LINKS BETWEEN

HEALTH-HARMING BEHAVIOURS AND COMMUNICABLE DISEASE

Informing future pandemics and epidemics

Modifiable, health-harming behaviours, such as **smoking**, **alcohol use**, **illicit drug use**, **obesity**, **physical inactivity** and **poor diet** all increase the risk of non-communicable diseases, such as cardiovascular disease and cancer. During the pandemic, health-harming behaviours were also found to be associated with increased severity of COVID-19 infection and death.

An extensive review was carried out to explore wider links between common health-harming behaviours (smoking, alcohol use, illicit drug use, obesity, physical inactivity and poor diet) and common communicable diseases and infections (Hepatitis B, Hepatitis C, HIV, TB, Pneumonia, Influenza and COVID-19). For more information, see Wood et al (2021)[1].

Modifiable, health-harming behaviours:

Can **double** the risk of **contracting** a common communicable disease, but in some instances can increase risk by **up to 8 times**.[2]

Can **double** the risk of having **more severe outcomes** from a common communicable disease, but in some instances can increase risk by **up to 4 times**.[3]

For example

Any/high use of alcohol can almost **double** the risk of contracting pneumonia compared to no/ low use.[4]

Current or former smoking can increase the risk of having severe COVID-19 outcomes by **2-3 times**.[5]

Children exposed to passive smoking are at almost **three times** the risk of developing tuberculosis disease compared to non-exposed children.[6]

Being obese more than **doubles** the risk of death from pandemic influenza.[7]

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Potential mechanisms of the association

Modifiable, health-harming behaviours can:

Impair the immune system.

Impact on other risk-taking behaviour e.g. alcohol can reduce risk perception.

Reduce the efficacy of treatment for communicable diseases.

Be a coping mechanism for living with a communicable disease.

Social issues such as homelessness can also **increase the risk** of both health-harming behaviours and communicable diseases.

In Wales

Modifiable, health-harming behaviours exist at the following levels in the Welsh population[8].

17% drink more than 14 units of alcohol per week.[9]

14% are current smokers, **30%** are ex-smokers.

61% are overweight or obese.

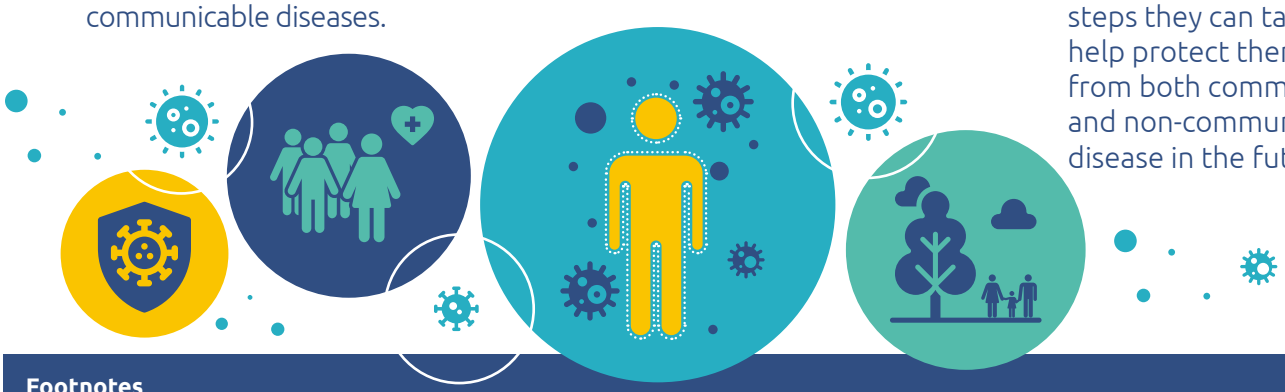
69% eat less than five fruits and vegetables a day.[10]

49% do less than 150 minutes of physical activity a week.[9,10]

These factors will have contributed to the burden of COVID-19 in Wales and are likely to contribute to the burden of future pandemics or epidemics.

Public health implications

1. Efforts to reduce the prevalence of modifiable, health-harming behaviours (commonly associated with non-communicable diseases) are likely to help efforts to prevent communicable diseases.
2. Addressing health-harming behaviours should be integral to building resilience against future epidemics and pandemics.
3. Public interest in protecting and improving health has increased over the course of the COVID-19 pandemic. This presents an opportunity to engage people in steps they can take to help protect themselves from both communicable and non-communicable disease in the future.



Footnotes

1) Further information can be found in Wood S, Harrison S, Judd N, Bellis M, Hughes K, Jones A. The impact of behavioural risk factors on communicable diseases: a systematic review of reviews. BMC Public Health. 2021;21:2110. The review explored the association between common behavioural risk factors and the contraction or severity of common communicable diseases and infections.

2) Effect sizes (ORs, RRs) ranged from 1.03 to 8.22.

3) Effect sizes (ORs, RRs) ranged from 0.83 to 3.96.

4) Simou E, Britton J, Leonardi-Bee J. Alcohol and the risk of pneumonia: a systematic review and meta-analysis. BMJ Open. 2018;8:e022344.

5) Sanchez-Ramirez DC, Mackey D. Underlying respiratory diseases, specifically COPD, and smoking are associated with severe COVID-19 outcomes: A systematic review and meta-analysis. Respir Med. 2020;171:106096.

6) Jafta N, Jeena PM, Barregard L, Naidoo RN. Childhood tuberculosis and exposure to indoor air pollution: a systematic review and meta-analysis. Int J Tuberc Lung Dis. 2015;19:596–602.

7) Mertz D, Kim TH, Johnstone J, Lam P-P, Science M, Kuster SP, et al. Populations at risk for severe or complicated influenza illness: systematic review and meta-analysis. BMJ. 2013;347:f5061.

8) Latest available data from the National Survey for Wales. Jan-March 2021. Available from: https://gov.wales/national-survey-wales-quarterly-survey-january-march-2021-html.

9) Recommended guidelines.

10) Based on participant reporting of previous day/ previous week.