Table 1. Descriptive statistics for Octo-twin

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | Year of Assessment | | | | |
| Variable | |  | Baseline  (n = 702) | Year 2  (n = 600) | Year 4  (n = 433) | Year 6  (n = 315) | Year 8  (n = 222) | |
|  | |  | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | |
| Demographic | | |  |  |  |  |  | |
| Age, years | | | 83.58(3.2) | 85.47(3.1) | 87.24(2.8) | 89.07(2.8) | 90.81(2.5) | |
| Education, years | | | 7.14(2.29) | -- | -- | -- | -- | |
| Height, cm | | | 161.68 | -- | -- | -- | -- | |
| Smoking history(%) | | | 39.0 | -- | -- | -- | -- | |
| Cardiovascular disease (%) | | | 46.3 | -- | -- | -- | -- | |
| Diabetes (%) | | | 10.3 | -- | -- | -- | -- | |
| Physical |  | |  |  |  |  |  | |
| Pulmonary: | PEF | | 319.69(108.4) | 334.20(107.8) | 327.95(98.05) | 296.13(98.7) | 279.64(98.9) | |
| Muscle: | Grip Strength | | 8.96(9.0) | 8.01(2.96) | 7.22(3.1) | 6.8(2.9) | 6.29(2.7) | |
| Gait: | Walking Speed | |  |  |  |  |  | |
| Cognitive |  | |  |  |  |  |  | |
|  | MMSE | | 24.51(7.1) | 23.56(8.0) | 23.20(8.6) | 22.63(8.9) | 22.00(8.2) | |
|  | Digit Span Forward | | 5.36(1.2) | 5.01(1.4) | 4.89(1.5) | 4.75(1.3) | 4.77(1.4) | |
|  | Digit Span Backward | | 3.16(1.6) | 3.03(1.6) | 2.76(1.7) | 2.81(1.6) | 2.84(1.4) | |
|  | Prose | | 8.86(4.5) | 8.61(4.7) | 8.67(4.7) | 8.94(4.9) | 8.76(4.6) | |
|  | Information | | 26.84(12.0) | 27.48(12.0) | 27.08(12.6) | 26.63(13.0) | 25.82(11.6) | |
|  | Block Design | | 10.67(7.4) | 10.39(7.5) | 10.28(7.5) | 10.44(7.3) | 9.81(7.4) | |
|  | Synonyms test | | 16.62(6.0) | 16.12(6.3) | 16.32(6.2) | 16.57(6.3) | 16.19(6.1) | |
|  | Figure Reasoning | | 15.39(4.2) | 15.43(4.3) | 15.93(4.0) | 15.45(4.5) | 15.32(3.9) | |
|  | Digit Symbol | | 23.19(11.7) | 23.21(11.5) | 23.24(12.0) | 22.84(12.6) | 21.12(11.59) | |
|  | Objects Recalled | | 5.86(2.9) | 5.34(3.3) | 5.27(3.4) | 5.46(3.5) | 5.68(3.5) | |
| Study Characteristics | | |  |  |  |  |  | |
| Retention from previous wave (%) | | | 85.5 | 72.2 | 72.2 | 72.7 | 70.5 | |
| Representative sample | | | yes |  |  |  |  | |
| Oldest Birth Cohort (year) | | |  |  |  |  |  | |

Table 2. Descriptive statistics for Octo-Twin (Males)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | Year of Assessment | | | | |
| Variable | |  | Baseline  (n = 234) | Year 2  (n = 199) | Year 4  (n = 143) | Year 6  (n = 90) | Year 8  (n = 57) | |
|  | |  | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | |
| Demographic | | |  |  |  |  |  | |
| Age, years | | | 83.14(2.9) | 84.92(2.7) | 86.84(2.6) | 88.55(2.5) | 90.53(2.5) | |
