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## [1] "These are the error rates for each variable in predicting BMI with Linear Regression:"

##
## Gender = 7.939414
## Age = 8.178174
## History of overweight = 9.08678
## Freq consumption of high caloric food = 8.134233
## Freq consumption of vegetables = 8.167971
## Number of main meals = 7.932018
## Consumption of food between meals = 8.807099
## Smoke = 7.929959
## Consumption of water = 8.065398
## Calorie consumption monitoring = 8.106003
## Freq of physical activity = 8.109581
## Time using electronics = 7.973657
## Consumption of alcohol = 8.130043
## Transportation used = 8.07459

##
##
## As we can see, the most accurate are gender,
## number of main meals, smoke, consumption of water,
## and time using electronics. Lets see if we can get
## these to be more precise with different regression approaches.

## [1] "These are the error rates for each numerical variable in predicting BMI with Spline Regression:"

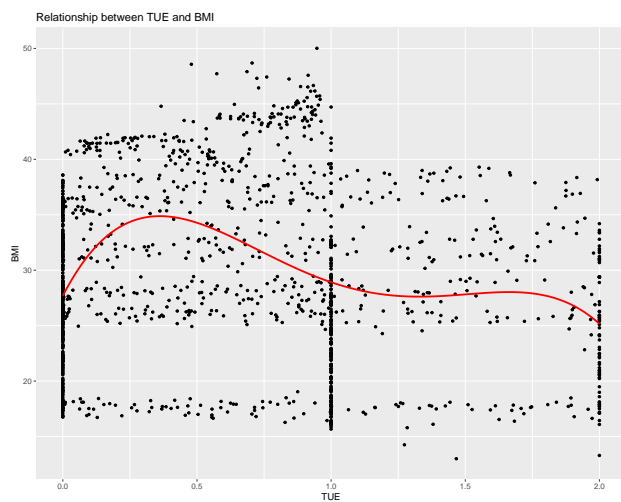
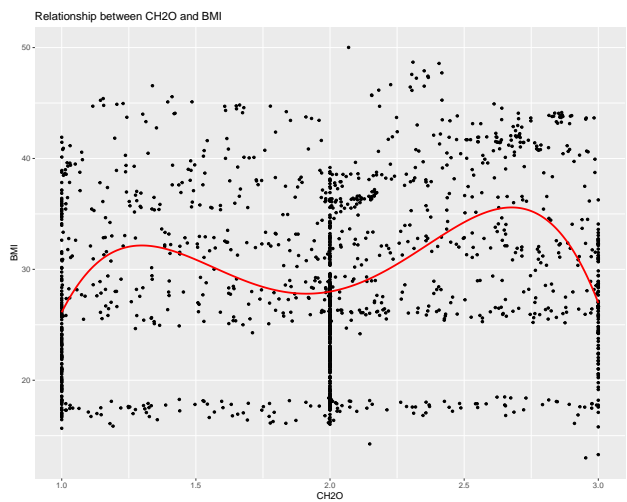
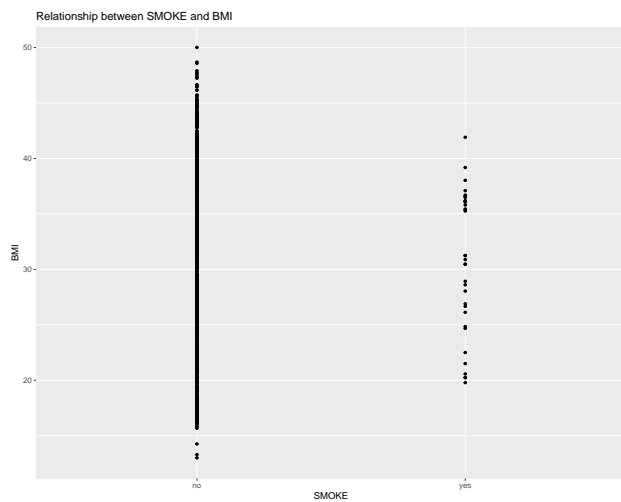
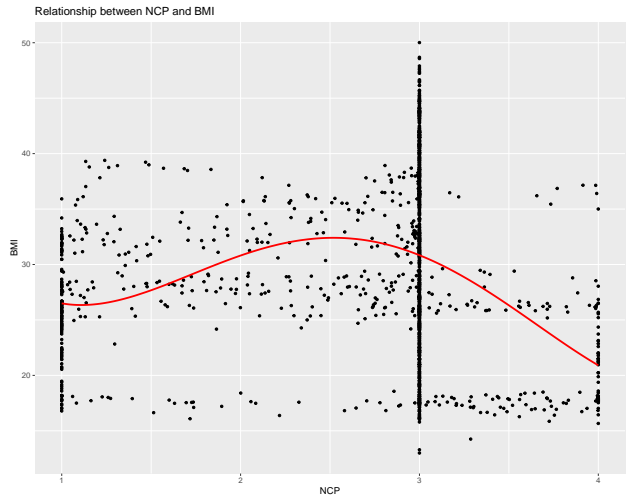
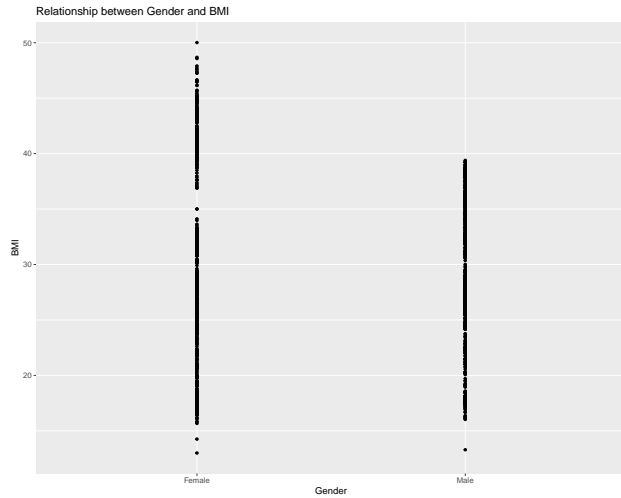
##
## Number of main meals = 8.540398
## Time using electronics = 8.488051

##
##
## As we can see from the results, spline regression is
## not a better predictor of the error rate so we will try
## something else.

## [1] "The error when using lasso regression is: "

## 7.968656
## Which is still not as low as linear regressin got us

```



```
## [1] "Testing for multicollinearity"
```

```
##           Age      Height      Weight      FCVC      NCP      CH2O
## Age      1.00000000 0.02080862 0.21793935 0.02225751 0.04393122 0.034840229
## Height 0.02080862 1.00000000 0.47117782 0.04608912 0.25248988 0.204148356
```

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## Weight 0.21793935 0.47117782 1.00000000 0.19534515 0.11347087 0.190483184
## FCVC   0.02225751 0.04608912 0.19534515 1.00000000 0.05008597 0.052498525
## NCP    0.04393122 0.25248988 0.11347087 0.05008597 1.00000000 0.042227619
## CH20   0.03484023 0.20414836 0.19048318 0.05249853 0.04222762 1.000000000
## FAF    0.16415271 0.30640582 0.05650405 0.01100181 0.11328858 0.161417486
## TUE    0.30123390 0.05600413 0.06577166 0.10525079 0.04894118 0.009913777
##          FAF          TUE
## Age     0.16415271 0.301233897
## Height  0.30640582 0.056004127
## Weight  0.05650405 0.065771664
## FCVC    0.01100181 0.105250787
## NCP     0.11328858 0.048941181
## CH20    0.16141749 0.009913777
## FAF     1.00000000 0.068454890
## TUE     0.06845489 1.000000000

## [1] "There is no evidence of multicollinearity"

```