

EATING RIGHT STILL AT CORE OF DIETARY GUIDELINES

WASHINGTON: Dietary advice can be confusing. Is it OK to eat meat and eggs? Is fat in or out? What about grains? How much salt? An advisory committee's recommendations for the nation's dietary patterns are due soon, and some advice may be changing. The committee is expected to downplay the importance of lowering cholesterol intake and may put less emphasis on eating lean meats. The panel could also tweak its recommendations on exactly how much salt is too much and put

limits on sugar consumption for the first time.

Still, despite some revisions, the main advice never changes: eat more fruits and vegetables and whole grains, and eat less saturated fats, salt and sugar. The Agriculture and Health and Human Services Departments will use the advisory committee's report to write the final version of the 2015 dietary guidelines, due by the end of this year. A look at the upcoming dietary guidelines, and what they mean for consumers:

Why they're important

The dietary guidelines are issued every five years. The federal government uses them to set standards for school lunches and other federal feeding programs, and they serve as the basis for information on the nutrition facts panel on the backs of food packages. They're also used to create the government's "My Plate" icon, which replaced the food pyramid and recommends a variety of fruits and vegetables, whole grains, lean proteins and low-fat dairy. Doctors and nutritionists use the guidelines when giving advice, and food companies use them to make claims about their food.

Evolving with science

The guidelines evolve as science evolves. Take cholesterol. In December, the advisory panel said in its preliminary recommendations that cholesterol is no longer "considered a nutrient of concern for overconsumption." That would be a change from previous guidelines, which said Americans eat too much cholesterol. This follows increasing medical research showing how much cholesterol is in your bloodstream is more complicated than once thought, and depends more on the kinds of fats that you eat. Medical groups have moved away from specific targets for cholesterol in the diet in recent years.

It's unclear if the recommendation will make it into the final guidelines. Dr Robert Eckel, a professor of medicine at the University of Colorado in Denver who is a past

president of the American Heart Association, says there's not enough evidence to make good recommendations on cholesterol right now, but "no evidence doesn't mean the evidence is no."

People can enjoy high-cholesterol egg yolks in moderation, he advises, but "a three- to four egg omelet isn't something I'd ever recommend to a patient at risk for cardiovascular disease," he says. There's also some new science on salt. The 2010 dietary guidelines recommend that people eat less than 2,300 milligrams a day. That is reduced to 1,500 milligrams for some people at risk of heart disease. A 2013 report by the Institute of Medicine said that while lowering salt intake is important for heart health, there is no good evidence that eating less than 2,300 milligrams a day of sodium offers benefits. The advisory panel's discussions hint that they may not include the lower recommendation for certain groups.

Political battles

While they are based on dietary science, the guidelines aren't immune to politics. This year, the battles have already started over meat. Current guidelines advise that people eat lean meats as a healthy way to get protein, but the advisory panel has debated whether lean meats should be included. In addition, the draft recommendations say a healthy dietary pattern includes fewer "red and processed meats" than are currently consumed. The meat industry called the draft rec-

ommendations absurd. The committee has also discussed the idea of including sustainability as a dietary goal. The advisory panel said in its draft recommendations that there is "compatibility and overlap" between what is good for health and what is good for the environment.

A diet higher in plant-based foods and lower in animal-based foods is "more health promoting and is associated with lesser environmental impact than is the current average U.S. diet," the draft recommendations said. Environmentalists have been pushing those recommendations, while Congress is pushing back. Language attached to a massive year-end spending bill enacted in December noted the advisory committee's interest in the environment and directed Agriculture Secretary Tom Vilsack "to only include nutrition and dietary information, not extraneous factors" in final guidelines.

