

Fertility and Infertility

Grades 11 and 12, Lesson #7

Time Needed

Two or three class periods ... one or two for Activities 1 through 4; another for Activities 5 and 6 (see below)

Prerequisite Knowledge

To be able to...

1. Locate at least 5 key parts of each reproductive system (male and female), given unlabeled drawings.
2. Distinguish among those parts which are present in the male, the female, and both.

Student Learning Objectives

To be able to...

1. Recognize that most men are fertile every day, while women are fertile for less than one week a month and explain **when**, in a woman's cycle, she is fertile (the timing and the symptoms).
2. Describe at least four causes of infertility, including the most frequent cause of **preventable** infertility, STDs.
3. Describe at least four behaviors one can do to try to protect one's future fertility.
4. Recognize that he/she is not immune to infertility and that it can be a major life crisis.

Agenda

1. Administer the *Fertility Pretest*, correct (using *Fertility Transparencies 1-2*) and discuss it and explain the lesson's purpose.
2. Use *Fertility Transparencies 3-5*, lecture and discussion to introduce fertility.
3. Use the *Infertility Reference Sheet* to address the prevalence and causes of infertility.
4. Use the *Infertility Worksheet*, with brainstorm and discussion, to address ways of trying to protect one's future fertility.
5. Personalize the issue of infertility and communicate its psychosocial impact via either:
 - a. a panel of persons who have faced fertility problems, or
 - b. Transparency 6, Individual Field Trip Reports and discussion
6. Summarize the lesson and provide closure.

Materials Needed

Student materials:

- *Fertility Pretest* (1 copy per student)
- *Infertility Worksheet* (1 copy per student)

Classroom materials, equipment:

- *Fertility Transparencies 1-6* *
- *Sample Fertility Chart* (6 copies per class)
- *Infertility Reference Sheet* (1 class set)
- transparency marking pens, 3 colors
- library paste, hand lotion, and a raw egg or a personal lubricant such as “Replens,” “Slippery Stuff” or “K-Y Jelly” **

* Alternately, beginning in late 2006, all FLASH transparencies will be available as PowerPoint files on the FLASH web site: www.metrokc.gov/health/famplan/flash

** Use of Transparency 6 and of these props (to illustrate fertile cervical fluids) are optional.

Rationale

Why a lesson on infertility? Because infertility is a growing problem, even for couples in their twenties, and one that is sometimes preventable.

Achieving pregnancy is an intricate physiological process. In younger grades, the **F.L.A.S.H.** curricula covered the basics of the reproductive system, without much emphasis on the endocrine system, and in a way that made achieving pregnancy seem easy. There were three reasons for this approach:

1. It is important to cultivate an attitude that the human body is “knowable”, that it is not mysterious.
2. For most couples, especially young ones, it *is* easy to start a pregnancy, often easier than they would have wished.
3. Enhancing young people’s sense of personal vulnerability to pregnancy may motivate them to prevent it (by abstaining from intercourse or, at least, using contraceptives correctly and consistently). Infertility is only mentioned briefly at these younger grades.

Juniors and seniors in high school, however, can grasp more complexity regarding fertility. Why must we help them to do so?

1. Because the rate of infertility has grown dramatically in the last generation. Pregnancy is not easy for every couple to achieve. Students need to understand why. Only through understanding fertility can they understand infertility.
2. Because there are behaviors that can be initiated at this time in students’ lives to protect their future fertility, should they ever desire children. In order to adopt or maintain those behaviors, students must be helped to:
 - a. empathize with those who experience infertility,
 - b. believe themselves to be personally vulnerable to fertility problems,
 - c. recognize that in many cases infertility is preventable,
 - d. know which health behaviors might indeed be protective of fertility (abstinence, condoms, avoiding drug abuse, avoiding excessive x-rays, etc.), and
 - e. know how to adopt and/or maintain those behaviors and believe that they are capable of doing so.

Infertility can be an emotionally and financially devastating experience. It is a life crisis, which stresses not only the individuals involved, but their relationship, as well. If even one student is helped to protect his or her own fertility, this lesson will have been worth your time.

Activities

1. We recommend preceding this lesson with lessons 2 and 3 from **9/10 FLASH** (or equivalent lessons on the reproductive system). If you have done this, you can skip the *Fertility Pretest*. If not, administer the *Pretest* now. It will take about five minutes.

Discuss the answers, using the test as a teaching tool. Have people put a “C” next to each question they answered correctly ... but also have them **change** any they answered incorrectly, so that the final version is 100% accurate. (Tell them you can only give participation points to those who turn in 100% correct papers ... so they should change their answers, regardless of how well they did in the first place. The idea is to give them an accurate test to refer back to in the future.)

The correct answers to the pretest are on Transparencies 1 and 2. We have used transparencies so that students can check not only their recollection of the names of the parts, but also their spelling.

Next, explain the purpose of these fertility and infertility lessons:

Today we are going to focus first on fertility. We will look at exactly what has to happen in both people’s bodies for a successful pregnancy to result.

*Then, we will examine infertility. **Experts define infertility as EITHER the inability to conceive a pregnancy after a year of trying OR the inability to carry a pregnancy to a live birth.** Infertility is a growing problem; it affects 15 or 20% of all couples. It is a life crisis both for the individuals involved and for their relationship.*

*We will look at the most common causes of infertility and we will look at ways you can **reduce your own risk** of future infertility, in case you ever want to have children ... or **more** children, if any of you are already parents.*

If you plan to have a panel tomorrow or the next day, tell the class about it today, as anticipating it will make today’s lesson more meaningful:

The day after tomorrow, we’ll speak with two couples who have confronted infertility problems. One resolved the problem medically; the other couple tried treatment for a while, but eventually decided to make a child-free life for themselves.

