

Fertility Apps Do not Help You Get pregnant

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Beyond Regular Intercourse

Many women use fertility apps to track their menstrual cycle and time intercourse. Tracking cycles, using apps as method of registering when the cycle started and ended is fine. The use of apps to time intercourse is not supported by any scientific evidence. We know for a long time that conception is likely to occur when exposure to sperm takes place in the six days that end in ovulation.

Why Fertility Apps are Unlikely to be Helpful

An analysis of large number of apps and websites indicates that only a minority will yield that fertile window and thus are unlikely to help women get pregnant.

Variation in the length of menstrual cycle 21 to 35 days will also means that ovulation day is very difficult to predict with methods readily available for women. Early ovulation (day 6 or 7 of the cycle) as well as late ovulation (day 18 to 20) will be missed. Conception will be a possibility in these cases for women having regular intercourse.

Sperm survives for at least 3 days. The WHO in a large study indicates that intercourse 3 times a day yields highest pregnancy rate among normal couples. Conceptually if you have intercourse 3 times a day, after menses, you have exposure to sperm all the time and there id no need to time ovulation. More accurate timing of ovulation using many self administered

methods has so far to demonstrate increase in pregnancy rate. More recently survey of more technology mediated methods also failed to show an increase in pregnancy rate beyond regular intercourse.

Effectiveness of Fertility Apps

Beware of many writings about [fertility apps](#), what do they do and what do they do not do...They miss the most important piece of information. Do they enable you to get pregnant at higher odds than those not using the app? And of course they cannot accurately answer that question as they did not do the research that prove an improvement in pregnancy rate. Many articles about fertility apps start with the narrative assumption that they are effective without offering a reference or proof.

One recent scientific survey of over 50 apps indicated that most of them even miss the fertile period. Insisting on intercourse at a specific day is not helpful also can impair performance in men.

How Long Have you Been Trying to Conceive (TTC)

It's exactly how long have you been having intercourse not protected by a birth control (pills, condom), irrespective of use of apps or any other method of timing ovulation. Not accounting for this period, artificially shorten the duration of infertility and delay seeking medical care.

It's great to use technology when it helps, it gives women a sense of empowerment. But when technology is not proven to be helpful then simple proven solutions should be used.

Possible Harm Caused by Using Apps

When you use fertility apps alone to conceive you are in effect

1. Depriving yourself of other fertility tests. You will not

know if your partner sperm is normal or if your Fallopian tubes are open. Your egg reserve is also not evaluated. All these factors are important for decision making about fertility and how long you should continue to try using the app. For example, if your tubes are blocked or your husband sperm is low intercourse close to your ovulation will not be helpful leading to more time wasted and no improvement in chance of conception.

2. Preconception testing and counseling performed at initial fertility evaluation is skipped. That means the risk of common genetic and other diseases are not tested for e.g cystic fibrosis, sickle cell disease, spinal muscular atrophy, Ashkenazi Jewish Profile and others. These increase the risk of transmission of genetic diseases to the baby. Other infectious diseases are not tested for too e,g hepatitis, immunity to Rubella and chicken pox.

3. [Serious security and privacy flaws has been cited for some fertility apps](#). Fertility apps ask users for intimate details including weight, sex life, pregnancy, miscarriage.. [A recent consumer report](#) indicated that someone with no hacking skills can access all these data. Data are also shared without permission with other apps

Do not use apps and have regular intercourse 3 times a week. Fertility Apps Do not Help You Get pregnant beyond Regular Intercourse and Delay a Complete Fertility Testing.

What is my Chance of

Delivering a Baby without Fertility Treatment?

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Women may ask what are my odds of delivering a baby in the next 12 months without any fertility investigation or treatment?

Let me start by saying that a consultation with a reproductive endocrinologist can help you identify any fertility factors unknown to you. Moreover, evaluation of your ovarian reserve can give you an estimate how long can you continue to try. Safety is another aspect of consultation as it can identify medical, obstetric and genetic risk factors to having a baby.

