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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | | | | | | | | | | | | | | |
|  | **GRN-(18)** | | | | | **GRN+(13)** | | | | **GRN-(13)** | | | | **GRN+(9)** | | | **GRN-(13)** | | | **GRN+ (9)** | | | |
|  |  | M(SD) | p | d | M(SD) | | p | d |  | M(SD) | p | d | M(SD) | | p | d |  | M(SD) | p | d | M(SD) | p | d |
| Attention | V2 | 0.64(0.67) | .967 | -.01 | 0.19(1.24) | | .127 | 0.438 | V3 | 0.61(0.78) | .94 | -.02 | -0.37(1.00) | | **.007↓** | **.745** | V3 | 0.47(0.76) | .443 | -.19 | -0.37(1.00) | **.039↓** | **.914** |
| V1 | 0.65(0.74) | -0.09(1.00) | | V2 | 0.62(0.77) | 0.54(0.72) | | V1 | 0.61 (.72) | 0.06(0.87) |
| Language | V2 | 0.94(0.59) | .**000↑** | **1.96** | 0.04(0.84) | | **.026↓** | **.381** | V3 | 0.88(0.80) | .211 | .381 | -0.06(0.78) | | **.034↓** | **1.181** | V3 | 0.75(0.80) | **.004↑** | **.861** | 0.27(0.99) | .472 | .172 |
| V1 | 0.38(0.54) | 0.18(0.63) | | V2 | 1.10(0.62) | 0.18(0.86) | | V1 | 0.34(0.47) | 0.37(0.69) |
| Visuospatial | V2 | 1.00(0.95) | **.018↑** | **.718** | 0.18(0.94) | | .170 | .114 | V3 | 1.37(1.56) | .313 | -.11 | -0.10(1.41) | | .280 | .449 | V3 | 1.29 (1.31) | **.006↑** | **.801** | 0.33(1.49) | .500 | .200 |
| V1 | 0.64(0.89) | 0.12(0.62) | | V2 | 1.11(1.09) | 0.48(0.72) | | V1 | 0.75 (1.02) | 0.55(0.73) |
| Memory | V2 | 0.41(0.87) | .352 | .268 | -0.72(0.92) | | .540 | .155 | V3 | -0.19(1.25) | **.049↓** | **-.16** | -0.76(0.91) | | .216 | .522 | V3 | -0.17(1.27) | .716 | .100 | -0.55(1.10) | .496 | .191 |
| V1 | 0.21(0.80) | -0.85(0.38) | | V2 | 0.60(0.77) | -0.37(0.86) | | V1 | -0.05(1.01) | -0.42(0.53) |
| Decision Making | V2 | 9.25(25.79) | .306 | .266 | -10(17.59) | | **.046↓** | **.452** | V3 | 6.71(20.42) | .916 | .452 | -7.8(16.64) | | .20 | .346 | V3 | 9.29(20.42) | .382 | .200 | -12.00(14.9) | .175 | .450 |
| V1 | 2.00(19.58) | 1.23(17.52) | | V2 | 6.86(26.43) | -12(14.90) | | V1 | 3.57(22.79) | -3.00(12.9) |
| Set-shifting | V2 | 0.22(0.71) | .140 | .404 | -0.48(0.72) | | .228 | .164 | V3 | -0.04(0.58) | .070 | -.58 | -0.61(0.67) | | .549 | -.223 | V3 | -0.21(0.64) | .415 | -.23 | -0.35(0.66) | .347 | .200 |
| V1 | -0.02(0.73) | -0.60(0.47) | | V2 | 0.42(0.58) | -0.47(0.80) | | V1 | -0.03(0.71) | -0.42(0.45) |
| Reasoning/concept formation | V2 | 0.83(0.81) | **.004↑** | **1.05** | -0.09 (0.9) | | **.028↓** | **.215** | V3 | 0.72(0.63) | **.011↓** | **-.95** | -0.03(0.62) | | .380 | .357 | V3 | 0.56 (0.64) | **.042↑** | **.603** | 0.19(0.75) | .070 | .546 |
| V1 | 0.47(0.75) | -0.19 (0.7) | | V2 | 1.00(0.77) | 0.13(0.80) | | V1 | 0.36 (0.74) | 0.30(0.82) |
| Facial Affect Recognition | V2 | 21.94(2.92) | .431 | .19 | 16.27(5.22) | | **.000↓** | **-1.35** | V3 | 24.62(3.07) | **.045↑** | **.614** | 16.44(4.80) | | **.045↓** | **.745** | V3 | 24.75(2.77) | **.000↑** | **1.084** | 16.29(5.53) | **.015↓** | **1.067** |
| V1 | 21.06(2.75) | 21.82(2.96) | | V2 | 22.23(2.74) | 18.22(4.15) | | V1 | 20.88(3.05) | 22.43(3.10) |

**TABLE e-1. Comparisons of cognitive domains across the three visits for GRN mutation carriers (GRN+) and non-carriers (GRN-)**

M: mean; SD: standard deviation; V1, V2 and V3: Visits 1, 2 and 3 respectively. P values < 0.05 after Bonferroni correction are presented in bold type. Arrows indicate significant improvement (↑) or decline (↓) compared with the previous assessment.