Natural Contraceptive Methods

Kirsten M. Vogelsong, PhD

UNDP/UNFPA/WHO/World Bank
Special Programme of Research Development and Research Training in Human Reproduction
Advantages of Natural Methods

• Knowledge of fertility
• Self-reliance
• Independence from medical services
• Freedom from drugs and devices
• Freedom from side-effects and risks
• Reduced or no costs
• Communication and intimacy with partner
• In line with religious and/or cultural norms
Disadvantages of Natural Methods

- No protection from STIs/HIV (except abstinence)
- Requires training by qualified instructor
- Unforgiving of incorrect use
- Requires consent, co-operation of partner
- Less effective for women with irregular cycles
- Requires regular monitoring and recording
Fertility Awareness

What is it?

• Understanding basic information about fertility and reproduction
• Identifying signs and symptoms of fertility during the woman’s fertile cycle
• Applying this information, discussing it with a partner and health providers
Fertility Awareness

Why is it important?

- Fundamental to understanding and making informed decisions about family planning choices and reproductive health
- Fundamental to understanding and using natural family planning, whether to avoid or plan a pregnancy
- Helps women and couples value and protect their fertility and reproductive health
Natural Regulation of Fertility

- Abstinence
- Withdrawal
- Periodic Abstinence/Rhythm
- Lactational Amenorrhea
### Distribution of Contraceptive Use Prevalence

**World wide contraceptive use (Married Women of Reproductive age)**

<table>
<thead>
<tr>
<th>Contraceptive</th>
<th>No. of users (Millions)</th>
<th>Users (%)</th>
<th>First year failure rate (%) - Typical use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total users</td>
<td>648</td>
<td>61.9</td>
<td></td>
</tr>
<tr>
<td>Female sterilization</td>
<td>210</td>
<td>20.1</td>
<td>0.5</td>
</tr>
<tr>
<td>IUD</td>
<td>156</td>
<td>14.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Oral contraceptives</td>
<td>82</td>
<td>7.8</td>
<td>5.0</td>
</tr>
<tr>
<td>Condom</td>
<td>53</td>
<td>5.1</td>
<td>14.0</td>
</tr>
<tr>
<td>Male sterilization</td>
<td>43</td>
<td>4.1</td>
<td>0.15</td>
</tr>
<tr>
<td>Injectables</td>
<td>27</td>
<td>2.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Vaginal barriers</td>
<td>4.2</td>
<td>0.4</td>
<td>20.0</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>32</td>
<td>3.1</td>
<td>19.0</td>
</tr>
<tr>
<td>Rhythm</td>
<td>27</td>
<td>2.6</td>
<td>25.0</td>
</tr>
<tr>
<td>Lactational Amenorrhea</td>
<td></td>
<td></td>
<td>0.2</td>
</tr>
</tbody>
</table>

*UN Population Division, 2001*
Abstinence

• Refrain from all penetrative sexual activity
• Effective in preventing pregnancy and STIs/HIV
• Effective programs can be targeted to young people and unmarried adults in order to delay first sex and reduce the number of partners
Withdrawal

• Has been in use for centuries
• Only male-initiated natural method
• Failure rates 4-17% (perfect-typical use)
• Prevalent and effective in several countries
• Reasons for use:
  – concerns about side-effects of other methods
  – partner preference
  – no cost
Periodic Abstinence

Periodic Abstinence refers to a variety of methods used to prevent pregnancy

• Based on identifying the woman’s fertile days
• Abstinence OR avoiding unprotected sex during the fertile days prevents pregnancy
Use of Periodic Abstinence

- Of married women worldwide using some form of family planning, approximately 15% claim to be using a form of periodic abstinence.
Periodic abstinence

Use is based on assumptions

- The oocyte (egg) lives for 1 day in the female reproductive tract
- The sperm can live for 4-5 days in the female reproductive tract
- Ovulation occurs about 14 days before the next menses
Periodic Abstinence

Probability of Pregnancy from Intercourse on Days Relative to Ovulation

Source: Wilcox et al. (1998)
Periodic Abstinence
Periodic Abstinence

Variations in cycle length

The interval between ovulation and the next period remains constant.

