

THE FRACTION OF CANCERS ATTRIBUTABLE TO TOBACCO IN WALES IN 2013

Casey Dunlop^a, Katrina Brown^a, Ceri White^b, Dyfed Wyn Huws^b, Ciaran Slyne^b, Julie Howe^b, Lucy Ironmonger^a, Nick Ormiston-Smith^a
^aStatistical Information Team, Cancer Research UK, ^bWelsh Cancer Intelligence and Surveillance Unit (WCISU), Health Intelligence Division, Public Health Wales

INTRODUCTION

In 2011, a landmark study estimated that **42.7% of all cancers each year in the UK were attributable to lifestyle and environmental factors.**¹ This finding has been monumental in influencing public health policy. However, **there is wide variation in exposure prevalence between UK-constituent countries.** In addition, the cancer epidemiology evidence-base is constantly changing, new aetiological effect sizes have emerged, or become more robust, since 2011.

New calculations are required to establish UK country-specific estimates to **inform local public health decisions**, and incorporate the most up-to-date risk factor evidence.

RESULTS

All cancers

In 2013, an estimated **19% of cancers in Wales were due to tobacco – around 3,600 cancers.** This burden is higher in men (21%) compared with women (16%) due to smoking rate differences between genders over time.

By cancer type

Lung cancers attributable to tobacco made up the largest proportion of cancers (**87%**), around **2,100 cases.**

Laryngeal (71%), oral cavity and pharynx (53%), bladder (51%), oesophageal (41%), and pancreatic (33%) cancers had the next highest proportions attributable to tobacco after lung cancer. The risk of cancer due to smoking was found to be highest in these sites compared to others.

Bladder, oral cavity and pharynx, oesophageal, pancreatic, and colorectal had the highest number of cancers attributable to tobacco after lung cancer: **around 310, 240, 170, 170 and 150 cancers, respectively.** This is due to the high risks of cancer from smoking and the high incidence of these cancer types.

These results are not comparable to current UK estimates as literature searches have been conducted to update existing relative risks. Work is ongoing to identify the most accurate method of estimating smoking prevalence.

CONCLUSION

Our study shows just how dark a shadow the tobacco industry casts, with around 3,600 people a year being diagnosed with cancers which could have been avoided. Lung cancers caused the largest burden, a cancer of which only 5% of people are expected to survive 10 years or more.⁸

These estimates for Wales will provide valuable information for health organisations in how to tailor public health interventions, and help predict areas of greatest impact.

REFERENCES

- 1 Parkin DM, Boyd L, Walker LC. The fraction of cancer attributable to lifestyle and environmental factors in the UK in 2010. *Br J Cancer* 2011;105(S2):S77-S81.
- 2 International Agency for Research on Cancer. List of Classifications by cancer sites with sufficient or limited evidence in humans, Volumes 1 to 105. Available from <http://monographs.iarc.fr/ENG/Classification/index.php>. Accessed May 2015.
- 3 Contact authors for full list of papers.