Chance of Spontaneously Pregnancy in One Year (treatment independent)

Ignoring all these aspects, the chance of getting pregnant with intercourse alone, within one year, is strongly related to age. Data from The American Community Survey (ACS) and National Center for Health Statistics (NCHS) based on study of millions of American women can provide an approximate answer.

If one 100 women living in The US tried to conceive, the odds of giving birth in the coming 12 months based on their age group would be

Age (y)	ACS (%)	NCHS (%)
20-24	21.5	23.2

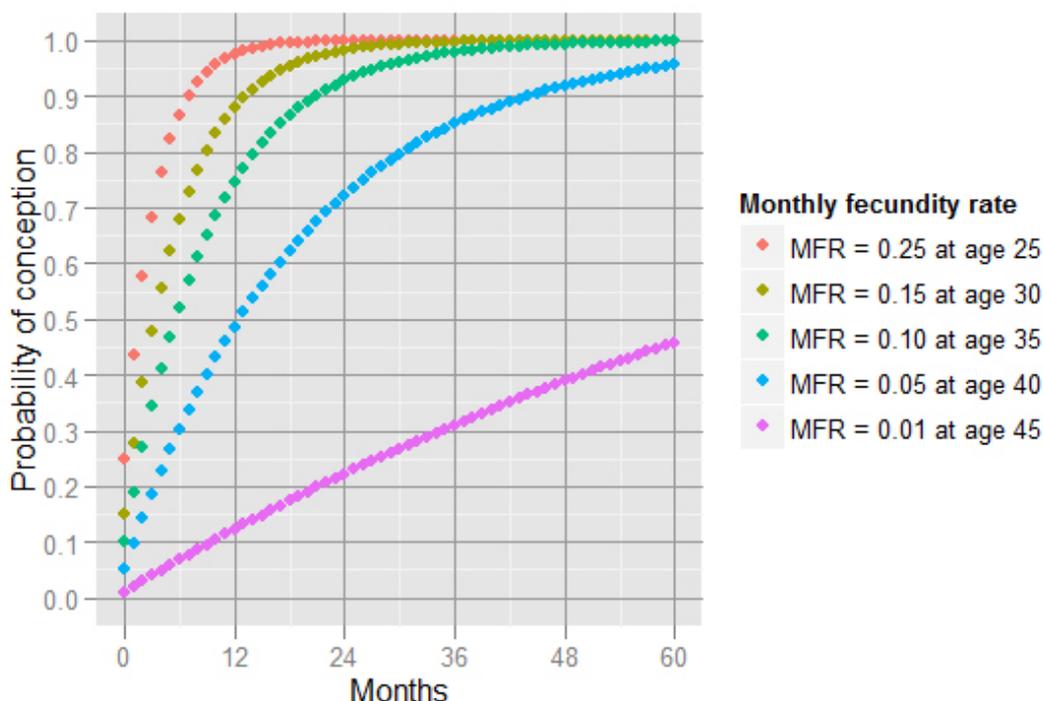
25–29	26.9		
	28.4		
30–34		25.6	26.6
35–39		11.9	14.5
40–44		2.8	5.0
45–50		1	2.3

[ACS American Community Survey 2012.](#)

[NCHS National Center for Health Statistics 2013.](#)

Monthly Fecundity Rate

The odds of getting pregnant and delivering a child each month is also a function of age.



The Monthly Chance for Conceiving and Delivering a

Live Born is Related to Maternal Age

One other aspect to consider is how long have you been trying = how long have been having intercourse with no birth control methods (irrespective of timing of intercourse or any other arrangements). The longer you have been trying with no success, the lower the chance for spontaneous conception.

The chance for spontaneous conception can give women realistic guidance of their odds for spontaneous pregnancy with time and minimize delay in seeking fertility consultation that can be detrimental to future fertility.

