What is the Sympto-Thermal Method? Offering Patients an Alternative Birth Control Option

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Submission: September 07, 2017; Published: September 27, 2017

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Introduction

Most patients are unaware of the full spectrum of birth control methods available. Despite beliefs to the contrary, natural family planning methods can be 97-99% [4] effective when used correctly by motivated couples. A recent study concluded that couples using the sympto-thermal method (STM) for contraception were able to identify their peak fertility days with a method effectiveness of 0.3% [5]. Moreover, unlike other forms of birth control, this system has no negative side effects. Yet a persistent lack of knowledge of STM (also known as natural family planning, fertility awareness, the Billings Ovulation method etc) hinders its use. One reason for this lack of knowledge is that unlike other forms of birth control, natural family planning methods are not marketed by corporations, partly because minimal profit is made from these techniques. This paper is thus intended to assist primary health care providers in presenting greater choices to their patients by including information about the sympto-thermal method. STM can be utilized to achieve or avert pregnancy. Most family physicians that are informed about STM know it as a technique for assisting conception as much of the information published on STM concentrates on how it can be used as a means of achieving pregnancy [6-12]. This paper thus focuses on contraceptive applications of this technique.

The Need for Alternative Contraception Methods

As illustrated in Table 1, popular contraceptive technologies come equipped with a number of widely reported and experienced side effects. The sympto-thermal method provides an ancient non-invasive, low technology alternative to reproductive technologies such as the pill, spermicidal, and IUDs. This method has been practiced by indigenous communities for thousands of years, including Cherokee, Hawaiian and Bantu women in various parts of Africa [13-15]. Today, the largest organization that promotes this method is the World Organization of the Ovulation Method Billings (WOOMB), located in Australia. STM involves

a. Changes in vaginal mucus

STM is an ancient non-invasive, low technology method. Latex protection in conjunction with STM is an effective way to protect against sexually transmitted infections. Most physicians lack knowledge about this method. This article seeks to bridge this gap in knowledge.

Abstract

The intrauterine device (IUD) is the most commonly used method of reversible birth control in the world, while sterilization remains the most prevalent overall [1]. Both these methods are associated with a host of side effects and health complications, the most severe of which include: pelvic inflammatory disease, ectopic pregnancy, uterine bleeding, organ perforation [2] and bowel and major vessel damage [3], respectively. Effective birth control that produces fewer side effects and is safer is critically needed. This paper offers family physicians one such option: the Sympto-Thermal Method (STM). When used properly, the effectiveness of this technique is 97-99% [4] comparable to all best known (non-permanent) forms of birth control I describe this method, explain how it works and elucidate its strengths and weaknesses. STM (also known as natural family planning, fertility awareness, the Billings Ovulation method etc) may be utilized to achieve or avert pregnancy. In this paper, STM as a method of contraception will be examined. The sympto-thermal method informs practitioners, theorists and lay people about contraception without invasive means. This method involves

a. Examining and studying vaginal mucus
b. Gauging basal body temperature and
c. Monitoring cervical os changes.

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STM can be utilized to achieve or avert pregnancy. Most family physicians that are informed about STM know it as a technique

a. Changes in vaginal mucus
b. Basal body temperature and
c. Changes in the cervix-to identify the 72 hour peak
fertility period per month [16].

The combination of cervical mucus observation, temperature
measurement and observation of cervical changes is more
effective than using one of these indicators separately [4,15].
The sympto-thermal method is non-invasive and effective when
properly applied [17-19]. Indeed, misapplication of this method's
rules appears to be the reason for failure, not the technique itself
[19].

Because STM is a skill that needs to be learned, trained coaches
are a fundamental component of this technique. Ideally, each
woman or couple learns this technique from a coach who has
received ample training. The training period may last 1-6 months.
This is an investment of time. It is not an instant fix.

Table 1: Comparison of Various Methods of Birth Control (non permanent).