2. Use lecture, and the following notes, to introduce some key concepts regarding fertility:

- a. **Ask** the class, “**When are men fertile (able to start a pregnancy)?**”

Answer: Most men are fertile every day, from puberty until death, although their fertility declines somewhat with age.

- b. **Ask**, “**What about women? When are women fertile?**”

Answer: Most women are technically fertile only about one day per month, from puberty until menopause (usually between about 45 and 55).

Ask, “Which day of the month is a woman fertile?”

Answer: the day she ovulates

Ask, “When does she ovulate?”

Answer: between menstrual periods ... actually about fourteen days before the start of her next menstrual period

Show Transparency 3.

- c. With the class’ assistance, demonstrate what you have just said, by explaining the cycle of an imaginary woman: Ms. X. Ask some one to choose a date in the first two weeks of Grovember. Any date will do. This is the date of the first day of Ms. X’s menstrual period. Mark the date with a red “**M**” for menstruation.

Ask some one to choose a number between 3 and 11. This is the length of her period. Mark each day of the period with a red “M”.

Ask some one to choose a number between 21 and 36. This is the length of this particular cycle. Count from day one of this period, whatever number the student chooses, to day one (probably in Planuary) of the next menstrual period and mark it with a red “M”.

Now, ask “**So, what date do you think we should mark as the day Ms. X’s ovulates?**”

Answer: She will have ovulated (released a mature egg cell) fourteen days **before** the first day of her next period ... give or take a day.

Count backwards fourteen days and mark the day of ovulation with a blue “0”. Point out that the second half of the cycle, from ovulation to the next menstruation, is always about the same length of time. It is the *first* half of the cycle, prior to ovulation, that varies from woman to woman, and for many women, from month to month.

Now ask, “**So, when is Ms. X REALLY fertile? When could she have intercourse that might result in a pregnancy?**”

Answer: Possibly as soon as five days before ovulation, and/or as late as one day after ovulation.

Mark all those days with a green “F” for fertile.

Ask, “Why? Why can she become pregnant any time from here to here, even though she only releases one egg, on this day?”

Answer: Because sperm may live in her body, awaiting an egg, for perhaps as long as five days. She has little caves called crypts in her cervix. These crypts are filled, during her fertile days, with nourishing fluids, to support sperm. Some sperm travel right past these

caves, and up into the uterus and tubes within minutes of intercourse. But others wait for hours or days in the cervical crypts, leaving a few at a time, in search of an egg.

Show Transparency 4.

- d. Now explain the concept that **predicting** ovulation is not as easy as calculating in **retrospect** when it must have happened. You can count backwards, reasonably accurately. But you cannot count forward, since a woman might ovulate a week after the beginning of her period, or two weeks, or three, or even longer.

Ask the class, “**How can she figure out when she ovulates?**”

Answer: Only by learning how to chart changes in her body temperature, her cervical fluid and the openness, softness and height of her cervix.

Show Transparency 5.

- e. Elaborate: A woman may study her fertility cycle, as you know, to avoid pregnancy. As a contraceptive method, she determines when she is fertile and she and her partner either avoid penile-vaginal intercourse at that time of the month or they use some other method of birth control during that time, such as foam and condoms. Some couples, however, use fertility awareness, not to avoid pregnancy, but instead, to achieve it. They want to determine the optimal time for starting a pregnancy. These couples (like those who are using the method for contraception) learn how to chart changes in the woman's body.
- She takes her temperature using a very accurate oral thermometer (usually a digital one) each morning, the moment she wakes up. They will notice that her temperature rises about a half of a degree Fahrenheit, the day of or the day after ovulation.
 - She also checks her cervical fluids every day. In the beginning of a cycle, of course, there will be menstrual blood. Then, she will probably be fairly dry for a few days or a week or more. Then her cervix will begin producing fluid. At first there won't be much, and it will probably be white and sticky like children's paste. After a few days, it becomes creamier, more the consistency of hand lotion. Then, a few days before ovulation, it becomes copious (there's lots of it), clear, and stretchy, much like egg white or the vaginal lubricants they sell in pharmacies. This is fertile, sperm-friendly cervical fluid, designed to form nourishing highways for sperm ... to increase the odds of fertilization occurring. After ovulation, her vagina will be drier again, until the beginning of her next menstrual period.

NOTE: If you have library paste, lotion, and either egg white or a vaginal lubricant, put a dab of each on your forefinger to illustrate as you walk through the sequence, above. The point is to demystify normal, healthy body fluids. With the egg white or lubricant, show how stretchy it is by stretching it between your thumb and finger.



- She may also learn to feel her cervix daily. It feels sort of like the tip of your nose. Curl your hand around your nose, like so:



- Imagine that your hand is the vaginal canal. You can feel your "cervix" (nose), at the end of the canal, like so:



Her cervix will be softer, a little higher in her body, and more open, around the day of ovulation. Again, her body is doing everything to maximize the chance of pregnancy occurring.

- f. Pass around the *Sample Fertility Chart*. It isn't necessary to provide each student with a copy, but there may be a few who would like one to keep. [The Sample Fertility Chart was adapted, with permission, from *Fertility Awareness Manual*, Hammond, Annese, Blackburn and Cruz; Copyright 1980, James Bowman Associates, San Francisco, CA, (414) 929-9100; revised 1982.]
3. Hand out the *Infertility Reference Sheet* and explain that starting a pregnancy is not always as easy as it sounds. Allow people fifteen minutes or so to read it. Alternately, you may want to suggest a cooperative read-aloud process, if you have reluctant or less-skilled readers in the class.
 4. Hand out the *Infertility Worksheet*. Fill it in cooperatively, as a whole class, by having the class brainstorm ways of protecting one's future fertility. Make sure all of the following behaviors are included in the list:
 - **Avoid catching any STDs.** (both men and women)
To eliminate risk, abstain from sexual intercourse.
To reduce risk considerably, use latex condoms and only have sex in a mutually monogamous, long-term relationship (as in many marriages).
To reduce risk somewhat, wait for intercourse until at least age 18 (ideally 25), if you are female, and regardless of your genders, both get tested first.
 - **Get treated for gonorrhea and chlamydia early, before they can damage your tubes.** (both men and women) This isn't always possible, because there may not be symptoms, but...

