For neurological disorders, including Parkinson disease (PD), medication is available offering significant alleviation of symptoms, especially at the early stages of the disease. But the requisite physical visits to the clinic for monitoring and treatment are difficult. Research has shown that approximately 90% of PWP exhibit some form of vocal impairment which is one of the indicators for the onset of the PD, and the measurement of voice is noninvasive and simple to administer. It is an effective way to realize remote monitoring and predict diseases early.

A person who has a PD or needs a diagnostic of PD must pass through various stages of tests. These tests designed by specialist doctors with their teams to better understand the severity level of patients. The data for this study consists of 195 sustained vowel phonations from 31 patients passing through 6 iterations of the same tests, of which 23 were diagnosed with PD. The time since diagnoses ranged from 0 to 28 years, and the ages of the subjects ranged from 46 to 85 years (mean 65.8, standard deviation 9.8). The phonations were recorded in an IAC sound-treated booth using a head-mounted microphone (AKG C420) positioned at 8 cm from the lips. The voice signals were recorded directly to computer using CSL 4300B hardware, sampled at 44.1 kHz, with 16-bit resolution. All samples were digitally normalized in amplitude prior to calculation of the measures. The diagnosis stage or data collection stage involves the application of pre-designed and verified measurement methods to all the speech signals. The diagnostic was performed using the software for better accuracy and precision of the data.