

How to Permanently Lose Body Fat: The ECR Training Method

PRINCIPLES

The ECR (Endurance Capacity Rating) Training Method is founded on the following physiological and nutritional principles to lose body fat:

- When you exercise at moderate aerobic intensity, most of the fat used for fuel (called intramuscular triglyceride or IMTG) comes from the **muscle**. As you become better conditioned, you adapt by using and storing *even greater amounts* of fat in the muscle and using proportionately less from **body fat stores**. This adaptation occurs to reduce the overall stress on the organism, thus enhancing survival (see PROCESS).
- Since carbohydrate is also used as fuel in addition to IMTG, it must be restored from your diet. The stress caused by moderate intensity aerobic exercise: (1) "turn on" the enzymes that store carbohydrate in the muscle; (2) "turn on" receptors on the muscle cell surface (membrane) to allow carbohydrate inside; and (3) increase hormonal response, while you are resting, to transfer fat from body fat stores to muscle, thus replenishing lost IMTG.
- Contrary to popular belief, very little fat is burned while you exercise compared to the amount of fat burned at rest no matter what exercise you do. From ancient times, the hormonal system, *while you were at rest*, moved fat from adipose cells (like around your waist and buttocks, etc.) through the blood stream and then into muscle to restore lost IMTG during activity. Since we are designed to receive the majority of our energy from carbohydrate, the body "turns on" the process of converting dietary sugars (carbohydrate) back into stored glycogen in the muscles and liver that was lost from the day's activity and it does this using very little insulin because *insulin sensitivity is extremely high under these conditions*. Carbohydrate has precedence over fat simply because if carbohydrate is not spared, then your survivability is imperiled. For this reason, your body greatly increases the amount of fat used at rest and while you sleep (even though you are eating large amounts of carbohydrate) in order to **maximize** the restoration of carbohydrate lost in muscle and the liver. The genome expects the carbohydrate to come exclusively from raw fruits and vegetables, and the notion that a diet principally-composed of carbohydrates from raw fruits and vegetables blocks the fat-burning process is patently false under these conditions. The key to blood sugar regulation is the execution of these three steps and remembering that raw fruits and vegetables, through their fermentation by bacteria in your colon, *really* controls blood sugar the way nature intended.

These are the **fuel rules** if you execute *The ECR Training Method* properly:

- Replace burned fat in muscle from body fat stores in a "shell game" process **thus you have a net loss of body fat**;
- Replace burned carbohydrate in muscle and liver from a diet principally-composed of carbohydrates from raw fruits and vegetables (no net change);
- Spare dietary carbohydrate from being used for fuel by increasing fat mobilization at rest **thus you have a net loss of body fat**.

What Is Your BMI?

The BMI (body mass index) gives a good estimate of certain health risks using just your height and weight. Your BMI equals your weight in kilograms divided by your height in meters squared.

Calculation of your BMI:

Divide your weight in pounds by 2.2
 Weight (lbs.) / 2.2 = Weight (kg)
 Multiply your height in inches by 0.0254
 Height (in.) X 0.0254 = Height (meters)
 Multiply Height X Height = Height-squared
 Divide your Weight by Height-squared
 Weight (kg) / Height-squared(m²) = BMI

If your BMI is between 25 and 26.5 you should consider the ECR Training Program as an option, but if your BMI is greater than 26.5, then the ECR Training Program is strongly recommended because it will have great impact on permanently decreasing your body fat and decreasing certain health risk factors.

