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The Ovulation Method: Ten Years of Research

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The modern history of natural family planning goes back to 1929-1930 when Ogino in Japan and Knaus in Austria independently discovered that ovulation occurs approximately 14 days before menstruation. Prior to this time, there were as many theories as to when ovulation occurred as there were individuals proposing such theories. With this new knowledge, the foundation was set for the scientific development of our understanding of the natural fertility process.

Over the last 48 years, great progress has been made in this understanding. The first natural method of family planning was Calendar Rhythm. This method, based upon calculations obtained from previous cycle history, the Ogino-Knaus discovery and the static concepts of a 3 day sperm survival and a 2 day ovum survival, was helpful for those women who had regular cycles. However, it was of little assistance to those women who were breastfeeding and amenorrheic and those who had irregular cycles (including anovulatory and premenopausal women). The development of the basal body temperature method improved the scientific foundation of natural family planning but again it suffered from many of the same drawbacks as the Calendar Rhythm Method. By adding a calendar calculation to the basal body temperature, the Calendar-Thermic Method was developed and while this was an improvement over previous methods, it still was

difficult to apply during lactation and in anovulatory conditions.

In an attempt to improve the practical application of natural family planning, the Sympto-Thermic Method was developed. This method, discussed elsewhere in this issue, combined the basal body temperature method with a variety of symptoms including cervical mucus discharge, self-examination of the cervix, inter-menstrual pain and breast tenderness. The most recent development in our understanding of natural family planning has been the Ovulation Method.

The Ovulation Method of natural family planning was first described by Billings¹ in 1964. It was developed out of an ongoing analysis of pregnancies which appeared to be related to defects in the natural methodologies in existence at that time. Billings searched the literature looking for a sign which might be more universally applicable in the practice of natural family planning. In his review, it became apparent that the cervical mucus might be such an indicator. Within this historical framework, work in Melbourne progressed steadily in the analysis and practical application of the cervical mucus symptom. With the entrance of Dr. Lyn Billings into the teaching program, it became apparent that all women who were fertile had the mucus symptom.

The original edition of *The Ovulation Method* placed considerable emphasis on the use of the basal body temperature in combination with the cervical mucus symptom. As time went on, the basal body temperature was de-emphasized and in the early 1970's was eliminated altogether. In subsequent publications,² the Ovulation Method has been further developed as a method which relies upon the woman's identification of a characteristic vaginal discharge of cervical mucus as the sole indicator of her fertility status.

The Ovulation Method of natural family planning can be described in the following way. The menstrual period is generally considered to be a time of fertility. Following the cessation of menstruation the woman experiences the absence of any vaginal discharge of cervical mucus and experiences a positive sensation of dryness. These dry days are considered to be infertile. Following the cessation of dry days there begins the discharge of cervical mucus from the vagina. The discharge generally begins as a sticky, cloudy type of discharge which progresses to become clear, stretchy and/or lubricative. The last day in which the clear, stretchy and/or lubricative mucus is present is called the PEAK symptom. Fertility is defined as beginning with the start of the mucus discharge and continuing until three full days past the PEAK symptom. From the fourth day after the PEAK symptom until the beginning of the next menstrual period is defined as being infertile. This period of time is usually dry. The observations made during the use of the Ovulation Method are made at the opening of the vagina and internal examinations are contra-indicated. In addition, the method is taught by trained teachers who are themselves users of the

method and it is taught either on a woman-to-woman or a couple-to-couple basis.

The method has been developed for use during all of the stages of the reproductive life of a couple, including the so-called "difficult cases" of natural family planning (the pre-menopause, lactation and other anovulatory circumstances). Knowledge of the mucus symptom has also proven to be valuable in the evaluation and treatment of the infertile couple. A reduction in the mucus symptom or its absence altogether has been observed in a number of infertility patients^{3, 4} who are otherwise normal. In this latter circumstance, the method becomes a form of treatment for the infertility problem by providing the couple with sufficient knowledge to time intercourse at the peak of their fertility.

The method can also be used in women who have a continuous discharge. The preovulatory discharge of cervical mucus is so characteristic that it can be distinguished from other discharges.

