# Figure 5

Figure 5A (Single-cluster (%))

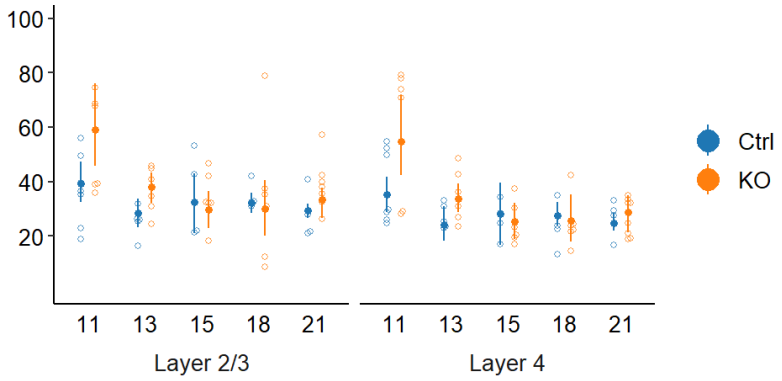


Table: ANOVA table before bootstrapping

| | F | Df | Df.res | Pr(>F) |
|---|---|---|---|---|
| (Intercept) | 123.320 | 1 | 80.444 | 0.000 |
| f.age | 1.573 | 4 | 98.056 | 0.188 |
| group | 15.446 | 1 | 74.156 | 0.000 |
| f.layer | 3.733 | 1 | 93.066 | 0.056 |
| f.age:group | 2.820 | 4 | 97.581 | 0.029 |

Table: Main effect after bootstrapping

| Parameter | Median | Mean | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|
| Ctrl - KO | -5.594 | -5.577 | 0.95 | -11.351 | 0.138 | 0.973 | 0.054 |

| Parameter | Median | Mean | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|
| f.age11 - f.age13 | 16.046 | 15.968 | 0.95 | 5.527 | 25.724 | 0.998 | 0.005 |
| f.age11 - f.age15 | 18.539 | 18.443 | 0.95 | 7.644 | 28.924 | 0.999 | 0.002 |
| f.age11 - f.age18 | 18.305 | 18.166 | 0.95 | 9.523 | 25.807 | 1.000 | 0.000 |
| f.age11 - f.age21 | 18.434 | 18.326 | 0.95 | 9.050 | 26.276 | 1.000 | 0.000 |
| f.age13 - f.age15 | 2.472 | 2.475 | 0.95 | -3.195 | 7.620 | 0.818 | 0.365 |
| f.age13 - f.age18 | 2.356 | 2.198 | 0.95 | -3.590 | 6.929 | 0.811 | 0.379 |
| f.age13 - f.age21 | 2.337 | 2.358 | 0.95 | -1.991 | 6.903 | 0.847 | 0.305 |
| f.age15 - f.age18 | -0.110 | -0.277 | 0.95 | -7.199 | 5.867 | 0.513 | 0.973 |
| f.age15 - f.age21 | -0.126 | -0.117 | 0.95 | -7.231 | 7.218 | 0.516 | 0.969 |
| f.age18 - f.age21 | 0.028 | 0.160 | 0.95 | -6.143 | 7.107 | 0.503 | 0.993 |

| Parameter | Median | Mean | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|
| f.layer2 - f.layer4 | 4.383 | 4.32 | 0.95 | 1.02 | 7.197 | 0.993 | 0.015 |

Table: Post-hoc comparison with bootstrapping output

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| KO - Ctrl, 2, 11 | 19.680 | 19.523 | 19.523 | 0.95 | 3.024 | 35.506 | 0.986 | 0.028 |
| KO - Ctrl, 4, 11 | 19.680 | 19.523 | 19.523 | 0.95 | 3.024 | 35.506 | 0.986 | 0.028 |
| KO - Ctrl, 2, 13 | 9.502 | 9.481 | 9.481 | 0.95 | 1.760 | 17.213 | 0.989 | 0.021 |
| KO - Ctrl, 4, 13 | 9.502 | 9.481 | 9.481 | 0.95 | 1.760 | 17.213 | 0.989 | 0.021 |
| KO - Ctrl, 2, 15 | -2.744 | -2.764 | -2.764 | 0.95 | -15.471 | 10.071 | 0.671 | 0.659 |
| KO - Ctrl, 4, 15 | -2.744 | -2.764 | -2.764 | 0.95 | -15.471 | 10.071 | 0.671 | 0.659 |
| KO - Ctrl, 2, 18 | -1.936 | -1.833 | -1.833 | 0.95 | -12.024 | 8.842 | 0.654 | 0.692 |
| KO - Ctrl, 4, 18 | -1.936 | -1.833 | -1.833 | 0.95 | -12.024 | 8.842 | 0.654 | 0.692 |
| KO - Ctrl, 2, 21 | 3.945 | 3.477 | 3.477 | 0.95 | -4.492 | 8.966 | 0.859 | 0.281 |
| KO - Ctrl, 4, 21 | 3.945 | 3.477 | 3.477 | 0.95 | -4.492 | 8.966 | 0.859 | 0.281 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.age11 - f.age13, Ctrl, 2 | 10.629 | 10.948 | 10.948 | 0.95 | -0.026 | 23.664 | 0.975 | 0.050 |
| f.age11 - f.age15, Ctrl, 2 | 6.694 | 7.300 | 7.300 | 0.95 | -3.935 | 23.811 | 0.812 | 0.375 |
| f.age11 - f.age18, Ctrl, 2 | 7.237 | 7.489 | 7.489 | 0.95 | -0.205 | 17.532 | 0.970 | 0.059 |
| f.age11 - f.age21, Ctrl, 2 | 10.307 | 10.303 | 10.303 | 0.95 | 2.245 | 18.190 | 0.994 | 0.013 |
| f.age13 - f.age15, Ctrl, 2 | -3.518 | -3.648 | -3.648 | 0.95 | -14.217 | 5.511 | 0.759 | 0.482 |
| f.age13 - f.age18, Ctrl, 2 | -3.519 | -3.459 | -3.459 | 0.95 | -6.722 | 0.346 | 0.963 | 0.074 |
| f.age13 - f.age21, Ctrl, 2 | -0.476 | -0.644 | -0.644 | 0.95 | -5.815 | 3.028 | 0.569 | 0.861 |
| f.age15 - f.age18, Ctrl, 2 | 0.088 | 0.189 | 0.189 | 0.95 | -8.580 | 9.544 | 0.509 | 0.981 |
| f.age15 - f.age21, Ctrl, 2 | 3.191 | 3.004 | 3.004 | 0.95 | -9.738 | 15.049 | 0.689 | 0.622 |
| f.age18 - f.age21, Ctrl, 2 | 2.727 | 2.815 | 2.815 | 0.95 | -0.380 | 6.922 | 0.942 | 0.115 |
| f.age11 - f.age13, KO, 2 | 21.369 | 20.989 | 20.989 | 0.95 | 3.506 | 36.376 | 0.987 | 0.027 |
| f.age11 - f.age15, KO, 2 | 30.376 | 29.587 | 29.587 | 0.95 | 12.178 | 43.035 | 0.995 | 0.009 |
| f.age11 - f.age18, KO, 2 | 29.409 | 28.844 | 28.844 | 0.95 | 13.361 | 40.677 | 1.000 | 0.000 |
| f.age11 - f.age21, KO, 2 | 26.766 | 26.349 | 26.349 | 0.95 | 9.144 | 40.672 | 1.000 | 0.000 |
| f.age13 - f.age15, KO, 2 | 8.548 | 8.598 | 8.598 | 0.95 | 4.848 | 12.645 | 0.999 | 0.001 |
| f.age13 - f.age18, KO, 2 | 8.360 | 7.855 | 7.855 | 0.95 | -3.355 | 16.304 | 0.931 | 0.138 |
| f.age13 - f.age21, KO, 2 | 5.183 | 5.360 | 5.360 | 0.95 | -1.833 | 13.299 | 0.926 | 0.148 |
| f.age15 - f.age18, KO, 2 | -0.200 | -0.742 | -0.742 | 0.95 | -12.057 | 5.912 | 0.512 | 0.976 |
| f.age15 - f.age21, KO, 2 | -3.266 | -3.238 | -3.238 | 0.95 | -12.131 | 5.381 | 0.782 | 0.435 |
| f.age18 - f.age21, KO, 2 | -2.626 | -2.495 | -2.495 | 0.95 | -14.288 | 10.928 | 0.674 | 0.652 |
| f.age11 - f.age13, Ctrl, 4 | 10.629 | 10.948 | 10.948 | 0.95 | -0.026 | 23.664 | 0.975 | 0.050 |
| f.age11 - f.age15, Ctrl, 4 | 6.694 | 7.300 | 7.300 | 0.95 | -3.935 | 23.811 | 0.812 | 0.375 |
| f.age11 - f.age18, Ctrl, 4 | 7.237 | 7.489 | 7.489 | 0.95 | -0.205 | 17.532 | 0.970 | 0.059 |
| f.age11 - f.age21, Ctrl, 4 | 10.307 | 10.303 | 10.303 | 0.95 | 2.245 | 18.190 | 0.994 | 0.013 |
| f.age13 - f.age15, Ctrl, 4 | -3.518 | -3.648 | -3.648 | 0.95 | -14.217 | 5.511 | 0.759 | 0.482 |
| f.age13 - f.age18, Ctrl, 4 | -3.519 | -3.459 | -3.459 | 0.95 | -6.722 | 0.346 | 0.963 | 0.074 |
| f.age13 - f.age21, Ctrl, 4 | -0.476 | -0.644 | -0.644 | 0.95 | -5.815 | 3.028 | 0.569 | 0.861 |
| f.age15 - f.age18, Ctrl, 4 | 0.088 | 0.189 | 0.189 | 0.95 | -8.580 | 9.544 | 0.509 | 0.981 |
| f.age15 - f.age21, Ctrl, 4 | 3.191 | 3.004 | 3.004 | 0.95 | -9.738 | 15.049 | 0.689 | 0.622 |
| f.age18 - f.age21, Ctrl, 4 | 2.727 | 2.815 | 2.815 | 0.95 | -0.380 | 6.922 | 0.942 | 0.115 |
| f.age11 - f.age13, KO, 4 | 21.369 | 20.989 | 20.989 | 0.95 | 3.506 | 36.376 | 0.987 | 0.027 |
| f.age11 - f.age15, KO, 4 | 30.376 | 29.587 | 29.587 | 0.95 | 12.178 | 43.035 | 0.995 | 0.009 |
| f.age11 - f.age18, KO, 4 | 29.409 | 28.844 | 28.844 | 0.95 | 13.361 | 40.677 | 1.000 | 0.000 |
| f.age11 - f.age21, KO, 4 | 26.766 | 26.349 | 26.349 | 0.95 | 9.144 | 40.672 | 1.000 | 0.000 |
| f.age13 - f.age15, KO, 4 | 8.548 | 8.598 | 8.598 | 0.95 | 4.848 | 12.645 | 0.999 | 0.001 |
| f.age13 - f.age18, KO, 4 | 8.360 | 7.855 | 7.855 | 0.95 | -3.355 | 16.304 | 0.931 | 0.138 |
| f.age13 - f.age21, KO, 4 | 5.183 | 5.360 | 5.360 | 0.95 | -1.833 | 13.299 | 0.926 | 0.148 |
| f.age15 - f.age18, KO, 4 | -0.200 | -0.742 | -0.742 | 0.95 | -12.057 | 5.912 | 0.512 | 0.976 |
| f.age15 - f.age21, KO, 4 | -3.266 | -3.238 | -3.238 | 0.95 | -12.131 | 5.381 | 0.782 | 0.435 |
| f.age18 - f.age21, KO, 4 | -2.626 | -2.495 | -2.495 | 0.95 | -14.288 | 10.928 | 0.674 | 0.652 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.layer4 - f.layer2, Ctrl, 11 | -4.383 | -4.32 | -4.32 | 0.95 | -7.197 | -1.02 | 0.993 | 0.015 |
| f.layer4 - f.layer2, KO, 11 | -4.383 | -4.32 | -4.32 | 0.95 | -7.197 | -1.02 | 0.993 | 0.015 |
| f.layer4 - f.layer2, Ctrl, 13 | -4.383 | -4.32 | -4.32 | 0.95 | -7.197 | -1.02 | 0.993 | 0.015 |

