HW8

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```
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(plyr)
```

```
## ------------------------------------------------------------------------------
```

```
## You have loaded plyr after dplyr - this is likely to cause problems.
## If you need functions from both plyr and dplyr, please load plyr first, then dplyr:
## library(plyr); library(dplyr)
```

```
## ------------------------------------------------------------------------------
```

```
##
## Attaching package: 'plyr'
```

```
## The following objects are masked from 'package:dplyr':
##
##     arrange, count, desc, failwith, id, mutate, rename, summarise,
##     summarize
```

```
library(reshape2)
load('./CHIS2009_reduced_2.Rdata')
```

```
p <- ggplot(adult, aes(SRAGE_P, fill = as.factor(RBMI))) + geom_histogram(binwidth = 1)
```

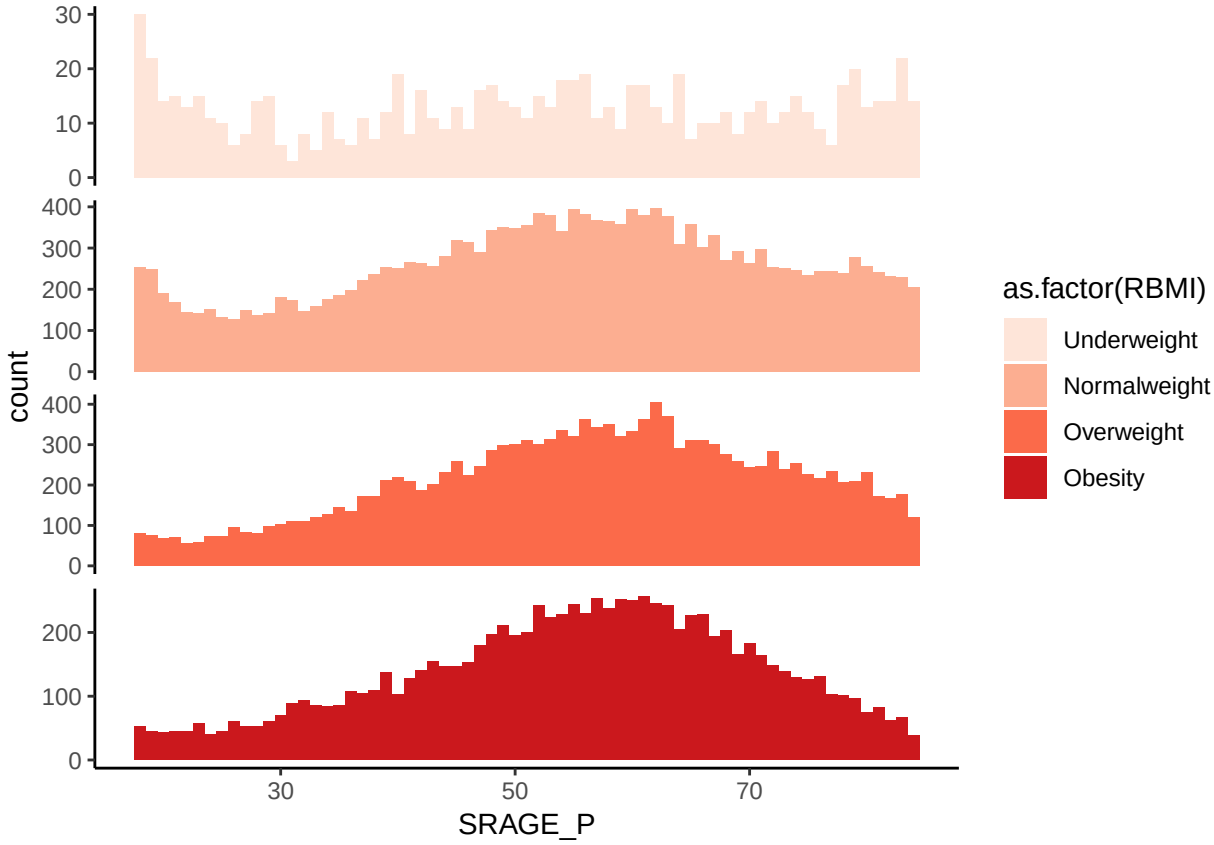
```
adult_clean <- filter(adult, SRAGE_P < 85)
adult_clean <- filter(adult_clean,BMI_P >= 16 & BMI_P <= 52)
```

