



What's

# New

in Medicine?

Volume IV Number 1

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

## Cure For Diabetes Is On The Way

Type 1 diabetes, a disease in which the immune system attacks the islet cells, the tiny insulin factories found in the pancreas, robbing the body of the insulin it needs to turn sugar into energy. It requires daily insulin injections and monitoring their food intake to maintain a steady blood sugar level. Striking a balance means checking blood sugar levels 4 times daily, injecting precise amounts of insulin and following a rigid meal schedule. 30 years old women was diagnosed with diabetes when she was 11 years old. She learned how to prick her finger for blood-sugar tests, inject herself with insulin twice a day, and eat carefully.

She recently took part in an experiment at University of Alberta in which researchers injected islets culled from donor pancreas into her liver. There, the cells began producing insulin and freed her from the burden of injections. For now at least, her diabetes is cured. The trial, reported in New England Journal of Medicine ( July 2000 ) showed similar results in six other patients. It is the most exciting diabetes news in decades and the glimpse of the future of diabetes treatment. Larger trials are now in progress ( U.S. News & World Report, August 7, 2000. )



**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.

**Want to protect your memory ?**

Tumeric is a spice of Indian Food. It seems to protect us from memory loss and eventual mental decline caused by Alzheimer's Disease. According to a study by University of California, tumeric contains the chemical compound curcumin ,which reduces inflammation caused by a build up of the protein beta -amyloid. The curcumin in the spice tumeric can actually reverse oxidation damage already done. The rate of Alzheimer's disease in India is extremely low at less than 1% of people over age 65, compared with 3% of people between the ages of 65 and 74 and half of those 85 and older. It is the lowest incidence of AD in the world. Curcumin could be a very exciting natural alternative method of protecting the brain from this devastating illness, according to **Jyni Hollander**, a nutritionist and registered dietician at New York University.

## Infertility Gene

The gene known as ZNF214 is believed to prevent some men from producing sufficient sperm cells. The gene is located on a chromosome region linked to Beckwith Wiedemann Syndrome. BWS is a complex disorder which causes boys to be born with undescended testicles and suffer from infertility as adults.

Dr Judith Gianotten, Dutch researcher and her team found an unusual distribution of DNA variants in the gene in men with low fertility, indicating a link.

For some that had one of the gene variants DNA from their parents showed they had inherited the mutation from their moms. Those appeared normal in others respects and only one individual had a history of undescended testicles.

The fact that the mutation appeared to be inherited from the mother explained how infertility due to impaired sperm production can be passed on to the next generation . If it was inherited from the father, then the mutation would be wiped out of the population.

## TRANSPLANTED PANCREAS CELLS

The Immune Tolerance Network (ITN), an international consortium of researchers, will soon begin testing a technique for transplanting insulinproducing pancreas cells that could allow people with type-1 diabetes to stop their insulin shots. Later this year ITN will spend \$5 million to expand research on the technique, known as Edmonton protocol, to other U.S. and Canadian research centers.



Alexandra Panagiota Sitaras Born 4/16/00  
**Wilsonette Club Member**

## NO MORE MENOPAUSE ?

A research team at Massachusetts General Hospital has found that deactivating a single gene in female mice can sustain ovarian function into advanced age.

While research is still far from application in humans, this may eventually lead to new techniques for delaying menopause and reducing its health risks.

# Forteo: A new Drug For Osteoporosis

It's a synthetic version of parathyroid hormone (PTH), which is secreted by tiny glands in the neck. Almost every patient in the study-which involved 1,637 post-menopausal women and was recently published in the New England Journal of Medicine - responded to treatment. In pre-menopausal women, calcium naturally lost from bones through the action of osteoblasts is quickly replenished by cells called osteoblasts, which are stimulated by estrogen. In post-menopausal who have less estrogen, there's less stimulation of the osteoblasts. Bone is broken down more quickly than it is replenished.

## MISLEADING MEDIA INFORMATION

"Longer breast feeding may help moms avoid cancer" this was the title of the article that appeared in New York Post on Jan 31 / 01. Andy Geller reports the study by Yale University of women in rural China, that women who breast fed their babies for 2 years or more cut the risk of breast cancer by 50%. This misleading information should never appear in a respectable American newspaper.

I just had two patients that presented with advanced breast cancer after two years of breast feeding. The cancer grew rapidly because breast was constantly stimulated by high levels of hormones. One patient was from New York and one from California. We do not know for sure what malfunctioning gene causes cancer; we do not even know whether pregnancy could activate a dormant gene, as it does sometimes activate gene for diabetes.

