

Hypertension risk from inhalation of particulate matter released from iron brakes

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Neil Armstrong syndrome applies both to Earth with common magnesium (Mg) deficits and with Mg deficits invariably occurring in Space (S); this can trigger acute temporary heart failure i.e., (catecholamine (C) cardiomyopathy). Whereas the normal CO₂ levels on Earth are 0.03% in S, during the Euro Mir 94 missions, levels, over 10 times higher (0.5-0.7% CO₂). It has been postulated that there is, with S flight, an intracellular shift of calcium (Ca) conducive to vasospasm and damage to mitochondria. Mg is a Ca blocker and strong antioxidant and is required for thermoregulation with loss of Mg in sweat and renal Mg loss and dehydration; this will increase potential for heart failure and hypertension. C levels in S are twice supine levels on Earth. Armstrong, during his last 20 lunar minutes, notified Houston twice during a 4 minute interval that he was "short of breath" along with heart rates up to 160; tachycardia will intensify oxidative stress in S from Mg ion deficits, high C, high free fatty acids and vicious cycles. This syndrome: Severe dyspnea, severe thirst, severe tachycardia corrected by fluid replenishment, applies to Earth

as well; it would be more likely to occur in post-menopausal women with 90% of cases of C cardiomyopathy reported in this group, marathoners particularly at the finish line and those in the tropics, particularly with water shortages. It is likely to be corrected, relatively quickly either by intravenous fluids or a subcutaneous Mg injection.

Biography

William J Rowe is a FBIS (Fellow British Interplanetary Society), FACN (Fellow American College of Nutrition, Retired Fellow Royal Society of Medicine), is a Board Certified Specialist in Internal Medicine. He has received his MD at the University of Cincinnati and was in private practice in Toledo, Ohio for 34 years. During that time he supervised over 5000 symptom-limited maximum hospital-based treadmill stress tests. He studied three world class extraordinary endurance athletes and published their exercise-related magnesium deficiencies. This triggered a 20 year pursuit of the cardiovascular complications of Space flight.