

# DaTSCAN

**DaTSCAN** is a diagnostic method to investigate if there is a loss of dopaminergic neurons in striatum. Its principle is based on using of **radiopharmaceutical**, which bind to dopamine transporters (DaT). The signal from them is then detected by the special gamma-cameras and the picture (SCAN) is created.

DaTSCAN is indicated in cases of tremor in patients, when we are not sure about its origin. Although this method can distinguish essential tremor from Parkinson's syndrome, it is unable to show us if the problem is Parkinson's disease, multiple system atrophy or progressive supranuclear palsy.

Its main advantage is that DaTSCAN is able to diagnose Parkinson's disease much earlier – *in stage of 30% loss of the dopamine brain cells instead of 80-90%* <sup>[1]</sup>, when the symptoms are already so visible, that we can be sure about the diagnosis. The earlier diagnosis, the earlier treatment with better results.

## How It Is Done?

At the beginning a patient should take two **iodine tablets** and wait for one hour. These pills are highly important, because they prevent the accumulation of radioactive substances in thyroid gland! After one hour, the patient gets **an injection** to shoulder, which contain the radiopharmaceutical and then he has to wait for 4 hours. The concentration of the substance increases and then it is scanned by gamma-camera, which is located around his head. Whole examination lasts about 30-45 minutes and it is non-invasive.

If a patient use some of the **medication** listed below, it is necessary to stop the using few days or weeks before the DaTSCAN, but just after a consultation with his doctor.

The examination takes just a few hours, so patients needen't to stay in a hospital overnight, but they have to **drink much more** than they are used to and go to the toilet more often. It is important for a fast elimination of the radioactive substances from the body.

## Contraidications

- pregnancy
- breast-feeding
- severe renal or hepatic insufiencie
- allergy to iodine substances
- some kind of medication – stimulants or noradrenalin and some antidepressants

## Differential Diagnosis

- Parkinson's disease, multiple system atrophy or progressive supranuclear palsy
- essential tremor
- Lewy's body disease

## Links

### Related articles

- Parkinson's Disease
- Essential Tremor
- Multiple System Atrophy
- Progressive Supranuclear Palsy

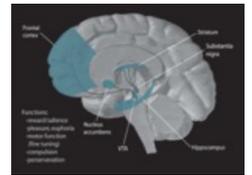
### External links

- European Parkinson's Disease Association (<http://epda.eu.com/medinfo/DatSCAN/>)
- DaTSCAN (<http://us.datscan.com/>)
- Patient's view (<http://www.tampabay.com/news/health/medicine/datscan-new-drug-help-with-early-diagnosis-of-parkinsons-disease/1184088>)

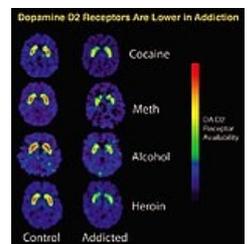
## References



Striatum



Dopamine Pathways



Dopamine D2 receptors



Gamma-camera

1. [1] (<http://www.tampabay.com/news/health/medicine/datscan-new-drug-help-with-early-diagnosis-of-parkinsons-disease/1184088>)