|f.layer4 - f.layer2, KO, 13   | -4.383| -4.32|  -4.32| 0.95| -7.197|   -1.02| 0.993| 0.015|
|f.layer4 - f.layer2, Ctrl, 15 | -4.383| -4.32|  -4.32| 0.95| -7.197|   -1.02| 0.993| 0.015|
|f.layer4 - f.layer2, KO, 15   | -4.383| -4.32|  -4.32| 0.95| -7.197|   -1.02| 0.993| 0.015|
|f.layer4 - f.layer2, Ctrl, 18 | -4.383| -4.32|  -4.32| 0.95| -7.197|   -1.02| 0.993| 0.015|
|f.layer4 - f.layer2, KO, 18   | -4.383| -4.32|  -4.32| 0.95| -7.197|   -1.02| 0.993| 0.015|
|f.layer4 - f.layer2, Ctrl, 21 | -4.383| -4.32|  -4.32| 0.95| -7.197|   -1.02| 0.993| 0.015|
|f.layer4 - f.layer2, KO, 21   | -4.383| -4.32|  -4.32| 0.95| -7.197|   -1.02| 0.993| 0.015|

Figure 5B (Non-cluster (%))

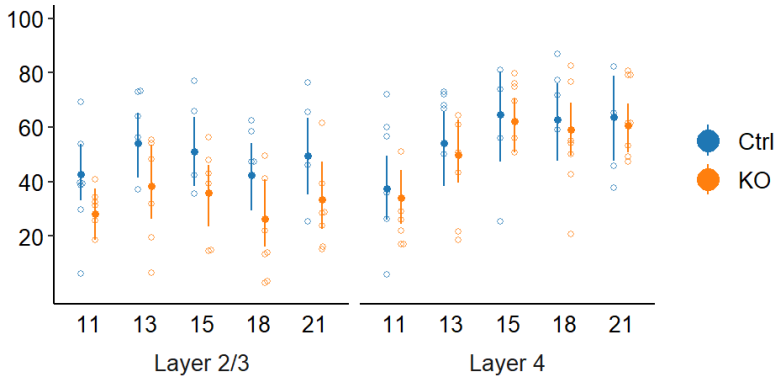


Table: ANOVA table before bootstrapping

|              |      F| Df| Df.res| Pr(>F)|
|:-------------|------:|--:|------:|------:|
|(Intercept)   | 54.170|  1| 38.943|  0.000|
|f.age         |  1.326|  4| 90.818|  0.266|
|group         |  6.621|  1| 15.802|  0.021|
|f.layer       |  0.787|  1| 86.466|  0.378|
|group:f.layer |  4.231|  1| 87.739|  0.043|
|f.age:f.layer |  3.042|  4| 87.779|  0.021|

Table: Main effect after bootstrapping

|Parameter | Median|  Mean|   CI| CI_low| CI_high|    pd|  pval|
|:---------|------:|-----:|----:|------:|-------:|-----:|-----:|
|Ctrl - KO |  9.239| 9.139| 0.95| -3.281|  20.796| 0.929| 0.141|

|Parameter         |  Median|    Mean|   CI|  CI_low| CI_high|    pd|  pval|
|:-----------------|-------:|-------:|----:|-------:|-------:|-----:|-----:|
|f.age11 - f.age13 | -13.339| -13.229| 0.95| -24.801|  -0.911| 0.983| 0.033|
|f.age11 - f.age15 | -17.449| -17.512| 0.95| -29.422|  -5.929| 0.999| 0.002|
|f.age11 - f.age18 | -12.001| -12.045| 0.95| -19.500|  -4.885| 0.999| 0.002|
|f.age11 - f.age21 | -16.228| -16.146| 0.95| -24.698|  -6.904| 1.000| 0.001|
|f.age13 - f.age15 |  -4.218|  -4.283| 0.95| -16.808|   8.048| 0.750| 0.501|
|f.age13 - f.age18 |   1.187|   1.184| 0.95|  -6.477|   8.879| 0.619| 0.763|
|f.age13 - f.age21 |  -2.946|  -2.917| 0.95| -12.273|   6.697| 0.733| 0.533|
|f.age15 - f.age18 |   5.817|   5.467| 0.95|  -5.223|  14.199| 0.865| 0.269|
|f.age15 - f.age21 |   1.417|   1.366| 0.95|  -7.880|  10.284| 0.629| 0.741|
|f.age18 - f.age21 |  -4.187|  -4.101| 0.95| -12.583|   5.019| 0.825| 0.349|

|Parameter          |  Median|    Mean|   CI|  CI_low| CI_high| pd| pval|
|:------------------|-------:|-------:|----:|-------:|-------:|--:|----:|
|f.layer2 - f.layer4 | -14.538| -14.457| 0.95| -19.327|  -9.235|  1|    0|

