Study determines saliva gland test can spot early Parkinson's disease

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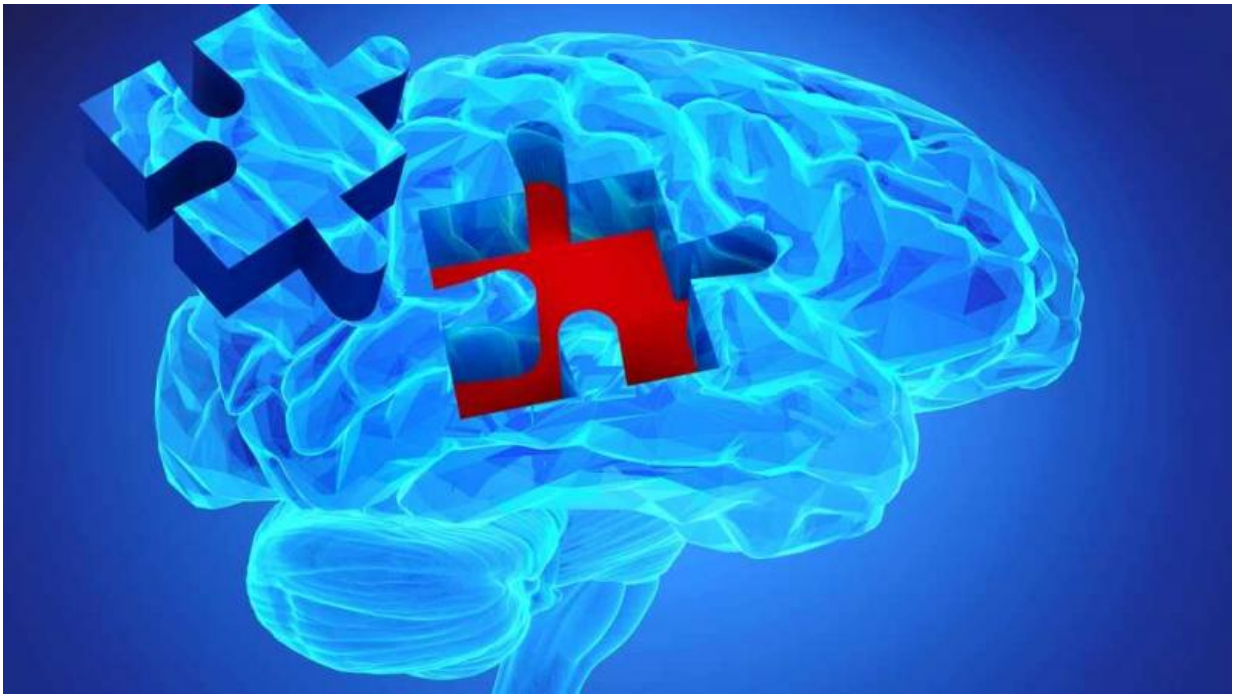

Credit: Mayo Clinic

Researchers from Mayo Clinic in Arizona and Banner Sun Health Research Institute have determined that testing a portion of a person's submandibular gland may be a way to diagnose early Parkinson's disease. The study was published this month in *Movement Disorders*, the official journal of the International Parkinson and Movement Disorders Society.

Currently, there is no accurate diagnostic test for Parkinson's disease. The researchers believe that a procedure termed transcutaneous submandibular gland biopsy may provide the needed accuracy. The test involves inserting a needle into the submandibular gland under the jaw and withdrawing the needle to obtain the core of gland tissue within. The researchers looked for a protein in the cells from patients who have early Parkinson's disease and compared this to subjects without the disease.

"This is the first study demonstrating the value of testing a portion of the submandibular gland to diagnose a living person with early Parkinson's disease. Making a better diagnosis in living patients is a big step forward in our effort to understand and better treat patients," says study author Charles Adler, M.D., Ph.D., neurologist, professor of neurology at Mayo Clinic in Arizona.

The study involved 25 patients with Parkinson's disease for less than five years and 10 control subjects without Parkinson's disease. Biopsies were taken from one submandibular gland which is a gland that makes saliva. The biopsies were done as an office procedure by Michael Hinni, M.D., and David Lott, M.D., at Mayo Clinic in Arizona. The biopsied tissues were tested for evidence of the abnormal Parkinson's protein by study co-author Thomas Beach, M.D., Ph.D., a neuropathologist with Banner Sun Health Research Institute.

"This procedure will provide a much more accurate diagnosis of Parkinson's disease than what is now available," Dr. Beach says. "One of the greatest potential impacts of this finding is on clinical trials, as at the present time some patients entered into Parkinson's clinical trials do not necessarily have Parkinson's disease and this is a big impediment to testing new therapies."

The abnormal Parkinson's protein was detected in 14 of the 19 patients who had enough tissue to study, providing positive results that need

further studies. The research team previously had shown that the biopsy could detect the protein in 9 of 12 patients with advanced disease.

"This study provides the first direct evidence for the use of submandibular gland biopsies as a diagnostic test for living patients with early Parkinson's disease," says Dr. Adler. "This finding, in patients with early Parkinson's disease, may be of great use since accuracy of diagnosis in patients with early disease is not nearly as good as in those having the disease for more than 10 years."

Parkinson's disease is a progressive disorder of the nervous system that affects movement as well as sleep, walking, balance, blood pressure, and smell. It develops gradually, sometimes starting with a barely noticeable tremor in just one hand. But while tremor may be the best-known sign of Parkinson's, the disorder also commonly causes stiffness or slowing of movement. Currently, the diagnosis is made based on medical history, a review of signs and symptoms, a neurological examination, and by ruling out other conditions. In a previous study, Drs. Adler and Beach found that up to 45 percent of patients may be misdiagnosed early in the disease. Although Parkinson's disease can't be cured, medications may markedly improve symptoms.

Provided by Mayo Clinic