| Education, years | | | 7.47(2.9) | -- | -- | -- | -- | |
| Height, cm | | | 171.03(6.5) | -- | -- | -- | -- | |
| Smoking history(%) | | | 72.1 | -- | -- | -- | -- | |
| Cardiovascular disease(%) | | | 51.9 | -- | -- | -- | -- | |
| Diabetes (%) | | | 11.8 | -- | -- | -- | -- | |
| Physical |  | |  |  |  |  |  | |
| Pulmonary: | PEF | | 387.80(118.3) | 396.08(114.0) | 391.45(101.6) | 368.17(110.7) | 338.24(124.4) | |
| Muscle: | Grip Strength | | 11.02(3.0) | 9.85(2.8) | 9.08(3.3) | 8.74(3.0) | 8.20(3.2) | |
| Gait: | Walking Speed | |  |  |  |  |  | |
| Cognitive |  | |  |  |  |  |  | |
|  | MMSE | | 25.39(5.7) | 24.53(6.7) | 24.05(7.3) | 22.82(8.1) | 21.68(7.6) | |
|  | Digit Span Forward | | 5.56(1.2) | 5.18(1.1) | 4.98(1.2) | 4.82(1.3) | 4.83(1.5) | |
|  | Digit Span Backward | | 3.16(1.6) | 3.06(1.7) | 2.77(1.6) | 2.68(1.7) | 2.84(1.5) | |
|  | Prose | | 8.94(4.4) | 8.17(4.9) | 8.18(4.9) | 9.28(5.3) | 8.82(4.7) | |
|  | Information | | 31.23(9.6) | 30.10(11.1) | 30.03(11.2) | 28.45(12.1) | 27.77(11.9) | |
|  | Block Design | | 10.94(7.6) | 10.53(8.1) | 10.30(8.3) | 10.31(7.9) | 10.78(7.9) | |
|  | Synonyms test | | 16.33(6.6) | 15.98(6.9) | 15.65(6.9) | 15.48(7.4) | 15.94(6.7) | |
|  | Figure Reasoning | | 15.45(4.3) | 15.30(4.2) | 15.96(4.1) | 14.82(4.6) | 16.51(3.6) | |
|  | Digit Symbol | | 23.89(11.5) | 22.68(11.7) | 23.42(12.5) | 22.28(13.0) | 22.0(12.2) | |
|  | Objects Recalled | | 5.63(2.6) | 5.11(3.0) | 4.95(3.2) | 5.05(3.4) | 5.30(3.5) | |
| Study Characteristics | | | yes |  |  |  |  | |
| Retention from previous wave (%) | | | 100.0 | 85.0 | 71.9 | 62.9 | 63.3 | |
| Representative sample | | | yes |  |  |  |  | |
| Oldest Birth Cohort (year) | | |  |  |  |  |  | |

Table 3. Descriptive statistics for Octo-Twin (Females)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | Year of Assessment | | | | |
| Variable | |  | Baseline  (n = 468) | Year 2  (n = 401) | Year 4  (n = 290) | Year 6  (n = 225) | Year 8  (n = 165) | |
|  | |  | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | |
| Demographic | | |  |  |  |  |  | |
| Age, years | | | 83.80(3.3) | 85.73(3.2) | 87.44(3.0) | 89.28(2.9) | 90.91(2.54) | |
| Education, years | | | 6.96(1.9) | -- | -- | -- | -- | |
| Height, cm | | | 157.04 | -- | -- | -- | -- | |
| Smoking history(%) | | | 20.5 | -- | -- | -- | -- | |
| Cardiovascular disease(%) | | | 39.7 | -- | -- | -- | -- | |
| Diabetes (%) | | | 9.5 | -- | -- | -- | -- | |
| Physical |  | |  |  |  |  |  | |
| Pulmonary: | PEF | | 281.82(80.6) | 297.64(85.0) | 292.71(76.0) | 263.13(71.9) | 254.71(73.5) | |
