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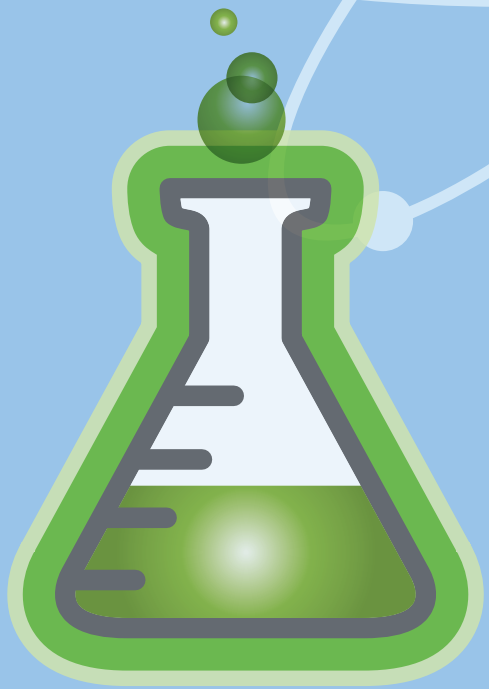

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October 1, 2009

Odds Favor Drunk Trauma Victims

A study in the journal *American Surgeon* finds that trauma victims who were inebriated at the time of their injury have higher survival rates than their sober counterparts. Rachel Kremen reports

[*The following is an exact transcript of this podcast.*]

Being drunk might make you more accident prone, but it also increases your chance of survival. Research published in the journal *American Surgeon* reveals that trauma patients are more likely to survive if they were intoxicated at the time of their injury.

A retrospective study of nearly 8,000 trauma patients found that seven percent of people who came in sober died of their injuries, while those who were hurt while drunk only died one percent of the time. A positive blood alcohol level seemed to increase the likelihood of survival, even after the researchers took into account the age of the patient and the severity of the injury. Trauma patients who came in to the hospital drunk were discharged sooner, too.

Exactly how alcohol protects the injured is still not clear. But a past study on animals did find that ethanol protected against nerve damage. The new work hints that alcohol might have a place in treating traumatic injuries, although more research is needed. In the meantime, avoiding trauma in the first place is still the strategy one might call most sober.

—Rachel Kremen

SCIENTIFIC AMERICAN

October 2, 2009

Ig Nobel Prizes Awarded

On the eve of the Nobel Prize announcements, the Ig Nobel Prizes were awarded at Harvard, for studies into knuckle-cracking and other vital medical and scientific research. Karen Hopkin retorts

[*The following is an exact transcript of this podcast.*]

When there are Nobel prizes there are Ig Nobel prizes, which were handed out at Harvard on October 1st. The awards honor research that “makes people laugh and then makes them think.”

Among this year’s winners:

The physics prize went to a study of why pregnant women don’t tip over. Usually. The chemistry prize was awarded to scientists who turned tequila into diamonds. Proof that all that glitters is not Cuervo gold. The veterinary medicine prize was given for finding that cows that have names make more milk than those who remain anonymous. Another study that’s udderly original. The medicine prize went to a physician who, for fifty years, cracked the knuckles on only his left hand to test his mother’s contention that knuckle-cracking causes arthritis. His conclusion: mom was wrong, although his study was self-controlled and not blinded.

Finally, the peace prize went to Swiss researchers for determining, through experiment, whether it’s better to get cracked over the head with a full bottle of beer or an empty one. Both, they found, are capable of fracturing a skull. Which should definitely make you think during your next barroom brawl, and that’s no laughing matter.

—Karen Hopkin

SCIENTIFIC AMERICAN

October 4, 2009

Truth Is That Parents Lie to Kids

A study in the *Journal of Moral Education* finds that parents lie to children regularly, to influence behavior

[*The following is an exact transcript of this podcast.*]

When I was pregnant, a friend gave me a book called *Great Lies to Tell Small Kids*. In it are gems like “wine makes mommy charming” and “men don’t go bald naturally, they like getting their hair cut that way.” Now, if you’re filled with horror at the notion of pulling a toddler’s leg like that, a new study in the *Journal of Moral Education* shows that parents regularly use deception to influence their kids.

We can all recall lies our parents told us to get us to do something, or to stop doing something. “If you cross your eyes they could stay that way” comes to mind. But in the current study, researchers found that these parental fibs are hardly few and far between. And that even parents who preach to their kids about the importance of being honest admit to lying to them as well.

