THE AUTHORS REPLY

We thank Morabia and Costanza for their thoughtful comments (1) on our article (2). We concur with two of their conclusions, which are similar to points we made in our paper. First, genomic research clearly should not delay public health interventions on environmental factors. Second, genomic research has still a long way to go to prove its added value for understanding gene-environment interactions and preventing disease.

Nevertheless, Morabia and Costanza seem to miss the essence of our argument. The fact that their own research on genetic and environmental factors on cholesterol levels was not particularly rewarding does not negate its importance or invalidate its scientific merit. There could be many explanations for their findings, including the choice of candidate genes; the dominance of body mass index effects could in fact be due to joint effects of hidden genetic and environmental factors. Undoubtedly, there will be many dead ends in applied genomic research over the next decades. Does that mean we should give a lower public health priority for funding studies of genetic and environmental factors in coronary heart disease, the leading cause of mortality? As we discuss in our paper, the study of gene-environment interaction can be used to identify or confirm suspected environmental factors; applied genomic research can also be used to elucidate disease pathogenesis, natural history, disease classification, and heterogeneity, as well as response to treatment and interventions. We were not trying to invalidate Merikangas and Risch’s thesis (3) but to point out that the implication of environmental factors in disease causation is not enough to preclude research on their interactions with genes. The tools of genomics are becoming readily available for the public health community. Let us use them judiciously to learn about the occurrence of diseases in populations, whether they are known to be associated with modifiable environmental factors or not. Let us stop debating nature versus nature and move forward with developing, validating, and applying the best tools in order to prevent and control disease at the population level, the main mission of public health.

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REFERENCES


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