Supplementary Table 1. Information on participants who were enrolled in the study but were not included in the analysis

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Subject | Age | UPDRS | DRS | MMSE | Group | Reason  |
| Participants who were enrolled but dropped out of the study |
| 104 | 74 | 52 | 140 | na | Aerobic  | Partially completed aerobic training. Lost interest in the study after the Christmas holidays |
| 106 | 70 | 37 | 133 | 29 | Control | Primary caregiver for spouse, who became much more impaired between pre and post testing. |
| 111 | 69 | Not scored | 132 | 28 | Control | Did not complete pretest assessments  |
| 114 | 59 | 55 | 142 | 28 | Control | Working full time. Would not come for post testing. |
| 123 | 33 | 75 | 134 | 28 | Aerobic  | Diagnosis changed after completing the protocol. No longer PD. |
| 132 | na | Not scored | na | na | Not assigned a group | Did not complete pretest assessment |
| 139 | 51 | Not scored | 136 | 30 | Not assigned a group | Did not complete pretest assessment |
| 141 | 59 | Not scored | 142 | 29 | Not assigned a group | Did not complete pretest assessments  |
| Participants who completed the intervention and post-tests but were excluded due to missing data |
| 107 | 76 | 48 | 141 | 28 | Stretch-Balance | Too fatigued to finish the dual task cognitive testing. Missing last two tasks at pre.  |
| 109 | 72 | 47 | 120 | 25 | Control | Could not understand directions for the 2-back and Operation Span at both pre and post. |
| 131 | 72 | 38 | 131 | 26 | Stretch-Balance | Could not understand directions for the 2-back and Operation span at post.  |
| Included Participants  | 63.6\* | 33.9 | 140.8\* | 29.4\* |   |   |
| Range of Scores of included participants  | 46-85 | 15-53 | 132-144 | 27-30 |  |  |
| Mann-Whitney value | .030 | .097 | .045 | .003 |  |  |

Supplementary Table 2. Mean of single and dual response accuracy on speed of processing tasks pre and post training in the three groups combined across single and dual tasks.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Speed of  | Single or | Aerobic Exercise | Stretch-Balance | Control |
| Processing Tasks | Dual Task | Pre (SD) | Post (SD) | Pre (SD) | Post (SD) | Pre (SD) | Post (SD) |
|  |  |  |  |  |  |  |  |
| Simple Attention  | Single | 1.00 (0) | 1.00 (0) | 1.00 (0) | 1.00 (0) | 1.00 (0) | 1.00 (0) |
|  | Dual | 1.00 (0) | 1.00 (0) | 1.00 (0) | 1.00 (0) | 1.00 (0) | 1.00 (0) |
| 0-Back | Single | 1.00 (0) | .982 (.060) | .988 (.037) | .956 (.101) | .983 (.036) | 1.00 (0) |
|  | Dual | 1.00 (0) | .991 (.030) | .984 (.048) | 1.00 (0) | 1.00 (0) | .920 (.253) |
| Stroop Colors \* | Single | .996 (.015) | .986 (.024) | .996 (.013) | .994 (.017) | 1.00 (0) | 1.00 (0) |
|  | Dual | .955 (.151) | 1.00 (0) | 1.00 (0) | 1.00 (0) | .995 (.016) | .994 (.017) |
| Stroop Color Word | Single | .918 (.169) | .972 (.042) | .994 (.017) | .922 (.233) | .975 (.047) | .897 (.247) |
|  | Dual | .914 (.217) | 1.00 (0) | .994 (.019) | .930 (.173) | .966 (.090) | .903 (.236) |
| Digit Symbol Substitution | Single | .886 (.100) | .897 (.077) | .943 (.053) | .961 (.055) | .944 (.050) | .920 (.092) |
|  | Dual | .923 (.065) | .883 (.111) | 932 (.074) | .966 (.036) | .885 (.094) | .769 (.265) |

Supplementary Table 3. Mean of single and dual task response times (in milliseconds) for attention-memory and executive function tasks before and after training in the three groups, combined across single and dual tasks. Response times were not collected for digit span tasks.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Working  | Single or | Aerobic Exercise | Stretch-Balance | Control |
| Memory Tasks | Dual Task | Pre (SD) | Post (SD) | Pre (SD) | Post (SD) | Pre (SD) | Post (SD) |
| Attention-Memory tasks |  |  |  |  |  |  |  |
|  1-Back  | Single | 808 (328) | 732 (215) | 777 (199) | 725 (146) | 744 (392) | 652 (141) |
|  | Dual | 695 (134) | 721 (120) | 738 (125) | 779 (286) | 733 (234) | 680 (183) |
|  2-Back  | Single | 1243 (564) | 1482 (1175) | 1110 (650) | 1001 (412) | 1300 (826) | 961 (337) |
|  | Dual | 1041 (406) | 1073 (536) | 1005 (295) | 1065 (283) | 1264 (1303) | 1033 (428) |
| Executive Function  |  |  |  |  |  |  |  |
|  Visual Memory  | Single | 1800 (502) | 1824 (598) | 2148 (1306) | 1685 (510) | 2139 (800) | 1963 (705) |
|  | Dual | 1471 (410) | 1806 (997) | 2017 (631) | 1663 (569) | 2220 (1007) | 2056 (927) |
|  Operation Span  | Single | 1351 (348) | 1342 (491) | 1683 (739) | 1482 (400) | 1524 (531) | 1482 (593) |
|  | Dual | 1283 (434) | 1210 (282) | 1434 (400) | 1382 (580) | 1773 (961) | 1494 (510) |
|  |  |  |  |  |  |  |  |