




Blood viscosity and its determinants in the highest city in the world

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Edited by: Harold Schultz & Frank Powell

Key points

- Highlanders develop unique adaptive mechanisms to chronic hypoxic exposure, including substantial haemoglobin and haematocrit increases.
- However, a significant proportion of populations living permanently at high altitude develop maladaptive features known as chronic mountain sickness (CMS).
- This study aimed to assess the effects of permanent life at high altitude on clinical and haemorheological parameters (blood viscosity and red blood cell aggregation) and to compare clinical and haemorheological parameters of dwellers from the highest city in the world according to CMS severity.
- Blood viscosity increased with altitude, together with haemoglobin concentration and haematocrit. At 5100 m, highlanders with moderate-to-severe CMS had higher blood viscosity mainly at high shear rate and even at corrected haematocrit (40%), with a lower red blood cell aggregation.
- Blood viscosity may contribute to CMS symptomatology but the increased blood viscosity in CMS patients cannot solely be explained by the rise in haematocrit.

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