<table>
<thead>
<tr>
<th>Method</th>
<th>Effectiveness When Used According to Instructions</th>
<th>Side Effects</th>
<th>Cost</th>
<th>Accessibility</th>
<th>Protection Against Stds</th>
</tr>
</thead>
<tbody>
<tr>
<td>STM</td>
<td>97-99%</td>
<td>None</td>
<td>Training is Free or Minimal; BBT thermometer costs $10-20; charts can be bought or printed online</td>
<td>Where there are coaches</td>
<td>None unless used with male or female condoms</td>
</tr>
<tr>
<td>The Pill</td>
<td>92% in the first year of use ~99% with perfect use</td>
<td>Nausea and vomiting, heavy bleeding, abdominal pain, amenorrhea, weight gain or loss, irregular bleeding, breast tenderness, increased breast size, headache [8]</td>
<td>Ranges from $15 to $35 per month</td>
<td>Through prescription by physician (except in special circumstances)</td>
<td>None unless used with male or female condoms</td>
</tr>
<tr>
<td>Latex Barriers alone</td>
<td>Male: 85% Female: 79% [9]</td>
<td>Allergic reaction to latex condoms, irritation of penis or the vagina from</td>
<td>Male: Ranges from $0.50 to $1.00 each</td>
<td>At local pharmacies, grocery stores; over the counter</td>
<td>Latex and Polyurethane condoms protect against most STIs transmitted through seminal fluid and skin to skin contact; areas not covered by the condom are still vulnerable to infection [9]</td>
</tr>
<tr>
<td>Female: Ranges from $2 to $5 each</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spermicides</td>
<td>Spermicide use only (without condoms): 71% in the first year of use 85% with perfect use [10]</td>
<td>May irritate skin [10]</td>
<td>$10-15 for foam bottle or box of film</td>
<td>At local grocery stores</td>
<td>None unless used with male or female condoms [10]</td>
</tr>
<tr>
<td>Injectables eg Depo Provera</td>
<td>97-99.7% [11]</td>
<td>Weight gain, loss in bone density; irregular, heavy or no bleeding; headache, mood swings, bloating, breast tenderness, hair loss, acne and backache [11]</td>
<td>Quarterly injection: $30-$40</td>
<td>At clinics by physicians</td>
<td>None unless used with male or female condoms</td>
</tr>
<tr>
<td>IUD</td>
<td>99%</td>
<td>Mood changes, acne, headaches, breast tenderness, pelvic pain, cramping, excessive bleeding, nausea and weight gain [12]</td>
<td>Copper: $30-80 Progesterone IUD: ~$400</td>
<td>At clinics by physicians</td>
<td>None unless used with male or female condoms</td>
</tr>
</tbody>
</table>

What is the Sympto-Thermal Method?

Zygote formation (i.e. conception) is only possible for 72 hours before ovulation and 24 hours after ovulation [20]. Three components-sperm, egg and fertile mucus -- are necessary for conception. The human ovum only lives for 12-24 hours. Sperm (once in the female reproductive system) can fertilize an egg for approximately 72 hours [21]. Spinnbarkeit mucus, the name given to the cervical mucus produced around the time of ovulation, is only produced for a few days each month. Avoiding pregnancy according to the sympto-thermal method consists of abstaining from penile penetration of the vagina for at least three days
preceeding ovulation and one day after. However, because it is not possible to pinpoint the exact time of ovulation, a time margin of error is built into this method of birth control. The safest time to engage in penetrative sexual activity is when ovulation has definitely occurred. Of the three combined techniques of the sympto-thermal method (cervical mucus observation, basal body temperature graphing, cervical os size and texture changes), the observation of mucus is considered the most reliable of these and some women use it exclusively. The other two techniques are essentially used to supplement mucus observation.

### Table 2: Advantages and Disadvantages of STM.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe-free from side effects</td>
<td>Cannot begin immediately—need to find a coach and spend a few months learning the method</td>
</tr>
<tr>
<td>97-99% effective</td>
<td>Not as useful as a birth control technique for those with various sexual partners, especially sex trade workers; works best when couples are in a monogamous committed relationship</td>
</tr>
<tr>
<td>Provides impetus for more discussion about the body with sexual partners</td>
<td>During cervical os observations there is a possibility of infection if device or fingers are unclean</td>
</tr>
<tr>
<td>Protects against STDs when used with male or female condom</td>
<td>Having a partner check cervical os may be easier physically for some women but may be more difficult emotionally</td>
</tr>
<tr>
<td>Teaches women about their bodies, specifically their reproductive cycles</td>
<td>Can be frustrating for sexual partners when abstinence is required</td>
</tr>
<tr>
<td>Free to learn it</td>
<td></td>
</tr>
<tr>
<td>Materials required are low cost and easily accessible: basal body thermometer, charts, speculum (optional), fertility monitors (optional)</td>
<td></td>
</tr>
<tr>
<td>Can be immediately stopped when pregnancy is desired</td>
<td></td>
</tr>
<tr>
<td>Good choice for those whose cultural/religious beliefs oppose other forms of birth control (eg Roman Catholics)</td>
<td></td>
</tr>
</tbody>
</table>

