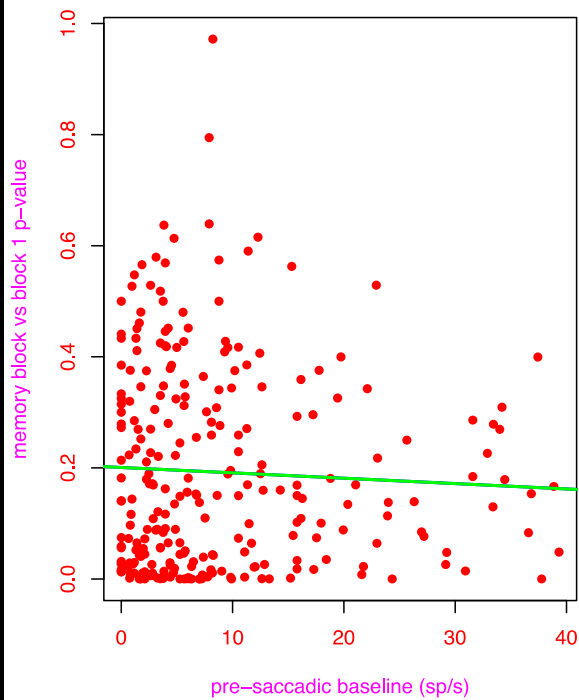
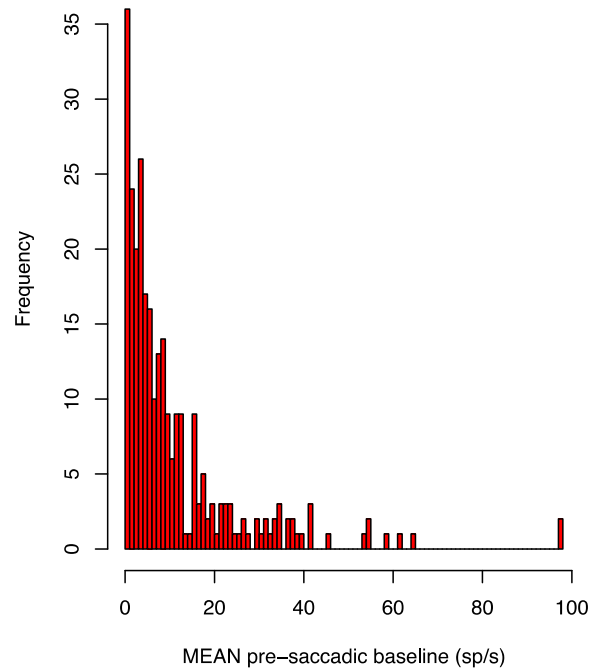


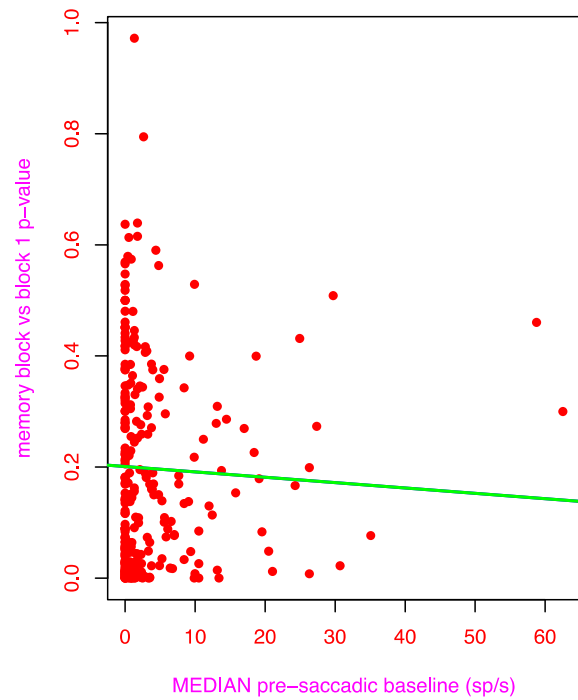
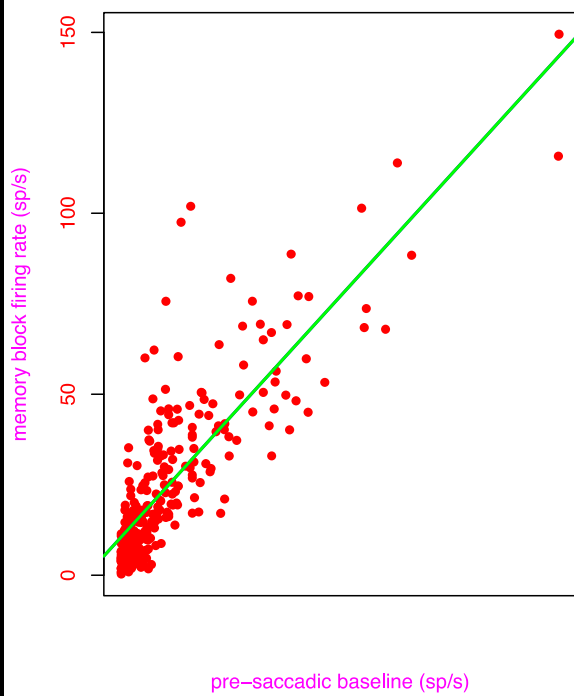
Does Firing rate influence memory response?

