Supplement to “Exploring responsiveness to highly challenging balance and gait training in Parkinson’s disease”, Albrecht et al.

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Methods

Steps per Day

The participants of the randomized controlled trial wore an Actigraph accelerometer for seven days on the hip (Franzén et al.,2019). Data collection took place in two waves in spring and autumn, thus we assume that seasonal effects of physical activity are averaged out. Further, physical activity patterns does not differ between weekdays and weekend days (Benka Wallén et al., 2015).

Data Imputation

We imputed missing variables with Random Forest regression as implemented in the "missForest" R package. Random Forest imputation is suitable for our data since it can be applied to mixed data types, can work with multicollinearity, and makes no assumptions about the relationship between variables. In short, missing values are marked as a response variable and the original data as training data. The Random Forest predicts these missing values based on the original data. Values are replaced by a better prediction in every

iteration. The difference between the predicted and previous dataset is computed and the imputation stops when this difference increases once. The dataset computed before the last iteration will be the final imputed data set.
Overall, we imputed data for ten people with PD (PwPD), where seven PwPD had up to two missing values in the variables of interest. There was one participant who had no post data for balance performance (Mini-BEST) and gait velocity, i.e., post values were imputed and thus also the responder domain grouping of this participant was based on these imputed values. Six PwPD had no post-measurement of steps per day, thus their physical activity responder domain was also based on imputed data.

Random Forest

Variable Importance

As a by-product, Random Forest produces measures of ranking the variables in their relevance for prediction. Two measures can be obtained, the Gini index - shown to be highly biased - and the accuracy decrease - a permutation-based measure (Couronné, Probst, & Boulesteix, 2018). In the present study, we choose the mean decrease in accuracy. The measure is directly based on the Random Forest accuracy since it is calculated as the mean difference in accuracy between the OOB errors of the original dataset and a permuted dataset. In short, after every decision tree construction, the values of a variable in the OOB dataset are permuted, i.e., replaced by random values, to change the relation to the prediction variable (i.e., responsiveness level). This permuted dataset is used to calculate the predictive accuracy of the OOB data by running down the decision tree. The difference between this accuracy and the accuracy of the original dataset shows the importance of the variable.

Results

Gait Responders

Anxiety (HADS), balance confidence (ABC), and the physical activity subtype were the most important variables for responsiveness classification (e-Table 4, e-Figure 1, I). The mean decrease in classification accuracy for high responsiveness was the highest for anxiety (HADS) and age. Only anxiety (HADS) had a high classification accuracy for non-responders. Balance confidence (ABC) was the most important variable for low responsiveness classification.

Partial dependence on Anxiety (HADS) showed that lower anxiety (≤2 points) classified high responsiveness, while higher anxiety classified non-responders (≥3 points) (e-Figure 1, II). Lower balance confidence (ABC ≤89) was indicative of non-responders, while higher balance confidence (>93) classified low responsiveness. Regarding the physical activity subtype, the classification of responsiveness levels is inconclusive.

Physical Activity Responders

Balance confidence (ABC), followed by motor subtype, and fall history had the highest importance for responsiveness classification for the overall model, high responders, and non-responders (e-Table 6, e-Figure 2, I).

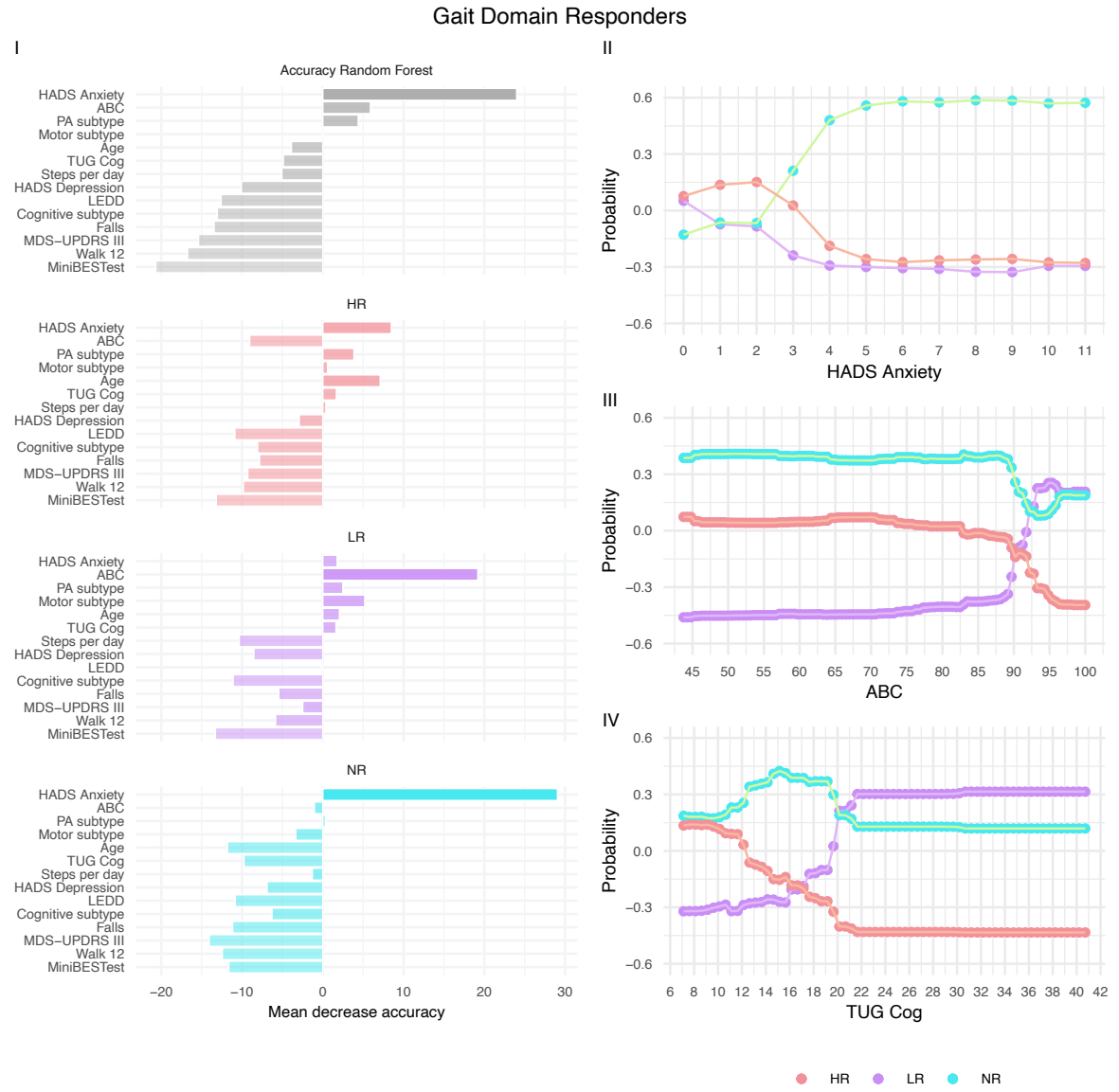
Partial dependence showed that people with PD with higher balance confidence (ABC ≥96) were likely to be high responders, while lower balance confidence classified non-responders (e-Figure 2, II). Regarding the motor subtype, tremor-dominant people with PD were more likely to be high responders, while postural instability/gait difficulty and indeterminate subtypes were more likely to be non-responders (e-Figure 2, III). Fall history showed only high classification probabilities for non-responders which decreases with the number of falls and does not predict high responders (e-Figure 2, IV).

