Figure Supp4

Figure Supp 4A- Kmean_CovM -tCC for all pairs

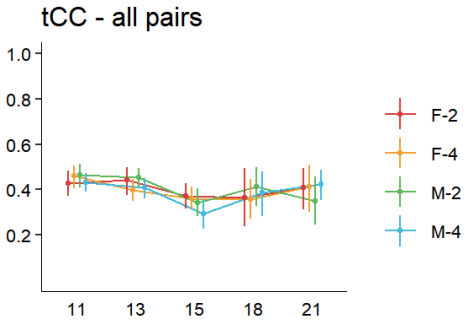


Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	277.461	1	63.813	0.000
f.age	10.515	4	414.209	0.000
sex	0.645	1	29.545	0.428
f.layer	6.912	1	373.472	0.009

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	0.049	0.051	0.95	-0.005	0.116	0.962	0.076
f.age11 - f.age15	0.150	0.151	0.95	0.089	0.218	1.000	0.000
f.age11 - f.age18	0.092	0.092	0.95	-0.007	0.195	0.966	0.069
f.age11 - f.age21	0.128	0.130	0.95	0.042	0.230	0.998	0.003
f.age13 - f.age15	0.099	0.100	0.95	0.051	0.153	1.000	0.000
f.age13 - f.age18	0.041	0.041	0.95	-0.062	0.148	0.772	0.455
f.age13 - f.age21	0.078	0.079	0.95	-0.009	0.176	0.959	0.082
f.age15 - f.age18	-0.059	-0.059	0.95	-0.140	0.022	0.922	0.156
f.age15 - f.age21	-0.022	-0.021	0.95	-0.107	0.077	0.687	0.626
f.age18 - f.age21	0.037	0.038	0.95	-0.062	0.145	0.759	0.482

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	0.022	0.021	0.95	-0.023	0.064	0.824	0.352

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	0.042	0.042	0.95	0.013	0.074	0.999	0.001

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	0.049	0.051	0.051	0.95	-0.005	0.116	0.962	0.076
f.age11 - f.age15 F 2	0.150	0.151	0.151	0.95	0.089	0.218	1.000	0.000
f.age11 - f.age18 F 2	0.092	0.092	0.092	0.95	-0.007	0.195	0.966	0.069
f.age11 - f.age21 F 2	0.128	0.130	0.130	0.95	0.042	0.230	0.998	0.003
f.age13 - f.age15 F 2	0.099	0.100	0.100	0.95	0.051	0.153	1.000	0.000
f.age13 - f.age18 F 2	0.041	0.041	0.041	0.95	-0.062	0.148	0.772	0.455
f.age13 - f.age21 F 2	0.078	0.079	0.079	0.95	-0.009	0.176	0.959	0.082
f.age15 - f.age18 F 2	-0.059	-0.059	-0.059	0.95	-0.140	0.022	0.922	0.156
f.age15 - f.age21 F 2	-0.022	-0.021	-0.021	0.95	-0.107	0.077	0.687	0.626
f.age18 - f.age21 F 2	0.037	0.038	0.038	0.95	-0.062	0.145	0.759	0.482
f.age11 - f.age13 M 2	0.049	0.051	0.051	0.95	-0.005	0.116	0.962	0.076
f.age11 - f.age15 M 2	0.150	0.151	0.151	0.95	0.089	0.218	1.000	0.000
f.age11 - f.age18 M 2	0.092	0.092	0.092	0.95	-0.007	0.195	0.966	0.069
f.age11 - f.age21 M 2	0.128	0.130	0.130	0.95	0.042	0.230	0.998	0.003
f.age13 - f.age15 M 2	0.099	0.100	0.100	0.95	0.051	0.153	1.000	0.000
f.age13 - f.age18 M 2	0.041	0.041	0.041	0.95	-0.062	0.148	0.772	0.455
f.age13 - f.age21 M 2	0.078	0.079	0.079	0.95	-0.009	0.176	0.959	0.082
f.age15 - f.age18 M 2	-0.059	-0.059	-0.059	0.95	-0.140	0.022	0.922	0.156
f.age15 - f.age21 M 2	-0.022	-0.021	-0.021	0.95	-0.107	0.077	0.687	0.626
f.age18 - f.age21 M 2	0.037	0.038	0.038	0.95	-0.062	0.145	0.759	0.482
f.age11 - f.age13 F 4	0.049	0.051	0.051	0.95	-0.005	0.116	0.962	0.076
f.age11 - f.age15 F 4	0.150	0.151	0.151	0.95	0.089	0.218	1.000	0.000
f.age11 - f.age18 F 4	0.092	0.092	0.092	0.95	-0.007	0.195	0.966	0.069
f.age11 - f.age21 F 4	0.128	0.130	0.130	0.95	0.042	0.230	0.998	0.003
f.age13 - f.age15 F 4	0.099	0.100	0.100	0.95	0.051	0.153	1.000	0.000
f.age13 - f.age18 F 4	0.041	0.041	0.041	0.95	-0.062	0.148	0.772	0.455
f.age13 - f.age21 F 4	0.078	0.079	0.079	0.95	-0.009	0.176	0.959	0.082
f.age15 - f.age18 F 4	-0.059	-0.059	-0.059	0.95	-0.140	0.022	0.922	0.156
f.age15 - f.age21 F 4	-0.022	-0.021	-0.021	0.95	-0.107	0.077	0.687	0.626
f.age18 - f.age21 F 4	0.037	0.038	0.038	0.95	-0.062	0.145	0.759	0.482
f.age11 - f.age13 M 4	0.049	0.051	0.051	0.95	-0.005	0.116	0.962	0.076
f.age11 - f.age15 M 4	0.150	0.151	0.151	0.95	0.089	0.218	1.000	0.000
f.age11 - f.age18 M 4	0.092	0.092	0.092	0.95	-0.007	0.195	0.966	0.069
f.age11 - f.age21 M 4	0.128	0.130	0.130	0.95	0.042	0.230	0.998	0.003
f.age13 - f.age15 M 4	0.099	0.100	0.100	0.95	0.051	0.153	1.000	0.000
f.age13 - f.age18 M 4	0.041	0.041	0.041	0.95	-0.062	0.148	0.772	0.455
f.age13 - f.age21 M 4	0.078	0.079	0.079	0.95	-0.009	0.176	0.959	0.082
f.age15 - f.age18 M 4	-0.059	-0.059	-0.059	0.95	-0.140	0.022	0.922	0.156
f.age15 - f.age21 M 4	-0.022	-0.021	-0.021	0.95	-0.107	0.077	0.687	0.626
f.age18 - f.age21 M 4	0.037	0.038	0.038	0.95	-0.062	0.145	0.759	0.482

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352
M - F 4 11	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352
M - F 2 13	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352
M - F 4 13	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352
M - F 2 15	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352
M - F 4 15	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352
M - F 2 18	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352
M - F 4 18	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352
M - F 2 21	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352
M - F 4 21	-0.022	-0.021	-0.021	0.95	-0.064	0.023	0.824	0.352

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	-0.042	-0.042	-0.042	0.95	-0.074	-0.013	0.999	0.001
f.layer4 - f.layer2 M 11	-0.042	-0.042	-0.042	0.95	-0.074	-0.013	0.999	0.001
f.layer4 - f.layer2 F 13	-0.042	-0.042	-0.042	0.95	-0.074	-0.013	0.999	0.001

```
|f.layer4 - f.layer2 M 13 | -0.042| -0.042| -0.042| 0.95| -0.074|  -0.013| 0.999| 0.001|
|f.layer4 - f.layer2 F 15 | -0.042| -0.042| -0.042| 0.95| -0.074|  -0.013| 0.999| 0.001|
|f.layer4 - f.layer2 M 15 | -0.042| -0.042| -0.042| 0.95| -0.074|  -0.013| 0.999| 0.001|
|f.layer4 - f.layer2 F 18 | -0.042| -0.042| -0.042| 0.95| -0.074|  -0.013| 0.999| 0.001|
|f.layer4 - f.layer2 M 18 | -0.042| -0.042| -0.042| 0.95| -0.074|  -0.013| 0.999| 0.001|
|f.layer4 - f.layer2 F 21 | -0.042| -0.042| -0.042| 0.95| -0.074|  -0.013| 0.999| 0.001|
|f.layer4 - f.layer2 M 21 | -0.042| -0.042| -0.042| 0.95| -0.074|  -0.013| 0.999| 0.001|
```

Figure Supp 4B- Kmean_CovM -tCC in - out subnetwork

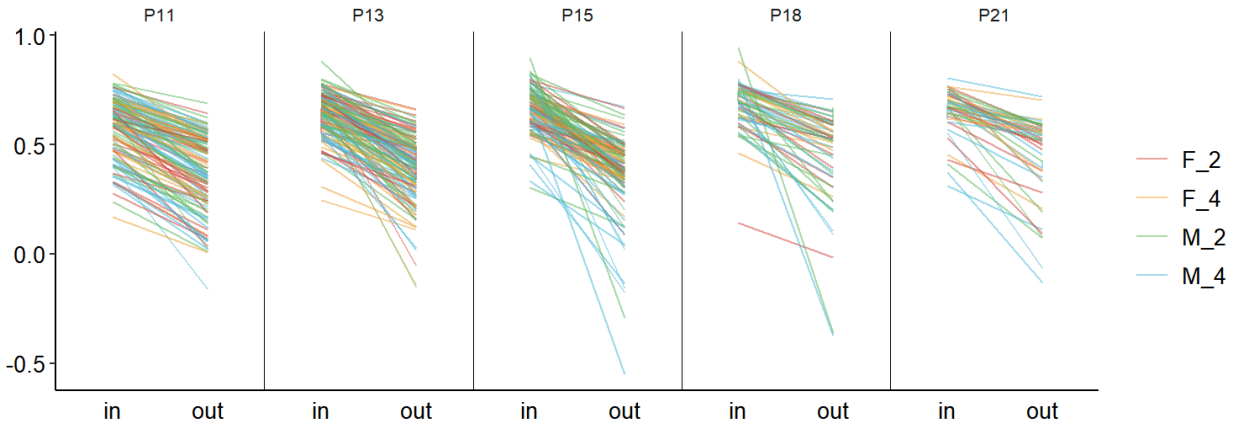
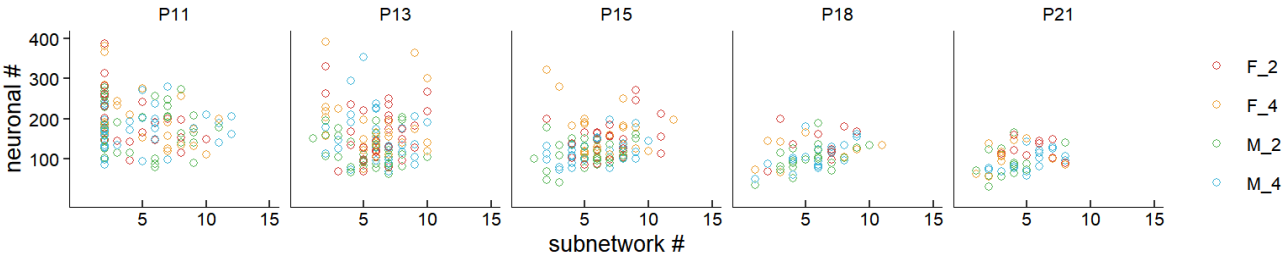


Figure Supp 4C - neuronal number vs subnetwork number




```
    Shapiro-Wilk normality test

data:  df_lite_fig$n_cls
W = 0.95653, p-value = 3.091e-10
```

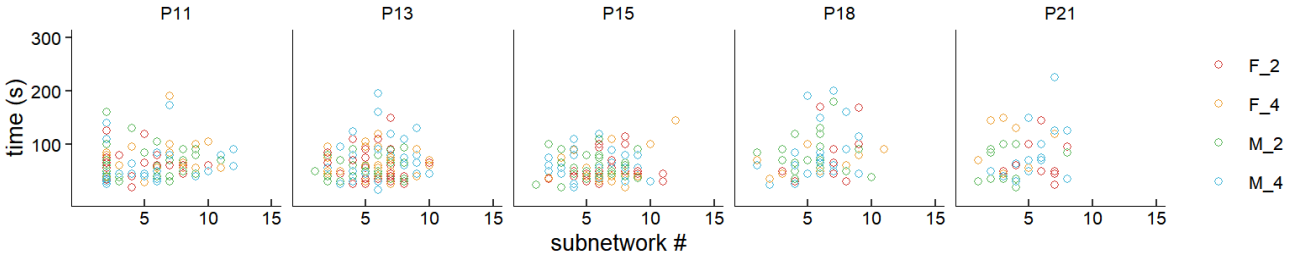
```
    Shapiro-Wilk normality test

data:  df_lite_fig$total_cell_number
W = 0.93252, p-value = 2.285e-13
```

```
    Spearman's rank correlation rho

data:  df_lite_fig$n_cls and df_lite_fig$total_cell_number
S = 14551867, p-value = 0.4539
alternative hypothesis: true rho is not equal to 0
sample estimates:
       rho
0.03543143
```

Figure Supp 4D - time vs subnetwork number




```
    Shapiro-Wilk normality test

data:  df_lite_fig$time_interval
W = 0.88148, p-value < 2.2e-16
```

```
    Spearman's rank correlation rho

data:  df_lite_fig$n_cls and df_lite_fig$time_interval
S = 13282939, p-value = 0.01124
alternative hypothesis: true rho is not equal to 0
sample estimates:
      rho
0.1195421
```