The researchers plan to extend their studies to see whether all this lying undermines children’s trust. Until then, well, keep telling junior that if he spins around really fast, then stops, his face will skid around to the back of his head. It could keep him busy while mommy becomes even more charming.

—Karen Hopkin

SCIENTIFIC AMERICAN

October 5, 2009

Nobel Prize in Physiology or Medicine

The 2009 Nobel Prize in physiology or medicine goes to Harvard's Jack Szostak, Johns Hopkins's Carol Greider and Elizabeth Blackburn at U.C. San Francisco, for their work on telomeres and telomerase. Steve Mirsky reports

[*The following is an exact transcript of this podcast.*]

The 2009 Nobel Prize in physiology or medicine goes to Harvard's Jack Szostak, Johns Hopkins's Carol Greider and Elizabeth Blackburn at U.C. San Francisco for their work on how chromosomes are protected by telomeres and the enzyme telomerase.

The Nobel laureates' research helped explain how an organism's DNA is successfully copied when cells divide. Telomeres are genetic sequences that act like little protective caps at the end of chromosomes—think of the sealed tips of your shoelaces. Telomerase is the enzyme that builds telomeres.

Blackburn and Szostak determined that it was a specific DNA sequence in the telomeres that kept chromosomes from fraying whenever they were copied when a cell splits in two. Blackburn and Greider discovered telomerase. The findings have implications for the understanding of aging and cancer. Because if the enzyme keeps the telomeres robust, the chromosomes stay protected and the cell's aging is slowed. And in cancer cells, which unfortunately do not seem to age, telomere length is maintained virtually indefinitely. Szostak, Greider and Blackburn thus revealed one of life's basic mechanisms, and paved the way for new medical strategies.

—Steve Mirsky

SCIENTIFIC AMERICAN

October 6, 2009

Nobel Prize in Physics

The 2009 Nobel Prize in physics goes to Charles Kao of Standard Communications Labs in England and the Chinese University of Hong Kong for the invention of practical optical fiber communication, and George Smith and Willard Boyle of Bell Labs in New Jersey, for inventing the charge-coupled device, the CCD, making digital cameras possible. Steve Mirsky reports

[*The following is an exact transcript of this podcast.*]

The Nobel Prize in physics goes to Charles Kao, of Standard Communications Labs in England and the Chinese University of Hong Kong, and George Smith and Willard Boyle of Bell Labs in New Jersey. Kao figured out how to transmit light over long distances in optical glass fibers. From the official announcement: “Today, more than a billion kilometers of optical fiber around the world forms the backbone of modern global communication.”

In 1969, Smith and Boyle made your digital camera possible by inventing the charge-coupled device, the CCD: “This device allows electronic recording of images and it replaces the photographic film in cameras. The CCD records the image as a distribution of charge in small cells or pixels, and it outputs the image as a series of digital numbers. The CCD is a crucial component of advanced cameras, and it finds numerous applications in scientific and medical equipment. For example, it gives us the spectacular images of the universe that we can see today.”

—Steve Mirsky

SCIENTIFIC AMERICAN

October 7, 2009

Nobel Prize in Chemistry

The 2009 Nobel Prize in Chemistry goes to Venkatraman Ramakrishnan, Thomas Steitz and Ada Yonath for studies of the protein-manufacturing ribosome, with implications for antibiotic development. Steve Mirsky reports

[*The following is an exact transcript of this podcast.*]

The 2009 Nobel Prize in Chemistry goes to Venkatraman Ramakrishnan of the MRC Laboratory of Molecular Biology in England, Yale University's Thomas Steitz, and Ada Yonath of the Weizmann Institute of Science in Israel for their studies of the ribosome. Gunnar von Heijne of the Royal Swedish Academy of Sciences at the official announcement:

"The three laureates have accomplished what many scientists thought impossible, namely to determine the three-dimensional structure of the molecular machine that makes all the proteins in a cell, the so-called ribosome. Using x-ray crystallography to obtain snapshots of the ribosome in action, they have been able to explain how the ribosome selects and couples together amino acids to form proteins. They have also shown how bacterial ribosomes can be stopped dead in their tracks by various antibiotics, thereby providing insights that help researchers design new drugs to be used in our never-ending fight against bacterial infections."