| Muscle: | Grip Strength | | 7.89(2.4) | 7.08(2.6) | 6.25(2.6) | 5.98(2.5) | 5.64(2.2) | |
| Gait: | Walking Speed | |  |  |  |  |  | |
| Cognitive |  | |  |  |  |  |  | |
|  | MMSE | | 24.07(7.6) | 23.07(8.6) | 22.78(9.2) | 22.55(9.2) | 22.12(8.4) | |
|  | Digit Span Forward | | 5.26(1.2) | 4.92(1.5) | 4.85(1.6) | 4.72(1.4) | 4.75(1.4) | |
|  | Digit Span Backward | | 3.16(1.6) | 3.02(1.6) | 2.76(1.7) | 2.86(1.5) | 2.84(1.4) | |
|  | Prose | | 8.83(4.5) | 8.81(4.7) | 8.89(4.7) | 8.85(4.8) | 8.74(4.8) | |
|  | Information | | 24.58(12.4) | 26.05(12.3) | 25.53(13.0) | 25.88(13.4) | 25.12(11.5) | |
|  | Block Design | | 10.53(7.3) | 10.31(7.1) | 10.28(7.0) | 10.50(7.1) | 9.49(7.2) | |
|  | Synonyms test | | 16.77(5.7) | 16.21(6.0) | 16.67(5.8) | 17.01(5.8) | 16.28(5.9) | |
|  | Figure Reasoning | | 15.36(4.1) | 15.51(4.3) | 15.91(3.8) | 15.73(4.5) | 14.91(3.9) | |
|  | Digit Symbol | | 22.83(11.8) | 23.51(11.3) | 23.14(11.8) | 23.07(12.5) | 20.79(11.4) | |
|  | Objects Recalled | | 5.97(3.0) | 5.46(3.4) | 5.43(3.5) | 5.64(3.6) | 5.81(3.5) | |
| Study Characteristics | | |  |  |  |  |  | |
| Retention from previous wave (%) | | | 100.0 | 85.7 | 72.3 | 77.6 | 73.3 | |
| Representative sample | | | yes |  |  |  |  | |
| Oldest Birth Cohort (year) | | |  |  |  |  |  | |

Table 4. Descriptive statistics for Octo-twin (Excluding older adults with dementia)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | Year of Assessment | | | | |
| Variable | |  | Baseline  (n = 477) | Year 2  (n = 404) | Year 4  (n = 294) | Year 6  (n = 223) | Year 8  (n = 174) | |
|  | |  | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | |
| Demographic | | |  |  |  |  |  | |
| Age, years | | | 83.47(3.2) | 85.37(3.1) | 87.09(2.8) | 88.90(2.8) | 90.65(2.4) | |
| Education, years | | | 7.29(2.5) | -- | -- | -- | -- | |
| Height, cm | | | 161.94(8.8) | -- | -- | -- | -- | |
| Smoking history(%) | | | 40.6 | -- | -- | -- | -- | |
| Cardiovascular disease(%) | | | 43.6 | -- | -- | -- | -- | |
| Diabetes (%) | | | 9.4 | -- | -- | -- | -- | |
| Physical |  | |  |  |  |  |  | |
| Pulmonary: | PEF | | 325.31(106.5) | 340.28(107.2) | 331.04(96.7) | 300.32(96.7) | 278.97(97.4) | |
| Muscle: | Grip Strength | | 9.07(2.9) | 8.33(2.7) | 7.71(2.8) | 7.06(2.7) | 6.52(2.6) | |
| Gait: | Walking Speed | |  |  |  |  |  | |
| Cognitive |  | |  |  |  |  |  | |
|  | MMSE | | 26.88(3.9) | 26.70(4.3) | 27.05(4.0) | 26.23(5.3) | 24.76(5.5) | |
|  | Digit Span Forward | | 5.48(1.2) | 5.24(1.1) | 5.2(1.1) | 5.1(1.0) | 5.1(1.0) | |
|  | Digit Span Backward | | 3.41(1.5) | 3.38(1.4) | 3.26(1.4) | 3.18(1.3) | 3.01(1.3) | |
