



insights

New knowledge in the sciences and humanities, by Bill Glovin

Fat Rules

KEEPING THOSE POUNDS OFF FOR GOOD

While everyone knows that shedding those extra pounds takes discipline and willpower, it's less understood that keeping them off over the long haul may require a long-term commitment to a weight-loss program. "For people who lose weight through a typical weight-loss program, it's more than likely that five years down the road, they're back to where they started," says

Janet Latner, lead author of a new weight-loss study by Rutgers' Eating Disorders Clinic and the department of psychiatry at the University of Pennsylvania. "Most programs offer six months to a year of maintenance, and it may even be more profitable for some commercial programs if people drop out and reenroll."

The five-year study monitored 146 women and 25

men in the Trevoze Behavior Modification Program, which is free and staffed by volunteers. The subjects were ages 22 to 72 and overweight by 25 to 100 pounds. For the first six months, they learned to change their eating habits and were told to monitor their food intake, eat nutritiously, and exercise. Among the rules: Eat in the same place, no TV or reading while eating, and leave some food on the plate. But the real motivation to stick to the program was that missing even a single meeting of the first five or failing to meet the initial weight-loss requirements resulted in instant, permanent dismissal.

"We're not completely sure why this program works, but we believe that the fact that it's free is especially important because it contributes to people

being able to stay in," says Latner, a therapist at Rutgers' clinic. "Once people lose weight in a commercial program, they may not want to keep making the financial commitment, and then drop out. But without that continuous care component, they begin to drift back to their old habits."

Of the 171 people who began the program during the study period, just 60 percent finished the first year. But those who stayed at least two years lost 20 percent of their original weight and kept it off for five years. Researchers also found that the success rate was double that of a recent clinical trial of one of the hottest new obesity drugs, Orlistat (Xenical).

The Trevoze method—founded in 1970 and offered in New Jersey, Pennsylvania, Florida, and Arizona—needs dedicated volunteers to grow. "We hope this program will be replicated as a treatment model across the country," says Latner. "With nearly 300,000 people dying every year from diseases triggered by obesity, its potential is unlimited."

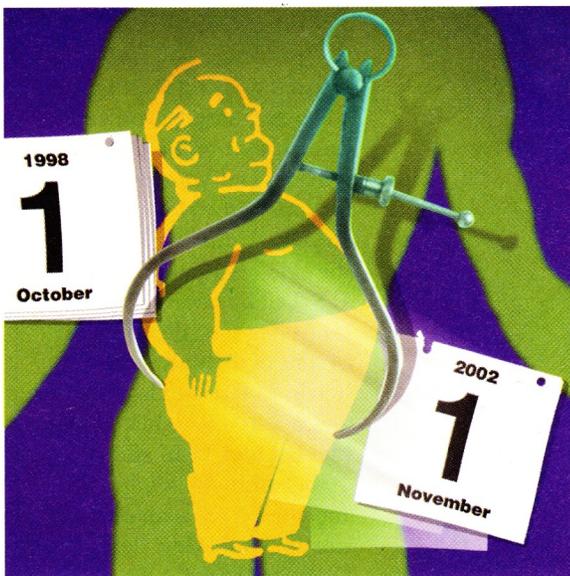
Reinventing Aspirin

SAY GOODBYE TO UPSET STOMACHS

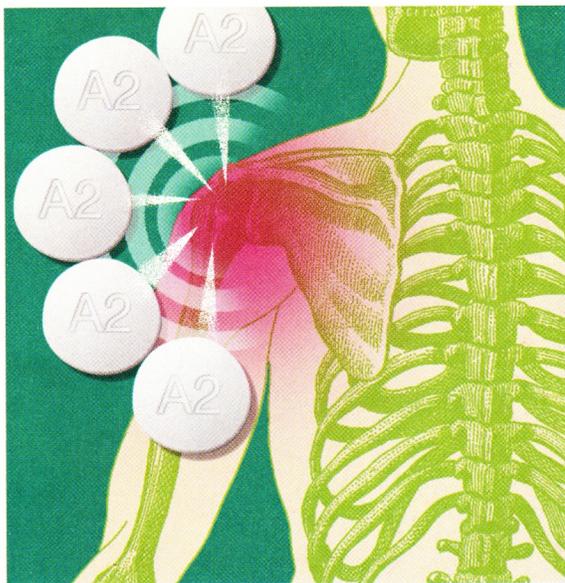
If dog is man's best friend, aspirin may be man's best drug. Originally derived from the bark of a willow tree, the over-the-counter remedy has long been used to relieve headaches and lower fevers. Research in recent years suggests that aspirin also reduces the possibility of heart attacks and strokes, and possibly works to prevent cancer and Alzheimer's disease.

