



SOMASCAN CARDIOVASCULAR

ADVANCED MEDICAL IMAGING

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PET Scans of Alzheimer's Disease

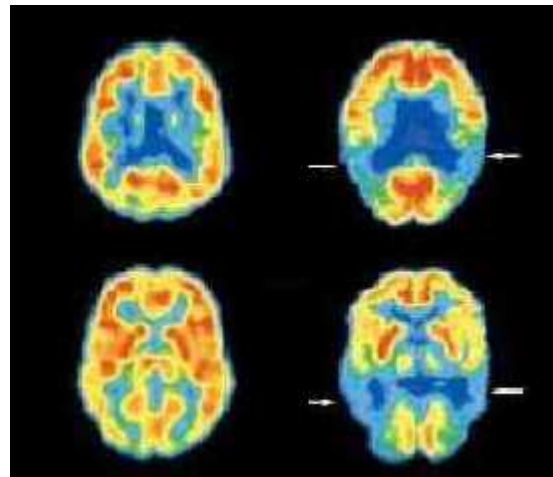
Alzheimer's disease is a disease that destroys brain cells. The destruction of cells causes a decline in mental functions that affect memory, thinking, language and behavior. Early symptoms may include difficulty in performing everyday tasks or remembering common words. Confusion and difficulty with reasoning are other frequent symptoms. As the disease progresses, victims of Alzheimer's disease become increasingly disoriented, anxious and agitated, until they can no longer perform the most basic tasks in their own care. While the disease can occur in people in their 40s and 50s, it most commonly affects those aged 65 and older.

A PET scan can show the brain's biological changes attributable to Alzheimer's disease before any other diagnostic test. Alzheimer's disease can even be detected several years earlier than the onset of symptoms. Early detection and confirmation of Alzheimer's disease allows for:

- Early drug therapy to slow the loss of the patient's ability to function.
- Future planning before loss of mental capacity.
- Positive and accurate diagnosis of other dementing processes, chronic depression and normal aging.
- Help in the discovery and development of new therapies.
- Hope.

There is no cure for Alzheimer's disease but a number of new drug treatments are being developed. Recently, the FDA approved a drug for Alzheimer's disease that affects the chemical systems of the brain. If this drug is administered early in the course of memory loss, it delays progression of symptoms in patients with Alzheimer's disease. Additional drug studies are underway, which hopefully will bring about more substantial improvements in the course of the disease.

PET is a test that may diagnose Alzheimer's early enough to make full use of drug therapies, reassure fearful patients who might not have the disease, or redirect treatment for other conditions.

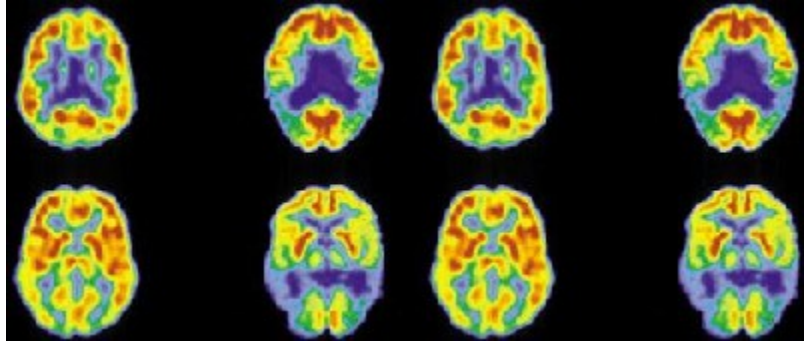


Normal Brain Image / Alzheimer's Brain image W/ arrows

PET Scans of Alzheimer's Disease

PET images show the metabolic degeneration of the brain of a patient with Alzheimer's as it progressively reduces brain function. In the early stages of the disease, limited areas of the brain are dysfunctional (arrows in upper image), but in late stages of Alzheimer's, larger brain areas are affected (arrows in upper and lower images).

The structures that are spared and remain functioning (dark blue images) are the portions of the cortex that control the motor systems such as the legs, arms and hands (upper image), the internal structures (center structures that are dark blue in lower image) and the visual cortex at the back (bottom of the lower image).



Normal Brain Image / Alzheimer's Brain image

Notice that the metabolic function of the brain with late stage Alzheimer's resembles that of a child. This correlates with the child-like functional behavior of these patients.

A PET scan shows a very consistent diagnostic pattern for Alzheimer's disease where certain regions of the brain have decreased metabolism early in the disease (see arrows). In fact, the pattern often can be recognized several years before a physician is able to confirm the diagnosis and is also used to differentiate Alzheimer's from other confounding types of dementia or depression.