TOOLS

bionetworth.com offers two turnkey ECR Training appliances called the A-Type and B-Type. They are based on factory Cateye EC-1600 and EC-1200 Ergocisers, respectively. Do not confuse the appearance of these devices with ordinary stationary bikes in fitness centers; the drive trains of both units are certified Class A ergometers (very smooth and precise medical instruments) featuring 36 resistance levels. A very important property of the Operating System's endurance capacity component, namely The ECR Training Method (in the book *The Digital Mantrap* it is called *The Woolly Mammoth Workout™*), is to provide a means to accurately measure endurance capacity performance not only from workout to workout as you progress, but also from person to person. This can only be accomplished with a certified ergometer, which both the A-Type and B-Type have. Without precise instrumentation, the foundational elements of standardization, validation, and meaningful performance evaluation are fruitless. How can you measure your progress without precisely knowing what you have achieved? How could more refined training protocols be created without reproducible metrics across a population? How can the concepts of endurance capacity and its impact on business productivity, disease prevention, enhanced quality of life, and longevity be quantified and valued as one of life's premier objectives?



Both the A- and B-Type can automatically "lock in" on a specific power output level in five-watt increments at the touch of a button while on the fly when you reach the target heart rate and will then stay locked on that power level even if you vary your cadence (pedaling frequency); *this is exactly what the ECR Training Method™ is*. This feature is crucial to your success because without it your workout is not controlled and, resultantly, your results are compromised.

Although both the A- and B-Type come from the factory with an integrated heart rate monitor system using a photo-optic earlobe sensor that works very well, Elite Performance Technologies delivers the A-Type with a pre-installed built-in Polar wireless heart rate data sensor and a Polar heart rate transmitter and chest belt; unlike the A-Type, the B-Type does not provide this feature.

Both the A- and B-Type are modified by Elite Performance Technologies to turnkey ECR Training Method appliances with the Ritchey Road Pro pedal system and the Ritchey Vector Gel saddle, replacing the standard "strapped" pedals and the factory "fitness club" seat (the factory equipment is shipped along with the upgrades).

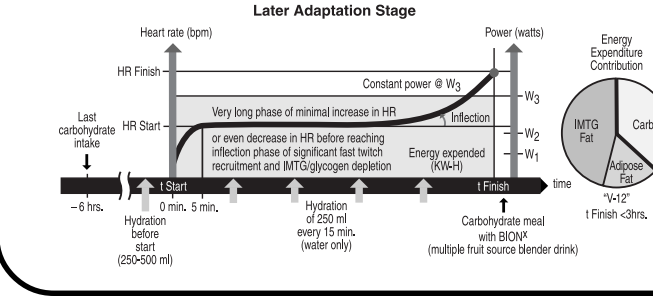
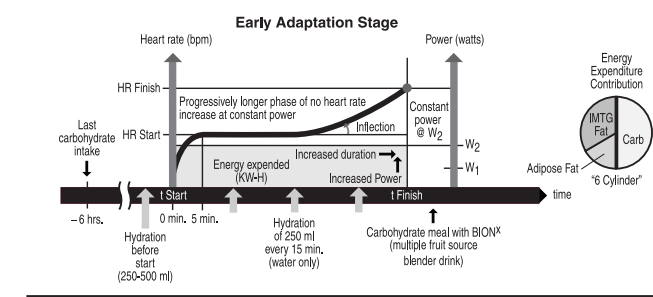
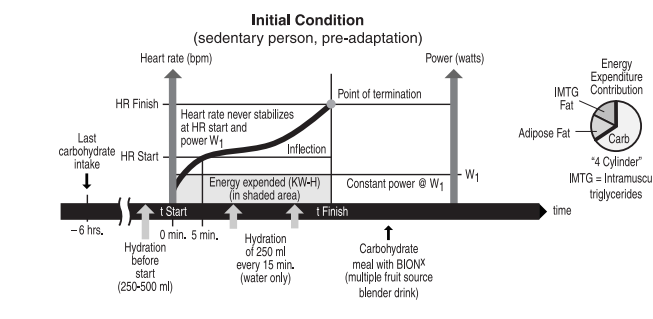
The B-Type, which is based on the Cateye EC-1200, is the least expensive true ergometer in the professional medical (cardiovascular/ rehabilitation/ physiologic test laboratory) marketplace worthy of attention. It has the same design and manufacturing standards (i.e. the quality of a certified Class A ergometer) as **much** more expensive laboratory ergometers, but without all the expensive and complicated software programming you won't ever need. *The B-Type is all you need to perform flawless ECR Training sessions — nothing more, nothing less.*

The A-Type has five significant advantages over the B-Type:

- A more uniform pedal stroke and superior "feel" because of a supplemental flywheel;
- The integrated Polar *wireless* heart rate telemetry capability;
- The hardcopy printing of ECR Training Method performance data;
- A better instrument panel with easier to use "key pad" controls; and
- The reading rack with water bottle holder.