Table: Post-hoc comparison with bootstrapping output

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| KO - Ctrl, 2, 11 | -15.218 | -15.013 | -15.013 | 0.95 | -27.065 | -1.464 | 0.985 | 0.030 |
| KO - Ctrl, 4, 11 | -3.362 | -3.264 | -3.264 | 0.95 | -16.342 | 10.691 | 0.697 | 0.606 |
| KO - Ctrl, 2, 13 | -15.218 | -15.013 | -15.013 | 0.95 | -27.065 | -1.464 | 0.985 | 0.030 |
| KO - Ctrl, 4, 13 | -3.362 | -3.264 | -3.264 | 0.95 | -16.342 | 10.691 | 0.697 | 0.606 |
| KO - Ctrl, 2, 15 | -15.218 | -15.013 | -15.013 | 0.95 | -27.065 | -1.464 | 0.985 | 0.030 |
| KO - Ctrl, 4, 15 | -3.362 | -3.264 | -3.264 | 0.95 | -16.342 | 10.691 | 0.697 | 0.606 |
| KO - Ctrl, 2, 18 | -15.218 | -15.013 | -15.013 | 0.95 | -27.065 | -1.464 | 0.985 | 0.030 |
| KO - Ctrl, 4, 18 | -3.362 | -3.264 | -3.264 | 0.95 | -16.342 | 10.691 | 0.697 | 0.606 |
| KO - Ctrl, 2, 21 | -15.218 | -15.013 | -15.013 | 0.95 | -27.065 | -1.464 | 0.985 | 0.030 |
| KO - Ctrl, 4, 21 | -3.362 | -3.264 | -3.264 | 0.95 | -16.342 | 10.691 | 0.697 | 0.606 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.age11 - f.age13, Ctrl, 2 | -10.704 | -10.393 | -10.393 | 0.95 | -23.509 | 4.457 | 0.923 | 0.153 |
| f.age11 - f.age15, Ctrl, 2 | -7.604 | -7.750 | -7.750 | 0.95 | -20.525 | 3.898 | 0.893 | 0.214 |
| f.age11 - f.age18, Ctrl, 2 | 0.954 | 0.866 | 0.866 | 0.95 | -10.642 | 11.413 | 0.569 | 0.861 |
| f.age11 - f.age21, Ctrl, 2 | -5.618 | -6.109 | -6.109 | 0.95 | -21.220 | 6.006 | 0.814 | 0.372 |
| f.age13 - f.age15, Ctrl, 2 | 2.793 | 2.643 | 2.643 | 0.95 | -9.744 | 14.046 | 0.675 | 0.649 |
| f.age13 - f.age18, Ctrl, 2 | 11.169 | 11.259 | 11.259 | 0.95 | -1.413 | 24.721 | 0.961 | 0.079 |
| f.age13 - f.age21, Ctrl, 2 | 4.211 | 4.284 | 4.284 | 0.95 | -7.421 | 16.223 | 0.765 | 0.471 |
| f.age15 - f.age18, Ctrl, 2 | 8.918 | 8.616 | 8.616 | 0.95 | -6.247 | 22.055 | 0.879 | 0.241 |
| f.age15 - f.age21, Ctrl, 2 | 1.699 | 1.640 | 1.640 | 0.95 | -10.376 | 12.907 | 0.623 | 0.755 |
| f.age18 - f.age21, Ctrl, 2 | -6.608 | -6.976 | -6.976 | 0.95 | -23.829 | 7.328 | 0.816 | 0.369 |
| f.age11 - f.age13, KO, 2 | -10.704 | -10.393 | -10.393 | 0.95 | -23.509 | 4.457 | 0.923 | 0.153 |
| f.age11 - f.age15, KO, 2 | -7.604 | -7.750 | -7.750 | 0.95 | -20.525 | 3.898 | 0.893 | 0.214 |
| f.age11 - f.age18, KO, 2 | 0.954 | 0.866 | 0.866 | 0.95 | -10.642 | 11.413 | 0.569 | 0.861 |
| f.age11 - f.age21, KO, 2 | -5.618 | -6.109 | -6.109 | 0.95 | -21.220 | 6.006 | 0.814 | 0.372 |
| f.age13 - f.age15, KO, 2 | 2.793 | 2.643 | 2.643 | 0.95 | -9.744 | 14.046 | 0.675 | 0.649 |
| f.age13 - f.age18, KO, 2 | 11.169 | 11.259 | 11.259 | 0.95 | -1.413 | 24.721 | 0.961 | 0.079 |
| f.age13 - f.age21, KO, 2 | 4.211 | 4.284 | 4.284 | 0.95 | -7.421 | 16.223 | 0.765 | 0.471 |
| f.age15 - f.age18, KO, 2 | 8.918 | 8.616 | 8.616 | 0.95 | -6.247 | 22.055 | 0.879 | 0.241 |
| f.age15 - f.age21, KO, 2 | 1.699 | 1.640 | 1.640 | 0.95 | -10.376 | 12.907 | 0.623 | 0.755 |
| f.age18 - f.age21, KO, 2 | -6.608 | -6.976 | -6.976 | 0.95 | -23.829 | 7.328 | 0.816 | 0.369 |
| f.age11 - f.age13, Ctrl, 4 | -16.035 | -16.065 | -16.065 | 0.95 | -27.916 | -4.713 | 0.997 | 0.005 |
| f.age11 - f.age15, Ctrl, 4 | -27.615 | -27.273 | -27.273 | 0.95 | -42.596 | -10.358 | 0.998 | 0.003 |
| f.age11 - f.age18, Ctrl, 4 | -24.857 | -24.956 | -24.956 | 0.95 | -37.254 | -13.293 | 1.000 | 0.000 |
| f.age11 - f.age21, Ctrl, 4 | -26.401 | -26.182 | -26.182 | 0.95 | -38.566 | -12.428 | 1.000 | 0.001 |
| f.age13 - f.age15, Ctrl, 4 | -11.198 | -11.209 | -11.209 | 0.95 | -26.953 | 4.421 | 0.923 | 0.154 |
| f.age13 - f.age18, Ctrl, 4 | -9.350 | -8.891 | -8.891 | 0.95 | -18.847 | 3.464 | 0.932 | 0.136 |
| f.age13 - f.age21, Ctrl, 4 | -10.183 | -10.117 | -10.117 | 0.95 | -25.296 | 5.495 | 0.902 | 0.197 |
| f.age15 - f.age18, Ctrl, 4 | 2.752 | 2.317 | 2.317 | 0.95 | -11.655 | 13.771 | 0.670 | 0.661 |
| f.age15 - f.age21, Ctrl, 4 | 1.165 | 1.091 | 1.091 | 0.95 | -10.261 | 12.022 | 0.589 | 0.822 |
| f.age18 - f.age21, Ctrl, 4 | -1.596 | -1.226 | -1.226 | 0.95 | -14.210 | 13.484 | 0.588 | 0.824 |
| f.age11 - f.age13, KO, 4 | -16.035 | -16.065 | -16.065 | 0.95 | -27.916 | -4.713 | 0.997 | 0.005 |
| f.age11 - f.age15, KO, 4 | -27.615 | -27.273 | -27.273 | 0.95 | -42.596 | -10.358 | 0.998 | 0.003 |
| f.age11 - f.age18, KO, 4 | -24.857 | -24.956 | -24.956 | 0.95 | -37.254 | -13.293 | 1.000 | 0.000 |
| f.age11 - f.age21, KO, 4 | -26.401 | -26.182 | -26.182 | 0.95 | -38.566 | -12.428 | 1.000 | 0.001 |
| f.age13 - f.age15, KO, 4 | -11.198 | -11.209 | -11.209 | 0.95 | -26.953 | 4.421 | 0.923 | 0.154 |
| f.age13 - f.age18, KO, 4 | -9.350 | -8.891 | -8.891 | 0.95 | -18.847 | 3.464 | 0.932 | 0.136 |
| f.age13 - f.age21, KO, 4 | -10.183 | -10.117 | -10.117 | 0.95 | -25.296 | 5.495 | 0.902 | 0.197 |
| f.age15 - f.age18, KO, 4 | 2.752 | 2.317 | 2.317 | 0.95 | -11.655 | 13.771 | 0.670 | 0.661 |
| f.age15 - f.age21, KO, 4 | 1.165 | 1.091 | 1.091 | 0.95 | -10.261 | 12.022 | 0.589 | 0.822 |
| f.age18 - f.age21, KO, 4 | -1.596 | -1.226 | -1.226 | 0.95 | -14.210 | 13.484 | 0.588 | 0.824 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.layer4 - f.layer2, Ctrl, 11 | -5.524 | -5.636 | -5.636 | 0.95 | -15.067 | 3.168 | 0.887 | 0.226 |
| f.layer4 - f.layer2, KO, 11 | 5.708 | 6.113 | 6.113 | 0.95 | -1.990 | 16.737 | 0.914 | 0.173 |
| f.layer4 - f.layer2, Ctrl, 13 | 0.195 | 0.036 | 0.036 | 0.95 | -10.693 | 10.055 | 0.512 | 0.976 |

|f.layer4 - f.layer2, KO, 13   | 11.649| 11.784| 11.784| 0.95|   4.197|  20.146| 0.999| 0.002|
|f.layer4 - f.layer2, Ctrl, 15 | 13.742| 13.888| 13.888| 0.95|   1.528|  27.141| 0.984| 0.031|
|f.layer4 - f.layer2, KO, 15   | 25.612| 25.636| 25.636| 0.95|  15.404|  35.715| 1.000| 0.001|
|f.layer4 - f.layer2, Ctrl, 18 | 20.453| 20.186| 20.186| 0.95|   2.901|  35.629| 0.987| 0.026|
|f.layer4 - f.layer2, KO, 18   | 32.669| 31.935| 31.935| 0.95|  14.180|  45.300| 1.000| 0.001|
|f.layer4 - f.layer2, Ctrl, 21 | 15.106| 14.437| 14.437| 0.95|  -6.842|  32.232| 0.923| 0.155|
|f.layer4 - f.layer2, KO, 21   | 27.109| 26.186| 26.186| 0.95|   8.149|  38.637| 0.995| 0.009|

Figure 5C (Multiple-cluster (%))

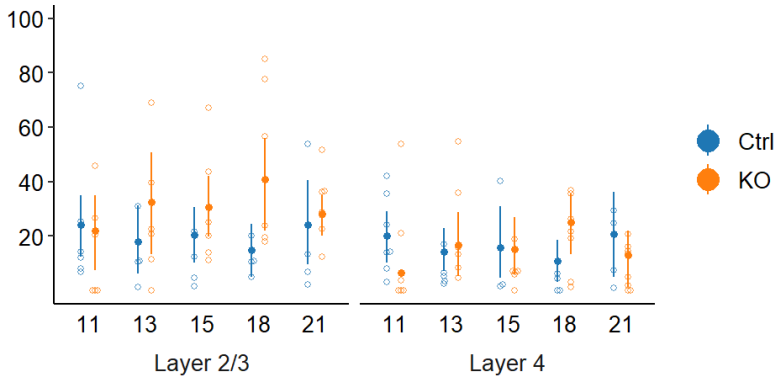


Table: ANOVA table before bootstrapping

|              |      F| Df| Df.res| Pr(>F)|
|:-------------|------:|--:|------:|------:|
|(Intercept)   | 15.716|  1| 30.407|  0.000|
|f.age         |  0.853|  4| 94.417|  0.495|
|group         |  0.039|  1| 29.148|  0.845|
|f.layer       |  0.817|  1| 90.306|  0.368|
|group:f.layer |  4.492|  1| 90.371|  0.037|
|f.age:group   |  3.040|  4| 93.483|  0.021|

Table: Main effect after bootstrapping

|Parameter | Median|  Mean|   CI|  CI_low| CI_high|    pd| pval|
|:---------|------:|-----:|----:|-------:|-------:|-----:|----:|
|Ctrl - KO | -4.735| -4.65| 0.95| -15.957|   7.789| 0.775| 0.45|

|Parameter         | Median|   Mean|   CI|  CI_low| CI_high|    pd|  pval|
|:-----------------|------:|------:|----:|-------:|-------:|-----:|-----:|
|f.age11 - f.age13 | -2.520| -2.575| 0.95| -15.302|   9.858| 0.657| 0.685|
|f.age11 - f.age15 | -2.766| -2.688| 0.95| -10.314|   5.358| 0.748| 0.503|
|f.age11 - f.age18 | -4.849| -4.692| 0.95| -13.314|   5.345| 0.846| 0.308|
|f.age11 - f.age21 | -3.743| -3.719| 0.95| -12.698|   5.391| 0.790| 0.421|
|f.age13 - f.age15 | -0.117| -0.113| 0.95| -10.472|  10.745| 0.508| 0.983|
|f.age13 - f.age18 | -2.143| -2.116| 0.95|  -8.096|   4.037| 0.771| 0.459|
|f.age13 - f.age21 | -0.997| -1.144| 0.95| -11.898|   9.058| 0.569| 0.861|
|f.age15 - f.age18 | -2.278| -2.004| 0.95|  -8.499|   5.604| 0.728| 0.543|
|f.age15 - f.age21 | -1.020| -1.031| 0.95| -10.397|   7.887| 0.587| 0.827|
|f.age18 - f.age21 |  0.902|  0.972| 0.95|  -9.195|  11.365| 0.569| 0.861|

|Parameter          | Median|  Mean|   CI| CI_low| CI_high|    pd|  pval|
|:------------------|------:|-----:|----:|------:|-------:|-----:|-----:|
|f.layer2 - f.layer4 |  9.788| 9.741| 0.95|  3.872|  15.355| 0.999| 0.001|

