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## When researchers are the guinea pigs

Should scientists be allowed to continue studying themselves?

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When the fictional Dr. Henry Jekyll took an experimental potion he developed, he ended up with a murderous alter-ego named Mr. Hyde. When the real-life Dr. John Pawelek became the first guinea pig for a new substance he was developing, he ended up with a healthy tan.

More than a decade ago, Pawelek, a dermatology researcher at Yale University, created a liquid form of the skin pigment melanin, which could be applied to skin to provide a fake tan and protection from the sun. To test his formulation, he put it on his own face.

"I really had to put it on my own skin to see if it looked good," he said. "If you're going to ask other people to do it, you've got to try it

yourself first."

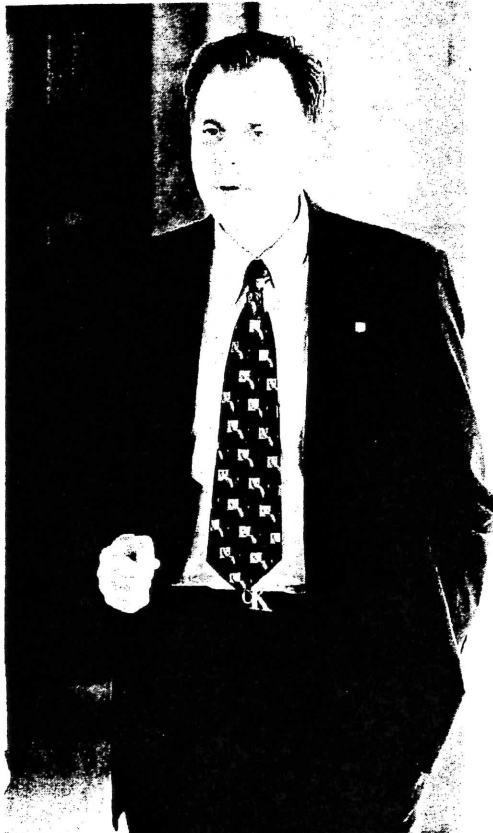
Pawelek still uses the patented product, every day, making him look as if he is perpetually returning from vacation. But before he hit upon the right formulation, there were hundreds of wrong ones.

"Once I had too much ammonia in the preparation," he said. "I got a pretty bad reaction. That was 10 years ago and I still have some scars today."

Self-experimentation, though controversial, is a tradition that dates back centuries, during which researchers have exposed themselves to untested vaccines, unperfected procedures, and unknown substances. On Saturday, Australian microbiologist Barry Marshall accepted the Nobel Prize for showing that stomach acid and bacteria cause ulcers. **SELF-EXPERIMENTATION, Page C4**



**TEST SUBJECT** Dr. John Pawelek, a Yale dermatologist, developed a liquid tan formulation by using it on himself (before, left; after, right).



TONY ASHBY/AFP/GETTY IMAGES (FAR LEFT); LIBRARY OF CONGRESS (CENTER TOP); REUTERS (CENTER BOTTOM) WWW.20SIX.FR/REVDCIER (UPPER RIGHT)

Famous self-experimenters include Nobel laureate Barry Marshall (far left), who did ulcer research; Sigmund Freud (center top), the father of psychoanalysis, who studied his own reaction to cocaine; and Jonas Salk (center bottom), who tested his polio vaccine on his children and possibly his wife and himself; and the fictional Dr. Jekyll, who took a potion to bring out his evil side and was transformed into the murderer Edward Hyde.

# Self-experimentation ethics remain unclear

## ► SELF-EXPERIMENTATION *Continued from Page C1*

ing that bacteria could cause stomach ulcers, which he illustrated by swallowing the microorganisms himself.

But the ethical issues surrounding such research remain unresolved, and some institutions, which begrudgingly allowed scientists to pursue this kind of research a decade or two ago, are increasingly trying to figure out what to do about the practice.

Federal guidelines governing human research studies do not deal explicitly with self-experimentation, and few institutions have clearly outlined their positions. Boston University Medical Center has no specific policy on self-experimentation, nor does Harvard University, though its School of Public Health is developing guidelines now.

"There's really not much out there about self-experimentation," said Sarah Putney, director of the Harvard School of Public Health's human subjects administration.

The school of public health deals regularly with self-experimentation, Putney said, including requests from a range of its researchers from senior scientists to graduate students to participate in their own studies.

"Some of them are pretty uncomfortable studies -- breathing studies or wires on the skin -- and we have a lot of people who work in the labs who want to participate," she said.

And they have a lot of legitimate reasons for volunteering, including troubleshooting, test-marketing products, and generating data cheaply and quickly.

But self-experiments also raise many concerns, including whether the expectations of self-experimenters influence the results, and whether the findings can be applied to a larger population.

The trickiest questions have to do with coercion, Putney said. For instance, junior faculty members may feel subtle pressure from senior researchers to volunteer. Or researchers may find authoring a

scientific paper enough of a career boost to subject themselves to otherwise unacceptable risks.

South Korean stem cell researcher and national hero Hwang Woo Suk, resigned two weeks ago from a prestigious post after it was revealed that two junior researchers in his lab donated their own eggs for research.

The human research committee for the Partners HealthCare system, which reviews research proposals from Massachusetts General Hospital and Brigham and Women's Hospital, specifically prohibits principal investigators from using junior members of their research teams as subjects. The committee will consider requests from lead researchers to participate in their own, low-risk studies, but only if there is a demonstrated need for self-experimentation, said Elizabeth Hohmann, the committee's director and chair.

"We tend to be rather discouraging about it. There's very few studies where there's a compelling scientific or ethical reason" for self-experimentation, Hohmann said. "It's very easy to get paid volunteers. So if you can do it that way, why not do it that way? It obviates this whole flock of problems."

Even a seemingly straightforward, low-risk experiment can face high hurdles. In 1988, Roland Griffiths, a Johns Hopkins University psychopharmacologist, and six of his colleagues set out to learn about caffeine's effects by studying themselves.

"It seemed so simple," he said. The seven researchers already used caffeine daily, at levels higher than the ones they would be exposed to in the study. "All we wanted to do was record some information. Well, Johns Hopkins thinks it's fine for us to use caffeine, but as soon as you start writing down data, it becomes research."

The review board raised many

concerns -- about whether participation was coerced, and even, Griffiths remembered incredulously, whether the study discriminated against people without psychopharmacology degrees because only psychopharmacologists were invited to participate.

"It was a long approval process, and I'm not entirely confident I could get it approved today," said Griffiths, whose findings were later verified in volunteers and published in peer-reviewed journals. "Ethical requirements have just ramped up geometrically over the last 10 years."

Griffiths' recent proposal to study ginseng in a group of researchers was rejected by Johns Hopkins.

Medical journals, though often hesitant, still publish self-experiments; in 2003, the Medical Journal of Australia published a study in which one of the researchers explored the effects of the dog hookworm in humans by infecting himself with the parasite. But requests to publish self-experiments come rarely.

"It's not a question that we seem to be facing," said Edward Campion, a senior deputy editor at the New England Journal of Medicine. "Of the 5,000 manuscripts a year that we see, I don't think I've seen one self-experiment in the past year."

Still, the practice can play an important role in the scientific process, said Allen Neuringer, a psychologist at Reed College in Portland, Ore., who has performed and written about self-experiments. He plans to have his introductory psychology students do self-experiments next semester and envisions the possibility of a journal, or perhaps a Web site, devoted solely to publishing the results of self-experiments.

"There could be this grand group of self-experimenters testing one another's hypotheses," he said. "And that could be very exciting."