

News in Brief

Foods to Combat

Winter Dull

It's easy for skin to become dry, flaky and sallow during winter. Before you go out and spend your paycheck on fancy lotions and creams, try nourishing your skin from the inside out—what we put in our body is just as essential for a healthy glow as what we put on it, Shine.yahoo reported.

Here are foods that will leave you glowing all winter long: **Get That Youthful Glow:** If you're not getting enough vitamin A in your diet, then your skin is majorly suffering. Not enough of this nutrient makes skin dry and flaky. The vitamin is also touted for its anti-aging benefits.

What Wrinkles?: By now we all know that citrus fruits like oranges and grapefruit are chock-full of vitamin C, which is great for protecting against immune deficiencies like colds. But this essential nutrient also helps turn back the clock by preventing wrinkles.

Smooth It Out: You probably already know that sulfur masks are great to put on the skin, but sulfur-rich foods such as eggs and garlic help the skin from the inside out. Sulfur helps keep skin smooth by repairing tissue and elasticity in skin.

Protect and Heal: Green tea is an all-around healer to skin. It helps protect the skin from melanoma and acts as an anti-inflammatory against acne and cuts.

Soft and Supple: Fish like salmon, tuna and trout are high in omega-3s. Those good-for-you fats help soften dry skin by holding in moisture, which helps decrease the look of wrinkles and plumps up skin.

Repair and Rejuvenate: Foods like lean meats are rich in zinc, which makes them great skin soothers. Zinc helps reduce oil production and acne, and also helps heal wounds.



Blame Bacteria

For Putting on Weight

Weight gain bugging you? Evidence is mounting for the central role that bacteria play in causing obesity.

Liping Zhao and his team at Shanghai Jiao Tong University in China put a morbidly obese man on a diet of whole grains, traditional Chinese medicines, probiotics and non-digestible carbohydrates for 23 weeks, NewScientist wrote.

The diet was designed to inhibit the bacteria thought to be associated with weight gain by increasing the pH in the colon.

The 175-kilogram volunteer lost 51 kg, despite not exercising. People who have had weight-loss surgery lose on average 49 kg. To see if the bacteria present also changed, the team looked at what species were prevalent in the volunteer's gut before and after the diet.

Before the regime, *Enterobacter*—a toxin-producing pathogen—was most abundant, accounting for 35 percent of the gut bacteria. After the diet, it was reduced to undetectable levels.

The researchers fed mice samples of this bacterium from the volunteer's gut to determine whether the pathogen was a cause or a result of his obesity.

They found that the mice with the new bacteria gained significantly more weight on a high fat diet than control mice, also on a high fat diet.

Rudolph's Red Nose Mystery

Solved

Most people know Rudolph the Red-Nosed Reindeer had a very shiny nose—but why? Medical researchers say they've now found the answer.

According to LiveScience, the secret to Rudolph's rosy schnozzle is the dense network of blood vessels in his nose.

Reindeers have 25 percent more capillaries carrying red, oxygen-rich blood in their nasal architecture than humans, say the scientists from the Erasmus Medical Center in Rotterdam, the Netherlands, and the University of Rochester in New York.

"In colder climates and also when they are higher up in the atmosphere pulling Santa's sleigh, the increase in blood flow in the nose will help keep the (nose's) surface warm," Dr. John Cullen of the University of Rochester told MedPage.

The dense network of blood vessels in reindeer noses is also essential for regulating the animal's internal body temperature; like many mammals, reindeer don't sweat.

The researchers took advantage of high-tech instruments like hand-held intravital video microscopes to compare the blood vessels of two reindeer (Rangifer tarandus) with those of human volunteers (five healthy humans and one with nasal polyps).

One of the human volunteers was examined after inhaling 0.0035 ounces (100 milligrams) of cocaine, "a drug routinely used in ear, nose, and throat medicine as a local anesthetic and vasoconstrictor," the researchers write in the British Medical Journal this week.