if there are symptoms (unusual discharge; burning with urination; abdominal pain or bleeding between periods in women; or scrotal pain in men), the diseases can be cured ... often before they do permanent damage to the fallopian tubes or vasa deferentia;

and even in the absence of symptoms, it is important to get regular, thorough STD check-ups if you are at risk. (The appropriate frequency would depend on the degree of risk. Prostitutes, male and female, often get weekly or monthly exams. A person with one sexual partner whom they believe to be monogamous might only need to be checked annually.) A routine physical doesn't suffice; you have to specifically ask to be tested for STDs.

And get *early prenatal care because a doctor or midwife can often identify a threat to the pregnancy* (an infection, for instance) and resolve it ... helping to prevent spontaneous abortion (miscarriage).

- **Avoid catching mumps**, if you are male.

If you have never had them, get an immunization.

- **Avoid unnecessary exposure to x-rays.** (both men and women)

Always ask the doctor or dentist if an x-ray is really needed. Always make sure that, unless there is reason to x-ray your abdomen, it is covered with a lead shield. If you need radiation treatment for cancer, consider having your eggs or sperm frozen for possible future use, in case the treatment damages your fertility.

- If you are male, and plan to start a pregnancy within the next few months, **avoid overheating your testes.**

That means not using hot tubs or saunas. You may want to wear boxer shorts and loose fitting pants. The effect of temperature on sperm production is only temporary, however, so a teen does not need to worry about it if he doesn't plan to have a baby until he is older.

- **Avoid damage from alcohol and other drugs.** (both men and women)

To reduce risk considerably, abstain altogether from alcohol and illegal drugs.

To reduce risk somewhat, use alcohol in moderation and stop using it a few months before starting a pregnancy (regardless of your gender). Reduce reliance on over-the-counter drugs to solve minor health problems.

And always ask your health care provider (doctor or nurse practitioner) the potential risks of drugs they prescribe ... and if you are male, and you *must* take a fertility-threatening drug (for cancer treatment, for example), consider storing your sperm in a sperm bank before beginning treatment.

- **If you are female and have a weight problem** (are very overweight or dangerously underweight), **consider getting help with it.** Talk it over with your health care provider.

5. Personalize the infertility issue and help students understand and empathize with the experience of infertile people/couples, in one of two ways:

- a. **Have as guest speaker(s) a person, couple or panel who have experienced infertility.** We suggest calling your local chapter of RESOLVE: The National Infertility Association, whose mission is to provide timely, compassionate support and information to people who are experiencing infertility and to increase awareness of infertility issues through public education and advocacy. Reach **The Washington State Chapter of RESOLVE** at 206-524-7257 or see www.resolvewa.org. Or find your own area's chapter by going to the national Resolve web site, www.resolve.org, and clicking on "find MY RESOLVE" or by emailing info@resolve.org.

We suggest that you invite people who have resolved the issue in at least two *different* ways so the class will see the diversity of experience. Some persons will have had a successful medical intervention (varying from fertility awareness classes to in vitro fertilization with donated egg or sperm with many degrees of intervention in between). Some may have made surrogacy arrangements or adopted or fostered a child. Some will have decided, eventually, to remain child-free. It is ideal to find speakers with at least two or three years' perspective on whatever resolution they reached, rather than individuals in the throes of a life crisis.

The day before this panel (or any panel), you might ask students to write questions they would like to ask of panelists. Then, you can ask panelists to arrive fifteen minutes early, so they can glance at the questions in advance.

Review ground rules by explaining them to the speaker(s) at the beginning of class. Then, ask speakers to tell the class a little about themselves, their experiences with infertility, and what is currently going on in their lives in terms of fertility. Leave much of the class period for students' questions.

- b. **Show Transparency 6 and use Individual Field Trip Reports and discussion.**

6. Summarize the key concepts of the fertility and infertility lesson(s):

There are four major things I hope you'll all remember from (yesterday's and) today's lesson(s).

NOTE: Tick these four off on your fingers as you list them

- *First, that the process of fertility is complex and rather incredible.*
- *Second, that not everyone is fertile, that a person's ability to some day have a baby is not something he or she can just take for granted. (Not that every one will **want** a baby, but many people will.)*
- *Third, that there are some specific things you can do, starting today, whether you are male or female, to try to protect your future chance to decide for yourself*
- *Fourth, that as tough (and even painful) as infertility can be, people can and do survive and go on to live full, happy lives, even if they can't have biological children.*

Some find other ways to have children in their lives (as adoptive or foster parents, aunts and uncles, volunteer Big Brothers or Big Sisters, day care workers, and so forth). Others make fulfilling lives that don't involve children.

Someday you or someone you love may be very grateful for the knowledge each of you carries away today.