—Steve Mirsky

SCIENTIFIC AMERICAN

October 8, 2009

Pill May Change Attraction

In a study in the journal *Trends in Ecology and Evolution,* researchers note that the birth control pill may change a woman's choice in whom she finds attractive. Cynthia Graber reports

[*The following is an exact transcript of this podcast.*]

Some people like to think there's something fated about who we fall in love with. It's that perfect mix of attraction, compatibility, and of course timing. But in some cases, fate may be taking its cues from birth control pills.

First, let's go over a woman's cycle and how that affects attraction. When women are ovulating, their features change in ways that men unconsciously pick up. So men are particularly attracted to women when they're fertile. And it works the other way, too. When a woman is fertile, she's more attracted to men with more traditionally masculine features and who are genetically dissimilar to her, or more compatible in terms of procreating.

Of course oral contraception changes a woman's hormonal cycles. Her body thinks it's pregnant and doesn't go through ovulation-induced changes. And in a study published this month in the journal *Trends in Ecology and Evolution*, researchers say that women on the pill do not show the ovulation-induced attraction to genetically dissimilar partners. So they might be choosing men who are more genetically similar—which could lead to some of the problems with conception that have become increasingly common. Because attraction isn't fate. It's chemistry.

—Cynthia Graber

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October 9, 2009

Genome: Now in 3-D!

In a study in the journal *Science,* researchers report the mapping of the three-dimensional structure of the human genome, and the finding that the cell's nucleus is divided into two regions, one where DNA goes to get expressed. Cynthia Graber reports

[*The following is an exact transcript of this podcast.*]

If the human genome were put in a straight line, it would be over six and a half feet long. So how do you store all that DNA in a tiny nucleus? And have the cell manage it? Researchers explain how in a study featured on the cover of the October 9th issue of the journal *Science*.

Using new analytic techniques, Erez Lieberman and colleagues found that the genome is packed into what's called a "fractal globule"—despite being intensely twisted, the string of genes never knots. This type of shape was mathematically postulated over a century ago, and has now been shown to describe the genome's three-dimensional structure.

But the big finding is that the cell nucleus has two compartments—and genes are only active in one. All cells carry the same complete genome, but different genes get turned on, for example, in a liver cell compared with a nerve cell. Turns out that the genes to be used in a given cell get shuttled into the nucleus's active section. Dormant genes stay out. The system allows each cell to make sense of information stored trillions of times more densely than what's on a computer chip.

—Cynthia Graber

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October 12, 2009

Antioxidants-Diabetes Connection

In a study in the journal *Cell Metabolism,* some mice given antioxidants were more likely to become diabetic, because free radicals help muscle cells respond to insulin. Karen Hopkin reports

[*The following is an exact transcript of this podcast.*]

You've no doubt heard of "free radicals," those nasty chemicals that seem to contribute to heart disease, cancer and all sorts of human ailments. Maybe you even take antioxidant vitamins to help get rid of these unwanted toxins. Well, maybe you shouldn't. Because a new study in the journal *Cell Metabolism* suggests that, when it comes to diabetes, free radicals can be good for you—and and antioxidants might make things worse.

Free radicals can damage vital cell components, and our bodies produce them naturally as we metabolize food. So, it stands to reason if we eat lots and lots of food, we'll make tons of radicals. And put ourselves at risk of becoming seriously obese, and developing diabetes. All of which is bad.

But it's actually not that simple. You see, in addition to being potentially harmful, free radicals are also necessary for cells to communicate. In particular, they help muscle cells respond to insulin. So, mice that can't get rid of their free radicals actually do well on a high-fat diet, and it's only when they're given antioxidants that they get diabetes. If all that makes your head hurt, go for a nice walk. Because exercise is still good for you.

—Karen Hopkin

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October 13, 2009

Odd Spider Prefers Salad

In a study in the journal *Current Biology,* researchers report the discovery of an unusual spider, *Bagheera kiplingi,* that eschews meat and chews acacia tips. Karen Hopkin reports

[*The following is an exact transcript of this podcast.*]

It's said that real men don't each quiche. And real spiders don't eat salad. Or so everyone thought, until scientists discovered a jumping spider that seems to be a vegetarian. The report appears in the journal *Current Biology*.

