

Brazilian version of the Functional Gait Assessment: translation, reliability, and validity for use on stroke patients

Versão brasileira da Functional Gait Assessment: tradução, confiabilidade e validade para uso em pacientes com AVC

Versión brasileña de la Functional Gait Assessment: traducción, fiabilidad y validez para su uso en pacientes con accidente cerebrovascular

Paulo Roberto Fonseca Junior^{1,2}, Kelven Antonio da Silva², Vanessa Donato do Vale², Claudia Santos Oliveira^{2,3}, Vera Lúcia dos Santos Alves¹

1.Instituto de Medicina Física e Reabilitação do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, IMREA HC FMUSP, São Paulo-SP, Brazil.

2.School of Medical Sciences, Irmandade da Santa Casa de Misericórdia de São Paulo, ISCMSP, São Paulo-SP, Brazil.

3.University Center of Anápolis, UniEVANGELICA, Anápolis-GO, Brazil.

Resumo

Objetivo. Traduzir e adaptar a Functional Gait Assessment (FGA) ao português brasileiro como uma medida de equilíbrio durante a marcha em pacientes com AVC e determinar sua validade e confiabilidade com base nas evidências de suas propriedades de medida. **Método.** Uma amostra de conveniência de 45 sobreviventes de AVC (média de sete meses desde o diagnóstico) foi incluída (idade média: 55 anos; 51% mulheres). O instrumento em questão foi traduzido e retrotraduzido. O desempenho do FGA foi avaliado por dois avaliadores para determinar a confiabilidade intra e interexaminadores. A validade concorrente e discriminante foi investigada usando a Berg Balance Scale (BBS), bem como a velocidade de caminhada normal e rápida. **Resultados.** Não foram encontradas dificuldades com a tradução durante a aplicação dos testes. Portanto, não foram necessárias alterações estruturais ou conceituais na versão traduzida para obter equivalência cultural. O intra-avaliador (coeficiente de correlação intraclass=0,93) e a confiabilidade entre avaliadores (coeficiente de correlação intraclass=0,90) foram quase perfeitos para a pontuação total. A confiabilidade de itens únicos também foi forte, variando de 0,74 a 0,95. A validade concorrente com outras medidas de marcha e equilíbrio foi de moderada a substancial. O AGP apresentou correlação ($p<0,001$) com o BBS (0,71), velocidade normal de caminhada (0,66) e velocidade rápida de caminhada (0,70). **Conclusão.** A versão brasileira do FGA é um instrumento válido e confiável para avaliar o desempenho funcional da marcha em sobreviventes de AVC.

Unitermos. AVC; Equilíbrio; Marcha; Validação

Abstract

Objective. Translate and adapt the Functional Gait Assessment (FGA) to Brazilian Portuguese as a measure of balance during gait in stroke patients and determine its validity and reliability based on evidence of its measurement properties. **Method.** A convenience sample of 45 stroke survivors (average of seven months since diagnosis) was included (mean age: 55 years; 51% women). The instrument under consideration was translated and back-translated. The performance of the FGA was assessed by two raters to determine intrarater and interrater reliability. Concurrent and discriminant validity were investigated using the Berg Balance Scale (BBS) as well as normal and fast walking speed. **Results.** No difficulties with the translation were found during the application of the tests. Therefore, no structural or conceptual changes to the translated version were needed to achieve cultural equivalence. Intrarater (intraclass

correlation coefficient=0.93) and interrater reliability (intraclass correlation coefficient=0.90) were almost perfect for the total scores. The reliability of single items was also strong, ranging from 0.74 to 0.95. Concurrent validity with other measures of gait and balance was moderate to substantial. The FGA was correlated ($p<0.001$) with the BBS (0.71), normal walking speed (0.66), and fast walking speed (0.70). **Conclusion.** The Brazilian version of the FGA is a reliable, valid instrument for assessing functional gait performance in stroke survivors.

Keywords. Stroke; Balance; Gait; Validation

Resumen

Objetivo. Traduzca y adapte la Functional Gait Assessment (FGA) al portugués brasileño como una medida de equilibrio durante la marcha en pacientes con accidente cerebrovascular y determine su validez y fiabilidad en función de la evidencia de sus propiedades de medición.