I have a patient who was perfectly healthy until she became pregnant, she developed diabetes during pregnancy and now she is an insulin dependant diabetic. Comparing women from rural China to American women, whose environment is completely different is totally unacceptable; especially that breast cancer in Chinese women is not that prevalent.

The references quoted in this article are from non clinicians who do not have any contact with patients. One is an epidemiologist and the other an anthropologist.

## Smallest Baby

A baby who was born 112 days premature, weighing 1 lb 5 1/2 oz, is to be named in the Guinness Book of World Records as the lightest baby to have survived. Christopher Williams was born at Whipps Cross Hospital, East London, 16 weeks ago. His mother, Leona, from, said he was now over 9 lbs.

Forteo increases the number of osteoblasts which in turn build bone fast enough to more than compensate for what is being lost. In less than two years, bone in study participants had been replenished to the point that treatments with Forteo could be halted. The only downside to Forteo is that it must be self-injected daily under the skin. Oral and inhaled versions of Forteo are now under study.

It is now under review by the FDA. (According to Professor Claude Arnauad of university of California, San Francisco)

## GENE TO PROTECT AGAINST HIV INFECTION ?

Some people carry an altered gene that protects them from being infected by HIV. The mutated gene also may be linked to the good health of long-term non-progressors, one of the studies showed. As many as one in 100 people may have the genetic alteration that prevents the virus from infecting cells, said Nathaniel Landau, PhD, of the Aaron Diamond AIDS Research Center.

A person needs to be homozygous for the altered gene to be well protected against invasion by HIV in this way. (Cell,1996;86:367-377) In the second study, which appeared in Nature (1996;384) some long-term non-progressors were heterozygous for the gene. The New York researchers studied 25 people who had never been infected with HIV despite being exposed sexually to the virus numerous times. The altered gene is called CKR-5.

The study also found that cells taken from an altered CKR-5 homozygous person could not be infected with HIV in laboratory experiments. The other 22 people none of whom have a copy of altered CKR5 - have been protected against the virus, despite repeated exposures. They could be resistant through another mechanism. Having two mutated CKR-5 genes may not be enough to protect people from getting infected with HIV.

Paris France, June 1999

## Finding at Colonoscopy

One of my patients was recently told that the microscopic diagnosis on her colon biopsy revealed melanosis coli. It is a rather common condition and it should not alarm you. It means that the brownish pigment is deposited in colonic mucosa. It is more often seen in patients using anthraquinone laxatives, but melanosis coli has also been described in patients not using these agents. Inflammatory bowel disease may be associated with melanosis coli. Ulcerative colitis, Chrons colitis, and the means duration of inflammatory bowel disease was more than seven years. Chronic colitis could cause meklanosis coli even in the absence of laxative use.

## Multiple Myeloma

### What is multiple myeloma ?

A rare, life-threatening cancer of the bone marrow in which malignant plasma cells interfere with the growth of red and white blood cells.

### How common is it ?

It affects only about 50,000 Americans. But it is very deadly, only about 28% of all patients live more than five years.

### Who is most at risk?

It usually strikes people over age of 60. African-Americans are twice as likely to have it than the general population, and people who have been exposed to radiation or fertilizers seem to have a higher risk.

### What are the symptoms?

Bone pain, most often in the spine, and brittle bones that fracture easily.

### What are the treatments?

Stem-cells transplant and chemotherapy combined with using the steroid Prednisone. Both treatments are often given in conjunction with the bone strengthening drug Aredia. Studies also have shown some success using thalidomide to treat the disease, and researchers are also attempting to develop a multiple-myeloma vaccine. (Hallie Levine-NYP, 04/22/01)

### Olive Oil

"Olive Oil slows stomach contraction, so we feel full" says Marshall Goldberg, a university professor. It prompts the release of cholecystokinin, a hormone that signals us to stop eating

First for Women 1/01

## Cancer Research

Researchers too DNA from cancerous cells in patients with lung cancer (including some who had never smoked cigarettes) and measured mutations in the p53 gene, the most frequently mutated gene in human cancer. Among the smokers who also drank alcohol, 76% had p53 mutations in their cancer cells, as compared with 42% of the smokers who did not drink alcohol. Scientists hypothesize that alcohol interferes with the body's ability to convert carcinogenic chemicals in smoke into more benign substances that it can eliminate. Alcohol may also disrupt the body's ability to repair DNA that has been damaged by the carcinogens, researchers suggest.

