

## News in Brief

## Nasal Irrigation Effective For Spring Allergies



When you're doing your spring cleaning, don't forget your nose. According to HealthDay, nasal irrigation is a cheap and easy way for people with spring allergies, nasal congestion, stuffy noses and post-nasal drip to get relief, says Dr. Melissa Pynnonen, co-director of the Michigan Sinus Center and an assistant professor in the University of Michigan's department of otolaryngology.

Nasal irrigation involves rinsing the nose and nasal passages with a solution made with a quarter-teaspoon of kosher salt, eight ounces of warm tap water and a quarter-teaspoon of baking soda. There are a number of ways to administer the solution. For people who've never done nasal irrigation, Pynnonen recommended using an eight-ounce squeeze bottle and squirting four ounces of the solution into each nostril.

The solution exits through the opposite nostril. Opening your mouth and making a "K" sound will prevent the solution from coming out of your mouth. Some people use a neti-pot, which looks like a miniature teapot. When using a neti-pot, the solution is poured, rather than squeezed, into the nose.

## Secrets of Big Tomatoes Unmasked



The secret behind growing large tomatoes lies not in the fertilizer or the perfect soil conditions, but in just a few genetic changes that over time have resulted in tomatoes 1,000 times bigger than their wild ancestors, US researchers said.

Without these changes, tomatoes would be little more than berries on a bush, Reuters reported. "The cherry tomato would be considered very large compared to what is found in the wild," said plant geneticist Steven Tanksley of Cornell University in Ithaca, New York.

Tanksley has been working to understand the genetic changes that allowed humans to transform wild tomatoes—which are naturally about the size of a blueberry—into modern varieties such as the beefsteak tomato, which can weigh a pound (half a kg) or more. Tanksley focused on the genetic changes that give rise to a large number of compartments or locules inside the tomato, a plant that originated in the Americas.

"If you take a beefsteak tomato from the supermarket and cut it open inside you'll see these compartments in there that have wells between them. They may have anywhere from 10 to 20 of these compartments," said Tanksley, whose research appears in the journal *Nature Genetics*.

A true wild tomato may have only two to four of these. "Somehow, something made the plant start making these compartments, and by making more compartments, you can get larger fruit."

## Aging Gene Found in Flies



Scientists funded by the Biotechnology and Biological Sciences Research Council (BBSRC) have found a fast and effective way to investigate important aspects of human aging.

According to ScienceDaily, working at the University of Oxford and The Open University, Dr. Lynne Cox and Dr. Robert Saunders have discovered a gene in fruit flies that means flies can now be used to study the effects aging has on DNA.

The researchers demonstrate the value of this model in helping us to understand the aging process. This exciting study demonstrates that fruit flies can be used to study critical aspects of human aging at cellular, genetic and biochemical levels.

Dr. Lynne Cox from the University of Oxford said, "We study a premature human aging disease called Werner syndrome to help us understand normal aging. The key to this disease is that changes in a single gene (called WRN) mean that patients age very quickly. Scientists have made great progress in working out what this gene does in the test tube, but until now we haven't been able to investigate the gene to look at its effect on development and the whole body."

## Kalashnikov Burglar Alarm



The Kalashnikov has been the common man's rifle for 60 years and responsible for more misery and wasted humanity than any other invention of history.

Now an ingenious Afghan inventor, Hanif Molavizadeh, has built one into a burglar alarm—a highly effective, seat-of-the-pants mash up that includes a cell and speaker phone, sensors, and armed response, Gizmag wrote.

Trigger the alarm by waving a hand outside the window of Molavizadeh's one-room home and the alarm sounds. It also calls Molavizadeh's cell phone so he can have a conversation with the would-be burglar via a speakerphone in the alarm, and if he doesn't like the answers he gets, he can fire the Kalashnikov remotely. He's working on an equally punitive anti-theft system for his car.

## Low-Energy Water Filtration Created

Most water-filtration technologies require a lot of energy to push water through membranes that eventually become fouled and need to be replaced. Both factors make water filtration costly for most applications.

Now researchers at Palo Alto Research Center (PARC) have been able to overcome those challenges by incorporating scientific insights from the physics of toner particle movements into a low-energy water-filtration device that doesn't use membranes, *Technologyview* reported.