What won't change

The "My Plate" isn't expected to change much - the guidelines issued at the end of the year will most certainly recommend putting fruits, vegetables, whole grains and lean proteins on your plate, accompanied by low-fat dairy. In its draft recommendations, the panel said the problem it is trying to solve is high rates of "preventable chronic disease" and obesity. The panel said the gap is an American diet too high in sodium, saturated fat, refined grains, added sugars and calories, and too low in vegetables, fruit and whole grains. —AP



CONCORD: Photo shows roasted garlic, turnip and sweet potato soup in Concord, NH. —AP

SPACE X DRAGON SHIP CAPSULE RETURNS FROM SPACE STATION

SATELLITE TO MONITOR THE SUN-LIT SIDE OF EARTH

CAPE CANAVERAL: A SpaceX Dragon cargo ship made a parachute return into the Pacific Ocean on Tuesday, while high winds in Florida scrapped plans for the company's Falcon rocket launch, NASA said. The Dragon capsule departed the International Space Station at 2:10 pm EST/19:10 GMT and splashed down about 260 miles (418 km)

southwest of Long Beach, California, about 5.5 hours later.

The Dragon is loaded with nearly 4,000 pounds (1,814 kg) of returning science experiments and equipment, including two faulty components from spacesuits that NASA wants to analyze before clearing astronauts for a trio of spacewalks later this month. Dragon's return overlapped with the

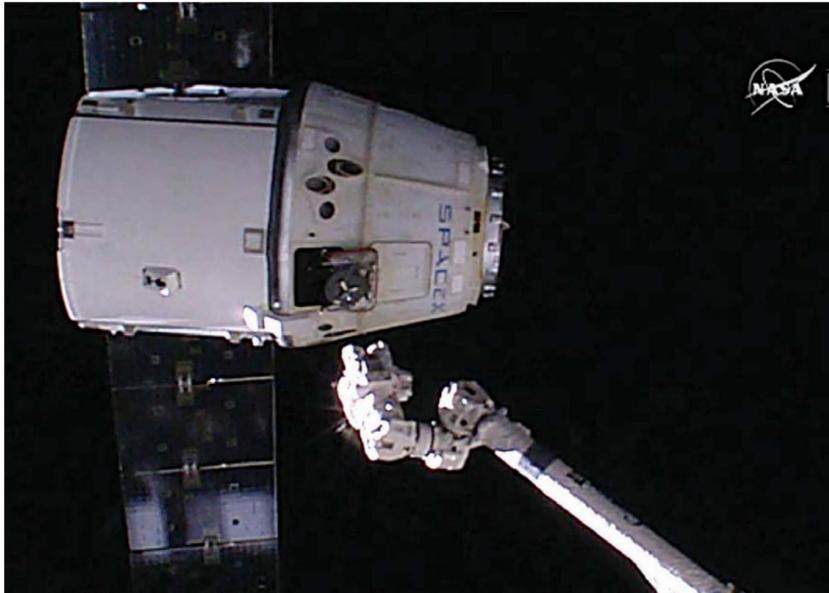
company's Falcon 9 launch attempt at Cape Canaveral Air Force Station in Florida. The rocket was grounded by high upper-level winds.

"Extreme wind shear over Cape Canaveral. Feels like a sledgehammer when supersonic in the vertical," SpaceX founder and Chief Executive Elon Musk posted on Twitter. SpaceX will try again at 6:03 p.m. EST/23:03

GMT later to launch the US government's Deep Space Climate Observatory, or DSCOVR. The satellite is designed to serve as weather buoy to provide about an hour's advance notice of potentially dangerous solar storms, which can disrupt radio communications, satellite signals and power grids on Earth.

It also will monitor the sun-lit side of Earth, tracking volcanic plumes, measuring ozone and monitoring droughts, flooding and fires. The launch of DSCOVR was planned for Sunday, but was delayed due to a problem with an Air Force radar system needed to track the Falcon rocket during flight. Once the satellite is on its way to orbit, eventually reaching 930,000 miles from Earth, SpaceX plans to attempt to land the Falcon launcher's spent first stage, part of ongoing efforts to develop reusable rockets, potentially slashing launch costs.

