

POPULATION ATTRIBUTABLE FRACTIONS RELATED TO CANCERS INCIDENT IN LUXEMBOURG: A RELIANCE PILOT STUDY

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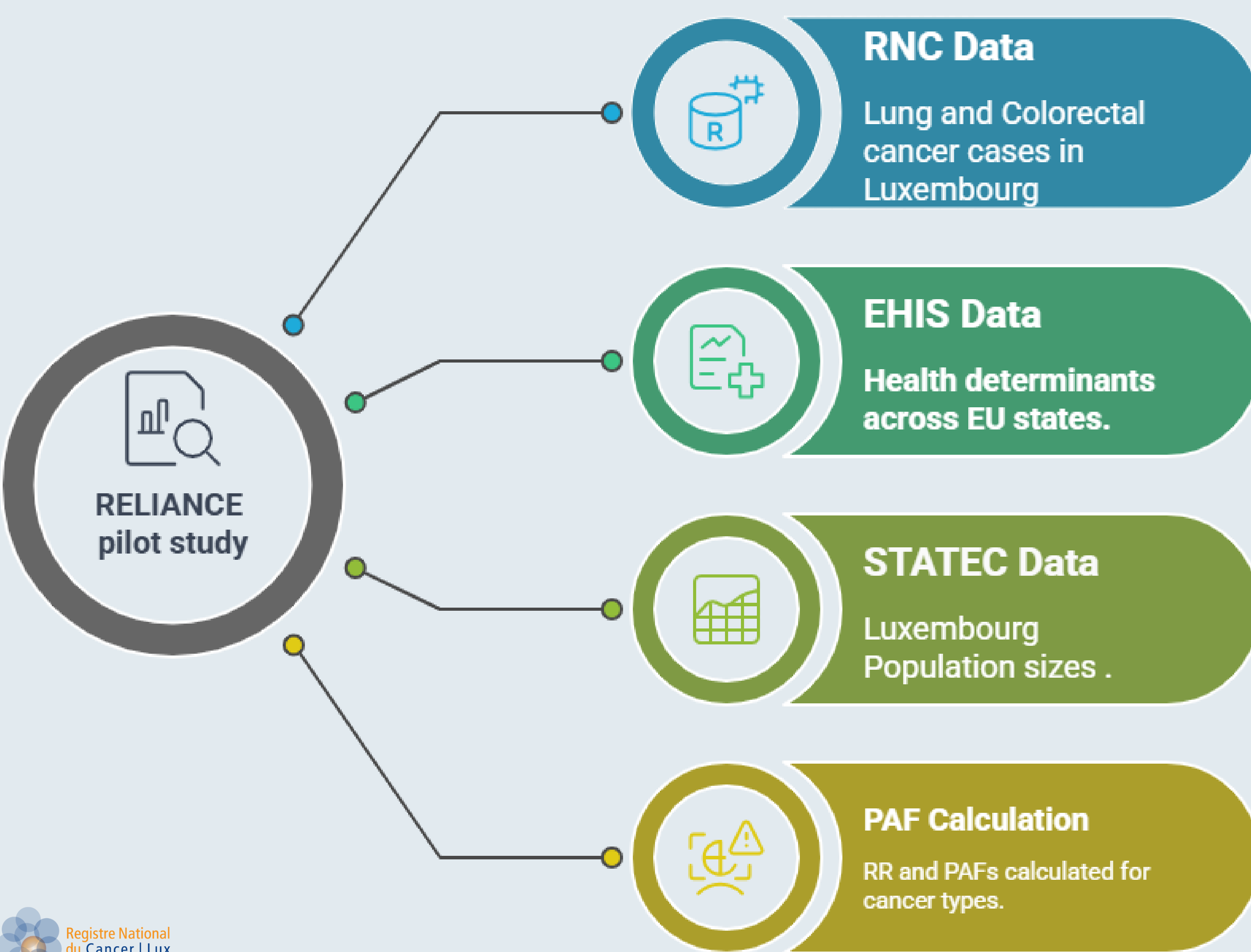
BACKGROUND

Cancer remains a major global health challenge, accounting for 20% of deaths from non-communicable diseases. **Luxembourg**, with the EU's highest population growth and a workforce of nearly 50% cross-border commuters, faces added pressure on its healthcare system, underscoring the need for effective prevention strategies. In 2019, age-standardized incidence rates for lung and colorectal cancers were 60.3 and 60 per 100,000 population, respectively, making them key public health concerns. At the same time, 18.3% of the population were smokers, and 51.6% were classified as overweight or obese.