Spiders are notorious hunters, luring prey into their sticky webs or ambushing them from behind a leaf. But field researchers have found that a jumping spider called *Bagheera kiplingi* actually prefers the leaf—or in this case, the leaf-tips produced by the acacia shrub. These tasty tips are usually eaten by ants that live on the plant and protect it from hungry herbivores. Or at least try to.

The veggie-loving spiders, it seems, outwit the ants by making themselves scarce or by spinning silky droplines to give the ants the slip. They may also pull the old wolf-in-sheep's clothing trick by cloaking themselves in the ants' chemical scent, a possibility the scientists are trying to sniff out.

For some of these spiders, acacia tips make up more than 90 percent of their diet. So, little Miss Muffet has nothing to fear from *B. Kiplingi*. Unless she's sitting on an acacia bush. In which case here's a tip: get a new tuffet, Muffet.

—Karen Hopkin

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October 14, 2009

Celeb Vaccine Wars: Peet Beats Maher

Comedian Bill Maher advises against vaccinations. But actress Amanda Peet--and Dr. Bill Frist--have it right: vaccines are good. Steve Mirsky comments.

[*The following is an exact transcript of this podcast.*]

In the celebrity vaccine wars, I'm siding with actress Amanda Peet. And comedian Bill Maher, well, I like your show, but when it comes to vaccines you don't know a punchline from a clothesline.

Maher recently tweeted to his twitter followers "if u get a swine flu shot ur an idiot." On his HBO program *Real Time* last week, Maher went head-to-head with former Senator Dr. Bill Frist, who patiently explained why vaccines were in fact good. But Maher wasn't buying it. He advocates a healthy lifestyle over vaccines. But polio and smallpox outmatched many robust immune systems.

Actress Amanda Peet, meanwhile, has used her celebrity to encourage vaccinations, specifically in response to the alleged vaccine-autism connection, for which there's no scientific evidence, but which has some parents afraid of childhood vaccinations. In a letter to a parenting magazine, Peet wrote: "It's irresponsible to suggest that virtually the entire medical community, and the CDC, and the American Academy of Pediatrics are behind a massive cover-up about vaccine safety." See you in the line for the flu shot.

—Steve Mirsky

SCIENTIFIC AMERICAN

October 15, 2009

Beating Heart Tissue from Stem Cells

In a study in the journal *Science*, researchers explain how they used mouse embryonic stem cells and microchip technology to create heart muscle tissue that actually beats. Cynthia Graber reports

[*The following is an exact transcript of this podcast.*]

One of the goals of regenerative medicine is to make tissue to replace our own damaged body parts. That's still a ways off. But starting with mouse embryonic stem cells, researchers have succeeded in creating heart muscle that actually beats. The study appears in the October 16th issue of the journal *Science*.

Different sets of progenitor cells in the heart give rise to two different types of heart cells—muscle and nonmuscle. To make beating heart muscle, researchers needed to figure out just which cells were the ones that they needed. They used colored fluorescent tags to identify the groups in question in embryos, allowing the correct cells to be harvested.

But that's just step one. The cells needed to link up in a form that will allow them to beat together. So the researchers borrowed from microchip technology. They created patterns on a film, much like the design for a computer chip. Laying down the cells within these patterns forces them to take the distinctive shape of cardiac muscle cells, which lets the cells link and beat in sync. The ultimate goal is to grow beating heart muscle from a patient's own cells. And thereby literally mend a broken heart.

—Cynthia Graber

SCIENTIFIC AMERICAN

October 16, 2009

Carbonation Has a Taste

In a study in the journal *Science,* researchers found that the taste buds for sensing sour also respond to carbonated beverages, because the fizz gets turned into chemical components, one of which is protons--basically simple, sour acid. Karen Hopkin reports

[*The following is an exact transcript of this podcast.*]

If you've ever craved an ice-cold soda, you know that sometimes you're just looking for something that tastes…fizzy. If that sounds odd, scientists have discovered that carbonation actually has a flavor. And that our taste buds can sense CO2.

Bubbly soft drinks tickle our tongues with their effervescence. But researchers got to wondering whether we can taste the carbonation. To find out, they studied mice whose taste cells had been turned off, one flavor at a time. So, one mouse couldn't taste sweet things, another couldn't taste bitter, a third couldn't taste salt, and so on. And they found that mice lacking the cells that sense the taste sour no longer respond to CO2.