Table: Post-hoc comparison with bootstrapping output

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| KO - Ctrl, 2, 11 | -1.563 | -1.592 | -1.592 | 0.95 | -19.222 | 16.551 | 0.569 | 0.862 |
| KO - Ctrl, 4, 11 | -13.328 | -13.129 | -13.129 | 0.95 | -30.455 | 6.142 | 0.914 | 0.171 |
| KO - Ctrl, 2, 13 | 14.327 | 14.097 | 14.097 | 0.95 | -9.506 | 37.538 | 0.874 | 0.251 |
| KO - Ctrl, 4, 13 | 2.703 | 2.561 | 2.561 | 0.95 | -12.761 | 17.577 | 0.639 | 0.723 |
| KO - Ctrl, 2, 15 | 10.716 | 10.732 | 10.732 | 0.95 | -5.119 | 26.665 | 0.906 | 0.187 |
| KO - Ctrl, 4, 15 | -0.556 | -0.805 | -0.805 | 0.95 | -17.982 | 15.307 | 0.526 | 0.947 |
| KO - Ctrl, 2, 18 | 26.074 | 25.637 | 25.637 | 0.95 | 4.081 | 45.727 | 0.990 | 0.021 |
| KO - Ctrl, 4, 18 | 14.348 | 14.101 | 14.101 | 0.95 | -1.041 | 27.502 | 0.967 | 0.065 |
| KO - Ctrl, 2, 21 | 3.748 | 3.215 | 3.215 | 0.95 | -17.292 | 19.393 | 0.671 | 0.659 |
| KO - Ctrl, 4, 21 | -7.660 | -8.321 | -8.321 | 0.95 | -28.622 | 7.843 | 0.815 | 0.370 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.age11 - f.age13, Ctrl, 2 | 5.411 | 5.269 | 5.269 | 0.95 | -2.900 | 12.621 | 0.906 | 0.189 |
| f.age11 - f.age15, Ctrl, 2 | 3.344 | 3.474 | 3.474 | 0.95 | -4.492 | 12.233 | 0.799 | 0.403 |
| f.age11 - f.age18, Ctrl, 2 | 8.726 | 8.923 | 8.923 | 0.95 | 4.210 | 14.881 | 1.000 | 0.000 |
| f.age11 - f.age21, Ctrl, 2 | -1.368 | -1.316 | -1.316 | 0.95 | -14.290 | 9.113 | 0.609 | 0.783 |
| f.age13 - f.age15, Ctrl, 2 | -1.463 | -1.795 | -1.795 | 0.95 | -13.705 | 6.999 | 0.592 | 0.816 |
| f.age13 - f.age18, Ctrl, 2 | 3.392 | 3.654 | 3.654 | 0.95 | -0.568 | 8.392 | 0.963 | 0.074 |
| f.age13 - f.age21, Ctrl, 2 | -6.133 | -6.585 | -6.585 | 0.95 | -24.299 | 5.187 | 0.833 | 0.334 |
| f.age15 - f.age18, Ctrl, 2 | 4.903 | 5.449 | 5.449 | 0.95 | -2.151 | 16.331 | 0.924 | 0.153 |
| f.age15 - f.age21, Ctrl, 2 | -4.643 | -4.790 | -4.790 | 0.95 | -22.794 | 5.958 | 0.787 | 0.425 |
| f.age18 - f.age21, Ctrl, 2 | -9.843 | -10.239 | -10.239 | 0.95 | -28.488 | -2.049 | 1.000 | 0.000 |
| f.age11 - f.age13, KO, 2 | -10.372 | -10.420 | -10.420 | 0.95 | -34.699 | 14.564 | 0.803 | 0.394 |
| f.age11 - f.age15, KO, 2 | -9.072 | -8.850 | -8.850 | 0.95 | -21.834 | 5.892 | 0.896 | 0.207 |
| f.age11 - f.age18, KO, 2 | -18.922 | -18.306 | -18.306 | 0.95 | -34.951 | 2.243 | 0.964 | 0.073 |
| f.age11 - f.age21, KO, 2 | -6.441 | -6.123 | -6.123 | 0.95 | -19.646 | 9.612 | 0.810 | 0.380 |
| f.age13 - f.age15, KO, 2 | 1.030 | 1.570 | 1.570 | 0.95 | -15.064 | 21.782 | 0.549 | 0.901 |
| f.age13 - f.age18, KO, 2 | -8.031 | -7.886 | -7.886 | 0.95 | -19.028 | 3.630 | 0.920 | 0.159 |
| f.age13 - f.age21, KO, 2 | 4.250 | 4.297 | 4.297 | 0.95 | -11.937 | 20.690 | 0.700 | 0.600 |
| f.age15 - f.age18, KO, 2 | -9.825 | -9.456 | -9.456 | 0.95 | -19.932 | 3.186 | 0.919 | 0.163 |
| f.age15 - f.age21, KO, 2 | 2.289 | 2.727 | 2.727 | 0.95 | -9.302 | 16.099 | 0.665 | 0.670 |
| f.age18 - f.age21, KO, 2 | 11.959 | 12.183 | 12.183 | 0.95 | -2.956 | 30.601 | 0.955 | 0.089 |
| f.age11 - f.age13, Ctrl, 4 | 5.411 | 5.269 | 5.269 | 0.95 | -2.900 | 12.621 | 0.906 | 0.189 |
| f.age11 - f.age15, Ctrl, 4 | 3.344 | 3.474 | 3.474 | 0.95 | -4.492 | 12.233 | 0.799 | 0.403 |
| f.age11 - f.age18, Ctrl, 4 | 8.726 | 8.923 | 8.923 | 0.95 | 4.210 | 14.881 | 1.000 | 0.000 |
| f.age11 - f.age21, Ctrl, 4 | -1.368 | -1.316 | -1.316 | 0.95 | -14.290 | 9.113 | 0.609 | 0.783 |
| f.age13 - f.age15, Ctrl, 4 | -1.463 | -1.795 | -1.795 | 0.95 | -13.705 | 6.999 | 0.592 | 0.816 |
| f.age13 - f.age18, Ctrl, 4 | 3.392 | 3.654 | 3.654 | 0.95 | -0.568 | 8.392 | 0.963 | 0.074 |
| f.age13 - f.age21, Ctrl, 4 | -6.133 | -6.585 | -6.585 | 0.95 | -24.299 | 5.187 | 0.833 | 0.334 |
| f.age15 - f.age18, Ctrl, 4 | 4.903 | 5.449 | 5.449 | 0.95 | -2.151 | 16.331 | 0.924 | 0.153 |
| f.age15 - f.age21, Ctrl, 4 | -4.643 | -4.790 | -4.790 | 0.95 | -22.794 | 5.958 | 0.787 | 0.425 |
| f.age18 - f.age21, Ctrl, 4 | -9.843 | -10.239 | -10.239 | 0.95 | -28.488 | -2.049 | 1.000 | 0.000 |
| f.age11 - f.age13, KO, 4 | -10.372 | -10.420 | -10.420 | 0.95 | -34.699 | 14.564 | 0.803 | 0.394 |
| f.age11 - f.age15, KO, 4 | -9.072 | -8.850 | -8.850 | 0.95 | -21.834 | 5.892 | 0.896 | 0.207 |
| f.age11 - f.age18, KO, 4 | -18.922 | -18.306 | -18.306 | 0.95 | -34.951 | 2.243 | 0.964 | 0.073 |
| f.age11 - f.age21, KO, 4 | -6.441 | -6.123 | -6.123 | 0.95 | -19.646 | 9.612 | 0.810 | 0.380 |
| f.age13 - f.age15, KO, 4 | 1.030 | 1.570 | 1.570 | 0.95 | -15.064 | 21.782 | 0.549 | 0.901 |
| f.age13 - f.age18, KO, 4 | -8.031 | -7.886 | -7.886 | 0.95 | -19.028 | 3.630 | 0.920 | 0.159 |
| f.age13 - f.age21, KO, 4 | 4.250 | 4.297 | 4.297 | 0.95 | -11.937 | 20.690 | 0.700 | 0.600 |
| f.age15 - f.age18, KO, 4 | -9.825 | -9.456 | -9.456 | 0.95 | -19.932 | 3.186 | 0.919 | 0.163 |
| f.age15 - f.age21, KO, 4 | 2.289 | 2.727 | 2.727 | 0.95 | -9.302 | 16.099 | 0.665 | 0.670 |
| f.age18 - f.age21, KO, 4 | 11.959 | 12.183 | 12.183 | 0.95 | -2.956 | 30.601 | 0.955 | 0.089 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.layer4 - f.layer2, Ctrl, 11 | -4.171 | -3.973 | -3.973 | 0.95 | -11.093 | 4.656 | 0.834 | 0.333 |
| f.layer4 - f.layer2, KO, 11 | -15.495 | -15.509 | -15.509 | 0.95 | -24.436 | -7.173 | 1.000 | 0.000 |
| f.layer4 - f.layer2, Ctrl, 13 | -4.171 | -3.973 | -3.973 | 0.95 | -11.093 | 4.656 | 0.834 | 0.333 |

|f.layer4 - f.layer2, KO, 13   | -15.495| -15.509| -15.509| 0.95| -24.436|  -7.173| 1.000| 0.000|
|f.layer4 - f.layer2, Ctrl, 15 |  -4.171|  -3.973|  -3.973| 0.95| -11.093|   4.656| 0.834| 0.333|
|f.layer4 - f.layer2, KO, 15   | -15.495| -15.509| -15.509| 0.95| -24.436|  -7.173| 1.000| 0.000|
|f.layer4 - f.layer2, Ctrl, 18 |  -4.171|  -3.973|  -3.973| 0.95| -11.093|   4.656| 0.834| 0.333|
|f.layer4 - f.layer2, KO, 18   | -15.495| -15.509| -15.509| 0.95| -24.436|  -7.173| 1.000| 0.000|
|f.layer4 - f.layer2, Ctrl, 21 |  -4.171|  -3.973|  -3.973| 0.95| -11.093|   4.656| 0.834| 0.333|
|f.layer4 - f.layer2, KO, 21   | -15.495| -15.509| -15.509| 0.95| -24.436|  -7.173| 1.000| 0.000|

