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Exposome from our past: what ancient and modern genomes can teach us?

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Background: (max 50 words)

The exposome shaped the evolution of our species: for example, in the last 30,000, one great climate event such as the Last Glacial Maximum and one great cultural change such as the Neolithic Revolution impacted on the human genome, as shown by studies based on ancient and modern genomes.

Methods and Results: (max 100 words)

In order to shed light on the exposome action on human genetic variability, we analyzed several ancient and modern genomes to unveil the effects of past climate changes, diet and lifestyle on our genetic landscape. We report two examples as case-studies: 1) studying the modern variability of 43 high-coverage individuals from different African groups, we shed light on the impact of the last Green Sahara (12,000-5,000 years ago); 2) analyzing hundreds of European individuals from Iron Age to Middle Age, we studied the selection effect of pathogens and how it shaped the modern genetic variability of immunity loci.

Conclusions and Significance: (max 50 words)

While the last Green Sahara had a strong impact on human migrations and subsistence strategies along the Sahel, surprisingly pathogenic infections seem not to have left strong genetic traces. This proves that the ancient and modern genomes can be highly informative about the exposome effects on the present-day genetic landscape.

Keywords: (max 5)

Genomics; Climate changes; Pathogens; Human migration; Immunity

References: (max 5 relevant references from the Authors in the following format:
full authors list, title, year, journal, vol.: pages)

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