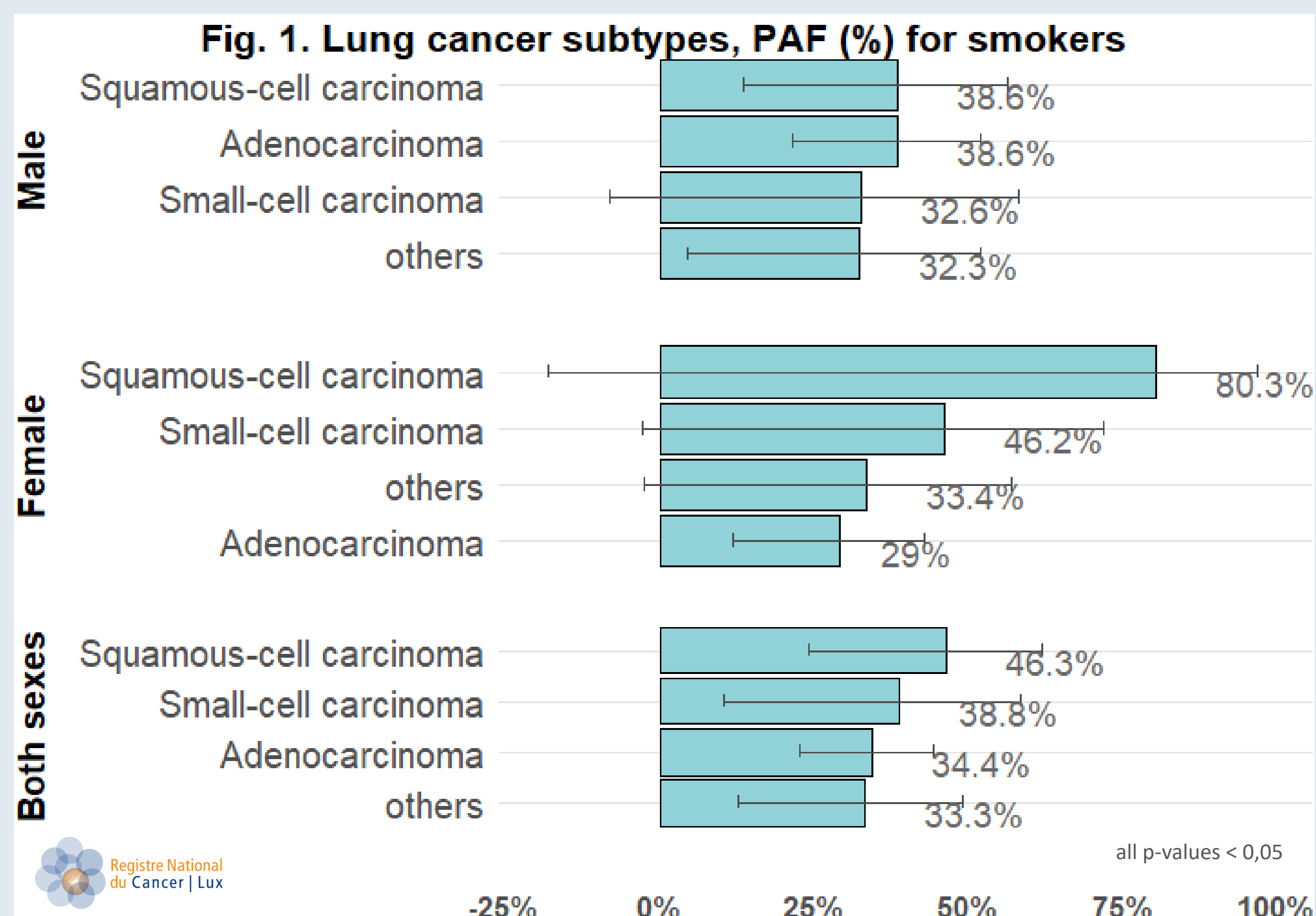
This study aims at investigating the **population attributable fractions (PAF)** of lung (ICD-O-3: C33-C34) and colorectal cancer (ICD-O-3: C18-C20) cases linked to smoking and elevated body mass index (BMI), respectively, using data from Luxembourg's National Population Based Cancer Registry (PBCR).