Figure 5D (Pairwise distances between neurons)

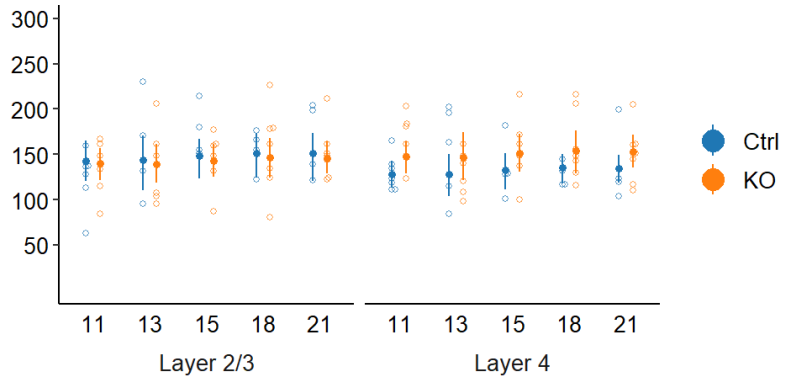


Table: ANOVA table before bootstrapping

|              |       F| Df| Df.res| Pr(>F)|
|:-------------|-------:|--:|------:|------:|
|(Intercept)   | 175.272|  1| 29.060|  0.000|
|f.age         |   0.390|  4| 96.907|  0.815|
|group         |   0.147|  1| 15.576|  0.707|
|f.layer       |   3.371|  1| 90.748|  0.070|
|group:f.layer |   4.020|  1| 91.118|  0.048|

Table: Main effect after bootstrapping

|Parameter | Median|   Mean|   CI|  CI_low| CI_high|   pd| pval|
|:---------|------:|------:|----:|-------:|-------:|----:|----:|
|Ctrl - KO | -7.716| -7.989| 0.95| -30.269|  11.498| 0.77| 0.46|

|Parameter         | Median|   Mean|   CI|  CI_low| CI_high|    pd|  pval|
|:-----------------|------:|------:|----:|-------:|-------:|-----:|-----:|
|f.age11 - f.age13 |  0.319|  0.225| 0.95| -23.557|  23.279| 0.511| 0.977|
|f.age11 - f.age15 | -3.917| -3.649| 0.95| -20.377|  14.177| 0.669| 0.663|
|f.age11 - f.age18 | -6.340| -6.825| 0.95| -27.619|  11.569| 0.757| 0.485|
|f.age11 - f.age21 | -6.265| -6.356| 0.95| -21.471|   8.342| 0.801| 0.399|
|f.age13 - f.age15 | -4.656| -3.874| 0.95| -21.725|  18.850| 0.679| 0.641|
|f.age13 - f.age18 | -7.413| -7.049| 0.95| -27.220|  15.231| 0.750| 0.501|
|f.age13 - f.age21 | -7.057| -6.581| 0.95| -27.209|  16.115| 0.732| 0.537|
|f.age15 - f.age18 | -3.295| -3.175| 0.95| -22.525|  16.697| 0.631| 0.738|
|f.age15 - f.age21 | -3.383| -2.707| 0.95| -15.704|  14.738| 0.660| 0.679|
|f.age18 - f.age21 |  0.525|  0.468| 0.95| -15.721|  16.571| 0.528| 0.943|

|Parameter          | Median| Mean|   CI| CI_low| CI_high|    pd| pval|
|:------------------|------:|----:|----:|------:|-------:|-----:|----:|
|f.layer2 - f.layer4 |  3.954| 3.96| 0.95| -7.419|  15.587| 0.745| 0.51|

Table: Post-hoc comparison with bootstrapping output

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| KO - Ctrl, 2, 11 | -4.099 | -3.437 | -3.437 | 0.95 | -27.792 | 25.388 | 0.624 | 0.753 |
| KO - Ctrl, 4, 11 | 19.283 | 19.415 | 19.415 | 0.95 | -1.918 | 41.308 | 0.964 | 0.073 |
| KO - Ctrl, 2, 13 | -4.099 | -3.437 | -3.437 | 0.95 | -27.792 | 25.388 | 0.624 | 0.753 |
| KO - Ctrl, 4, 13 | 19.283 | 19.415 | 19.415 | 0.95 | -1.918 | 41.308 | 0.964 | 0.073 |
| KO - Ctrl, 2, 15 | -4.099 | -3.437 | -3.437 | 0.95 | -27.792 | 25.388 | 0.624 | 0.753 |
| KO - Ctrl, 4, 15 | 19.283 | 19.415 | 19.415 | 0.95 | -1.918 | 41.308 | 0.964 | 0.073 |
| KO - Ctrl, 2, 18 | -4.099 | -3.437 | -3.437 | 0.95 | -27.792 | 25.388 | 0.624 | 0.753 |
| KO - Ctrl, 4, 18 | 19.283 | 19.415 | 19.415 | 0.95 | -1.918 | 41.308 | 0.964 | 0.073 |
| KO - Ctrl, 2, 21 | -4.099 | -3.437 | -3.437 | 0.95 | -27.792 | 25.388 | 0.624 | 0.753 |
| KO - Ctrl, 4, 21 | 19.283 | 19.415 | 19.415 | 0.95 | -1.918 | 41.308 | 0.964 | 0.073 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.age11 - f.age13, Ctrl, 2 | 0.319 | 0.225 | 0.225 | 0.95 | -23.557 | 23.279 | 0.511 | 0.977 |
| f.age11 - f.age15, Ctrl, 2 | -3.917 | -3.649 | -3.649 | 0.95 | -20.377 | 14.177 | 0.669 | 0.663 |
| f.age11 - f.age18, Ctrl, 2 | -6.340 | -6.825 | -6.825 | 0.95 | -27.619 | 11.569 | 0.757 | 0.485 |
| f.age11 - f.age21, Ctrl, 2 | -6.265 | -6.356 | -6.356 | 0.95 | -21.471 | 8.342 | 0.801 | 0.399 |
| f.age13 - f.age15, Ctrl, 2 | -4.656 | -3.874 | -3.874 | 0.95 | -21.725 | 18.850 | 0.679 | 0.641 |
| f.age13 - f.age18, Ctrl, 2 | -7.413 | -7.049 | -7.049 | 0.95 | -27.220 | 15.231 | 0.750 | 0.501 |
| f.age13 - f.age21, Ctrl, 2 | -7.057 | -6.581 | -6.581 | 0.95 | -27.209 | 16.115 | 0.732 | 0.537 |
| f.age15 - f.age18, Ctrl, 2 | -3.295 | -3.175 | -3.175 | 0.95 | -22.525 | 16.697 | 0.631 | 0.738 |
| f.age15 - f.age21, Ctrl, 2 | -3.383 | -2.707 | -2.707 | 0.95 | -15.704 | 14.738 | 0.660 | 0.679 |
| f.age18 - f.age21, Ctrl, 2 | 0.525 | 0.468 | 0.468 | 0.95 | -15.721 | 16.571 | 0.528 | 0.943 |
| f.age11 - f.age13, KO, 2 | 0.319 | 0.225 | 0.225 | 0.95 | -23.557 | 23.279 | 0.511 | 0.977 |
| f.age11 - f.age15, KO, 2 | -3.917 | -3.649 | -3.649 | 0.95 | -20.377 | 14.177 | 0.669 | 0.663 |
| f.age11 - f.age18, KO, 2 | -6.340 | -6.825 | -6.825 | 0.95 | -27.619 | 11.569 | 0.757 | 0.485 |
| f.age11 - f.age21, KO, 2 | -6.265 | -6.356 | -6.356 | 0.95 | -21.471 | 8.342 | 0.801 | 0.399 |
| f.age13 - f.age15, KO, 2 | -4.656 | -3.874 | -3.874 | 0.95 | -21.725 | 18.850 | 0.679 | 0.641 |
| f.age13 - f.age18, KO, 2 | -7.413 | -7.049 | -7.049 | 0.95 | -27.220 | 15.231 | 0.750 | 0.501 |
| f.age13 - f.age21, KO, 2 | -7.057 | -6.581 | -6.581 | 0.95 | -27.209 | 16.115 | 0.732 | 0.537 |
| f.age15 - f.age18, KO, 2 | -3.295 | -3.175 | -3.175 | 0.95 | -22.525 | 16.697 | 0.631 | 0.738 |
| f.age15 - f.age21, KO, 2 | -3.383 | -2.707 | -2.707 | 0.95 | -15.704 | 14.738 | 0.660 | 0.679 |
| f.age18 - f.age21, KO, 2 | 0.525 | 0.468 | 0.468 | 0.95 | -15.721 | 16.571 | 0.528 | 0.943 |
| f.age11 - f.age13, Ctrl, 4 | 0.319 | 0.225 | 0.225 | 0.95 | -23.557 | 23.279 | 0.511 | 0.977 |
| f.age11 - f.age15, Ctrl, 4 | -3.917 | -3.649 | -3.649 | 0.95 | -20.377 | 14.177 | 0.669 | 0.663 |
| f.age11 - f.age18, Ctrl, 4 | -6.340 | -6.825 | -6.825 | 0.95 | -27.619 | 11.569 | 0.757 | 0.485 |
| f.age11 - f.age21, Ctrl, 4 | -6.265 | -6.356 | -6.356 | 0.95 | -21.471 | 8.342 | 0.801 | 0.399 |
| f.age13 - f.age15, Ctrl, 4 | -4.656 | -3.874 | -3.874 | 0.95 | -21.725 | 18.850 | 0.679 | 0.641 |
| f.age13 - f.age18, Ctrl, 4 | -7.413 | -7.049 | -7.049 | 0.95 | -27.220 | 15.231 | 0.750 | 0.501 |
| f.age13 - f.age21, Ctrl, 4 | -7.057 | -6.581 | -6.581 | 0.95 | -27.209 | 16.115 | 0.732 | 0.537 |
| f.age15 - f.age18, Ctrl, 4 | -3.295 | -3.175 | -3.175 | 0.95 | -22.525 | 16.697 | 0.631 | 0.738 |
| f.age15 - f.age21, Ctrl, 4 | -3.383 | -2.707 | -2.707 | 0.95 | -15.704 | 14.738 | 0.660 | 0.679 |
| f.age18 - f.age21, Ctrl, 4 | 0.525 | 0.468 | 0.468 | 0.95 | -15.721 | 16.571 | 0.528 | 0.943 |
| f.age11 - f.age13, KO, 4 | 0.319 | 0.225 | 0.225 | 0.95 | -23.557 | 23.279 | 0.511 | 0.977 |
| f.age11 - f.age15, KO, 4 | -3.917 | -3.649 | -3.649 | 0.95 | -20.377 | 14.177 | 0.669 | 0.663 |
| f.age11 - f.age18, KO, 4 | -6.340 | -6.825 | -6.825 | 0.95 | -27.619 | 11.569 | 0.757 | 0.485 |
| f.age11 - f.age21, KO, 4 | -6.265 | -6.356 | -6.356 | 0.95 | -21.471 | 8.342 | 0.801 | 0.399 |
| f.age13 - f.age15, KO, 4 | -4.656 | -3.874 | -3.874 | 0.95 | -21.725 | 18.850 | 0.679 | 0.641 |
| f.age13 - f.age18, KO, 4 | -7.413 | -7.049 | -7.049 | 0.95 | -27.220 | 15.231 | 0.750 | 0.501 |
| f.age13 - f.age21, KO, 4 | -7.057 | -6.581 | -6.581 | 0.95 | -27.209 | 16.115 | 0.732 | 0.537 |
| f.age15 - f.age18, KO, 4 | -3.295 | -3.175 | -3.175 | 0.95 | -22.525 | 16.697 | 0.631 | 0.738 |
| f.age15 - f.age21, KO, 4 | -3.383 | -2.707 | -2.707 | 0.95 | -15.704 | 14.738 | 0.660 | 0.679 |
| f.age18 - f.age21, KO, 4 | 0.525 | 0.468 | 0.468 | 0.95 | -15.721 | 16.571 | 0.528 | 0.943 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.layer4 - f.layer2, Ctrl, 11 | -15.751 | -15.386 | -15.386 | 0.95 | -32.494 | 4.847 | 0.945 | 0.11 |
| f.layer4 - f.layer2, KO, 11 | 7.740 | 7.466 | 7.466 | 0.95 | -8.365 | 19.349 | 0.840 | 0.32 |
| f.layer4 - f.layer2, Ctrl, 13 | -15.751 | -15.386 | -15.386 | 0.95 | -32.494 | 4.847 | 0.945 | 0.11 |

