

News in Brief

Pill Burns Fat Without Diet

It sounds like the perfect remedy for modern life: a pill that simultaneously reduces both belly fat and blood pressure. And it may already exist.

High blood pressure is often treated with drugs called ACE inhibitors, which block angiotensin-converting enzyme (ACE). ACE usually constricts blood vessels and so raises blood pressure. It is also expressed in fat cells, and previous studies had suggested that it might trigger fat accumulation, NewScientist reported.

To investigate exactly what ACE does, Michael Mathai of the Howard Florey Institute in Melbourne, Australia, and colleagues engineered mice to lack the ACE gene. These mice turned out to weigh 20 percent less than normal mice and had 50 to 60 percent less body fat, especially in the abdomen. The mice also cleared excess sugar from the blood faster, making them less prone to diabetes. This suggests that mice lacking ACE can burn off excess energy without skipping on food or being more physically active.



Mirror on Moon

Could Catch Alien Eyes

Mounting mirrors on the moon and using them to signal across space could let ET know we Earthlings are here.

Ever since radio broadcasts began we've been trumpeting our presence to nearby parts of the galaxy, so far without reply, NewScientist wrote.

To improve the chances of being found, Shawn Domagal-Goldman and Jacob Haqq-Misra of Pennsylvania State University in State College reckon we should cover half of the moon with mirrors.

When angled to catch the sun's rays the mirrors would increase the amount of light the Earth-moon system reflects by 20 per cent, they say, more than enough to catch the eye of a vigilant alien astronomer.

Domagal-Goldman proposes using a code of prime number flashes--just as aliens used to get in touch in Carl Sagan's book Contact. This will ensure the flashes aren't mistaken for natural variations in brightness.

As a bonus, the underside of the mirrors could be covered with photovoltaic cells.



Dark Chocolate Good For Pregnant Women

A daily snack of quality dark chocolate is healthy for pregnant women and protects them from possible high blood pressure problems, a medical study said.

By biting into rich, dark chocolate, there is a 69 percent less chance of contracting preeclampsia, a major pregnancy complication with cardiovascular manifestations such as hypertension that affects up to eight percent of pregnancies, said Dr. Elizabeth Triche, the associate director at the Yale Center for Perinatal, Pediatric & Environmental Epidemiology, at Yale University, AFP reported.

The study method measured the density of theobromine--a chemical in chocolate--in the arterial cord blood extracted from the umbilical cord at delivery.

The primary effects of theobromine include diuresis, myocardial stimulation and vasodilatation. Other chemicals in chocolate include magnesium, which lowers hypertension, and flavanoids, which are potent antioxidants, the study said.

"The darker (the chocolate) is, the better it is. The more highly processed, the more fat and sweet it is, the less it contains theobromine," she said, adding that theobromine concentrations in chocolate vary from 0.15 percent to 0.46 percent.



Device Spins Silk Like Spiders

It can't rival Spider-Man yet, but a new micromachine that works like a spider's silk duct might finally lead the way to producing industrial quantities of high-quality artificial spider silk.

Spider silk is super-light, super-strong and elastic too. Existing human materials lack its useful combination of properties, and proposed uses span everything from bulletproof vests to optic fibers, NewScientist said.

Researchers have struggled for years to find an industrial process to make spider silk, and have tried everything from making it in a lab dish to creating silk-secreting goats.

Now German researchers have demonstrated a new method of production--an artificial version of the duct spiders use to 'spin' the silk.

Spiders' silk ducts contain glands that process a gel of simple proteins into long fibers of protein. Different glands alter the chemistry of the gel in different ways, producing silk with different properties.

The artificial duct is a glass chip shot through with tiny tubes that tries to mimic those processes.



Fragility of Self-Esteem

Do you feel good about yourself? Don't get defensive! It's just a question. Placing yourself on a pedestal isn't all it's cracked up to be, a psychologist says. New research reveals people with "fragile high self-esteem" are more defensive if they feel attacked by others than those who have more stable and secure self-worth.

According to LiveScience, the recent study, detailed in the June issue of the Journal of Personality, adds to a mound of navel-gazing research that is painting a more complex picture of self-esteem.

"There are many kinds of high self-esteem, and in this study we found that for those in which it is fragile and shallow it's no better than having low self-esteem," said Michael Kernis of the University of Georgia.

"People with fragile high self-esteem compensate for their self-doubts by engaging in exaggerated tendencies to defend, protect and enhance their feelings of self-worth."

Kernis says the results are not meant to knock down high self-esteem, which has been stamped as one of the keys to happiness and to moving up the popularity or professional ladder. The study only adds another layer to this psychological phenomenon.

In general, individuals with so-called secure high self-esteem tend to present an authentic self to the world; they are genuinely happy with themselves and accept their weaknesses. A fragile self-esteem is unstable, and can fluctuate from day to day or within one day.

