Block periodization training in Navy Seal Operators: effect of 12 weeks on salivary hormones

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We sought to determine the stress response to block periodization training (BPT) in Navy SEAL Operators by measuring salivary hormones over a 12 week period. Eighteen Navy SEAL Operators (31 ± 6 yrs, 86.6 ± 9.0 kg, 176.2 ± 5.9 cm, 17.5 ± 6.5% fat) participated in a 12 week BPT during routine operational training. Salivary free testosterone (FT), dehydroepiandrosterone sulfate (DHEAS), and cortisol (C) were obtained at four time points separated by 4 weeks coincident with changes in rest:work ratio: 1- prior to training (T1), 2- moderate rest:moderate intensity (T2), 3- short rest:moderate intensity (T3), 4- long rest:high intensity (T4). The ratios of FT:C and DHEAS:C were also calculated. A significant increase in FT was observed at T3 (20.3 ± 31.4%; p < 0.05). DHEAS increased at T2 (23.2 ± 46.6%) with a further increase observed at T3 (57.0 ± 73.7%; p < 0.05). A significant increase in C was observed at T3 (20.8±41.8%; p < 0.05). No significant changes were observed in FT:C ratio. The ratio of DHEAS:C increased at T2 (45.5 ± 88.5%) with a further increase observed at T3 (43.9 ± 82.6%; p < 0.05). These data suggest that despite participation in operational training, a BPT produces acute elevations in anabolic hormones congruent with changes in intensity in SEAL Operators. Supported by ONR #N00014-11-1-0929.