Dr. Brown Joins Billings

Early in the beginning work with the Ovulation Method in Melbourne, Dr. James Brown from the Royal Women's Hospital in Melbourne, and an expert in estrogen biochemistry, joined with the Billings in coordinating the woman's observation of the mucus symptom with the standard hormonal parameters of ovulation. In 1972, correlation of the time of ovulation with the woman's observation of the PEAK mucus symptom was published.⁵ In 22 subjects from a like number of menstrual cycles it was found that ovulation occurred an average 0.9 days following the PEAK mucus symptom. The estimated time of ovulation ranged from two days before the PEAK symptom until three days after. The mean number of mucus days preceding the estimated time of ovulation was 6.2 days. This work has now been corroborated by Flynn and Lynch,⁶ Casey⁷ and Hilgers, et al.⁸ While there has been identified a significant range of time in which ovulation may occur around the PEAK symptom it occurs consistently during the time of fertility as defined by the method.

The question of whether or not the woman's observations made at the opening of the vagina are a reliable indicator of cervical mucus events occurring at the level of the endocervix has been asked. We have attempted to answer this question in a forthcoming publication.⁹ By using two parameters of the quality of cervical mucus (ferning and channel formation),¹⁰ we have correlated the events occurring in the endocervix with indices of the menstrual cycle and the woman's vulvar observations. In general, we found an improvement in the quality of cervical mucus as the PEAK symptom approached and for the three days after the PEAK symptom. However, at other times during the cycle, the quality was poor. In addi-

tion, there was a very close correlation between the woman's vulvar observations and the mucus events in the endocervix.

The role that cervical mucus plays in the natural fertility process has not yet been fully clarified. However, current knowledge would indicate that its role is vital. Under the influence of the preovulatory rise of estradiol 17-B, the cervical mucus changes its characteristic by forming channels^{11, 12, 13, 14} in the mucus and increasing its quantity of production. The formation of channels in the mucus facilitates penetration of the spermatozoa through the endocervix and the increased quantity of mucus facilitates sperm survival. In effect, the cervical mucus acts as a biological valve, only allowing for sperm penetration and survival during the immediate preovulatory phase of the menstrual cycle.¹⁵ This mechanism is important in assuring that fresh sperm and fresh ova are available for conception. The Ovulation Method, through the woman's vulvar observations, attempts to communicate to the couple when the biological valve is open (a time of fertility) and when it is closed (a time of infertility).

While the method is currently available for use by couples, it is our feeling that continued research will improve the method and our ability to teach it. Some areas of future research which should prove beneficial would include the following: A) a large scale statistical analysis of the parameters of the mucus cycle, B) continued hormonal analysis especially in the premenopausal, breastfeeding and generally anovulatory woman, C) improving the objectivity in which women check for and describe the presence or absence of the mucus discharge and D) long-term studies of the reproductive events occurring in women using the mucus symptom to achieve pregnancy.

A Great Need

Perhaps one of the greatest needs currently is in the areas of both standardization of teaching and teacher training itself. Standardization of teaching is essential with any method of natural family planning since only with such standardization can results be measured objectively. Of equal importance is the training of teachers. As a greater understanding of both the science and art of natural family planning is achieved, this must be communicated, in formal educational programs, so that the teachers may deliver the very highest quality of instruction to couples.

Most people are generally interested in the effectiveness of the ovulation method and, for that matter, all methods of natural family planning. It has been our experience that the method effectiveness has been very high, in the range of 98-99 percent. However, there has not yet been developed a statistical protocol which adequately takes into account the unique features of natural family planning. It must be

remembered that a natural method (and especially the ovulation method) can be used *both* to achieve and avoid pregnancy. Until the appropriate protocol is developed whereby the use-effectiveness of natural methods can be measured both as methods to achieve pregnancy and as methods to avoid pregnancy, discussion of use-effectiveness will not be meaningful.

Over the last 50 years, our understanding of the natural fertility process has increased considerably. Over the last 10 years progress has been rapid. Never before have we had the practical knowledge which we possess today. Indeed, with our present knowledge we can truly deliver effective means of natural family planning. However, with continued research our ability to deliver such services will become better and better.

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