**Rock Solid Science: Studies of the Effectiveness of the Billings Ovulation Method®**

Gillian Barker

Rock solid science starts with rock solid scientists who have a strong desire to seek answers, reasons and explanations not just for their subject of interest but for many things that surround them. The scientists involved in the development of the Billings Ovulation Method® were Drs John and Evelyn Billings and Professors Emeritus James Brown and Erik Odeblad. What started as a collaboration between scientists became a life-long friendship.

*L-R: Dr Evelyn Billings, Dr John Billings, Professor James Brown, Professor Erik Odeblad*

**Dr John Billings** AM, KSCG, MBBS (Melb), MD (Melb), MRACP, MRCP (Lond), FRACP, FRCP (Lond) who initially began the research into what became the Billings Ovulation Method®, was a neurologist held in high esteem before he became interested in fertility. John obtained his medical degree in 1941, graduating with high honours. He took up the position as the resident medical officer at St Vincent's Hospital in Melbourne, Australia. He married Dr Evelyn Thomas in 1943 and later that year enlisted in the Australian Infantry Force where he served in Papua New Guinea.

He had published papers on conditions that he had encountered during his time as an army doctor in World War II, such as amoebiasis in Papua New Guinea and also on viral encephalitis. He worked in the Australian Army Pulmonary Diseases Hospital in Bonegilla and also at the Repatriation Hospital in Heidelberg.

In 1946 he obtained his MD (Doctorate of Medicine), he was made a member of the Royal Australasian College of Physicians (MRACP). In that same year he was awarded a Nuffield Fellowship, which enabled him to develop his interest in neurology in London where he gained membership of the Royal College of Physicians.

The Billings returned to Melbourne in 1948 where John initially worked as Assistant to the Neurosurgical Clinic but having convinced the hospital administrators that clinical neurology should be seen as a separate discipline he was appointed Head of the newly established Department of Neurology at St Vincent's Hospital in 1950 until his retirement from the Department in 1983. Although John had retired from the Department of Neurology he continued to work in private practice.

He served on the Medical Advisory Council of St Vincent's Hospital and was Associate Dean (Clinical) of its clinical school. He was appointed neurological consultant to the Royal Victorian Eye and Ear Hospital and to the Peter McCallum Cancer Hospital and the Infectious Diseases Hospital, Fairfield. John Billings served on the Council of the Royal Australasian College of Physicians and represented the College on the National Health and Medical Research Council, for a time as its chairman. This very significant contribution was recognized by the establishment of the John Billings Scholarship.

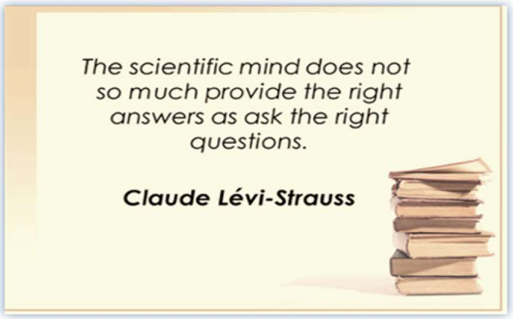

*Dr John Billings at a session of the NH&MRC in 1970*

**Dr Evelyn Livingston Billings**, AM, DCSG, MBBS (Melb), DCH (Lond) was one of only two female medical students when she began studying at the University of Melbourne. While in London with John in the 1940s she studied Paediatrics at Great Ormond Street Hospital for Children, achieving a Diploma in Child Health. She practised paediatrics after their return to Melbourne and for 13 years held a position at the Anatomy School of the University of Melbourne as a Senior Demonstrator in Embryology and Histology.

*Lyn Billings in her younger years. A great example of how to juggle motherhood and a career as a caring doctor.*

In 1969 she published an article in the Medical Journal of Australia on a study of 478 neonates at risk from difficult and anoxic births. This was achieved whilst being a busy mother of 9 children, the first having been born before they went to London, the ninth in 1959.

**Beginnings of the clinical investigations:**




In 1953 Rev Fr Maurice Catarinich, Director of Marriage Guidance, Melbourne, asked Dr John Billings to assist him in finding a more effective method of natural family planning for couples facing the problem of too many children coming too close together. John agreed to give 3 months to this work. He began by doing a search of the medical literature.

He found references to cervical discharge:

- 1855 W T Smith *The Pathology of treatment of Leucorrhea*
- 1865 J M Sims developed the post-coital test showing that sperm move best in cervical mucus
- 1930s French gynaecologists Seguy and Vimex noted that at about the time of ovulation, confirmed by laparotomy, the mucus in the cervix becomes permeable to sperm.