Discussion

Characterization of High Responders

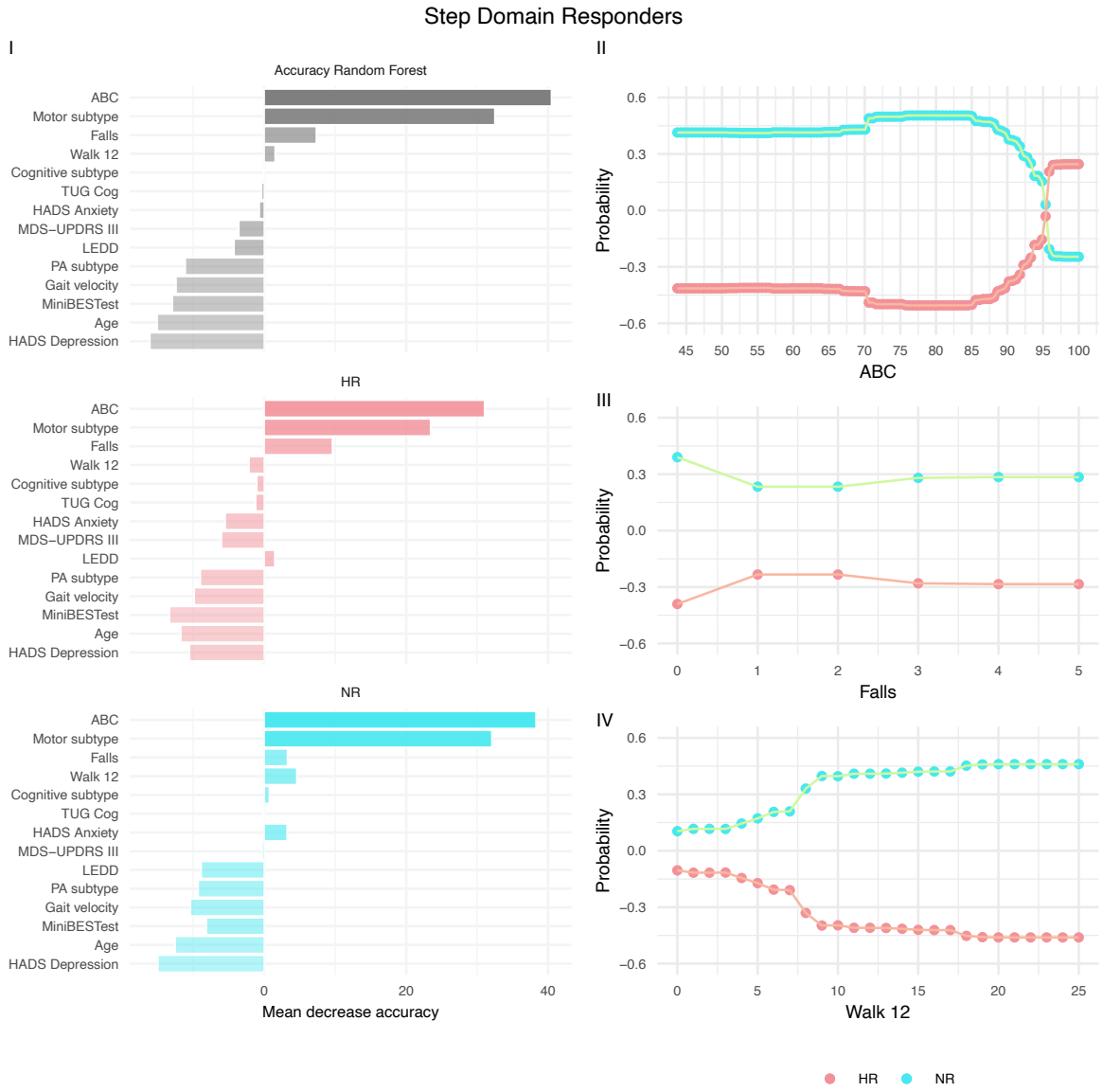
We performed subject-level responder analyses since we expected to see that not every individual shows high responsiveness in the balance, gait, and physical activity domains due to the disease heterogeneity of PD regarding symptoms, subtypes, and progression. Different studies find different variables indicative of balance response which raises the question if this is due to heterogeneity in study protocols, analysis methods, or may be mediated by other unknown factors. It is general clinical knowledge that PwPD with lower physical functioning may have more room to improve following an intervention. On the other hand, too low physical functioning may be a limiting factor since motor learning takes longer in PwPD (Allen et al., 2011). Indeed, descriptively, those that responded most in our cohort in the balance domain, had the worst balance performance (i.e., lowest values on the Mini-BESTest), slowest gait velocity, fewest steps per day, and highest disease severity (MDS-UPDRS) compared with the other two responsiveness levels. Nevertheless, the aforementioned variables did not differ significantly between responsiveness levels when compared statistically, which could also be a power problem.