|f.layer4 - f.layer2, KO, 13   |   7.740|   7.466|   7.466| 0.95|  -8.365|  19.349| 0.840| 0.32|
|f.layer4 - f.layer2, Ctrl, 15 | -15.751| -15.386| -15.386| 0.95| -32.494|   4.847| 0.945| 0.11|
|f.layer4 - f.layer2, KO, 15   |   7.740|   7.466|   7.466| 0.95|  -8.365|  19.349| 0.840| 0.32|
|f.layer4 - f.layer2, Ctrl, 18 | -15.751| -15.386| -15.386| 0.95| -32.494|   4.847| 0.945| 0.11|
|f.layer4 - f.layer2, KO, 18   |   7.740|   7.466|   7.466| 0.95|  -8.365|  19.349| 0.840| 0.32|
|f.layer4 - f.layer2, Ctrl, 21 | -15.751| -15.386| -15.386| 0.95| -32.494|   4.847| 0.945| 0.11|
|f.layer4 - f.layer2, KO, 21   |   7.740|   7.466|   7.466| 0.95|  -8.365|  19.349| 0.840| 0.32|

Figure 5E (Distance of neuron to subnetwork centroid)

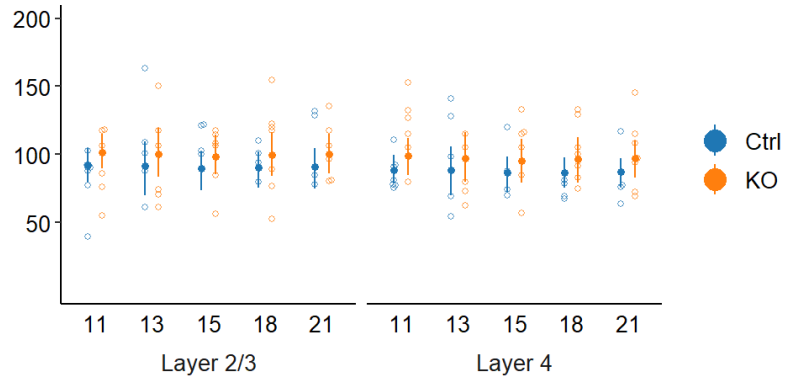


Table: ANOVA table before bootstrapping

|            |       F| Df| Df.res| Pr(>F)|
|:-----------|-------:|--:|------:|------:|
|(Intercept) | 149.957|  1| 23.091|  0.000|
|f.age       |   0.008|  4| 98.084|  1.000|
|group       |   0.943|  1| 10.462|  0.353|
|f.layer     |   0.666|  1| 92.396|  0.417|

Table: Main effect after bootstrapping

|Parameter | Median|   Mean|   CI| CI_low| CI_high|    pd|  pval|
|:---------|------:|------:|----:|------:|-------:|-----:|-----:|
|Ctrl - KO | -9.501| -9.715| 0.95| -25.07|   4.876| 0.906| 0.189|

|Parameter         | Median|   Mean|   CI|  CI_low| CI_high|    pd|  pval|
|:-----------------|------:|------:|----:|-------:|-------:|-----:|-----:|
|f.age11 - f.age13 |  1.067|  1.113| 0.95| -17.149|  19.392| 0.545| 0.909|
|f.age11 - f.age15 |  2.696|  3.065| 0.95|  -9.859|  18.004| 0.652| 0.695|
|f.age11 - f.age18 |  2.835|  2.457| 0.95| -11.575|  14.333| 0.666| 0.668|
|f.age11 - f.age21 |  1.682|  1.718| 0.95|  -8.946|  12.474| 0.624| 0.751|
|f.age13 - f.age15 |  1.418|  1.952| 0.95| -10.579|  17.430| 0.590| 0.820|
|f.age13 - f.age18 |  1.154|  1.343| 0.95| -13.215|  17.489| 0.559| 0.883|
|f.age13 - f.age21 |  0.419|  0.604| 0.95| -14.360|  17.016| 0.521| 0.958|
|f.age15 - f.age18 | -0.755| -0.609| 0.95| -13.195|  13.283| 0.546| 0.907|
|f.age15 - f.age21 | -1.755| -1.347| 0.95| -12.223|  11.916| 0.613| 0.774|
|f.age18 - f.age21 | -0.463| -0.739| 0.95| -11.061|   8.352| 0.538| 0.923|

|Parameter           | Median|  Mean|   CI| CI_low| CI_high|    pd|  pval|
|:-------------------|------:|-----:|----:|------:|-------:|-----:|-----:|
|f.layer2 - f.layer4 |  3.137| 3.239| 0.95| -4.621|  11.565| 0.777| 0.447|