|  | Prose | | 9.97(4.0) | 10.41(3.6) | 10.43(3.7) | 10.91(3.4) | 10.12(3.5) | |
|  | Information | | 29.21(10.5) | 30.37(10.1) | 30.04(10.8) | 29.92(11.2) | 27.51(10.5) | |
|  | Block Design | | 12.14(7.1) | 12.63(6.8) | 12.69(6.6) | 12.15(6.8) | 11.38(6.9) | |
|  | Synonyms test | | 17.08(6.0) | 17.03(6.2) | 16.82(6.2) | 17.33(6.1) | 16.55(6.2) | |
|  | Figure Reasoning | | 15.67(4.2) | 15.87(3.9) | 16.00(3.9) | 16.01(4.0) | 15.67(3.8) | |
|  | Digit Symbol | | 25.47(10.7) | 25.90(10.4) | 26.40(10.8) | 26.12(10.7) | 23.54(10.4) | |
|  | Objects Recalled | | 6.79(2.2) | 6.77(2.3) | 6.80(2.5) | 6.89(2.7) | 6.71(2.9) | |
| Study Characteristics | | |  |  |  |  |  | |
| Retention from previous wave (%) | | | 100.0 | 84.7 | 72.8 | 75.9 | 78.0 | |
| Representative sample | | | yes |  |  |  |  | |
| Oldest Birth Cohort (year) | | |  |  |  |  |  | |

Table 5. Descriptive statistics for Octo-Twin (Excluding older adults with dementia, Males)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | Year of Assessment | | | | |
| Variable | |  | Baseline  (n = 166) | Year 2  (n = 138) | Year 4  (n = 100) | Year 6  (n = 63) | Year 8  (n = 45) | |
|  | |  | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | |
| Demographic | | |  |  |  |  |  | |
| Age, years | | | 83.22(3.0) | 84.94(2.7) | 86.84(2.5) | 88.33(2.2) | 90.25(2.2) | |
| Education, years | | | 7.64(3.1) | -- | -- | -- | -- | |
| Height, cm | | | 170.97 | -- | -- | -- | -- | |
| Smoking history(%) | | | 72.1 | -- | -- | -- | -- | |
| Cardiovascular disease(%) | | | 53.3 | -- | -- | -- | -- | |
| Diabetes (%) | | | 11.8 | -- | -- | -- | -- | |
| Physical |  | |  |  |  |  |  | |
| Pulmonary: | PEF | | 393.78(115.3) | 408.11(113.0) | 395.51(99.7) | 374.89(104.6) | 330.76(122.2) | |
| Muscle: | Grip Strength | | 10.86(3.0) | 10.04(10.0) | 9.30(9.3) | 8.90(8.9) | 8.32(8.3) | |
| Gait: | Walking Speed | |  |  |  |  |  | |
| Cognitive |  | |  |  |  |  |  | |
|  | MMSE | | 26.56(4.0) | 26.37(4.8) | 26.93(4.2) | 25.84(6.0) | 23.84(5.6) | |
|  | Digit Span Forward | | 5.63(1.3) | 5.29(1.09) | 5.20(1.09) | 5.02(1.12) | 5.19(1.02) | |
|  | Digit Span Backward | | 3.26(1.6) | 3.38(1.5) | 3.22(1.3) | 3.04(1.5) | 3.03(1.4) | |
|  | Prose | | 9.50(4.3) | 10.00(4.1) | 9.97(4.2) | 11.22(3.9) | 9.57(4.1) | |
|  | Information | | 32.45(8.8) | 32.43(9.3) | 32.06(9.9) | 32.00(9.8) | 28.80(11.3) | |
|  | Block Design | | 11.75(7.4) | 12.43(7.6) | 12.27(7.8) | 11.77(7.5) | 11.67(7.7) | |
|  | Synonyms test | | 16.86(7.0) | 16.87(6.9) | 16.89(7.1) | 16.44(7.2) | 16.21(6.9) | |
|  | Figure Reasoning | | 15.55(4.4) | 15.76(3.8) | 15.64(4.2) | 15.83(3.8) | 16.63(3.7) | |