Hepatitis B: what do you need to know if trying to conceive

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Hepatitis B is relatively common in the US and worldwide. There are approximately one million individuals living in the US with chronic hepatitis B. According to the CDC, the highest rate of infection occurs among those 20 to 49 years old. Approximately 5% to 10% of adults and children older than age 5 with hepatitis B infection go on to develop chronic infection. Globally, 350 million individuals live with chronic hepatitis B infection, according to WHO and other sources. One third of those infected reside in China ([\[link\]](#)). It is more common in Asia, Saharan Africa and some areas in South America. Migration and medical tourism may increase the magnitude of hepatitis B problem in the US. In Asian countries the prevalence is slightly higher in men and is about 10% of adult population. Universal vaccination of all infants at birth and vaccination of at risk individuals e.g type I and II diabetes, sex partners of hepatitis B infected individuals, men who have sex with men, travelers to high risk areas, can prevent transmission of hepatitis B.

Reproductive endocrinologists and fertility specialists are responsible for detection of hepatitis B in partners and prevent the transmission of hepatitis to non infected partner and newborn. Women and men are tested for hepatitis B at the time of initial fertility consultation. Abnormal results are interpreted and measures are taken to avoid transmission to others, during natural conception and with the use of assisted reproduction (IVF).

Hepatitis B Discordant Couples Discovered Prior to Fertility Treatment

One of the major means of transmission of hepatitis B is sexual intercourse. At initial consultation if one partner is hepatitis B Surface antigen positive (HBsAg) indicating chronic infection, vaccination of the other partner will most likely prevent the transmission of hepatitis B during attempts of natural conception and fertility treatment. The vaccine is administered three times at 0, one month and 6 months. High levels of Hepatitis B surface antibody (anti-HBs) indicates immunity.

During fertility treatment, when the male partner is infected and female partner is not, modification of sperm washing techniques minimize the risk of hepatitis B transmission. These include separation of sperm from seminal fluid and then testing of the sperm for hepatitis B before use IUI or intracytoplasmic sperm injection (ICSI). The use of ICSI may reduce but not eliminate the transmission of hepatitis B virus (controversial).

Prevention of Hepatitis B transmission from Egg Donors

Egg donors are initially screened through careful history to exclude those exposed to risk factors, then a complete physical examination. They are also initially screened for viral infections including hepatitis B. Within one month of egg retrieval, donors are retested using conventional labs as well as DNA based testing for hepatitis B (and hepatitis C and HIV) to further minimize the risk of transmission.

Prevention of Hepatitis B transmission

from Sperm Donors

Sperm donors undergo a careful questionnaire related to risk factor, followed by examination and laboratory screening. Sperm is obtained and frozen and quarantined. Donors are then retested using FDA approved laboratories to further minimize the risk of transmission of infectious diseases including hepatitis B.

Prevention of Hepatitis B transmission to Gestational Carriers

Male and female partners (intended parents) are tested in a manner similar to sperm and egg donors. If testing was not possible, the carrier is carefully counseled that FDA mandated testing is not followed. In case of a hepatitis B carrier partner, the carrier is vaccinated prior to transfer of embryos.

Low Temperature Storage of Cells & Tissue from a Hepatitis B infected individual

There were few reported cases of transmission of hepatitis B from frozen tissue. Those cases did not involve sperm, eggs or embryos. As a precaution, reproductive cells from infected individuals are frozen in separate tanks than those not infected. More recently, the use of closed systems that do not allow cells to touch liquid nitrogen in the tank, the use of nitrogen vapor instead of liquid and the sterilization of nitrogen using ultraviolet rays can further minimize the risk of transmission.

Hepatitis B Discovered During Pregnancy

A hepatitis B infected mother have a small risk of transmission of the virus to the fetus during pregnancy. The risk of transmission, however, is significant at the time of delivery. Sometimes medical treatment of mothers is indicated

with anti-viral medications to minimize this risk after consultation with a maternal and fetal medicine specialist.

All newborn to a hepatitis B infected mother should receive at birth

i. Hepatitis B immune globulin (HBIG) to neutralize a virus acquired from the mother and ii. Hepatitis B Vaccine to produce long term immunity.

Careful screening of intimate partners, egg and sperm donors can markedly reduce the chance of hepatitis B transmission during natural conception and IVF.

Sperm Analysis in Natural and Assisted Conception

Sperm analysis is the initial test for evaluation of male fertility. Components of **sperm analysis** include volume, count (concentration), movement and shape of sperm cells.

Normal Sperm Analysis

Sperm volume: the total amount of fluid produced. Commonly 1.5 mL or more.