This discharge was mentioned in gynaecology text books but was described as "a benign phenomenon which was of no great importance".

John also found references to basal body temperature changes that occur during the menstrual cycle

- 1868 the drop in temperature prior to menses was described
- 1905 Van de Velde noticed a drop mid-cycle followed by a rise until just before menstruation.

In the 1920s independent discoveries by Ogino (Japan) and Knaus (Austria) identified ovulation as occurring 2 weeks before the following menstruation which became the basis of the Rhythm Method. In 1932 Leo Latz published *The Rhythm of Sterility and Fertility in Women,* based on the work of Ogino and Knaus, giving information on how their results could be applied.

Armed with this knowledge, John Billings began working with couples. He taught them to apply the Rhythm Method and asked them to keep a daily record of any discharge and to not have intercourse on any days of discharge if they wished to avoid pregnancy. They were asked to also keep a separate record of daily temperature readings. John Billings and Fr Catarinich pored over charts of the temperature records and mucus descriptions to unlock the key to the information contained therein.

The findings of this early clinical research showed there was definitely a relationship between the woman's record of mucus and her fertility. It was apparent that the recording of a slippery sensation was critical and that it seemed to relate to the time of ovulation, this being the significant event in the cycle, rather than the time of menstruation, in assessing fertility.

The four Rules of the Billings Ovulation Method® were developed in response to these early clinical findings and have not changed in the 65 years since.

The development of the Billings Ovulation Method® proceeded in four overlapping stages:

- the clinical observations of women during many hundreds of cycles to establish a pattern of mucus recognisable by women and a set of guidelines for effective fertility control
- scientific validation of these guidelines
- independent peer-reviewed trials of the effectiveness of the method
- design of a teaching program and training of teachers to disseminate the information.

**Development of the Billings Ovulation Method®**

**Stage 1: Clinical studies and preliminary data**: For couples wishing to avoid pregnancy – no pregnancies were observed when there was abstinence from intercourse on any days of discharge; no pregnancies were observed from any act of intercourse occurring 4+ days following the last day of the slippery sensation. This last day of the slippery sensation was designated the Peak of fertility.

For couples wishing to achieve pregnancy – many couples conceived when intercourse occurred on days of mucus discharge; there was one pregnancy from intercourse on the 3rd day past the Peak, a few pregnancies from intercourse on day 2 past the Peak and more from the day after Peak, but most pregnancies resulted from intercourse on the Peak day.

Conclusions drawn;

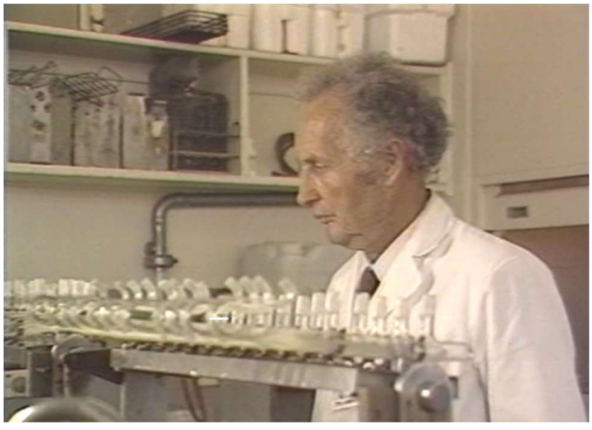
- mucus must be present for sperm survival
- the Peak of fertility is the last day of the slippery sensation – the quantity of the mucus is irrelevant
- the temperature is non-specific and can be affected by other influences.

**Stage 2: Scientific Verification**

In 1962 Dr James B Brown arrived in Melbourne from Edinburgh where he had done research into the measurement of urinary oestrogen, pregnanediol, FSH and LH. He was appointed to set up the Endocrine Unit at the Royal Women's Hospital for the University of Melbourne. Dr John Billings met with Dr Jim Brown, explained the work he had been doing on female fertility and invited him to assist with verification of the clinical results through laboratory hormone assays.