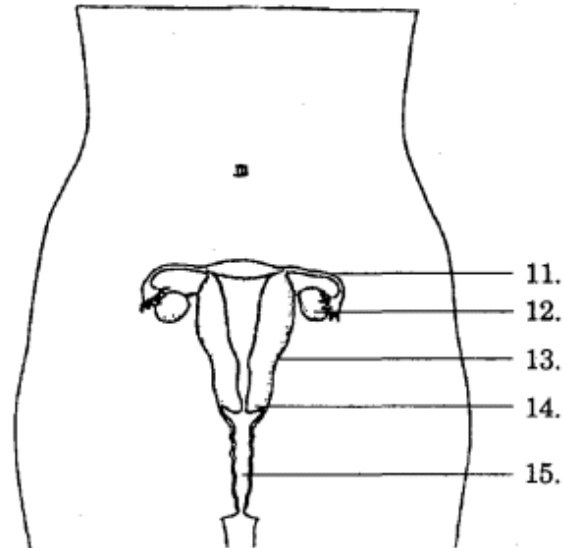
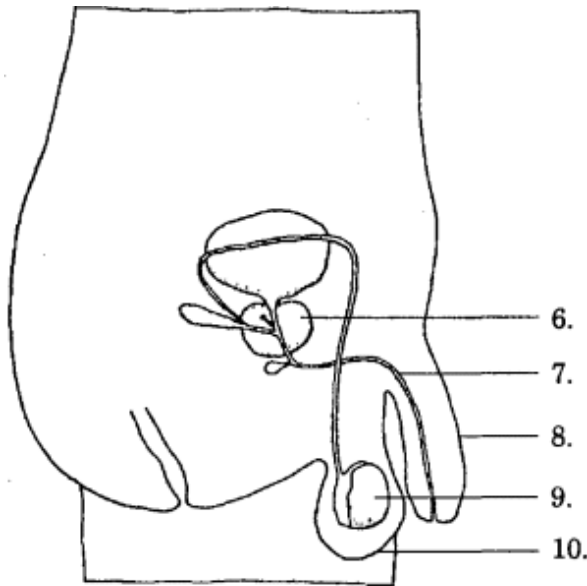
Fertility Pretest

NAME _____ DATE _____ PERIOD _____

Circle the best answer:

- | | | | |
|---|---------|-----------|---------|
| 1. The seminal vesicles are part of whose body? | a. male | b. female | c. both |
| 2. Sperm is made in whose body? | a. male | b. female | c. both |
| 3. Who has a bladder? | a. male | b. female | c. both |
| 4. The labia are found in whose body? | a. male | b. female | c. both |
| 5. Who has an abdomen? | a. male | b. female | c. both |

Use the drawings below to fill in blanks 6-15 at the bottom of the page: (spelling counts)






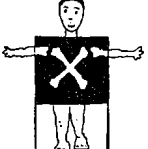
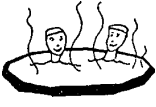

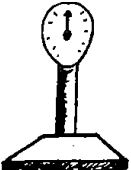
- 6. _____
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- 10. _____

- 11. _____
- 12. _____
- 13. _____
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- 15. _____

Infertility Worksheet

NAME _____ DATE _____ PERIOD _____

DIRECTIONS: Describe here “things a person can do to try to protect his or her future fertility”. Be specific.

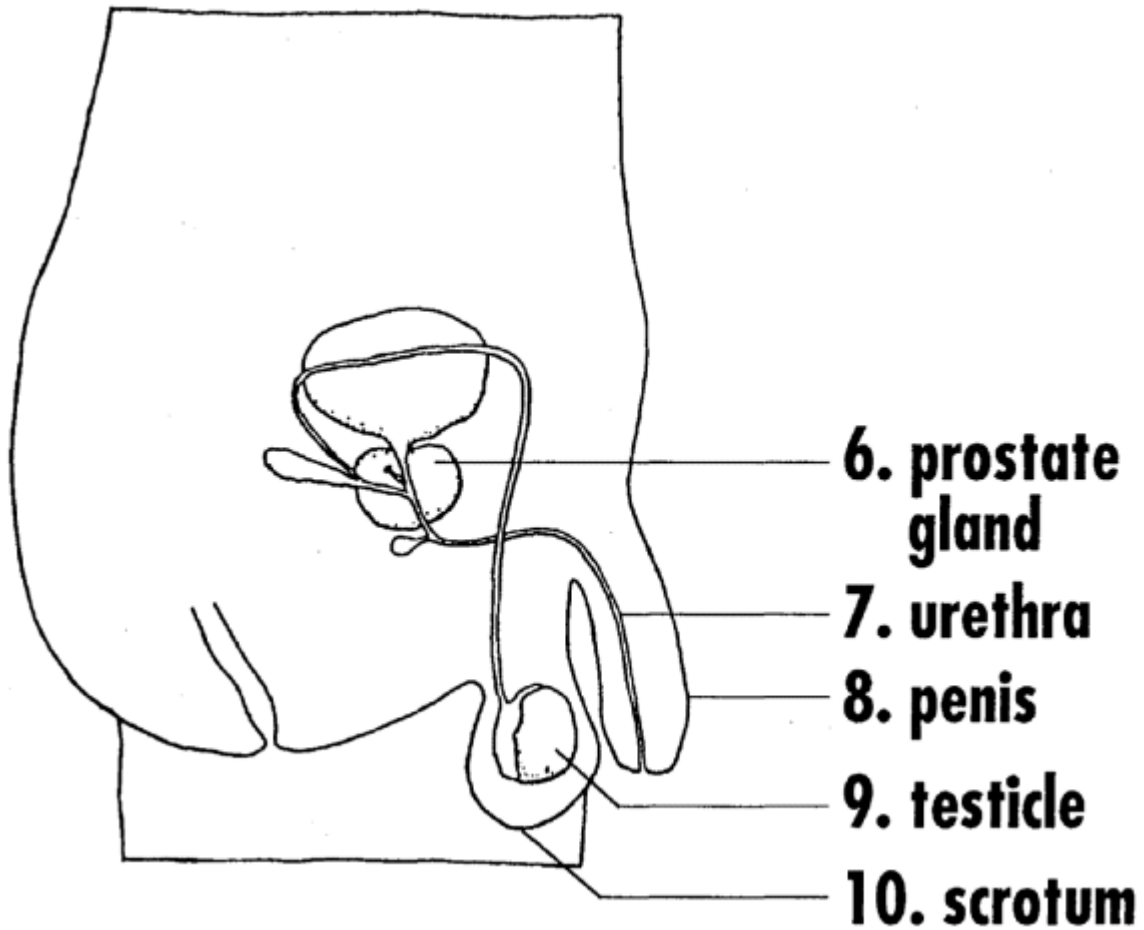
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<p>5. _____ _____ _____</p>	
<p>6. _____ _____ _____</p>	
<p>7. _____ _____ _____</p>	

We have focused on how to reduce your risk of infertility, but it is important to remember that, in many cases, infertility is not preventable. If a person (or couple) has a fertility problem, the chances are that they did nothing to “cause” it. Guilt and blame are usually uncalled for and are never helpful. Infertility is hard enough, without that added burden. Also remember that 50% of those couples can eventually have a baby with treatment or with the help of a sperm or egg donor or surrogate mother. Others decide to adopt or foster a child or to remain child-free.