Probing further, they discovered that eliminating a single gene renders these mice blind, if you will, to the taste of carbonation. That gene encodes an enzyme that breaks down CO2—and water…don't forget the water—into bicarbonate and protons. And it's the protons—which are essentially acid—that the sour-sensitive cells seem to sense. The work appears in the journal *Science*.

The scientists speculate that our CO2 sensor evolved to help us avoid food that's spoiled. Yet we still like some of our drinks to include the delightfully acidic tingle of a touch of CO2.

—Karen Hopkin

SCIENTIFIC AMERICAN

October 19, 2009

Brain's Speech Center Finally Talks

In a study in the journal *Science,* researchers analyzed the inner workings of Broca's area, long known as the brain's speech center, in pre-op brain surgery patients. Cynthia Graber reports

[*The following is an exact transcript of this podcast.*]

In 1865, Pierre Paul Broca pinpointed the part of the brain responsible for language by autopsying brains of the language-impaired—the region is now called Broca's area. But more info has been hard to get. Because most brain research is done on animals—and they're not talking.

The types of human research that we can do—such as brain scans—aren't detailed enough for identifying words, using grammar, and the act of speech. But in a study published October 16 in the journal *Science*, researchers found a way around this barrier.

Some epileptics who don't respond to drugs undergo brain surgery. Before cutting, surgeons implant electrodes to determine the exact site of the problem and to test healthy regions. So the researchers piggy-backed on the procedure by giving three patients language tests.

Patients thought of a word, changed its tense or number and silently articulated it. The scientists were able to pinpoint these activities, all within Boca's area. And the whole process took place within the 600 milliseconds that previous studies found was the time it takes for a person to go from zero to speaking. Researchers have thus now looked at the inner workings of Broca's area—and communicated their findings.

—Cynthia Graber

SCIENTIFIC AMERICAN

October 20, 2009

Web Boosts Grandpa's Brain

In a study presented at the annual meeting of the Society for Neuroscience, researchers reported that older adults exposed to Web surfing for the first time showed increased brain activity in regions associated with language and working memory. Karen Hopkin reports

[*The following is an exact transcript of this podcast.*]

Searching the Internet can be a totally exhausting experience, as you bounce from one site to another to another, sometimes until you can't remember what you were looking for in the first place. But according to scientists at U.C.L.A., all that virtual running around is actually good exercise—for your brain. Particularly if you're older. Because Internet training can enhance neural function.

The scientists worked with people between the ages of 55 and 78. At the start of the study, all the participants did some Web searching while the scientists monitored their brain activity by functional magnetic resonance imaging. The subjects who'd had little exposure to the Internet before the study showed activity in brain regions involved in vision, language and reading.

Then everyone went home to do some surfing on their own—an hour a day for a total of a week. When the no-longer-naive subjects returned to the lab, their brain scans showed additional activity in regions associated with working memory and decision-making. The results were presented on October 19th at the 2009 meeting of the Society for Neuroscience in Chicago. So for older adults, a little Web surfing could keep your brain on its toes.

—Karen Hopkin

SCIENTIFIC AMERICAN

October 21, 2009

Light All Night Not Alright

In a study presented at the annual meeting of the Society for Neuroscience, researchers found that mice that were exposed to light all night long showed signs of depression. Karen Hopkin reports

[*The following is an exact transcript of this podcast.*]

A nightlight may keep those monsters under the bed. But it may also open the door to the blues. Because a new study reveals that animals exposed to light all night long show signs of clinical depression.

If you have access to electricity, you no doubt switch on a lamp, maybe even watch a little TV, after the sun goes down. But our bodies use cues about lightness and dark to regulate our hormones and of course our sleep cycles. So what might these extra photons be doing to our health?

To find out, scientists housed mice in a room where the lights were always on. After three weeks, they found that mice who lived in the spotlight showed symptoms of depression, more so than mice who enjoyed eight hours of darkness at night. Interestingly, mice who could escape the light by ducking into a dark tube also escaped the worst of the depression. The findings were presented on October 21st at the Society for Neuroscience meeting in Chicago, and they'll be published in the journal *Behavioural Brain Research* in December.

So flip that light switch at your own risk. Because the artificial brightness that helps keep us up could also bring us down.

