

Boy or Girl? You Get to Choose.

By Bridgette Springer for *Parenting New Hampshire Magazine*

Oh the joys of being pregnant. What will the baby look like, will it have your eyes, your partner's hair, and most importantly, will it be a boy or a girl? Well, with a little bit of wishful luck you may be shopping for all things pink or blue, and with some really advanced planning, you can even pre-determine the sex of your little one. Say what? The concept may be a bit hard to wrap your mind around, but biology has evolved to the point where you can put your best dollar forward and invest in the baby's X or Y chromosome. Forget about waiting until your ultrasound to discover how the dice have rolled, you can get ahead of the curve with scientific measures. And yet, the thought of being so technically involved in a pregnancy may not be for everyone, and so we take a look at the details of sex selection for family balancing, the ethical implications, and some more traditional techniques for boosting gender outcome some women swear by.

According to Eleanor Nicholl, Public Affairs Manager for the American Society for Reproductive Medicine (ASRM), there are basically two methods for trying to conceive a baby of a certain sex. First there is sperm sorting followed by artificial insemination. This sorting process is not 100% effective, but it is very effective according to Nicholl. Secondly, there is IVF, followed by pre-implantation genetic diagnosis (PGD), in which a cell is removed from each embryo. The chromosomes within each cell are then examined with only an embryo of the desired sex being transferred.

Used in the 1970s, sperm sorting was created for breeding animals. Next came pre-implantation genetic diagnosis (PGD) which was made available by scientist Mark Hughes in 1991. The procedure was meant to help reduce the risk of passing on serious diseases associated with a particular chromosome, such as Tay-Sachs, Hemophilia, and Muscular Dystrophy.

Gender Selection for Family Balancing

Marcy Darnovsky, Ph.D., co-founder and associative executive director, with the Center for Genetics and Society (CGS), a non-profit public interest group which has followed gender selection since the late 1990's cloning of Dolly the sheep, points out Hughes is strongly against the use of PGD for "family balancing." "We become faced with a moral dilemma. If choosing your baby's sex is okay, then what about their eye color, height, and other traits? In fact, there is a southern California fertility clinic that started advertising future parents could use PGD to select traits of future children," she said.

According to Darnovsky, fertility is a business and establishing PGD as a means for choosing gender opens up a whole new market or customer base for the fertility industry. "We don't like to think about it like that since it is about our children and parents that want a family. But we have to face the fact it is a multi-billion industry in the US alone." And, not only is PGD unnecessary for parents who only want to choose their baby's gender, it is costly, since there are no insurance mandates for the technique, resulting in out-of-pocket payments and clinics competing for customers.

Where is PGD Available?

There are no policies in the United States controlling PGD, and therefore no statistics on the number of women seeking the procedure or clinics which offer the service. The best way to find a reliable practice which offers the technique is by inquiring at a fertility clinic. Here in New Hampshire, the Fertility Centers of New England (<http://www.fertilitycenter.com>) with locations in Massachusetts, and Portsmouth, has offered sex selection for family balancing since October, 2010. According to Dr. Joseph A Hill, with the Fertility Center of New England, they have been performing PGD for years on the basis of sex linked disorders. The average person requesting family balancing services are women in their mid-30s who have had two children and want a child of opposite sex. In order to undergo treatment at the Portsmouth clinic, you must have a least one child previously which follows the ASRM ethic committee guidelines.

“In most areas of the country the cost is \$20,000 to undergo PGD for family balancing,” said Dr. Hill. At the Fertility Clinic of New England, they offer an inclusive price of \$9000 which does not include the drugs to stimulate ovaries and eggs, or the actual PGD procedure. “No more than two embryos are transferred to the women and the remaining embryos are frozen. “We do not discard embryos,” said Dr. Hill. In addition Dr. Hill stated that family balancing is not recommended for people who have trouble getting pregnant, and it is not 100 percent guaranteed women will conceive. For more information on the procedure, visit their website.

Cultural Differences

The biggest concern about PGD comes down to the ethical implications. According to the ASRM ethics committee report on the subject, “Interest in sex selection has a long history in ancient cultures.” In fact, cultural discrimination in India has included infanticide and sex-selective abortion. In the novel, “Secret Daughter,” by Shilip Somaya Gowda, It is estimated by the UN that one hundred million women and girls are missing from the population because of these practices. To add to the problem, Darnovsky pointed out that when ultrasound was introduced in India and China, it spread quickly, going from village to village causing a worsening sex ratio problem where boys are being chosen over girls. According to Darnovsky, the problem has become so rampant in certain parts of the world that men are unable to find brides, which has lead to increased sex trafficking.

In the U.S., PGD begs the question of just how much one would want to meddle with a baby’s characteristics. “In our society, especially women, want girls. When parents go to great lengths to have a particular sex, they have a certain stereotype in mind, and it puts undo expectations on kids, whether they are athletic boys or girly girls. We really need to look at what it means to pre-select since it has the problems of gender stereotyping, and skewed parental expectations which can be bad for the whole family. Do we want to live in a world where parents choose the traits of children?” said Darnovsky.

Timing (call out box maybe?)

There are other ways to pre-determine your baby’s sex, one of which is scientifically true and does give you some control over your baby’s pink or blue onesies. Male sperm carry a Y chromosome for

males, and others will carry an X chromosome for females. When the two sperm are released, the male sperm are faster yet die off more quickly while the female sperm treats the race like a marathon, slow at first but keeping a steady pace. When a woman releases an egg during ovulation, there is a window of about 24 hours in which it can be fertilized. If you are hoping for a boy, plan for fertilization as close as possible to your ovulation. If you prefer a girl, then fertilization should take place a couple of days prior to ovulation. This gives the female egg a head start while allowing the faster male sperm to use up its resources.ⁱ

References:

<http://www.geneticsandsociety.org/article.php?id=3578>

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“Secret Daughter,” by Shilipi Somaya Gowda, 2010

–Unnatural Selection is the book that looks at the global consequences – Mara Hvistendahl she is Beijing based correspondent for Science Magazine.

http://biopolicywiki.org/index.php?title=Main_Page

ⁱ http://www.pregnancy-calendars.net/determine_sex.aspx