

What's

# New in Medicine?

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"Great spirits have always encountered violent response from mediocre minds." - Albert Einstein



About the Editor:  
Dr. Mary Wilson is Medical Director of the New York Fertility Unit and Menopause Research Center. She promotes early ovarian cancer detection by using transvaginal sonography and color Doppler. She is in private practice in Manhattan.

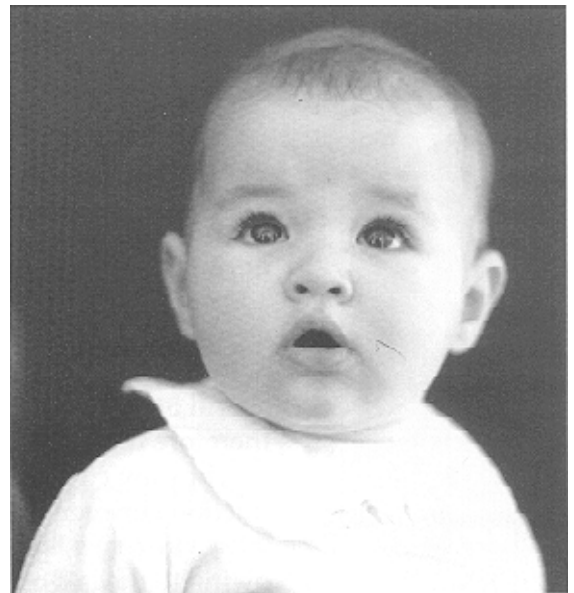
## Girl Power in a New Millennium

A baby is either going to be a boy or a girl, and man)' people secretly have an instinctive preference. Are baby girls now what parents hope for? They fight less, do better in school, and are less likely to get into trouble. The rise of baby girl power, it appeals, reflects the gender revolution of the timer..

Once only boys would do. They hunted gathered, fought, inherited and (they hoped) impregnated their wives. Now, the theory goes, boys can't spell, drop out of school, get into trouble, and have lost the plot about how to fathers. Girls have bloomed in their place. They are not Usually involved in crime or violence, and they are still much less likely to die (rout do accident or illness. Girls no longer have to be married off at great expense. Women believe their daughters have more Opportunities, more financial independence and ran control their own fertility these days.

A baby's gender is determined by the father's sperm. Each man produces two types of sperm-those carrying the X or female chromosome, and those that carry the Y or male chromosome. Separating the two and inseminating with X (u Y sperm enables parents to have the child of their choice\_

The Genetics IVF Institution in Fairfax, Virginia deploys MicroSort, a new technique that involves dyeing sperm to sort out "male" front "female". The Institute claims a success rate of about 90°v for couples wanting girls and 70% far those wanting boys (read more about this in "Sex Pre-selection" on page 2).



Baby Sea Louie Bensimon was delivered hi 1 Dr. Mary Wilson on May 5,1998.

European couples tend to want girls, whereas Asian and those trout the Middle Lava Leant boys. Sperm carrying the male Y chromosome are thought to swim faster but to die quicker than those carrying the female X chromosome if the sperm have to wait a long time for ovulation, the female version is more likely to prevail.

Nearly half of American medical and law students and 45% of University teachers ate women. And 40% of the worldwide labor force is now female. The Victories of the American team in the women's football World Cup: the ozone busting flight of Eileen Collins, the first woman to command a space shuttle; the news that Carl Fiorina has been appointed the first female executive officer of blue-chip Hewlett-Packard; and

continued on page 2

### Note from the Editor:

In view of the vastly increased demand for our Newsletter, I have reluctantly been forced to curtail the lavishness of my presentation. As you can see, from now on I will be utilizing only two colors (black and green). I will try to maintain the quality and variety of the international news.

—Dr. Mary

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### Carres Memoire

A bar of chocolate contains a small amount of choline, a compound related to the family of chemicals that are crucial to the brain's memory skills. It is claimed that it will enhance remembering, diligence, and concentration.

### Selenium in the Fight Against Cancer

It was found that 200 mcg. of Selenium per day halved the risk of getting cancer of a group of 1,300 volunteers. There were 63% fewer prostate cancers, 58% fewer colorectal cancers, and 46% fewer lung cancers. Natural sources of Selenium are: Brazil nuts, organic grains, pumpkin seeds, kidney and liver. Selenium is toxic in high doses. The recommended supplementation is 200 mcg. per day. Selenium is part of the antioxidant enzyme glutathione peroxidase. As part of glutathione peroxidase, Selenium enhances immune function and helps to rid the body of hazardous chemicals.

### Ginseng and Cancer Prevention

Panax Ginseng cultivated by C.A. Meyer in Korea, Japan, China and Russia has a non-organ specific preventive effect against cancer. Ginseng inhibited liver cancer induced by diethylnitrosamine in rats.

**If your dream is to have a daughter,  
then this technology is for you . . .**

## MicroSort in Sex

MicroSort has been used in cattle for more than a decade. The machine for sorting sperm in farm animals was developed by Lawrence Johnson, a scientist at the Department of Agriculture.