Figure Supp 4E - Kmean_CovM

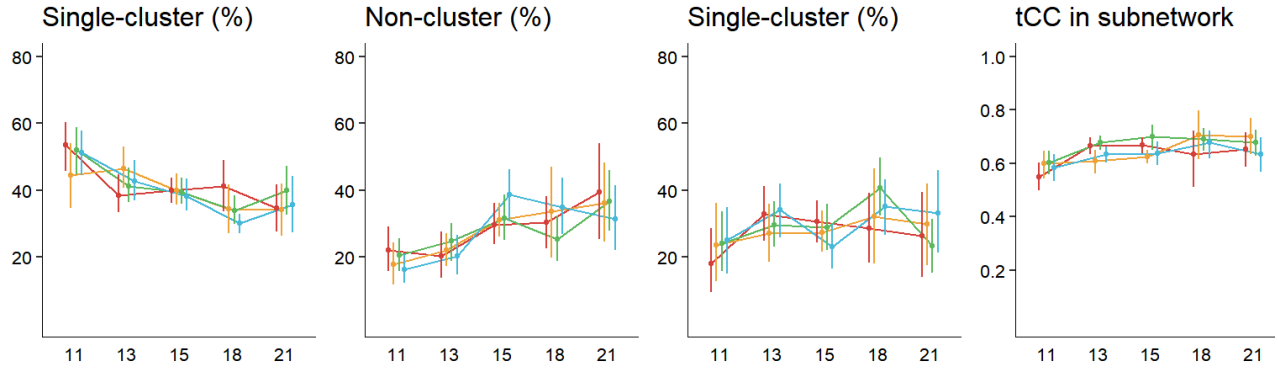


Figure Supp 4E - Kmean_CovM - Single-cluster

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	475.779	1	65.491	0.000
f.age	15.727	4	410.681	0.000
sex	0.054	1	28.302	0.817
f.layer	0.111	1	372.570	0.739

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	9.813	9.834	0.95	4.042	15.637	1.000	0.001
f.age11 - f.age15	13.972	13.972	0.95	9.155	18.812	1.000	0.000
f.age11 - f.age18	17.644	17.647	0.95	11.569	23.682	1.000	0.000
f.age11 - f.age21	15.106	15.006	0.95	6.153	23.750	1.000	0.001
f.age13 - f.age15	4.110	4.138	0.95	0.983	7.422	0.995	0.011
f.age13 - f.age18	7.745	7.813	0.95	3.426	12.622	1.000	0.000
f.age13 - f.age21	5.207	5.172	0.95	-2.339	12.109	0.912	0.175
f.age15 - f.age18	3.653	3.675	0.95	-0.005	7.419	0.975	0.050
f.age15 - f.age21	1.060	1.034	0.95	-5.169	7.138	0.633	0.734
f.age18 - f.age21	-2.658	-2.641	0.95	-9.605	4.412	0.771	0.458

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	0.631	0.619	0.95	-3.613	4.789	0.611	0.778

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	0.468	0.469	0.95	-1.875	2.847	0.647	0.706

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	9.813	9.834	9.834	0.95	4.042	15.637	1.000	0.001
f.age11 - f.age15 F 2	13.972	13.972	13.972	0.95	9.155	18.812	1.000	0.000
f.age11 - f.age18 F 2	17.644	17.647	17.647	0.95	11.569	23.682	1.000	0.000
f.age11 - f.age21 F 2	15.106	15.006	15.006	0.95	6.153	23.750	1.000	0.001
f.age13 - f.age15 F 2	4.110	4.138	4.138	0.95	0.983	7.422	0.995	0.011
f.age13 - f.age18 F 2	7.745	7.813	7.813	0.95	3.426	12.622	1.000	0.000
f.age13 - f.age21 F 2	5.207	5.172	5.172	0.95	-2.339	12.109	0.912	0.175
f.age15 - f.age18 F 2	3.653	3.675	3.675	0.95	-0.005	7.419	0.975	0.050
f.age15 - f.age21 F 2	1.060	1.034	1.034	0.95	-5.169	7.138	0.633	0.734
f.age18 - f.age21 F 2	-2.658	-2.641	-2.641	0.95	-9.605	4.412	0.771	0.458
f.age11 - f.age13 M 2	9.813	9.834	9.834	0.95	4.042	15.637	1.000	0.001
f.age11 - f.age15 M 2	13.972	13.972	13.972	0.95	9.155	18.812	1.000	0.000
f.age11 - f.age18 M 2	17.644	17.647	17.647	0.95	11.569	23.682	1.000	0.000
f.age11 - f.age21 M 2	15.106	15.006	15.006	0.95	6.153	23.750	1.000	0.001
f.age13 - f.age15 M 2	4.110	4.138	4.138	0.95	0.983	7.422	0.995	0.011
f.age13 - f.age18 M 2	7.745	7.813	7.813	0.95	3.426	12.622	1.000	0.000
f.age13 - f.age21 M 2	5.207	5.172	5.172	0.95	-2.339	12.109	0.912	0.175
f.age15 - f.age18 M 2	3.653	3.675	3.675	0.95	-0.005	7.419	0.975	0.050
f.age15 - f.age21 M 2	1.060	1.034	1.034	0.95	-5.169	7.138	0.633	0.734
f.age18 - f.age21 M 2	-2.658	-2.641	-2.641	0.95	-9.605	4.412	0.771	0.458
f.age11 - f.age13 F 4	9.813	9.834	9.834	0.95	4.042	15.637	1.000	0.001
f.age11 - f.age15 F 4	13.972	13.972	13.972	0.95	9.155	18.812	1.000	0.000
f.age11 - f.age18 F 4	17.644	17.647	17.647	0.95	11.569	23.682	1.000	0.000
f.age11 - f.age21 F 4	15.106	15.006	15.006	0.95	6.153	23.750	1.000	0.001
f.age13 - f.age15 F 4	4.110	4.138	4.138	0.95	0.983	7.422	0.995	0.011
f.age13 - f.age18 F 4	7.745	7.813	7.813	0.95	3.426	12.622	1.000	0.000
f.age13 - f.age21 F 4	5.207	5.172	5.172	0.95	-2.339	12.109	0.912	0.175
f.age15 - f.age18 F 4	3.653	3.675	3.675	0.95	-0.005	7.419	0.975	0.050
f.age15 - f.age21 F 4	1.060	1.034	1.034	0.95	-5.169	7.138	0.633	0.734
f.age18 - f.age21 F 4	-2.658	-2.641	-2.641	0.95	-9.605	4.412	0.771	0.458
f.age11 - f.age13 M 4	9.813	9.834	9.834	0.95	4.042	15.637	1.000	0.001
f.age11 - f.age15 M 4	13.972	13.972	13.972	0.95	9.155	18.812	1.000	0.000
f.age11 - f.age18 M 4	17.644	17.647	17.647	0.95	11.569	23.682	1.000	0.000
f.age11 - f.age21 M 4	15.106	15.006	15.006	0.95	6.153	23.750	1.000	0.001
f.age13 - f.age15 M 4	4.110	4.138	4.138	0.95	0.983	7.422	0.995	0.011
f.age13 - f.age18 M 4	7.745	7.813	7.813	0.95	3.426	12.622	1.000	0.000
f.age13 - f.age21 M 4	5.207	5.172	5.172	0.95	-2.339	12.109	0.912	0.175
f.age15 - f.age18 M 4	3.653	3.675	3.675	0.95	-0.005	7.419	0.975	0.050
f.age15 - f.age21 M 4	1.060	1.034	1.034	0.95	-5.169	7.138	0.633	0.734
f.age18 - f.age21 M 4	-2.658	-2.641	-2.641	0.95	-9.605	4.412	0.771	0.458

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778
M - F 4 11	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778
M - F 2 13	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778
M - F 4 13	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778
M - F 2 15	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778
M - F 4 15	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778
M - F 2 18	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778
M - F 4 18	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778
M - F 2 21	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778
M - F 4 21	-0.631	-0.619	-0.619	0.95	-4.789	3.613	0.611	0.778

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706
f.layer4 - f.layer2 M 11	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706
f.layer4 - f.layer2 F 13	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706

f.layer4 - f.layer2 M 13	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706
f.layer4 - f.layer2 F 15	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706
f.layer4 - f.layer2 M 15	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706
f.layer4 - f.layer2 F 18	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706
f.layer4 - f.layer2 M 18	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706
f.layer4 - f.layer2 F 21	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706
f.layer4 - f.layer2 M 21	-0.468	-0.469	-0.469	0.95	-2.847	1.875	0.647	0.706

Figure Supp 4E - Kmean_CovM - Non-cluster

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	70.573	1	97.414	0.000
f.age	14.951	4	406.275	0.000
sex	0.001	1	25.334	0.972
f.layer	0.031	1	376.025	0.861

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	-4.526	-4.573	0.95	-10.824	1.380	0.930	0.140
f.age11 - f.age15	-14.974	-15.046	0.95	-21.736	-8.658	1.000	0.000
f.age11 - f.age18	-12.705	-12.590	0.95	-20.356	-4.414	0.998	0.004
f.age11 - f.age21	-18.664	-18.669	0.95	-26.481	-10.847	1.000	0.000
f.age13 - f.age15	-10.435	-10.473	0.95	-15.572	-5.591	1.000	0.000
f.age13 - f.age18	-8.093	-8.017	0.95	-15.976	0.178	0.972	0.056
f.age13 - f.age21	-14.026	-14.096	0.95	-21.409	-7.113	1.000	0.000
f.age15 - f.age18	2.435	2.456	0.95	-3.387	8.563	0.795	0.409
f.age15 - f.age21	-3.566	-3.623	0.95	-11.986	4.388	0.806	0.387
f.age18 - f.age21	-6.023	-6.079	0.95	-14.115	1.424	0.941	0.117

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	0.051	0.094	0.95	-3.251	3.682	0.513	0.975

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	0.268	0.283	0.95	-2.177	2.847	0.588	0.825

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	-4.526	-4.573	-4.573	0.95	-10.824	1.380	0.930	0.140
f.age11 - f.age15 F 2	-14.974	-15.046	-15.046	0.95	-21.736	-8.658	1.000	0.000
f.age11 - f.age18 F 2	-12.705	-12.590	-12.590	0.95	-20.356	-4.414	0.998	0.004
f.age11 - f.age21 F 2	-18.664	-18.669	-18.669	0.95	-26.481	-10.847	1.000	0.000
f.age13 - f.age15 F 2	-10.435	-10.473	-10.473	0.95	-15.572	-5.591	1.000	0.000
f.age13 - f.age18 F 2	-8.093	-8.017	-8.017	0.95	-15.976	0.178	0.972	0.056
f.age13 - f.age21 F 2	-14.026	-14.096	-14.096	0.95	-21.409	-7.113	1.000	0.000
f.age15 - f.age18 F 2	2.435	2.456	2.456	0.95	-3.387	8.563	0.795	0.409
f.age15 - f.age21 F 2	-3.566	-3.623	-3.623	0.95	-11.986	4.388	0.806	0.387
f.age18 - f.age21 F 2	-6.023	-6.079	-6.079	0.95	-14.115	1.424	0.941	0.117
f.age11 - f.age13 M 2	-4.526	-4.573	-4.573	0.95	-10.824	1.380	0.930	0.140
f.age11 - f.age15 M 2	-14.974	-15.046	-15.046	0.95	-21.736	-8.658	1.000	0.000
f.age11 - f.age18 M 2	-12.705	-12.590	-12.590	0.95	-20.356	-4.414	0.998	0.004
f.age11 - f.age21 M 2	-18.664	-18.669	-18.669	0.95	-26.481	-10.847	1.000	0.000
f.age13 - f.age15 M 2	-10.435	-10.473	-10.473	0.95	-15.572	-5.591	1.000	0.000
f.age13 - f.age18 M 2	-8.093	-8.017	-8.017	0.95	-15.976	0.178	0.972	0.056
f.age13 - f.age21 M 2	-14.026	-14.096	-14.096	0.95	-21.409	-7.113	1.000	0.000
f.age15 - f.age18 M 2	2.435	2.456	2.456	0.95	-3.387	8.563	0.795	0.409
f.age15 - f.age21 M 2	-3.566	-3.623	-3.623	0.95	-11.986	4.388	0.806	0.387
f.age18 - f.age21 M 2	-6.023	-6.079	-6.079	0.95	-14.115	1.424	0.941	0.117
f.age11 - f.age13 F 4	-4.526	-4.573	-4.573	0.95	-10.824	1.380	0.930	0.140
f.age11 - f.age15 F 4	-14.974	-15.046	-15.046	0.95	-21.736	-8.658	1.000	0.000
f.age11 - f.age18 F 4	-12.705	-12.590	-12.590	0.95	-20.356	-4.414	0.998	0.004
f.age11 - f.age21 F 4	-18.664	-18.669	-18.669	0.95	-26.481	-10.847	1.000	0.000
f.age13 - f.age15 F 4	-10.435	-10.473	-10.473	0.95	-15.572	-5.591	1.000	0.000
f.age13 - f.age18 F 4	-8.093	-8.017	-8.017	0.95	-15.976	0.178	0.972	0.056
f.age13 - f.age21 F 4	-14.026	-14.096	-14.096	0.95	-21.409	-7.113	1.000	0.000
f.age15 - f.age18 F 4	2.435	2.456	2.456	0.95	-3.387	8.563	0.795	0.409
f.age15 - f.age21 F 4	-3.566	-3.623	-3.623	0.95	-11.986	4.388	0.806	0.387
f.age18 - f.age21 F 4	-6.023	-6.079	-6.079	0.95	-14.115	1.424	0.941	0.117
f.age11 - f.age13 M 4	-4.526	-4.573	-4.573	0.95	-10.824	1.380	0.930	0.140
f.age11 - f.age15 M 4	-14.974	-15.046	-15.046	0.95	-21.736	-8.658	1.000	0.000
f.age11 - f.age18 M 4	-12.705	-12.590	-12.590	0.95	-20.356	-4.414	0.998	0.004
f.age11 - f.age21 M 4	-18.664	-18.669	-18.669	0.95	-26.481	-10.847	1.000	0.000
f.age13 - f.age15 M 4	-10.435	-10.473	-10.473	0.95	-15.572	-5.591	1.000	0.000
f.age13 - f.age18 M 4	-8.093	-8.017	-8.017	0.95	-15.976	0.178	0.972	0.056
f.age13 - f.age21 M 4	-14.026	-14.096	-14.096	0.95	-21.409	-7.113	1.000	0.000
f.age15 - f.age18 M 4	2.435	2.456	2.456	0.95	-3.387	8.563	0.795	0.409
f.age15 - f.age21 M 4	-3.566	-3.623	-3.623	0.95	-11.986	4.388	0.806	0.387
f.age18 - f.age21 M 4	-6.023	-6.079	-6.079	0.95	-14.115	1.424	0.941	0.117

