

Benefits of Heart Rate Monitoring

Why is it important to monitor your heart rate when you exercise?

Your heart rate is a convenient, reliable, personal indicator of the intensity of your exercise.

It's good to know the intensity of your exercise so you can vary it depending on your fitness level and the goals you want to achieve by exercising.

Heart rate monitoring brings following benefits to all levels of users:

Exercise Beginner

Teaches you about your body's reaction to exercise

Keeps you from starting out too hard (as beginners are often tempted)

Helps you control the intensity of your exercise routine

Provides feedback on your improvement

Regular exerciser

Helps you control the intensity of your exercise program under different circumstances

Helps you fine-tune your program for the best results

Gives you plenty of feedback both during and after a session, teaching you more about your body's reaction to exercise

Helps you see how you're progressing

Serious exerciser

Helps you make sure you work out at the right planned intensities for your training program (hard enough on hard days, light enough on recovery days, enough recovery between intervals, etc.)

Enables you to track and accurately adjust your training program

Teaches you about your body's reaction to training, providing an early warning of overtraining, flu, etc.

Provides feedback on your progress

Different Training Heart rates are used for Different Purposes

Training heart rates are ranges of percentages of your maximum heart rate (HRmax).

Each range is useful for different purposes and is associated with different fitness benefits.

Training heart rate 50-60% HRmax- Great for recovery sessions.

Training heart rate 60-70% HRmax- Improves the heart's ability to pump blood- Increases the number of small blood vessels in your muscles- Increases the enzymes in your muscles responsible for oxygen metabolism- Increases the strength of your muscles, tendons, ligaments and bones- Improves your endurance- Burns fat as the body's main energy source at this intensity

Training heart rate 70-80% HRmax- Also called the "steady state" because it's the fastest pace you can maintain for long periods of time (for example, a competitive Ironman athlete will race near this intensity)- Accustoms the body with a faster pace- Improves endurance- Begins to raise the speed you can maintain without building up lactic acid (your anaerobic threshold)- The more fit you are, the greater the percentage of fat your body uses as fuel, enabling you to perform longer at this rate while preserving limited stores of glycogen

Training heart rate 80-90% HRmax- At this intensity, you begin to "go anaerobic" and build up lactic acid (reach your anaerobic threshold)- Your anaerobic threshold increases along with your fitness- This intensity can be maintained for about one hour in competition

Training heart rate 90-100% HRmax- Is only needed for sprint training - racing over short distances (track sprinters, short-distance swimmers).

A Healthy Heart Through Training

The cardiovascular system serves several important functions in the body.

For example, it delivers oxygen and nutrients to and removes carbon dioxide and metabolic waste products from every cell in the body. Your body's cardiovascular system has three components:

The heart (cardiac muscle)

The blood vessels

The blood

The heart is the pump that moves blood from the lungs (where the blood picks up oxygen) to the muscles (which burn the oxygen as fuel) and back to the lungs again. The harder you are training, the more fuel your muscles need and the harder your heart has to work to pump oxygen-rich blood to the muscles.

As you get more fit, your heart is able to pump more blood with every beat. As a result, your heart doesn't have to beat as often to get the needed oxygen to your muscles - so both your resting heart rate and your exercise heart rate (at any given exertion level) decrease.

Heart rate is one of the simplest and most informative of the cardiovascular parameters. When you start training, your heart rate increases rapidly in proportion to the intensity of the training. In Polar Heart Rate Monitors the transmitter in the belt detects the electrocardiogram (ECG), the electric signal originating from your heart. The transmitter then sends an electromagnetic signal to the Polar wrist receiver, which shows you information about your heart rate.

Fluid Balance

Whether you're training in hot or cold weather, you need to drink frequently.

Over long-term activity, your exercise tolerance decreases because of the water your body loses through sweating - unless you adequately replace the lost fluids. For marathon runners, fluid losses can be as high as 5.4 liters (1.5 gallons) per hour.

If you don't drink enough, you become dehydrated and your body's total blood volume drops.

Because the heart has access to less blood, it has to pump faster to circulate the same amount of blood - and your heart rate rises. If you don't replace the lost fluids by drinking, your heart rate will increase, and your ability to perform will decrease rapidly.

So drinking fluids during exercise has several benefits:

Fights dehydration

Offsets body temperature increase

Minimizes cardiovascular stress

Introducing Training Changes

Our bodies take time to adapt. Give yours the opportunity adjust slowly to any changes you make in your training routine. The following guidelines explain how.

Training Volume

The "10% rule" is a useful guideline. Don't increase the volume of your workouts (how much you exercise and for how long) by more than 10% per week. More experienced athletes can probably get away with increasing their volume by 15 or 20% during periods of lesser volume.

Training Intensity

Suddenly starting to do hard, 90% effort intervals is just asking for injury or overtraining stress. Instead, introduce harder training into your routine slowly and gradually. Start with just a few 80% effort repeats, and then build slowly to doing a full set of 85-90% intervals.

Equipment

Even a small change in your equipment or environment - your brand of running shoe, the type of surfaces or terrain you run on, the seat height or seat position of your bike or even the type of pedals you use - can stress your body and cause an injury. Introduce these kinds of changes with care, staying aware of what feels different.

Recovery

If you train very intensively, you need adequate recovery between training sessions.

Exercise puts positive stress on the body by forcing it to function outside its comfort zone.

During rest, the body will make adjustments to better face the challenge next time you exercise.

These adjustments are what will make your body stronger. In other words, fitness improves not during exercise but during rest. Giving your body ample time to recover from exercise is therefore crucial to getting fit.

Disregarding the need to rest and recover is quite common practice and may lead to injury, overtraining or fatigue. Resting properly isn't the same as skipping workouts or being lazy.

Resting is about giving your body the time it needs to get stronger and fitter.

Suggestions for recovery:

Take one or two days off per week from exercising

Follow a hard workout day with an easy day

Don't be afraid to take a day off or reduce training if you're tired

Stretching

Whenever you exercise, be sure to stretch.

Stretch first after your warm-up, when your muscles aren't so tight, and again after the cool-down period. Stretching for five minutes after you warm up will improve your workout and help prevent injuries.

Why? Because repetitive exercise tends to reduce muscle flexibility. Also, tissues like muscle and skin lose elasticity with age. So if you increase the intensity or duration of your workouts, maintaining muscular flexibility in your lower legs, thighs, gluteals and back will become even more important.

There are stretching techniques for almost every major muscle group. If you aren't familiar with different techniques, consult any sports physiologist or coach for advice. Below are some tips to help you stretch properly no matter what technique you use.

Stretching Tips

Never stretch cold muscles. Be sure to warm them up before stretching.

Hold each stretch for 30-60 seconds to give your muscle time to adapt to the stretch.

Never bounce in a stretching pose or force a muscle into a position that causes pain.

Relax and breathe deeply and slowly while holding each stretch position.

If you are stretching your arms, legs or sides, remember to stretch both sides.

Tapering

Tapering refers to a period of easy training immediately before a competition.

Before an important race, you might take an entire week of easy, low-volume training (25% of your high-volume week with one or two short, sharp, faster sessions early in the week).

Before a regular weekend race, you might take two to four days easy.

Rest to be at your best!

Warming up and Cooling Down

Much like a high-performance car on a cold winter morning, our bodies need to start with a slow "warm-up" period before we can increase the pace into a full workout.

This crucial period allows blood to be directed from the abdominal organs and towards the exercising muscle so that it can get the oxygen and energy it needs. Blood also moves toward the skin to allow the extra heat created to escape, causing the body to sweat.

At the end of a workout, the cool-down period allows the body to flush out metabolic waste from exercise, such as lactic acid. It also ensures that the heart rate and distribution of blood flow returns to normal gently.

Warm-Up Examples

For Beginners:

Run - 10 minutes starting at a fast walk, easing into a slow, comfortable jog

Cycle - 10 minutes spinning (pedaling with a high cadence of 90-100 revs per minute) easily in a low gear

Swim - 10 minutes easy swimming in varied strokes, also taking the time to practice stroke drills and technique

For Competitive Athletes:

Run - 5-10 minutes warm-up for runs up to 80% HRmax. 15-20 minutes for hard intervals or time trials, finishing the warm-up with a thorough stretching session.

Cycle - 10-15 minutes warm-up for any ride up to 80% HRmax. 30 minutes warm-up for hard intervals or time trials, finishing the warm-up with a thorough stretching session.

Swim - 800m using different strokes, stroke drills.

Why use a heart rate monitor?

By monitoring heart rate, the simple observation that the harder we exercise, the faster our heart beats is put to good use. Professional athletes and amateurs alike have for decades been relying on the information provided by their heart rate monitor for the following reasons:

A heart rate monitor is like a rev counter, giving a precise measurement of exercise intensity.

Training at your own ideal pace is made possible with a heart rate monitor.

Direct measurement of heart rate during exercise is the most accurate way to gauge performance.

Progress can be monitored and measured, increasing motivation.

It maximizes the benefits of exercise in a limited amount of time.

It introduces objective observation. Are you on the right track? Are you improving?

It is a tool for regulating frequency and intensity of workouts.

Because of the immediate feedback it provides, heart rate monitoring is an ideal training partner.

How does it work?

When you start training, your heart rate increases rapidly in proportion to the intensity of the training. In Polar Heart Rate Monitors, the transmitter belt detects the electrocardiogram (ECG -

the electric signal originating from your heart) and sends an electromagnetic signal to the Polar wrist receiver where heart rate information appears.

The heart moves blood from the lungs (where the blood picks up oxygen) to the muscles (which burn the oxygen as fuel) and back to the lungs again. The harder the training, the more fuel the muscles need and the harder the heart has to work to pump oxygen-rich blood to the muscles.

As you get fitter, your heart is able to pump more blood with every beat. As a result, your heart doesn't have to beat as often to get the needed oxygen to your muscles, decreasing resting heart rate and exercise heart rate on all exertion levels.