Método. Se incluyó una muestra de conveniencia de 45 sobrevivientes de accidente cerebrovascular (media de siete meses desde el diagnóstico) (edad media: 55 años; 51% mujeres). El instrumento en cuestión fue traducido y retrotraducido. El desempeño de la FGA fue evaluado por dos evaluadores para determinar la confiabilidad intra e interevaluador. Se investigó la validez concurrente y discriminante utilizando la Escala de equilibrio de Berg (BBS), así como la velocidad de caminata normal y rápida. **Resultados** No hubo dificultades con la traducción durante la aplicación de las pruebas. Por lo tanto, no fueron necesarios cambios estructurales o conceptuales en la versión traducida para obtener equivalencia cultural. El intra-evaluador (coeficiente de correlación intraclass=0,93) y la fiabilidad entre evaluadores (coeficiente de correlación intraclass=0,90) fueron casi perfectos para la puntuación total. La fiabilidad de los artículos individuales también fue fuerte, con un rango de 0,74 a 0,95. La validez concurrente con otras medidas de marcha y equilibrio fue de moderada a sustancial. El AGP mostró una correlación ($p<0.001$) con el BBS (0.71), la velocidad de caminata normal (0.66) y la velocidad de caminata rápida (0.70). **Conclusión.** La versión brasileña de la FGA es un instrumento válido y confiable para evaluar el rendimiento funcional de la marcha en los sobrevivientes de un accidente cerebrovascular.

Palabras clave. accidente cerebrovascular; Equilibrar; Marcha; Validación

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Corresponding address: Paulo R Fonseca Junior. R. Padre João Gonçalves 116. Pinheiros, São Paulo-SP, Brazil. CEP 05432-040. Phone +55 11 97194-7326 / 3031-9659. E-mail: paulofonseca28@gmail.com

INTRODUCTION

Stroke is one of the leading causes of death and disability. The number of stroke survivors is expected to reach 23 million throughout the world by the year 2030 if no additional prevention measures are taken¹. Between 50 and 60% of stroke survivors are unable to walk or require a gait-assistance device^{2,3}, which contributes to the risk of falls, dependence, limited participation in social activities and a poor quality of life^{3,4}.

The choice of the most appropriate measure for assessing gait in individuals with neurological disorders is essential to the proper assessment of the gait pattern and the planning of the rehabilitation process. Although three-dimensional gait analysis is considered the gold standard by providing a wide range of objective gait variables, the equipment for such an analysis is not always available⁵. Assessment measures (clinical tests and scales) are valid, reliable instruments for detecting changes in the gait pattern of patients with specific conditions, such as stroke. Such assessment tools include the Berg Balance Scale (BBS), Timed Up and Go (TUG) Test, Functional Ambulation Categories (FAC) and Dynamic Gait Index (DGI). These instruments address functional tasks during gait that require the use of dynamic balance^{6,7}.

The Functional Gait Assessment (FGA) is an outcome measure proposed by Wrisley et al.⁸ in 2004 and developed as a modification of the DGI to improve reliability and diminish the ambiguity of several items that caused scoring problems for evaluators^{9,10}. The FGA items address several aspects of gait and are used to measure balance and gait disorders. It is also easily performed in the clinical setting with a single evaluator⁹. The 10-item FGA has seven of the eight items on the DGI and three additional items: "gait with a narrow base of support", "ambulating backward" and "gait with eyes closed". Each of the 10 items is scored on an ordinal scale with four levels (0 to 3 points). The maximum score is 30 points. Although the scale involves important

functional aspects of gait, such as quality of movement, deviation from the intended walking path, the need for a gait-assistance device and the time required to perform the tasks, there is no consensus on a cutoff point that defines individuals with a high risk of falls¹⁰.

In a systematic review performed by Weber et al.¹⁰ in 2016 analyzing the psychometric properties (reliability and validity) of the FGA for use on patients with Parkinson's Disease, stroke survivors and community-dwelling seniors, the FGA was found to have high reliability for all populations studied as well as moderate to high concurrent validity with other outcome measures. Intrarater and interrater reliability for the total FGA score was excellent in most studies, with intraclass correlation coefficients (ICC) of 0.97 and 0.94, respectively. For the assessment of concurrent validity, the studies compared the FGA to similar outcome measures, such as the BBS, TUG Test and the Six-Minute Walk Test. The reliability of a scale regards the level of agreement between measurements repeated under the same conditions. External validity regards intrarater and interrater agreement, whereas internal validity refers to the consistency of the elements in the items on the scale⁸.

Low-cost assessment tools that are easy to administer have been developed to enable the quantitative and/or qualitative description of gait in the clinical setting and involve functional tasks during gait that require dynamic balance^{5,11,12}. For these tools to have clinical usefulness, however, they must be valid, reliable, and capable of

detecting changes in the gait pattern of an individual. The difficulty in accessing assessment tools for use in clinical practice, information on their psychometric properties and aspects of clinical interpretation determines the choice of the most appropriate outcome measure for a given health condition and exert an influence on the proper evaluation of the gait pattern and planning of the rehabilitation process¹³.

