

Newsletter issued by Forensic Nursing, Inc.

Talking Points



December 2013/January 2014



Mary Jane Barrett, M.S., R.N.

Nurse Consultant

Certified Case Manager (CCM)

Master of Science

Bachelor of Science-Nursing



Successful weight loss takes programming, not willpower.
--Phil McGraw



13 O'Brien Avenue
Whitefish, MT 59937
Phone: (406) 257-8658
Fax: (406) 257-8553
mjb@mjnurse.com
mjnurse.com

Fat Metabolism 101: The Principle Physiological Functions

Fat is stored in the body in the form of triglycerides. Triglycerides are made up of three fatty acid molecules held together by a molecule of glycerol. The mobilization of fat refers to the initial process of releasing fat from storage sites (adipocytes) in adipose tissue. Lipolysis follows, which is the progression of reactions that biologically 'disassemble' the triglyceride into three fatty acids and glycerol, which are released into the blood. The metabolism of fat describes the complete biological breakdown or oxidation (which means loss of electrons) of fatty acids into energy that can be used by the cells of the body.

At the start of exercise the adrenal medulla (in the kidneys) secretes epinephrine and norepinephrine, which are part of the body's 'fight or flight' autonomic response to physical stress (such as exercise). Epinephrine and norepinephrine are major stimulatory hormones of hormone sensitive lipase (HSL). When HSL is stimulated, it acts to break apart the

triglyceride in the manner defined above called lipolysis. HSL actions can be inhibited by insulin. Therefore, during exercise the rate of lipolysis is largely regulated by the balance between the stimulating effect of epinephrine and norepinephrine and the inhibitory effect of insulin.

A guiding principle of weight management is the attainment and maintenance of a 1) 'negative' energy balance (i.e., burning more calories than storing) 2) over extended periods of time.

-Journal of Applied Physiology-2007

Fat burning kicks in after about 20 minutes of continuous aerobic exercise. It takes that long for fat burning (lipolysis) to begin. The first 20 minutes of exercise an individual is generally utilizing glycogen. Glucose is stored in the muscle as glycogen and if glycogen is around it is used first.

Re-programming for weight loss:

- 1) Follow the Mediterranean Diet which means change the way you eat on a daily basis.
- 2) This is not a fad diet but a way of life.
- 3) Exercise....lift weights. Move as often as possible. Take the stairs!!

What is the Mediterranean Diet? **Emphasizes:** Primarily plant-based

foods, such as fruits & vegetables, whole grains, legumes, nuts. Replaces butter with healthy fats, such as olive oil. Uses herbs & spices instead of salt for flavor. Limits red meat to no more than a few times per month. Recommends eating fish & poultry at least twice weekly. Drink red wine (optional). This diet recognizes the importance of being physically active & enjoying meals with family & friends. *Research has shown that the traditional Mediterranean diet reduces the risk of heart disease, cancer, Parkinson's & Alzheimer's diseases.* --Mayo Clinic 2014.

Trouble losing weight?.....1) Walk (fast) or jog. 30-40 minutes twice per day. You continue burning fat about 5-7 hrs. after the exercise because you have raised your metabolic rate. If you have time to do this twice daily....you can raise your metabolic rate twice daily, promoting two fat burning sessions instead of one. **2) Lift weights:** More repetitions/ less weight-- three to four times per week. Again, the metabolic rate increases *during & after exercise*. And, fat can be exchanged for muscle tissue with resistance exercise such as weight lifting programs. A bonus of that exchange is that *muscle tissue is metabolically more active than fat tissue.* MJ Barrett, MS, RN