The booster is programmed to separate itself three minutes after liftoff, turn around, make two braking burns and touch down on a platform floating about 370 miles northeast of the launch site. The last Falcon rocket to fly nearly made it back intact, but it ran short of hydraulic fluid to maneuver steering fins and it crashed into the platform. For the second attempt, engineers added an extra reservoir of hydraulic fluid, but the rocket will be coming in with nearly twice the force and four times the heat, SpaceX said. "Rocket re-entry will be much tougher this time around due to deep space mission," Musk wrote on Twitter. —Reuters



SPACE: Image from NASA TV shows the SpaceX Dragon undocking from the International Space Station (ISS). —AFP



PARIS: A picture taken in Paris shows a bowl of popcorn. To most people, it may be just a fun food to munch while watching a movie. But to a couple of French investigators, popcorn is a biomechanical enigma waiting to be explained. —AFP

PHYSICS OF FOOD SHOWS THE SECRETS OF POPCORN

PARIS: To most people, it may be just a fun food to munch while watching a movie. But to a couple of French investigators, popcorn is a biomechanical enigma waiting to be explained. In an unusual study published yesterday, engineers Emmanuel Viot and Alexandre Ponomarenko carried out experiments into what makes popcorn, well, pop. Cameras recording at 2,900 frames per second helped show what happened when a kernel of corn strutted its stuff. When the temperature reached 100 degrees Celsius (180 degrees Fahrenheit), some of the moisture inside the corn started to turn into steam, the researchers found. As the temperature rose to around 180 C (356 F), pressure built to around 10 bar, or 10 times the atmosphere at sea level.

Unable to withstand the stress, the outer shell broke open, causing a dramatic drop in pressure that forced the kernel's starchy innards to expand and protrude. "We found that the critical temperature is about 180 C (356 F), regardless of the size or shape of the grain," said Viot, an aero-

nautical engineer at the elite Ecole Polytechnique. The first thing to emerge from the fractured shell is a limb-shaped structure—a "leg"—that comes into contact with the surface of the pan and starts to compress under the heat. Tensed and then released, the "leg" causes the corn to leap up—a height ranging from a few millimeters to centimeters (tenths of an inch to several inches)—and emit a "pop" from the sudden release of water vapor.

A few milliseconds later, the granules spewing from inside expand to form a spongy flake. Evolution from fracture to flake takes less than 90 milliseconds - 0.09 of a second. The popcorn's leap results from an intriguing combination of thermodynamics and fracture mechanics, rather than just the blast of pent-up gases. "A piece of popcorn has a singular way of jumping, midway between explosive plants such as impatiens, and muscle-based animals such as human beings," the researchers said. The study appears in a British journal, the Royal Society Interface. —AFP

COLORADO'S POT TAX TALLY HAS LESSONS FOR OTHER US STATES

DENVER: Marijuana makes money. But legalizing it doesn't eliminate the black market or solve a state's budget problems. Those are the lessons from Colorado's first full year of tax collections on recreational pot. The year-end report, released Tuesday, tallied about \$44 million in new sales taxes and excise taxes from recreational pot. Add fees and pre-existing taxes from medical pot, which has been legal since 2000, and Colorado's total 2014 pot haul was about \$76 million. Colorado was the first government anywhere in the world to regulate marijuana production and sales, so other governments are watching closely. Estimates varied widely for how much money Colorado would make, and the final hard numbers have important lessons for other states considering legal weed markets.

Money doesn't come overnight

Colorado started selling recreational weed on Jan 1, 2014. But its first month of sales resulted in only \$1.6 million for the state. By December, that figure was \$5.4 million. The reason for the increase? Regulatory delays. Red tape meant stores opened slowly, with many municipalities waiting months before allowing pot shops to open. In Washington state, delays were even more pronounced. Washington voters legalized pot at the same time Colorado did, in 2012. But retail sales in Washington didn't start until June, with stores slowly opening and sales increasing

each month. Things will speed up as more states legalize pot and can look to Colorado and Washington for regulatory guidance. But legal weed isn't an overnight flood of tax money. "Everyone who thinks Colorado's rollin' in the dough because of marijuana? That's not true," said state Sen Pat Steadman, a Denver Democrat and one of the Legislature's main budget-writers.