Therefore, the aim of the present study was to translate and adapt the FGA to Brazilian Portuguese for use on the Brazilian population of stroke survivors and validate the translated version through an evaluation of its reliability and validity.

METHOD

The present study was conducted in accordance with the norms governing research involving human subjects stipulated by the Brazilian National Board of Health in 2012 and received approval from the local human research ethics committee (certificate number: 08327619.6.0000.5479). All volunteers agreed to participate by signing the consent form.

An analytical cross-sectional study was conducted with a convenience sample of 45 stroke survivors recruited from the Neurofunctional Physical Therapy Clinic of the *Irmandade da Santa Casa de Misericórdia* Hospital of Sao Paulo between January and June 2019. The sample size was calculated considering a 95% power, 65% positive predictive value and 90% negative predictive value for Pearson's chi-square

analysis with a significance level of $\alpha = 0.05$, leading to a minimum sample of 40 participants.

Participants

The population was composed of 45 male and female stroke victims. The inclusion criteria were a) a diagnosis of stroke; b) independent gait; c) adequate visual acuity to see the six-meter marker; d) adequate auditory acuity to hear commands (with or without a hearing aid); e) agreement to participate by signing a statement of informed consent; and f) age 18 to 80 years. The following were the exclusion criteria: a) uncontrolled heart or respiratory disease, osteoporosis, recent lower limb fracture or surgery; b) cognitive impairment (diagnosis of cognitive impairment or score on the Mini Mental State Examination < 24 points).

Procedures

Initial translation and evaluation of initial translation (back-translation)

The researchers first contacted the authors of the FGA to obtain authorization for the translation and validation of the Brazilian version. The measure was translated by two independent native Portuguese-speaking translators proficient in English who had been explained the objectives of the study. The two translated versions were compared for the identification of differences. The texts were then modified to obtain a consensus between the two versions. The consensus version was then back-translated by two native

English-speaking translators proficient in Portuguese who had no knowledge of the original measures or the objectives of the study. The two back-translated versions were compared to the original measure in English and differences were analyzed. Incomprehensible items were substituted, and discrepancies were resolved by a bilingual multidisciplinary committee composed of two physiotherapists, an occupational therapist, and a physician.

Evaluation of cultural equivalence

The Portuguese version of the FGA was administered to 12 stroke survivors. The expression "I don't understand" was added to the instructions. Items that received more than 15% "I don't understand" answers would be analyzed and replaced with other items addressing the same concept such that the evaluation structure and properties of these items were not significantly altered. If changes were deemed necessary, a new version would be administered to another group of 12 stroke survivors and cultural equivalence would be tested again until no item received was considered incomprehensible by more than 15% of the patients.

The Portuguese version was also given to a specialist in physical medicine, an occupational therapist and two physiotherapists specialized in the field of neurology to administer the FGA to one of their habitual patients. This step was taken to determine the ease of application and understanding of the measures. All professionals offered feedback on the administration of the translated version of

the FGA. As no difficulties were reported in terms of administering or understanding the instructions for each item, no changes were deemed necessary.

Validation of the Brazilian version of the Functional Gait Assessment

The FGA consists of ten items: walking on level surface, changing speed, walking with horizontal and vertical head turns, turning, stepping over obstacles, walking with a narrow base of support, walking with eyes closed, walking backward and stair climbing. Each item is graded from 0 (severe impairment) to 3 (normal performance), giving a maximum score of 30. A digital stopwatch, two shoeboxes (11.43 cm each) and stairs with four steps were used for the evaluation, which was performed in along a marked track measuring six meters in length and 30.5 cm in width¹⁴.

The validation of the Brazilian version of the FGA was performed by administering the measure after its translation into Portuguese. The test was first applied to 40 male and female stroke survivors recruited from the Neurofunctional Physical Therapy Clinic between January and June 2019. In this step, data were collected to estimate test/retest reliability.

To determine intrarater reliability, the individuals were evaluated by a physiotherapist specialized in neurology and evaluated a second time after an average interval of seven days. To determine interrater reliability, the procedure was repeated in the same manner by another physiotherapist specialized in neurology on the same day as the first

evaluation – 10 minutes after the application of the first rater to avoid habituation on the part of the patients to the tasks solicited by the evaluator. The participants could rest as needed during all parts of the evaluation. Each rater was unaware of the other's results.