```
vec = c('Latino','Asian','African American','White')
adult_clean$RACEHPR2 <- factor(adult_clean$RACEHPR2, labels=vec)
```

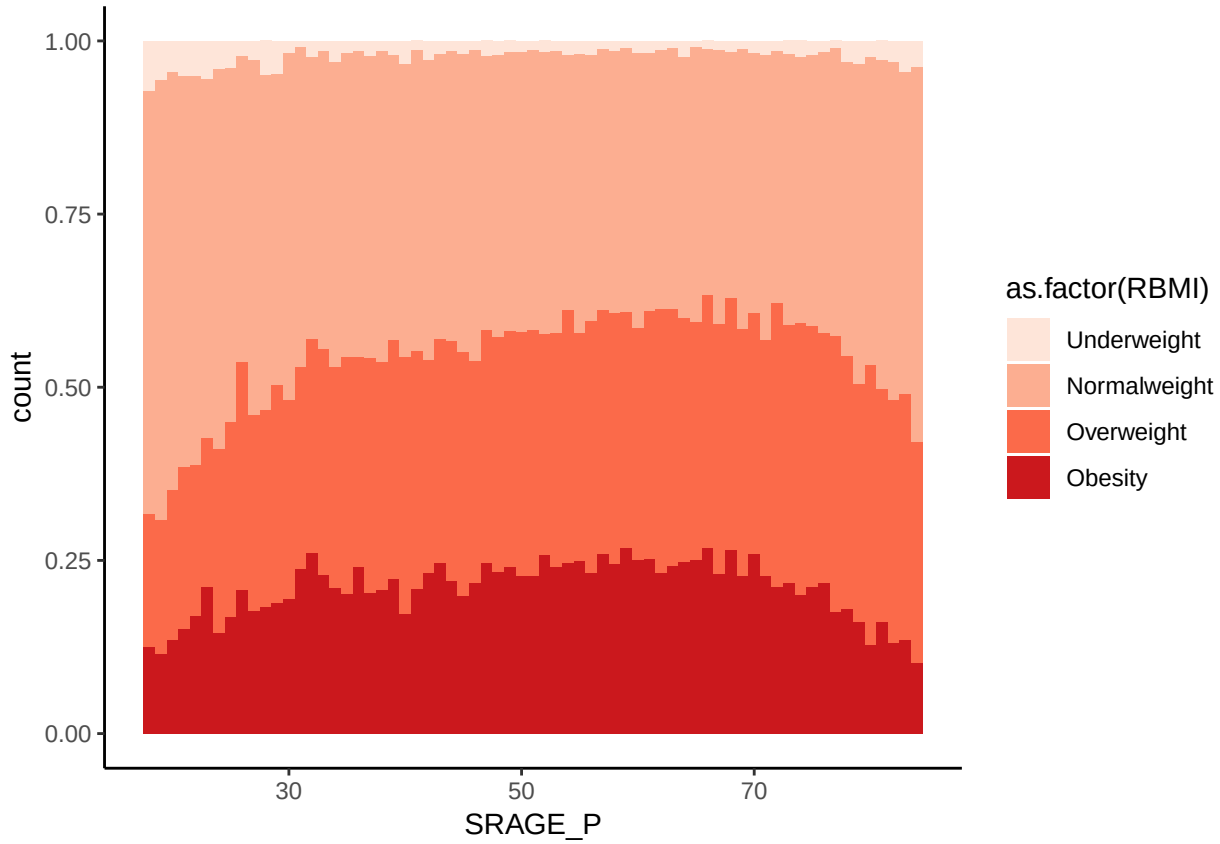
```
vec = c('Underweight','Normalweight','Overweight','Obesity')
adult_clean$RBMI <- factor(adult_clean$RBMI, labels=vec)
```

```
for(i in 1:length(adult_clean$RBMI)){
    if(adult_clean$RBMI[i] == 1) adult_clean$RBMI[i] <- 'Underweight'
    if(adult_clean$RBMI[i] == 2) adult_clean$RBMI[i] <- 'Normalweight'
    if(adult_clean$RBMI[i] == 3) adult_clean$RBMI[i] <- 'Overweight'
    if(adult_clean$RBMI[i] == 4) adult_clean$RBMI[i] <- 'Obesity'
    }
```

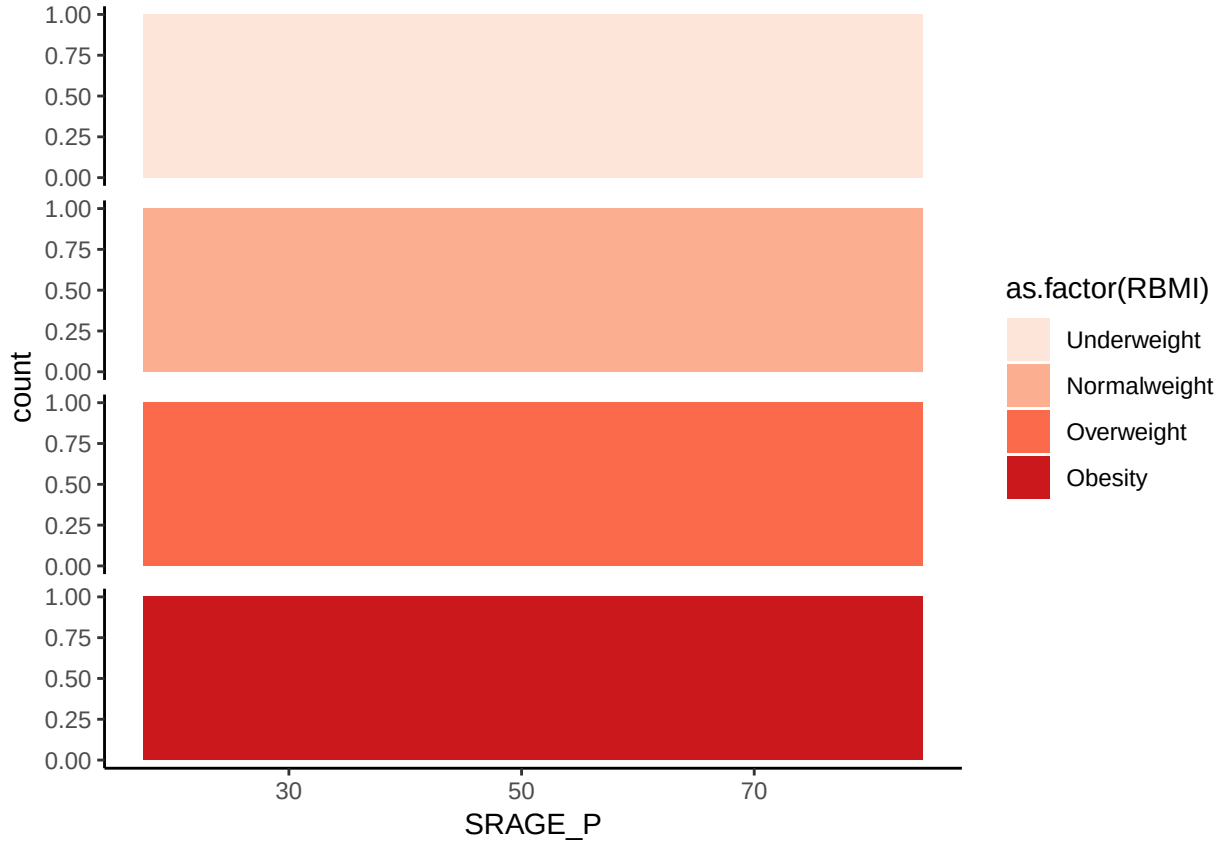
```r
ggplot(adult_clean, aes(SRAGE_P, fill = as.factor(RBMI))) +
  geom_histogram(binwidth = 1) +
  facet_grid(RBMI ~ ., scales = 'free_y') +
  theme_classic() +
  theme(strip.text.y = element_blank()) +
  scale_fill_brewer(palette="Reds")
```




```r
ggplot(adult_clean, aes(SRAGE_P, fill = as.factor(RBMI))) +
  geom_histogram(binwidth = 1, position = 'fill') +
  theme_classic() +
  theme(strip.text.y = element_blank()) +
  scale_fill_brewer(palette="Reds")
```




```
ggplot(adult_clean, aes(SRAGE_P, fill = as.factor(RBMI))) +
  geom_histogram(binwidth = 1, position = 'fill') +
  facet_grid(RBMI ~ .) +
  theme_classic() +
  theme(strip.text.y = element_blank()) +
  scale_fill_brewer(palette="Reds")
```




```
proportion <- dcast(adult_clean, SRAGE_P ~ RBMI, length)
```

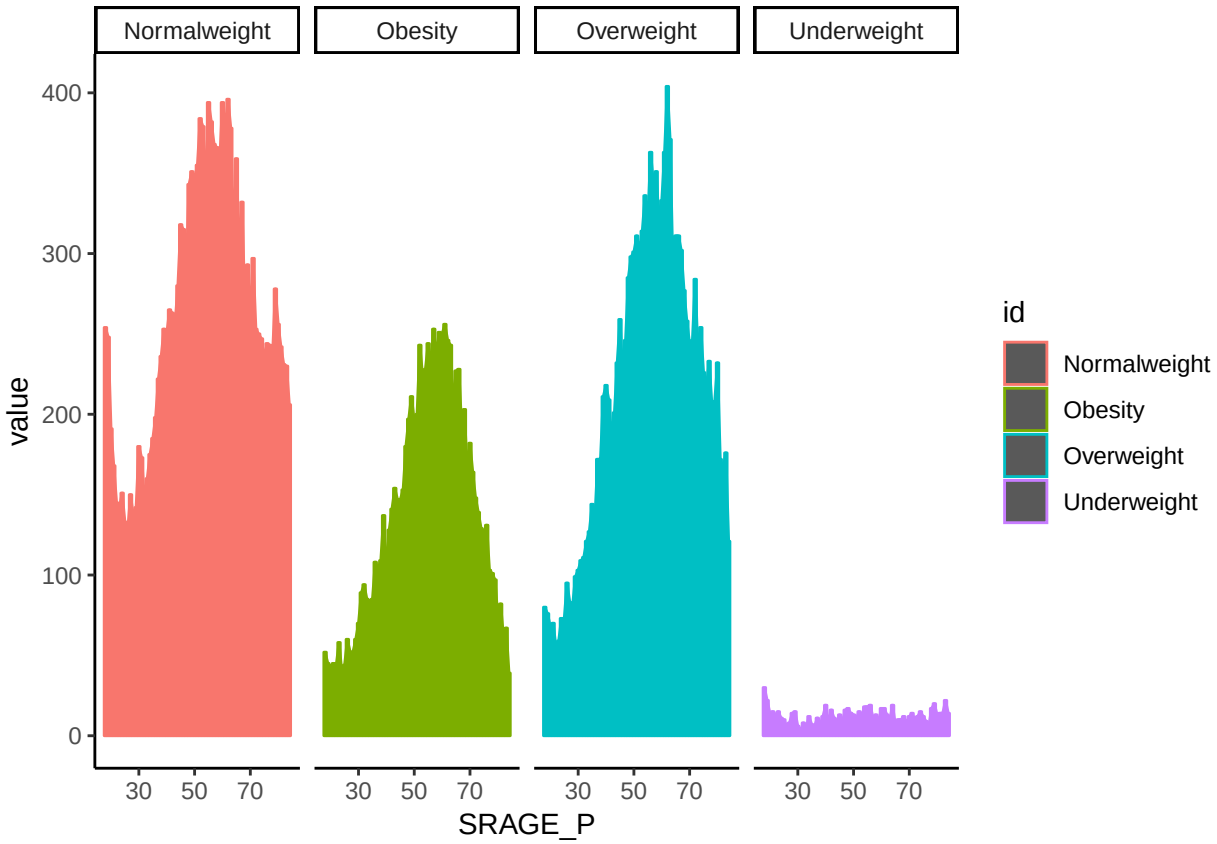
```
## Using POVLL as value column: use value.var to override.
```

```
proportion
```

```
##    SRAGE_P Underweight Normalweight Overweight Obesity
## 1       18          30          254         80      52
## 2       19          22          248         76      45
## 3       20          14          191         68      43
## 4       21          15          168         70      45
## 5       22          13          145         56      44
## 6       23          15          142         59      58
## 7       24          11          151         73      40
## 8       25          10          133         73      44
## 9       26           6          128         95      60
## 10      27           8          150         83      52
## 11      28          14          137         81      52
## 12      29          15          142         99      60
## 13      30           6          180        103      70
## 14      31           3          173        109      89
## 15      32           8          147        111      94
## 16      33           5          160        121      85
## 17      34          12          175        127      84
## 18      35           7          185        144      85
## 19      36           6          198        135     108
## 20      37          11          222        172     104
## 21      38           7          236        172     109
```

```
## 22      39          12          253         211      137
## 23      40          19          250         218      102
## 24      41           8          265         209      128
## 25      42          16          263         186      141
## 26      43          11          257         201      154
## 27      44           9          280         232      147
## 28      45          13          318         259      147
## 29      46           9          315         225      153
## 30      47          16          289         246      180
## 31      48          17          343         285      197
## 32      49          14          351         298      211
## 33      50          13          347         301      196
## 34      51          11          355         311      200
## 35      52          15          384         302      243
## 36      53          13          379         314      224
## 37      54          18          341         336      228
## 38      55          18          394         321      244
## 39      56          19          382         363      230
## 40      57          11          368         344      253
## 41      58          13          366         351      237
## 42      59           9          357         320      251
## 43      60          17          394         333      250
## 44      61          17          379         363      256
## 45      62          13          396         404      246
## 46      63          10          378         371      243
## 47      64          19          310         291      204
## 48      65           7          359         311      227
## 49      66          10          301         311      228
## 50      67          10          332         302      193
## 51      68          12          271         277      203
## 52      69           8          293         258      165
## 53      70          12          263         244      182
## 54      71          14          297         246      164
## 55      72          10          253         284      148
## 56      73          12          250         238      139
## 57      74          15          247         254      129
## 58      75          12          235         226      127
## 59      76           9          244         217      131
## 60      77           6          243         233      103
## 61      78          17          238         206      101
## 62      79          20          278         208       97
## 63      80          13          256         232       74
## 64      81          14          242         172       82
## 65      82          14          231         166       62
## 66      83          22          230         176       67
## 67      84          14          206         121       39
```

```
proportion %>% tidyr::gather("id", "value", 2:5) %>%
  ggplot(aes(x=SRAGE_P,y=value, col = id)) +
    geom_line() +
    geom_col() +
    facet_grid(~id) +
    theme_classic()
```


Normalweight
Obesity
Overweight
Underweight
400
300
200
100
0
value
30
50
70
SRAGE_P
id
Normalweight
Obesity
Overweight
Underweight