not a method of Family Planning, but LAM is. LAM is the "Lactational Amenorrhea method" – the breastfeeding with no periods method.

Fig. 6 LAM Algorithm



The criteria for LAM to work are very specific.

1. The baby must be fully breastfed, receiving no supplementary bottles. Solids are to be discouraged ideally till the baby is at least 5 months.
2. There must be no vaginal bleeding experienced after locchia (blood loss after birth).
3. Given the above conditions, the first six months of full breastfeeding have a pregnancy rate as low as the mini-pill.

Once any criteria are broken, the woman needs additional family planning advice.

The Lancet article about LAM is well worth reading as it questions the value of much contraceptive advice given to breastfeeding mothers at a time when their fertility is so low. In developing countries it is welcomed as a gentle means of introducing child spacing to societies resistant to the concept of family planning. Having used, written about and taught this method to women, I can only say it is a wonderfully relaxed approach to motherhood to which so many satisfied customers testify.

NFP to avoid pregnancy

The final, but greatest use of fertility education is to formulate it into a method of genuine "family planning". The all-embracing term of "Natural Family Planning" emphasises that it is a non-invasive method based on education not intervention, that it has no health risks or side-effects, and that ***it can be used to plan as well as to avoid pregnancy.*** In Africa it is called "Modern Scientific NFP" to distinguish it from the old Rhythm, Calendar Calculation Method. Perhaps the same title needs to be applied here to break through the barriers of prejudice that exist in the profession.

The Sympto-Thermal Method

The highest success rates in avoidance of pregnancy have been achieved by use of multiple indices as in the "Sympto-Thermal Method". It combines the rules of the Billings Ovulation Method with the Temperature Method and teaches couples, the woman in particular:

- how to observe the onset of the fertile mucus symptom so that intercourse can be avoided at the time of fertility.
- how to keep a temperature chart to confirm the event of ovulation.

As the mucus disappears and the temperature rises, after three high readings, the rest of the cycle is absolutely infertile. The infertility of this latter phase, confirmed by Tietze, can be offered with relief to women with serious health risks, thus avoiding the need for sterilisation or the less effective continuous use of barrier methods.

As already explained, the mucus is observed visually and by sensation at the vulva. The mesh mucus with its "dry" feeling and the motorway mucus with its "wet" feeling have given rise to a simple teaching verse "***When you're dry, the sperm will die. When you're wet, a baby you can get."*** It is an over-simplification, but nonetheless a useful catch phrase for teaching. With experience, the use of a thermometer is reduced to cover only the days of fertile mucus plus the first three high readings.

Improved success rates in new studies.

Through improved teaching programmes and good motivation of couples, the failure rates in modern studies are very low (Ryder 1995). Figures have been broken down to distinguish between method failures, teaching related pregnancies and user failure. Charting systems are varied and imaginative. My own system puts fertility back into the tapestry of nature. I equate the infertile time with autumn and winter and fertility with spring and summer. There is a colour scheme based on the seasonal changes of the trees, with a quick tick system as the symptoms appear. It is visual, easily read and has proved very popular.

The attractions of NFP

It is a method that is growing in popularity among people concerned with green issues. As one new convert to NFP put it succinctly, "I don't smoke, I exercise, I eat healthily and avoid additives, I even drive across the city to buy fresh organic vegetables, then I used to go home and swallow my daily steroid - the Pill!" For those in pursuit of a healthy natural life-style, NFP has much to offer.

For those with moral objections to other forms of contraception, it fulfils the demand for a method which respects their gift of procreation and allows them to plan their families without interfering either with their fertility, the act itself or the newly conceived life it may create. For them, the abstinence at the time of fertility becomes an expression of love and commitment to responsible parenthood, a time to renew the courtship of love and affection so necessary to marriage, which is independent of genital sex.

Conclusion

Fertility is a gift to be enjoyed not feared. It enables us to have children and enjoy the blessings of family life. It can be controlled, naturally without interference, provided good information and teaching are given. It requires commitment and motivation, but not necessarily literacy or high levels of education. It is very pro woman, pro greater choice and an added attraction to surgeries seeking to promote women's health issues.

The National Association of NFP Teachers runs training programmes for teachers and users, and has a network of trained teachers around the country trying to provide a professional, but often voluntary service, for a need as yet unmet by the NHS. I have tried to demonstrate the level of misinformation in the community and regret that prejudice in the medical profession hinders

development of NFP and thereby reduces patient choice. If I have succeeded in arousing interest and a desire for further information on fertility education and Natural Family Planning, please contact me at the address given.

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Article first published in RCOG journal "The Diplomate".
It has been slightly modified for the Web Site make it accessible to a wider audience.

References

1. Billings E.L., Billings J.J., Brown J.B. & Burgen H. (1972) Symptoms and hormonal changes accompanying ovulation. *Lancet 1:282-84*

2. Odeblad E. (1997) Cervical mucus and their functions. *Journal of Irish College of Physicians and Surgeons 26:27-32*

3. Tietze C. (1970) Proceedings of the Eighth Annual Meeting of the American Association of Planned Parenthood Physicians, Boston, Massachusettes, USA. *Advances in Planned Parenthood Volume VI*

4. World Health Organisation (1981) A prospective multi-centre trial of the ovulation method of natural family planning 2. Effectiveness phase. *Fertility and sterility 36:591-598*

5. Ecochard R., Ecochard I, Dumeril B., Guibaud S., Leger A & Dumont M. (1984) Interet de l' auto-observation de la glaire cervicale dans la determination de la periode fertile. *Contacept. Fertil Sex 12:475-8*

6. Depares J., Ryder R.E.J., Walker S.M., Scanlon M.F. & Norman C.M. (1986) Ovarian ultrasonography highlights precision of symptoms of ovulation as markers of ovulation. *British Med. Journal 292:1562*

7. Labbok M., Koniz-Booher P., Shelton J. & Krasovec K. (1992) Guidelines for breastfeeding in family planning and child survival programmes. *Institute for International Studies in Natural Family Planning, Georgetown University, Washington DC*

8. Gray R.H., Campbell O.M. Apelo R et al. (1990) Risk of ovulation during lactation. *Lancet 335:25-29*

9. Ryder R.E.J. (1995) Natural Family Planning in the 1990s. *Lancet 346:233-*