That's all good news for the looming specter of filtering brackish drinking water that threatens much of the developing world and even some water-stressed areas in developed countries. In the past, however, the economics have been the stumbling block for creating affordable water-treatment systems. The United Nations estimates that over the next eight years, some 900 million people will need a safe supply of drinking water.

PARC researchers call their device the spiral concentrator. It is a spiral-shaped, 50-centimeter-long piece of plastic tubing that's one millimeter in diameter.

As water is pumped through one end of the device, particles in the water are pressed up against the walls of the tubing. Particles as small as one micron in size are separated out by centrifugal force and shunted away from the clean water via diverging forks in the spiral concentrator.

## Hope in Fight Against Preeclampsia

A gene called COMT, already known for its role in schizophrenia, also plays a significant part in the dangerous obstetric complication known as preeclampsia, a new study finds.

Although the current study was done on mice, the researchers envision a time when the findings could be used as a test to identify women at risk of preeclampsia—and even as a means of preventing the condition, *HealthDay* wrote.

"This gene regulates the oxygenation of the placenta," explained lead researcher Raghu Kalluri, a professor of medicine at Harvard Medical School. "Preeclampsia is a pregnancy disorder where the placenta is hypoxic (isn't receiving enough oxygen)," he added.

Preeclampsia, which affects about 5 percent of all pregnancies, is a leading cause of sickness for pregnant women and their infants. Symptoms of preeclampsia include high blood pressure, protein in the urine and swelling.

The COMPT (catechol-O-methyltransferase) gene is involved in breaking out estrogen into a metabolite called 2ME (2-methoxyestradiol), which prevents a shortage of oxygen in the placenta. When the gene does not function properly, levels of 2-ME are reduced, setting in motion a series of events that lead to preeclampsia, Kalluri explained.

## Braille Converter Bridges Information Gap



RoboBraille service offers a unique solution to the problem of converting text into Braille and audio without the need for users to operate complicated software.

A free, email-based service that translates text into Braille and audio recordings is helping to bridge the information gap for blind and visually impaired people, giving them quick and easy access to books, news articles and web pages.

Developed by European researchers, the RoboBraille service offers a unique solution to the problem of converting text into Braille and audio without the need for users to operate complicated software, *ScienceDaily* reported.

"We started working in this field 20 years ago, developing software to translate text into Braille, but we discovered that users found the programs difficult to use—we therefore searched for a simpler solution," explains project coordinator Lars Ballieu Christensen, who also works for Synscenter Refsnaes, a Danish center for visually impaired children.

The result of the EU-funded project was RoboBraille, a service that requires no more skill with a computer than the ability to send an email.

Users simply attach a text they want to translate in one of several recognized formats, from plain text and Word documents to HTML and XML. They then email the text to the service's server. Software agents then automatically begin the process of translating the text into Braille or converting it into an audio recording through a text-to-speech engine.

"The type of output and the language depends on the email address the user sends the text to," Christensen says. "A document sent to .org would be converted into spoken British English while a text sent to .org would be

translated from Portuguese into six-dot Braille."

The user then receives the translation back by email, which can be read on a Braille printer or on a tactile display, a device connected to the computer with a series of pins that are raised or lowered to represent Braille characters.

RoboBraille can currently translate text written in English, Danish, Italian, Greek and Portuguese into Braille and speech. The service can also handle text-to-speech conversions in French and Lithuanian.

Christensen notes that the RoboBraille partners are constantly working on adding new languages to the service and plan to start providing Braille and audio translations for Russian, Spanish, German and Arabic. They are also working on making the service compatible with PDF documents and text scanned from images.

At present, the service translates an average of 500 documents a day, although it could handle as many as 14,000. RoboBraille can return a simple text in Braille in under a minute while taking as long as 10 hours to provide an audio recording of a book.

As of January, the RoboBraille system had carried out 250,000 translations since it first went online.

The team have won widespread recognition for their work, receiving the 2007 Social Contribution Award from the British Computer Society in December while in April they were awarded the 2008 award for technological innovation from Milan-based Well-Tech.