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975
M - F 4 11	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975
M - F 2 13	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975
M - F 4 13	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975
M - F 2 15	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975
M - F 4 15	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975
M - F 2 18	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975
M - F 4 18	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975
M - F 2 21	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975
M - F 4 21	-0.051	-0.094	-0.094	0.95	-3.682	3.251	0.513	0.975

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825
f.layer4 - f.layer2 M 11	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825
f.layer4 - f.layer2 F 13	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825

f.layer4 - f.layer2 M 13	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825
f.layer4 - f.layer2 F 15	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825
f.layer4 - f.layer2 M 15	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825
f.layer4 - f.layer2 F 18	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825
f.layer4 - f.layer2 M 18	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825
f.layer4 - f.layer2 F 21	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825
f.layer4 - f.layer2 M 21	-0.268	-0.283	-0.283	0.95	-2.847	2.177	0.588	0.825

Figure Supp 4E - Kmean_CovM - Multiple-cluster

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	73.689	1	97.898	0.000
f.age	1.950	4	431.704	0.101
sex	0.043	1	27.293	0.838
f.layer	0.122	1	414.587	0.727

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	-5.269	-5.263	0.95	-13.612	3.525	0.884	0.232
f.age11 - f.age15	0.965	1.045	0.95	-6.392	9.227	0.591	0.817
f.age11 - f.age18	-5.074	-5.066	0.95	-15.264	4.971	0.842	0.316
f.age11 - f.age21	2.374	2.479	0.95	-8.409	14.046	0.655	0.690
f.age13 - f.age15	6.242	6.307	0.95	0.413	12.566	0.983	0.034
f.age13 - f.age18	0.220	0.197	0.95	-9.017	9.155	0.521	0.957
f.age13 - f.age21	7.710	7.742	0.95	-1.968	17.877	0.940	0.120
f.age15 - f.age18	-6.054	-6.110	0.95	-13.265	0.841	0.956	0.089
f.age15 - f.age21	1.488	1.434	0.95	-7.980	10.995	0.621	0.758
f.age18 - f.age21	7.456	7.545	0.95	-1.117	16.872	0.956	0.089

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	-0.717	-0.721	0.95	-5.442	4.13	0.621	0.757

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	-0.717	-0.751	0.95	-4.348	2.662	0.659	0.682

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	-5.269	-5.263	-5.263	0.95	-13.612	3.525	0.884	0.232
f.age11 - f.age15 F 2	0.965	1.045	1.045	0.95	-6.392	9.227	0.591	0.817
f.age11 - f.age18 F 2	-5.074	-5.066	-5.066	0.95	-15.264	4.971	0.842	0.316
f.age11 - f.age21 F 2	2.374	2.479	2.479	0.95	-8.409	14.046	0.655	0.690
f.age13 - f.age15 F 2	6.242	6.307	6.307	0.95	0.413	12.566	0.983	0.034
f.age13 - f.age18 F 2	0.220	0.197	0.197	0.95	-9.017	9.155	0.521	0.957
f.age13 - f.age21 F 2	7.710	7.742	7.742	0.95	-1.968	17.877	0.940	0.120
f.age15 - f.age18 F 2	-6.054	-6.110	-6.110	0.95	-13.265	0.841	0.956	0.089
f.age15 - f.age21 F 2	1.488	1.434	1.434	0.95	-7.980	10.995	0.621	0.758
f.age18 - f.age21 F 2	7.456	7.545	7.545	0.95	-1.117	16.872	0.956	0.089
f.age11 - f.age13 M 2	-5.269	-5.263	-5.263	0.95	-13.612	3.525	0.884	0.232
f.age11 - f.age15 M 2	0.965	1.045	1.045	0.95	-6.392	9.227	0.591	0.817
f.age11 - f.age18 M 2	-5.074	-5.066	-5.066	0.95	-15.264	4.971	0.842	0.316
f.age11 - f.age21 M 2	2.374	2.479	2.479	0.95	-8.409	14.046	0.655	0.690
f.age13 - f.age15 M 2	6.242	6.307	6.307	0.95	0.413	12.566	0.983	0.034
f.age13 - f.age18 M 2	0.220	0.197	0.197	0.95	-9.017	9.155	0.521	0.957
f.age13 - f.age21 M 2	7.710	7.742	7.742	0.95	-1.968	17.877	0.940	0.120
f.age15 - f.age18 M 2	-6.054	-6.110	-6.110	0.95	-13.265	0.841	0.956	0.089
f.age15 - f.age21 M 2	1.488	1.434	1.434	0.95	-7.980	10.995	0.621	0.758
f.age18 - f.age21 M 2	7.456	7.545	7.545	0.95	-1.117	16.872	0.956	0.089
f.age11 - f.age13 F 4	-5.269	-5.263	-5.263	0.95	-13.612	3.525	0.884	0.232
f.age11 - f.age15 F 4	0.965	1.045	1.045	0.95	-6.392	9.227	0.591	0.817
f.age11 - f.age18 F 4	-5.074	-5.066	-5.066	0.95	-15.264	4.971	0.842	0.316
f.age11 - f.age21 F 4	2.374	2.479	2.479	0.95	-8.409	14.046	0.655	0.690
f.age13 - f.age15 F 4	6.242	6.307	6.307	0.95	0.413	12.566	0.983	0.034
f.age13 - f.age18 F 4	0.220	0.197	0.197	0.95	-9.017	9.155	0.521	0.957
f.age13 - f.age21 F 4	7.710	7.742	7.742	0.95	-1.968	17.877	0.940	0.120
f.age15 - f.age18 F 4	-6.054	-6.110	-6.110	0.95	-13.265	0.841	0.956	0.089
f.age15 - f.age21 F 4	1.488	1.434	1.434	0.95	-7.980	10.995	0.621	0.758
f.age18 - f.age21 F 4	7.456	7.545	7.545	0.95	-1.117	16.872	0.956	0.089
f.age11 - f.age13 M 4	-5.269	-5.263	-5.263	0.95	-13.612	3.525	0.884	0.232
f.age11 - f.age15 M 4	0.965	1.045	1.045	0.95	-6.392	9.227	0.591	0.817
f.age11 - f.age18 M 4	-5.074	-5.066	-5.066	0.95	-15.264	4.971	0.842	0.316
f.age11 - f.age21 M 4	2.374	2.479	2.479	0.95	-8.409	14.046	0.655	0.690
f.age13 - f.age15 M 4	6.242	6.307	6.307	0.95	0.413	12.566	0.983	0.034
f.age13 - f.age18 M 4	0.220	0.197	0.197	0.95	-9.017	9.155	0.521	0.957
f.age13 - f.age21 M 4	7.710	7.742	7.742	0.95	-1.968	17.877	0.940	0.120
f.age15 - f.age18 M 4	-6.054	-6.110	-6.110	0.95	-13.265	0.841	0.956	0.089
f.age15 - f.age21 M 4	1.488	1.434	1.434	0.95	-7.980	10.995	0.621	0.758
f.age18 - f.age21 M 4	7.456	7.545	7.545	0.95	-1.117	16.872	0.956	0.089

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757
M - F 4 11	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757
M - F 2 13	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757
M - F 4 13	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757
M - F 2 15	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757
M - F 4 15	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757
M - F 2 18	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757
M - F 4 18	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757
M - F 2 21	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757
M - F 4 21	0.717	0.721	0.721	0.95	-4.13	5.442	0.621	0.757

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682
f.layer4 - f.layer2 M 11	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682
f.layer4 - f.layer2 F 13	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682

f.layer4 - f.layer2 M 13	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682
f.layer4 - f.layer2 F 15	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682
f.layer4 - f.layer2 M 15	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682
f.layer4 - f.layer2 F 18	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682
f.layer4 - f.layer2 M 18	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682
f.layer4 - f.layer2 F 21	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682
f.layer4 - f.layer2 M 21	0.717	0.751	0.751	0.95	-2.662	4.348	0.659	0.682

Figure Supp 4E - Kmean_CovM - tCC in subnetwork

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	820.164	1	124.537	0.000
f.age	7.744	4	394.026	0.000
sex	2.129	1	50.974	0.151
f.layer	1.976	1	366.196	0.161
sex:f.layer	3.607	1	368.324	0.058
f.age:f.layer	2.589	4	370.521	0.037

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	-0.058	-0.058	0.95	-0.087	-0.028	1.000	0.000
f.age11 - f.age15	-0.069	-0.069	0.95	-0.099	-0.038	1.000	0.000
f.age11 - f.age18	-0.086	-0.087	0.95	-0.120	-0.055	1.000	0.000
f.age11 - f.age21	-0.075	-0.074	0.95	-0.127	-0.020	0.997	0.007
f.age13 - f.age15	-0.011	-0.010	0.95	-0.033	0.013	0.818	0.363
f.age13 - f.age18	-0.028	-0.028	0.95	-0.060	0.001	0.969	0.061
f.age13 - f.age21	-0.017	-0.016	0.95	-0.059	0.031	0.767	0.466
f.age15 - f.age18	-0.017	-0.018	0.95	-0.050	0.012	0.875	0.250
f.age15 - f.age21	-0.006	-0.006	0.95	-0.051	0.039	0.602	0.796
f.age18 - f.age21	0.012	0.012	0.95	-0.035	0.058	0.694	0.612

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	-0.009	-0.009	0.95	-0.038	0.021	0.725	0.55

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	0.016	0.016	0.95	-0.011	0.048	0.86	0.279