The engineering effort that went into its design and manufacturing is really evident by the user experience — both a hassle-free and flawless execution. This is what you expect from a true instrument — an instrument and training process designed to permanently lose body fat — and the A-Type delivers. For the money, the B-Type represents an excellent value. Be aware that a cheap, infomercialized \$300 recumbent bike seen on TV cannot be compared to the engineering standards of a certified ergometer; cutting cost on your principal ECR Training appliance beneath the level of the B-Type is a strategic error.

PROCESS



THE A-TYPE

The A-Type is shipped complete with the following components:

- Implementation Guide and Heart Rate Calculation Software
- Cateye integrated wireless sensor (factory installed)
- Cateye heart rate transmitter and chest belt
- Ritchey Road Pro pedals (one pair)
- Ritchey cleats (one pair)
- Ritchey Vector Gel saddle
- Cateye integrated reading rack and water holder
- AC adaptor

US \$1,930

For more information or to order, please call: 1-800-800-9461

THE B-TYPE

The B-Type is shipped complete with the following components:

- Implementation Guide and Heart Rate Calculation Software
- Ritchey Road Pro pedals (one pair)
- Ritchey cleats (one pair)
- Ritchey Vector Gel saddle
- AC adaptor

US \$1,250

What Does Your ECR Mean & How Do You Measure It?

Exercise Equipment

ECR Workout Appliance A- or B-Type stationary bicycle with certified medical ergometer

Assessment of Starting Condition

Your BMI gives you an estimate of certain health risk factors but does not directly tell you about your physiological abilities. Now we want to assess your body's efficiency of processing energy at intermediate aerobic intensity. The measurement, called the ECR, is your standard of measure of physical conditioning that correlates with your permanent reduction of body fat and is what you want to improve over the next 12 months. The ECR measures your body's ability to produce energy while at a fixed relative aerobic intensity and relative to bodyweight.

There are two levels of ECR measurement and training. You will be measured first at the lower intensity standard (ECR-45) and then later progress to the higher standard (ECR-60). ECR-45 is at an aerobic intensity level that is very conservative and is the starting point for the beginner, but always check with your physician before starting any exercise program. Your long-term goal is to achieve an ECR-60 performance of 8.

Calculating ECR-45

ECR-45 = $[(0.132 \times (\text{power(watts)} \times \text{time(minutes)}) / \text{weight (pounds)})] = \text{kJ/kg (or = J/g)}$

Example:

Age = 63 years
 Maximum heart rate = 220 - 63 (unless you know your maximal observed heart rate)
 Minimum heart rate = 65 (unless you measured your heart rate in a supine (face up) position before getting up in the morning)
 Target heart rate = $((220 - 63) - 65) \times 45\% + 65$
 Target heart rate = 106
 Termination heart rate = $((220 - 63) - 65) \times 55\% + 65 + 5$
 Termination heart rate = 121
 A- or B-Type locked in on 85 watts (example only, see Implementation Guide for procedure to determine watts)
 Termination heart rate achieved in 35 minutes
 Bodyweight = 210 pounds
 ECR-45 = $0.132 \times ((85 \text{ watts} \times 35 \text{ minutes}) / 210 \text{ pounds})$
 ECR-45 = 1.9 kJ/kg (or J/g)

Progression

Notice that the assessment of ECR-45 is identical to the training process. *Assessment = Training*. When you are able to exceed 60 minutes at the ECR-45 level before reaching the termination heart rate, you are ready to progress to Level 2, the ECR-60 level.