### Mucus Observation

Inside the cervix are approximately 100 mucus-producing gland-like crypts. The mucus flows downward to protect the uterine cavity from bacterial invasion [22]. The mucus undergoes observable changes due to cyclical hormonal influences from the hypothalamus. The hypothalamus produces and secretes hormones and releasing factors that act directly on the pituitary gland. The pituitary gland hormones, which regulate reproductive functions, are FSH (follicle-stimulating hormone) and LH (lutenizing hormone). FSH and LH target primarily the ovaries (lutenizing vagina). This mucus nourishes sperm, allowing only viable sperm to make the journey to the egg and preventing sperm from being swallowed by phagocytes Table 2. It arranges itself into strands of micelles on which sperm are able to flow easily. The last day of this type of mucus is called the peak, and ovulation usually occurs the next day. Self-determination of the peak day of cervical mucus is a very accurate means of determining peak fertility and a fairly accurate way to determine the end of fertility time [16]. With the onset of progesterone, the mucus may disappear immediately or may be scant, thick, sticky, opaque, white or yellowish. The vaginal environment is acidic and hostile to sperm. It creates a thick criss-cross barrier across the cervix, keeping sperm and anything else from moving past the cervix into the uterus for most of the cycle it forms a mucus plug, which acts as a gate. As estrogen levels rise, the mucus becomes liquidly, clear and slippery. It is stretchy and threadlike. It is called ‘spinnbarkeit’ at this point, and is considered the most fertile mucus. It has an alkaline pH and is produced in large amounts (approximately 10 times its earlier volume) to coat the surface of the normally acidic vagina. This mucus nourishes sperm, allowing only viable sperm to make the journey to the egg and preventing sperm from being swallowed by phagocytes.

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approximately three times daily and is easiest to check when using the toilet. After a bowel movement is a particularly effective time, as mucus usually flows out quite freely due to the contractions in the rectum.

**Basal Body Temperature (BBT)**

BBT is the body’s resting temperature, measured after at least 3 hours of sleep. First thing in the morning, before any movement, is the most accurate time to take BBT. BBT drops just before ovulation and rises just after ovulation, the elevation lasting until the onset of menstruation. BBT is thus an indicator of ovulation. Using a specialized thermometer for BBT (available at most drug stores), it is possible to detect significant temperature elevations in the post-ovulatory phase. Because the day on which ovulation occurs is variable, BBT is not a useful indicator of fertility in the pre-ovulatory phase. Charts for both temperature and mucus changes show the processes simultaneously occurring (Women with thyroid problems or constant fevers may experience difficulty using BBT as an indicator of ovulation).

**Cervical Os Changes**

Observing cervical os changes is another form of fertility awareness, which can be used to supplement the sympto-thermal method. Os is the Latin word for ‘hole’. In general, under the influence of estrogen the cervical os is soft, moist, light pink and open. It becomes softer and more open as estrogen levels rise and ovulation approaches. When estrogen levels are low, it is harder, darker pink, drier and closed, with the texture of the tip of the human nose. Women and/or their partners may use their fingers to feel the os or use a speculum to view the cervix and a finger to palpate it. Being able to view the cervix serves the additional purpose of checking for unusual signs, which may signal potential infection. For women trying to become pregnant, scanty mucus production may be of vital importance. A number of excellent manuals with clear instructions, sample charts and graphic illustrations are available [23-26].

**Effectiveness**

Only 3 methods of birth control are 100% effective: total abstinence, male castration (not vasectomy) and removal of both ovaries (not tubal ligation) [27]. One of the safest methods to prevent pregnancy with a high successful rate is the sympto-thermal method. Effectiveness depends on the correct use of the method which depends, in turn, upon the partners’ cooperation and communication. This may be challenging in a situation where one partner dominates the other in the bedroom. This technique works best in more egalitarian sexual relationships. The reality of unequalitarian sexual relationships between men and women is thus a limiting factor in the application of this technique. As male/female relationships become more equal and communication becomes more open, STM has greater potential. Also, the effectiveness of STM may vary depending on the level of the desire to avert pregnancy – motivated couples are more likely to follow the rules of STM which will therefore, result in no unplanned pregnancies. Different sources cite the effectiveness of STM with a wide range of favourability. A 2005 study showed that the sympto-thermal method makes it possible to avoid pregnancy with a method effectiveness of 0.3% [5]. A recent Human Reproduction study found that using the sympto-thermal method correctly led to a rate of 0.4 pregnancies per 100 women per year [19]. Lead researcher Dr Petra Frank-Herrmann explains that “the STM is a highly effective family planning method, provided the appropriate guidelines are consistently adhered to” [4,15,19,28,29]. Despite the fact that the sympto-thermal method is efficient cheap 100% reversible and without side effects, it continues to be uncommon and for many couples, unfamiliar method of contraception. This lack of knowledge is likely due to a number of causes:

- a) Most primary care providers are uninformed about the effectiveness of STM and confuse it with the rhythm method.
- b) Culturally, there is an inherent trust in medical science and drugs. Mentally contrasting the barrage of media reports, corporate advertising and exaggerations about unnatural birth control is therefore difficult.
- c) The “pop the pill” culture in which we live likes health care to work instantly.
- d) Many people are willing to abdicate responsibility for their body to professionals; this method requires self-knowledge and responsibility.

Of those who are aware of STM:

- a) Some may have difficulty with breaking cultural and religious taboos of encouraging patients to touch the genital area.
- b) Some are convinced that STM is too much work.
- c) Some do not wish to invest the time in becoming effectively trained.

It is a myth that STM requires too much work. Many women keep journals. Jotting mucus observations and temperature readings requires less than two minutes a day. Every woman urinates a few times daily. Examining cervical mucus while wiping requires a few seconds. It is not harder than remembering to take a pill once a day at the same time each day.

**Drawbacks**

Effectiveness of this method relies largely on the mutual motivation of couples and the quality of teaching they receive. The responsibility of couples to cooperate with each other and trust each other is great. The method also takes time to learn; up to six months of charting is required for a woman to learn her cycle and feel comfortable with the technique. People who have low literacy skills might experience problems in charting, although they may devise pictures or other means of documenting their mucus, temperature and cervical os changes. Other disadvantages of the
technique include complications due to vaginal infections or other significant life stresses which may interfere with women's cyclical patterns [3]. A small minority of women may not exhibit clear-cut mucus/temperature patterns despite diligent observations. If it is practised in a heterosexually relationship involving unprotected penile penetration of the vagina, both couples ought to be tested for STIs (sexually transmitted infections), especially HIV (Human Immunodeficiency Virus). This is the same for the Pill, IUD, injectable contraceptives and others. Latex barriers such as condoms and dental dams are effective protection against STIs and ought to be utilized in conjunction with STM for couples who are uncertain about their status vis-à-vis STIs. A high level of trust in partners' behaviour is required in order to be assured that no STIs will enter into the relationship. For couples who do not wish to use barrier methods or periodic abstinence from traditional intercourse, the method can be frustrating. This frustration, however, is possible to overcome. Most people in particular are socialized into believing that penetration of a woman's vagina is the most pleasurable sexual act. Yet the limit of possibilities is only bound by the imagination.

In Closing

Family physicians ought to be aware of the full range of birth control options available physicians are less likely to offer methods of birth control to their patients if they are unaware of them [4]. This paper described STM, a positive non-invasive and highly effective means of birth control. The root of the word doctor is docere, which is the Latin word for teacher. By going back to the roots of medicine, family physicians have the option of teaching patients about an effective system of birth control that could positively influence their lives forever. While family physicians do not have the time to teach this method themselves they can refer to teachers of this technique. Around the world there a few organizations that teach this technique, including Serena [30], Couple to Couple League [31], and Northwest Family Services [32]. Some of these organizations are religious in nature and may hold beliefs that do not agree with patients. The secular organizations would better serve this group of patients. No form of impermanent birth control is 100% effective. STM is as effective as other impermanent methods when used according to instructions. It has no side effects. These two reasons alone make this system of birth control worthy of attention; family physicians can easily add it to their list of types of birth control. Instead of a prescription, this method requires a referral. For women and couples, learning about STM can be an empowering experience which provides tools for limiting or encouraging birth in a natural, low cost, efficient manner. It does not work for everyone. Neither does the diaphragm, pill, condom or any other method. Natural family planning (NFP) methods, including STM, can be extremely effective when used correctly by motivated couples, yet a persistent lack of knowledge hinders more widespread use. Physicians and public health nurses who counsel women for preconception concerns are in an excellent position to fill the knowledge gap and to advice couples regarding the optimal timing of intercourse to achieve pregnancy.

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