Note: There is no consistent relationship between a period and the following ovulation.
Periodic Abstinence Calendar Methods

- Uses calculations to determine the fertile period of each cycle
- A variety of calculations are used.
- Efficacy ranges between 85-91% in the first year of use
Periodic Abstinence
Calendar Methods

EXAMPLE

• Client #1’s last 6 cycles ranged in length from 27 to 30 days.

• She is taught the 11-18 rule: she will subtract 18 from the number of days in her shortest cycle (27-18=9) and 11 from the number of days in her longest cycle (30-11=19).

• Her fertile period is determined to be between days 9 and 19 of her next cycle.
Periodic Abstinence

Standard Days Method

- Simple fertility awareness-based method
- No calculation or observation
- “Standard rule” or “fixed window”
- Identifies days 8-19 of the cycle as fertile
Standard Days Method

Tool for teaching and use

- The method is designed for women with regular cycles 26-32 days long
- The necklace has 32 beads
  - #1 is red
  - #2-7 are brown
  - #8-19 are white
  - #20-32 are brown
Standard Days Method

Tool for teaching and use

Move the band to the red bead when your period starts

Also mark this day on your calendar

Move the band every morning

Always move the band from narrow to wide end of bead
Standard Days Method

Tool for teaching and use

Band on WHITE bead, abstain from unprotected intercourse

Band of BROWN bead, you may have intercourse
Standard Days Method

Efficacy Trial

• Multi-site prospective efficacy trial recently completed
• Services provided through existing programs in Peru, Bolivia and the Philippines
• Clients followed monthly for 13 cycles
Standard Days Method

Efficacy Trial - Study Sites

N=478 couples
Standard Days Method

Efficacy Trial - Results

Are couples able to use the SDM?

Total Cycles 4035

% cycles with correct use 97%

Correct use is defined as abstinence or use of another method during the fertile window (days 8-19).
Standard Days Method

Efficacy Trial - Results

Cumulative probability of pregnancy over 13 cycles

Correct use
(w/abstinence)

Correct use
(abstinence + other method)

Typical use
(Correct + non-compliant)

4.8%

5.7%

12.0%
# Standard Days Method

## Efficacy Trial - Results

<table>
<thead>
<tr>
<th>Method</th>
<th>Typical use</th>
<th>Correct use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chance</td>
<td>85%</td>
<td>85%</td>
</tr>
<tr>
<td>Spermicides</td>
<td>26%</td>
<td>6%</td>
</tr>
<tr>
<td>Female condom</td>
<td>21%</td>
<td>5%</td>
</tr>
<tr>
<td>Diaphragm</td>
<td>20%</td>
<td>6%</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>19%</td>
<td>4%</td>
</tr>
<tr>
<td>SDM</td>
<td>12%</td>
<td>5%</td>
</tr>
<tr>
<td>Male condom</td>
<td>14%</td>
<td>3%</td>
</tr>
<tr>
<td>Pill</td>
<td>5%</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

Emergency contraception reduces the risk of pregnancy by ±75%.
Standard Days Method

Efficacy Trial - Lessons Learned

- Sensitize and train providers
- SDM is easy to learn and use
- Many couples are willing and able to use the method correctly
- Involving men is needed for successful use
- Many men can and do support use of SDM
- The necklace is an effective tool
- Some will prefer to use with other methods
- Correct use increases over time
Periodic Abstinence
Observation-based Methods

• Rely on the observation of signs and symptoms of fertility

• Signs are induced by hormones and include:
  – cervical secretions
  – cervix
  – basal body temperature
Observation-based methods