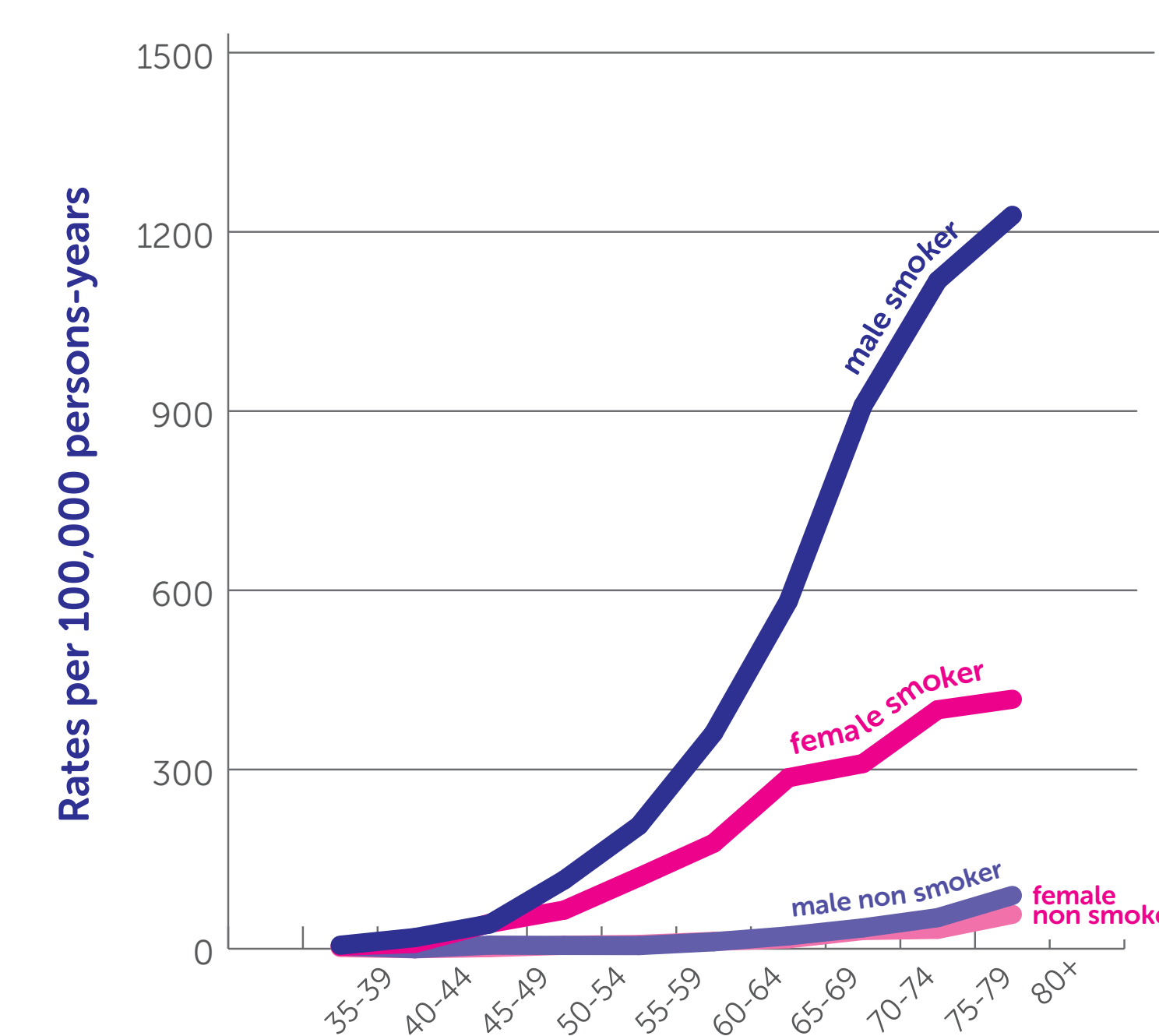
METHODS

The proportion of cancers attributable to tobacco in Wales was calculated. **Cancer types with sufficient evidence** in humans for smoking, voluntary and involuntary, as judged by the International Agency for Research on Cancer (IARC) were used.²

Systematic reviews were conducted to identify the highest-quality evidence available for tobacco associated relative risks. In total, **16 new relative risks** from 14 papers were selected.³