Female sperm in all animals have more genetic material than male sperm, meaning they are larger. Johnson's flow cytometer first dyes the sperm and then passes them through a narrow opening. As they shuffled along they are zapped with an ultraviolet laser. The X-bearing sperm glow brighter and the machine uses that difference to sort X from Y.

The flow cytometer has been used in the birth of more than 400 animals, including sheep, pigs, and cows. The offspring born of the method appear normal, as do the subsequent generations. To be used on humans, the flow cytometer had to be tuned, since the gap between the size of X and Y bearing sperm is far smaller than in animals, and therefore more difficult to sort.

The only currently recognizable distinction between living X and Y bearing spermatozoa is their total DNA content, owing to the larger size of the X chromosome. The first successful separation of human X-and Y-bearing sperm cells based on the 2.8% total DNA content difference using FCS (Flow cytometric separation) was reported by Johnson and the team from the Genetics & IVF Institute in Fairfax, VA. Sperm identified with one distinct red spot were classified as haploid X chromosome-bearing cells, and those with the distinct green spot as haploid Y chromosomes. The first birth of normal daughters after MicroSort sperm separation was reported by F. Fugger in *Human Reproduction*, vol 13, 1998 (the journal published by the European Fertility Society).

**Indications for MicroSort X separation are prevention of sex-linked disorders (for women who are carriers of X-linked disorders) and family balancing (when you already have one or more male**

MicroSort may be followed by IUI, WE or ICSI to achieve pregnancy. Most of the pregnancies were achieved after simple IUI. 92.9% of the pregnancies were solely of the desired female gender. All children born were healthy.

The ability to separate X- and Y-bearing sperm cells provides new opportunities for women who are carriers of X linked disorders (hemophilia, Duchenne muscular dystrophy, X linked hydrocephalus). In most cases, the X-linked diseases are only expressed in the male offspring of carrier mothers. The use of MicroSort for the enrichment of the X-chromosome bearing sperm cells can now allow for the preferential conception of unaffected female offspring.

Concerns regarding the use of ultraviolet light and the dye Bisbenzimidazole for FCS of human sperm have been expressed (Ashwood-Smith 1994) Bisbenzimidazole is a non cyto-toxic DNA stain which binds to a minor external part of DNA according to Dr. Fugger, the head of the Cryobank in Fairfax, VA. Pregnancies have also been attained with the use of frozen sorted sperm cells.

## Girl Power from page 1

Sherry Lansing, the new chairwoman of the Paramount Picture Group - there are now three women running the film divisions of the big studios.

The rise in women entrepreneurs is one of the big demographic changes in our society. There are now many examples of outstanding women and there will be many more in the new millennium.

### Woman's Point of View

Opinions are invited on any interesting subject. Please send a short story to:

*What's New In Medicine*  
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## A True Story

His name was Fleming, and he was a poor Scottish farmer. One day, while trying to make a living for his family, he heard a cry for help coming from a

nearby bog. He dropped his tools and ran to the bog. There, mired to his waist in black muck, was a terrified boy, screaming and struggling to free himself. Farmer Fleming saved the lad from what could have been a slow and terrifying death.

The next day, a fancy carriage pulled up to the Scotsman's sparse surroundings.

An elegantly dressed nobleman stepped out and introduced himself as the father of the boy Farmer Fleming had saved.

"I want to repay you," said the nobleman. "You saved my son's life."

"No, I cannot accept payment for what I did," the Scottish farmer replied, waving off the offer.

At that moment, the farmer's own son came to the door of the family hovel.

"Is that your son?" the nobleman asked.

"Yes," the farmer replied proudly. "I'll make you a deal. Let me take him and give him a good education. If the lad is anything like his father, he'll grow into a man you can be proud of."

And that he did. In time, Farmer Fleming's son graduated from St. Mary's Hospital Medical School in London, and went on to become known throughout the world as the noted Sir Alexander Fleming, the discoverer of Penicillin.

Years afterward, a nobleman's son was stricken with pneumonia.

What saved him?

Penicillin.

The name of the nobleman? Lord Randolph Churchill.

His son's name? Sir Winston Churchill.

Someone once said: What goes around comes around.

This information was provided to me via the Internet by Susan Axamethy.

Slange et Vie. -Ian Wilson

*Ian Wilson is a descendant of the Sutherland Clan from Scotland and is a freelance writer.*

## Pill Not All Bad

Recent research has shown that birth control pills prescribed to premenopausal women have many beneficial effects: a documented 60-80% reduction in ovarian cancer risk with 10 years of BCP use, lessened risk of uterine cancer and osteoporosis, and reduction in acne and hirsutism. The pill also protects fallopian tube function, conferring lower rates of pelvic inflammatory disease, and ectopic pregnancy. Beneficial effects of the pill upon the breast include, fewer fibroadenomas and fibrocystic changes, less breast pain, and fewer breast biopsies. Another benefit of being on the pill is menstrual cycle symptom control. Best choices for premenopausal women up to age 52, or even into early menopause would be ALESSE, LOESTRIN 1/20, or more recently, BCP, LEVLITE. Minor side effects include nausea, mood swings, and breast tenderness and disappear within the first three months. The risk of deep venous thrombosis is only 3 cases per 10,000 in non-smoking, predisposed women.

