# CCInter

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## CCInter - Summary table for cohort study

CCInter produces 2 by 2 tables with stratum specific odds ratios, attributable risk among exposed and population attributable risk.

Displays a summary with the crude OR, the Mantel Haenszel adjusted OR and the result of a Woolf test for homogeneity.

Also computes additive interaction (biological interaction)

## Function CCInter

```
data(Tiramisu)
DF <- Tiramisu
```

### Recoding

```
DF <- DF %>%
  mutate(age = case_when(age < 30 ~ 0, age >= 30 ~ 1)) %>%
  rename(agegroup = age) %>%
  mutate(tportion = case_when(tportion == 0 ~ 0, tportion == 1 ~ 1, tportion >= 2 ~ 2)) %>%
  mutate(tportion = as.factor(tportion)) %>%
  as.data.frame()
```

### CCInter ill / wmousse by tira

```
options(knitr.kable.NA = '')

res <- CCInter(DF, cases="ill", exposure = "wmousse", by = "tira")
kable(res$df1, align=res$df1.align, digits = res$df1.digits)
```

```
## Warning in rep(digits, length.out = m): 'x' is NULL so the result will be
## NULL
```

| CCInter ill - wmousse by(tira) | Cases | Controls | P.est. | Stats | 95%CI-ll | 95%CI-ul |
|---|---|---|---|---|---|---|
| tira = 1 | | | Odds ratio | 1.45 | 0.52 | 4.22 |
| Exposed | 43 | 9 | Attrib.risk.exp | 0.31 | -0.92 | 0.76 |
| Unexposed | 46 | 14 | Attrib.risk.pop | 0.15 | NA | NA |
| Total | 89 | 23 | | NA | NA | NA |
| Exposed % | 48.3% | 39.1% | | NA | NA | NA |
| | | | | NA | NA | NA |
| tira = 0 | | | Odds ratio | 14.46 | 2.12 | 106.00 |
| Exposed | 4 | 13 | Attrib.risk.exp | 0.93 | 0.53 | 0.99 |
| Unexposed | 3 | 141 | Attrib.risk.pop | 0.53 | NA | NA |
| Total | 7 | 154 | | NA | NA | NA |
| Exposed % | 57.1% | 8.4% | | NA | NA | NA |
| | | | | NA | NA | NA |
| Number of obs | 273 | | | NA | NA | NA |
| Missing | 18 | | | NA | NA | NA |

```
kable(res$df2, digits = res$df2.digits)
```

```
## Warning in rep(digits, length.out = m): 'x' is NULL so the result will be
## NULL
```

| P.estimate | Stats | 95%CI-ll | 95%CI-ul |
|---|---|---|---|
| MH test of Homogeneity | 0.01 | | |
| Crude OR for wmousse | 6.76 | 3.57 | 12.93 |
| MH OR wmousse adjusted for tira | 2.25 | 1.01 | 5.05 |
| Adjusted/crude relative change | -66.65 | | |

### CCInter ill / beer by tira

```
options(knitr.kable.NA = '')

CCInter(DF, cases="ill", exposure = "beer", by = "tira", table = TRUE)
```

```
## $df1
##    CCInter ill - beer by(tira) Cases Controls          P.est. Stats
## 1                      tira = 1  <NA>     <NA>      Odds ratio  0.37
## 2                       Exposed    27       14 Prev. frac. ex.  0.63
## 3                     Unexposed    63       12 Prev. frac. pop  0.34
## 4                         Total    90       26                    NA
## 5                     Exposed % 30.0%    53.8%                    NA
## 6                 ______________  <NA>     <NA>                    NA
## 7                      tira = 0  <NA>     <NA>      Odds ratio  1.04
## 8                       Exposed     3       60 Attrib.risk.exp  0.04
## 9                     Unexposed     4       83 Attrib.risk.pop  0.02
## 10                        Total     7      143                    NA
## 11                    Exposed % 42.9%    42.0%                    NA
## 12                ______________  <NA>     <NA>                    NA
## 13                Number of obs   266     <NA>            <NA>    NA
## 14                      Missing    25     <NA>            <NA>    NA
##    95%CI-ll 95%CI-ul
## 1      0.14     0.99
## 2      0.01     0.86
## 3        NA       NA
## 4        NA       NA
## 5        NA       NA
## 6        NA       NA
## 7      0.15     6.38
## 8     -5.82     0.84
## 9        NA       NA
## 10       NA       NA
## 11       NA       NA
## 12       NA       NA
## 13       NA       NA
## 14       NA       NA
##
## $df2
##                       P.estimate  Stats 95%CI-ll 95%CI-ul
## 1         MH test of Homogeneity   0.22
## 2              Crude OR for beer   0.57     0.33     1.00
## 3   MH OR beer adjusted for tira   0.48     0.22     1.05
## 4 Adjusted/crude relative change -15.83
##
## $df3
##      tira / beer Cases Controls     OR
## 1             ++    27       14  40.02
## 2             +-    63       12 108.94
## 3             -+     3       60   1.04
## 4 reference   --     4       83     NA
## 5          Total    97      169     NA
##
## $df4
```

```
##                                           Statistic  Value
## 1                   Observed OR when exposed to both  40.02
## 2 Expected OR if exposed to both and no interaction 108.97
## 3                                       Interaction -68.96
```

```
res <- CCInter(DF, cases="ill", exposure = "beer", by = "tira")
kable(res$df1, align=res$df1.align, digits = res$df1.digits)
```

```
## Warning in rep(digits, length.out = m): 'x' is NULL so the result will be
## NULL
```

| CCInter ill - beer by(tira) | Cases | Controls | P.est. | Stats | 95%CI-ll | 95%CI-ul |
|---|---|---|---|---|---|---|
| tira = 1 | | | Odds ratio | 0.37 | 0.14 | 0.99 |
| Exposed | 27 | 14 | Prev. frac. ex. | 0.63 | 0.01 | 0.86 |
| Unexposed | 63 | 12 | Prev. frac. pop | 0.34 | NA | NA |
| Total | 90 | 26 | | NA | NA | NA |
| Exposed % | 30.0% | 53.8% | | NA | NA | NA |
| | | | | NA | NA | NA |
| tira = 0 | | | Odds ratio | 1.04 | 0.15 | 6.38 |
| Exposed | 3 | 60 | Attrib.risk.exp | 0.04 | -5.82 | 0.84 |
| Unexposed | 4 | 83 | Attrib.risk.pop | 0.02 | NA | NA |
| Total | 7 | 143 | | NA | NA | NA |
| Exposed % | 42.9% | 42.0% | | NA | NA | NA |
| | | | | NA | NA | NA |
| Number of obs | 266 | | | NA | NA | NA |
| Missing | 25 | | | NA | NA | NA |

```
kable(res$df2, digits = res$df2.digits)
```

```
## Warning in rep(digits, length.out = m): 'x' is NULL so the result will be
## NULL
```

| P.estimate | Stats | 95%CI-ll | 95%CI-ul |
|---|---|---|---|
| MH test of Homogeneity | 0.22 | | |
| Crude OR for beer | 0.57 | 0.33 | 1.00 |
| MH OR beer adjusted for tira | 0.48 | 0.22 | 1.05 |
| Adjusted/crude relative change | -15.83 | | |