

Saliva ferning test and the fertile period

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Ovulation detection

IMPORTANT

- those who would like to conceive
- those who would like to avoid a pregnancy

Self-monitoring of ovulation

- economical
- simple to do
- allows greater autonomy for the couple
- may improve user's compliance
- may improve method efficacy

(Ferreira-Poblete, et al. Adv in Contracep, 1997)

Fertility Markers

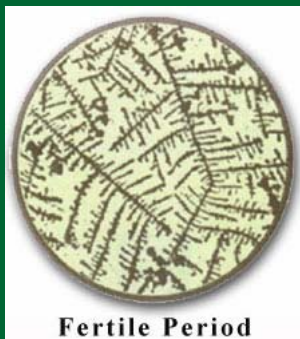
Direct Methods:

- Transvaginal Ultrasound- ovum detection, follicle size, corpus luteum, fluid in the cul de sac
- Hormonal: **urinary LH peak**, estrogens, progesterone estrogen conjugates, etc.
- Enzymes: B-glucoronidase, alkaline phosphatase, etc.

Clinical Markers:

- BBT, Cervical mucus changes or Billing's method, saliva electrical resistance, **saliva ferning/crystallisation**

Saliva ferning



Hypothesis:Ovulation

- increased 17-beta estradiol leads to increase in NaCl in saliva
- crystallisation

picture of mini-microscope



- **1**- Cover
- **2**- Optics
 - 2.1- Focus Adjustment
 - 2.2- Glass Surface*- Place your saliva sample on this portion of the optical lens
- **3**- Housing
- **4**- Light Source
 - 4.1- Light Button
 - 4.2- Batteries- **15 year battery included.**

Objectives:

- to review the studies made on the saliva ferning method in the determination of the fertile period,
- to evaluate the cost-effectiveness of the mini-microscopes marketed for ovulation detection

Materials & Methods:

Database Search:

- saliva+fertile period+family
planning+contraception+monitoring

Analysis:

WHO User's guide to medical literature for the evaluation of diagnostic tests

Jaeschke R et al JAMA Mar 1994;271(9):703-707

Daya S. Seminars in Reproductive Endocrinology,1996;14(2):101-109

Description of studies made on saliva ferning

Study	I	II	III	IV	V
# of subjects	58	12	32	40	36
mean age	30.5	34.6	31.5	28.4	30.2
	(18-43)	(30-44)	(19-42)	(21-42)	(20-42)
# of cycles tested /subject	5	2	4	4	2
study origin	Csek	Italy	USA	Italy	New Zealand
year	(1992)	(1993)	(1998)	(1999)	(1998)

I. Rotta et al (1992)

mini-microscope vs.

ultrasound, estradiol, progesterone, LH, prolactin, BBT, FSH

N=58; total of 120 cycles, 5 months

drop-outs: 11 cycles due to flu epidemic

Results:

78.5%-ferning noted in the peri-ovulatory period

84% - no ferning during the infertile period

**special thanks to Dr. Magdalena Kholik for the translation*

II. Barbato et al. (1993)

mini-microscope vs. cervical mucus appearance, BBT

N=32, 2 menstrual cycles; no drop-outs

Results:

- (+) ferning in 28 (87%)
- ferning began 1-2 days before cervical mucus appearance
- lasted for a mean of 6.2 days
- occurred 7.2 days before the temperature shift
- no pattern noted in 4 cycles

III. Fehring et al.(1998)

- mini-microscope vs. urinary LH and cervico-vaginal mucus appearance, BBT
- N=12; number of cycle/women= 2

Results:

- ferning lasted a mean of 6.2 days
- began 1-2 days before the appearance of cervico-vaginal mucus
- occurred 7.2 days before the first day of temperature shift
- strong correlation with LH peak($r=0.99$, $p \leq 0.001$)
- strong correlation with cervical mucus ferning ($r=0.98$, $p \leq 0.001$)

con't:Fehring et al.

- no discernible beginning or end of the fertile period with either saliva or cervical mucus ferning
- ferning was demonstrated all throughout the cycle in one subject
- saliva ferning was noted in a MALE !

IV. Guida et al (1999)

- minimicroscope vs. ultrasound, urinary LH, cervical mucus, BBT, saliva beta-glucoronidase
- N=40, 4 cycles/subject
- 100% correlation between US and urine LH
- saliva ferning (+) in only 36.8%,
- but 58.7%: uninterpretable (?)

con't. Guida et al.(1999)

- ferning was given a scoring system(0-3)
- interpretation of the results were left to the subjects themselves
- no control measures that may affect NaCl concentration in saliva was employed

V. Didi et al (1998)

mini-microscope vs.

- I-urinary LH (17)
- II-BBT (13)
- N= 30; 2 menstrual cycles/subject

Table

	I (with LH measures)	II (with BBT measures)
sensitivity	53%	86%
specificity	72%	14%
likelihood ratio for a negative test	0.7	1.0
likelihood ratio for a positive test	1.9	1.0

con't. Didi et al. (1998)

- they could not find a correlation between saliva ferning and saliva estradiol levels
- (+) in 8 out of 10 postmenopausal women did not take HRT
- positive in 10 out of 10 MEN tested.

Recommendations:

- standardisation of tests
- randomised trials with bigger sample size
- control factors that may affect NaCl in saliva prior to testing
- test under different environmental conditions

Conclusions:

- The saliva ferning test is a non-specific phenomenon, with a bad correlation with the fertile period as compared with sonography, urinary LH and clinical parameters of cervico-vaginal mucus appearance and the BBT, and
- we strongly discourage the use and promotion of the mini-microscopes for ovulation detection for the purpose of family planning, unless further studies are made to support this claim.

Thank you...



See you again!