## Amino Acid Configuration in P53 Gene May Increase Risk of Cervical Cancer

According to findings published in *Nature* (1998;393-229-234), HPV-infected women who carry two copies of a certain mutation of the p53 gene are seven times as likely to develop cervical cancer as infected women who have one copy of the variation.

Previous reports have linked many types of cancer to mutations in p53, which in its normal form is known as the "tumor-suppressor" protein because of its ability to protect against cancer cell growth.

The new study is the first to document a genetic susceptibility to cervical cancer. When a woman is infected with certain types of HPV, a viral protein called E6 binds with p53 and causes it to deteriorate, increasing the risk for cervical cancer, according to the report.

Two copies of arginine-encoded gene increase risk.

## A Genetic Cause for Infertility

The loss of a tiny piece of the male sex chromosome appears to cause the most severe form of male infertility. It could be responsible for 15% of causes of the complete inability to make sperm (azoospermia).

## The Choice of Skin Oil for Premature Babies

Premature babies have thin and sensitive skin that is not strong enough to ward off attacking germs. Rubbing a preemie with the right kind of oil may help. Researchers at Stanford University massaged a group of infants born about 2-3 months early with Aquaphor, an over-the-counter ointment extracted from sheep's wool. Compared with non-oiled babies, the Aquaphor babies had a much lower incidence of infection. It seems that the rubs may mimic nature's way with mature babies, who are protected by a substance called Vernix.

## Cholesterol Raising Factors in Boiled Coffee

The coffee diterpenes cafestol and possibly kahweol are responsible for raised cholesterol levels. They are rich in unfiltered coffee but negligible in filtered and instant.

*(International Journal of Epidemiology, 1988:27)*

# Herpes Virus May Cause Multiple Sclerosis

Increasing evidence from peripheral blood cultures in autopsy studies suggests that reactivation of human herpes virus-6 infection appears to play a central role in the pathogenesis of multiple sclerosis. Control of HIV-6 infection with an antiviral agent such as ganciclovir may alter the course of the disease, reported Dr. Joseph Brewer at the annual meeting of the Infection Diseases Society in Denver.

HIV-6 infection, the cause of a variety of illnesses, including roseola, is a common pathogen acquired by most individuals by 3 years of age. HIV-6 viremia was found in 8 out of 13 patients with

relapsing, remitting MS and 6 of 12 patients with chronic progressive MS. So far, Dr. Brewer has found active HIV-6 infection in CNS tissue taken from 8 of 11 MS patients. When these infected cells were found, they were always located in MS lesion or plaques. He has treated 5 MS patients with HIV-6 ganciclovir, with the longest follow up being 11 months. The antiviral agent appears to control MS symptoms and prevent relapses, but further studies are needed to confirm this.

OB GYN News, Jan. 99

TB Emergency  
in Japan

On July 26, the Japanese Minister of Health, Sohei Miyashita, officially designated the country's resurgence of tuberculosis as an emergency. Japan has one of the highest tuberculosis rates in the industrialized world.

(Lancet 7.17, p.231)

**Breast Cancer and Virus Evidence** linking breast cancer to a virus carried by up to 30 percent of the population has been discovered by researchers. It raises the prospect that a vaccine could be developed against the disease.

The findings, which are the first scientific data to link an inherited virus with a major human cancer, were announced in Sydney at the 11th International Congress of Virology. It was found that 85 percent of women with breast cancer had the human virus, compared with 20 percent of women without breast cancer.

## Late Mothers Get a Baby 'Deadline'

A new fertility test may soon resolve the dilemma facing millions of women: can they wait to have babies while they pursue a career or will they run out of time to conceive?

The technique measures the "shelf life" of eggs in a woman's ovaries, effectively enabling her to tell the time on her biological clock, which is not purely related to age.

It will predict whether women will be able to have children late in life, like Hollywood stars Susan Sarandon and Britt Ekland (who both had babies at 45), or whether they should start a family soon because their fertility is already declining.

The test is the result of more than six

years' work by scientists in Oxford (UK), who discovered that levels of a hormone, inhibin B, are related to the time that a woman's ovaries will continue to release eggs that are healthy enough for fertilization.

It is well known that women's ovaries age at different rates from the rest of their bodies. Those who do decide to delay childbearing will be able to do so with some sense of security.

Women who failed to get pregnant had very low inhibin B levels. In this case, infertility treatment can no longer help.

It is expected that one day the test will be available in a simple kit sold in pharmacies, which young women could use to map out plans for motherhood.

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