**SDC 1. Exclusion Criteria.** Exclusion criteria specific to the testosterone countermeasures in the HDBR protocol.

1. BMI > 35
2. Use of medications including anticoagulant (Coumadin), anabolic steroids, nitrates, antihistamines, and glucocorticoids.
3. Recent history of smoking tobacco (history of > 20 pack per year or unable to abstain from smoking for duration of the study).
4. Adherence to high intensity resistance training on a regular basis.
5. Current adherence to a weight-loss diet.
6. Implanted electronic devices (i.e pacemakers, electronic infusion pumps, stimulators).
7. Abnormal low hemoglobin or hematocrit.
8. LDL cholesterol above 200 mg/dL.
9. HDL above or below the normal clinical ranges used by NASA Human Test Subject Facility (HTSF).
10. Testosterone above or below the normal clinical ranges used by NASA HTSF.
11. Any major medical illness such as diabetes, chronic obstructive pulmonary disease, or sleep apnea.
12. Evidence of kidney disease (serum creatinine > 2.0 mg/dl).
13. Evidence of thyroid disease (as determined by an abnormal TSH level).
14. Evidence of liver dysfunction (history of hepatitis B or hepatitis C, or by a three-fold elevation of liver enzymes (Alk phos, ALT, AST) above normal).
15. Hypertension. (Blood pressure on three consecutive measurements taken at weekly intervals that has a systolic pressure > 140 or a diastolic blood pressure > 90 mmHg).
16. History of breast cancer or prostate cancer, or any indication of an occult carcinoma.
17. PSA ≥ 3.0 ng/ml. (PSA levels were monitored monthly. PSA velocities greater than 0.75 ng·ml-1·yr-1 while receiving testosterone would have resulted in withdrawal of the subject from the study and referral to a urologist).
18. Recent history of treated cancer other than basal cell carcinoma (< 6 months).
19. Recent history of GI bleed (< 12 months).
20. History of agitation/aggression disorder.
21. History of stroke with motor disability.
22. Known coagulation disorder or with clinical evidence indicative of a bleeding disorder (easy bruising, “free bleeders”).
23. Positive HIV test.
24. Any other condition or event deemed exclusionary by the PI and physician.
25. The subjects were required to have a minimal VO2max score of 30 ml/kg and minimal isokinetic knee extension strength/body weight ratio of 2.0 Nm/kg.
26. Subjects were screened with serum 25-hydroxyvitamin D level using 30-day lab values. If the 30-day value was <50 nmoles/L, the subject was recommended to take 2000 IU/day of Vitamin D3 until admittance into the study at UTMB. Once admitted into the study, the subject received 2000 IU/day of Vitamin D3 during the pre-bed rest phase at UTMB. If the 30-day value was >50 nmoles/L, the subject did not need to take the Vitamin D3 before admittance into the study at UTMB. The subject would also not need to receive the Vitamin D3 during the pre-bed rest phase of the study at UTMB. All subjects received 800 IU/day of Vitamin D3 during the in-bed rest phase of the study at UTMB.