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THE ESTROGEN TRAP

The role of hormones and insulin in female fat development.

By Teresa Tapp

Most women can relate to fighting the ongoing battle against increasing fat that seems to begin in our 20s, accelerates in our 30s, accumulates in our 40s, and explodes in our 50s. Even though we may consume the same amount of calories and maintain the same level of exercise or activity, we seem to lose control over the formation of new fat.

Initially this fat seems to shift to new areas of concern, but eventually grows into layers, which often covers the hard earned muscle tissue. The common approach to getting rid of this fat is to reduce calories and increase exercise. This may work initially, but eventually the fat wins. What to do? Center on the core!

I first studied metabolic breakpoints versus glucose utilization rates in reference to female hormones for my master's thesis. In my opinion, spinal density (the thickness of the muscle that attaches to the spine) is one of the primary secrets to success in

being able to consume carbohydrates without gaining weight. Involuntary muscle movement-the muscles that attach to the spine to maintain an upright position as well as the muscles involved in breathing-use glucose for fuel while active muscle movement prefers fat for fuel.



Because we use our arms and legs daily, we generally maintain muscle in those areas, but the majority of us do not do cartwheels, somersaults or other movements that involve balance on a daily basis. We know that if we don't use it, we lose it, so atrophy begins. A decrease in spinal density means less fuel (glucose) is needed for spinal support to maintain an upright position, so although consumption of carbohydrate calories remains constant, excess glucose will develop and be converted to fat. Unfortunately, once existing fat cells become full, the body will create more fat cells. Fat cells never disappear; they're either empty or full.

State of Flux

To complicate matters, female hormones create continual estrogen/insulin fluctuations. Our bodies are in a constant state of homeostasis, meaning each time our level of estrogen increases, the pancreas reacts by releasing more insulin to maintain hormonal balance. Because insulin is classified as a fat producing hormone, increased estrogen levels trigger a vicious cycle. The increased insulin, produced in reaction to carbohydrate consumption, creates increased estrogen, which then causes even more insulin to be produced.

To compound the challenge, female bodies undergo additional hormonal changes, specifically estrogen dominance, during the onset of menopause. So female fat accumulation continues to grow with increased furor as we

age unless we maintain or rebuild our resting glucose utilization rate

Resting glucose utilization rate is similar, but not the same as, base metabolic rate. To maintain resting glucose utilization rate, it is important to maintain balanced muscle density on the spine. Muscles need to be activated at both points of attachment for full fiber contraction, but most exercise programs are only isotonic in nature (one attachment). However, muscle movements involving balance are both comprehensive (both attachments) as well as compound, involving multiple muscles.

The trend in the fitness industry is toward increased focus on core development, with a variety of equipment, ranging from the Reebok Coreboard to the Bosu Ball to the Resist-A-Ball, so it is easy to incorporate balance workouts. But with exercise programs such as Pilates and T-Tapp, it is not necessary to use equipment for balance development. These comprehensive, compound muscle exercise programs utilize the body as a machine.

Get Moving

Along with increasing spinal density, it is also important to include aerobic activity for glucose control. I have included a sample exercise from the T-Tapp program called "hoe downs" (see box). This exercise (utilizing isometric contractions of large muscle groups and lymphatic stimulation) has been proven to help the body drop glucose levels an average of 62 to 85 points within three minutes. That's faster than an insulin shot!

Although hoe downs have been used to manage diabetic conditions, it is also a great movement for burning off excess glucose before it converts to fat. I suggest performing hoe downs after a meal or carbohydrate snack or whenever you need extra energy or clarity of mind. You can even add aerobic elements to your favorite weight training program by doing hoe downs during warm up. Although it looks simple, you'll be surprised how aerobically challenging it is.

The easiest way too increase aerobic benefits and glucose control is to get up and be active. Even just walking has aerobic benefits. Did you realize that walking involves more muscles than jogging? Try doing a combination of walking/jogging instead of straight jogging for a change. You'll soon notice increased slimming of the hips and thighs within a month if done regularly. Make sure to keep the shoulders in linear alignment with the hips in order to maximize muscle activation.

Wear ergonomic, weighted athletic shoes to increase the intensity of the exercise. Ranging from 2.5 to 4.5 pounds per shoe, weighted shoes have been clinically proven to increase base metabolic rate up to 25 percent within two weeks. I discourage the use of ankle weights, which can compound foot problems like plantar fasciitis, arch issues or knee problems. The ergonomic design not only provides spinal support, it also maximizes muscle movement from the waist down to build muscle density instead of muscle bulk.

Teresa Tapp, exercise physiologist and rehabilitative fitness specialist, is the creator of "T-Tapp-The Workout that Works." Additional information and exercises are available at <http://>.

Hoe Down Workout

Beginning Position: Stand with feet hip width apart, toes forward, butt tucked, with knees bent and pushing out toward little toe. Assume arm position with palms up and thumbs twisting back as far as possible. Push elbows forward at same time hands move back in alignment with shoulders. You should feel activation of the upper back muscles.



Front Lift/Touches: Lift left knee waist high or higher in alignment toward left shoulder. It is important to point toes and maintain a straight line from knee to ankle. Lower the left knee until the toe touches the floor. Repeat four times.

Form check: The butt should stay tucked and the right knee should stay bent.

Most common error: Allowing the knee to aim toward the center of the body or allowing the foot to aim toward the center of the body.



Side Lift/Touches: Bring the left arm across the body while lifting the left knee to the side. Concentrate on tucking the butt as the left knee lifts up and maintain tucked butt position as the left knee lowers. Repeat four times.

Form check: Maintain straight line from left knee to ankle. Right knee should remain bent.

Most common error: Allowing the butt to release tuck and knee to come forward.

Hoe Down Sequence

1. Four left knee lift/touches to the front. Four left knee lift/touches to the side. Repeat each movement four times.
2. Two left knee lift/touches to the front. Two left knee lift/touches to the side. Repeat each movement twice.
3. One left knee/touch to the front. One left knee lift/touch to the side. Repeat for a total of four single lift/touches front and side.
4. Rest four counts and repeat entire sequence; this time lifting the right knee.



5. Rest four counts and repeat with left side. Rest four counts and repeat right side.