Table: Post-hoc comparison with bootstrapping output

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| KO - Ctrl, 2, 11 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |
| KO - Ctrl, 4, 11 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |
| KO - Ctrl, 2, 13 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |
| KO - Ctrl, 4, 13 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |
| KO - Ctrl, 2, 15 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |
| KO - Ctrl, 4, 15 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |
| KO - Ctrl, 2, 18 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |
| KO - Ctrl, 4, 18 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |
| KO - Ctrl, 2, 21 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |
| KO - Ctrl, 4, 21 | 9.501 | 9.715 | 9.715 | 0.95 | -4.876 | 25.07 | 0.906 | 0.189 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.age11 - f.age13, Ctrl, 2 | 1.067 | 1.113 | 1.113 | 0.95 | -17.149 | 19.392 | 0.545 | 0.909 |
| f.age11 - f.age15, Ctrl, 2 | 2.696 | 3.065 | 3.065 | 0.95 | -9.859 | 18.004 | 0.652 | 0.695 |
| f.age11 - f.age18, Ctrl, 2 | 2.835 | 2.457 | 2.457 | 0.95 | -11.575 | 14.333 | 0.666 | 0.668 |
| f.age11 - f.age21, Ctrl, 2 | 1.682 | 1.718 | 1.718 | 0.95 | -8.946 | 12.474 | 0.624 | 0.751 |
| f.age13 - f.age15, Ctrl, 2 | 1.418 | 1.952 | 1.952 | 0.95 | -10.579 | 17.430 | 0.590 | 0.820 |
| f.age13 - f.age18, Ctrl, 2 | 1.154 | 1.343 | 1.343 | 0.95 | -13.215 | 17.489 | 0.559 | 0.883 |
| f.age13 - f.age21, Ctrl, 2 | 0.419 | 0.604 | 0.604 | 0.95 | -14.360 | 17.016 | 0.521 | 0.958 |
| f.age15 - f.age18, Ctrl, 2 | -0.755 | -0.609 | -0.609 | 0.95 | -13.195 | 13.283 | 0.546 | 0.907 |
| f.age15 - f.age21, Ctrl, 2 | -1.755 | -1.347 | -1.347 | 0.95 | -12.223 | 11.916 | 0.613 | 0.774 |
| f.age18 - f.age21, Ctrl, 2 | -0.463 | -0.739 | -0.739 | 0.95 | -11.061 | 8.352 | 0.538 | 0.923 |
| f.age11 - f.age13, KO, 2 | 1.067 | 1.113 | 1.113 | 0.95 | -17.149 | 19.392 | 0.545 | 0.909 |
| f.age11 - f.age15, KO, 2 | 2.696 | 3.065 | 3.065 | 0.95 | -9.859 | 18.004 | 0.652 | 0.695 |
| f.age11 - f.age18, KO, 2 | 2.835 | 2.457 | 2.457 | 0.95 | -11.575 | 14.333 | 0.666 | 0.668 |
| f.age11 - f.age21, KO, 2 | 1.682 | 1.718 | 1.718 | 0.95 | -8.946 | 12.474 | 0.624 | 0.751 |
| f.age13 - f.age15, KO, 2 | 1.418 | 1.952 | 1.952 | 0.95 | -10.579 | 17.430 | 0.590 | 0.820 |
| f.age13 - f.age18, KO, 2 | 1.154 | 1.343 | 1.343 | 0.95 | -13.215 | 17.489 | 0.559 | 0.883 |
| f.age13 - f.age21, KO, 2 | 0.419 | 0.604 | 0.604 | 0.95 | -14.360 | 17.016 | 0.521 | 0.958 |
| f.age15 - f.age18, KO, 2 | -0.755 | -0.609 | -0.609 | 0.95 | -13.195 | 13.283 | 0.546 | 0.907 |
| f.age15 - f.age21, KO, 2 | -1.755 | -1.347 | -1.347 | 0.95 | -12.223 | 11.916 | 0.613 | 0.774 |
| f.age18 - f.age21, KO, 2 | -0.463 | -0.739 | -0.739 | 0.95 | -11.061 | 8.352 | 0.538 | 0.923 |
| f.age11 - f.age13, Ctrl, 4 | 1.067 | 1.113 | 1.113 | 0.95 | -17.149 | 19.392 | 0.545 | 0.909 |
| f.age11 - f.age15, Ctrl, 4 | 2.696 | 3.065 | 3.065 | 0.95 | -9.859 | 18.004 | 0.652 | 0.695 |
| f.age11 - f.age18, Ctrl, 4 | 2.835 | 2.457 | 2.457 | 0.95 | -11.575 | 14.333 | 0.666 | 0.668 |
| f.age11 - f.age21, Ctrl, 4 | 1.682 | 1.718 | 1.718 | 0.95 | -8.946 | 12.474 | 0.624 | 0.751 |
| f.age13 - f.age15, Ctrl, 4 | 1.418 | 1.952 | 1.952 | 0.95 | -10.579 | 17.430 | 0.590 | 0.820 |
| f.age13 - f.age18, Ctrl, 4 | 1.154 | 1.343 | 1.343 | 0.95 | -13.215 | 17.489 | 0.559 | 0.883 |
| f.age13 - f.age21, Ctrl, 4 | 0.419 | 0.604 | 0.604 | 0.95 | -14.360 | 17.016 | 0.521 | 0.958 |
| f.age15 - f.age18, Ctrl, 4 | -0.755 | -0.609 | -0.609 | 0.95 | -13.195 | 13.283 | 0.546 | 0.907 |
| f.age15 - f.age21, Ctrl, 4 | -1.755 | -1.347 | -1.347 | 0.95 | -12.223 | 11.916 | 0.613 | 0.774 |
| f.age18 - f.age21, Ctrl, 4 | -0.463 | -0.739 | -0.739 | 0.95 | -11.061 | 8.352 | 0.538 | 0.923 |
| f.age11 - f.age13, KO, 4 | 1.067 | 1.113 | 1.113 | 0.95 | -17.149 | 19.392 | 0.545 | 0.909 |
| f.age11 - f.age15, KO, 4 | 2.696 | 3.065 | 3.065 | 0.95 | -9.859 | 18.004 | 0.652 | 0.695 |
| f.age11 - f.age18, KO, 4 | 2.835 | 2.457 | 2.457 | 0.95 | -11.575 | 14.333 | 0.666 | 0.668 |
| f.age11 - f.age21, KO, 4 | 1.682 | 1.718 | 1.718 | 0.95 | -8.946 | 12.474 | 0.624 | 0.751 |
| f.age13 - f.age15, KO, 4 | 1.418 | 1.952 | 1.952 | 0.95 | -10.579 | 17.430 | 0.590 | 0.820 |
| f.age13 - f.age18, KO, 4 | 1.154 | 1.343 | 1.343 | 0.95 | -13.215 | 17.489 | 0.559 | 0.883 |
| f.age13 - f.age21, KO, 4 | 0.419 | 0.604 | 0.604 | 0.95 | -14.360 | 17.016 | 0.521 | 0.958 |
| f.age15 - f.age18, KO, 4 | -0.755 | -0.609 | -0.609 | 0.95 | -13.195 | 13.283 | 0.546 | 0.907 |
| f.age15 - f.age21, KO, 4 | -1.755 | -1.347 | -1.347 | 0.95 | -12.223 | 11.916 | 0.613 | 0.774 |
| f.age18 - f.age21, KO, 4 | -0.463 | -0.739 | -0.739 | 0.95 | -11.061 | 8.352 | 0.538 | 0.923 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.layer4 - f.layer2, Ctrl, 11 | -3.137 | -3.239 | -3.239 | 0.95 | -11.565 | 4.621 | 0.777 | 0.447 |
| f.layer4 - f.layer2, KO, 11 | -3.137 | -3.239 | -3.239 | 0.95 | -11.565 | 4.621 | 0.777 | 0.447 |
| f.layer4 - f.layer2, Ctrl, 13 | -3.137 | -3.239 | -3.239 | 0.95 | -11.565 | 4.621 | 0.777 | 0.447 |

|f.layer4 - f.layer2, KO, 13   | -3.137| -3.239| -3.239| 0.95| -11.565|   4.621| 0.777| 0.447|
|f.layer4 - f.layer2, Ctrl, 15 | -3.137| -3.239| -3.239| 0.95| -11.565|   4.621| 0.777| 0.447|
|f.layer4 - f.layer2, KO, 15   | -3.137| -3.239| -3.239| 0.95| -11.565|   4.621| 0.777| 0.447|
|f.layer4 - f.layer2, Ctrl, 18 | -3.137| -3.239| -3.239| 0.95| -11.565|   4.621| 0.777| 0.447|
|f.layer4 - f.layer2, KO, 18   | -3.137| -3.239| -3.239| 0.95| -11.565|   4.621| 0.777| 0.447|
|f.layer4 - f.layer2, Ctrl, 21 | -3.137| -3.239| -3.239| 0.95| -11.565|   4.621| 0.777| 0.447|
|f.layer4 - f.layer2, KO, 21   | -3.137| -3.239| -3.239| 0.95| -11.565|   4.621| 0.777| 0.447|

Figure 5D (Pairwise distances subnetwork centroids)

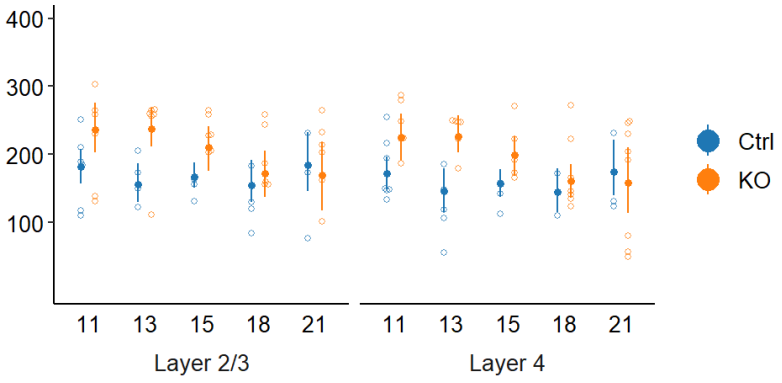


Table: ANOVA table before bootstrapping

|            |       F| Df| Df.res| Pr(>F)|
|:-----------|-------:|--:|------:|------:|
|(Intercept) | 111.472|  1| 25.218|  0.000|
|f.age       |   0.835|  4| 86.496|  0.507|
|group       |   4.665|  1| 22.534|  0.042|
|f.layer     |   1.522|  1| 82.971|  0.221|
|f.age:group |   3.146|  4| 85.465|  0.018|

Table: Main effect after bootstrapping

|Parameter |  Median|    Mean|   CI|  CI_low| CI_high|    pd|  pval|
|:---------|-------:|-------:|----:|-------:|-------:|-----:|-----:|
|Ctrl - KO | -34.585| -34.937| 0.95| -69.828|   0.194| 0.974| 0.052|

|Parameter         |  Median|    Mean|   CI|  CI_low| CI_high|    pd|  pval|
|:-----------------|-------:|-------:|----:|-------:|-------:|-----:|-----:|
|f.age11 - f.age13 |  10.999|  10.831| 0.95| -12.518|  32.954| 0.825| 0.350|
|f.age11 - f.age15 |  20.381|  20.294| 0.95|   4.442|  36.013| 0.995| 0.010|
|f.age11 - f.age18 |  45.440|  45.591| 0.95|  26.572|  66.304| 1.000| 0.000|
|f.age11 - f.age21 |  31.265|  31.148| 0.95|   9.588|  52.842| 0.992| 0.015|
|f.age13 - f.age15 |   9.686|   9.462| 0.95| -10.274|  28.406| 0.826| 0.349|
|f.age13 - f.age18 |  34.856|  34.760| 0.95|   7.068|  62.242| 0.997| 0.007|
|f.age13 - f.age21 |  20.776|  20.316| 0.95| -18.722|  57.858| 0.850| 0.301|
|f.age15 - f.age18 |  25.494|  25.298| 0.95|   9.309|  40.535| 0.999| 0.001|
|f.age15 - f.age21 |  11.331|  10.854| 0.95| -20.904|  39.591| 0.776| 0.449|
|f.age18 - f.age21 | -14.713| -14.444| 0.95| -40.300|  11.888| 0.873| 0.255|

|Parameter          | Median| Mean|   CI| CI_low| CI_high|   pd| pval|
|:------------------|------:|----:|----:|------:|-------:|----:|----:|
|f.layer2 - f.layer4 | 10.642| 10.6| 0.95| -5.238|  26.189| 0.91| 0.18|