Figures



Supplemental Figure 1 Variable importance of the gait responders analysis

I Mean decrease in the accuracy of the Random Forest prediction for each variable used for the decision trees. The decreased accuracy is shown as a percent increase in the misclassification rate as compared to the out-of-bag rate. Classification probability for each responsiveness level is shown as a function of predicted values of classification variables: II Partial dependence on anxiety (HADS), III Partial dependence on balance confidence (ABC), and IV Partial dependence on Timed Up and Go test with a serial subtraction task (TUG Cog) in s. Abbreviations: ABC= Activities-specific Balance Confidence scale, HADS= Hospital Anxiety and Depression scale, HR= high responder, LR= low responder, LEDD= levodopa-equivalent daily dosage, MDS-UPDRS-III= Movement Disorder Society-sponsored Revision of the Unified Parkinson´s Disease Rating Scale – Motor severity, NR= non-responder, PA= physical activity, TUG Cog=Timed Up and Go test with a serial subtraction task, Walk 12= Walking Impact Scale.



Supplemental Figure 2 Variable importance of the step responders analysis

I Mean decrease in the accuracy of the Random Forest prediction for each variable used for the decision trees. The decreased accuracy is shown as a percent increase in the misclassification rate as compared to the out-of-bag rate. Classification probability for each responsiveness level is shown as a function of predicted values of classification variables: II Partial dependence on balance confidence (ABC), III Partial dependence on the number of falls within 6 months before the HiBalance intervention, and IV Partial dependence on self-reported walking limitations (Walk 12). Abbreviations: ABC= Activities-specific Balance Confidence scale, HADS= Hospital Anxiety and Depression scale, HR= high responder, LR= low responder, LEDD= levodopa-equivalent daily dosage, MDS-UPDRS-III= Movement Disorder Society-sponsored Revision of the Unified Parkinson´s Disease Rating Scale – Motor severity, NR= non-responder, PA= physical activity, TUG= Timed Up and Go, TUG Cog= Timed Up and Go test with a serial subtraction task, Walk 12= Walking Impact Scale.

Tables

Supplemental Table 1 Cohen's Kappa for the responder domain prediction

Kappa is calculated from the confusion matrix of the respective responder domain Random Forest. An agreement was seen as a match between the Random Forest prediction and the true responsiveness label (diagonal of the confusion matrix, Table 2). Disagreements were considered for the weighted kappa (off-diagonal of the confusion matrix, Table 2).

	Lower	*Estimate*	*Upper*
Balance domain responders			
unweighted kappa	-0.1531468	0.09118541	0.3355177
weighted kappa	-0.1764257	0.14446228	0.4653503
Gait domain responders			
unweighted kappa	-0.1730624	0.05974843	0.2925592
weighted kappa	-0.3644092	-0.05507246	0.2542643
Physical activity domain responders			
unweighted kappa	-0.1736512	0.1459854	0.465622
weighted kappa	-0.1736512	0.1459854	0.465622

Weighted kappa is (probability of observed matches - probability of expected matches)/(1 - probability of expected matches). Unweighted kappa just considers the matches on the main diagonal of the confusion matrix. Weighted kappa considers also the off-diagonal.

Supplemental Table 2 Mean decrease accuracy for balance domain responders

Variable Importance as measured by mean decrease accuracy computed by permuting the variables' values and running the prediction again. Columns two to four are the responsiveness level-specific measures. The last two columns are the mean decrease in accuracy over all responsiveness levels.

Variables	*NR Mean Decrease Accuracy*	*LR Mean Decrease Accuracy*	*HR Mean Decrease Accuracy*	*Mean Decrease Accuracy*	*SD Mean Decrease Accuracy*
Falls last 6 months	24.6487815	33.2855903	-5.0635276	32.9415591	0.00047892
Gait velocity	-13.392159	19.6510777	47.9971168	30.8464907	0.00051639
TUG Cog	23.6481363	8.10595718	-11.528559	13.4298812	0.0004602
Walk 12	8.88936919	-2.2063315	15.5663127	12.8921815	0.00040635
HADS Anxiety	-1.4107885	15.3511025	4.8120569	9.43101659	0.0003381
Physical activity subtype	-1.3288044	14.4931502	0.25525931	8.72904944	0.00035865
Steps per day	9.19590558	-8.938868	5.37276727	3.0016594	0.00038557
HADS Depression	-12.76054	8.01360182	-7.7239751	-7.5439095	0.00028147
Cognitive subtype	-2.5708215	-7.1187154	-8.4487349	-8.9852345	0.00023197
LEDD	-6.2338141	-12.545679	0.41812368	-10.289454	0.00032588
Age	-8.2415976	-9.2352276	-2.433367	-10.725637	0.00028228
MDS-UPDRS III	-5.7512317	-16.809648	0.70693768	-12.879468	0.0003213
Motor subtype	-9.9925766	-7.7128488	-6.9283225	-12.884551	0.00019791
ABC	-10.333449	-16.826561	-12.996884	-20.897394	0.00029017