Correlation instruments

The BBS and walking speed test were administered on the first evaluation day by the second physiotherapist for the determination of correlations with the FGA and the establishment of concurrent validity.

The BBS consists of 14 items involving dynamic and static balance in the sitting and standing positions. Each item is graded from 0 (poorest balance) to 4 (best balance). The maximum score is 56 points, with higher scores indicating better balance.⁹ The BBS has been used as a reference tool to establish construct validity in studies involving novel walking balance assessment tools for stroke patients¹⁵. Normal and fast walking speed were measured (in meters per second) using the Ten-Meter Walk Test, which was administered by marking a starting and ending point at a distance of 10m. The participants were asked to stand behind the starting point and walk at a comfortable pace (1) and at a fast pace (2) until crossing the end point. Each participant was given two trials with each pace and the average of the two trials was used for analysis. If a participant felt tired during the assessment, he or she could have a five-to-ten-minute rest.

Data analysis

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS) v.25. The Kolmogorov-Smirnov test was used to test for normality with a significance level $\alpha = 0.05$. The distributions of the variables are presented as absolute and/or relative frequency represented by mean \pm standard deviation values for normally distributed data or median and interquartile range (25th to 75th percentile) for non-normally distributed data. The FGA scores were normally distributed. ICCs were calculated for the determination of intrarater and interrater reliability regarding the total FGA score¹⁴. The reliability of single items was calculated using Kendall's coefficient of concordance (W). Spearman's correlation coefficients were calculated between total FGA score, BBS, and normal and fast walking speed for the analysis of concurrent and discriminant validity. Correlation coefficients were interpreted as follows: <0 = poor; 0 to 0.20 = slight; 0.21 to 0.40 = fair; 0.41 to 0.60 = moderate; 0.61 to 0.80 = substantial; and 0.81 to 1.0 = almost perfect^{15,16}. All significance tests were two-sided and were conducted with a 5% significance level (95% confidence interval).

RESULTS

Participants

The sample was composed of 45 individuals with a diagnosis of stroke. All participants were able to walk independently (with or without a gait-assistance device) and

had a score higher than 24 points on the Mini Mental State Examination, indicating no cognitive impairment what would impede their understanding and participation in the study. None of the initial participants was excluded and all took part in the test/retest process and evaluation of cultural equivalence.

The baseline characteristics of the participants are presented in Table 1. Twenty-three women and 22 men participated in the study. Mean age was 55 years (range: 26 to 80 years). Forty-two participants had suffered an ischemic stroke and three had suffered a hemorrhagic stroke. The time elapsed since the stroke event ranged from three to 26 months (median: seven months). Twenty-four (53%) participants had right-side hemiparesis and 21 (47%) had left-side hemiparesis. Sixteen participants (36%) used a gait-assistance device, such as a cane with one or four points, and 29 (64%) did not use a gait-assistance device. Eight participants (17%) reported having fallen in the previous six months and 37 participants (83%) reported no occurrence of falls.

Translation and cultural adaptation

The Brazilian version of the FGA can be found in the Appendix. No difficulties occurred during the application of the tests because of the translation.

Therefore, no structural or conceptual changes to the versions (translation and back-translation) were needed to achieve cultural equivalence.

Table 1. Baseline characteristics of participants.

Variables	n = (45)
Sex (Male/Female)	22/23
Age (years)	55±14*
Time since diagnosis (months)	7 (3-26) **
Use of an assistive device (Yes/No)	16/29
Stroke Diagnosis (Ischemic/Hemorrhage)	42/3
Topography (Left/Right)	21/24
Falls in the last 6 months (Yes/No)	8/37

The test was understood well by the multidisciplinary committee (specialist in physical medicine, occupational therapist, and specialized physiotherapists) and the participants. None of the items was considered incomprehensible by more than 15% of the participants.

Reliability

The median scores for the FGA items are presented in Table 2. The most difficult items to perform were walking with eyes closed, during head rotations, gait with narrow base of support, ambulating backward and going up and down steps. The impairment score ranged from 2 (mild impairment) to 3 (normal).

The ICCs for pooled intrarater and interrater reliability for each question and the total FGA score are displayed in

Table 3. For the total FGA scores, almost perfect pooled intrarater reliability was demonstrated (ICC=0.93). For single items, Kendall's W values ranged from 0.91 (item 7) to 1.0 (items 6 and 10), demonstrating strong reliability. Pooled interrater reliability was almost perfect, with an ICC of 0.90 for the total score. Single item values ranged from 0.74 (Items 2 and 5) to 0.95 (Item 10).

