

Is Protokinetics' Primary Gait Screen Comparable to Other Gait Assessments? (Research)

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In a recent study, *The Primary Gait Screen in Parkinson's disease: Comparison to standardized measures*, proprietary technologies developed by ProtoKinetics were used to analyze a variety of factors regarding gait impairments in people with Parkinson's disease. The primary tool developed by ProtoKinetics, the Primary Gait Screen (PGS), offers a more thorough examination of a patient's movement patterns and provides additional data on gait initiation, overground walking, turning, and gait termination than previous gait assessments. The Zeno Walkway mat and PKMAS software were used to collect the patient data.

Patients who are struggling with Parkinson's Disease (PD) often encounter intense difficulty with regards to comfortable-pace overground walking. The study focused on determining whether the gait assessment data that was recorded during the usage of the PGS was comparable to the more common SS protocols used to evaluate subjects who have PD.

Primary Gate Screen captures comprehensive data movement in less time.

The Primary Gate Screen is a potentially useful tool in terms of its ability to capture more comprehensive data movement from patients in a shorter period of time. The protocol was specially designed for [clinical gait assessment](#). Because patients who have PD have difficulty with walking forward and making transitional movements, this population was ideal to evaluate the effectiveness of the protocol.

The sample size for the study was comprised of 175 patients, all of whom are currently suffering from idiopathic Parkinson's disease. 47 of the participants in the study were female, while 128 of them were male. The average age range of each participant in the study was 67 years old, with a plus or minus range of nine years.

In the study, each patient completed a total of four passes over the [Zeno Walkway mat](#) at a self-selected speed, and two trials of the Primary Gait Screen. It should be noted that these trials were conducted without the usage of assistive walking devices on the part of the subjects. During the self-selected speed portion of the study, subjects began walking one meter before the walkway began and then turned for one meter after reaching the end of the walkway. Both the first and the last 0.6 meters of the self-selected speed portions were excluded during the final analysis of the data. This was to account for the removal of acceleration or deceleration based effects on the overall data.

After the data was collected, a variety of spatiotemporal gait variables were conducted using PKMAS software. The trials were processed separately from one another, and the variable and gait velocities from both trials were averaged. A repeated-measures [MANOVA](#), along with a [Bonferroni correction](#), were used to compare data from the self-selected speed trials to the primary gait screen. The variables that were measured included gait velocity, [cadence](#), [step length](#), [step time](#), and [stride length](#).

The Primary Gait Screen, which operated within the [PKMAS software](#), was used to calculate velocity for the gait portion of the PGS trial. A separate analysis was also conducted using PKMAS, during which the processing settings of the PGS trials were modified to ensure that no bias would affect the gait velocity calculations during the computations. The gait velocity data collected was processed three different times using three different cutoffs. These cutoffs were calculated by factoring out the first meter, 1.5 meters, and two meters of the testing walkway. While processing the first meter cutoff, the first and last meter of collected data was factored out, and during the 1.5 and two meter cutoffs, the beginning and ending 1.5 and two meters were not used during the final data analysis.

The results of the analyses were unable to show any meaningful differences between the Primary Gait Screen and the self-selected speed portions in terms of gait velocity, step length, or step stride, with p being greater than .01 in this instance. Furthermore, the only noticeable differences that could be discerned between the two different types of gait evaluations were in regards to decreased cadence and increased step time. P was determined to be less than .001 during this additional testing.

The conclusion of the study is that the Primary Gait Screen is a comparable assessment to previous gait assessments when used to evaluate overground walking in patients who have developed idiopathic Parkinson's disease. Even with the usage of shorter pressure mats during the study, as well as factoring in minimal data being lost during the gait initiation, termination, and turning portions of the Primary Gait Screen, it was determined to be an accurate tool for assessing and collecting gait data from PD test subjects. In addition, it may have the potential to be used with populations who are suffering from other chronic illnesses as well.