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Researchers in Thailand design Parkinson's gloves to reduce tremors

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The tremor-reducing Parkinson's gloves innovation is ready to be introduced to patients at large



Doctors at King Chulalongkorn Memorial Hospital in Thailand have developed lightweight and easy-to-use Parkinson's gloves that can automatically reduce tremors, allowing Parkinson's Disease (PD) patients to enjoy social life and reducing side effects from medication and risk from brain surgery.

The automatic tremor-reducing Parkinson's gloves operate by detecting and measuring Parkinson's tremors using an accelerometer and a gyroscope, which are highly accurate and low in error risk. Parkinson's tremors measure at 4-7 Hz.

The gloves suppress tremors with electrical stimulation of the hand muscles — when the sensors detect Parkinson's-specific tremors, they will transmit a signal via Bluetooth to the muscle stimulator to release an electric current that will reduce the tremors from a small battery. The muscle stimulator uses the physiotherapy standard resistance, frequency, and electric current, which are safe for use with patients.

Although devices to reduce PD patients' hand tremors are available in other countries, they are mostly very expensive. Also, there are no similar devices backed up by medical research, but Chulalongkorn's Parkinson's gloves are accompanied by clinical research which has been published in international medical journals. The cost of production of the gloves is also lower than the imported ones. Currently, the production cost is around 30,000 – 40,000 baht per set.

Right now the tremor-reducing Parkinson's gloves are limited to only patients at King Chulalongkorn Memorial Hospital. The Excellence Centre for Parkinson's Disease & Related Disorders is receiving patients to test the device. If the device works well for the patient, the Centre will sponsor the device for the patient's continuous use.

Image caption- *Asst. Prof. Dr Onanong Phokaewvarangkul (Left) and Prof. Dr Roongroj Bhidayasiri (Right), Excellence Centre for Parkinson's Disease & Related Disorders, King Chulalongkorn Memorial Hospital*