

# Parkinson's disease patients can become more creative when they take dopamine

February 23 2012

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Some Parkinson's Disease patients can suddenly become creative when they take dopamine therapy, producing pictures, sculptures, novels and poetry. But their new-found interests can become so overwhelming that they ignore other aspects of their everyday life, such as daily chores and social activities, according to research published in the March issue of the *European Journal of Neurology*.

Italian researchers studied 36 patients with Parkinson's Disease - 18 with increased artistic production and 18 without - and compared them with 36 healthy controls without Parkinson's. None of the patients had engaged in artistic hobbies before they took dopamine.

"Patients were included in the artistic group if they started working on creative projects for two or more hours a day after starting taking dopamine" explains lead author Dr Margherita Canesi, a neurological specialist at the Centro Parkinson e Disordini del Movimento in Milan.

"Our findings suggest that the patients' newly acquired artistic skills were probably there all along, but did not start to emerge until they took the dopamine therapy. They did not appear to be connected with abnormal repetitive behaviours, such as [impulse control disorders](#) or punding - stereotyped behavior characterised by an intense fascination with a complex, excessive, non-goal oriented, repetitive activity.

"Other researchers have noted that altered creative drive has been observed in patients who have [neurodegenerative diseases](#) or have had a

stroke. However the anatomical and physiological understanding of creativity is difficult to establish and quantify."

Dopamine is a [neurotransmitter](#) that helps control the brain's reward and pleasure centres. It helps to regulate movement and [emotional responses](#) and enables people to see rewards and work towards them. Parkinson's Disease is caused by dopamine deficiency and using medication to increase [dopamine levels](#) in the brain is one of the most popular kinds of therapy.

Key findings of the study included:

- The artwork presented by the patients was mainly drawings/paintings (83%), poetry/novels (50%) and sculpture (28%). In 78% of cases, the patients showed more than one skill, normally writing plus painting or drawing.
- Some of the patients produced art that was sold and books that were published, but, at the other end of the scale, some of the creative work was of a very poor quality.
- By using the Torrence Test of Creative Thinking to compare the three groups, the researchers showed that the artistic Parkinson's Disease patients had similar overall and individual scores to the healthy controls. However the non-artistic patients had significantly lower overall scores than the healthy controls and significantly lower scores than the artistic patients when it came to the elaboration sub-score.
- There was no correlation between the Torrence Test of Creative Thinking scores and the scores obtained using the Barratt Impulsivity Scale, one of the oldest and most widely used measures of impulsive personality traits.
- The researchers also used the Minnesota Impulsive Disorders Interview. This showed that one creative patient was positive for

compulsive sexual behaviour, one creative patient for compulsive buying and two creative and three non-creative patients for pathological gambling. However, there was little difference in the Torrence scores for patients who tested positive or negative on the Minnesota scale.

- None of the patients or healthy controls displayed the stereotyped behaviour measured by the Punding Rating Scale.

"In conclusion, we found that newly acquired creative drive in [patients](#) with [Parkinson's Disease](#), after the introduction of dopaminergic therapy, is not related to impulsivity or impulse control disorders as measured by the Barratt Impulsivity Scale or the Minnesota Impulsive Disorders Interview" says Dr Canesi.

"We believe that their desire to be creative could represent emerging innate skills, possibly linked to repetitive and reward-seeking behaviours. Further studies are needed to support our preliminary observations."

**More information:** Artistic productivity and creative thinking in Parkinson's disease. Canesi et al. *European Journal of Neurology*. 19, pp468-472. (March 2012) [doi:10.1111/j.1468-1331.2011.03546.x](https://doi.org/10.1111/j.1468-1331.2011.03546.x)

Provided by Wiley

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