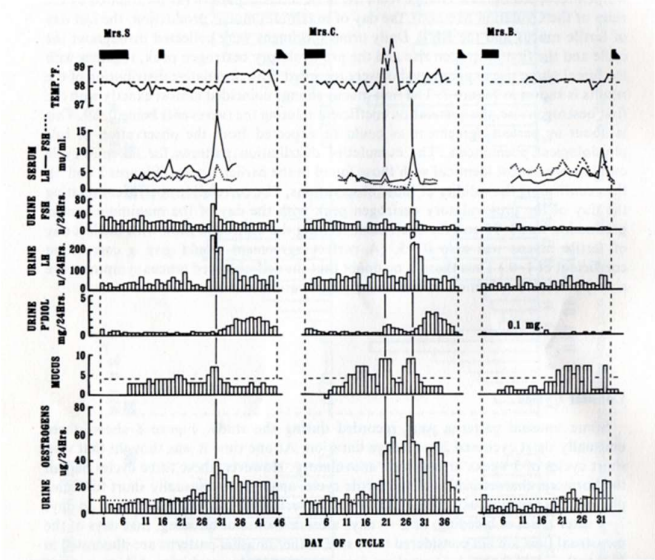
**Professor Emeritus James Boyer Brown**, MSc (NZ) PhD (Edin) DSc (Edin) FRACOG, was well known as a brilliant scientist who had received a number of awards for innovative work in measuring ovarian and pituitary hormones. His work has been published in over 230 refereed scientific journals and chapters in books. Jim Brown's expertise was invaluable in validating the Billings Ovulation Method®.

Not just a theoretical scientist, Jim Brown designed, built and patented the Brown's Semi-automatic Extractor, to enable an increased number of experiments to be performed simultaneously in the laboratory.



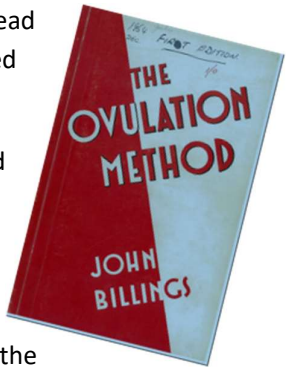
*Professor Jim Brown with his Brown's Semi-Automatic Extractor*

H His work on the Billings Ovulation Method® showed the relationship between progesterone and identification of the Peak – no ovulation, no progesterone rise, no Peak observed in the woman's chart.




*Professor Jim Brown's meticulous graphs correlating pituitary and ovarian hormone results alongside mucus and temperature reading*

**Dr Evelyn (Lyn) Billings** joined the work initially when she was asked to proofread the manuscript for John's first book *The Ovulation Method* which was published in December 1964.

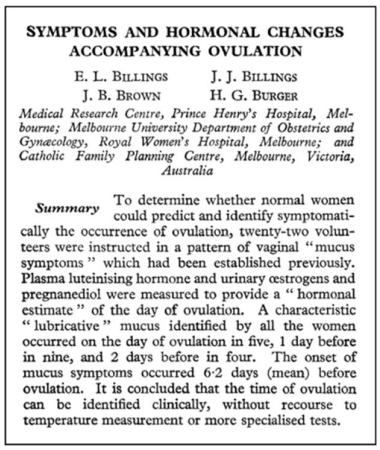



The following year she began working with John and Fr Catarinich on the "hard cases" – women who had a continuous discharge which had precluded identifying when fertility began. She recognized that women's charts not only identified the phase of fertility, but also patterns of infertility. By collaborating with Jim Brown she found that if the symptoms, as described by the women, were unchanging they reflected unchanging, low oestrogens – the Basic Infertile Pattern, which consisted of days of dryness or of unchanging discharge or a combination of dry days and days of unchanging discharge when ovulation is delayed.

Lyn undertook studies of menopausal and breastfeeding women and showed the importance of the presence of mucus for a cycle to be fertile. Her study of 98 premenopausal women demonstrated that if the woman ovulates without a cervical response she is infertile, there is no mucus and the sperm are unable to enter the reproductive tract and fertilise the ovum.

These were significant discoveries, the studies showed that if infertility could be recognised, variations in the cycle were no longer a barrier to a couple using the Billings Ovulation Method®

In February 1972 an article was published in The Lancet entitled *Symptoms and hormonal changes accompanying ovulation* by E L Billings, J J Billings, J B Brown and H G Burger reporting on a study to determine whether normal women could predict and identify symptomatically the occurrence of ovulation. This was the first published report of the work relating to the effect of hormone changes on the mucus symptom and establishing the relationship between the surge of LH, ovulation and the observations of the Peak of fertility.



SYMPTOMS AND HORMONAL CHANGES ACCOMPANYING OVULATION

E. L. BILLINGS J. J. BILLINGS
J. B. BROWN H. G. BURGER

*Medical Research Centre, Prince Henry's Hospital, Melbourne; Melbourne University Department of Obstetrics and Gynæcology, Royal Women's Hospital, Melbourne; and Catholic Family Planning Centre, Melbourne, Victoria, Australia*

***Summary*** To determine whether normal women could predict and identify symptomatically the occurrence of ovulation, twenty-two volunteers were instructed in a pattern of vaginal "mucus symptoms" which had been established previously. Plasma luteinising hormone and urinary œstrogens and pregnanediol were measured to provide a "hormonal estimate" of the day of ovulation. A characteristic "lubricative" mucus identified by all the women occurred on the day of ovulation in five, 1 day before in nine, and 2 days before in four. The onset of mucus symptoms occurred 6·2 days (mean) before ovulation. It is concluded that the time of ovulation can be identified clinically, without recourse to temperature measurement or more specialised tests.