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	-0.089	-0.089	-0.089	0.95	-0.123	-0.056	1.000	0.000
f.age11 - f.age15 F 2	-0.104	-0.104	-0.104	0.95	-0.137	-0.069	1.000	0.000
f.age11 - f.age18 F 2	-0.083	-0.082	-0.082	0.95	-0.139	-0.022	0.996	0.008
f.age11 - f.age21 F 2	-0.085	-0.086	-0.086	0.95	-0.148	-0.027	0.998	0.004
f.age13 - f.age15 F 2	-0.014	-0.015	-0.015	0.95	-0.043	0.012	0.848	0.304
f.age13 - f.age18 F 2	0.006	0.007	0.007	0.95	-0.044	0.063	0.591	0.818
f.age13 - f.age21 F 2	0.003	0.003	0.003	0.95	-0.046	0.051	0.553	0.894
f.age15 - f.age18 F 2	0.020	0.022	0.022	0.95	-0.030	0.080	0.766	0.467
f.age15 - f.age21 F 2	0.018	0.018	0.018	0.95	-0.033	0.066	0.761	0.478
f.age18 - f.age21 F 2	-0.003	-0.004	-0.004	0.95	-0.067	0.052	0.543	0.914
f.age11 - f.age13 M 2	-0.089	-0.089	-0.089	0.95	-0.123	-0.056	1.000	0.000
f.age11 - f.age15 M 2	-0.104	-0.104	-0.104	0.95	-0.137	-0.069	1.000	0.000
f.age11 - f.age18 M 2	-0.083	-0.082	-0.082	0.95	-0.139	-0.022	0.996	0.008
f.age11 - f.age21 M 2	-0.085	-0.086	-0.086	0.95	-0.148	-0.027	0.998	0.004
f.age13 - f.age15 M 2	-0.014	-0.015	-0.015	0.95	-0.043	0.012	0.848	0.304
f.age13 - f.age18 M 2	0.006	0.007	0.007	0.95	-0.044	0.063	0.591	0.818
f.age13 - f.age21 M 2	0.003	0.003	0.003	0.95	-0.046	0.051	0.553	0.894
f.age15 - f.age18 M 2	0.020	0.022	0.022	0.95	-0.030	0.080	0.766	0.467
f.age15 - f.age21 M 2	0.018	0.018	0.018	0.95	-0.033	0.066	0.761	0.478
f.age18 - f.age21 M 2	-0.003	-0.004	-0.004	0.95	-0.067	0.052	0.543	0.914
f.age11 - f.age13 F 4	-0.027	-0.027	-0.027	0.95	-0.072	0.016	0.886	0.228
f.age11 - f.age15 F 4	-0.034	-0.033	-0.033	0.95	-0.073	0.006	0.950	0.100
f.age11 - f.age18 F 4	-0.092	-0.091	-0.091	0.95	-0.139	-0.040	0.999	0.001
f.age11 - f.age21 F 4	-0.063	-0.063	-0.063	0.95	-0.130	0.002	0.971	0.057
f.age13 - f.age15 F 4	-0.007	-0.006	-0.006	0.95	-0.039	0.030	0.647	0.705
f.age13 - f.age18 F 4	-0.065	-0.064	-0.064	0.95	-0.114	-0.006	0.983	0.035
f.age13 - f.age21 F 4	-0.036	-0.036	-0.036	0.95	-0.097	0.028	0.866	0.269
f.age15 - f.age18 F 4	-0.058	-0.058	-0.058	0.95	-0.110	0.000	0.974	0.052
f.age15 - f.age21 F 4	-0.029	-0.029	-0.029	0.95	-0.094	0.033	0.811	0.378
f.age18 - f.age21 F 4	0.029	0.028	0.028	0.95	-0.034	0.087	0.821	0.359
f.age11 - f.age13 M 4	-0.027	-0.027	-0.027	0.95	-0.072	0.016	0.886	0.228
f.age11 - f.age15 M 4	-0.034	-0.033	-0.033	0.95	-0.073	0.006	0.950	0.100
f.age11 - f.age18 M 4	-0.092	-0.091	-0.091	0.95	-0.139	-0.040	0.999	0.001
f.age11 - f.age21 M 4	-0.063	-0.063	-0.063	0.95	-0.130	0.002	0.971	0.057
f.age13 - f.age15 M 4	-0.007	-0.006	-0.006	0.95	-0.039	0.030	0.647	0.705
f.age13 - f.age18 M 4	-0.065	-0.064	-0.064	0.95	-0.114	-0.006	0.983	0.035
f.age13 - f.age21 M 4	-0.036	-0.036	-0.036	0.95	-0.097	0.028	0.866	0.269
f.age15 - f.age18 M 4	-0.058	-0.058	-0.058	0.95	-0.110	0.000	0.974	0.052
f.age15 - f.age21 M 4	-0.029	-0.029	-0.029	0.95	-0.094	0.033	0.811	0.378
f.age18 - f.age21 M 4	0.029	0.028	0.028	0.95	-0.034	0.087	0.821	0.359

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	0.028	0.028	0.028	0.95	-0.008	0.064	0.941	0.118
M - F 4 11	-0.010	-0.011	-0.011	0.95	-0.050	0.027	0.702	0.596
M - F 2 13	0.028	0.028	0.028	0.95	-0.008	0.064	0.941	0.118
M - F 4 13	-0.010	-0.011	-0.011	0.95	-0.050	0.027	0.702	0.596
M - F 2 15	0.028	0.028	0.028	0.95	-0.008	0.064	0.941	0.118
M - F 4 15	-0.010	-0.011	-0.011	0.95	-0.050	0.027	0.702	0.596
M - F 2 18	0.028	0.028	0.028	0.95	-0.008	0.064	0.941	0.118
M - F 4 18	-0.010	-0.011	-0.011	0.95	-0.050	0.027	0.702	0.596
M - F 2 21	0.028	0.028	0.028	0.95	-0.008	0.064	0.941	0.118
M - F 4 21	-0.010	-0.011	-0.011	0.95	-0.050	0.027	0.702	0.596

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	0.033	0.032	0.032	0.95	-0.002	0.066	0.967	0.067
f.layer4 - f.layer2 M 11	-0.006	-0.006	-0.006	0.95	-0.055	0.037	0.600	0.800
f.layer4 - f.layer2 F 13	-0.031	-0.030	-0.030	0.95	-0.074	0.020	0.893	0.214

f.layer4 - f.layer2 M 13	-0.068	-0.069	-0.069	0.95	-0.108	-0.032	1.000	0.000
f.layer4 - f.layer2 F 15	-0.038	-0.038	-0.038	0.95	-0.072	-0.004	0.986	0.028
f.layer4 - f.layer2 M 15	-0.076	-0.077	-0.077	0.95	-0.117	-0.042	1.000	0.000
f.layer4 - f.layer2 F 18	0.042	0.041	0.041	0.95	-0.051	0.133	0.806	0.388
f.layer4 - f.layer2 M 18	0.005	0.003	0.003	0.95	-0.091	0.084	0.543	0.915
f.layer4 - f.layer2 F 21	0.011	0.009	0.009	0.95	-0.062	0.068	0.630	0.741
f.layer4 - f.layer2 M 21	-0.028	-0.030	-0.030	0.95	-0.099	0.030	0.828	0.343

Figure Supp 4 - Community detection-uniform_CovM

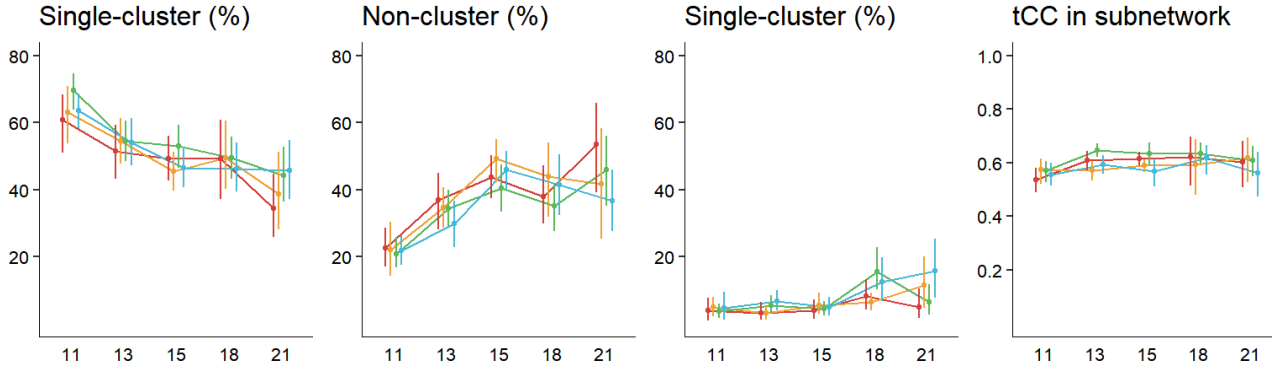


Figure Supp 4E - Community detection-uniform - Single-cluster

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	886.029	1	69.981	0.000
f.age	41.658	4	409.148	0.000
sex	0.880	1	26.485	0.357
f.layer	0.788	1	374.646	0.375

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	14.652	14.663	0.95	7.427	21.858	1.000	0.000
f.age11 - f.age15	25.006	25.072	0.95	19.202	31.251	1.000	0.000
f.age11 - f.age18	26.762	26.718	0.95	20.726	32.440	1.000	0.000
f.age11 - f.age21	30.346	30.331	0.95	23.205	37.304	1.000	0.000
f.age13 - f.age15	10.525	10.409	0.95	4.721	15.752	1.000	0.001
f.age13 - f.age18	12.098	12.055	0.95	6.230	17.601	1.000	0.000
f.age13 - f.age21	15.611	15.668	0.95	8.108	23.186	1.000	0.000
f.age15 - f.age18	1.664	1.646	0.95	-3.484	6.574	0.744	0.512
f.age15 - f.age21	5.257	5.259	0.95	-2.399	12.887	0.907	0.185
f.age18 - f.age21	3.724	3.613	0.95	-3.377	9.891	0.859	0.282

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	-2.085	-2.083	0.95	-6.085	1.876	0.848	0.304

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	1.458	1.46	0.95	-1.708	4.618	0.818	0.365

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	14.652	14.663	14.663	0.95	7.427	21.858	1.000	0.000
f.age11 - f.age15 F 2	25.006	25.072	25.072	0.95	19.202	31.251	1.000	0.000
f.age11 - f.age18 F 2	26.762	26.718	26.718	0.95	20.726	32.440	1.000	0.000
f.age11 - f.age21 F 2	30.346	30.331	30.331	0.95	23.205	37.304	1.000	0.000
f.age13 - f.age15 F 2	10.525	10.409	10.409	0.95	4.721	15.752	1.000	0.001
f.age13 - f.age18 F 2	12.098	12.055	12.055	0.95	6.230	17.601	1.000	0.000
f.age13 - f.age21 F 2	15.611	15.668	15.668	0.95	8.108	23.186	1.000	0.000
f.age15 - f.age18 F 2	1.664	1.646	1.646	0.95	-3.484	6.574	0.744	0.512
f.age15 - f.age21 F 2	5.257	5.259	5.259	0.95	-2.399	12.887	0.907	0.185
f.age18 - f.age21 F 2	3.724	3.613	3.613	0.95	-3.377	9.891	0.859	0.282
f.age11 - f.age13 M 2	14.652	14.663	14.663	0.95	7.427	21.858	1.000	0.000
f.age11 - f.age15 M 2	25.006	25.072	25.072	0.95	19.202	31.251	1.000	0.000
f.age11 - f.age18 M 2	26.762	26.718	26.718	0.95	20.726	32.440	1.000	0.000
f.age11 - f.age21 M 2	30.346	30.331	30.331	0.95	23.205	37.304	1.000	0.000
f.age13 - f.age15 M 2	10.525	10.409	10.409	0.95	4.721	15.752	1.000	0.001
f.age13 - f.age18 M 2	12.098	12.055	12.055	0.95	6.230	17.601	1.000	0.000
f.age13 - f.age21 M 2	15.611	15.668	15.668	0.95	8.108	23.186	1.000	0.000
f.age15 - f.age18 M 2	1.664	1.646	1.646	0.95	-3.484	6.574	0.744	0.512
f.age15 - f.age21 M 2	5.257	5.259	5.259	0.95	-2.399	12.887	0.907	0.185
f.age18 - f.age21 M 2	3.724	3.613	3.613	0.95	-3.377	9.891	0.859	0.282
f.age11 - f.age13 F 4	14.652	14.663	14.663	0.95	7.427	21.858	1.000	0.000
f.age11 - f.age15 F 4	25.006	25.072	25.072	0.95	19.202	31.251	1.000	0.000
f.age11 - f.age18 F 4	26.762	26.718	26.718	0.95	20.726	32.440	1.000	0.000
f.age11 - f.age21 F 4	30.346	30.331	30.331	0.95	23.205	37.304	1.000	0.000
f.age13 - f.age15 F 4	10.525	10.409	10.409	0.95	4.721	15.752	1.000	0.001
f.age13 - f.age18 F 4	12.098	12.055	12.055	0.95	6.230	17.601	1.000	0.000
f.age13 - f.age21 F 4	15.611	15.668	15.668	0.95	8.108	23.186	1.000	0.000
f.age15 - f.age18 F 4	1.664	1.646	1.646	0.95	-3.484	6.574	0.744	0.512
f.age15 - f.age21 F 4	5.257	5.259	5.259	0.95	-2.399	12.887	0.907	0.185
f.age18 - f.age21 F 4	3.724	3.613	3.613	0.95	-3.377	9.891	0.859	0.282
f.age11 - f.age13 M 4	14.652	14.663	14.663	0.95	7.427	21.858	1.000	0.000
f.age11 - f.age15 M 4	25.006	25.072	25.072	0.95	19.202	31.251	1.000	0.000
f.age11 - f.age18 M 4	26.762	26.718	26.718	0.95	20.726	32.440	1.000	0.000
f.age11 - f.age21 M 4	30.346	30.331	30.331	0.95	23.205	37.304	1.000	0.000
f.age13 - f.age15 M 4	10.525	10.409	10.409	0.95	4.721	15.752	1.000	0.001
f.age13 - f.age18 M 4	12.098	12.055	12.055	0.95	6.230	17.601	1.000	0.000
f.age13 - f.age21 M 4	15.611	15.668	15.668	0.95	8.108	23.186	1.000	0.000
f.age15 - f.age18 M 4	1.664	1.646	1.646	0.95	-3.484	6.574	0.744	0.512
f.age15 - f.age21 M 4	5.257	5.259	5.259	0.95	-2.399	12.887	0.907	0.185
f.age18 - f.age21 M 4	3.724	3.613	3.613	0.95	-3.377	9.891	0.859	0.282

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304
M - F 4 11	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304
M - F 2 13	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304
M - F 4 13	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304
M - F 2 15	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304
M - F 4 15	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304
M - F 2 18	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304
M - F 4 18	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304
M - F 2 21	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304
M - F 4 21	2.085	2.083	2.083	0.95	-1.876	6.085	0.848	0.304

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365
f.layer4 - f.layer2 M 11	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365
f.layer4 - f.layer2 F 13	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365

f.layer4 - f.layer2 M 13	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365
f.layer4 - f.layer2 F 15	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365
f.layer4 - f.layer2 M 15	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365
f.layer4 - f.layer2 F 18	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365
f.layer4 - f.layer2 M 18	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365
f.layer4 - f.layer2 F 21	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365
f.layer4 - f.layer2 M 21	-1.458	-1.46	-1.46	0.95	-4.618	1.708	0.818	0.365

Figure Supp 4E - Community detection-uniform- Non-cluster

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	99.535	1	97.502	0.000
f.age	26.204	4	405.945	0.000
sex	3.986	1	25.118	0.057
f.layer	0.007	1	378.359	0.933