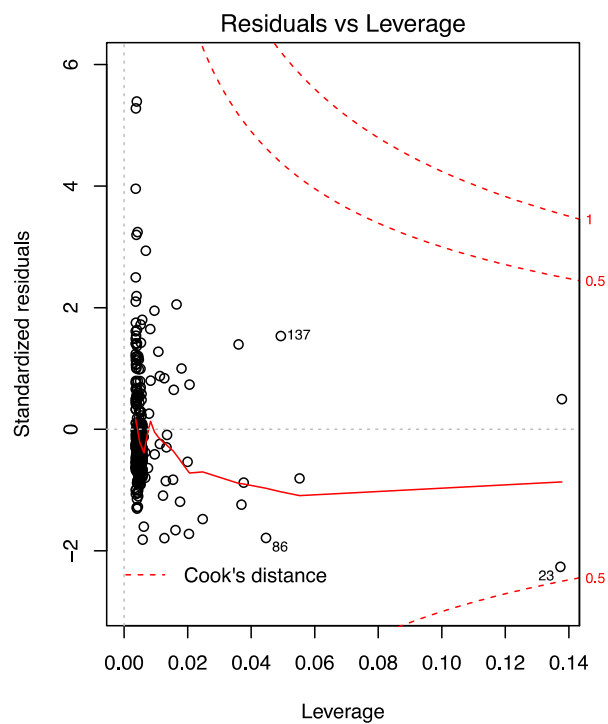
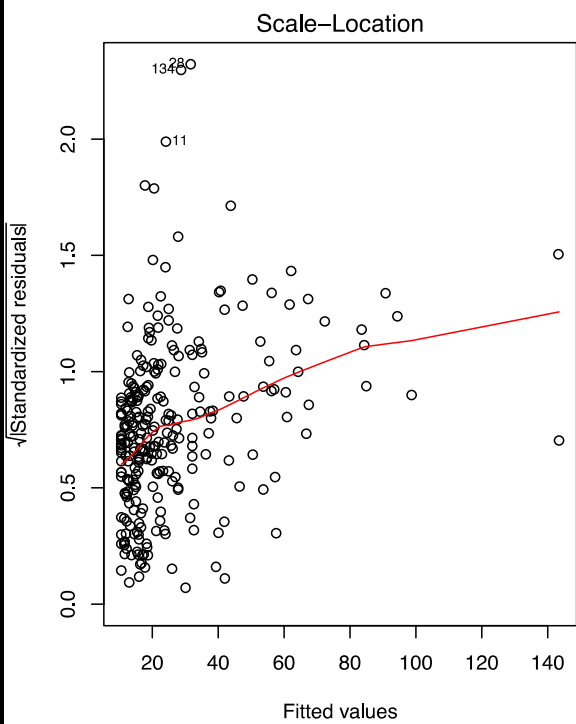
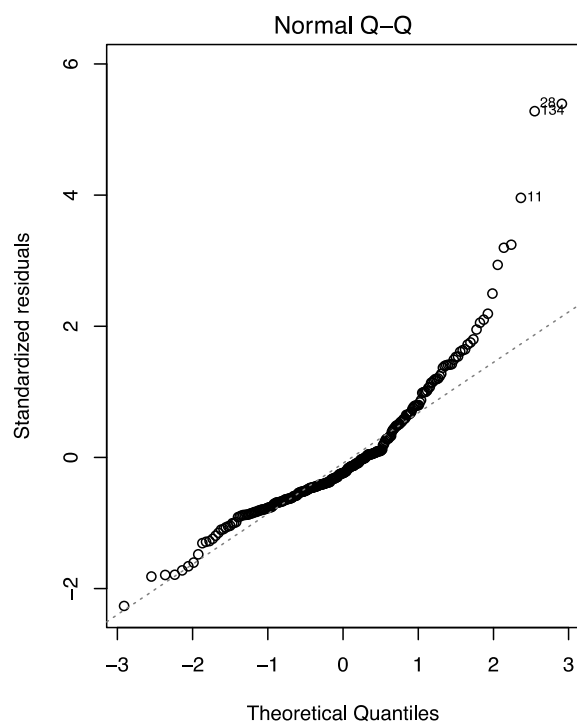
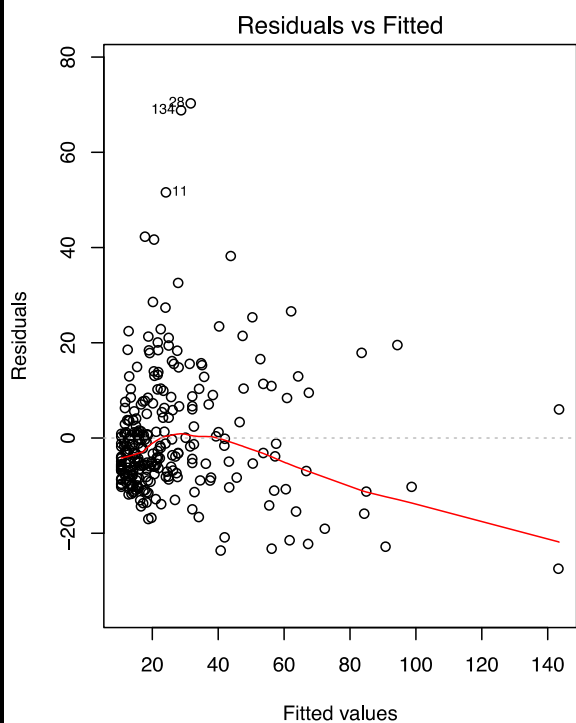


How is baseline rate distributed?



Does presacc baseline Firing rate influence memory response? Does MEDIAN\_Firing rate influence memory response?





```
Call:
lm(formula = pMemoBase_MED_ranksum2 ~ baseGauss_PREMEAN2 * baseGauss_PREMEDIAN2 *
    base_PREGEOmeanMEAN2 * baseMEM_PRE_MEDI_RAW, data = DT)
```

```
Residuals:
    Min       1Q   Median       3Q      Max
-585.78 -366.15 -151.74   63.75 1859.35
```

Coefficients: (8 not defined because of singularities)

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	585.83819	69.90406	8.381	2.97e-15 ***
baseGauss_PREMEAN2	-11.04390	6.79279	-1.626	0.105157
baseGauss_PREMEDIAN2	191.39645	85.69075	2.234	0.026334 *
base_PREGEOmeanMEAN2	NA	NA	NA	NA
baseMEM_PRE_MEDI_RAW	-125.89332	45.14022	-2.789	0.005666 **
baseGauss_PREMEAN2:baseGauss_PREMEDIAN2	-2.60935	1.28981	-2.023	0.044058 *
baseGauss_PREMEAN2:base_PREGEOmeanMEAN2	NA	NA	NA	NA
baseGauss_PREMEDIAN2:base_PREGEOmeanMEAN2	NA	NA	NA	NA
baseGauss_PREMEAN2:baseMEM_PRE_MEDI_RAW	1.91739	0.57448	3.338	0.000964 ***