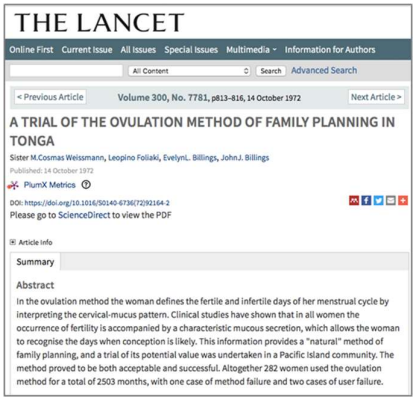
This was a study of 22 women aged 25-45 years with proven fertility and cycles between 22 and 35 days. The women recorded their vaginal BBT taken each day before rising and they kept a chart of their mucus symptoms throughout the cycle. A nurse came to the woman's home for 9-10 consecutive days, around mid-cycle, to collect blood which was tested for LH. The women also made 24-hour urine collections throughout the cycle for the measurement of total oestrogens and pregnanediol.

Conclusions:

- A woman can be taught to recognise a pattern of vaginal mucus secretion during the menstrual cycle and can distinguish the occurrence of a particular symptom – lubricative clear mucus.
- This "peak mucus" closely correlates with the day of ovulation as estimated from the measurement of plasma LH and urinary oestrogen and pregnanediol.
- The mucus symptom begins, on average, 6.2 days before the putative occurrence of ovulation.
- The time of ovulation can be identified clinically, without recourse to temperature or more specialised tests.

**Stage 3: Trials of the Billings Ovulation Method®**

In October of the same year another paper was published in *The Lancet* of a trial of the "potential value" of this "natural" Method of family planning which was conducted in the Pacific island nation of Tonga. Tongan society is very easy going and family size is relatively large. Many women had little idea of the length of their cycle and there was not great motivation to adhere to guidelines or even continue to use the Method. There were also considerable difficulties of distance and transport – Tonga is spread over 150 islands.



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A TRIAL OF THE OVULATION METHOD OF FAMILY PLANNING IN TONGA

Sister M.Cosmas Weissmann, Leopino Foliaki, Evelyn L. Billings, John J. Billings

Published: 14 October 1972

PlumX Metrics

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Article Info

Summary

Abstract

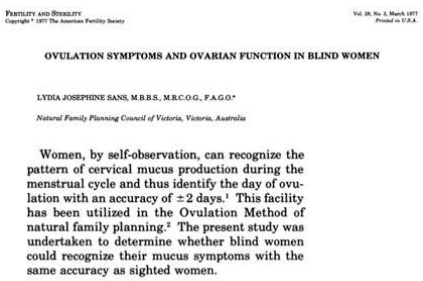
In the ovulation method the woman defines the fertile and infertile days of her menstrual cycle by interpreting the cervical-mucus pattern. Clinical studies have shown that in all women the occurrence of fertility is accompanied by a characteristic mucous secretion, which allows the woman to recognise the days when conception is likely. This information provides a "natural" method of family planning, and a trial of its potential value was undertaken in a Pacific Island community. The method proved to be both acceptable and successful. Altogether 282 women used the ovulation method for a total of 2503 months, with one case of method failure and two cases of user failure.

For this study, 395 women were instructed in the Billings Ovulation Method®, 331 opted to use the Method eighteen of whom were anxious to conceive, 46 elected to use other methods. Of the 282 women who completed the study, totalling 2503 months of charting, there were 81 pregnancies

– 28 conceived because they wanted more children, 50 “took a chance” and there were two user-related pregnancies and one method-related pregnancy.

The comment was made “It has been most gratifying that those couples who ‘broke the rules’ have, if anything, gained greater confidence in the method as a result, and have willingly returned to its use subsequently.”

Two studies by Dr Hanna Klaus and colleagues were published in *Fertility and Sterility* in October 1977 and in *Contraception* in June 1979. The first was a 2-year pilot study of “fertility awareness and the choice consequent upon such awareness” and the second was on “use effectiveness and client satisfaction”. In the effectiveness study of 1139 couples from six clinics, 1090 wanted to avoid pregnancy and 44 wished to achieve pregnancy. A total of 12,283 cycles were studied. The Method-related pregnancy rate was 1.17 per 100 women years and the user-related pregnancy rate was 19.25 per 100 women years.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OVULATION SYMPTOMS AND OVARIAN FUNCTION IN BLIND WOMEN

LYDIA JOSEPHINE SANS, M.B.B.S., M.R.C.O.G., F.A.G.O.*

*Natural Family Planning Council of Victoria, Victoria, Australia*

Women, by self-observation, can recognize the pattern of cervical mucus production during the menstrual cycle and thus identify the day of ovulation with an accuracy of ±2 days.[1] This facility has been utilized in the Ovulation Method of natural family planning.[2] The present study was undertaken to determine whether blind women could recognize their mucus symptoms with the same accuracy as sighted women.

In March of 1977 *Fertility and Sterility* published a small study by Dr Lydia Sans on the use of the Billings Ovulation Method® among blind women. The study included 75 cycles from 4 women aged 17 – 22 who had been blind since birth against a control group of 29 women aged 25-45 years. “The symptoms were assessed by sensation in the vulval area and by examining discharge on toilet paper.” Though this was a statistically insignificant study it did show that blind women can learn the Method as well as sighted women.

*A prospective multicentre trial of the ovulation method of natural family planning* was conducted by the World Health Organisation in five countries between 1976 and 1978. Five papers reported on this study, all published in *Fertility and Sterility* between 1981 and 1987. The first of these papers reported on the teaching phase and the second on the effectiveness phase of the study.


869 couples wishing to avoid pregnancy were recruited to the study and 10,215 cycles were assessed. The couples covered different levels of education from illiterate to post-graduate and the societies varied from poor women in rural and urban India and rural El Salvador to more advanced communities in Ireland and New Zealand.

The first three cycles constituted the teaching phase - 91% of subjects showed an "interpretable mucus pattern in the first cycle of charting, increasing to 97% by the third cycle". The paper reported that an objective assessment of the competence of the teachers to teach and record the data had been difficult to achieve, however the Method-related pregnancy rate was judged to be 2.9%.

The trial continued and 725 subjects completed a further 13 cycles which constituted the effectiveness phase of the trial. 7514 cycles were assessed, there was a 35.6% discontinuation rate including 19.6% due to pregnancy. The Method-related pregnancy rate was 2.8%. There was a 0.4% pregnancy rate due to inadequate teaching and 3.5% resulted from inaccurate application of instructions, 15.4% resulted from conscious departure from the Rules, 0.5% could not be determined.

The other three papers which resulted from the trial reported on "characteristics of the menstrual cycle and fertile phase", "the outcome of pregnancy" and "psychosexual aspects".

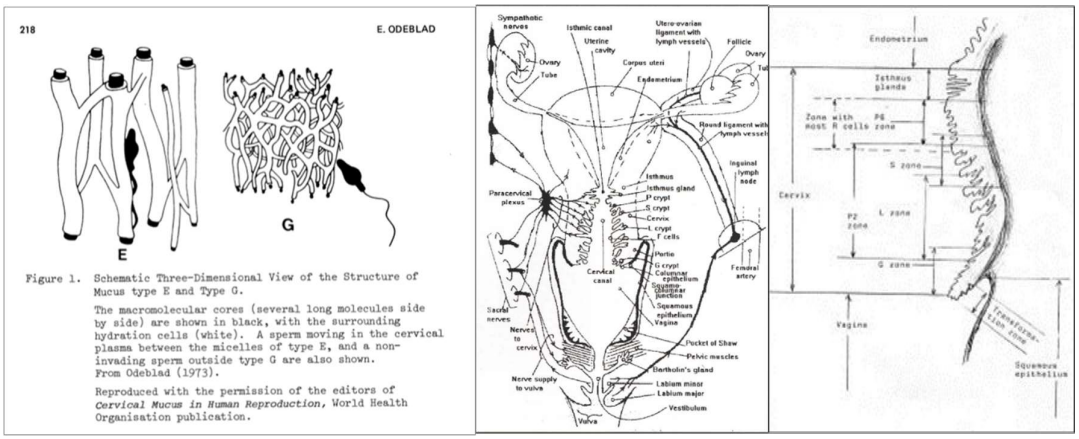
Concurrent with these trials of the effectiveness of the Billings Ovulation Method® another scientist joined the work.