Artificial Airways Good News for Asthma

A new artificial airway being developed in a test tube could make it possible to develop better therapies for asthma and allergy sufferers and could reduce the need for animal testing.

The development promises to benefit people with asthma, whose airways (breathing passages) are sensitive to pollen, dust, animal fur and viruses which cause them to be inflamed making it hard to breathe, ScienceDaily said. Academics at the University of Southampton are working with the National Center for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs) on this project.

Principal Investigator on the project, Donna Davies, Professor of Respiratory, Cell and Molecular Biology in the University's Infection, Inflammation and Repair division, is working with Professor Hywel Morgan of the University's School of Electronics and Computer Science to construct the artificial airways.

NC3R provides a UK focus for the promotion, development and implementation of the 3Rs in animal research and testing. The airways, which are being developed over a two and a half year period, will be made using tissue engineering.

Layers of the cells that make up the airway tissue will be grown inside a micro-fluidic device.

Tomato Dishes May Protect Skin

A new study found adding five tablespoons of tomato paste to the daily diet of 10 volunteers improved the skin's ability to protect against harmful UV rays.

Damage from these rays can lead to premature ageing and even skin cancer, BBC said.

The study, presented at the British Society for Investigative Dermatology, suggested the antioxidant lycopene was behind the apparent benefit.

This component of tomatoes--found at its highest concentration when the fruit has been cooked--has already been linked to a reduction in the risk of prostate cancer.

Now researchers at the universities of Manchester and Newcastle have suggested it may also help ward off skin damage by providing some protection against the effects of UV rays.

They gave 10 volunteers around 55g of standard tomato paste--which contains high levels of cooked tomatoes--and 10g of olive oil daily. A further 10 participants received just the olive oil. After three months, skin samples from the tomato group showed they had 33 percent more protection against sunburn--the equivalent of a very low factor sun cream--and much higher levels of procollagen, a molecule which gives the skin its structure and keeps it firm.

"The tomato diet boosted the level of procollagen in the skin significantly. These increasing levels suggest potential reversal of the skin ageing process," said Professor Lesley Rhodes, a dermatologist at the University of Manchester.

"These weren't huge amounts of tomato we were feeding the group. It was the sort of quantity you would easily manage if you were eating a lot of tomato-based meals."

There was a warning however that tomatoes

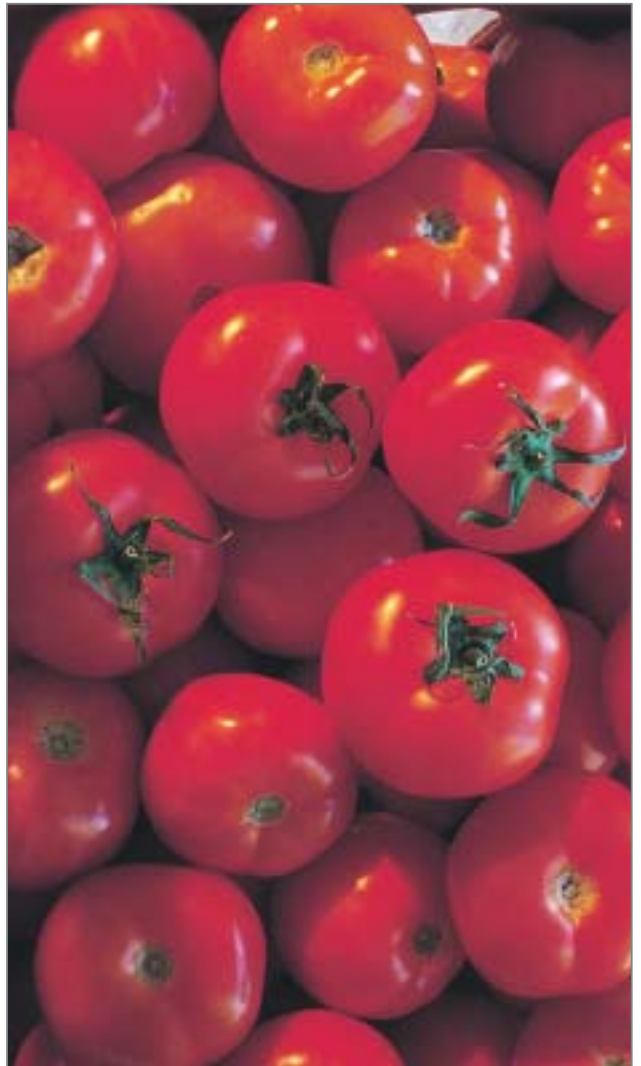
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The study was both small and short, and the team is now looking at carrying out fresh research into the benefits of lycopene for the skin.

Dr. Colin Holden of the British Association of Dermatologists said, "While the protection offered by lycopene is low, this research suggests that a diet containing high levels of antioxidant rich tomatoes could provide an extra tool in sun protection".



Tomatoes should be viewed as a helpful addition rather than an alternative to sun cream.