—Karen Hopkin

SCIENTIFIC AMERICAN

October 22, 2009

Red Wine with Fish? Iron-ic Answer

In a study published in the *Journal of Agricultural and Food Chemistry,* researchers found that red wine only clashes with fish if the wine has high levels of iron. Steve Mirsky reports

[*The following is an exact transcript of this podcast.*]

It's one of the most vexing problems in modern science: which wine to order with the Chilean sea bass. One thing's for sure, though—you'd only ever order a white wine, never a red wine with fish. The flavors just clash. But now researchers have pinpointed the problem with red wine and seafood. And some reds may actually go fine with fish.

Japanese scientists asked study subjects to try 38 red wines and 26 whites while eating scallops. Some of the wines contained small amounts of iron, which varied by country of origin, variety and vintage. The tasters noted which wines really didn't work with scallops. And the researchers found that those wines all had high levels of iron. So they doctored the wine with a substance that binds iron, keeping it away from the tasters' tongues. And voila, the bad taste became a bad memory. The study appears in the *Journal of Agricultural and Food Chemistry.*

With that knowledge in hand, wine lovers should be able to find reds that taste terrific with tilapia. So look for red wines with low iron. Just for the halibut.

—Steve Mirsky

SCIENTIFIC AMERICAN

October 23, 2009

Less Fungus among Us Warm-Blooded

A study in the *Journal of Infectious Diseases* finds that one major advantage of being warm-blooded is that the great majority of fungi cannot infect us. Karen Hopkin reports

[*The following is an exact transcript of this podcast.*]

Some people eat to avoid being bored. Others to avoid doing something they'd rather not, like preparing a podcast. Now a report says we might eat to avoid fungi. Because warm-bloodedness, a condition that requires a lot of calories, may have evolved to keep fungal infections at bay.

There are obvious benefits to being warm blooded. Like not having to sit in the sun for a few hours just to get going in the morning. Another, less obvious plus, is the fact that we tend not to get attacked by fungi. Of the one-and-a-half million fungal species on Earth, only a few hundred are capable of infecting mammals. Compare that to a quarter of a million fungi that target plants, and 50,000 species that infect insects. So what makes us mammals relatively fungus-free? It seems to be our hot bodies.

Scientists measured how well 4,000 different fungi fared at different temperatures. They found that nearly all grow well up to about 86 degrees. Beyond that, the survivors drop by six percent for each extra degree. The study appears in the *Journal of Infectious Diseases*. Bottom line: if you can't stand the fungus, get back in the kitchen.

—Karen Hopkin

SCIENTIFIC AMERICAN

October 26, 2009

Household Hints to Halt Heating

A study in the *Proceedings of the National Academy of Sciences* finds that Americans could easily cut carbon emissions by more than France's entire output. Karen Hopkin reports

[*The following is an exact transcript of this podcast.*]

How many times has your mother told you to turn off the lights when you leave a room, or to close the fridge door while you decide what to eat. Well, climatologists are on her side. Because according to a study in the *Proceedings of the National Academy of Sciences*, reducing global carbon emissions should begin at home.

Even if politicians manage to pass climate change legislation, it could be years or even decades before those policies start to make a difference. In the meantime, scientists say, there are things we can all do to shrink our carbon footprint. You've heard most of 'em before: everything from insulating your home and using low-flow showerheads to driving more efficient vehicles and carpooling to the office. But these things really work.

Based in part on how folks responded to the energy crisis in the '70s, the scientists calculated how many Americans might be willing to reform their energy-wasting ways. And they found that within 10 years, we could reasonably expect to cut our national emissions by 7.4 percent. That much carbon is slightly larger than the total amount put out by France. If we could manage that, the whole world might say merci.

—Karen Hopkin

SCIENTIFIC AMERICAN

October 27, 2009

Dieting and the TV-to-Treadmill Ratio

A study in the *Annals of Behavioral Medicine* finds that the ratio of TV sets to exercise equipment in the home is predictive of weight loss success. Karen Hopkin reports

[*The following is an exact transcript of this podcast.*]

If you want to lose weight—really lose it and keep it off—look around your house. How many TV sets are there? And is there an exercise bike or any other similar equipment? The answers could predict the success of your weight loss quest, according to a report in the *Annals of Behavioral Medicine.*

In the study, scientists surveyed 167 people who managed to lose 10 percent of their body weight and keep it off for five years. They compared them to two other groups whose dieting was not so successful. And they found that the slenderized subjects, in addition to having fewer high-fat foods in the house, also had fewer TV sets and more exercise equipment. These people were more likely to work out, more careful about calories and less likely to sit for hours in front of the tube.