Fertility Transparency 1

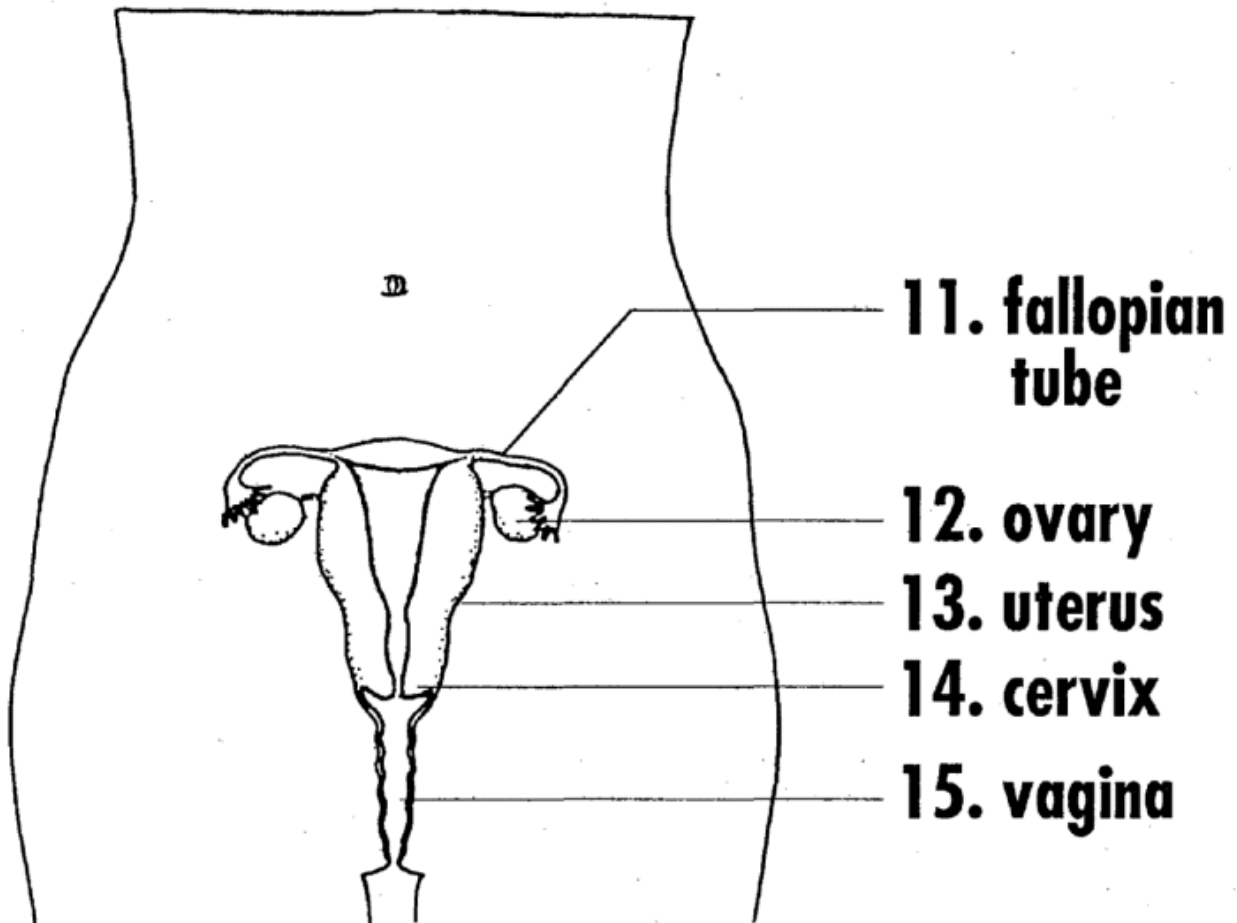
Pretest Answers

1.a 2.a 3.c 4.b 5.c



Fertility Transparency 2

Pretest Answers Continued

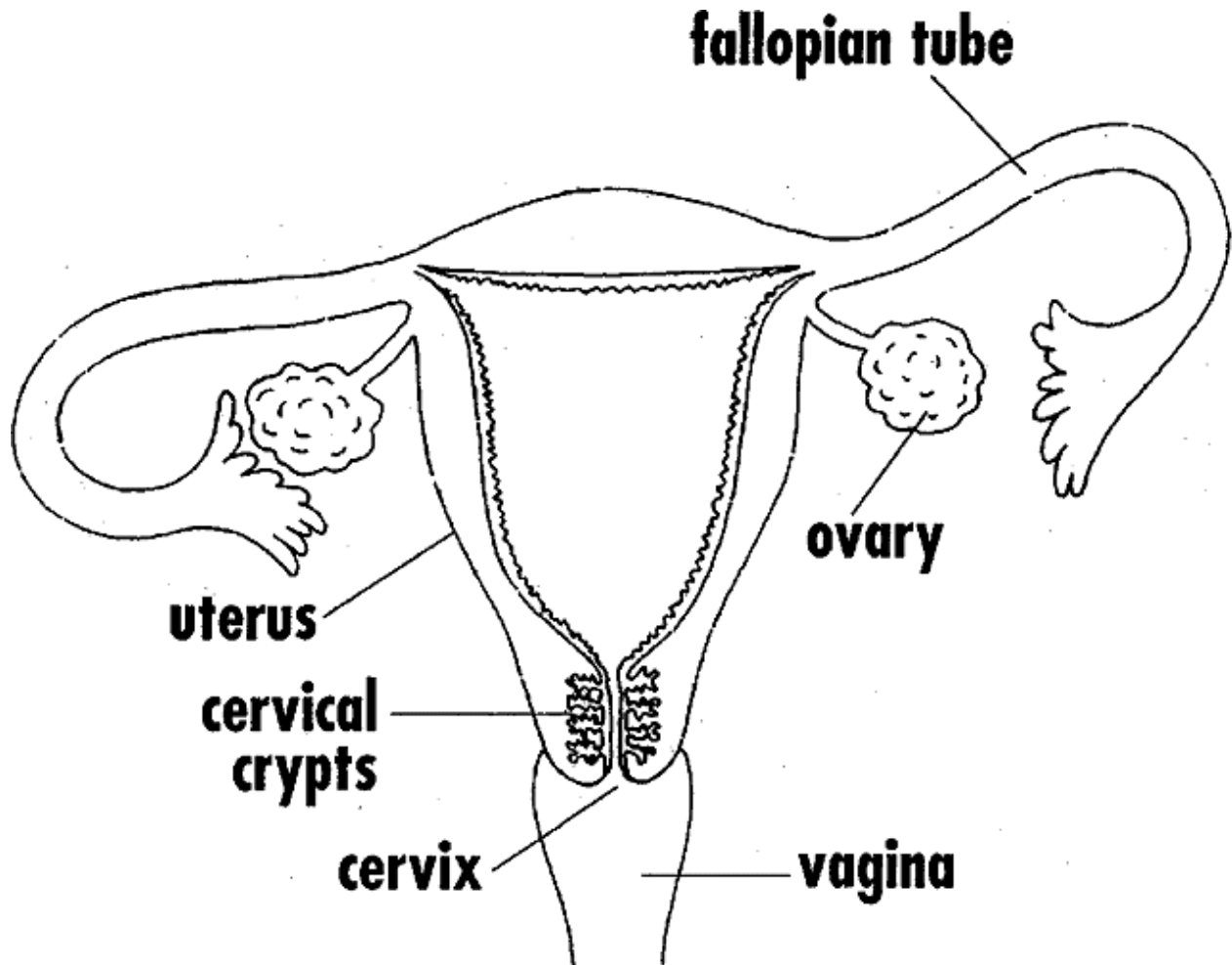


Fertility Transparency 3

GROVEMBER						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	23	24	25	26	27
28	29	30	31			

PLANUARY						
4	5	6	7	1	2	3
11	12	13	14	8	9	10
18	19	20	21	15	16	17
25	26	27	28	22	23	24
			29	30		

Fertility Transparency 4



Fertility Transparency 5

So, how can a couple figure out when the woman is fertile?

1. **NOT by guessing, even with a calendar**

2. **ONLY by learning to chart changes in:**
 - a. **body temperature,**

 - b. **cervical fluid, and**

 - c. **the cervix' softness, openness, and height**

Fertility Transparency 6

**“A friend of mine, she cries at night,
And she calls me on the phone
Sees babies everywhere she goes,
And she wants one of her own”**

**Bonnie Raitt
“Nick of Time”**

Infertility Reference Sheet

“[The human being] is the only animal that laughs and weeps, for [we are] the only animal that is struck with the difference between what things are and what they ought to be”

- William Hazlitt

We have grown up in a time when birth control is legal and most people in the United States live in places where it is available. That makes it easy to think we have total control over our fertility: that we can have babies when we want. And some people can.

Others can't. As you know, some heterosexual couples who **don't** want a baby start a pregnancy by mistake. And others, about 10-15% of the couples who **do** want one, do not start a pregnancy in their first year of trying.¹