**Professor Emeritus Erik Odelbad**, MD (Gynae), PhD (physics) from Umea in Sweden first published on "human cervical mucus during the menstrual cycle" in 1957. He came to notice in Australia when he attended a veterinary conference in Sydney in 1977 where he was speaking on mucus secretions during oestrus which was helpful to vets conducting artificial insemination. In the audience at the conference was Dr Kevin Hume, a General Practitioner from Sydney who was a good friend of the Drs Billings. He spoke to Professor Odeblad at the end of the presentation to tell him of the work being done on the Billings Ovulation Method®.

Odeblad had learned about nuclear magnetic resonance when working at the University of California and on returning to Sweden built his own machine in order to study human samples.

*Professor Erik Odeblad with a photo of the first Nuclear Magnetic Resonance machine he and colleagues built.*

Having learned of the work of the Drs Billings and Professor Brown, Professor Odeblad turned his attention to the structure and role of the different types of cervical mucus and how these related to the Billings Ovulation Method®. He explained that the G-mucus occludes the cervix when oestrogen levels are low and the woman recognises her Basic Infertile Pattern and again during the luteal phase. The L and S mucus types are produced during the fertile phase and the P mucus around the Peak of fertility. Professor Odeblad was able to explain their role in fertility and sperm survival, thus validating the rules of the Billings Ovulation Method®.

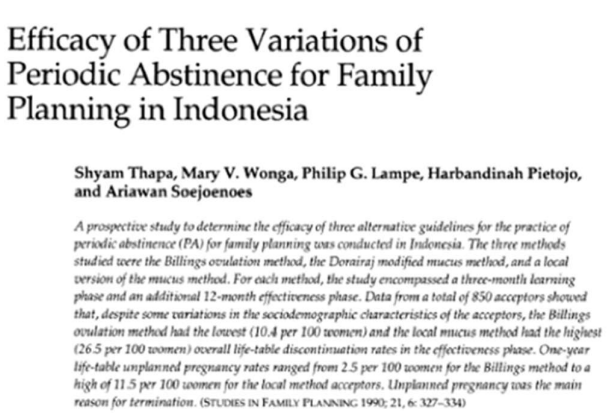



*Three of Professor Erik Odeblad's exquisite hand-drawn diagrams to illustrate sperm in different mucus types, the structure of the cervix and a detail of the crypts of the cervix.*

His results were published in the *Bulletin of the Ovulation Method Research & Reference Centre of Australia* in 1994 in the *Journal of the Irish College of Physicians and Surgeons* in 1997.

**Further studies of the Effectiveness of the Billings Ovulation Method®**

In 1990 in the journal *Studies in Family Planning* the results of a study entitled *Efficacy of Three Variations of Periodic Abstinence for Family Planning in Indonesia* were published comparing three methods – the Billings Ovulation Method®, the Modified Mucus (MM) method and the Local Method LO), a simplified MM.


Efficacy of Three Variations of Periodic Abstinence for Family Planning in Indonesia

**Shyam Thapa, Mary V. Wonga, Philip G. Lampe, Harbandinah Pietojo, and Ariawan Soejoenoes**

*A prospective study to determine the efficacy of three alternative guidelines for the practice of periodic abstinence (PA) for family planning was conducted in Indonesia. The three methods studied were the Billings ovulation method, the Dorairaj modified mucus method, and a local version of the mucus method. For each method, the study encompassed a three-month learning phase and an additional 12-month effectiveness phase. Data from a total of 850 acceptors showed that, despite some variations in the sociodemographic characteristics of the acceptors, the Billings ovulation method had the lowest (10.4 per 100 women) and the local mucus method had the highest (26.5 per 100 women) overall life-table discontinuation rates in the effectiveness phase. One-year life-table unplanned pregnancy rates ranged from 2.5 per 100 women for the Billings method to a high of 11.5 per 100 women for the local method acceptors. Unplanned pregnancy was the main reason for termination.* (STUDIES IN FAMILY PLANNING 1990; 21, 6: 327–334)

No distinction was drawn between user-related and Method-related pregnancy rates but the unplanned pregnancy rates were 2.5% for BOM, 10.3% for MM and 11.5% for LO. The conclusion drawn from this study states "The results of this study suggest there is no easy and short-cut approach to using a cervical mucus method that obtains a high level of efficacy." In other words, it is important for success to use a scientifically validated method and learn it properly!