(U.S. News, THE FEMALE PATIENT, August)

## Gene Test for Cancer

Myriad Genetics has introduced a predictive test for hereditary colon cancer and uterine cancer. The test, Colaris, is used to assess a person's risk of developing colon cancer based on the presence of a mutation in either of two genes. The same mutation also substantially increases a woman's risk for endometrial cancer. Patients with positive Colaris test findings have 80 % lifetime risk of developing colon cancer; women who test positive have 40 % to 60 % risk of developing uterine cancer.

## Chitosan-Instant Fat Blockers

Chitosan (made from shellfish shells) can help you get trim. A study published in the journal of ARM Medicina-Helsinki found subjects who took 1.800 mg chitosan daily while following a low fat diet, lost average of 15 lbs in four weeks; those who didn't lost an average of 5 lbs

# Should Women Have the Right to Choose Caesarean Birth

The London Sunday Times (8/14/98) published an article titled "Doctors call for right to choose Caesarean birth" A recent survey of women obstetricians in London found that 31% of them would choose to have a C/S rather than a normal birth, if they had an uncomplicated singleton pregnancy, 80% of those who would prefer the operation said they were frightened of the injuries that they knew they could suffer during a normal delivery.

"We are at the turning point in obstetric thinking" writes Sara Paterson-Brown OB/GYN at Queen Charlotte's and Chelsea Teaching Hospital in London, that had been brought about by advances in making C/S safe, by evidence of "substantial morbidity" with normal births, and by changes in the attitudes of society, which has become intolerant of risk.

She says that a normal delivery can cause greater damage to the pelvic floor, worse incontinence than among women who have a C/S.

There was a one in 1,500 risk of a baby weighing 3 lbs. 6 oz., dying during or shortly after normal delivery. 10% of cerebral palsy cases occurring during labor, in postdate pregnancy 1:600 chance of baby dying. Those problems are well avoided by a C/S - which causes its own, but different risks.

Women who ask for C/S, must be given all the facts, and then allowed to make up their own minds. She says she expected only a very small proportion of women would opt for a C/S if they were healthy, but the choice had to be there provided they were fully informed of all the risks.

Women are free to decline medical advice, treatment for rational or irrational reasons, or for no reason, even if as consequence they or their fetus suffer death or injuries.

If a C/S is the preferred mode of delivery by the mother, her choice, however foolish or irrational, must be respected. Director of the English Board of the Royal College of Midwives agreed. "A woman's right to choose was paramount, she said "provided she is in possession of all the facts, if she decides she doesn't want to go through labor, then we must respect that decision, even though midwives would naturally prefer the mother to have a normal birth."

The rate for C/S in England has tripled in the last 25 years from 4.5% in 1970 to 16% now. Over 100,000 women in U.K. have a C/S every year. In U.S. up to a third of all birth In some areas are now by C/S. In Italy, where women's choice must be respected by law, 4% choose to have a caesarean.

## Genetic Advancements Against the Plague and Anthrax

In the Oct. 4 issue of "Nature", Julian Parkhill and colleagues at the Sanger Centre in Cambridge, England, have decoded the entire genetic blueprint of *Yersinia pestis*, the bacterium that causes plague. The discovery should one day enable researchers to find ways to disable and defend against the plague bacterium, which since the 6th century has caused three pandemics that killed 200 million people.

In a separate discovery, researchers at Harvard Medical School report in the October "Current Biology" that they found a gene that makes mice naturally resistant to anthrax.

The discovery could lead to the identification of people unlikely to be infected by anthrax and perhaps provide clues to help others resist infection.

## Sharks & Cancer (Deflating The Myth)

New research shows that sharks do get cancer, including cancer of the cartilage. As you probably heard, shark cartilage was widely used as alternative treatment for cancer, based on the idea that sharks do not get cancer.

Scientist at the Registry of Tumors in Lower animals at George Washington University in Washington D.C. reported documenting 40 tumors in animals like rays and skates. "The inaccurate claims that sharks do not get cancer have fostered the use of unproven treatment of sharks cartilage extracts", said Dr. John C. Harshbarger, the registry's director. "It appears that sharks are being destroyed needlessly to exploit desperate people based on erroneous information."

(San Francisco conference of The American Association for Cancer Research.)

## Anti-Depressants

**SAM-e** : (S-adenosyl-L-methionine) is found in all body cells and participates in dozens of biochemical processes, including the production of hormones, neurotransmitters, cartilage, and detoxifying chemicals. Levels of SAM-e decline with age. Improves arthritic symptoms in about two weeks. Relieves pain of mild osteoarthritis of the knees. Anti-depressant compared with tricyclic antidepressants, taking effect more quickly and without the side effects (drowsiness, dry mouth and nausea)

# Britain's Pre-eminent Scientist Is Predicting

As panic grows over the threat of biological weapons from terrorists, a new book claims that germ warfare will destroy the human race in 1,000 years. The only way to save ourselves is to colonize other planets. This chilling prophecy comes from Professor Stephen Hawking, the world's most respected cosmologist. As a Lucasian professor of mathematics at Cambridge University, he not only works with the most advanced theories of physics but is also renowned for his best-seller, *A Brief History Of Time*, which addressed the inner workings of the universe. Forget nuclear weapons which Man has had for 56 years.