"We're kind of glad they didn't do the same thing with the reindeer, because the last thing we would want is reindeer on cocaine, pulling Santa around the sky," said Cullen.

Their results showed reindeer noses do turn a rosy red; after a treadmill test, the reindeer's nose showed up as red (warm) in a thermographic image. In addition, they found glandlike structures in the nasal mucous membrane of reindeer and humans; the structures were surrounded by capillaries, and the researchers suspect, at least in humans, they secrete mucus.



Metal Electrical Wires Stretch Without Breaking

Things like earbud cords have a nasty way of getting hooked on things and breaking.

Such incidents may become a lot less common, however, as scientists from North Carolina State University have created conductive wires that stay intact even when stretched up to eight times their regular length, Gizmag wrote.

The researchers made the wires by filling a tube of extremely elastic polymer with a liquid metal alloy of gallium and indium. As a result, even when the polymer is stretched to several times its relaxed state, the liquid metal inside of it is still able to carry an electrical current.

According to NC State's Dr. Michael Dickey, other efforts at creating stretchable electrical wires have involved embedding metals or other conductive materials within the polymer matrix itself. Doing so, however, compromised the elasticity of the material.

"Our approach keeps the materials separate, so you have maximum conductivity without impairing elasticity," he said. "In short, our wires are orders of magnitude more stretchable than the most conductive wires, and at least an order of magnitude more conductive than the most stretchable wires currently in the literature."



Iran Plans to Establish Tooth Stem Cell Bank

Iran announced on Tuesday that it plans to establish a tooth stem cell bank to save dental pulp cavity stem cells to be used by patients in case of a broken or damaged tooth.

"We want to set up a pulp cavity stem cell bank with the help of the Presidential Office's Department for Technology to be used for producing teeth and materials similar to it," Professor Ardeshtir Qavamzadeh, the dean of Shahid Beheshti University's Dentistry Faculty, said in Tehran on Tuesday, Fars News Agency said.

He said once the stem cell bank is established, those people who pull their teeth can save and use their cells for producing and planting new teeth.

Prof. Qavamzadeh, who is also the head of Tehran Medical University's Hematology-Oncology and Stem Cell Transplantation Research Center, won the world's top researcher award in thalassemia and cancer treatment in 2012. He announced in August that Iran ranks second in transplanting stem cells.

"Iran ranks second in the world in treating thalassemia and transplanting stem cells," he told FNA at the time.

In recent years, Iran has made huge progress in stem cell science and is considered a world pioneering country in the field.



Iranians Use Goat Milk To Produce Heart Drug

Iranian scientists at Royan Institute for Reproductive Biomedicine, Stem Cell Biology and Technology have produced a new type of drug from goat milk for treating patients who suffered a heart failure.

"We managed to produce the drug to treat myocardial infarction (heart failure) and the medicine that has reached the laboratory production stage is produced from goat's milk. We hope it will reach the stage of industrial production," Mohammad Hussein Naest Esfahani, the head of Royan Institute, said in Isfahan on Wednesday, Fars News Agency reported.

"The patients will not need to be hospitalized after a heart failure. The drug clears blood clots," he added.

Royan Institute for Reproductive Biomedicine, Stem Cell Biology and Technology is a leading Iranian biomedical research center dealing with stem cell technology and regenerative medicine.

Established in 1991, the institute's first director was Professor Saeid Kazzemi

Ashtiani. Since its establishment, the institute has had close collaborations with other leading Iranian research centers such as Institute of Biochemistry and Biophysics (IBB), NRCGEB and Bone Marrow Transplantation Center at Tehran's Shariati Hospital.

The Department of Stem Cells was established in 2002 to establish embryonic stem cell lines and to differentiate them into different kinds of cells, including cardiomyocytes, beta cells and neural cells.