Abbreviations: ABC= Activities-specific Balance Confidence scale, HADS= Hospital Anxiety and Depression scale, HR = high responder, LEDD= levodopa equivalent daily dose, LR = low responder, MDS-UPDRS= The Movement Disorder Society-sponsored Revision of the Unified Parkinson's Disease Rating Scale, Mini-BESTest= Mini Balance Evaluation Systems Test,

MoCA= Montreal cognitive assessment, NR = non-responder, SD = standard deviation, TUG= Timed Up and Go, TUG Cog= Timed Up and Go test with a serial subtraction task, Walk 12= Walking Impact Scale.

Supplemental Table 3 Demographics of the participants in the HiBalance intervention group divided into responders according to gait velocity differences (post-pre)

, non-responders ≤0.04 m/s, low responders = 0.13-0.04m/s, and high responders ≥0.14m/s.

	Non-responder (N=17)	***Low responder (N=11)***	***High responder (N=11)***	***Total (N=39)***	***p value***
Age, yrs					0.957[1]
Mean	70.18	69.64	71.18	70.31	
Range	61.00 - 81.00	62.00 - 83.00	67.00 - 83.00	61.00 - 83.00	
Sex, n (%)					0.755[2]
male	10 (58.8%)	8 (72.7%)	7 (63.6%)	25 (64.1%)	
female	7 (41.2%)	3 (27.3%)	4 (36.4%)	14 (35.9%)	
Cognitive subtype, n (%)					0.631[2]
Non-MCI	12 (70.6%)	7 (63.6%)	9 (81.8%)	28 (71.8%)	
MCI	5 (29.4%)	4 (36.4%)	2 (18.2%)	11 (28.2%)	
Motor subtype, n (%)					0.083[2]
TD	1 (5.9%)	4 (36.4%)	2 (18.2%)	7 (17.9%)	
PIGD	12 (70.6%)	4 (36.4%)	9 (81.8%)	25 (64.1%)	
IND	4 (23.5%)	3 (27.3%)	0 (0.0%)	7 (17.9%)	
PA subtype, n (%)					0.399[2]
Sedentary	1 (5.9%)	1 (9.1%)	3 (27.3%)	5 (12.8%)	
Light movers	8 (47.1%)	3 (27.3%)	3 (27.3%)	14 (35.9%)	
Steady movers	8 (47.1%)	7 (63.6%)	5 (45.5%)	20 (51.3%)	
LEDD pre, mg					0.240[1]
Mean	668.32	456.36	714.73	621.63	
Range	0.00 - 1164.00	0.00 - 1008.00	226.00 - 1385.00	0.00 - 1385.00	
LEDD post, mg					0.382[1]
Mean	671.56	490.00	732.91	645.64	
Range	0.00 - 1164.00	100.00 - 1008.00	226.00 - 1485.00	0.00 - 1485.00	
MDS-UPDRS III					0.995[1]
Mean	31.47	30.91	31.82	31.41	
Range	11.00 - 70.00	20.00 - 48.00	10.00 - 60.00	10.00 - 70.00	
MDS-UPDRS Total					0.593[1]
Mean	53.82	48.82	49.45	51.18	
Range	24.00 - 102.00	23.00 - 80.00	22.00 - 110.00	22.00 - 110.00	
MoCA					0.027[1]
Mean	27.06	24.27	26.45	26.10	
Range	23.00 - 30.00	21.00 - 29.00	24.00 - 29.00	21.00 - 30.00	
Mini-BESTest					0.885[1]
Mean	21.29	20.82	21.27	21.15	
Range	14.00 - 27.00	16.00 - 25.00	15.00 - 26.00	14.00 - 27.00	
Mini-BESTest post-pre					0.112[1]
Mean	0.18	1.82	1.45	1.00	
Range	-3.00 - 3.00	-2.00 - 8.00	-3.00 - 4.00	-3.00 - 8.00	
Gait velocity, cm/s					0.017[1]
Mean	131.09	120.99	112.85	123.10	
Range	109.70 - 150.60	96.80 - 150.90	82.20 - 143.50	82.20 - 150.90	
Gait velocity post-pre					<0.001[1]
Mean	-3.97	7.90	20.17	6.19	
Range	-20.10 - 3.40	4.80 - 13.90	15.10 - 30.80	-20.10 - 30.80	
Steps per day					0.461[1]
Mean	5736	6070	4605	5511	
Range	1689- 10979	1858- 11482	2334 - 8225	1689- 11482	
Steps per day post-pre					0.447[1]
Mean	-735	-217	449	-256	
Range	-2997 - 2458	-3561- 3350	-1979 - 5830	-3561- 5830	
TUG					0.537[1]
Mean	9.89	11.11	11.29	10.63	
Range	6.09 - 12.62	7.13 - 18.12	7.31 - 15.68	6.09 - 18.12	
TUG Cog					0.392[1]
Mean	14.41	17.23	12.84	14.76	
Range	7.12 - 19.90	9.62 - 40.72	7.85 - 17.28	7.12 - 40.72	
Presence intervention, %					0.094[1]
Mean	84.71	88.18	80.00	84.36	