Concurrent validity

Concurrent validity was substantial for the BBS and fast walking speed and moderate for normal walking speed (Table 3). The FGA was significantly correlated ($p<0.001$) with the BBS (0.71), normal walking speed (0.66) and fast walking speed (0.70), indicating a moderate to substantial correlation between the FGA and the other measures.

DISCUSSION

The aim of the present study was to investigate the reliability and concurrent validity of the Brazilian version of the FGA for use on Brazilian stroke survivors. Although stroke continues to be the second leading cause of death in Brazil, an increase in the awareness of the population of this condition and improved access to more appropriate, reliable assessment instruments in clinical practice and primary care have resulted in better rehabilitation processes for stroke survivors, with a consequent improvement in quality of life^{17,18}.

Table 2. FGA score data and intra and interrater reliability (Kendall's W).

FGA items	Score, median (range)	Intrarater Reliability	Interrater Reliability	<i>p</i>
1. Gait on level surface	2 (1-3)	0.97	0.92	<0,001
2. Change in gait speed	3 (1-3)	0.95	0.74	<0,001
3. Gait with horizontal head	2 (0-3)	0.95	0.86	<0,001
4. Gait with vertical head turns	2 (0-3)	0.97	0.82	<0,001
5. Gait with pivot turn	3 (0-3)	0.97	0.74	<0,001
6. Step over obstacle	3 (0-3)	1.0	0.89	<0,001
7. Gait with narrow base of	2 (0-3)	0.91	0.85	<0,001
8. Gait with eyes closed	2 (0-3)	0.95	0.89	<0,001
9. Ambulating backward	2 (0-3)	0.97	0.94	<0,001
10. Steps	2 (0-3)	1.0	0.95	<0,001
Total score ICC	-	0.93	0.90	<0,001
Total FGA score (0-30), mean (SD)	20 (6.5)	-	-	0,087

Table 3. Correlation between the Functional Gait Assessment (FGA) and the correlation instruments.

Measure (Score range)	Median (25th, 75th Percentiles)	Correlation Coefficient	<i>p</i>
BBS (0-56) ^a	47 (22-55)	0.71	<0,001
Normal walking speed (m/s) ^b	0.7 (0.3-2.0)	0.66	<0,001
Fast walking speed (m/s) ^c	1.2 (0.3-1.5)	0,70	<0,001

^ap=0,004; ^bp=0,000; ^cp=0,008

To ensure a process free of bias, the translation and cross-cultural adaptation of the FGA followed internationally accepted guidelines^{19,20}. To obtain the best accuracy and

reproducibility possible, the translations, back-translation, revision by an expert committee and the pretest were performed in strict accordance with these guidelines to preserve the local social, cultural, and linguistic characteristics.

After the translation, back-translation, evaluation by the expert committee and pre-test, it was determined that the translated version of the FGA did not differ significantly from the original version in English and preserved its psychometric properties. The conceptual and cultural equivalences obtained between the original measure and the Portuguese version were satisfactory and no changes were needed so that the items would be adequate and consistent with the experiences of the target population.

The results revealed almost perfect interrater and intrarater reliability for the total FGA scores. This study provides evidence that the Brazilian version of the FGA is an effective measure of functional gait status in stroke victims, with the reliability of the single items ranging from moderate to almost perfect. However, the reliability of the individual FGA items was lower than that found in the study by Thieme with stroke survivors (intrarater and interrater reliability: ICC = 0.97 and 0.93, respectively)¹⁵. One possible reason may be the different forms of evaluation used in the Thieme study, in which an *in-situ* evaluation (a direct observer) was compared to the observation of videos (two video observers). Moreover, the reliability test procedures involved

three evaluators, differing from the present study, in which only two direct evaluators were used.

Although reliability for the total FGA score was almost perfect, varying results were found for the single items were found, with Items 2 and 5 achieving an interrater reliability below 0.80 (Kendall's W). Similar results (moderate reliability) were found in previous studies involving stroke survivors¹⁵, individuals with vestibular disorders²¹ and older adults^{22,23}. Other studies conducted with populations with neurological diseases, such as multiple sclerosis¹⁴ and Parkinson's Disease^{9,16}, did not report intrarater or interrater reliability. Based on the good intrarater reliability found with direct observers, Nilsagard states that the low interrater reliability may have occurred due to the use of video recordings²¹. Thieme and Walker concluded that some items are only moderately reliable, such as Items 2 and 5^{15,23}, which may be due to the lower standardization in the definition of these items, generating differences in the interpretation of an abnormality considered minimal or adequate¹⁵. Thus, appropriate, standardized instructions should be given by the evaluator of the test to improve the reliability of these items.