An independent trial of the Billings Ovulation Method® was conducted by the Indian Council of Medical Research Task Force on Natural Family Planning and published in *Contraception* in 1996. Conducted in 5 states of India the trial covered approximately 500 women from each centre aged 15-35 years experiencing regular cycles. A total of 2,059 women were followed for 21 months – 32,957 cycles. The Method-related pregnancy rate was 0.76% and the user-related rate 9.1%. An 88.3% continuation rate was reported at 6 months and 52% at 21 months. The participants came from a diverse range of socio-economic groups and different religions. The majority of women were classified as illiterate with only a small percentage having education above primary level. The study authors concluded, "The Billings Ovulation Method® of natural family planning appears a feasible and acceptable option for couples belonging to different socio-cultural milieu. Besides the training period, the method does not incur cost either to the provider or user. The method is not associated with fear of any side effect. It is a user-controlled, behavioural and culturally compatible method. It, therefore, promises good program benefits to developing countries in general, and to India in particular."


In 1997 Professor Qian Shao Zhen, a Chinese andrologist, speaking at a congress at the Jiangsu Family Health Institute, presented the results of a study comparing the effectiveness of the Billings Ovulation Method® with the Intrauterine Device. A total of 16,169 cycles were assessed – 992 of couples using the BOM and 662 using the IUD. For the BOM there were 0 Method-related pregnancies and 5 (0.5%) user-related pregnancies to women "who did not follow the rules of the Method". For the IUD there were 12 pregnancies, 15 spontaneous expulsions of the device and 38 removals. In addition, Dr Qian reported a 32.1% success rate for achieving pregnancy using the Billings Ovulation Method® by couples previously believed to be infertile.

In March 2001 in the *African Journal of Reproductive Health*, Dr Léonie McSweeney, an Irish missionary physician working in Nigeria, reported on a trial of *Successful Sex Pre-selection using Natural Family Planning*. The objective of the study was to test the hypothesis "That gender can be preselected by timing coitus in relation to ovulation, the marker of ovulation being the Peak symptom according to the Billings Method™." Of 99 couples included in the study, 94 gave birth to a child of the predicted sex – a success rate of 94.9%. The premise on which the study was conducted was that "Y-bearing sperm are more motile and shorter-lived than X-bearing sperm. If intercourse is confined to the time of ovulation the Y-bearing sperm arrive more quickly at the ovum and the resultant child is more likely to be a male. If intercourse is confined to the fertile days prior to ovulation it is more likely to lead to the conception of a female child."

**Continuing Scientific Studies of the Cervix and Hormones**

In addition to the clinical studies described above, Professors Odeblad and Brown continued their scientific research over the following decades, Jim Brown until shortly before his death in 2009 and Erik Odeblad until his retirement from active research very recently when in his mid-90s.

Professor Brown demonstrated that it is the rise in progesterone shortly before ovulation which is significant in identifying Peak fertility and the time of ovulation. This dovetailed with Professor Odeblad's discovery of the role and function of the Pockets of Shaw – the para-urethral pockets which work to absorb the fluid from any discharge flowing through the vagina in response to rising progesterone levels. This causes the change in sensation at the vulva experienced by the woman which alerts her to the Peak day.

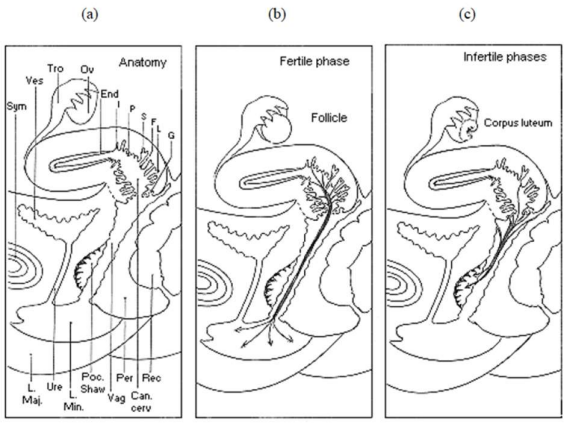
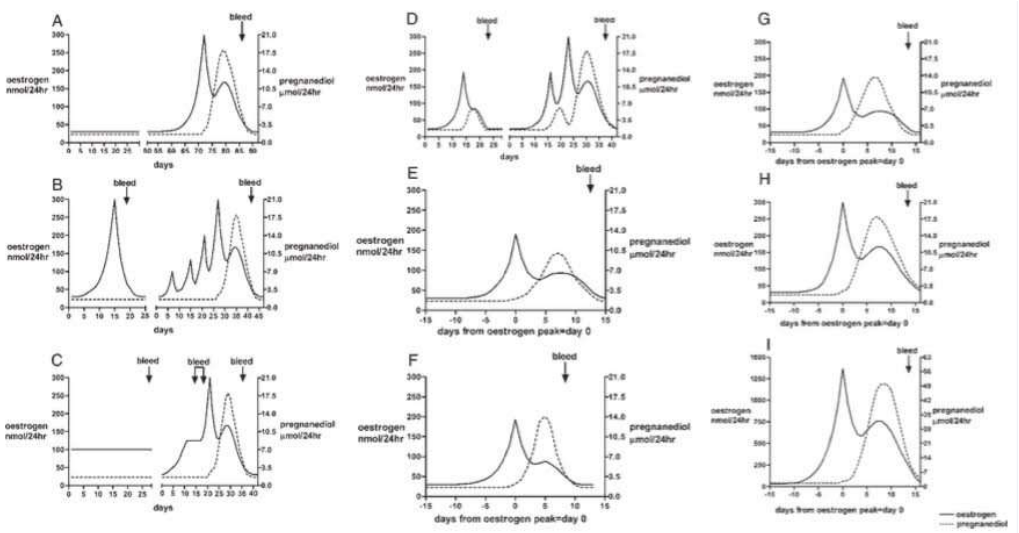