Range	60.00 - 100.00	60.00 - 100.00	65.00 - 95.00	60.00 - 100.00	
HADS Anxiety					0.094[1]
Mean	5.76	3.55	3.73	4.56	
Range	1.00 - 11.00	0.00 - 10.00	1.00 - 9.00	0.00 - 11.00	
HADS Depression					0.968[1]
Mean	3.12	3.45	3.27	3.26	
Range	1.00 - 8.00	0.00 - 8.00	0.00 - 8.00	0.00 - 8.00	
ABC					0.099[1]
Mean	78.92	88.73	79.40	81.82	
Range	46.25 - 96.88	58.12 - 100.00	43.75 - 93.75	43.75 - 100.00	
Walk 12					0.737[1]
Mean	10.41	11.73	9.64	10.56	
Range	4.00 - 23.00	0.00 - 25.00	3.00 - 19.00	0.00 - 25.00	
Falls last 6 month					0.944[1]
Mean	0.76	0.73	0.64	0.72	
Range	0.00 - 5.00	0.00 - 5.00	0.00 - 3.00	0.00 - 5.00	

[1]Kruskal-Wallis test, [2]Chi-squared test. Abbreviations: ABC= Activities-specific Balance Confidence scale, HADS= Hospital Anxiety and Depression scale, IND= indetermined, LEDD= levodopa equivalent daily dose, MCI= mild cognitive impairment, MDS-UPDRS= The Movement Disorder Society-sponsored Revision of the Unified Parkinson's Disease Rating Scale, Mini-BESTest= Mini Balance Evaluation Systems Test, MoCA= Montreal cognitive assessment, PIGD= postural instability gait difficulty, TD= tremor dominant, TUG= Timed Up and Go, TUG Cog= Timed Up and Go test with a serial subtraction task, Walk 12= Walking Impact Scale.

Supplemental Table 4 Mean decrease accuracy for gait domain responders

Variable Importance as measured by mean decrease accuracy computed by permuting the variables' values and running the prediction again. Columns two to four are the responsiveness level-specific measures. The last two columns are the mean decrease in accuracy over all responsiveness levels.

Variables	*NR Mean Decrease Accuracy*	*LR Mean Decrease Accuracy*	*HR Mean Decrease Accuracy*	*Mean Decrease Accuracy*	*SD Mean Decrease Accuracy*
HADS Anxiety	29.0645483	1.77969553	8.48637949	24.0136382	0.00052927
ABC	-1.0451612	19.2019706	-9.0575312	5.89781481	0.00046614
Physical activity subtype	0.31164265	2.48708793	3.85796838	4.3868792	0.00024907
Motor subtype	-3.350827	5.19884816	0.60009503	-0.041483	0.00032469
Age	-11.804806	2.05978143	7.11025282	-3.8872271	0.00036443
TUG Cog	-9.7616105	1.63396347	1.68593274	-4.8882616	0.00041696
Steps per day	-1.3003353	-10.345057	0.3797929	-5.0719818	0.00039252
HADS Depression	-6.9088557	-8.5380116	-2.9184699	-10.081729	0.00033205
LEDD	-10.848417	-0.1920649	-10.889002	-12.599431	0.00036224
Cognitive subtype	-6.2912031	-11.107545	-8.0759163	-13.061329	0.00022496
Falls last 6 months	-11.165964	-5.4543005	-7.8288457	-13.463287	0.00014165
MDS-UPDRS III	-14.073224	-2.4873556	-9.2916053	-15.391799	0.00036729
Walk 12	-12.441166	-5.84955	-9.8413162	-16.740802	0.00031773
Mini-BESTest	-11.641504	-13.296896	-13.200422	-20.681043	0.00029884