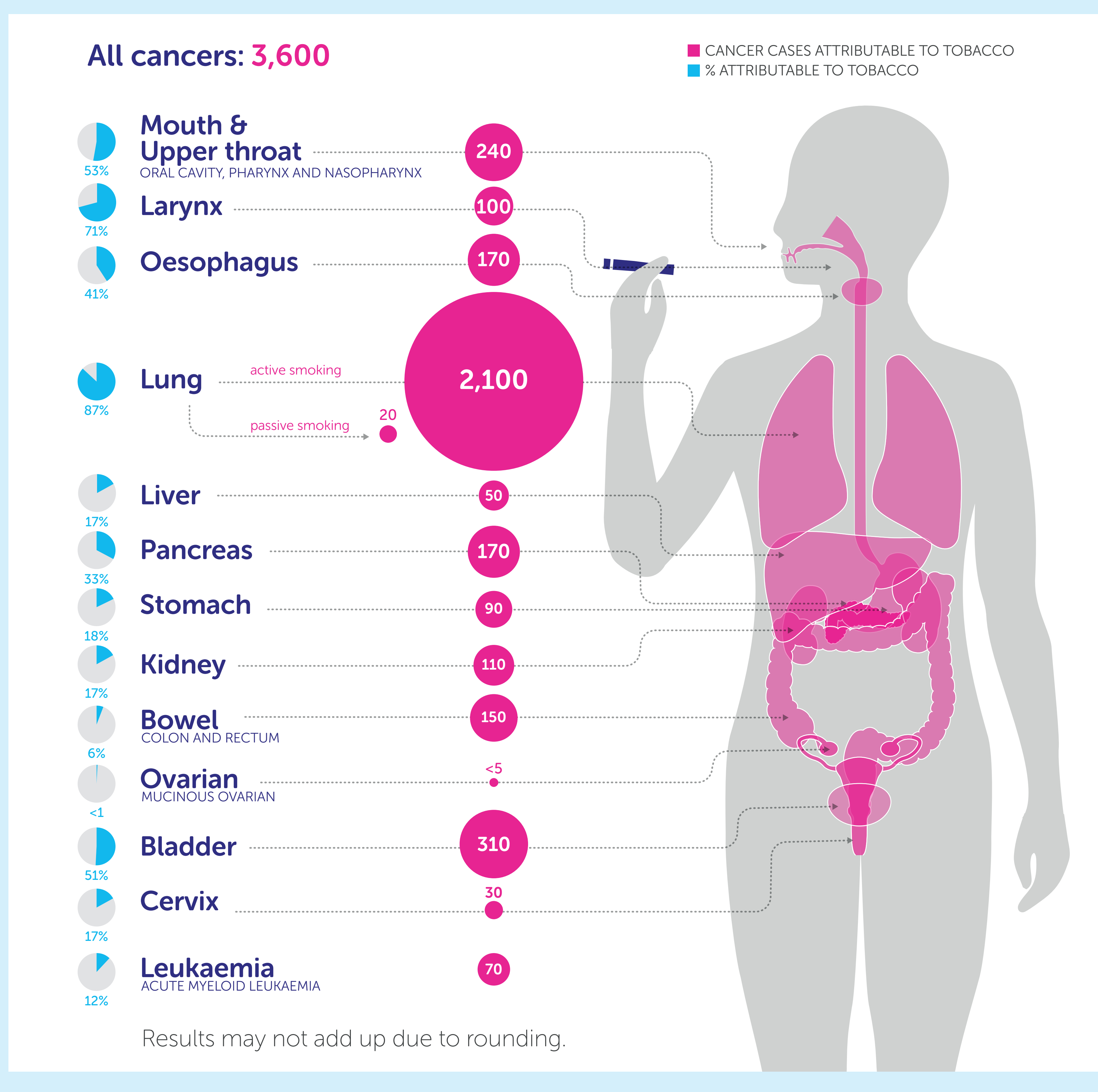
Prevalence of smoking in Wales (ever vs. never smokers) was calculated using methodology from Parkin et al. 2011.¹ This method uses results from the CPS-II study^{4,5} and takes into account past smoking exposure in the population. **Welsh population and incidence data** were provided by WCISU.⁶ Involuntary smoking prevalence was selected from the first Welsh Health Survey, 2003.⁷

LUNG CANCER RATES IN SMOKERS AND NON-SMOKERS*



*Mortality rates in smokers and non-smokers in the CPS-II study^{4,5}

NUMBER OF CANCERS CAUSED BY TOBACCO IN WALES IN 2013



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- 4 Thun MJ, Day-Lally C, Myers DG, et al. Trends in Tobacco Smoking and Mortality From Cigarette Use in Cancer Prevention Studies I (1959 through 1965) and II (1982 through 1988) In: Burns JM, Garfinkel L, Samet JM, editors. Monograph 8: Changes in Cigarette-Related Disease Risks and Their Implications for Prevention and Control. Bethesda: National Cancer Institute; 1996. pp. 305-332.
- 5 Michael J. Thun, S. Jane Henley, David Burns, Ahmedin Jemal, Thomas G. Shanks, and Eugenia E. Calle Lung Cancer Death Rates in Lifelong Nonsmokers *J Natl Cancer Inst* 2006; 98: 691-699.

- 6 Data were provided by the Welsh Cancer Intelligence and Surveillance Unit on request, May 2015.
- 7 Welsh Health Survey 2003/04. Available from: <http://gov.wales/docs/statistics/2005/050727healthsurvey0304en.pdf>. Accessed May 2015.
- 8 Cancer Research UK Cancer Survival Group, London School of Hygiene and Tropical Medicine. Personal communication, 2014.

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