baseGauss_PREMEDIAN2:baseMEM_PRE_MEDI_RAW	-1.64730	2.70063	-0.610	0.542396
base_PREGEOmeanMEAN2:baseMEM_PRE_MEDI_RAW	NA	NA	NA	NA
baseGauss_PREMEAN2:baseGauss_PREMEDIAN2:base_PREGEOmeanMEAN2	NA	NA	NA	NA
baseGauss_PREMEAN2:baseGauss_PREMEDIAN2:baseMEM_PRE_MEDI_RAW	0.01567	0.01699	0.922	0.357303
baseGauss_PREMEAN2:base_PREGEOmeanMEAN2:baseMEM_PRE_MEDI_RAW	NA	NA	NA	NA
baseGauss_PREMEDIAN2:base_PREGEOmeanMEAN2:baseMEM_PRE_MEDI_RAW	NA	NA	NA	NA
baseGauss_PREMEAN2:baseGauss_PREMEDIAN2:base_PREGEOmeanMEAN2:baseMEM_PRE_MEDI_RAW	NA	NA	NA	NA

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 595.5 on 269 degrees of freedom  
Multiple R-squared: 0.1337, Adjusted R-squared: 0.1111  
F-statistic: 5.929 on 7 and 269 DF, p-value: 1.997e-06

```
Call:
lm(formula = pMemoBase_MED_ranksum2 ~ basePreEventMAXRAW * basePSTHFROMEAN_mean_PRE *
    baseGauss_PREMeanMEAN2 * memPSTHGauss_PREMeanMEAN2, data = DT)
```

```
Residuals:
    Min       1Q   Median       3Q      Max
-760.05 -347.64 -92.53   47.74 1833.83
```

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	7.604e+02	1.010e+02	7.528	8.4e-13 ***
basePreEventMAXRAW	-4.629e+00	7.590e+01	-0.061	0.9514
basePSTHFROMEAN_mean_PRE	-1.098e+01	6.520e+00	-1.683	0.0935 .
baseGauss_PREMeanMEAN2	-1.303e+02	1.199e+02	-1.086	0.2783
memPSTHGauss_PREMeanMEAN2	-6.785e+01	2.968e+01	-2.286	0.0231 *
basePreEventMAXRAW:basePSTHFROMEAN_mean_PRE	-1.663e+00	2.773e+00	-0.600	0.5493
basePreEventMAXRAW:baseGauss_PREMeanMEAN2	1.068e+00	4.397e+00	0.243	0.8083
basePSTHFROMEAN_mean_PRE:baseGauss_PREMeanMEAN2	4.458e+00	4.143e+00	1.076	0.2828
basePreEventMAXRAW:memPSTHGauss_PREMeanMEAN2	3.954e+00	9.869e+00	0.401	0.6890
basePSTHFROMEAN_mean_PRE:memPSTHGauss_PREMeanMEAN2	7.820e-01	1.271e+00	0.615	0.5388
baseGauss_PREMeanMEAN2:memPSTHGauss_PREMeanMEAN2	4.836e+00	1.270e+01	0.381	0.7036
basePreEventMAXRAW:basePSTHFROMEAN_mean_PRE:baseGauss_PREMeanMEAN2	-3.247e-02	4.430e-02	-0.733	0.4642
basePreEventMAXRAW:basePSTHFROMEAN_mean_PRE:memPSTHGauss_PREMeanMEAN2	8.025e-02	2.172e-01	0.369	0.7121
basePreEventMAXRAW:baseGauss_PREMeanMEAN2:memPSTHGauss_PREMeanMEAN2	-9.607e-02	1.605e-01	-0.599	0.5499
basePSTHFROMEAN_mean_PRE:baseGauss_PREMeanMEAN2:memPSTHGauss_PREMeanMEAN2	-2.360e-01	2.781e-01	-0.849	0.3969
basePreEventMAXRAW:basePSTHFROMEAN_mean_PRE:baseGauss_PREMeanMEAN2:memPSTHGauss_PREMeanMEAN2	1.777e-03	9.526e-04	1.865	0.0633 .

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 591 on 261 degrees of freedom  
Multiple R-squared: 0.1719, Adjusted R-squared: 0.1243  
F-statistic: 3.611 on 15 and 261 DF, p-value: 1.03e-05

```
Call:
lm(formula = pMemoBase_MED_ranksum2 ~ base_PREMEDIAN2 * pVisVis_MAX_ranksum *
    basePSTH_PREMEAN2, data = DT)

Residuals:
    Min       1Q   Median       3Q      Max
-1534.29  -298.60  -120.55   33.98  1841.10

Coefficients:
(Intercept)                                4.272e+02  7.401e+01  5.773 2.21e-08 ***
base_PREMEDIAN2                            6.713e+01  7.214e+01  0.931 0.352957
pVisVis_MAX_ranksum                        1.199e+03  3.462e+02  3.463 0.000624 ***
basePSTH_PREMEAN2                         -2.656e+01  3.234e+01 -0.821 0.412225
basePSTH_PREMEAN2:pVisVis_MAX_ranksum    -1.374e+03  6.397e+02 -2.149 0.032593 *
base_PREMEDIAN2:basePSTH_PREMEAN2        -2.766e+00  3.517e+00 -0.786 0.432289
pVisVis_MAX_ranksum:basePSTH_PREMEAN2     9.976e+01  3.055e+02  0.327 0.744250
base_PREMEDIAN2:basePSTH_PREMEAN2:pVisVis_MAX_ranksum:basePSTH_PREMEAN2
-3.969e+02  1.003e+03 -0.396 0.692602
basePSTH_PREMEAN2:basePSTH_PREMEAN2       3.465e+00  2.337e+00  1.482 0.139423
base_PREMEDIAN2:pVisVis_MAX_ranksum:basePSTH_PREMEAN2
9.156e+00  7.733e+01  0.118 0.905835
base_PREMEDIAN2:pVisVis_MAX_ranksum:basePSTH_PREMEAN2:pVisVis_MAX_ranksum:basePSTH_PREMEAN2
2.022e+02  1.277e+02  1.584 0.114437
base_PREMEDIAN2:basePSTH_PREMEAN2:basePSTH_PREMEAN2
-1.428e-02  1.616e-02 -0.884 0.377499
pVisVis_MAX_ranksum:basePSTH_PREMEAN2:basePSTH_PREMEAN2
7.085e+00  4.337e+01  0.163 0.870352
base_PREMEDIAN2:pVisVis_MAX_ranksum:basePSTH_PREMEAN2:basePSTH_PREMEAN2
-4.216e+00  1.756e+00 -2.401 0.017069 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 584.9 on 261 degrees of freedom
Multiple R-squared:  0.189,    Adjusted R-squared:  0.1424
F-statistic: 4.055 on 15 and 261 DF,  p-value: 1.208e-06
```

```
Call:
lm(formula = pMemoBase_ranksum2 ~ baseGauss_PREMEAN2 * baseGauss_PREMEDIAN2 *
    base_PREGEOMeanMEAN2 * baseMEM_PRE_MEDI_RAW, data = DT)

Residuals:
    Min       1Q   Median       3Q      Max
-0.30792 -0.17069 -0.05663  0.13261  0.78463

Coefficients: (8 not defined because of singularities)
(Intercept)                                1.921e-01  2.369e-02  8.111 1.79e-14 ***
baseGauss_PREMEAN2                        -7.151e-04  2.302e-03 -0.311  0.756
baseGauss_PREMEDIAN2                      3.410e-02  2.903e-02  1.175  0.241
base_PREGEOMeanMEAN2                      NA          NA          NA    NA
baseMEM_PRE_MEDI_RAW                      8.329e-03  1.530e-02  0.545  0.586
baseGauss_PREMEAN2:baseGauss_PREMEDIAN2   -4.790e-05  4.370e-04 -0.110  0.913
baseGauss_PREMEAN2:base_PREGEOMeanMEAN2   NA          NA          NA    NA
baseGauss_PREMEDIAN2:base_PREGEOMeanMEAN2 NA          NA          NA    NA
baseGauss_PREMEAN2:baseMEM_PRE_MEDI_RAW    -2.207e-04  1.947e-04 -1.134  0.258
baseGauss_PREMEDIAN2:baseMEM_PRE_MEDI_RAW  -9.388e-04  9.151e-04 -1.026  0.306
base_PREGEOMeanMEAN2:baseMEM_PRE_MEDI_RAW NA          NA          NA    NA
baseGauss_PREMEAN2:baseGauss_PREMEDIAN2:base_PREGEOMeanMEAN2
NA          NA          NA    NA
baseGauss_PREMEAN2:baseGauss_PREMEDIAN2:baseMEM_PRE_MEDI_RAW
6.980e-06  5.757e-06  1.212  0.226
baseGauss_PREMEAN2:base_PREGEOMeanMEAN2:baseMEM_PRE_MEDI_RAW
NA          NA          NA    NA
baseGauss_PREMEDIAN2:base_PREGEOMeanMEAN2:baseMEM_PRE_MEDI_RAW
NA          NA          NA    NA
baseGauss_PREMEAN2:baseGauss_PREMEDIAN2:base_PREGEOMeanMEAN2:baseMEM_PRE_MEDI_RAW
NA          NA          NA    NA
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.2018 on 269 degrees of freedom
Multiple R-squared:  0.06439,    Adjusted R-squared:  0.04004
F-statistic: 2.645 on 7 and 269 DF,  p-value: 0.01166
```

```

Call:
lm(formula = pMemoBase_ranksum2 ~ basePreEventMAXRAW * basePSTHFROMEAN_mean_PRE *
    baseGauss_PREMeanMEAN2 * memPSTHGAUSS_PREMeanMEAN2, data = DT)

Residuals:
    Min       1Q   Median       3Q      Max
-0.28987 -0.15799 -0.06518  0.12034  0.91233

Coefficients:
(Intercept)                                1.992e-01  3.470e-02  5.741 2.61e-08 ***
basePreEventMAXRAW                        1.893e-03  2.607e-02  0.073  0.942
basePSTHFROMEAN_mean_PRE                 -7.486e-04  2.240e-03 -0.334  0.738
baseGauss_PREMeanMEAN2                   2.193e-02  4.118e-02  0.533  0.595
memPSTHGAUSS_PREMeanMEAN2               -1.248e-02  1.019e-02 -1.224  0.222
basePreEventMAXRAW:basePSTHFROMEAN_mean_PRE -1.788e-04  9.525e-04 -0.188  0.851
basePreEventMAXRAW:baseGauss_PREMeanMEAN2 -3.638e-04  1.510e-03 -0.241  0.810
basePSTHFROMEAN_mean_PRE:baseGauss_PREMeanMEAN2 3.476e-04  1.423e-03  0.244  0.807
basePreEventMAXRAW:memPSTHGAUSS_PREMeanMEAN2 3.371e-03  3.390e-03  0.995  0.321
basePSTHFROMEAN_mean_PRE:memPSTHGAUSS_PREMeanMEAN2 1.909e-04  4.365e-04  0.437  0.662
baseGauss_PREMeanMEAN2:memPSTHGAUSS_PREMeanMEAN2 -6.119e-03  4.361e-03 -1.403  0.162
basePreEventMAXRAW:basePSTHFROMEAN_mean_PRE:baseGauss_PREMeanMEAN2 -2.196e-06  1.522e-05 -0.144  0.885
basePreEventMAXRAW:basePSTHFROMEAN_mean_PRE:memPSTHGAUSS_PREMeanMEAN2 -7.452e-05  7.461e-05 -0.999  0.319
basePreEventMAXRAW:baseGauss_PREMeanMEAN2:memPSTHGAUSS_PREMeanMEAN2 5.157e-05  5.511e-05  0.936  0.350
basePSTHFROMEAN_mean_PRE:baseGauss_PREMeanMEAN2:memPSTHGAUSS_PREMeanMEAN2 9.856e-05  9.553e-05  1.032  0.303
basePreEventMAXRAW:basePSTHFROMEAN_mean_PRE:baseGauss_PREMeanMEAN2:memPSTHGAUSS_PREMeanMEAN2 -3.287e-07  3.272e-07 -1.005  0.316
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.203 on 261 degrees of freedom
Multiple R-squared:  0.08099, Adjusted R-squared:  0.02818
F-statistic: 1.533 on 15 and 261 DF, p-value: 0.09333

```

```

Call:
lm(formula = pMemoBase_MED_ranksum2 ~ base_PREMEDIAN2 * pVisVis_MAX_ranksum *
    basePSTH_PREMEAN2 * basePSTH_PREMeanMEAN2, data = DT)

Residuals:
    Min       1Q   Median       3Q      Max
-1534.29 -298.60 -120.55  33.98 1841.10

Coefficients:
(Intercept)                                4.272e+02  7.401e+01  5.773 2.21e-08 ***
base_PREMEDIAN2                          6.713e+01  7.214e+01  0.931 0.352957
pVisVis_MAX_ranksum                      1.199e+03  3.462e+02  3.463 0.000624 ***
basePSTH_PREMEAN2                       -2.656e+01  3.234e+01 -0.821 0.412225
basePSTH_PREMeanMEAN2                   -7.778e+01  1.107e+02 -0.703 0.482829
base_PREMEDIAN2:pVisVis_MAX_ranksum     -1.374e+03  6.397e+02 -2.149 0.032593 *
base_PREMEDIAN2:basePSTH_PREMEAN2       -2.766e+00  3.517e+00 -0.786 0.432289
pVisVis_MAX_ranksum:basePSTH_PREMEAN2    9.976e+01  3.055e+02  0.327 0.744250
base_PREMEDIAN2:basePSTH_PREMeanMEAN2    9.916e-01  4.030e+00  0.246 0.805844
pVisVis_MAX_ranksum:basePSTH_PREMeanMEAN2 -3.969e+02  1.003e+03 -0.396 0.692602
basePSTH_PREMEAN2:basePSTH_PREMeanMEAN2  3.465e+00  2.337e+00  1.482 0.139423
base_PREMEDIAN2:pVisVis_MAX_ranksum:basePSTH_PREMEAN2 9.156e+00  7.733e+01  0.118 0.905835
base_PREMEDIAN2:pVisVis_MAX_ranksum:basePSTH_PREMeanMEAN2 2.022e+02  1.277e+02  1.584 0.114437
base_PREMEDIAN2:basePSTH_PREMEAN2:basePSTH_PREMeanMEAN2 -1.428e-02  1.616e-02 -0.884 0.377499
pVisVis_MAX_ranksum:basePSTH_PREMEAN2:basePSTH_PREMeanMEAN2 7.085e+00  4.337e+01  0.163 0.870352
base_PREMEDIAN2:pVisVis_MAX_ranksum:basePSTH_PREMEAN2:basePSTH_PREMeanMEAN2 -4.216e+00  1.756e+00 -2.401 0.017069 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 584.9 on 261 degrees of freedom
Multiple R-squared:  0.189, Adjusted R-squared:  0.1424
F-statistic: 4.055 on 15 and 261 DF, p-value: 1.208e-06

```



```
> summary(fit7)

Call:
lm(formula = pMemoBase_MED_ranksum2 ~ base_PREMEDIAN2 * pVisVis_MAX_ranksum *
    basePSTH_PREMEAN2 * basePSTH_PREMeanMEAN2, data = DT)

Residuals:
    Min       1Q   Median       3Q      Max
-1534.29  -298.60  -120.55   33.98  1841.10

Coefficients:
                                Estimate Std. Error t value Pr(>|t|)
(Intercept)                   4.272e+02   7.401e+01   5.773 2.21e-08 ***
base_PREMEDIAN2                6.713e+01   7.214e+01   0.931 0.352957
pVisVis_MAX_ranksum            1.199e+03   3.462e+02   3.463 0.000624 ***
basePSTH_PREMEAN2             -2.656e+01   3.234e+01  -0.821 0.412225
basePSTH_PREMeanMEAN2         -7.778e+01   1.107e+02  -0.703 0.482829
base_PREMEDIAN2:pVisVis_MAX_ranksum -1.374e+03   6.397e+02  -2.149 0.032593 *
base_PREMEDIAN2:basePSTH_PREMEAN2 -2.766e+00   3.517e+00  -0.786 0.432289
pVisVis_MAX_ranksum:basePSTH_PREMEAN2 9.976e+01   3.055e+02   0.327 0.744250
base_PREMEDIAN2:basePSTH_PREMeanMEAN2 9.916e-01   4.030e+00   0.246 0.805844
pVisVis_MAX_ranksum:basePSTH_PREMeanMEAN2 -3.969e+02   1.003e+03  -0.396 0.692602
basePSTH_PREMEAN2:basePSTH_PREMeanMEAN2 3.465e+00   2.337e+00   1.482 0.139423
base_PREMEDIAN2:pVisVis_MAX_ranksum:basePSTH_PREMEAN2 9.156e+00   7.733e+01   0.118 0.905835
base_PREMEDIAN2:pVisVis_MAX_ranksum:basePSTH_PREMeanMEAN2 2.022e+02   1.277e+02   1.584 0.114437
base_PREMEDIAN2:basePSTH_PREMEAN2:basePSTH_PREMeanMEAN2 -1.428e-02   1.616e-02  -0.884 0.377499
pVisVis_MAX_ranksum:basePSTH_PREMEAN2:basePSTH_PREMeanMEAN2 7.085e+00   4.337e+01   0.163 0.870352
base_PREMEDIAN2:pVisVis_MAX_ranksum:basePSTH_PREMEAN2:basePSTH_PREMeanMEAN2 -4.216e+00   1.756e+00  -2.401 0.017069 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 584.9 on 261 degrees of freedom
Multiple R-squared:  0.189,    Adjusted R-squared:  0.1424
F-statistic: 4.055 on 15 and 261 DF,  p-value: 1.208e-06
```