Ovarian Hormones

- Oestrogen
- Progesterone

Day 1

Day 28
Observation-based methods

Ovarian Hormones

- Oestrogen
- Progesterone

Ovarian Activity

- Growth and Maturation of Follicle
- Ovulation
- Growth and Degeneration of Corpus Luteum

Variable length

Constant length
Observation-based methods
• Increase in temperature is an indication that ovulation has occurred; it is used to indicate the end of the fertile time

• Abstain from unprotected intercourse until after 3 days of continuous increased temperatures

• Probability of pregnancy between 2-20%
Observation-based methods

Temperature Method

CHANCES OF CONCEPTION

Study by Professor John Marshall & Dr. J Barrett

Days Relative to Temperature Rise

Before temperature rise

After temperature rise

Probability % of Conception on any day

Temp. rise

-5  -4  -3  -2  -1  0  1  2  3

13  20  17  30  14  7
Observation-based methods
**Observation-based methods**

**Mucus Method**

- Abstain during menses
- Abstain every other day during dry days
- Abstain between Day #1 of mucus and 4th day after peak mucus
- Can be used by women with irregular cycles
- Probability of pregnancy between 3-20%
Observation-based methods

**Mucus Method**

Early Mucus
Scanty, thick, white, sticky

Transitional Mucus
More, Thinner, cloudy, stretchy

Highly fertile mucus
Profuse, thin, transparent, Stretchy
Observation-based methods

**Sympto-thermal Method**

- Observation of more than one indicator of fertility
- Cervical secretions and temperature
- Position and feel of cervix; calendar
- Probability of pregnancy between 2-20%
Observation-based methods

Symptothermal Method
Observation-based Methods

The TwoDay Method

- Simple observation-based method
- Based on the presence or absence of cervical secretions
- If a women notices any secretions on the current or previous day, then she is probably in her fertile phase
- If she notices no secretions on either day, then she is probably not fertile
- Clinical trials ongoing to test efficacy
Lactational Amenorrhea

- Post-partum breastfeeding to achieve contraception
- Suckling stimulates the production and release of prolactin and B-endorphin
- Prolactin inhibits LH synthesis and release; endorphins suppress GnRH release, and therefore ovarian stimulation is inhibited and Ovulation is blocked
- Efficacy is up to 98% for 6 months
Lactational Amenorrhea

**Definition of Breast-feeding**

- **Breast-feeding**
  - **Full**
    - No other liquid
    - No other solid
  - **Almost Full**
    - Water-Juice-Vitamins
    - 1 or 2 token feeds
  - **Partial**
    - >80% of feeds
  - **Token**
    - <20% of feeds
**Lactational Amenorrhea**

**LAM Algorithm**

**Questions to ask the Mother**

1. Have the mother's periods returned?  
   - Yes
   - No

2. Is the mother supplementing regularly or allowing long periods without breastfeeding, either by day or night?  
   - Yes
   - No

3. Is her baby more than six months old?  
   - Yes
   - No

   **The mother's chance of pregnancy is increased. Advise her to begin using a complementary family planning method and continue breast-feeding for the child's health.**

   **There is only a 1-2% chance of pregnancy at this time.**
Natural Contraceptive Methods

The Future

• Continue to simplify and test simple methods
• Mainstream methods into programs
• Streamline the training and follow-up
• Methods to assist in determining the fertile window
Home Test Kits for Ovulation Prediction and Detection

- Uses urinary metabolites and a computer chip to identify the beginning and end of the fertile time
- Can predict the fertile window 94% of the time
- Currently available in certain European countries

PERSONA (Unipath, Ltd)
Home Test Kits for Ovulation Prediction and Detection

BIOSELF

- Monitors temperature and cycle day
- Detects the fertile window in over 90% of cycles
Natural Contraceptive Methods

For More Information:

• Georgetown University Institute for Reproductive Health http://www.irh.org

• The Fertility Awareness and Natural Family Planning Service UK http://www.fertilityuk.org

• The Billings Ovulation Method of NFP http://billings-centre.ab.ca/