Figure 14. Cervical anatomy and mucus and fluid flow during fertile and infertile phases of the cycle. The locations of crypts P, S, L, and G are indicated as also are F cells (F); I, isthmus (secretion Z); Can cerv, cervical canal; End, endometrium; L. maj., Labium major; L. min., Labium minor; Ov, ovary; Per, perinium; Poc. Shaw, pocket of Shaw; Rec, rectum; Sym, symphesis; Tro, tube; Ure, urethra; Vag, vagina; Ves, bladder.

*Professor Erik Odeblad's hand-drawn illustrations of the function of the Pockets of Shaw*

In 2011 in the journal *Human Reproduction Update* a paper was published posthumously of Professor Jim Brown's life's work *Types of ovarian activity in women and their significance: the continuum (a reinterpretation of early findings)* which documents and explains all the identified variants of ovarian activity that occur throughout a woman's reproductive life from menarche to menopause.




*Professor Jim Brown's diagrams of the variations of levels of ovarian hormones in different situations within a woman's reproductive life.*

**Next generation of scientists:**

Work on the research, dissemination and evaluation of the Billings Ovulation Method® has not stopped with the deaths of the Drs Billings. Scientists in different regions of the world are continuing the work of "asking the right questions".

In recent years we have been privileged to work with and learn from Professor Pilar Vigil Portales (pictured) who is doing so much work to increase knowledge of fertility and in particular to share her knowledge with other medical professionals so that fertility disorders can be identified in the chart and treated adequately. The work that Pilar and her team are doing around the world spreading the message that ovulation is sign of good health is invaluable.

Professor Vigil has shown us the importance of the preovulatory progesterone rise and how it causes the LH to plateau at its highest level, all important steps in the mechanism of ovulation. Professor Vigil has increased our knowledge of hormones with DHEA, testosterone, leptin, inhibin, prostaglandin and others. More recently she has shown the importance of role that kisspeptin as the messenger between the hypothalamus and the pituitary.

**In summary I would like to review one final paper, I feel this summarises all the papers I have reviewed in this article:**

***"Natural Family Planning": effective birth control supported by the Catholic Church*** by R E J Ryder published in *BMJ Clinical Research* in 1993.

The paper reports the following clinical implications:

- Ovarian ultrasonography shows that cervical mucus symptoms identify ovulation with precision.
- According to the WHO, women of all cultural and educational backgrounds can learn to use cervical mucus symptom observation to recognise when they ovulate.
- Worldwide evidence suggests that methods of birth control using avoidance of the fertile phase identified by ovulation symptoms are associated with pregnancy rates equivalent to those with artificial contraception.
- Findings among 20,000 poor women in Calcutta with a pregnancy rate approaching zero, complemented by other studies in the developing world, suggest that the motivation of poverty may be particularly associated with "natural family planning".
- A WHO study found that couples in the developing world were satisfied with the frequency of intercourse associated with natural family planning, which is cheap and may be especially valuable in the developing world.

The final paragraph in the conclusion of this paper, I believe, embodies the philosophy of the Billings Ovulation Method®. "Understanding the simple facts about the signs of fertility confers considerable power to couples to control their fertility, for achieving as well as preventing conception. The

widespread dissemination of these simple facts would be useful everywhere but may be of particular value in the Third World."

It was a dream of Drs Billings that this method be taught to every country in the world. They believed that this information should be available to every woman. This should now be our mission, to teach whoever we can, wherever we can and whenever we can. Rich or poor, literate or illiterate everyone has the right to this knowledge.

It is a dream of mine that the research that continues will be published alerting the medical profession to the highly effective method that we know as the Billing Ovulation Method®.