Table: Post-hoc comparison with bootstrapping output

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| KO - Ctrl, 2, 11 | 53.939 | 54.269 | 54.269 | 0.95 | 14.495 | 96.761 | 0.994 | 0.013 |
| KO - Ctrl, 4, 11 | 53.939 | 54.269 | 54.269 | 0.95 | 14.495 | 96.761 | 0.994 | 0.013 |
| KO - Ctrl, 2, 13 | 82.880 | 82.671 | 82.671 | 0.95 | 38.160 | 123.256 | 1.000 | 0.000 |
| KO - Ctrl, 4, 13 | 82.880 | 82.671 | 82.671 | 0.95 | 38.160 | 123.256 | 1.000 | 0.000 |
| KO - Ctrl, 2, 15 | 42.533 | 41.938 | 41.938 | 0.95 | 2.477 | 78.019 | 0.980 | 0.040 |
| KO - Ctrl, 4, 15 | 42.533 | 41.938 | 41.938 | 0.95 | 2.477 | 78.019 | 0.980 | 0.040 |
| KO - Ctrl, 2, 18 | 16.171 | 15.466 | 15.466 | 0.95 | -30.238 | 56.588 | 0.762 | 0.477 |
| KO - Ctrl, 4, 18 | 16.171 | 15.466 | 15.466 | 0.95 | -30.238 | 56.588 | 0.762 | 0.477 |
| KO - Ctrl, 2, 21 | -17.876 | -19.657 | -19.657 | 0.95 | -88.781 | 40.557 | 0.710 | 0.579 |
| KO - Ctrl, 4, 21 | -17.876 | -19.657 | -19.657 | 0.95 | -88.781 | 40.557 | 0.710 | 0.579 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.age11 - f.age13, Ctrl, 2 | 24.323 | 25.032 | 25.032 | 0.95 | -8.465 | 63.426 | 0.924 | 0.152 |
| f.age11 - f.age15, Ctrl, 2 | 13.812 | 14.129 | 14.129 | 0.95 | -6.358 | 35.244 | 0.891 | 0.218 |
| f.age11 - f.age18, Ctrl, 2 | 25.431 | 26.190 | 26.190 | 0.95 | -0.349 | 59.505 | 0.973 | 0.055 |
| f.age11 - f.age21, Ctrl, 2 | -6.082 | -5.815 | -5.815 | 0.95 | -37.105 | 30.336 | 0.643 | 0.714 |
| f.age13 - f.age15, Ctrl, 2 | -10.566 | -10.904 | -10.904 | 0.95 | -43.536 | 19.495 | 0.745 | 0.509 |
| f.age13 - f.age18, Ctrl, 2 | 1.483 | 1.158 | 1.158 | 0.95 | -49.664 | 51.704 | 0.529 | 0.942 |
| f.age13 - f.age21, Ctrl, 2 | -28.175 | -30.847 | -30.847 | 0.95 | -99.087 | 25.679 | 0.843 | 0.314 |
| f.age15 - f.age18, Ctrl, 2 | 11.938 | 12.062 | 12.062 | 0.95 | -11.173 | 35.325 | 0.885 | 0.230 |
| f.age15 - f.age21, Ctrl, 2 | -17.842 | -19.944 | -19.944 | 0.95 | -62.961 | 16.017 | 0.867 | 0.267 |
| f.age18 - f.age21, Ctrl, 2 | -30.333 | -32.005 | -32.005 | 0.95 | -72.387 | -3.798 | 0.981 | 0.038 |
| f.age11 - f.age13, KO, 2 | -2.180 | -3.370 | -3.370 | 0.95 | -36.263 | 20.430 | 0.562 | 0.876 |
| f.age11 - f.age15, KO, 2 | 26.808 | 26.459 | 26.459 | 0.95 | 0.326 | 50.154 | 0.977 | 0.046 |
| f.age11 - f.age18, KO, 2 | 65.505 | 64.993 | 64.993 | 0.95 | 37.649 | 91.381 | 1.000 | 0.000 |
| f.age11 - f.age21, KO, 2 | 69.482 | 68.111 | 68.111 | 0.95 | 39.114 | 89.190 | 0.995 | 0.010 |
| f.age13 - f.age15, KO, 2 | 30.302 | 29.829 | 29.829 | 0.95 | 4.596 | 52.108 | 0.987 | 0.026 |
| f.age13 - f.age18, KO, 2 | 69.072 | 68.362 | 68.362 | 0.95 | 40.761 | 89.305 | 1.000 | 0.000 |
| f.age13 - f.age21, KO, 2 | 70.038 | 71.480 | 71.480 | 0.95 | 31.047 | 120.723 | 0.993 | 0.013 |
| f.age15 - f.age18, KO, 2 | 39.397 | 38.534 | 38.534 | 0.95 | 15.274 | 60.336 | 1.000 | 0.000 |
| f.age15 - f.age21, KO, 2 | 41.662 | 41.652 | 41.652 | 0.95 | -5.903 | 87.455 | 0.955 | 0.090 |
| f.age18 - f.age21, KO, 2 | 1.889 | 3.118 | 3.118 | 0.95 | -29.444 | 47.691 | 0.535 | 0.930 |
| f.age11 - f.age13, Ctrl, 4 | 24.323 | 25.032 | 25.032 | 0.95 | -8.465 | 63.426 | 0.924 | 0.152 |
| f.age11 - f.age15, Ctrl, 4 | 13.812 | 14.129 | 14.129 | 0.95 | -6.358 | 35.244 | 0.891 | 0.218 |
| f.age11 - f.age18, Ctrl, 4 | 25.431 | 26.190 | 26.190 | 0.95 | -0.349 | 59.505 | 0.973 | 0.055 |
| f.age11 - f.age21, Ctrl, 4 | -6.082 | -5.815 | -5.815 | 0.95 | -37.105 | 30.336 | 0.643 | 0.714 |
| f.age13 - f.age15, Ctrl, 4 | -10.566 | -10.904 | -10.904 | 0.95 | -43.536 | 19.495 | 0.745 | 0.509 |
| f.age13 - f.age18, Ctrl, 4 | 1.483 | 1.158 | 1.158 | 0.95 | -49.664 | 51.704 | 0.529 | 0.942 |
| f.age13 - f.age21, Ctrl, 4 | -28.175 | -30.847 | -30.847 | 0.95 | -99.087 | 25.679 | 0.843 | 0.314 |
| f.age15 - f.age18, Ctrl, 4 | 11.938 | 12.062 | 12.062 | 0.95 | -11.173 | 35.325 | 0.885 | 0.230 |
| f.age15 - f.age21, Ctrl, 4 | -17.842 | -19.944 | -19.944 | 0.95 | -62.961 | 16.017 | 0.867 | 0.267 |
| f.age18 - f.age21, Ctrl, 4 | -30.333 | -32.005 | -32.005 | 0.95 | -72.387 | -3.798 | 0.981 | 0.038 |
| f.age11 - f.age13, KO, 4 | -2.180 | -3.370 | -3.370 | 0.95 | -36.263 | 20.430 | 0.562 | 0.876 |
| f.age11 - f.age15, KO, 4 | 26.808 | 26.459 | 26.459 | 0.95 | 0.326 | 50.154 | 0.977 | 0.046 |
| f.age11 - f.age18, KO, 4 | 65.505 | 64.993 | 64.993 | 0.95 | 37.649 | 91.381 | 1.000 | 0.000 |
| f.age11 - f.age21, KO, 4 | 69.482 | 68.111 | 68.111 | 0.95 | 39.114 | 89.190 | 0.995 | 0.010 |
| f.age13 - f.age15, KO, 4 | 30.302 | 29.829 | 29.829 | 0.95 | 4.596 | 52.108 | 0.987 | 0.026 |
| f.age13 - f.age18, KO, 4 | 69.072 | 68.362 | 68.362 | 0.95 | 40.761 | 89.305 | 1.000 | 0.000 |
| f.age13 - f.age21, KO, 4 | 70.038 | 71.480 | 71.480 | 0.95 | 31.047 | 120.723 | 0.993 | 0.013 |
| f.age15 - f.age18, KO, 4 | 39.397 | 38.534 | 38.534 | 0.95 | 15.274 | 60.336 | 1.000 | 0.000 |
| f.age15 - f.age21, KO, 4 | 41.662 | 41.652 | 41.652 | 0.95 | -5.903 | 87.455 | 0.955 | 0.090 |
| f.age18 - f.age21, KO, 4 | 1.889 | 3.118 | 3.118 | 0.95 | -29.444 | 47.691 | 0.535 | 0.930 |

| Parameter | Median | Mean | Mean.1 | CI | CI_low | CI_high | pd | pval |
|---|---|---|---|---|---|---|---|---|
| f.layer4 - f.layer2, Ctrl, 11 | -10.642 | -10.6 | -10.6 | 0.95 | -26.189 | 5.238 | 0.91 | 0.18 |
| f.layer4 - f.layer2, KO, 11 | -10.642 | -10.6 | -10.6 | 0.95 | -26.189 | 5.238 | 0.91 | 0.18 |
| f.layer4 - f.layer2, Ctrl, 13 | -10.642 | -10.6 | -10.6 | 0.95 | -26.189 | 5.238 | 0.91 | 0.18 |

|f.layer4 - f.layer2, KO, 13   | -10.642| -10.6|  -10.6| 0.95| -26.189|   5.238| 0.91| 0.18|
|f.layer4 - f.layer2, Ctrl, 15 | -10.642| -10.6|  -10.6| 0.95| -26.189|   5.238| 0.91| 0.18|
|f.layer4 - f.layer2, KO, 15   | -10.642| -10.6|  -10.6| 0.95| -26.189|   5.238| 0.91| 0.18|
|f.layer4 - f.layer2, Ctrl, 18 | -10.642| -10.6|  -10.6| 0.95| -26.189|   5.238| 0.91| 0.18|
|f.layer4 - f.layer2, KO, 18   | -10.642| -10.6|  -10.6| 0.95| -26.189|   5.238| 0.91| 0.18|
|f.layer4 - f.layer2, Ctrl, 21 | -10.642| -10.6|  -10.6| 0.95| -26.189|   5.238| 0.91| 0.18|
|f.layer4 - f.layer2, KO, 21   | -10.642| -10.6|  -10.6| 0.95| -26.189|   5.238| 0.91| 0.18|