Concurrent validity was considered good, with moderate correlations between the FGA and both the BBS and gait speed, demonstrating the capacity of the FGA to evaluate balance during walking in patients in the subacute and chronic stages of a stroke. Moderate to almost perfect correlation coefficients with different established measures,

such as the BBS and walking speed, have also been found in studies involving patients with Parkinson's disease^{9,16}, community-dwelling older adults^{22,23}, stroke victims¹⁵ and individuals with vestibular disorders²¹. The BBS is a good measure of balance in other populations and has served as a functional balance measure, providing information on balance during tasks such as standing up, turning around and bending over, and therefore measures common alterations in balance that occur during gait in stroke survivors. Gait speed is an important factor for community ambulation and has been highly correlated with the FGA in previous studies^{9,15}. Tests with normal and fast walking speeds were used to determine the concurrent validity of the FGA measure, which involves the evaluation of functional skills, such as walking normally and as fast as possible.

The mean total FGA score was 20 (range: 0 to 30). The participants received a mean score of 2 (mild impairment) on seven items: gait on level surface, gait with horizontal or vertical head turns, gait with eyes closed, gait with narrow base of support, ambulating backward and going up steps (Table 2). These activities depend not only on balance but also the visual, somatosensory, and vestibular systems, which are often affected in cases of stroke¹⁴. The FGA items enable the assessment of activities performed by stroke survivors when walking in the community that involve balance and other sensory systems. This instrument can be used for functional gait evaluations in the outpatient setting as well as in hospital wards. It can also be easily integrated

into the day-to-day clinical practice of physiotherapists and is easily understood.

One limitation of the present study was the failure to measure walking balance and the determination of the validity of the FGA with regards to predicting falls after a stroke (sensitivity). Future studies are needed to determine the predictive validity and responsiveness to change of the FGA in stroke survivors. Another limitation was the fact that only patients in the subacute and chronic stages of a stroke (within the first three months and six or more months after the stroke event) were included. As the FGA items assume that the patient is ambulatory, only those with at least minimum ability for independent walking with or without a gait-assistance device can be assessed. It is unclear whether the FGA exhibits similar psychometric properties for acute stroke patients with minimal ability for independent walking with or without a gait-assistance device.

CONCLUSION

In this study, the Brazilian version of the Functional Gait Assessment was translated without the need for cross-cultural adaptation, achieving almost perfect interrater and intrarater reliability for total score. Moreover, good concurrent validity was found when compared to other balance and gait measurement tools. Therefore, the FGA is a promising, useful tool for clinicians and researchers to evaluate functional gait status in stroke survivors. Further

studies should be performed to evaluate the sensitivity of the FGA with regards to predicting falls after a stroke.

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Avaliação Funcional da Marcha (AFM)

Functional Gait Assessment (FGA)

Requisitos: Corredor marcado com 6 metros e 30.48 cm de largura.

Nome: _____

Data: ____/____/____

1. MARCHA EM SUPERFÍCIE PLANA

Instruções: Ande com sua velocidade normal, até a próxima marcação.

Classificação: Marque a categoria mais alta aplicada.

[3] Normal – Anda 6m em menos de 5.5 segundos, sem dispositivo de marcha, boa velocidade, sem evidencia de desequilíbrio, padrão de marcha normal, desvia não mais que 15.24-25.4cm fora da largura de 30.48cm.

[2] Comprometimento leve – Anda 6m em menos de 7 segundos, mas maior do que 5.5 segundos, usa dispositivo de marcha, velocidade diminuída, leve desvios na marcha, ou desvia 15.24-25.4 cm fora da largura de 30.48cm.

[1] Comprometimento moderado – Anda 6m, baixa velocidade, padrão de marcha anormal, desequilíbrio evidente, ou desvia 25.4-38.1cm fora da largura de 30.48cm.

[0] Comprometimento grave – Não anda 6m sem uso de dispositivo de marcha, graves desvios da marcha ou desequilíbrios, desvia mais do que 38.1 cm fora da largura de 30.48cm ou alcança e se apoia na parede.

2. MUDANÇA NA VELOCIDADE DA MARCHA

Instruções: Inicie a marcha com passos normais (por 1,5m). Quando eu disser “Vai”, ande o mais rápido que puder (por 1,5m). Quando eu disser “Devagar”, ande o mais devagar que puder (por 1,5m).

Classificação: Marque a categoria mais alta aplicada.