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	-14.045	-14.130	0.95	-21.802	-7.001	1.000	0.000
f.age11 - f.age15	-24.393	-24.464	0.95	-30.713	-18.697	1.000	0.000
f.age11 - f.age18	-19.910	-19.853	0.95	-27.434	-12.100	1.000	0.000
f.age11 - f.age21	-25.128	-25.155	0.95	-33.591	-16.659	1.000	0.000
f.age13 - f.age15	-10.442	-10.334	0.95	-15.942	-4.335	1.000	0.001
f.age13 - f.age18	-5.821	-5.723	0.95	-13.670	2.738	0.913	0.173
f.age13 - f.age21	-11.007	-11.024	0.95	-19.337	-2.940	0.996	0.008
f.age15 - f.age18	4.651	4.611	0.95	-1.989	11.139	0.916	0.168
f.age15 - f.age21	-0.703	-0.690	0.95	-9.694	8.204	0.558	0.885
f.age18 - f.age21	-5.279	-5.301	0.95	-13.140	2.622	0.909	0.182

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	4.249	4.294	0.95	0.637	8.03	0.99	0.02

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	-0.243	-0.248	0.95	-3.347	2.908	0.564	0.873

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	-14.045	-14.130	-14.130	0.95	-21.802	-7.001	1.000	0.000
f.age11 - f.age15 F 2	-24.393	-24.464	-24.464	0.95	-30.713	-18.697	1.000	0.000
f.age11 - f.age18 F 2	-19.910	-19.853	-19.853	0.95	-27.434	-12.100	1.000	0.000
f.age11 - f.age21 F 2	-25.128	-25.155	-25.155	0.95	-33.591	-16.659	1.000	0.000
f.age13 - f.age15 F 2	-10.442	-10.334	-10.334	0.95	-15.942	-4.335	1.000	0.001
f.age13 - f.age18 F 2	-5.821	-5.723	-5.723	0.95	-13.670	2.738	0.913	0.173
f.age13 - f.age21 F 2	-11.007	-11.024	-11.024	0.95	-19.337	-2.940	0.996	0.008
f.age15 - f.age18 F 2	4.651	4.611	4.611	0.95	-1.989	11.139	0.916	0.168
f.age15 - f.age21 F 2	-0.703	-0.690	-0.690	0.95	-9.694	8.204	0.558	0.885
f.age18 - f.age21 F 2	-5.279	-5.301	-5.301	0.95	-13.140	2.622	0.909	0.182
f.age11 - f.age13 M 2	-14.045	-14.130	-14.130	0.95	-21.802	-7.001	1.000	0.000
f.age11 - f.age15 M 2	-24.393	-24.464	-24.464	0.95	-30.713	-18.697	1.000	0.000
f.age11 - f.age18 M 2	-19.910	-19.853	-19.853	0.95	-27.434	-12.100	1.000	0.000
f.age11 - f.age21 M 2	-25.128	-25.155	-25.155	0.95	-33.591	-16.659	1.000	0.000
f.age13 - f.age15 M 2	-10.442	-10.334	-10.334	0.95	-15.942	-4.335	1.000	0.001
f.age13 - f.age18 M 2	-5.821	-5.723	-5.723	0.95	-13.670	2.738	0.913	0.173
f.age13 - f.age21 M 2	-11.007	-11.024	-11.024	0.95	-19.337	-2.940	0.996	0.008
f.age15 - f.age18 M 2	4.651	4.611	4.611	0.95	-1.989	11.139	0.916	0.168
f.age15 - f.age21 M 2	-0.703	-0.690	-0.690	0.95	-9.694	8.204	0.558	0.885
f.age18 - f.age21 M 2	-5.279	-5.301	-5.301	0.95	-13.140	2.622	0.909	0.182
f.age11 - f.age13 F 4	-14.045	-14.130	-14.130	0.95	-21.802	-7.001	1.000	0.000
f.age11 - f.age15 F 4	-24.393	-24.464	-24.464	0.95	-30.713	-18.697	1.000	0.000
f.age11 - f.age18 F 4	-19.910	-19.853	-19.853	0.95	-27.434	-12.100	1.000	0.000
f.age11 - f.age21 F 4	-25.128	-25.155	-25.155	0.95	-33.591	-16.659	1.000	0.000
f.age13 - f.age15 F 4	-10.442	-10.334	-10.334	0.95	-15.942	-4.335	1.000	0.001
f.age13 - f.age18 F 4	-5.821	-5.723	-5.723	0.95	-13.670	2.738	0.913	0.173
f.age13 - f.age21 F 4	-11.007	-11.024	-11.024	0.95	-19.337	-2.940	0.996	0.008
f.age15 - f.age18 F 4	4.651	4.611	4.611	0.95	-1.989	11.139	0.916	0.168
f.age15 - f.age21 F 4	-0.703	-0.690	-0.690	0.95	-9.694	8.204	0.558	0.885
f.age18 - f.age21 F 4	-5.279	-5.301	-5.301	0.95	-13.140	2.622	0.909	0.182
f.age11 - f.age13 M 4	-14.045	-14.130	-14.130	0.95	-21.802	-7.001	1.000	0.000
f.age11 - f.age15 M 4	-24.393	-24.464	-24.464	0.95	-30.713	-18.697	1.000	0.000
f.age11 - f.age18 M 4	-19.910	-19.853	-19.853	0.95	-27.434	-12.100	1.000	0.000
f.age11 - f.age21 M 4	-25.128	-25.155	-25.155	0.95	-33.591	-16.659	1.000	0.000
f.age13 - f.age15 M 4	-10.442	-10.334	-10.334	0.95	-15.942	-4.335	1.000	0.001
f.age13 - f.age18 M 4	-5.821	-5.723	-5.723	0.95	-13.670	2.738	0.913	0.173
f.age13 - f.age21 M 4	-11.007	-11.024	-11.024	0.95	-19.337	-2.940	0.996	0.008
f.age15 - f.age18 M 4	4.651	4.611	4.611	0.95	-1.989	11.139	0.916	0.168
f.age15 - f.age21 M 4	-0.703	-0.690	-0.690	0.95	-9.694	8.204	0.558	0.885
f.age18 - f.age21 M 4	-5.279	-5.301	-5.301	0.95	-13.140	2.622	0.909	0.182

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02
M - F 4 11	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02
M - F 2 13	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02
M - F 4 13	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02
M - F 2 15	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02
M - F 4 15	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02
M - F 2 18	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02
M - F 4 18	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02
M - F 2 21	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02
M - F 4 21	-4.249	-4.294	-4.294	0.95	-8.03	-0.637	0.99	0.02

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873
f.layer4 - f.layer2 M 11	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873
f.layer4 - f.layer2 F 13	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873

f.layer4 - f.layer2 M 13	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873
f.layer4 - f.layer2 F 15	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873
f.layer4 - f.layer2 M 15	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873
f.layer4 - f.layer2 F 18	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873
f.layer4 - f.layer2 M 18	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873
f.layer4 - f.layer2 F 21	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873
f.layer4 - f.layer2 M 21	0.243	0.248	0.248	0.95	-2.908	3.347	0.564	0.873

Figure Supp 4E - Community detection-uniform- Multiple-cluster

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	3.616	1	67.525	0.062
f.age	7.037	4	434.790	0.000
sex	2.356	1	30.499	0.135
f.layer	1.758	1	414.113	0.186

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	-0.271	-0.264	0.95	-2.555	2.099	0.595	0.811
f.age11 - f.age15	-0.320	-0.310	0.95	-2.585	1.994	0.609	0.782
f.age11 - f.age18	-6.476	-6.619	0.95	-12.629	-1.650	0.997	0.005
f.age11 - f.age21	-4.689	-4.827	0.95	-10.600	0.167	0.970	0.060
f.age13 - f.age15	-0.080	-0.045	0.95	-2.075	2.156	0.531	0.938
f.age13 - f.age18	-6.166	-6.354	0.95	-12.158	-1.752	0.997	0.006
f.age13 - f.age21	-4.499	-4.562	0.95	-9.739	0.282	0.967	0.067
f.age15 - f.age18	-6.191	-6.309	0.95	-10.969	-2.362	1.000	0.000
f.age15 - f.age21	-4.380	-4.517	0.95	-9.996	0.049	0.973	0.054
f.age18 - f.age21	1.895	1.792	0.95	-5.223	8.308	0.708	0.583

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	-2.502	-2.468	0.95	-4.541	-0.157	0.981	0.038

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	-1.133	-1.143	0.95	-2.932	0.565	0.901	0.199

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	-0.271	-0.264	-0.264	0.95	-2.555	2.099	0.595	0.811
f.age11 - f.age15 F 2	-0.320	-0.310	-0.310	0.95	-2.585	1.994	0.609	0.782
f.age11 - f.age18 F 2	-6.476	-6.619	-6.619	0.95	-12.629	-1.650	0.997	0.005
f.age11 - f.age21 F 2	-4.689	-4.827	-4.827	0.95	-10.600	0.167	0.970	0.060
f.age13 - f.age15 F 2	-0.080	-0.045	-0.045	0.95	-2.075	2.156	0.531	0.938
f.age13 - f.age18 F 2	-6.166	-6.354	-6.354	0.95	-12.158	-1.752	0.997	0.006
f.age13 - f.age21 F 2	-4.499	-4.562	-4.562	0.95	-9.739	0.282	0.967	0.067
f.age15 - f.age18 F 2	-6.191	-6.309	-6.309	0.95	-10.969	-2.362	1.000	0.000
f.age15 - f.age21 F 2	-4.380	-4.517	-4.517	0.95	-9.996	0.049	0.973	0.054
f.age18 - f.age21 F 2	1.895	1.792	1.792	0.95	-5.223	8.308	0.708	0.583
f.age11 - f.age13 M 2	-0.271	-0.264	-0.264	0.95	-2.555	2.099	0.595	0.811
f.age11 - f.age15 M 2	-0.320	-0.310	-0.310	0.95	-2.585	1.994	0.609	0.782
f.age11 - f.age18 M 2	-6.476	-6.619	-6.619	0.95	-12.629	-1.650	0.997	0.005
f.age11 - f.age21 M 2	-4.689	-4.827	-4.827	0.95	-10.600	0.167	0.970	0.060
f.age13 - f.age15 M 2	-0.080	-0.045	-0.045	0.95	-2.075	2.156	0.531	0.938
f.age13 - f.age18 M 2	-6.166	-6.354	-6.354	0.95	-12.158	-1.752	0.997	0.006
f.age13 - f.age21 M 2	-4.499	-4.562	-4.562	0.95	-9.739	0.282	0.967	0.067
f.age15 - f.age18 M 2	-6.191	-6.309	-6.309	0.95	-10.969	-2.362	1.000	0.000
f.age15 - f.age21 M 2	-4.380	-4.517	-4.517	0.95	-9.996	0.049	0.973	0.054
f.age18 - f.age21 M 2	1.895	1.792	1.792	0.95	-5.223	8.308	0.708	0.583
f.age11 - f.age13 F 4	-0.271	-0.264	-0.264	0.95	-2.555	2.099	0.595	0.811
f.age11 - f.age15 F 4	-0.320	-0.310	-0.310	0.95	-2.585	1.994	0.609	0.782
f.age11 - f.age18 F 4	-6.476	-6.619	-6.619	0.95	-12.629	-1.650	0.997	0.005
f.age11 - f.age21 F 4	-4.689	-4.827	-4.827	0.95	-10.600	0.167	0.970	0.060
f.age13 - f.age15 F 4	-0.080	-0.045	-0.045	0.95	-2.075	2.156	0.531	0.938
f.age13 - f.age18 F 4	-6.166	-6.354	-6.354	0.95	-12.158	-1.752	0.997	0.006
f.age13 - f.age21 F 4	-4.499	-4.562	-4.562	0.95	-9.739	0.282	0.967	0.067
f.age15 - f.age18 F 4	-6.191	-6.309	-6.309	0.95	-10.969	-2.362	1.000	0.000
f.age15 - f.age21 F 4	-4.380	-4.517	-4.517	0.95	-9.996	0.049	0.973	0.054
f.age18 - f.age21 F 4	1.895	1.792	1.792	0.95	-5.223	8.308	0.708	0.583
f.age11 - f.age13 M 4	-0.271	-0.264	-0.264	0.95	-2.555	2.099	0.595	0.811
f.age11 - f.age15 M 4	-0.320	-0.310	-0.310	0.95	-2.585	1.994	0.609	0.782
f.age11 - f.age18 M 4	-6.476	-6.619	-6.619	0.95	-12.629	-1.650	0.997	0.005
f.age11 - f.age21 M 4	-4.689	-4.827	-4.827	0.95	-10.600	0.167	0.970	0.060
f.age13 - f.age15 M 4	-0.080	-0.045	-0.045	0.95	-2.075	2.156	0.531	0.938
f.age13 - f.age18 M 4	-6.166	-6.354	-6.354	0.95	-12.158	-1.752	0.997	0.006
f.age13 - f.age21 M 4	-4.499	-4.562	-4.562	0.95	-9.739	0.282	0.967	0.067
f.age15 - f.age18 M 4	-6.191	-6.309	-6.309	0.95	-10.969	-2.362	1.000	0.000
f.age15 - f.age21 M 4	-4.380	-4.517	-4.517	0.95	-9.996	0.049	0.973	0.054
f.age18 - f.age21 M 4	1.895	1.792	1.792	0.95	-5.223	8.308	0.708	0.583