Royan is a leading stem cell research center in Asia and Middle-East. Earlier, scientists at the Stem Cell Department of Iran's Royan Research Center successfully produced a mouse using embryonic stem cells.

The mouse was created by injecting the embryonic stem cells of a black mouse into a white mouse's blastocysts.

In 2006, Royan's scientists successfully cloned the country's first lamb named Royana.



Iran to Produce Antibodies for Treating Breast Cancer

Iran on Wednesday announced plans to produce five new antibodies in the next two years.

"We have signed a memorandum of understanding (MoU) with the Industrial Development and Renovation Organization (IDRO) on investment for the establishment of a complex to produce monoclonal antibodies for treating breast cancer. We hope that to produce five antibodies in the first stage after launching the complex in the next two years," Dr. Mohammad Mehdi Akhondji, the head of Ibn Sina (Avicenna) Research Center of Academic Jihad, was quoted as saying by Fars News Agency.

"Identification, production and supply of breast cancer drugs, including monoclonal antibody, will be the tasks of this complex," he added.

Iran in August started the mass production of antibodies and blood factor 7 products that are used to treat hemophilia.

Iran has taken wide strides in science and technology, particularly in medical and medicinal fields, in recent years.

In January, Iranian President Mahmoud Ahmadinejad in a ceremony in Tehran unveiled six new types of homemade medicines used for treating various kinds of diseases.

The Iranian president unveiled two

new types of drugs and four types of raw materials for treating osteoporosis, hemophilia and neurological, skin and muscle diseases and breast cancer.

Iranian scientists had also in 2011 produced a new type of anti-cancer drug using the venoms of reptiles like snakes and scorpions.

"After several years of research and studies on a combination of snake and scorpion venoms, the anti-cancer drug was produced in Iran," Abbas Zare, the director of the Venomous Animals Department of Iran's Razi Vaccine and Serum Research Institute, told reporters in October 2011.



Nearest Sun-Like Star Has Planets

The nearest single Sun-like star to the Earth hosts five planets—one of which is in the "habitable zone" where liquid water can exist, astronomers say.

Tau Ceti's planetary quintet—reported in an online paper that will appear in Astronomy and Astrophysics—was found in existing planet-hunting data, BBC said.

The study's refined methods of sifting through data should help find even more far-flung worlds.

The star now joins Alpha Centauri as a nearby star known to host planets.

In both those cases, the planets were found not by spying them through a telescope but rather by measuring the subtle effects they have on their host stars' light.

In the gravitational dance of a planet around a star, the planet does most of the moving. But the star too is tugged slightly to and fro as the planet orbits, and these

subtle movements of the star show up as shifts in the color of the star's light we see from Earth.

This "radial velocity" measurement is a tricky one; stars' light changes also for a range of other reasons, and requires picking out the specifically planetary component from all this 'noise'.

Now, Hugh Jones of the University of Hertfordshire and colleagues have refined their "noise modeling" in order to subtract it, and thereby see the smallest signals hiding in the data—starting with Tau Ceti.

"It's a star on which we have a lot of data—an order of magnitude more data than we have for pretty much any other star," Prof Jones told BBC News.

"It's a good test case for how low can we go, what size of signals can we pick up."

The team started with data from three planet-hunting missions: Harps, AAPS, and HiRes, all of which had data on Tau Ceti.

The trick to honing the technique was to put in "fake planets"—to add signals into the messy data that planets should add—and find ways to reduce the noise until the fake planets became more and more visible in the data.

"Putting all that together, we optimized a noise-modeling strategy that allows us to recover our fake signals—but in the process of doing that, we actually saw that we were finding signals as well," Prof Jones said—actual planets.

The quintet includes planets between two and six times the Earth's mass, with periods ranging from 14 to 640 days.

One of them, dubbed HD 10700c, lies about half as far from Tau Ceti as the Earth is

from the Sun—and because Tau Ceti is slightly smaller and dimmer than our Sun, that puts the planet in the so-called habitable zone.