[3] Normal - Capaz de mudar suavemente a velocidade da marcha sem perda de equilíbrio ou desvio da marcha. Mostra diferença significativa na velocidade da marcha entre normal, rápida, e lenta velocidade. Desvia não mais que 15.24-25.4cm fora da largura de 30.48 cm.

[2] Comprometimento leve – Capaz de mudar de velocidade, mas demonstra leve desvio da marcha, desvia 15.24-25.4cm fora da largura de 30.48cm, ou sem desvio da marcha, mas incapaz de obter mudança significativa na velocidade, ou uso de dispositivo de marcha.

[1] Comprometimento moderado – Faz somente pequenos ajustes para a velocidade da marcha, ou realiza mudança na velocidade da marcha com desvios significantes da marcha, desvia 25.4-38.1cm fora da largura de 30.48cm, ou muda a velocidade mas há perda do equilíbrio, porém é capaz de se recuperar e continuar andando.

[0] Comprometimento grave – Não é capaz de mudar de velocidade, desvios maior que 38.1cm fora da largura do

30.48cm, ou perda do equilíbrio e alcança e se apoia na parede ou é segurado.

3. MARCHA COM VIRADAS HORIZONTAIS DA CABEÇA

Instruções: Ande daqui até a próxima marcação (6m). Inicie andando com passos normais. Mantenha-se andando em linha reta, após 3 passos, vire sua cabeça para o lado direito e continue andando em linha reta enquanto olha para a direita. Após mais 3 passos, vire sua cabeça para o lado esquerdo e continue andando em linha reta enquanto olha para a esquerda. Continue alternando o olhar para a esquerda e direita a cada 3 passos até completar 2 repetições em cada direção.

Classificação: Marque a categoria mais alta aplicada.

[3] Normal – Realiza viradas da cabeça suavemente com nenhuma alteração da marcha. Desvia não mais que 15.24cm fora da largura de 30cm.

[2] Comprometimento leve – Realiza viradas da cabeça suavemente com leve mudança na velocidade da marcha (ex. pequena perturbação para suavizar o trajeto da marcha), desvia 15.24-25.4cm fora da largura de 30.48cm, ou usa um dispositivo de marcha.

[1] Comprometimento moderado – Realiza viradas de cabeça com mudança moderada na velocidade da marcha, diminui a velocidade, desvia 25.4-38.1cm fora da largura de 30.48cm, mas recupera-se, podendo continuar a andar.

[0] Comprometimento grave – Realiza viradas de cabeça com grave perturbação da marcha (ex. anda cambaleando 38.1 fora da largura de 30.48cm, perdas de equilíbrio, paradas, ou alcança a parede).

4. MARCHA COM VIRADAS VERTICAIS DA CABEÇA

Instruções: Ande daqui até a próxima marcação (6m). Inicie andando com passos normais. Mantenha-se andando em linha reta, após 3 passos, vire sua cabeça para cima e continue andando em linha reta enquanto olha para cima. Após mais 3 passos, vire sua cabeça para baixo e continue andando em linha reta enquanto olha para baixo. Continue alternando o olhar para a cima e para baixo a cada 3 passos até completar 2 repetições em cada direção

[3] Normal – Realiza viradas da cabeça suavemente com nenhuma alteração da marcha. Desvia não mais que 15.24cm fora da largura de 30cm.

[2] Comprometimento leve – Realiza viradas da cabeça suavemente com leve mudança na velocidade da marcha (ex. pequena perturbação para suavizar o trajeto da marcha), desvia 15.24-25.4cm fora da largura de 30.48cm, ou usa um dispositivo de marcha.

[1] Comprometimento moderado – Realiza viradas de cabeça com mudança moderada na velocidade da marcha, diminui a velocidade, desvia 25.4-38.1cm fora da largura de 30.48cm, mas recupera-se, podendo continuar a andar.

[0] Comprometimento grave – Realiza viradas de cabeça com grave perturbação da marcha (ex. anda cambaleando 38.1cm fora da largura de 30.48cm, perdas de equilíbrio, paradas, ou alcança a parede).

5. MARCHA COM GIRO EM PIVÔ

Instruções: Inicie andando com passos normais. Quando eu disser, “gire e pare”, gire o mais rápido que puder para a direção oposta e pare.

Classificação: Marque a categoria mais alta aplicada.

[3] Normal – Giro em pivô seguro dentro de 3 segundos e para rapidamente sem perda de equilíbrio.

[2] Comprometimento leve - Giro em pivô seguro > 3 segundos e para rapidamente sem perda de equilíbrio, ou giro em pivô seguro dentro de 3 segundos e parada com leve desequilíbrio, requer pequenos passos para obter equilíbrio.