In other words, if 100 heterosexual couples had intercourse for a year without protection, by the end of the year 85 or 90 would have gotten pregnant. Some of the other 10 or 15 couples will get pregnant eventually, even without a doctor's help; it's just been a matter of chance for them. Others are *subfertile* or *infertile*. That is, some can get pregnant with help and some won't be able to have a baby biologically.

Ten Common Questions about Infertility:

1. What causes infertility?

Picture the fifteen heterosexual couples above (with fertility concerns).

In five (about 32%) a problem is found in the woman's body



In five (another 32%) a problem is found in the man's body



In two (16%) there are both male and female factors.



In three couples (20%), the doctor can't find a medical cause for the problem.²



2. Is infertility caused by psychological factors? NO, not usually.

In 12 of the couples on the previous page (80%), doctors found a physical reason for infertility. In the other couples, it may be that medical science is not yet able to find what's wrong.

3. Is infertility curable? YES, often.

Of the couples where a physical problem is found, about half can have a baby with treatment. Some of the others may decide to try donated eggs or sperm, or a surrogate mother.³

4. Is it a sexual dysfunction? NO.

Most infertile couples have healthy sexual response systems and have no problem with sex itself. On the other hand, their enjoyment of sex may lessen with the frustration of not getting pregnant.⁴

5. Is the rate of infertility growing? YES

It has almost tripled in the last twenty years. Why? The main reason is the **rising rates of sexually transmissible diseases (STDs)**. STDs are the leading cause of preventable infertility.⁵

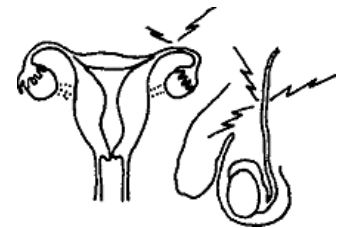
Rates of sexually transmitted diseases are growing. But what difference does that make? What do sexually transmitted diseases have to do with infertility?

