



aerobic exercise for 30 to 60 minutes daily (or 5 days a week minimally) and maintain a body mass index of at least 18.5 kg/m<sup>2</sup>, and at most 24.9 kg/m<sup>2</sup>. In managing diabetes, hemoglobin A1c levels should be less than 7%. And there should be complete cessation of smoking with no exposure to environmental tobacco smoke.

#### FLU VACCINE

The new recommendation for influenza vaccination falls in line with the current stance of the US Centers for Disease Control and Prevention, which call for routine immunization for patients with chronic cardiovascular disorders, who are at markedly increased risk for complications from influenza.

"We included [vaccination] in the recommendations because there is an awareness that it was not uniformly being administered around the country," said Smith, a professor of medicine at the University of North Carolina at Chapel Hill and a past AHA president. "Certainly the more risk the patient has, such as impaired left-ventricular function and age, the greater the benefit."

The authors said the updated guidelines were also important because of two continuing developments—the aging of the population, which expands the number of patients living with cardiovascular disease (including an estimated 13 million with coronary heart disease alone), and the "discouraging conclusion" that patients are not receiving indicated therapies in clinical practice.

"The reasons patients don't receive therapies are multiple," Smith said. "But we wanted to at least make sure the physicians understand the benefits of the therapies and prescribe them to their patients."

One reason, Smith said, is the shortening of hospital stays following heart procedures, which limits the time during which cardiologists can educate patients about risk-reduction therapies. Another is a lack of communication between heart specialists and primary care

physicians. To improve adherence, the guidelines suggest that hospitals and physicians use programs such as the AHA's "Get With The Guidelines" (<http://www.americanheart.org/presenter.jhtml?identifier=1165>) and the ACC's "Guidelines Applied to Practice" (<http://www.acc.org/gap/gap.htm>).

#### FUTURE GUIDANCE

Smith said several trials scheduled to conclude in the next several years could eventually lead to recommendations for even greater reduction in LDL cholesterol levels. Other lipid studies are also being followed. The "other frontier," he

added, is high-density lipoprotein (HDL) cholesterol and medications to increase it.

For patients with hypertension, Smith believes the guidelines may be refined even more as studies show further benefits from angiotensin-converting enzyme inhibitors and angiotensin receptor blockers.

The document, AHA/ACC Guidelines for Secondary Prevention for Patients With Coronary and Other Atherosclerotic Vascular Disease: 2006 Update, is available online at [http://circ.ahajournals.org/content/vol113/issue19/#AHA\\_ACC\\_GUIDELINE](http://circ.ahajournals.org/content/vol113/issue19/#AHA_ACC_GUIDELINE). □

## Nicotine, Donepezil May Dampen Meth Craving

Bridget M. Kuehn

**N**ICOTINE, DONEPEZIL, AND OTHER drugs that act on the same brain pathways may one day help treat craving symptoms in individuals who are dependent on methamphetamine, research by a team of Japanese researchers suggests.

The scientists, who were studying the molecular and neurological basis of methamphetamine craving, found that nicotine and donepezil suppress cravinglike behavior in methamphetamine-dependent rats by reactivating brain activity that had been inactivated by repeated use of the drug (Hiranita T et al. *Proc Natl Acad Sci U S A*. 2006;103:8523-8527). The findings suggest that donepezil (used to treat Alzheimer disease) and nicotine replacement therapies might help control craving in patients being treated for drug addiction.

Both nicotine and donepezil stimulate nicotinic acetylcholine receptors. These receptors are thought to play an important role in the brain's reward system, and previous studies had suggested that methamphetamine use might inactivate them. The Japanese scientists hypothesized that inactivating

the nicotinic acetylcholine receptors might trigger drug craving and found that treating methamphetamine-dependent rats with nicotine or donepezil lessened cravinglike behavior. In addition, nicotinic receptor antagonists blocked nicotine and donepezil's craving-reducing effects, verifying that the nicotinic acetylcholine receptors were indeed the target.

The researchers also identified several affected brain regions—the nucleus accumbens core, prelimbic cortex, amygdala, and hippocampus—but noted that there may be differences in the way these regions are affected by triggers of drug craving. Craving can be triggered in a drug-dependent individual by environmental cues that the person associates with drug use, by stress, or by a single "priming" dose of the abused substance. When the Japanese team triggered cravinglike behavior in the rats using environmental cues or drug priming, they found that the amygdala was involved in the craving triggered by environmental cues but not by craving triggered by drug priming. This suggests that different mechanisms are involved in these two types of behavior. □