|  | Digit Symbol | | 25.45(11.1) | 24.90(11.1) | 26.46(11.3) | 25.45(11.4) | 24.23(11.5) | |
|  | Objects Recalled | | 6.23(2.2) | 6.26(2.3) | 6.23(2.6) | 6.20(2.9) | 6.22(3.0) | |
| Study Characteristics | | |  |  |  |  |  | |
| Retention from previous wave (%) | | | 100.0 | 83.1 | 72.5 | 63.0 | 71.4 | |
| Representative sample | | | yes |  |  |  |  | |
| Oldest Birth Cohort (year) | | |  |  |  |  |  | |

Table 6. Descriptive statistics for Octo-Twin (Excluding older adults with dementia, Females)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | Year of Assessment | | | | |
| Variable | |  | Baseline  (n = 311) | Year 2  (n = 266) | Year 4  (n = 194) | Year 6  (n = 160) | Year 8  (n = 129) | |
|  | |  | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | |
| Demographic | | |  |  |  |  |  | |
| Age, years | | | 83.61(3.3) | 85.60(3.3) | 87.22(2.9) | 89.13(2.9) | 90.80(2.5) | |
| Education, years | | | 7.10(2.0) | -- | -- | -- | -- | |
| Height, cm | | | 157.37(5.7) | -- | -- | -- | -- | |
| Smoking history(%) | | | 23.6 | -- | -- | -- | -- | |
| Cardiovascular disease(%) | | | 44.3 | -- | -- | -- | -- | |
| Diabetes (%) | | | 8.1 | -- | -- | -- | -- | |
| Physical |  | |  |  |  |  |  | |
| Pulmonary: | PEF | | 288.93(80.7) | 303.46(83.7) | 297.05(75.7) | 268.74(73.5) | 257.34(74.1) | |
| Muscle: | Grip Strength | | 8.13(2.3) | 7.45(2.3) | 6.87(2.2) | 6.35(2.3) | 5.91(2.2) | |
| Gait: | Walking Speed | |  |  |  |  |  | |
| Cognitive |  | |  |  |  |  |  | |
|  | MMSE | | 27.05(3.8) | 26.88(4.1) | 27.12(4.0) | 26.38(5.1) | 25.08(5.4) | |
|  | Digit Span Forward | | 5.40(1.2) | 5.22(1.1) | 5.27(1.0) | 5.08(.9) | 5.02(1.0) | |
|  | Digit Span Backward | | 3.49(1.4) | 3.38(1.3) | 3.27(1.4) | 3.24(1.2) | 3.00(1.3) | |
|  | Prose | | 10.23(3.8) | 10.60(3.4) | 10.63(3.3) | 10.82(3.3) | 10.28(3.3) | |
|  | Information | | 27.54(10.9) | 29.25(10.3) | 28.95(11.1) | 29.11(11.7) | 27.04(10.24) | |
|  | Block Design | | 12.34(6.9) | 12.74(6.3) | 12.91(5.9) | 12.30(6.4) | 11.29(6.6) | |
|  | Synonyms test | | 17.20(5.5) | 17.11(5.8) | 17.16(5.7) | 17.67(5.6) | 16.66(6.0) | |
|  | Figure Reasoning | | 15.74(4.0) | 15.93(4.0) | 16.20(3.7) | 16.09(4.2) | 15.35(3.8) | |
|  | Digit Symbol | | 25.49(10.6) | 26.46(10.1) | 26.38(10.5) | 26.38(10.4) | 23.30(10.1) | |
|  | Objects Recalled | | 7.07(2.2) | 7.04(2.3) | 7.09(2.4) | 7.18(2.6) | 6.87(2.9) | |
| Study Characteristics | | |  |  |  |  |  | |
| Retention from previous wave (%) | | | 100.0 | 85.5 | 72.9 | 82.4 | 80.6 | |
| Representative sample | | | yes |  |  |  |  | |
| Oldest Birth Cohort (year) | | |  |  |  |  |  | |