Figure out how to tax it

Washington and Colorado set vastly different tax rates, both based on a percentage of the pot's value. The states then had to immediately set a value for a product with no legal sales history. What's the right price? Colorado's pot regulators have struggled to establish a wholesale pot price to collect excise taxes. "Taxing a percentage of price may simply not work," said Pat Oglesby, a former congressional tax staffer who now studies marijuana's tax potential at the Chapel Hill, NC, Center for New Revenue. He pointed out that the two latest legal weed states - Alaska and Oregon, both still working on retail regulations - will tax marijuana by weight, similar to how tobacco is taxed.

Not everyone will pay

Every state in the union, liberal to conservative, has a market for marijuana. And making pot legal doesn't guarantee those consumers will leave the black market and happily sign up to start paying taxes. In

Washington state, medical marijuana isn't taxed. It is in Colorado, but all adults are allowed to grow up to six plants on their own. That means the states' new marijuana markets had legal competition from Day One. And that doesn't account for the black market, which of course is completely free of taxes and regulations. Lawmakers in both Colorado and Washington are looking for ways to drive pot smokers out of the lower-taxed medical pot market and into the recreational one. But obstacles are stiff. "If there is untaxed medical pot, the taxes are voluntary. When you make it voluntary, people won't necessarily pay," Oglesby said.

Things will change

The marijuana market is far from settled. Colorado benefited from first-in-the-nation curiosity and marijuana tourism. As more states legalize, Colorado and Washington will face competition. "Colorado is probably kind of a best-case scenario" for pot tax collections, said Jeffrey Miron, a Harvard University economist who studies the drug market. "If a number of other states legalize - and two of them already have - then bit by bit, Colorado revenue is likely to decline." There's an even bigger uncertainty looming for states considering legal weed - a new president in 2016. "The huge unknown is still federal policy," Miron said. "A new president can radically change state policies toward legalization." —AP

POLAND'S DREAM OF SHALE GAS RICHES BEGINS TO DIM

WARSAW: Poland's dream of becoming a shale gas "El Dorado", bringing untold riches and assuring energy independence, is turning into a mirage as Western firms abandon prospecting efforts, citing poor results. "We can no longer talk of a new El Dorado," said Grazyna Piotrowska-Oliwa, a former president of Poland's PGNiG gas utility. "The hopes and promises were excessive," she said, even though the official results of the explorations have yet to be published.

Optimistic estimates suggested Poland could have up to 1.92 trillion cubic metres (67.8 trillion cubic feet) of exploitable shale gas deposits, fuelling interest from top energy giants around the world. But those forecasts were "exaggerated", and now "there's disappointment" in Poland, according to analyst Grzegorz Kus of the consultancy PwC. Leading Polish geology scholars also say that the country's shale deposits are structured so differently from those found in the United States that extraction technologies developed there cannot be applied in Poland.

US energy major Chevron was the latest to pull the plug on shale gas prospecting in Poland. ExxonMobil, Marathon Oil and Talisman Energy had led the exodus, followed by French oil giant Total and Italy's Eni last year. "It's not a surprise and it's not the last withdrawal," Kus said of Chevron. "It turns out that this market is not as inter-

esting as it was thought to be." He attributed the retreat of global oil giants to the disappointing results of exploration, the drop in global fuel prices, more interesting extraction opportunities elsewhere in the world, Polish bureaucracy and planned tax hikes in Poland's energy sector. Fifteen firms are still in the game, including US major ConocoPhillips, PGNiG and Polish oil group PKN Orlen.

Pipe dream

Chevron said plunging oil prices had prompted severe spending cuts in worldwide exploration. But energy sector expert Andrzej Szczesniak says "it was the geological conditions that were decisive." "Of the 68 exploratory drillings carried out to date across Poland, not a single one brought positive results in terms of profitability," he said. However, Szczesniak said: "It's not yet officially over," adding that "any discovery of profitable deposits will revive hopes." The spokeswoman for Poland's environment ministry, Katarzyna Pliszczynska, also remained hopeful, telling AFP: "At this stage, it is premature to speak of the results of the drilling." New official assessments of exploration are expected this year. "The drilling will continue. We're going ahead with explorations, even if the last ones weren't successful," Polish Prime Minister Ewa Kopacz said last week. —AFP