Some STDs, especially gonorrhea and chlamydia, can travel to the tubes ... the vasa deferentia or fallopian tubes. In a woman this is called pelvic inflammatory disease or "PID" and is fairly common. In either a man or a woman, the infection can cause scars



to form in the tubes. Sometimes scars block the tube completely. Other times they cause the cilia to form clumps, so they can no longer sweep the sperm or ovum along very well. It's like using a broom with just a couple of big, thick bristles, instead of hundreds of thin ones. It simply doesn't work as well ... the sperm and ovum are much less likely to meet.

In some cases, the sperm can find their way up a scarred fallopian tube. The ovum gets fertilized, but then that ovum (which is much bigger than a sperm) can't travel the rest of the way down the tube to the uterus, because scar tissue is partly blocking the way. The embryo starts to grow in the tube. This is an ectopic pregnancy. It must be removed to prevent the tube from bursting ... which



could be life-threatening.

Some STDs contribute to infertility not by blocking the pathways, but by increasing the risk of miscarriage. Some can damage a developing embryo, causing the end of the pregnancy. Others cause premature labor, sometimes before the baby can survive.

Why are STD rates growing? **On average, people are having sex with a greater number of people in their lives.** Among heterosexual people, the average age of marriage is rising. Fewer people are waiting until they marry to have sex. Some live together and don't ever marry. The average number of relationships (married or not) in people's lifetimes has increased in the last generation. The bottom line is this: The more people someone has sex with, the greater their chances of catching an infection.

STDs are not only becoming more common; they are also doing more damage.

Why? For one thing, people are having sexual intercourse at younger ages, on average. Fewer people are waiting until their twenties to have intercourse. In women, that makes a difference: their bodies are more vulnerable to STDs as teens. By age 18, a woman's cervix begins to mature. By 25, it's fully mature and the most vulnerable cells have moved up inside the uterus, where they are less likely to come in contact with germs.

6. What else can cause infertility besides STDs? A number of things:

ENDOMETRIOSIS:

Some women have a problem called endometriosis. With endometriosis, the tissue that lines the uterus (the endometrium) begins to form outside the uterus. It attaches itself to other pelvic organs, such as the tubes or ovaries. We don't know why this happens, but it can leave scarring that causes infertility.⁶

MUMPS:

In an adolescent or adult man, mumps can infect the testes, damaging the cells that produce sperm.⁷

BIRTH DEFECTS:

Some people were born with birth defects that make them infertile. Often, when they have genetic problems, we don't know why. Sometimes, their reproductive systems may have been damaged by their mothers' use of certain drugs during pregnancy. You may have heard, for instance, of a medicine called "DES" that was used by many pregnant women in the 1940's and 50's to prevent miscarriage. It caused many birth defects, including infertility ... in these women's sons as well as their daughters.⁸

X-RAYS and other RADIATION:

Radiation (from a nuclear accident, cancer therapy, etc.) can damage the ovaries or testes. In men, the damage may be temporary (lasting some months) or permanent. It is more likely to be permanent in women.⁹

TEMPERATURE:

The testes have to be cool enough to make sperm. A man with a very high fever may have a low sperm count lasting several months. Some health experts believe that perhaps even hot tubs and tight clothing can raise a man's temperature enough to lower an already-low sperm count. In any case, this effect is only temporary.¹⁰

UNDESCENDED TESTICLES and SWOLLEN VEINS:

In male fetuses, the testes start out in the abdomen. Usually they drop down into the scrotum before birth. In about three percent of male infants they don't descend by birth. If they don't drop into the scrotum by age five or six, a doctor will operate to lower them. Otherwise, these boys will never be fertile; the high temperature in their abdomens will have permanently damaged their testes.

Swollen ("varicose") veins in the scrotum can also raise the temperature enough to prevent sperm from being made. Surgery sometimes helps.¹¹

SICKLE CELL DISEASE:

Sometimes (not always) Sickle Cell Anemia causes nerve damage in men's sexual response systems and miscarriage in women.¹²

TOBACCO, ALCOHOL and other DRUGS:

Some men who are chronic smokers have higher levels of damaged sperm than nonsmokers. In women, heavy smoking can increase the risk of miscarriage. Heavy use of alcohol can also effect sperm quality. Heavy alcohol use in women can lower the chance of conceiving or lead to miscarriage.

Long-term narcotic use can also lower fertility. So can long-term use of marijuana, especially in males. Some other drugs block conception, while some increase the risk of miscarriage. The most common of these today is cocaine (in all its forms). Sadly, many of these drugs, from alcohol to cocaine, are more likely to harm a fetus than to lead to infertility ... even in relatively small amounts.¹³

DOUCHING:

Douching can lead to infertility by spreading an STD into the upper reproductive organs, causing PID. As you know, PID can leave scars in the tubes.

PREVIOUS PREGNANCY:

Having a pregnancy slightly increases the risk of future fertility problems, because there is sometimes infection or injury to the reproductive system during pregnancy or birth.

NUTRITION:

Sometimes, a woman doesn't ovulate because she has too little body fat. Women who have survived famines or prison camps, as well as athletes and women with "anorexia nervosa" may, at least temporarily, stop releasing eggs. Just as too little body fat can prevent ovulation, so can having too much (being obese).¹⁴

GENDER REASSIGNMENT:

Some transgender people use hormones to transition from one gender to another. Some use hormones *and* surgery. In either case, if they may want a baby in the future, they will want to consider freezing eggs or sperm before they start hormone therapy.¹⁵

OTHER COMMON REASONS FOR INFERTILITY:

Sometimes — for no reason we can pinpoint — there is a problem with the sperms' shape (a high percentage may have oddly-shaped or double heads, their tails may be too long, etc.) Other times the sperm can't swim well. There may be too little prostate fluid, for example. Or a man may have too few sperm ... what's called a 'low sperm count'. It takes thousands of sperm to wear away the protein coat around the egg, so that one can fertilize it. Or he may have antibodies to his own sperm, which kill them off before they can fertilize an egg.

