

CORRECTION

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Correction: Exposure to major coronary heart disease events reduces lung cancer risk: a Mendelian randomization study based on a European population

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Following publication of the original article [1], the authors identified errors in the following sections:

Location: abstract

Error: Conclusions: This study suggests that MCHDE reduce the risk of NSCLC in the U.K. population and SCLC in the Finnish population.

Corrected content: “in the U.K. population” should be removed.

Correction: This study suggests that MCHDE reduce the risk of NSCLC and SCLC in the Finnish population.

Impact: The conclusion of the study was revised to align with the experimental results.

Location: Conclusion

Error: In conclusion, MCHDE reduce the risk of NSCLC in the U.K. population and of SCLC in the Finnish population.

Corrected content: “in the U.K. population and of” should be removed.

Correction: In conclusion, MCHDE reduce the risk of NSCLC and SCLC in the Finnish population.

Impact: The conclusion of the study was revised to align with the experimental results.

Location: Discussion

Error: Simultaneously, it is important to note that LUAD and LUSC, the major subtypes of NSCLC, are not causally associated with MCHDE. Three potential explanations for this exist. First, population differences may be a factor. The NSCLC data used in this study were based on the UK population, while the LUAD and LUSC data were derived from the Finnish population. The genetic background of the UK population differs from that of the Finnish population. Finland's high latitude, coupled with its relatively marginal geographical position, has resulted in the population being more isolated for a significant portion of its history. This has led to the uniqueness of

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the Finnish population's genetic background, with some rare genetic diseases having a relatively high incidence in Finland [40]. In contrast, the UK has historically been a global center, experiencing frequent gene flow and greater genetic diversity[41]. Genetic background differences between the Finnish and UK populations may account for the significant association between NSCLC and MCHDE, but not between LUAD and LUSC. Second, environmental differences between the UK and Finnish populations may also play a role. For instance, the PM_{2.5-10} in Finland is 2.0 µg/m³, while the PM_{2.5-10} in the UK is 5.3 µg/m³ [42]. PM_{2.5-10} is known to increase the risk of lung cancer [43]. Third, in addition to LUAD and LUSC, NSCLC includes other subtypes, such as Large Cell Carcinoma (LCC) and Adenosquamous Carcinoma (ADSQ) [44]. LCC accounts for approximately 15% of NSCLC cases [45], while ADSQ accounts for 1–4% of NSCLC cases [46]. These subtypes may contribute to the significant correlation between NSCLC and MCHDE.

Corrected content: “The NSCLC data used in this study were based on the UK population, while the LUAD and LUSC data were derived from the Finnish population. The genetic background of the UK population differs from that of the Finnish population. Finland's high latitude, coupled with its relatively marginal geographical position, has resulted in the population being more isolated for a significant portion of its history. This has led to the uniqueness of the Finnish population's genetic background, with some rare genetic diseases having a relatively high incidence in Finland [40]. In contrast, the UK has historically been a global center, experiencing frequent gene flow and greater genetic diversity[41]. Genetic background differences between the Finnish and UK populations may account for the significant association between NSCLC and MCHDE, but not between LUAD and LUSC. Second, environmental differences between the UK and Finnish populations may also play a role. For instance, the PM_{2.5-10} in Finland is 2.0 µg/m³, while the PM_{2.5-10} in the UK is 5.3 µg/m³ [42]. PM_{2.5-10} is known to increase the risk of lung cancer [43]. Third, in addition to LUAD and LUSC, NSCLC includes other subtypes, such as Large Cell Carcinoma (LCC) and Adenosquamous Carcinoma (ADSQ) [44].” should be changed to “The underlying cause of this phenomenon may be attributed to the fact that NSCLC encompasses not only lung adenocarcinoma and lung squamous cell carcinoma but also less common subtypes, including large cell carcinoma (LCC) and adenosquamous carcinoma (ADSQ), among others.[44].”

Correction: Simultaneously, it is important to note that LUAD and LUSC, the major subtypes of NSCLC, are not

causally associated with MCHDE. The underlying cause of this phenomenon may be attributed to the fact that NSCLC encompasses not only lung adenocarcinoma and lung squamous cell carcinoma but also less common subtypes, including large cell carcinoma (LCC) and adenosquamous carcinoma (ADSQ), among others.[44]. LCC accounts for approximately 15% of NSCLC cases [45], while ADSQ accounts for 1–4% of NSCLC cases [46]. These subtypes may contribute to the significant correlation between NSCLC and MCHDE.

Impact: Notably, this observation does not invalidate the core conclusion that MCHDE reduces the risk of NSCLC and SCLC. Moreover, it provides a plausible explanation for the significant association between MCHDE and NSCLC, but not with LUAD or LUSC. This discrepancy arises because NSCLC includes subtypes such as large cell carcinoma (LCC) and adenosquamous carcinoma (ADSQ), which collectively represent a non-negligible proportion of this category. LCC constitutes approximately 15% of histologically confirmed NSCLC cases, whereas ADSQ represents 1–4% of such cases, respectively. These subtypes likely contribute to the significant association observed between NSCLC and MCHDE.

Location: Table 1

Error: The Sample size of Major coronary heart disease event of Finnish in the first row of Table 1 is 337,277.

Corrected content: The Sample size should be changed from 337,277 to 377,277.

Correction: The Sample size of Major coronary heart disease event in the first row of Table 1 is 377,277.

Impact: This modification exerted no discernible influence on the interpretation of the results or the conclusions drawn from the research.

The original article [1] has been corrected.

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References

1. He D, Lu H, Ou X, et al. Exposure to major coronary heart disease events reduces lung cancer risk: a Mendelian randomization study based on a European population. *BMC Cancer*. 2025;25:152. <https://doi.org/10.1186/s12885-025-13485-6>.

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