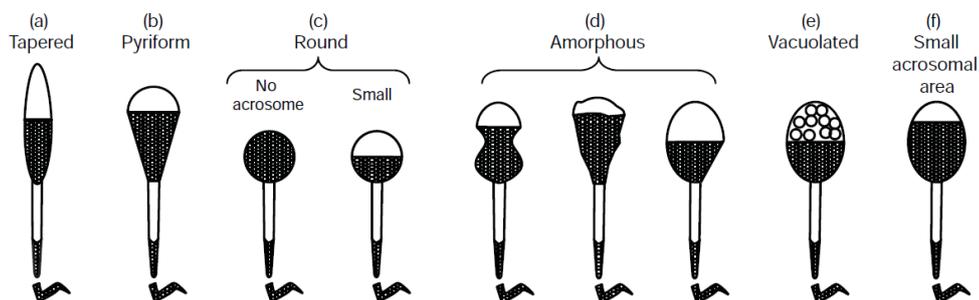
Sperm count: number of sperm in each mL of fluid. Normal concentration is 15 to 20million per mL. Total count= volume x concentration (count).

Sperm motility: % of sperm with vigorous or moderate movement. Total motile sperm count=volume x concentration x %motility

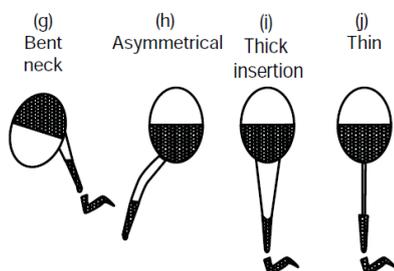
Sperm morphology: Shape of sperm using strict (Tygerberg,

Kruger) criteria 4% normal or more

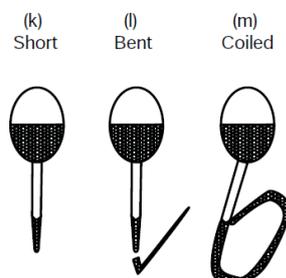
A. Head defects



B. Neck and midpiece defects



C. Tail defects



D. Excess residual cytoplasm



Strict Sperm Morphology

Lower reference limits for men whose partner conceived within 12 months after stopping use of contraception had the following parameters (WHO manual , 5th ed.) are:

Semen volume (ml) 1.5 (1.4–1.7)

Total sperm number (10^6 per ejaculate) 39 (33–46)

Sperm concentration (10^6 per ml) 15 (12–16)

Total motility (PR + NP, %) 40 (38–42)

Progressive motility (PR, %) 32 (31–34)

Vitality (live spermatozoa, %) 58 (55–63)

Sperm morphology (normal forms, %) 4 (3.0–4.0)

All parameters should be interpreted in conjunction with clinical information. If abnormal it can be repeated in 2 to 3 months.

How much sperm is enough?

Evaluation of male fertility through sperm analysis is complex. Clinical factors in history and examination should be considered. Total sperm count in the specimen is an important factor e.g low sperm morphology in specimen of 200 million sperm may have a different effect than low morphology in a specimen of 30 million sperm. Although there are notable variations in a sperm sample of the same man over time, there is no evidence that repeat evaluation of semen is helpful in managing infertility in a female partner.

Since we have very limited tools (medications, supplements, surgery) to meaningfully improve sperm parameters and fertility, a practical management of fertility due to male factor is:

>10 million motile sperm: suitable for natural conception and IUI

2-10 million motile sperm: suitable for IVF

<2million motile sperm or strict morphology <2% suitable for IVF with ICSI (intracytoplasmic sperm injection)

IVF + ICSI is indicated if surgical sperm harvest is needed and some cases of retrograde ejaculation and anti-sperm antibodies.

Can the sperm analysis be improved?

The count, motility and morphology can sometimes be improved (lifestyle modifications, medicine, surgery). Two important tips to consider though

a. In the majority of cases, there is no evidence that this improvement increases the odds of a pregnancy in female partner

b. The delay in treatment is sometimes critical for women with

low egg reserve while they wait for their partners to improve their sperm parameters