Case-Control Study on Esophageal Cancer Prevalence: Evaluating Tobacco and Alcohol Consumption.

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#install.packages("unibeCols")

You can add options to executable code like this

# Load libraries  
library(here)

here() starts at C:/Users/Demetrio/OneDrive - Università Commerciale Luigi Bocconi/Desktop/Chiavetta/PHD doc/Corsi PhD Berna/Corsi 2024/Course in R/My-First-R-project

library(tidyverse)

── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
✔ dplyr 1.1.4 ✔ readr 2.1.5  
✔ forcats 1.0.0 ✔ stringr 1.5.1  
✔ ggplot2 3.5.0 ✔ tibble 3.2.1  
✔ lubridate 1.9.3 ✔ tidyr 1.3.1  
✔ purrr 1.0.2

── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
✖ dplyr::filter() masks stats::filter()  
✖ dplyr::lag() masks stats::lag()  
ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors

library(lubridate)  
library(unibeCols)

## Introuction

Esophageal cancer remains a significant global health concern, with its incidence and mortality rates varying widely across regions. Tobacco and alcohol consumption are established risk factors for esophageal cancer, yet the prevalence of these habits and their correlation with squamous cell cancer of the esophageal and adenocarcinoma necessitate further investigation

The aim of this analysis is to visualize the prevalence rate of esophagus cancer cases in a case (squamous cell cancer) control (adenocarcinoma) study focusing on the alcohol and tobacco consumption.

## Data

We read and process the data from a case-control study of esophageal cancer in Ille-et-Vilaine [the dataset medicaldata available on R]

Data on tobacco and alcohol consumption were collected through structured interviews.

# Read data  
data <- medicaldata::esoph\_ca

[Figure 1](#fig-cases) shows the number of esophagus cancer cases and alcool consumption in the case group

ggplot(data = data, mapping = aes(x = ncases, y = alcgp)) + geom\_col() +  
theme\_bw()

|  |
| --- |
| Figure 1: Number of esophagus cancer and alcool consumption control group. |

[Figure 2](#fig-cases2) shows the number of esophagus cancer cases and alcool consumption in the control group

ggplot(data = data, mapping = aes(x = ncontrols, y = alcgp)) + geom\_col() +  
theme\_bw()

|  |
| --- |
| Figure 2: Number of esophagus cancer and alcool consumption control group. |

[Figure 3](#fig-cases3) shows the number of esophagus cancer cases and tobacco consumption in the case group

ggplot(data = data, mapping = aes(x = ncases, y = tobgp)) + geom\_col() +  
theme\_bw()

|  |
| --- |
| Figure 3: Number of esophagus cancer and tobacco consumption case group. |

[Figure 4](#fig-cases4) shows the number of esophagus cancer cases and tobacco consumption in the control group

ggplot(data = data, mapping = aes(x = ncontrols, y = tobgp)) + geom\_col() +  
theme\_bw()

|  |
| --- |
| Figure 4: Number of esophagus cancer and tobacco consumption control group. |

##Conclusions This case-control study highlights the association between tobacco and alcohol consumption with squamous cell cancer. On the other hand, it highlights a moderate and not significant association between alcohol and tobacco consumption and adenocarcinoma