METHODS

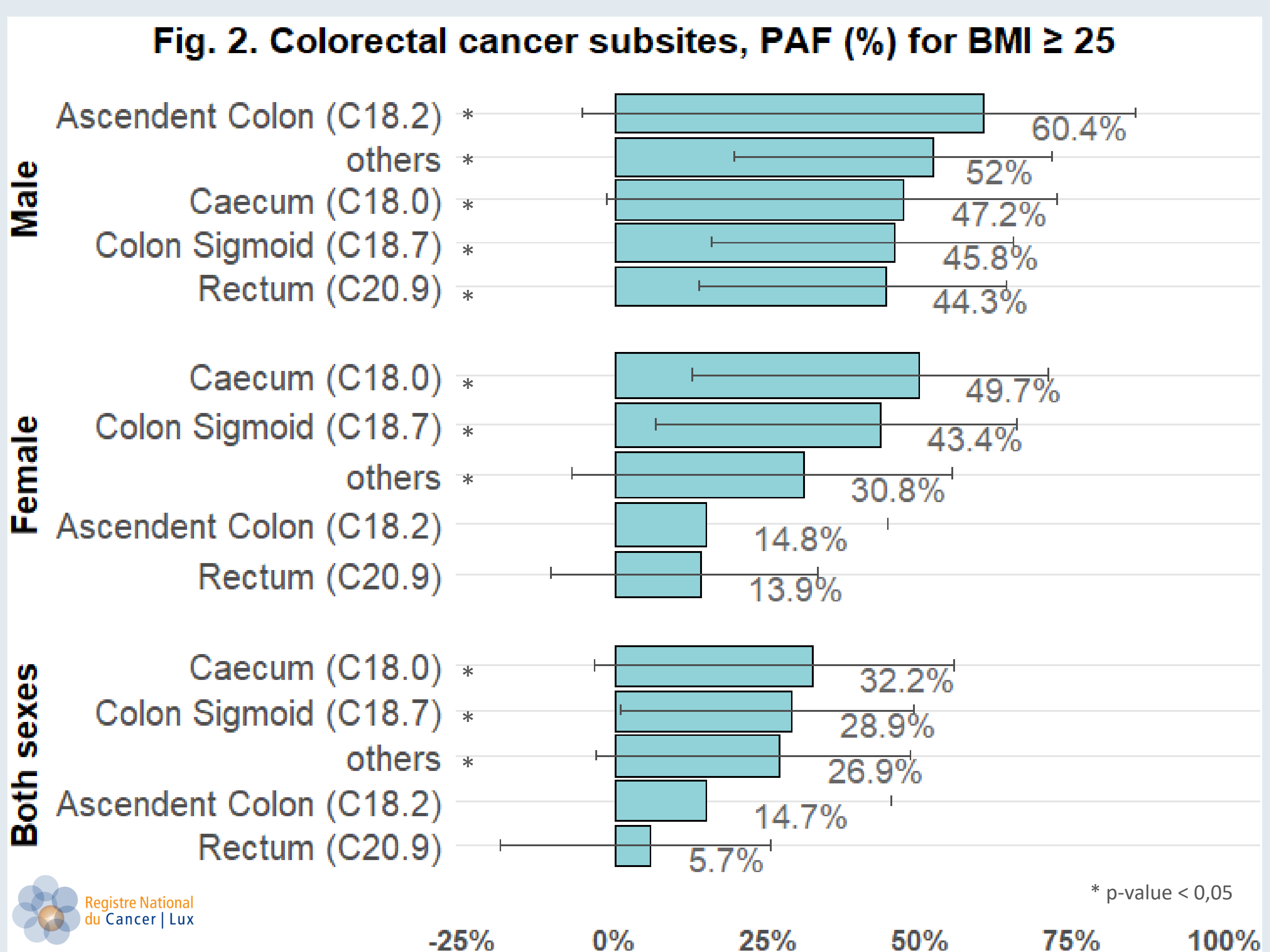
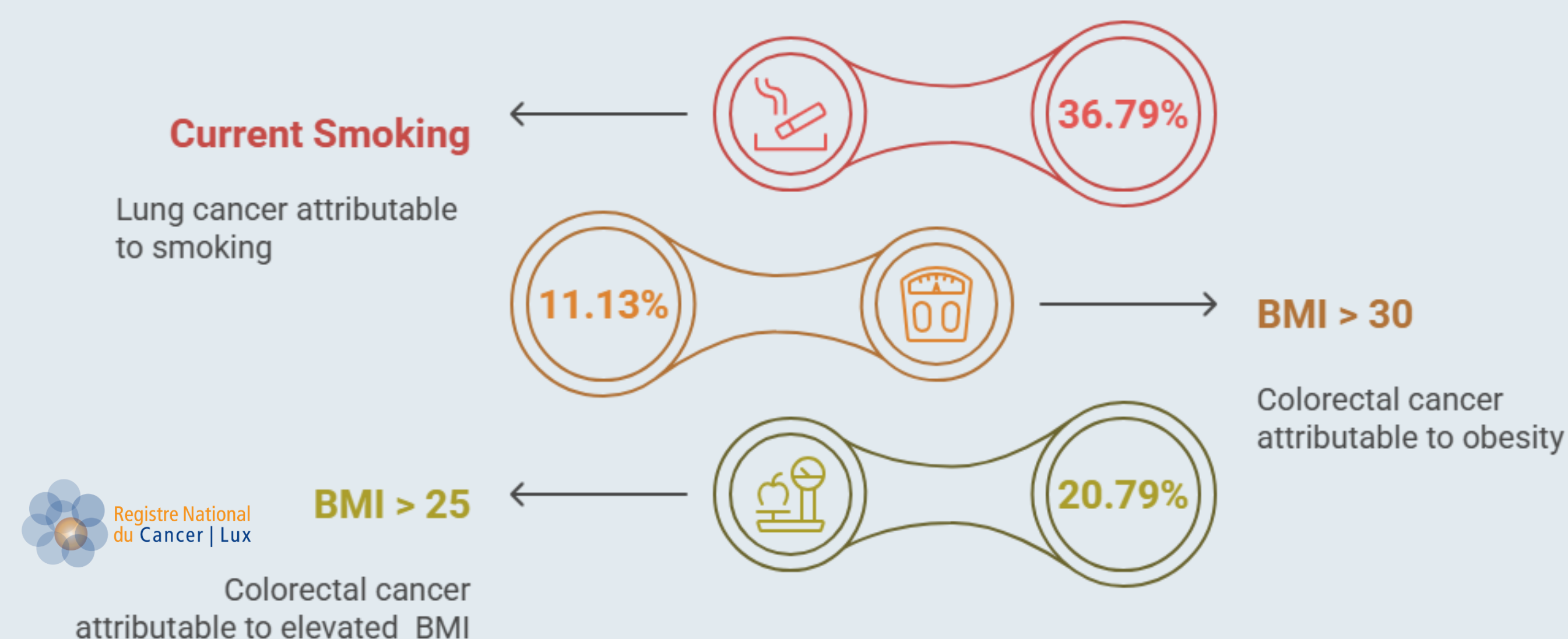
Incident lung and colorectal cancer cases from 2019 in Luxembourg were analyzed. Data sources included Luxembourg's PBCR – *Registre National du Cancer* (RNC), population sizes from the *Institut national de la statistique et des études économiques du Grand-Duché de Luxembourg* (STATEC) census, and prevalence of body mass index (BMI) and smoking from the European Health Interview Survey (EHIS). Calculated PAFs combines the magnitude of a risk factor effect with its distribution in the population. The R package {epiR} was used to estimate relative risks and PAFs for smoking with lung cancer, and BMI with colorectal cancer.



RESULTS



Population Attributable Fractions for Cancer in Luxembourg 2019



CONCLUSION

In this pilot study, we present a versatile methodology that uses PBCR, EHIS and census data to produce comparable PAFs. This is made possible by RNC's collection of additional data, such as height, weight and smoking, beyond the classical PBCR variables, which is key to enable deeper insights into cancer risk factors. Though based on 2019 data, this results stress the need for tailored prevention efforts. Long-term data are needed to assess trends.

