

Antidepressants may alter personality

A new generation of antidepressant drugs, led by Prozac (fluoxetine), has gained renown as a builder of better personalities through chemistry. In his 1993 book *Listening to Prozac* (Viking, New York), psychiatrist Peter D. Kramer of Brown University in Providence, R.I., argues that the drug enhances feelings of social ease and flexibility in people who constantly fear rejection by others but do not suffer from full-blown depression.

Kramer's claims have sparked a vigorous debate among psychiatrists, much of which springs from clinical observations rather than scientific assessments. A new study, described at the annual meeting of the American Psychiatric Association in Philadelphia last week, suggests that Prozac and many other antidepressants may indeed alter one enduring aspect of personality as they diminish depression.

"Emotional and personality factors are intertwined in depression, so it's really not surprising that some type of personality change would accompany improvement in this condition," asserts study director Ron G. Goldman of Columbia University.

Goldman's group employed a 100-item questionnaire, developed by psychiatrist C. Robert Cloninger of Wash-

ington University School of Medicine in St. Louis, that measures three broad personality dimensions (SN: 3/5/94, p.152). These consist of novelty-seeking behavior, harm avoidance, and dependence on rewards.

The researchers gave this personality test to 59 moderately or severely depressed individuals before and after random assignment to 6 weeks of treatment with a standard antidepressant, imipramine, or a placebo pill. Another 87 severely depressed persons treated with Prozac took the test before and after 10 to 12 weeks of treatment.

About two-thirds of those treated with imipramine or Prozac displayed a substantial dampening of their depression, compared with one-fifth of the placebo group. Regardless of treatment, participants whose depression eased also cited notable reductions in harm avoidance, the scientists contend.

Pessimistic worry about future problems, tapped by some harm-avoidance items, showed the greatest change as depression lifted, Goldman notes. Lesser change occurred for three other aspects of harm avoidance: fear of uncertainty, shyness of strangers, and a tendency to tire quickly in the face of stress.

Novelty seeking and reward dependence remained stable as depression less-

ened, the Columbia psychiatrist adds. "Harm avoidance may describe some basic aspect of depression, or antidepressants may have the capacity to change enduring personality traits," Goldman maintains.

The latter possibility has yet to be tested in psychiatrically healthy people given Prozac or other antidepressants.

Goldman suspects that most antidepressants, not just Prozac, alter similar facets of personality as depression declines. However, Prozac causes fewer side effects than its chemically distinct counterparts, such as imipramine. Physicians may therefore prefer to prescribe Prozac to patients suffering from social unease or mild depression, producing obvious personality changes with only that drug, Goldman notes.

Personality disorders, which encompass a bevy of interpersonal problems, also attract the use of Prozac and its chemical cousins. Psychiatrists disagree about the extent to which antidepressants help in such cases, however.

"I suspect Prozac and other drugs have fundamental effects on personality," argues Robert M.A. Hirschfeld of the University of Texas at Galveston.

Columbia's Michael H. Stone disagrees. In personality disorders, Prozac and similar drugs transform a person's enduring traits only to a limited extent, he contends.

— B. Bower

Microorganisms used to fight fruit rot

If you can't lick 'em, join 'em. That's the lesson agricultural researchers have been applying recently. Rather than fight mold on fruits and seeds with expensive and sometimes ineffective pesticides, plant pathologists have isolated naturally occurring bacteria, yeast, or fungi and used these microorganisms to control more harmful ones.

The beneficial microorganisms may work in several ways, says Wojciech J. Janisiewicz of the Department of Agriculture's Appalachian Fruit Research Station in Kearneysville, W. Va. They may outcompete pathogens for living space, he says, or use up available nutrients, thereby excluding the pathogens. The helpful microbes may also produce chemicals that kill or disable potential competitors.

Janisiewicz is now working with a pink yeast that can keep stored pears and apples from rotting. He scraped or bruised apples and then treated them with the pink yeast. The yeast reduced or completely prevented mold growth at wounds, he reports in the May PLANT DISEASE.

"The yeast worked as well as a fungicide on fruit removed from storage after 3 months," he says. "And in fruit stored for 6 months, yeast-treated fruit has less rot than fruit treated with fungicides." Be-

cause the pink yeast occurs naturally on most fruits, Janisiewicz adds, it should be safe to use on fresh produce.

"We really believe [such biocontrol agents] are going to be a major part of commercial pesticide control mechanisms," says Gary E. Harman, a plant pathologist at Cornell University who has recently started a company to exploit the new technologies. Harman and his colleagues are working with a fungus called *Trichoderma*, which acts both through simple competition — not giving other fungi a chance to grow — and by releasing enzymes that dissolve fungal cell walls.

Harman hopes to market biocontrol products for treating seeds and applying on soil by early next year. In addition, his company has isolated the fungicidal enzymes and the genes that code for them, he says. These may prove effective biocontrol agents and be easier to store and apply than the fungus itself. However, to be effective, enzyme solutions may require several applications.

Biocontrol agents that can be applied by conventional techniques should be on the market next year. Janisiewicz has patented a bacterium that prevents post-harvest diseases in apples, pears, and citrus fruits. This has been developed



Mold growth on these wounded pears was controlled by bacteria.

commercially by EcoScience Corp., based in Worcester, Mass.

Environmentally friendly biocontrol systems are looking more and more promising, says Janisiewicz, and should quickly acquire consumer support. "The public will have to be educated to accept [microorganisms] on fruit," he says. "They are already there . . . and [the public] just has to realize that some of them are good, and some of them are bad."

— D. Christensen