Immobilization as a risk factor for arterial and venous thrombosis

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Cardiovascular disease is the leading cause of death worldwide. Immobilization and a sedentary lifestyle are correlated to an elevated risk of both arterial and venous thrombosis in humans. Despite several cardiovascular risk factors, brown bears show no signs of organ damage after 5-7 months of hibernation every year. The overall aim of the thesis was to explore different possible links between immobilization and the risk of arterial and venous thrombosis in both a human and an animal model, by investigating markers associated with cardiovascular disease risk, such as cystatin C, platelet activation and aggregation, lipids and coagulation factors in both active and inactive states. Our objective was to gain further insights of the risks of physical immobilization documented by 1) how brown bears survive repeated annual cycles of immobilization and 2) human bed rest experiments.