In some cases, a man does make healthy sperm and plenty of semen ... but when he ejaculates, instead of coming out through the urethra, the semen goes up into his bladder. That's called "retrograde" ejaculation.

In other cases, a woman doesn't ovulate (or ovulates and menstruates only occasionally). Perhaps she's had many cysts on her ovaries. Cysts are swollen, fluid-filled follicles (egg sacs) that don't release their eggs. They are common. We don't know what causes them, and they often do no harm. But if she has had many cysts, the walls of the ovaries may have become rather tough ... too tough to allow any follicles to burst. Sometimes a woman does ovulate, but her cervix doesn't make enough fluid ... or the fluid is too acidic. Sperm can't travel into her uterus. In some cases, a woman is allergic to the man's sperm ... she has antibodies that identify his sperm as foreign and attack them.

Sometimes, a sperm is able to fertilize the ovum, but then it can't implant in the uterus. Maybe there isn't enough lining, for instance. Or it may implant, but then she doesn't make enough progesterone to maintain the lining ... and she menstruates.

7. Does age effect fertility? YES and NO.

Older people (male and female) do take longer, on average, to conceive. But taking longer is not the same as being infertile. Experts disagree, but some think that age itself may not have much to do with infertility (except, of course, if the woman has passed menopause -- the age at which she stops ovulating or menstruating).¹⁶

8. Does having an abortion increase the risk of infertility? NO.

Studies show that legal, first trimester abortion (usually a vacuum aspiration procedure) does *not* increase a woman's risk of being infertile.¹⁷

An *illegal* abortion, by the woman herself or by someone who isn't a doctor, can endanger a woman's life and, if she survives, can clearly damage her future fertility. It

can damage the cervix or uterus, or introduce germs. (Giving birth or having a late abortion can do these things, too ... but both are much safer than an illegal abortion.)

9. Do birth control pills increase the risk of infertility? NO.

In fact, birth control pills **protect** a woman's fertility in a number of ways. They decrease her risk of Pelvic Inflammatory Disease (PID), uterine fibroids, ectopic pregnancies, ovarian cysts, ovarian cancer, endometrial cancer, and endometriosis. All those things increase a woman's risk of infertility, so reducing their frequency is protective.¹⁸

Pills may, however, **mask** a fertility problem. A woman who ovulates and menstruates irregularly may take the Pill "to regulate her cycle". While she is taking the Pill, her "periods" may arrive like clockwork, but that doesn't fix her ovaries. When she stops taking the Pill, her ovaries will go *back* to working irregularly. So she may not discover that she has a fertility problem until after she stops taking pills.

Besides, while taking pills she has also, like everyone else, been aging. If she can't get pregnant when she stops the pill, it may just be that she has stopped ovulating regularly due to her age.

10. Can a person do anything to protect his or her future fertility? YES!

Glance back at all the causes of infertility listed above. Which ones are preventable?

¹ Hatcher, R.A., Trussell, J., Stewart, F.H., Nelson, A.L., Cates, W., Guest, F. & Kowal, D. (2004). *Contraceptive technology: Eighteenth revised edition*. New York: Ardent Media.

² Hatcher, R.A. et al. (2004).

³ Guttmacher, A. & Kaiser, I. (1986). *Pregnancy, Birth and Family Planning* (New York: New American Library)

⁴ Bevilacqua, K. (2004, Summer). What's love got to do with it? When intimacy affects sexual desire. *Family Building: A publication of RESOLVE: The National Infertility Association*. Retrieved November 2, 2006 from <http://www.resolve.org/site/DocServer/WhatsLove.pdf?docID=581>

⁵ Cates, W. (2003). Preserving fertility: An underappreciated aspect of sexual health. *Network*, 23(2).

⁶ Council on Scientific Affairs (1984). Effects of physical forces on the reproductive cycle. *Journal of the American Medical Association*, 2:247-250.

⁷ Franklin, R.R. & Brockman, D.K. (1990). *In pursuit of fertility: A consultation with a specialist*. New York: Henry Holt.

⁸ Kruse, K., Lauver, D. & Hanson, K. (2003, July). Clinical implications of DES. *The Nurse Practitioner*. 28(7):26-35

⁹ Hatcher, R.A., et al (1990) *Contraceptive Technology 1990-1992*. New York: Irvington Publishers.

¹⁰ Hatcher, R.A., et al. (1990).

¹¹ Franklin, R.R. & Brockman, D.K. (1990)

¹² Hatcher, R.A., et al. (1990).

¹³ Hatcher, R.A., et al. (1990).

¹⁴ Hatcher, R.A. et al. (2004).

¹⁵ De Sutter, P. (2001, April) Gender reassignment and assisted reproduction: Present and future reproductive options for transsexual people. *Human Reproduction*, Vol. 16, No. 4, 612-614.

¹⁶ Dunson, D.B., Baird, D.D. & Colombo, B. (2004). Increased infertility with age in men and women. *Obstetrics & Gynecology*, 103, 51-56.

¹⁷ Atrash, H.K. & Hogue, C.J.R. (1990). The effect of pregnancy termination on future reproduction, *Baillière's Clinical Obstetrics and Gynecology*, 4(2):391-405; and Hogue C.J.R., Cates W & Tietze C. (1982). The effects of induced abortion on subsequent reproduction, *Epidemiologic Reviews*, 4(1):66-94.

¹⁸ Hatcher, R.A., et al (2004).