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038
M - F 4 11	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038
M - F 2 13	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038
M - F 4 13	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038
M - F 2 15	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038
M - F 4 15	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038
M - F 2 18	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038
M - F 4 18	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038
M - F 2 21	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038
M - F 4 21	2.502	2.468	2.468	0.95	0.157	4.541	0.981	0.038

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199
f.layer4 - f.layer2 M 11	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199
f.layer4 - f.layer2 F 13	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199

f.layer4 - f.layer2 M 13	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199
f.layer4 - f.layer2 F 15	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199
f.layer4 - f.layer2 M 15	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199
f.layer4 - f.layer2 F 18	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199
f.layer4 - f.layer2 M 18	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199
f.layer4 - f.layer2 F 21	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199
f.layer4 - f.layer2 M 21	1.133	1.143	1.143	0.95	-0.565	2.932	0.901	0.199

Figure Supp 4E - Community detection-uniform- tCC in subnetwork

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	1183.129	1	68.532	0.000
f.age	2.976	4	410.171	0.019
sex	0.559	1	27.021	0.461
f.layer	9.004	1	374.647	0.003

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	-0.041	-0.041	0.95	-0.070	-0.010	0.992	0.016
f.age11 - f.age15	-0.032	-0.031	0.95	-0.063	0.008	0.945	0.110
f.age11 - f.age18	-0.053	-0.053	0.95	-0.097	-0.006	0.985	0.031
f.age11 - f.age21	-0.030	-0.030	0.95	-0.095	0.038	0.808	0.385
f.age13 - f.age15	0.009	0.010	0.95	-0.015	0.039	0.759	0.483
f.age13 - f.age18	-0.012	-0.012	0.95	-0.054	0.030	0.720	0.560
f.age13 - f.age21	0.010	0.011	0.95	-0.051	0.078	0.618	0.765
f.age15 - f.age18	-0.022	-0.022	0.95	-0.058	0.018	0.876	0.247
f.age15 - f.age21	0.000	0.001	0.95	-0.057	0.063	0.503	0.994
f.age18 - f.age21	0.023	0.023	0.95	-0.040	0.086	0.764	0.472

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	-0.015	-0.016	0.95	-0.044	0.012	0.865	0.271

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	0.031	0.031	0.95	0.012	0.051	1	0.001

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	-0.041	-0.041	-0.041	0.95	-0.070	-0.010	0.992	0.016
f.age11 - f.age15 F 2	-0.032	-0.031	-0.031	0.95	-0.063	0.008	0.945	0.110
f.age11 - f.age18 F 2	-0.053	-0.053	-0.053	0.95	-0.097	-0.006	0.985	0.031
f.age11 - f.age21 F 2	-0.030	-0.030	-0.030	0.95	-0.095	0.038	0.808	0.385
f.age13 - f.age15 F 2	0.009	0.010	0.010	0.95	-0.015	0.039	0.759	0.483
f.age13 - f.age18 F 2	-0.012	-0.012	-0.012	0.95	-0.054	0.030	0.720	0.560
f.age13 - f.age21 F 2	0.010	0.011	0.011	0.95	-0.051	0.078	0.618	0.765
f.age15 - f.age18 F 2	-0.022	-0.022	-0.022	0.95	-0.058	0.018	0.876	0.247
f.age15 - f.age21 F 2	0.000	0.001	0.001	0.95	-0.057	0.063	0.503	0.994
f.age18 - f.age21 F 2	0.023	0.023	0.023	0.95	-0.040	0.086	0.764	0.472
f.age11 - f.age13 M 2	-0.041	-0.041	-0.041	0.95	-0.070	-0.010	0.992	0.016
f.age11 - f.age15 M 2	-0.032	-0.031	-0.031	0.95	-0.063	0.008	0.945	0.110
f.age11 - f.age18 M 2	-0.053	-0.053	-0.053	0.95	-0.097	-0.006	0.985	0.031
f.age11 - f.age21 M 2	-0.030	-0.030	-0.030	0.95	-0.095	0.038	0.808	0.385
f.age13 - f.age15 M 2	0.009	0.010	0.010	0.95	-0.015	0.039	0.759	0.483
f.age13 - f.age18 M 2	-0.012	-0.012	-0.012	0.95	-0.054	0.030	0.720	0.560
f.age13 - f.age21 M 2	0.010	0.011	0.011	0.95	-0.051	0.078	0.618	0.765
f.age15 - f.age18 M 2	-0.022	-0.022	-0.022	0.95	-0.058	0.018	0.876	0.247
f.age15 - f.age21 M 2	0.000	0.001	0.001	0.95	-0.057	0.063	0.503	0.994
f.age18 - f.age21 M 2	0.023	0.023	0.023	0.95	-0.040	0.086	0.764	0.472
f.age11 - f.age13 F 4	-0.041	-0.041	-0.041	0.95	-0.070	-0.010	0.992	0.016
f.age11 - f.age15 F 4	-0.032	-0.031	-0.031	0.95	-0.063	0.008	0.945	0.110
f.age11 - f.age18 F 4	-0.053	-0.053	-0.053	0.95	-0.097	-0.006	0.985	0.031
f.age11 - f.age21 F 4	-0.030	-0.030	-0.030	0.95	-0.095	0.038	0.808	0.385
f.age13 - f.age15 F 4	0.009	0.010	0.010	0.95	-0.015	0.039	0.759	0.483
f.age13 - f.age18 F 4	-0.012	-0.012	-0.012	0.95	-0.054	0.030	0.720	0.560
f.age13 - f.age21 F 4	0.010	0.011	0.011	0.95	-0.051	0.078	0.618	0.765
f.age15 - f.age18 F 4	-0.022	-0.022	-0.022	0.95	-0.058	0.018	0.876	0.247
f.age15 - f.age21 F 4	0.000	0.001	0.001	0.95	-0.057	0.063	0.503	0.994
f.age18 - f.age21 F 4	0.023	0.023	0.023	0.95	-0.040	0.086	0.764	0.472
f.age11 - f.age13 M 4	-0.041	-0.041	-0.041	0.95	-0.070	-0.010	0.992	0.016
f.age11 - f.age15 M 4	-0.032	-0.031	-0.031	0.95	-0.063	0.008	0.945	0.110
f.age11 - f.age18 M 4	-0.053	-0.053	-0.053	0.95	-0.097	-0.006	0.985	0.031
f.age11 - f.age21 M 4	-0.030	-0.030	-0.030	0.95	-0.095	0.038	0.808	0.385
f.age13 - f.age15 M 4	0.009	0.010	0.010	0.95	-0.015	0.039	0.759	0.483
f.age13 - f.age18 M 4	-0.012	-0.012	-0.012	0.95	-0.054	0.030	0.720	0.560
f.age13 - f.age21 M 4	0.010	0.011	0.011	0.95	-0.051	0.078	0.618	0.765
f.age15 - f.age18 M 4	-0.022	-0.022	-0.022	0.95	-0.058	0.018	0.876	0.247
f.age15 - f.age21 M 4	0.000	0.001	0.001	0.95	-0.057	0.063	0.503	0.994
f.age18 - f.age21 M 4	0.023	0.023	0.023	0.95	-0.040	0.086	0.764	0.472

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271
M - F 4 11	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271
M - F 2 13	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271
M - F 4 13	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271
M - F 2 15	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271
M - F 4 15	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271
M - F 2 18	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271
M - F 4 18	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271
M - F 2 21	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271
M - F 4 21	0.015	0.016	0.016	0.95	-0.012	0.044	0.865	0.271

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001
f.layer4 - f.layer2 M 11	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001
f.layer4 - f.layer2 F 13	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001

f.layer4 - f.layer2 M 13	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001
f.layer4 - f.layer2 F 15	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001
f.layer4 - f.layer2 M 15	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001
f.layer4 - f.layer2 F 18	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001
f.layer4 - f.layer2 M 18	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001
f.layer4 - f.layer2 F 21	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001
f.layer4 - f.layer2 M 21	-0.031	-0.031	-0.031	0.95	-0.051	-0.012	1	0.001

Figure Supp 4E - Community detection-Asymmetric_CovM

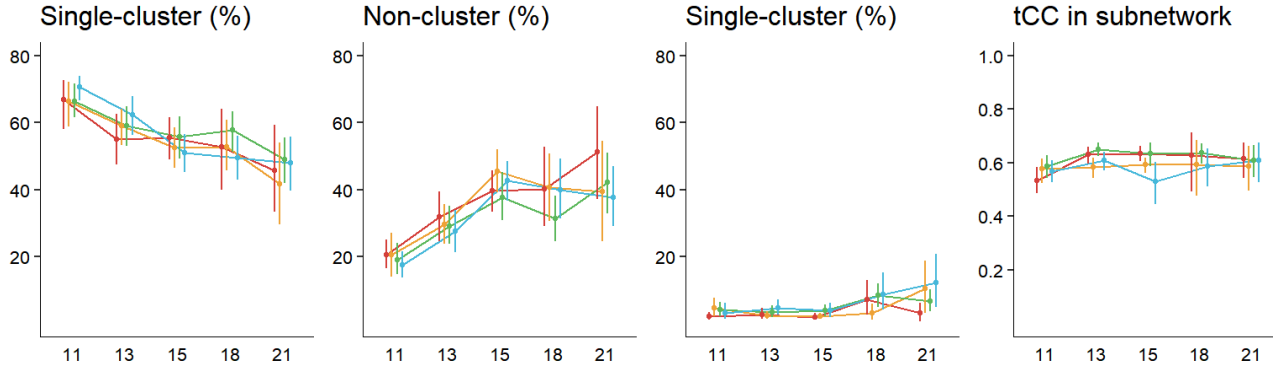


Figure Supp 4E - Community detection-Asymmetric_CovM - Single-cluster

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	1115.471	1	70.587	0.000
f.age	44.630	4	412.823	0.000
sex	0.704	1	27.227	0.409
f.layer	0.394	1	376.112	0.531

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	11.218	11.264	0.95	5.426	17.363	1.000	0.000
f.age11 - f.age15	23.337	23.321	0.95	18.168	28.517	1.000	0.000
f.age11 - f.age18	22.820	22.869	0.95	16.733	29.161	1.000	0.000
f.age11 - f.age21	29.590	29.579	0.95	23.699	35.585	1.000	0.000
f.age13 - f.age15	12.082	12.058	0.95	7.791	16.267	1.000	0.000
f.age13 - f.age18	11.585	11.606	0.95	5.194	18.050	1.000	0.001
f.age13 - f.age21	18.176	18.315	0.95	12.842	24.389	1.000	0.000
f.age15 - f.age18	-0.458	-0.452	0.95	-5.843	5.009	0.567	0.867
f.age15 - f.age21	6.154	6.258	0.95	-0.010	13.097	0.975	0.051
f.age18 - f.age21	6.683	6.710	0.95	1.228	12.359	0.992	0.015

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	-1.754	-1.768	0.95	-5.476	1.752	0.834	0.332

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	0.919	0.922	0.95	-1.487	3.377	0.775	0.451

