Biomedicine

Joanne Silberner reports from Monterey, Calif., at the American Heart Association's Science Writers Forum

It's all in the hips...

If you're trying to avoid cardiovascular disease, a pear-shaped figure is better than a beach-ball body, according to research from the University of Göteborg in Sweden. "The distribution of fat was able to predict myocardial infarction [heart attack] or stroke more precisely than just weight," says Ulf Smith.

He and his colleagues looked at waist and hip measurements of about 3,000 people. They found that when obesity was factored out, men and women who carried their weight in their waists rather than their hips had three to five times the incidence of heart attacks and strokes, and that a rough estimate of risk could be garnered just from the waist-to-hip ratio. A value of over 1.0 in men (a waist measurement larger than a hip measurement) and over 0.8 in women put them into a high risk group.

"It's well known that modest obesity is a risk factor for various diseases [diabetes, hypertension and high cholesterol] associated with coronary disease," says Smith. "Yet it has been astonishing that body weight has not been found to be a major risk factor." So they looked for a fat-related factor and found it in the distribution pattern.

Fat cells of the abdomen are more prone than fat cells in other parts of the body to release fatty acids, which Smith believes may be at the root of the relationship. Fat in the abdominal area as opposed to the hips makes a person more "metabolically obese," he says. A previous study at the Medical College of Wisconsin in Milwaukee (SN: 1/23/82, p.52) showed a relationship between fat distribution and diabetes.

Since men tend to carry their weight around their gut, whereas women settle into their hips, men are "more susceptible to an increase in body fat than women." Fashion notwithstanding, women can better tolerate a modest increase in body fat, Smith says.

For those attempting to alter their ratio, take heart: The abdomen is the first area to shrink when weight is dropped.

... and the potassium

Rats concerned about avoiding cardiovascular disease might want to monitor their potassium intake. Studies on species of rats prone to hypertension-related strokes show that a diet high in potassium protects them against strokes. The finding, says Louis Tobian of the University of Minnesota in Minneapolis, could very well apply to humans as well.

He and his colleagues found that 20 of 24 stroke-prone rats died after four months on a diet that contained the normal amount of potassium for rat food. When 50 of their cousins were fed a high potassium diet, only one was dead after four months. The blood pressure in each group was the same, so the reduction in the death rate — from 83 percent to 2 percent — could be ascribed to potassium, Tobian says. When they found similar results in further studies, they took a close look at the condition of the arteries.

"The classic thing about high blood pressure is that it thickens the walls of the arteries," says Tobian. But with sufficient potassium, he says, "the walls didn't get thicker even though the rats still had high blood pressure. Something about potassium allows that artery to not have problems. It seems to protect the wall of the artery against the damage of carrying high blood pressure."

The low potassium diets of many blacks in the southeastern United States may explain that group's 18-fold increased incidence of strokes, he says. While he doesn't recommend that people take megadoses of potassium (too much of the element can be lethal), he does believe a dietary change is in order. The diet of our hunter-gatherer forebears — lots of fruit and vegetables — is the way to go, he says.

"We were gradually designed to run perfectly on this," says Tobian, "just as some cars are designed to run on diesel, and some on no-lead."

Science & Society

FCC stops Alaska's aerial wolf hunt

Though conservationists have challenged the biological rationale for aerial hunting of wolves to protect the caribou and moose Alaskans hunt for food and sport (SN:11/3/84, p. 279), they have had only limited success in thwarting it. In a clever alliance with the Federal Communications Commission (FCC), however, wildlife protection groups have put a crimp in the state's ambitious program. On Dec. 27, the FCC ordered that Alaska's game managers cease their use of radio telemetry to track wolf packs earmarked for eradication — a move that has temporarily shut down the current season's hunt.

According to Dan Smith, whose Washington, D.C.-based organization, Defenders of Wildlife, was instrumental in alerting FCC to the game managers' actions, the radio-collared wolf has been exploited efficiently. "In some cases all but the collared wolf in the pack are killed, leaving the lone wolf to eventually meet up with other wolves and form new packs which, in turn, are shot."

In a letter to Alaska officials explaining his agency's move, H. Frank Wright, chief of FCC's Frequency Liaison Branch, noted that the telemetry equipment game officials used had been authorized under an FCC license granted for biological research. Ruling that Alaska's wolf cull is not research, Wright ordered that the practice stop "until further notice." Alaska officials have been given 30 days to provide written justification for the contested operation. Failure to comply with the order could cost the state a variety of other FCC permits, including those used by police, fire and other emergency-aid agencies.

But the wolves are not out of the woods yet. Public sport trapping is not affected by the ruling. Moreover, the state visually tracked and killed wolves from planes and heliocopters for years before employing the now-outlawed radio tracking. Except for a "threatened" population in Minnesota, the U.S. wolf has been all but eradicated from the lower 48 states. Alaska's wolf population numbers between 6,000 and 10,000.

Partial deregulation of natural gas

With the new year came the long awaited price decontrol of between 50 and 60 percent of the nation's natural gas supplies. Contrary to many predictions, however, this deregulation is now expected to result in an initial price drop, largely because of a gas surplus estimated at between 1 and 2 trillion cubic feet.

Congress enacted the Natural Gas Policy Act (NGPA) of 1977 to give gas producers a greater incentive for investing in costly new exploration by permitting them to charge significantly more for any fuel extracted from these operations. Until Jan. 1, NGPA set a ceiling on the wellhead price of more than 20 natural gas categories. Decontrol allows the price of interstate-pipeline supplied gas in several categories — mostly "new" gas, from wells drilled after April 20, 1977 — to fluctuate according to market conditions or contract provisions.

News updates

- On Jan. 7, U.S. District Judge Jack Weinstein gave final approval to the \$180 million settlement (SN: 5/19/84, p. 314) between makers of Agent Orange and representatives of veterans who claim their exposure to it in Vietnam injured them or their offspring. Veterans' lawyers were awarded \$9.2 million for fees and expenses—far less than the \$40 million they sought.
- The Environmental Protection Agency has announced it will extend its regulation of hazardous wastes to cover dioxin in all its forms, not just the highly toxic 2,4,7,8-TCDD. Related chlorinated dibenzofurans and -phenols will similarly get the "acute" hazard designation, meaning production of a kilogram or more per month of wastes contaminated with these chemicals will require that the generator meet federal laws. Nonacute hazards are regulated only if production reaches 2,000 kg per month.

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