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Iron bioavailability and cardiopulmonary function during ascent to very high altitude

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Intravenous iron supplementation at sea level is associated with enhanced stroke volume and higher S_{pO_2} on ascent to very high altitude (5100 m). These effects appear to result from reduced pulmonary vascular resistance and improved right heart function. <https://bit.ly/2VQX5fR>

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To the Editor:

More than one hundred million people reside worldwide at altitudes in excess of 2500 m above sea level. In the millions more who sojourn at high altitude for recreational, occupational or military pursuits, hypobaric hypoxia drives physiological changes affecting the pulmonary circulation, haematocrit and right ventricle (RV) [1]. Coincident with these, maximal left ventricular (LV) stroke volume (SV) falls [2], with a reduction of 20% reported after a 2-week stay at 4300 m [3]. A rise in heart rate (HR) compensates at rest and during submaximal exercise but is insufficient during maximal intensity exercise, constraining maximal cardiac output (CO). Previously, it was considered that a reduction in plasma volume or a direct effect of hypoxia on LV myocardial contractility were probably responsible [4]. More recently it has been suggested that increased RV afterload may be of greater importance [5].