So can a drug with a proven track record and so much potential be improved? Kathryn Uhrich, an associate professor of chemistry at Rutgers–New Brunswick, has already demonstrated in the lab and in animal studies that an alternate form of aspirin can be created by making it into a polymer. What's more, her research may lead to eliminating aspirin's one major downside—stomach irritation.

The key is plastic polymers that control drug delivery. Uhrich has found a way to turn aspirin's active ingredient, salicylic acid, into an elastic polymer consisting of 100 molecules strung together. "Polymer structure prevents the breakdown of the aspirin in the acidic environment of the stomach,



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ensuring that it will be absorbed later in the alkaline intestine,” she explains. “The gradual release feature should help eliminate upset stomachs, provide medication for a longer period of time, and require smaller doses of salicylic acid.”

Moreover, mice implanted with the polymeric aspirin showed a surprising development—they grew 37 percent more bone relative to polymers that did not contain salicylic acid. This suggests that plastic aspirin, also called PolyAspirin™, might stimulate bone regrowth, a feature of particular significance in treating periodontal disease. The polymer construction may also be applied to antibiotics so that medication is released slowly over time or be used as surgical sutures that deliver healing medication as they dissolve.

This past summer Uhrich cofounded a new company called Polymerix Corporation. With the help of Rutgers’ Office of Corporate Liaison and Technology Transfer, Polymerix has licensed Uhrich’s entire patent portfolio and will commercialize plastic aspirin, as well as polymer versions of aminosalicic acid that are used to treat inflammatory bowel diseases and other disorders.

Because Uhrich is targeting FDA-approved drugs, her company expects to spend far less money introducing its PolyDrugs compared to what a new drug would cost. Rutgers, which is already among the top 15 universities in the country in revenues from royalties, believes Uhrich’s research will help it move up the list.

Working Assets

SKILLED EMPLOYEES IN DRIVER’S SEAT

If you’re a computer technician or engineer, it’s likely that you work long hours, Big Brother is watching, and executive recruiters are beating down your door. Those are among the findings of a Cornell–Rutgers Telecommunications Project study

that looked at evolving employment practices in the information economy.

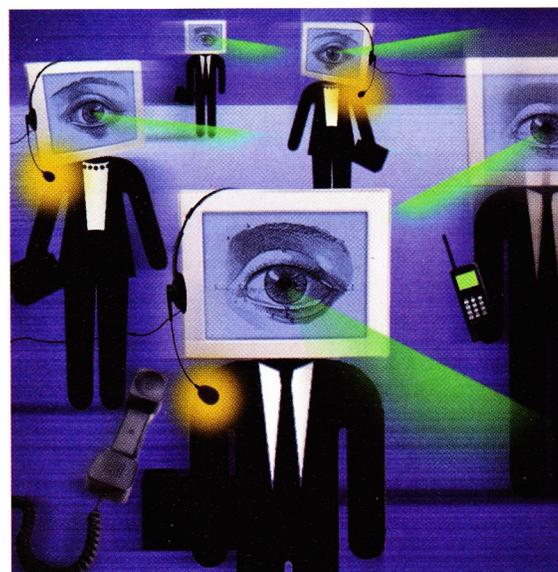
“For large corporations, filling jobs that require computer and engineering skills has more of a direct impact on the bottom line than ever before, and for start-ups, putting the right people in those jobs can be the key to survival,” says principal investigator Jeffrey Keefe, professor of labor studies and employment relations with Rutgers’ School of Management and Labor Relations.

“Over the last three or four years, it’s become a buyer’s market for trained employees, who have become extremely valuable commodities. Someone hired for a job that requires technical skills almost always needs considerable training. And once that employee is familiar with the hardware, the software is constantly evolving.”

The study, which surveyed managers at 636 businesses employing a total of more than 160,000 people, is the first to explore workplace concerns at Internet service providers and call centers. “In terms of employee stability, we found that companies that were unionized fared far better than companies that weren’t,” says Keefe. “Bargaining agents tend to negotiate higher wages and better benefits.” Formal dispute resolution procedures, common in union shops, are available to about half of all nonunion employees, the study found.

The study also found that technicians work an average of 47.5 hours a week, that their companies randomly monitor their job performance through audio recordings or video surveillance, and that automation is no longer a threat to job security.

While U.S.-based companies were the study’s primary focus, the findings could have important implications for the emerging global market in communications services. “The United States has been at the forefront of market deregulation and technology change,” says Keefe. “As a result, we found that companies in other countries are using our corporate labor policies as a model.”



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