

Research Update

Something in the way they move clue to Huntington's

American researchers believe they have identified both the mechanism that is associated with movement problems in Huntington's disease (HD) and the part of the brain that causes them. They have also discovered that subtle jerkiness in movements may appear in patients with HD long before other clinical symptoms are evident (*Nature* 2000;403:495-6).

"This study identifies a change in motor coordination long before we can

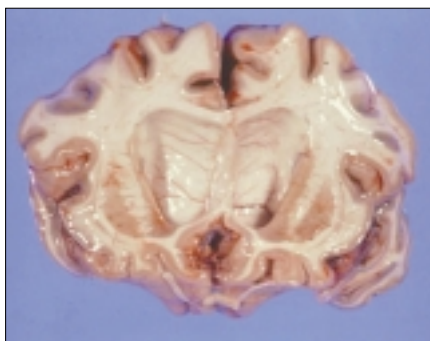
see it on clinical examination," says Dr. Christopher Ross, professor of psychiatry and neuroscience at Johns Hopkins University. "This can be very useful. We are now trying to develop treatments for Huntington's disease. The problem is, how do you study a drug in the absence of any markers for the disease? This, we hope, will serve as a marker."

The researchers found that HD involves a dysfunction in the way the brain monitors movement, specifically in the way it corrects small errors in movement. Researchers examined 11 asymptomatic patients who were known carriers of the HD gene, 16 others with symptomatic HD, and 3 subjects who did not have the HD gene but whose parents have the disease, as well as 12 healthy controls. (A second, similar study included 6 control subjects with cerebellar injuries.) Researchers asked the subjects to reach quickly for targets while grasping a robotic arm. The arm continuously mea-

sured the movements for jerkiness and smoothness and the ability to stay on target, called "aiming."

While initial aiming was not dramatically disturbed in patients with HD, all of these individuals and several of the asymptomatic patients displayed unusual jerkiness as the movements progressed. These results suggest that HD movements often begin normally, but become jerky and irregular at some point during their course because of impaired error feedback, says Maurice Smith, a doctoral student in Johns Hopkins' Department of Biomedical Engineering.

The significance of these findings may be relevant to diseases other than Huntington's, adds Dr. Ross. "In terms of genetic disorders [this] is quite important. Huntington's disease has been the prototype for genetic diseases. We need to develop a whole way of approaching genetic diseases and their onset. HD is presenting a model for doing that." — *Donalee Moulton*, Halifax



Brain section from a patient with Huntington's disease.

Kevin Roth and Robert Schmidt, Washington University, St. Louis, Mo.

Vitamin E not a heartfelt protector

Some studies have suggested that vitamin E reduces the risk of coronary disease and atherosclerosis. But after almost 5 years of study, researchers involved with the Heart Outcomes Prevention Evaluation (HOPE) study have concluded that vitamin E has no apparent effect on outcomes for patients at high risk of cardiovascular disease (*N Engl J Med* 2000;342:154-60).

"What this really means is that we should really not be prescribing vitamin E for the prevention of heart disease — at least, not yet. Vitamin E has not had a protective effect, at least over 4 and a half years," says lead investigator Dr. Salim Yusuf, professor of medicine and director of cardiology at McMaster University in Hamilton, Ont.

More than 9500 men and women, who were all 55 years of age or older and at high risk for cardiovascular events, were randomly assigned to receive either 400 IU of vitamin E a day or a placebo. A total of 772 patients (16.2%) assigned to the treatment group experienced a primary outcome event, compared with 739 patients (15.5%) in the control group. As well, there were no significant differences in the numbers of deaths as a result of cardiovascular disease (342 in the vitamin E group versus 328 in the control group), myocardial infarction (532 versus 524), or stroke (209 versus 180). The researchers also found no significant differences in the incidence of secondary cardiovascular outcomes or in death from any cause. They also found

no serious adverse effects of vitamin E.

"We found that [vitamin E] is safe. That doesn't mean we should use it. There is a cost to vitamins. Patients' money would be better spent elsewhere," says Yusuf, who recommends that physicians advise their patients to stick with the tried and true, such as stopping smoking and exercising regularly.

The vitamin E component of the HOPE study has now been extended for another 3 years. In addition to investigating the association with heart disease, the researchers are also looking to see if there is a link between vitamin E and the prevention of cancer. "This is a really promising area," notes Yusuf. "Studies suggest positive results." — *Donalee Moulton*, Halifax