Abbreviations: ABC= Activities-specific Balance Confidence scale, HADS= Hospital Anxiety and Depression scale, HR = high responder, LEDD= levodopa equivalent daily dose, LR = low responder, MDS-UPDRS= The Movement Disorder Society-sponsored Revision of the Unified Parkinson's Disease Rating Scale, Mini-BESTest= Mini Balance Evaluation Systems Test, MoCA= Montreal cognitive assessment, NR = non-responder, SD = standard deviation, TUG= Timed Up and Go, TUG Cog= Timed Up and Go test with a serial subtraction task, Walk 12= Walking Impact Scale.

Supplemental Table 5 Demographics of the participants in the HiBalance intervention group divided into Physical Activity responders according to steps per day differences (post-pre), non-responders ≤0 steps per day and high responders ≥500 steps per day.

	Non-responder (N=23)	*High responder (N=13)*	*Total (N=36)*	*p value*
Age, yrs				0.974[1]
Mean	70.39	70.54	70.44	
Range	62.00 - 83.00	61.00 - 81.00	61.00 - 83.00	
Sex, n (%)				0.616[2]
male	14 (60.9%)	9 (69.2%)	23 (63.9%)	
female	9 (39.1%)	4 (30.8%)	13 (36.1%)	
Cognitive subtype, n (%)				0.071[2]
Non-MCI	15 (65.2%)	12 (92.3%)	27 (75.0%)	
MCI	8 (34.8%)	1 (7.7%)	9 (25.0%)	
Motor subtype, n (%)				0.026[2]
TD	1 (4.3%)	5 (38.5%)	6 (16.7%)	
PIGD	17 (73.9%)	7 (53.8%)	24 (66.7%)	
IND	5 (21.7%)	1 (7.7%)	6 (16.7%)	
PA subtype, n (%)				0.940[2]
Sedentary	3 (13.0%)	2 (15.4%)	5 (13.9%)	
Light movers	8 (34.8%)	5 (38.5%)	13 (36.1%)	
Steady movers	12 (52.2%)	6 (46.2%)	18 (50.0%)	
LEDD, mg				0.429[1]
Mean	654.50	557.54	619.49	
Range	78.00 - 1385.00	0.00 - 1324.00	0.00 - 1385.00	
MDS-UPDRS III				0.489[1]
Mean	32.61	28.85	31.25	
Range	10.00 - 70.00	17.00 - 40.00	10.00 - 70.00	
MDS-UPDRS Total				0.468[1]
Mean	53.26	46.46	50.81	
Range	22.00 - 110.00	23.00 - 76.00	22.00 - 110.00	
MoCA				0.288[1]
Mean	25.87	26.77	26.19	
Range	21.00 - 29.00	22.00 - 30.00	21.00 - 30.00	
Mini-BESTest				0.486[1]
Mean	21.17	22.00	21.47	
Range	14.00 - 27.00	15.00 - 26.00	14.00 - 27.00	
Mini-BESTest post-pre				0.526[1]
Mean	0.48	1.00	0.67	
Range	-3.00 - 4.00	-2.00 - 3.00	-3.00 - 4.00	
Gait velocity, cm/s				0.300[1]
Mean	122.13	126.88	123.85	
Range	82.20 - 150.60	91.10 - 150.90	82.20 - 150.90	
Gait velocity post-pre				0.681[1]
Mean	5.57	6.29	5.83	
Range	-20.10 - 30.80	-15.00 - 22.20	-20.10 - 30.80	
Steps per day				0.046[1]
Mean	6124	4647	5590	
Range	1858- 10979	1689- 11482	1689- 11482	
Steps per day post-pre				<0.001[1]
Mean	-1536	1909	-292	
Range	-3561- -16	516 - 5830	-3561- 5830	
TUG				0.420[1]
Mean	10.17	11.02	10.48	
Range	6.09 - 15.15	7.13 - 15.68	6.09 - 15.68	
TUG Cog				0.270[1]
Mean	13.45	15.11	14.05	
Range	7.12 - 19.22	10.62 - 23.00	7.12 - 23.00	
Presence intervention, %				0.651[1]
Mean	85.00	83.46	84.44	
Range	60.00 - 100.00	60.00 - 100.00	60.00 - 100.00	
HADS Anxiety				0.416[1]
Mean	4.61	3.77	4.31	
Range	0.00 - 10.00	0.00 - 11.00	0.00 - 11.00	
HADS Depression				0.867[1]
Mean	3.09	3.00	3.06	
Range	0.00 - 8.00	0.00 - 7.00	0.00 - 8.00	
ABC				0.038[1]
Mean	79.40	86.28	81.89	