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	11.218	11.264	11.264	0.95	5.426	17.363	1.000	0.000
f.age11 - f.age15 F 2	23.337	23.321	23.321	0.95	18.168	28.517	1.000	0.000
f.age11 - f.age18 F 2	22.820	22.869	22.869	0.95	16.733	29.161	1.000	0.000
f.age11 - f.age21 F 2	29.590	29.579	29.579	0.95	23.699	35.585	1.000	0.000
f.age13 - f.age15 F 2	12.082	12.058	12.058	0.95	7.791	16.267	1.000	0.000
f.age13 - f.age18 F 2	11.585	11.606	11.606	0.95	5.194	18.050	1.000	0.001
f.age13 - f.age21 F 2	18.176	18.315	18.315	0.95	12.842	24.389	1.000	0.000
f.age15 - f.age18 F 2	-0.458	-0.452	-0.452	0.95	-5.843	5.009	0.567	0.867
f.age15 - f.age21 F 2	6.154	6.258	6.258	0.95	-0.010	13.097	0.975	0.051
f.age18 - f.age21 F 2	6.683	6.710	6.710	0.95	1.228	12.359	0.992	0.015
f.age11 - f.age13 M 2	11.218	11.264	11.264	0.95	5.426	17.363	1.000	0.000
f.age11 - f.age15 M 2	23.337	23.321	23.321	0.95	18.168	28.517	1.000	0.000
f.age11 - f.age18 M 2	22.820	22.869	22.869	0.95	16.733	29.161	1.000	0.000
f.age11 - f.age21 M 2	29.590	29.579	29.579	0.95	23.699	35.585	1.000	0.000
f.age13 - f.age15 M 2	12.082	12.058	12.058	0.95	7.791	16.267	1.000	0.000
f.age13 - f.age18 M 2	11.585	11.606	11.606	0.95	5.194	18.050	1.000	0.001
f.age13 - f.age21 M 2	18.176	18.315	18.315	0.95	12.842	24.389	1.000	0.000
f.age15 - f.age18 M 2	-0.458	-0.452	-0.452	0.95	-5.843	5.009	0.567	0.867
f.age15 - f.age21 M 2	6.154	6.258	6.258	0.95	-0.010	13.097	0.975	0.051
f.age18 - f.age21 M 2	6.683	6.710	6.710	0.95	1.228	12.359	0.992	0.015
f.age11 - f.age13 F 4	11.218	11.264	11.264	0.95	5.426	17.363	1.000	0.000
f.age11 - f.age15 F 4	23.337	23.321	23.321	0.95	18.168	28.517	1.000	0.000
f.age11 - f.age18 F 4	22.820	22.869	22.869	0.95	16.733	29.161	1.000	0.000
f.age11 - f.age21 F 4	29.590	29.579	29.579	0.95	23.699	35.585	1.000	0.000
f.age13 - f.age15 F 4	12.082	12.058	12.058	0.95	7.791	16.267	1.000	0.000
f.age13 - f.age18 F 4	11.585	11.606	11.606	0.95	5.194	18.050	1.000	0.001
f.age13 - f.age21 F 4	18.176	18.315	18.315	0.95	12.842	24.389	1.000	0.000
f.age15 - f.age18 F 4	-0.458	-0.452	-0.452	0.95	-5.843	5.009	0.567	0.867
f.age15 - f.age21 F 4	6.154	6.258	6.258	0.95	-0.010	13.097	0.975	0.051
f.age18 - f.age21 F 4	6.683	6.710	6.710	0.95	1.228	12.359	0.992	0.015
f.age11 - f.age13 M 4	11.218	11.264	11.264	0.95	5.426	17.363	1.000	0.000
f.age11 - f.age15 M 4	23.337	23.321	23.321	0.95	18.168	28.517	1.000	0.000
f.age11 - f.age18 M 4	22.820	22.869	22.869	0.95	16.733	29.161	1.000	0.000
f.age11 - f.age21 M 4	29.590	29.579	29.579	0.95	23.699	35.585	1.000	0.000
f.age13 - f.age15 M 4	12.082	12.058	12.058	0.95	7.791	16.267	1.000	0.000
f.age13 - f.age18 M 4	11.585	11.606	11.606	0.95	5.194	18.050	1.000	0.001
f.age13 - f.age21 M 4	18.176	18.315	18.315	0.95	12.842	24.389	1.000	0.000
f.age15 - f.age18 M 4	-0.458	-0.452	-0.452	0.95	-5.843	5.009	0.567	0.867
f.age15 - f.age21 M 4	6.154	6.258	6.258	0.95	-0.010	13.097	0.975	0.051
f.age18 - f.age21 M 4	6.683	6.710	6.710	0.95	1.228	12.359	0.992	0.015

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332
M - F 4 11	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332
M - F 2 13	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332
M - F 4 13	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332
M - F 2 15	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332
M - F 4 15	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332
M - F 2 18	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332
M - F 4 18	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332
M - F 2 21	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332
M - F 4 21	1.754	1.768	1.768	0.95	-1.752	5.476	0.834	0.332

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451
f.layer4 - f.layer2 M 11	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451
f.layer4 - f.layer2 F 13	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451

f.layer4 - f.layer2 M 13	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451
f.layer4 - f.layer2 F 15	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451
f.layer4 - f.layer2 M 15	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451
f.layer4 - f.layer2 F 18	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451
f.layer4 - f.layer2 M 18	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451
f.layer4 - f.layer2 F 21	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451
f.layer4 - f.layer2 M 21	-0.919	-0.922	-0.922	0.95	-3.377	1.487	0.775	0.451

Figure Supp 4E - Community detection-Asymmetric_CovM - Non-cluster

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	81.609	1	88.495	0.000
f.age	29.772	4	414.734	0.000
sex	2.761	1	26.632	0.108
f.layer	0.001	1	378.565	0.982

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	-11.346	-11.383	0.95	-17.863	-5.290	1.000	0.000
f.age11 - f.age15	-23.736	-23.770	0.95	-29.468	-18.431	1.000	0.000
f.age11 - f.age18	-19.187	-19.160	0.95	-27.114	-11.126	1.000	0.000
f.age11 - f.age21	-25.300	-25.298	0.95	-33.126	-17.551	1.000	0.000
f.age13 - f.age15	-12.425	-12.387	0.95	-17.292	-7.287	1.000	0.000
f.age13 - f.age18	-7.803	-7.777	0.95	-16.151	0.746	0.963	0.073
f.age13 - f.age21	-13.916	-13.915	0.95	-21.469	-6.380	1.000	0.000
f.age15 - f.age18	4.627	4.610	0.95	-2.580	11.754	0.895	0.211
f.age15 - f.age21	-1.521	-1.529	0.95	-10.339	7.197	0.634	0.733
f.age18 - f.age21	-6.046	-6.138	0.95	-14.248	1.232	0.946	0.109

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	3.615	3.616	0.95	-0.036	7.327	0.974	0.052

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	-0.035	-0.013	0.95	-2.629	2.692	0.509	0.983

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	-11.346	-11.383	-11.383	0.95	-17.863	-5.290	1.000	0.000
f.age11 - f.age15 F 2	-23.736	-23.770	-23.770	0.95	-29.468	-18.431	1.000	0.000
f.age11 - f.age18 F 2	-19.187	-19.160	-19.160	0.95	-27.114	-11.126	1.000	0.000
f.age11 - f.age21 F 2	-25.300	-25.298	-25.298	0.95	-33.126	-17.551	1.000	0.000
f.age13 - f.age15 F 2	-12.425	-12.387	-12.387	0.95	-17.292	-7.287	1.000	0.000
f.age13 - f.age18 F 2	-7.803	-7.777	-7.777	0.95	-16.151	0.746	0.963	0.073
f.age13 - f.age21 F 2	-13.916	-13.915	-13.915	0.95	-21.469	-6.380	1.000	0.000
f.age15 - f.age18 F 2	4.627	4.610	4.610	0.95	-2.580	11.754	0.895	0.211
f.age15 - f.age21 F 2	-1.521	-1.529	-1.529	0.95	-10.339	7.197	0.634	0.733
f.age18 - f.age21 F 2	-6.046	-6.138	-6.138	0.95	-14.248	1.232	0.946	0.109
f.age11 - f.age13 M 2	-11.346	-11.383	-11.383	0.95	-17.863	-5.290	1.000	0.000
f.age11 - f.age15 M 2	-23.736	-23.770	-23.770	0.95	-29.468	-18.431	1.000	0.000
f.age11 - f.age18 M 2	-19.187	-19.160	-19.160	0.95	-27.114	-11.126	1.000	0.000
f.age11 - f.age21 M 2	-25.300	-25.298	-25.298	0.95	-33.126	-17.551	1.000	0.000
f.age13 - f.age15 M 2	-12.425	-12.387	-12.387	0.95	-17.292	-7.287	1.000	0.000
f.age13 - f.age18 M 2	-7.803	-7.777	-7.777	0.95	-16.151	0.746	0.963	0.073
f.age13 - f.age21 M 2	-13.916	-13.915	-13.915	0.95	-21.469	-6.380	1.000	0.000
f.age15 - f.age18 M 2	4.627	4.610	4.610	0.95	-2.580	11.754	0.895	0.211
f.age15 - f.age21 M 2	-1.521	-1.529	-1.529	0.95	-10.339	7.197	0.634	0.733
f.age18 - f.age21 M 2	-6.046	-6.138	-6.138	0.95	-14.248	1.232	0.946	0.109
f.age11 - f.age13 F 4	-11.346	-11.383	-11.383	0.95	-17.863	-5.290	1.000	0.000
f.age11 - f.age15 F 4	-23.736	-23.770	-23.770	0.95	-29.468	-18.431	1.000	0.000
f.age11 - f.age18 F 4	-19.187	-19.160	-19.160	0.95	-27.114	-11.126	1.000	0.000
f.age11 - f.age21 F 4	-25.300	-25.298	-25.298	0.95	-33.126	-17.551	1.000	0.000
f.age13 - f.age15 F 4	-12.425	-12.387	-12.387	0.95	-17.292	-7.287	1.000	0.000
f.age13 - f.age18 F 4	-7.803	-7.777	-7.777	0.95	-16.151	0.746	0.963	0.073
f.age13 - f.age21 F 4	-13.916	-13.915	-13.915	0.95	-21.469	-6.380	1.000	0.000
f.age15 - f.age18 F 4	4.627	4.610	4.610	0.95	-2.580	11.754	0.895	0.211
f.age15 - f.age21 F 4	-1.521	-1.529	-1.529	0.95	-10.339	7.197	0.634	0.733
f.age18 - f.age21 F 4	-6.046	-6.138	-6.138	0.95	-14.248	1.232	0.946	0.109
f.age11 - f.age13 M 4	-11.346	-11.383	-11.383	0.95	-17.863	-5.290	1.000	0.000
f.age11 - f.age15 M 4	-23.736	-23.770	-23.770	0.95	-29.468	-18.431	1.000	0.000
f.age11 - f.age18 M 4	-19.187	-19.160	-19.160	0.95	-27.114	-11.126	1.000	0.000
f.age11 - f.age21 M 4	-25.300	-25.298	-25.298	0.95	-33.126	-17.551	1.000	0.000
f.age13 - f.age15 M 4	-12.425	-12.387	-12.387	0.95	-17.292	-7.287	1.000	0.000
f.age13 - f.age18 M 4	-7.803	-7.777	-7.777	0.95	-16.151	0.746	0.963	0.073
f.age13 - f.age21 M 4	-13.916	-13.915	-13.915	0.95	-21.469	-6.380	1.000	0.000
f.age15 - f.age18 M 4	4.627	4.610	4.610	0.95	-2.580	11.754	0.895	0.211
f.age15 - f.age21 M 4	-1.521	-1.529	-1.529	0.95	-10.339	7.197	0.634	0.733
f.age18 - f.age21 M 4	-6.046	-6.138	-6.138	0.95	-14.248	1.232	0.946	0.109

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052
M - F 4 11	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052
M - F 2 13	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052
M - F 4 13	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052
M - F 2 15	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052
M - F 4 15	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052
M - F 2 18	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052
M - F 4 18	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052
M - F 2 21	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052
M - F 4 21	-3.615	-3.616	-3.616	0.95	-7.327	0.036	0.974	0.052

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983
f.layer4 - f.layer2 M 11	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983
f.layer4 - f.layer2 F 13	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983

f.layer4 - f.layer2 M 13	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983
f.layer4 - f.layer2 F 15	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983
f.layer4 - f.layer2 M 15	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983
f.layer4 - f.layer2 F 18	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983
f.layer4 - f.layer2 M 18	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983
f.layer4 - f.layer2 F 21	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983
f.layer4 - f.layer2 M 21	0.035	0.013	0.013	0.95	-2.692	2.629	0.509	0.983

Figure Supp 4E - Community detection-Asymmetric_CovM - Multiple-cluster

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	4.536	1	137.437	0.035
f.age	2.753	4	429.642	0.028
sex	3.350	1	29.034	0.077
f.layer	0.163	1	412.058	0.686
f.age:f.layer	2.600	4	413.442	0.036

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	0.224	0.250	0.95	-1.496	2.081	0.601	0.797
f.age11 - f.age15	0.559	0.626	0.95	-1.228	2.769	0.728	0.543
f.age11 - f.age18	-3.532	-3.598	0.95	-7.889	0.273	0.964	0.072
f.age11 - f.age21	-4.185	-4.280	0.95	-9.018	-0.365	0.985	0.030
f.age13 - f.age15	0.387	0.376	0.95	-1.056	1.767	0.702	0.595
f.age13 - f.age18	-3.717	-3.848	0.95	-7.869	-0.590	0.991	0.018
f.age13 - f.age21	-4.412	-4.530	0.95	-8.984	-0.756	0.990	0.019
f.age15 - f.age18	-4.144	-4.224	0.95	-7.464	-1.412	0.999	0.002
f.age15 - f.age21	-4.821	-4.906	0.95	-9.491	-0.855	0.992	0.017
f.age18 - f.age21	-0.631	-0.682	0.95	-5.449	3.981	0.614	0.772

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	-1.86	-1.861	0.95	-3.316	-0.406	0.994	0.011

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	-1.333	-1.368	0.95	-3.165	0.212	0.955	0.091

