

Exercise induced growth hormone

Growth Hormone is made by the pituitary gland and is needed for growth. It plays an important role in how the body uses food for energy (metabolism). The amount of GH in the blood changes during the day and is affected by exercise, sleep, emotional stress, and diet.

Cortisol is considered catabolic the opposite of growth hormone which is anabolic. Cortisol mobilizes energy by tapping into the body's fat stores. It then moves these fat stores from one location to another fueling hungry working muscles. Energy regulation and mobilization are two critical functions of cortisol. However, if there is too much cortisol in circulation, abdominal obesity can develop.

Research has shown that lactic acid increases the secretion of growth hormone. (study) By increasing your body's lactic acid production you are helping your body stay young and lose weight due to increased growth hormone. So training for that lactic acid burn should be used often in your workouts when trying to lose weight. Interval type exercises with high reps and limited rest work best to quickly stimulate lactic acid and not overstimulate cortisol. Remember anything over 47 minutes doubles the effect of cortisol and could lead to not getting to sleep at night (if you workout in the evening).

Although cortisol isn't all bad you want to keep it at lower levels in the evening so growth hormone secretion can be elevated 2 to 3 hours into sleep. This will ensure a refreshed feeling in the morning. Cortisol levels are supposed to be naturally at their highest in the morning. Blood sugar levels are low at this time as well, this coupled with light running may allow your body to burn more fat. I say light running because your body will use free fatty acids as the primary source of fuel as long as you don't go over 65% of your VO₂.

I have said before not to train on an empty stomach first thing in the morning because effects of cortisol are amplified. But the benefits of running, biking or rowing at low intensity far out weigh the negative effects of cortisol. This is the case as long as intensity is low, not to exceed 65% VO₂. The reason behind this is because at 25% VO₂ fat supplies 80% of the muscle's fuel. As your percent VO₂ used increases your body begins to use more glycogen for fuel since it requires less oxygen to be converted

to energy. You don't want to call on glycogen stores at this time because your body is primed for lipolysis. So if you can find the time 20 to 30 minutes of light running, biking, swimming or rowing first thing in the morning will help get rid of unwanted fat.

http://www.ncbi.nlm.nih.gov/pubmed/18184755?ordinalpos=2&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum