

MATJAZ_URBAN

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```
# Ht, telesna višina v cm
```

```
lungcap$Ht <- lungcap$Ht*2.54
```

```
# Smoke naj bo faktor z vrednostma "Ne" in "Da"
```

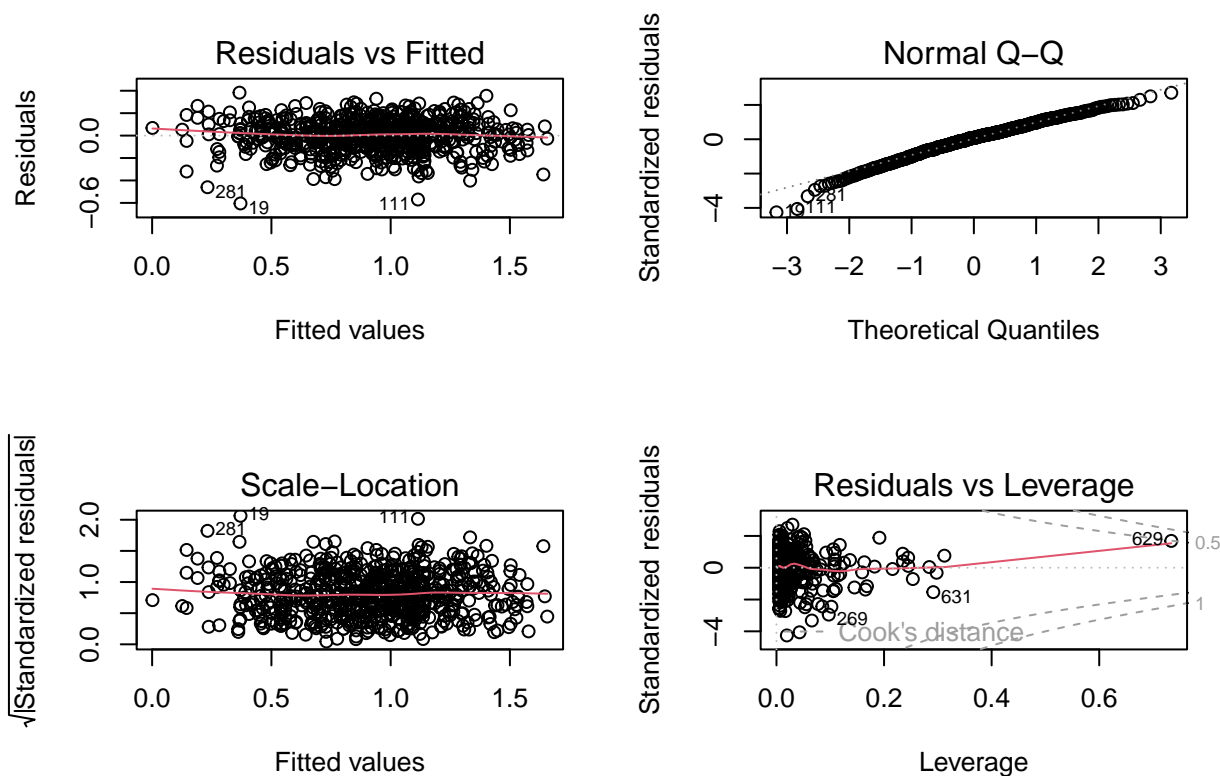
```
lungcap$Smoke <- factor(lungcap$Smoke, labels=c("Ne", "Da"))  
levels(lungcap$Gender)
```

```
## [1] "F" "M"
```

```
# zamenjamo oznaki za spol za grafične prikaze
```

```
levels(lungcap$Gender) <- c("Ženske", "Moški")
```

```
mod2.int <- lm(log(FEV) ~ Age*Ht*Gender*Smoke, data=lungcap)  
par(mfrow=c(2,2))  
plot(mod2.int)
```



```
summary(mod2.int)
```

```
##
## Call:
## lm(formula = log(FEV) ~ Age * Ht * Gender * Smoke, data = lungcap)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.60494 -0.08675  0.01153  0.09379  0.38277
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -2.546e+00  3.166e-01  -8.043 4.29e-15 ***
## Age             1.215e-01  4.111e-02   2.954  0.00325 **
## Ht              2.049e-02  2.153e-03   9.515 < 2e-16 ***
## GenderMoški    9.803e-01  4.131e-01   2.373  0.01794 *
## SmokeDa       1.205e+01  4.997e+00   2.412  0.01614 *
## Age:Ht        -6.003e-04  2.595e-04  -2.313  0.02103 *
## Age:GenderMoški -1.371e-01  5.095e-02  -2.692  0.00730 **
## Ht:GenderMoški  -5.876e-03  2.793e-03  -2.104  0.03579 *
## Age:SmokeDa    -8.366e-01  3.779e-01  -2.214  0.02721 *
## Ht:SmokeDa     -7.147e-02  3.035e-02  -2.355  0.01883 *
## GenderMoški:SmokeDa -1.388e+01  5.811e+00  -2.388  0.01722 *
## Age:Ht:GenderMoški 8.444e-04  3.158e-04   2.673  0.00770 **
## Age:Ht:SmokeDa  4.931e-03  2.297e-03   2.147  0.03219 *
```

```
## Age:GenderMoški:SmokeDa      8.748e-01  4.570e-01  1.914  0.05603 .
## Ht:GenderMoški:SmokeDa      8.236e-02  3.497e-02  2.355  0.01881 *
## Age:Ht:GenderMoški:SmokeDa -5.194e-03  2.739e-03  -1.897  0.05834 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1435 on 638 degrees of freedom
## Multiple R-squared:  0.8189, Adjusted R-squared:  0.8147
## F-statistic: 192.4 on 15 and 638 DF,  p-value: < 2.2e-16
```

Splošna enačba modela

$$\hat{y}_i = \beta_0 + \beta_1 \cdot \text{Age}_i + \beta_2 \cdot \text{Ht}_i + \beta_3 \cdot \text{Gender}_i + \beta_4 \cdot \text{Smoke}_i + \beta_5 \cdot (\text{Age}_i \cdot \text{Ht}_i) + \beta_6 \cdot (\text{Age}_i \cdot \text{Gender}_i) + \beta_7 \cdot (\text{Age}_i \cdot \text{Smoke}_i) + \beta_8 \cdot (\text{Ht}_i \cdot \text{Gender}_i) + \beta_9 \cdot (\text{Ht}_i \cdot \text{Smoke}_i) + \beta_{10} \cdot (\text{Gender}_i \cdot \text{Smoke}_i) + \beta_{11} \cdot (\text{Age}_i \cdot \text{Ht}_i \cdot \text{Gender}_i) + \beta_{12} \cdot (\text{Age}_i \cdot \text{Ht}_i \cdot \text{Smoke}_i) + \beta_{13} \cdot (\text{Age}_i \cdot \text{Gender}_i \cdot \text{Smoke}_i) + \beta_{14} \cdot (\text{Ht}_i \cdot \text{Gender}_i \cdot \text{Smoke}_i) + \beta_{15} \cdot (\text{Age}_i \cdot \text{Ht}_i \cdot \text{Gender}_i \cdot \text{Smoke}_i) + \epsilon_i$$