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	0.229	0.238	0.238	0.95	-1.730	2.337	0.583	0.833
f.age11 - f.age15 F 2	0.317	0.348	0.348	0.95	-1.719	2.535	0.625	0.751
f.age11 - f.age18 F 2	-4.303	-4.305	-4.305	0.95	-8.201	-0.427	0.986	0.028
f.age11 - f.age21 F 2	-1.216	-1.221	-1.221	0.95	-4.066	1.632	0.797	0.406
f.age13 - f.age15 F 2	0.085	0.110	0.110	0.95	-1.851	2.164	0.534	0.932
f.age13 - f.age18 F 2	-4.494	-4.543	-4.543	0.95	-8.339	-0.997	0.995	0.009
f.age13 - f.age21 F 2	-1.457	-1.459	-1.459	0.95	-4.138	1.191	0.858	0.285
f.age15 - f.age18 F 2	-4.649	-4.653	-4.653	0.95	-8.332	-1.020	0.994	0.013
f.age15 - f.age21 F 2	-1.587	-1.569	-1.569	0.95	-4.307	1.212	0.870	0.261
f.age18 - f.age21 F 2	3.037	3.084	3.084	0.95	-0.183	6.588	0.968	0.065
f.age11 - f.age13 M 2	0.229	0.238	0.238	0.95	-1.730	2.337	0.583	0.833
f.age11 - f.age15 M 2	0.317	0.348	0.348	0.95	-1.719	2.535	0.625	0.751
f.age11 - f.age18 M 2	-4.303	-4.305	-4.305	0.95	-8.201	-0.427	0.986	0.028
f.age11 - f.age21 M 2	-1.216	-1.221	-1.221	0.95	-4.066	1.632	0.797	0.406
f.age13 - f.age15 M 2	0.085	0.110	0.110	0.95	-1.851	2.164	0.534	0.932
f.age13 - f.age18 M 2	-4.494	-4.543	-4.543	0.95	-8.339	-0.997	0.995	0.009
f.age13 - f.age21 M 2	-1.457	-1.459	-1.459	0.95	-4.138	1.191	0.858	0.285
f.age15 - f.age18 M 2	-4.649	-4.653	-4.653	0.95	-8.332	-1.020	0.994	0.013
f.age15 - f.age21 M 2	-1.587	-1.569	-1.569	0.95	-4.307	1.212	0.870	0.261
f.age18 - f.age21 M 2	3.037	3.084	3.084	0.95	-0.183	6.588	0.968	0.065
f.age11 - f.age13 F 4	0.263	0.262	0.262	0.95	-2.112	2.582	0.595	0.811
f.age11 - f.age15 F 4	0.856	0.905	0.905	0.95	-1.210	3.394	0.786	0.428
f.age11 - f.age18 F 4	-2.534	-2.891	-2.891	0.95	-10.140	2.283	0.814	0.371
f.age11 - f.age21 F 4	-7.082	-7.338	-7.338	0.95	-14.868	-1.453	0.996	0.008
f.age13 - f.age15 F 4	0.613	0.643	0.643	0.95	-1.057	2.542	0.754	0.493
f.age13 - f.age18 F 4	-2.740	-3.153	-3.153	0.95	-10.245	1.405	0.853	0.295
f.age13 - f.age21 F 4	-7.333	-7.600	-7.600	0.95	-15.204	-1.511	0.994	0.012
f.age15 - f.age18 F 4	-3.426	-3.796	-3.796	0.95	-9.974	-0.004	0.975	0.050
f.age15 - f.age21 F 4	-8.009	-8.243	-8.243	0.95	-15.863	-2.009	0.996	0.007
f.age18 - f.age21 F 4	-4.513	-4.447	-4.447	0.95	-12.626	4.085	0.867	0.265
f.age11 - f.age13 M 4	0.263	0.262	0.262	0.95	-2.112	2.582	0.595	0.811
f.age11 - f.age15 M 4	0.856	0.905	0.905	0.95	-1.210	3.394	0.786	0.428
f.age11 - f.age18 M 4	-2.534	-2.891	-2.891	0.95	-10.140	2.283	0.814	0.371
f.age11 - f.age21 M 4	-7.082	-7.338	-7.338	0.95	-14.868	-1.453	0.996	0.008
f.age13 - f.age15 M 4	0.613	0.643	0.643	0.95	-1.057	2.542	0.754	0.493
f.age13 - f.age18 M 4	-2.740	-3.153	-3.153	0.95	-10.245	1.405	0.853	0.295
f.age13 - f.age21 M 4	-7.333	-7.600	-7.600	0.95	-15.204	-1.511	0.994	0.012
f.age15 - f.age18 M 4	-3.426	-3.796	-3.796	0.95	-9.974	-0.004	0.975	0.050
f.age15 - f.age21 M 4	-8.009	-8.243	-8.243	0.95	-15.863	-2.009	0.996	0.007
f.age18 - f.age21 M 4	-4.513	-4.447	-4.447	0.95	-12.626	4.085	0.867	0.265

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011
M - F 4 11	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011
M - F 2 13	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011
M - F 4 13	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011
M - F 2 15	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011
M - F 4 15	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011
M - F 2 18	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011
M - F 4 18	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011
M - F 2 21	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011
M - F 4 21	1.86	1.861	1.861	0.95	0.406	3.316	0.994	0.011

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	0.496	0.544	0.544	0.95	-0.941	2.301	0.741	0.519
f.layer4 - f.layer2 M 11	0.496	0.544	0.544	0.95	-0.941	2.301	0.741	0.519
f.layer4 - f.layer2 F 13	0.489	0.520	0.520	0.95	-1.224	2.449	0.708	0.584

f.layer4 - f.layer2 M 13	0.489	0.520	0.520	0.95	-1.224	2.449	0.708	0.584
f.layer4 - f.layer2 F 15	-0.044	-0.013	-0.013	0.95	-1.484	1.610	0.521	0.958
f.layer4 - f.layer2 M 15	-0.044	-0.013	-0.013	0.95	-1.484	1.610	0.521	0.958
f.layer4 - f.layer2 F 18	-1.232	-0.870	-0.870	0.95	-6.009	6.294	0.655	0.690
f.layer4 - f.layer2 M 18	-1.232	-0.870	-0.870	0.95	-6.009	6.294	0.655	0.690
f.layer4 - f.layer2 F 21	6.461	6.661	6.661	0.95	1.580	12.902	0.997	0.006
f.layer4 - f.layer2 M 21	6.461	6.661	6.661	0.95	1.580	12.902	0.997	0.006

Figure Supp 4E - Community detection-Asymmetric_CovM - tCC in subnetwork

Table: ANOVA table before bootstrapping

	F	Df	Df.res	Pr(>F)
(Intercept)	1067.806	1	67.100	0.000
f.age	2.370	4	413.501	0.052
sex	0.198	1	27.993	0.659
f.layer	12.809	1	375.927	0.000

Table: Main effect after bootstrapping

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13	-0.044	-0.043	0.95	-0.072	-0.012	0.997	0.007
f.age11 - f.age15	-0.024	-0.023	0.95	-0.062	0.020	0.867	0.266
f.age11 - f.age18	-0.037	-0.037	0.95	-0.083	0.012	0.935	0.131
f.age11 - f.age21	-0.026	-0.026	0.95	-0.094	0.043	0.772	0.456
f.age13 - f.age15	0.020	0.020	0.95	-0.009	0.052	0.904	0.193
f.age13 - f.age18	0.006	0.006	0.95	-0.038	0.052	0.608	0.785
f.age13 - f.age21	0.016	0.017	0.95	-0.046	0.085	0.684	0.632
f.age15 - f.age18	-0.013	-0.014	0.95	-0.058	0.028	0.734	0.532
f.age15 - f.age21	-0.004	-0.003	0.95	-0.064	0.059	0.542	0.916
f.age18 - f.age21	0.010	0.011	0.95	-0.044	0.066	0.641	0.718

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
F - M	-0.011	-0.011	0.95	-0.042	0.019	0.761	0.478

Parameter	Median	Mean	CI	CI_low	CI_high	pd	pval
f.layer2 - f.layer4	0.038	0.038	0.95	0.017	0.061	1	0

Table: Post-hoc comparison with bootstrapping output

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.age11 - f.age13 F 2	-0.044	-0.043	-0.043	0.95	-0.072	-0.012	0.997	0.007
f.age11 - f.age15 F 2	-0.024	-0.023	-0.023	0.95	-0.062	0.020	0.867	0.266
f.age11 - f.age18 F 2	-0.037	-0.037	-0.037	0.95	-0.083	0.012	0.935	0.131
f.age11 - f.age21 F 2	-0.026	-0.026	-0.026	0.95	-0.094	0.043	0.772	0.456
f.age13 - f.age15 F 2	0.020	0.020	0.020	0.95	-0.009	0.052	0.904	0.193
f.age13 - f.age18 F 2	0.006	0.006	0.006	0.95	-0.038	0.052	0.608	0.785
f.age13 - f.age21 F 2	0.016	0.017	0.017	0.95	-0.046	0.085	0.684	0.632
f.age15 - f.age18 F 2	-0.013	-0.014	-0.014	0.95	-0.058	0.028	0.734	0.532
f.age15 - f.age21 F 2	-0.004	-0.003	-0.003	0.95	-0.064	0.059	0.542	0.916
f.age18 - f.age21 F 2	0.010	0.011	0.011	0.95	-0.044	0.066	0.641	0.718
f.age11 - f.age13 M 2	-0.044	-0.043	-0.043	0.95	-0.072	-0.012	0.997	0.007
f.age11 - f.age15 M 2	-0.024	-0.023	-0.023	0.95	-0.062	0.020	0.867	0.266
f.age11 - f.age18 M 2	-0.037	-0.037	-0.037	0.95	-0.083	0.012	0.935	0.131
f.age11 - f.age21 M 2	-0.026	-0.026	-0.026	0.95	-0.094	0.043	0.772	0.456
f.age13 - f.age15 M 2	0.020	0.020	0.020	0.95	-0.009	0.052	0.904	0.193
f.age13 - f.age18 M 2	0.006	0.006	0.006	0.95	-0.038	0.052	0.608	0.785
f.age13 - f.age21 M 2	0.016	0.017	0.017	0.95	-0.046	0.085	0.684	0.632
f.age15 - f.age18 M 2	-0.013	-0.014	-0.014	0.95	-0.058	0.028	0.734	0.532
f.age15 - f.age21 M 2	-0.004	-0.003	-0.003	0.95	-0.064	0.059	0.542	0.916
f.age18 - f.age21 M 2	0.010	0.011	0.011	0.95	-0.044	0.066	0.641	0.718
f.age11 - f.age13 F 4	-0.044	-0.043	-0.043	0.95	-0.072	-0.012	0.997	0.007
f.age11 - f.age15 F 4	-0.024	-0.023	-0.023	0.95	-0.062	0.020	0.867	0.266
f.age11 - f.age18 F 4	-0.037	-0.037	-0.037	0.95	-0.083	0.012	0.935	0.131
f.age11 - f.age21 F 4	-0.026	-0.026	-0.026	0.95	-0.094	0.043	0.772	0.456
f.age13 - f.age15 F 4	0.020	0.020	0.020	0.95	-0.009	0.052	0.904	0.193
f.age13 - f.age18 F 4	0.006	0.006	0.006	0.95	-0.038	0.052	0.608	0.785
f.age13 - f.age21 F 4	0.016	0.017	0.017	0.95	-0.046	0.085	0.684	0.632
f.age15 - f.age18 F 4	-0.013	-0.014	-0.014	0.95	-0.058	0.028	0.734	0.532
f.age15 - f.age21 F 4	-0.004	-0.003	-0.003	0.95	-0.064	0.059	0.542	0.916
f.age18 - f.age21 F 4	0.010	0.011	0.011	0.95	-0.044	0.066	0.641	0.718
f.age11 - f.age13 M 4	-0.044	-0.043	-0.043	0.95	-0.072	-0.012	0.997	0.007
f.age11 - f.age15 M 4	-0.024	-0.023	-0.023	0.95	-0.062	0.020	0.867	0.266
f.age11 - f.age18 M 4	-0.037	-0.037	-0.037	0.95	-0.083	0.012	0.935	0.131
f.age11 - f.age21 M 4	-0.026	-0.026	-0.026	0.95	-0.094	0.043	0.772	0.456
f.age13 - f.age15 M 4	0.020	0.020	0.020	0.95	-0.009	0.052	0.904	0.193
f.age13 - f.age18 M 4	0.006	0.006	0.006	0.95	-0.038	0.052	0.608	0.785
f.age13 - f.age21 M 4	0.016	0.017	0.017	0.95	-0.046	0.085	0.684	0.632
f.age15 - f.age18 M 4	-0.013	-0.014	-0.014	0.95	-0.058	0.028	0.734	0.532
f.age15 - f.age21 M 4	-0.004	-0.003	-0.003	0.95	-0.064	0.059	0.542	0.916
f.age18 - f.age21 M 4	0.010	0.011	0.011	0.95	-0.044	0.066	0.641	0.718

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
M - F 2 11	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478
M - F 4 11	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478
M - F 2 13	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478
M - F 4 13	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478
M - F 2 15	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478
M - F 4 15	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478
M - F 2 18	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478
M - F 4 18	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478
M - F 2 21	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478
M - F 4 21	0.011	0.011	0.011	0.95	-0.019	0.042	0.761	0.478

Parameter	Median	Mean	Mean.1	CI	CI_low	CI_high	pd	pval
f.layer4 - f.layer2 F 11	-0.038	-0.038	-0.038	0.95	-0.061	-0.017	1	0
f.layer4 - f.layer2 M 11	-0.038	-0.038	-0.038	0.95	-0.061	-0.017	1	0
f.layer4 - f.layer2 F 13	-0.038	-0.038	-0.038	0.95	-0.061	-0.017	1	0

```
|f.layer4 - f.layer2 M 13 | -0.038| -0.038| -0.038| 0.95| -0.061|  -0.017|  1|    0|
|f.layer4 - f.layer2 F 15 | -0.038| -0.038| -0.038| 0.95| -0.061|  -0.017|  1|    0|
|f.layer4 - f.layer2 M 15 | -0.038| -0.038| -0.038| 0.95| -0.061|  -0.017|  1|    0|
|f.layer4 - f.layer2 F 18 | -0.038| -0.038| -0.038| 0.95| -0.061|  -0.017|  1|    0|
|f.layer4 - f.layer2 M 18 | -0.038| -0.038| -0.038| 0.95| -0.061|  -0.017|  1|    0|
|f.layer4 - f.layer2 F 21 | -0.038| -0.038| -0.038| 0.95| -0.061|  -0.017|  1|    0|
|f.layer4 - f.layer2 M 21 | -0.038| -0.038| -0.038| 0.95| -0.061|  -0.017|  1|    0|
```