Range	43.75 - 95.31	55.62 - 100.00	43.75 - 100.00	
Walk 12				0.047[1]
Mean	11.43	7.00	9.83	
Range	1.00 - 25.00	0.00 - 16.00	0.00 - 25.00	
Falls last 6 month				0.374[1]
Mean	0.87	0.62	0.78	
Range	0.00 - 5.00	0.00 - 1.00	0.00 - 5.00	

[1]Kruskal-Wallis test, [2]Chi-squared test. Abbreviations: ABC= Activities-specific Balance Confidence scale, HADS= Hospital Anxiety and Depression scale, IND= indetermined, LEDD= levodopa equivalent daily dose, MCI= mild cognitive impairment, MDS-UPDRS= The Movement Disorder Society-sponsored Revision of the Unified Parkinson's Disease Rating Scale, Mini-BESTest= Mini Balance Evaluation Systems Test, MoCA= Montreal cognitive assessment, PIGD= postural instability gait difficulty, TD= tremor dominant, TUG= Timed Up and Go, TUG Cog= Timed Up and Go test with a serial subtraction task, Walk 12= Walking Impact Scale.

Supplemental Table 6 Mean decrease accuracy for step domain responders

Variable Importance as measured by mean decrease accuracy computed by permuting the variables' values and running the prediction again. Columns two to three are the responsiveness level-specific measures. The last two columns are the mean decrease in accuracy over all responsiveness levels.

Variables	*NR Mean Decrease Accuracy*	*HR Mean Decrease Accuracy*	*Mean Decrease Accuracy*	*SD Mean Decrease Accuracy*
ABC	38.2810854	31.0262182	40.4541776	0.00062009
Motor subtype	32.0585585	23.4235466	32.476533	0.0004249
Falls last 6 months	3.26124179	9.59651282	7.32768982	0.00029194
Walk 12	4.57094082	-2.1307511	1.52488751	0.0004047
Cognitive subtype	0.71959957	-1.0252763	-0.1072767	0.00026133
TUG Cog	-0.1688383	-1.1871183	-0.351498	0.00034888
HADS Anxiety	3.21198773	-5.4843306	-0.6779742	0.00028274
MDS-UPDRS III	-0.2706883	-6.009217	-3.5581449	0.00033142
LEDD	-8.8626521	1.47089814	-4.2363714	0.00035176
Physical activity subtype	-9.2879815	-8.9835287	-11.102966	0.00017726
Gait velocity	-10.388193	-9.8500047	-12.405974	0.00038089
Mini-BESTest	-8.1414447	-13.327747	-12.923019	0.00024772
Age	-12.520852	-11.735067	-15.066063	0.00039878
HADS Depression	-14.95938	-10.522877	-16.087412	0.00024896

Abbreviations: ABC= Activities-specific Balance Confidence scale, HADS= Hospital Anxiety and Depression scale, HR = high responder, LEDD= levodopa equivalent daily dose, LR = low responder, MDS-UPDRS= The Movement Disorder Society-sponsored Revision of the Unified Parkinson's Disease Rating Scale, Mini-BESTest= Mini Balance Evaluation Systems Test, MoCA= Montreal cognitive assessment, NR = non-responder, SD = standard deviation, TUG= Timed Up and Go, TUG Cog= Timed Up and Go test with a serial subtraction task, Walk 12= Walking Impact Scale.