The real threat is from viruses and bacteria, capable of killing millions. Prof. Hawking points out that these biological weapons can be manufactured secretly and silently in small, hidden laboratories anywhere around globe. Anthrax, a disease that has been a scourge of farming folk for centuries, has been put to a new, sinister use.

Although September 11 was "horrible" Professor Hawking says, "it didn't threaten the long term survival of our species". It is doubtful that anthrax or any of the half-dozen germs, such as plague or smallpox, touted as possible warfare agents, could wipe out humanity.

All these bugs have been around for centuries, and humanity has built up a certain degree resistance to them. Even in the Black Death or smallpox and cholera epidemics of the past, most people exposed to them survived. And that was without the aid of modern medicine, vaccinations and antibiotics. Professor Hawking believes a true doomsday weapon would be a genetically modified bug against which we have no resistance. For instance, meddling around with anthrax's DNA to make it antibiotic resistant without turn it, from a potential threat to thousands into a killer of millions.

We are quite likely, he thinks, by accident or design, to create a super-germ which would run rampant through humanity. After all, HIV ( a natural virus) has killed millions because of our lack of immunity to it. A deliberately engineered killer would be far worse.

His solution is for humanity to establish colonies in space- spread out from our home planet across the Solar System and beyond. The problems with space travel are huge, but the work being done by Professor Hawking and its colleagues may go a long way towards solving them. Unfortunately, most of the nearby cosmic real estate is pretty hopeless as a home for humanity. Mercury and Venus are as hot as hell.

The Moon's surface is a parched, airless dustbowl. Jupiter and the other outer planets are giant balls of gas, their moons frozen. Mars is more hospitable, but turning it into a suitable home for millions of people rather than a base for a few explorers will probably require thousands of years of planetary engineering time, according to the professor, that we may not have. So it would be preferable to find a far more Earth-like planet orbiting a nearby star.

The discovery of eight new solar systems was announced earlier this week. In the next 20 years or so, giant space telescopes, successors to the Hubble orbiting observatory, will be launched. These huge spyglasses will be able to detect Earth like planets orbiting the closest stars. The problem is getting to them.

Today's rockets are fast enough to get to the moon, but hopelessly slow for traveling to another star system. For example, if the distance from the Earth to the Moon is compressed to a single inch, then the nearest star ( Proxima Centauri) would be nearly 2,000 miles away. The fastest rockets can travel from Earth to the moon in ten hours, so the nearest star would be thousands of years away.

So Professor Hawking hopes that developments in his field of physics may provide a solution. On the other hand, mankind's rescue may come from the laboratories of biologists. Professor Hawking, is not in favor of genetically-modified humans but feels that such a development is ultimately inevitable. There is a lot of hype over the "new eugenics", but within a century, surely, we will be able to make ourselves stronger, brainier and longer lived by tampering with our genes.

This may make space travel easier for our descendants, or it may lead to new solutions to problems that have bedeviled mankind since we evolved. Prof. Hawking is someone we should take seriously. If he is right, we are living in the beginning of a new terrifying era.

(From the report of Michael Hanlon, Daily Mail, London, UK, 10/17/01)

## What's New In Medicine ?

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### Gene Mapping

A gene mapping discovery on Cleft Palates. British scientists had identified the gene that causes cleft palate. About 1 in 600 babies are born with cleft palate, in which the two sides of the roof of the mouth do not fuse properly. Researchers at Imperial College from London found the gene on the X chromosome by using information from the Humane Genome Project. "By identifying the gene that causes X-linked cleft palate, we will now understand much more about the cause of the condition.", said Dr. Phillip Stanier, the head of the research team.

It will lead to effective treatments other than corrective surgery. The search for the gene began with a study of seven generations of an Icelandic family with the problem.

### Gene Therapy

Gene therapy restores sight in dogs. Gene therapy, a procedure in which a synthetic virus carries a gene into living tissues, has enabled dogs born blind to see.

Researchers at the Univer. of Pennsylvania's Scheie Eye Institute injected a healthy version of the retinal pigment epithelium (RPE) -65 gene into the retinas of blind dogs, and the dogs are now seeing for the first time. The race is on to apply the same method to humans.

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