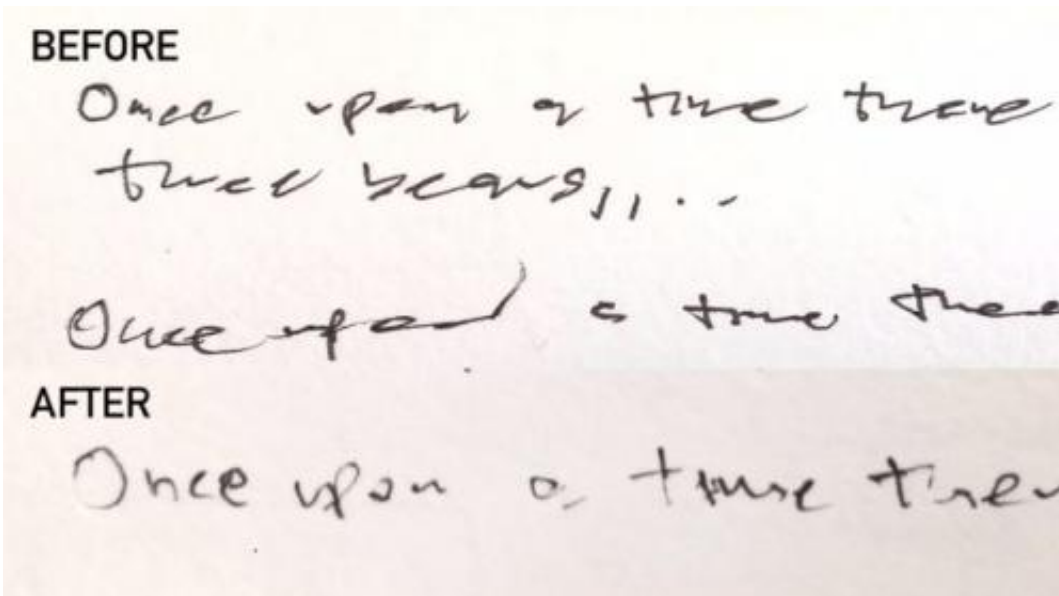


Vibration pen is designed for people with Parkinson's

April 1 2015, by Nancy Owano



A woman appears in a video about a very special pen, the ARC, specifically designed for people with Parkinson's living with micrographia. Diagnosed with Parkinson's in 2013, the woman says that, over time, her writing changed. It got smaller and smaller and smaller. Another man interviewed in the video also revealed his writing got smaller and smaller. This does not surprise those familiar with the disease. An associated problem is a condition called micrographia. Writing can get so small that it is almost impossible to see.

For support, a team of four enterprising people skilled in engineering and product design put their heads together to work on a prototype dubbed ARC, a pen for people with Parkinson's. Lucy Jung, Tian-Jia Hsieh, Hwan Soo Jeon, and Danny Walklin make up a group called the Dopa Solution. Their ARC [writing](#) utensil is the first pen specifically designed for people with Parkinson's living with micrographia. As students from the Imperial College I Royal College of [Art](#) they took part in the Innovation Design and Engineering joint masters course, said *Fast Company*.

"As the disease takes hold," said *Fast Company*, "patients find their muscles seizing up, which then impacts their handwriting, and their letters appear abnormally small and cramped." Rather than seeing such patients lose hope and give up on the desire to move a pen across paper to write or draw—whether sending greeting cards or expressing oneself in a letter or writing formally—the team worked to come up with a utensil to support people with this difficulty in motor control.

The ARC pen uses high-frequency vibration motors to facilitate larger and clearer writing. Key muscles in the hand are stimulated. ARC prototypes were developed and in trials with 14 people with micrographia symptoms, an overall improvement in writing of 86 percent was demonstrated. Tests were performed under the direction of specialists.

A push button on the device can control various frequency vibrations and there is a docking station for inductive charging. The Dopa Solution team explained how it works: "By utilizing high frequency [vibration motors](#) within ARC, we are able to facilitate larger and clearer writing, by stimulating the key muscles in the hand as well as reducing the effort required to move the pen across the paper."

Katie Collins in *Wired* took notice of the shape of the device, with these

users in mind. Slim pens may be painful to hold and control. Prototypes of the ARC pen show a [thicker](#) design than the average writing implement.

The project continues; the pen is still being tested. *CNET* said that Dopa Solution is seeking sponsors to help further its [development](#).

They said, "We are continuously developing the Arc [pen](#) and other [solutions](#) for the people who have [motor control](#) disease. They said they are looking for "funders /manufacturers/ distributors for further development," and participants for testing.

More information: www.dopasolution.com/

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