[1] Comprometimento moderado – giro lento, requer comando verbal, ou requer vários pequenos passos para obter equilíbrio depois de girar e parar.

[0] Comprometimento grave – Não gira de forma segura, requer ajuda para girar e parar.

6. ULTRAPASSAR OBSTÁCULOS

Instruções: Inicie andando com sua velocidade normal. Quando você chegar perto da caixa de sapato, passe por cima dela, e não em volta, e continue andando.

Classificação: Marque a categoria mais alta aplicada.

[3] Normal – É capaz de passar por cima de 2 caixas de sapato fixadas juntas [altura total de 22.86cm] sem mudança na velocidade da marcha; sem evidência de desequilíbrio.

[2] Comprometimento leve – É capaz de passar por cima de 1 caixa de sapato [altura total de 11.43cm] sem mudança de velocidade da marcha; sem evidência de desequilíbrio.

[1] Comprometimento moderado – É capaz de passar por cima de 1 caixa de sapato [altura total de 11.43cm] mas diminui a velocidade e ajusta o passo para passar de forma segura. Pode precisar de comando verbal.

[0] Comprometimento grave – Não realiza sem assistência.

7. MARCHA COM DIMINUIÇÃO DA BASE DE APOIO

Instruções: Ande com os braços cruzados sobre o peito, pés alinhados calcanhar ao dedo do pé em tandem por uma distância de 3.6 metros. O número de passos dado em linha reta é contado por um máximo de 10 passos.

Classificação: Marque a categoria mais alta aplicada.

[3] Normal – É capaz de andar por 10 passos em tandem sem perturbações.

[2] Comprometimento leve – Anda de 7-9 passos.

[1] Comprometimento moderado – Anda de 4-7 passos.

[0] Comprometimento grave – Anda menos que 4 passos em tandem, ou não realiza sem ajuda.

8. MARCHA COM OLHOS FECHADOS

Instruções: Ande com sua velocidade normal, daqui até a próxima marcação [6 metros] com os olhos fechados.

Classificação: Marque a categoria mais alta aplicada.

[3] Normal – Anda por 6m, sem dispositivo de marcha, boa velocidade, sem evidência de desequilíbrios, padrão de marcha normal, desvia não mais que 15.24cm fora da largura de 30.48cm. Anda 6m em menos de 7 segundos.

[2] Comprometimento leve – Anda 6m, usa dispositivo de marcha, velocidade diminuída, leve desvio da marcha, desvia 15.24-25.4cm fora da largura de 30.48cm. Anda 6m em menos de 9 segundos, mas maior que 7 segundos.

[1] Comprometimento moderado – Anda 6m, velocidade diminuída, padrão de marcha anormal, evidência de desequilíbrio, desvia 25.4-38.1cm fora da largura de 30.48cm. Requer mais do que 9 segundos para andar 6m.

[0] Comprometimento grave – Não anda 6m sem assistência, grave desvio ou desequilíbrio, desvia mais do que 38.1cm fora da largura de 30.48cm ou não tentará realizar a tarefa.

9. ANDAR PARA TRÁS

Instruções: Ande para trás até que eu diga para parar.

Classificação: Marque a categoria mais alta aplicada.

[3] Normal – Anda 6m, sem dispositivos de marcha, boa velocidade, sem evidência de desequilíbrio, padrão de marcha normal, desvia não mais que 15.24cm fora da largura de 30.48cm.

[2] Comprometimento leve – Anda 6m, usa dispositivo de marcha, leve desvio da marcha, desvia 15.24-25.4cm fora da largura de 30.48cm.

[1] Comprometimento moderado – Anda 6m, velocidade diminuída, padrão de marcha anormal, evidência de desequilíbrio, desvia 25.4-38.1cm fora da largura de 30.48cm.

[0] Comprometimento grave – Não anda 6m sem assistência, grave desvio ou desequilíbrio, desvia mais do que 38.1cm fora da largura de 30.48cm ou não tentará realizar a tarefa.

10. DEGRAUS

Instruções: Suba estas escadas como você faria em casa (usando o corrimão se necessário). No topo, vire-se e desça.

Classificação: Marque a categoria mais alta aplicada.

[3] Normal - Alternando os pés, sem uso do corrimão.

[2] Comprometimento leve – Alternando os pés, usa o corrimão.

[1] Comprometimento moderado - Dois pés para um degrau; usa o corrimão.

[0] Comprometimento grave – Não faz de forma segura.

ESCORE TOTAL: _____ ESCORE MÁXIMO 30