The results pretty much corroborate common sense. If you want to shed a few pounds, don't fill your cupboard with cupcakes. Instead fill your living space with things that will make you more likely, not less likely, to actually move. Things like a treadmill or a stationary cycle. Or a key. That you can use to lock the door and go out for a nice walk.

—Karen Hopkin

SCIENTIFIC AMERICAN

October 28, 2009

Clean Smell Promotes Good Deeds

A study in the journal *Psychological Science* finds that people in a room recently sprayed with citrus-scented cleanser were fairer and more generous than a control group. Cynthia Graber reports

[*The following is an exact transcript of this podcast.*]

When you're done listening to this podcast, grab whatever product you use to clean. Maybe it's something that smells really citrusy. Do a bit of cleaning. Then take a few deep breaths. Believe it or not the odds are now higher that you'll make decisions that are both more fair and more generous than you would have without smelling the cleanser. That's according to research published in the journal *Psychological Science*.

Study subjects were tested in two different rooms. One room had recently been spritzed with citrus-scented glass cleaner. The first test evaluated fairness—how much real money the participants were willing to share with an anonymous partner in another room. Participants in the clean-smelling room offered twice as much cash.

In the second test, subjects gauged how interested they were in volunteering for Habitat for Humanity and in donating money. Those in the clean-smelling room said they were significantly more interested in volunteering and almost three times more likely to donate money.

Researchers claim that clean smells thus promote moral behavior. And that schools, workplaces and stores could take advantage of the finding. So if you're being virtuous, maybe you're following the rules because you're following your nose.

—Cynthia Graber

SCIENTIFIC AMERICAN

October 29, 2009

Resuscitating Lungs for Transplant

A study in the journal *Science Translational Medicine* details a new procedure for making damaged, donated lungs functional, potentially doubling the number of lungs available for transplant. Cynthia Graber reports

[*The following is an exact transcript of this podcast.*]

Emphysema and cystic fibrosis patients who need new lungs are faced with a life-threatening problem: more than 80 percent of donated lungs can't be used—they're inflamed and barely functional. But a new approach, detailed this week in the new journal *Science Translational Medicine*, describes a novel gene therapy that can repair these damaged lungs—and make them available for transplant.

Researchers first developed a system for preserving the lungs. They put the organs in a glass chamber and kept them functioning and at human body temperature. This technique proved better than freezing. Then they inserted into the lungs a gene IL-10. The gene plays a key role in inhibiting the immune response. About six hours after injection, the cells start producing proteins that combat the damaging inflammation. The presence of the IL-10 gene may also lower the chances that the recipient of the lung will reject the transplanted organ.

After the gene therapy, treated lungs showed improved blood flow and were significantly better at taking in oxygen and expelling carbon dioxide. The technique could double the number of lungs available for transplant, truly making patients breathe easier.

—Cynthia Graber

SCIENTIFIC AMERICAN

October 30, 2009

Dogs Can't Smell A Liar

A study in the journal *Behavioural Processes* finds that dogs cannot reliably tell if someone is fibbing to them. Karen Hopkin reports.

[*The following is an exact transcript of this podcast.*]

You can teach your dog to lie down. But you can't teach him to lie, or to know when you're lying. Because a new report shows that Spot can't spot deception. The study's in the journal *Behavioural Processes*.

We've all known pooches who run and hide when their owners shout "let's go for a ride"—when what they really mean is "we have an appointment with the vet." But do the dogs really know that their people are being duplicitous? To find out, Mark Petter, a student in clinical psychology at Dalhousie University in Canada, decided to fib to some Fidos.

In his experiment, dogs were shown two covered containers. One held a treat. The other: nothing but disappointment. In half the trials, a helpful trainer stood behind and pointed to the container holding the treat. In the other half, a deceptive trainer pointed to the empty container.

The results? The dogs approached the honest trainer a little more often than they did the deceiver. But not enough to conclude that the pups had figured out that one of the guys was pulling their leg. So dogs may be able to sniff out bombs. But they can't pick up the smell of mendacity.

—Karen Hopkin