

## VASCULAR DISEASE

## Atherosclerosis unravelled—clues from ancient civilizations

Analysis of mummified humans from ancient populations has revealed that atherosclerosis was prevalent in preindustrial societies across various geographical regions and historical eras. These findings “suggest that the disease is an inherent component of human ageing and not characteristic of any specific diet or lifestyle,” write Professor Randall Thompson and colleagues, who have published their report from the Horus study in the *Lancet*.

Mummies discovered in four regions—Alaska ( $n=5$ ), Egypt ( $n=76$ ), Peru ( $n=51$ ), and the southwestern USA ( $n=5$ )—were included in the study. Together, the lives of these individuals spanned a period of ~4,000 years, from 2,000 BCE (before common era) to 1,900 CE (common era). Each mummy underwent a whole-body CT scan to determine the presence and extent of vascular calcification in the carotid, coronary, iliac or femoral, and popliteal or tibial arteries, and the aorta. Bodies were in various states of preservation. Mummies from ancient Egypt often had the heart and some

vessels removed as part of the embalming process, whereas those from other cultures were naturally mummified and were usually anatomically intact. Therefore, atherosclerosis was defined as ‘probable’ (calcification along the expected course of a vessel) or ‘definite’ (calcified deposits in a clearly identifiable artery).

Atherosclerosis was identified in 34% of mummies. The rates among individual populations were 60% for Unangans (Alaska), 40% for Ancestral Puebloans (USA), 38% for Peruvians, and 25% for Ancient Egyptians. Most mummies with atherosclerosis had lesions in one or two vascular beds (25%), but a small proportion had diffuse disease in three or four (8%) or five (1%) vascular beds. No correlations were found between presence or extent of atherosclerosis and the sex of the individual or geographical location. However, a significant link between age at death and severity of atherosclerosis in all four populations was evident. The investigators calculated that the disease severity risk increased by 69% for each decade of life.



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Thompson *et al.* considered various potential modifiers of atherosclerosis in the populations studied, such as protein and fat content of diet, exposure to smoke from open fires, and inflammation caused by infection. However, their conclusion is that atherosclerosis might not be a disease of ‘modern’ lifestyle but a more-natural process associated with ageing.

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