

HIIT



HIGH-INTENSITY INTERVAL TRAINING

HIIT It Hard (But Smart): What You Need to Know About High-Intensity Interval Training

High-Intensity Interval Training (HIIT) is super-popular, and for good reason. HIIT workouts are efficient, effective, and they can actually be pretty fun once you get into the groove. Whether your goal is to lose weight, tone up, build strength, or just get fitter in less time, HIIT can be a game-changer. But like any training method, you will achieve best results when you understand how it works, and how to do it right.

HIIT is a style of workout that alternates between short bursts of intense activity and brief periods of rest or lower-intensity movement. For example, you might sprint for 30 seconds, walk for 60 seconds, and repeat that cycle several times.



It's not about working out longer, it's about working out smarter. HIIT can be applied to almost any type of movement: running, cycling, bodyweight exercises, weightlifting, even dancing. The key is pushing your body to work hard during the high-intensity intervals.

How Does It Work?

When you push your body to near-maximum effort for short bursts, you:

- Burn more calories in less time
- Increase your heart rate rapidly, which boosts cardiovascular fitness
- Stimulate both aerobic and anaerobic energy systems
- Trigger a phenomenon called EPOC (excess post-exercise oxygen consumption), meaning your body continues to burn calories even after your workout ends

Basically, HIIT fires up your metabolism and keeps it elevated for hours. That's part of why it's so effective for fat loss and overall fitness.



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The Health Benefits of HIIT

Here's what the research (and plenty of sweaty people) have found HIIT can do:

- Burn fat and aid weight loss: HIIT is especially effective at reducing abdominal/visceral fat which is the type of inflammatory and dangerous fat associated with many chronic health complications.
- Improve cardiovascular health: Studies show HIIT improves heart health and blood pressure just as well (or even better) than traditional endurance training.
- Build muscle tone: Short, intense efforts challenge your muscles in ways that promote tone and strength, especially when you include resistance exercises.
- Increase insulin sensitivity: Great news for blood sugar control and reducing your risk of type 2 diabetes.
- Boost mood and brain function: The intense physical exertion triggers the release of endorphins which lift your mood. Increased oxygen and nutrient supply to your brain improves focus, and supports mental clarity.

And the best part? You don't need hours in the gym. Just 15–30 minutes, a few times a week, can deliver real results.



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One of my patients asked: 'Doc, I just love running. I get into the rhythm, and I can carry on for hours. Running makes me feel great. Why should I bother with interval training?'

Here's the deal: HIIT combines the best of both worlds: The cardiovascular benefits of aerobic exercise and the muscle-building benefits of strength training, into one super-efficient workout.

And we are learning more and more each day about how important muscle mass and efficient muscle metabolism is for health and longevity. Your return on investment in terms of time and energy is just far greater when you train your muscles and your cardiovascular system together.

Let's break down what's happening inside your body during HIIT and why it's so effective:

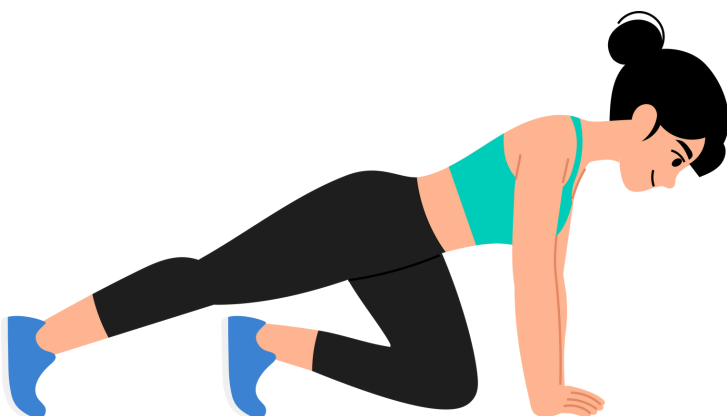
1. HIIT Improves Both Aerobic and Anaerobic Fitness

- Aerobic fitness is your body's ability to use oxygen efficiently (think steady-state cardio like jogging or cycling at a moderate pace).
- Anaerobic fitness is your ability to perform short bursts of intense activity without relying heavily on oxygen (think sprinting, jumping, heavy lifting).

HIIT challenges both systems:

- During the high-intensity intervals, your body operates anaerobically. Quick energy, not much oxygen.
- During recovery periods (lower intensity activity) , it switches back to aerobic mode to replenish energy stores.

This constant flip-flopping makes your heart, lungs, and muscles more versatile and resilient. What does this mean in practical terms? You'll be able to run further, lift heavier, move faster, and recover better across all kinds of physical activities.



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2. HIIT Stimulates Greater Hormonal Changes

Intense exercise like HIIT triggers powerful hormonal responses, including:

- Growth hormone (GH): Which promotes fat burning and muscle repair
- Testosterone (even in women, in a healthy way): Enhances muscle growth and recovery
- Adrenalin and noradrenalin: Boost metabolism and fat mobilization
- Brain-derived neurotrophic factor (BDNF): Supports brain health, memory, and mood

On the other hand, moderate steady-state cardio primarily promotes endurance and doesn't stimulate these powerful muscle-preserving, fat-burning hormones to the same extent.

3. HIIT Creates Higher EPOC (Afterburn Effect)

After a HIIT session, your body continues to burn more oxygen (and calories) to repair itself and return to baseline. This is called Excess Post-Exercise Oxygen Consumption (EPOC). Because HIIT causes more disruption to your energy systems than traditional cardio, the afterburn is higher and lasts longer... Sometimes for up to 24 hours after your workout.

In contrast, after steady-state cardio, your calorie burn typically drops back to normal shortly after you stop moving.

4. HIIT Helps Build and Preserve Lean Muscle Mass

Traditional cardio, especially when overdone, can sometimes lead to muscle breakdown if not balanced properly with strength work. HIIT, on the other hand, often includes bodyweight or resistance-based movements (like squats, push-ups, kettlebell swings) that stimulate your muscles. This preserves lean muscle which is super important because muscle is metabolically active tissue.

More muscle = higher resting metabolism = you burn more calories even when you're chilling on the couch.



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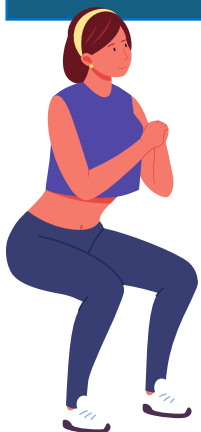
5. HIIT Trains Mental Toughness

Pushing through intense bursts teaches your brain resilience. You build a stronger mind-body connection, practice managing discomfort, and improve your ability to focus under stress. These skills spill over into work, relationships, and other life challenges.

Long steady-state cardio can build mental endurance too, but HIIT compresses the challenge into a shorter, more intense timeframe.

Quick Comparison: HIIT vs Traditional Cardio/Strength

Feature	HIIT	Traditional Cardio	Traditional Strength Training
Time Efficient	Yes	No	No
Aerobic Fitness	Yes	Yes	Minimal
Anaerobic Fitness	Yes	Minimal	Yes
Builds/Preserves Muscle	Yes	No (can lose muscle if overdone)	Yes
EPOC (Afterburn)	High	Low	Moderate
Metabolic Boost	High	Moderate	Moderate
Hormonal Benefits	High	Moderate	High



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How to Gauge the Right Intensity

HIIT should feel challenging! You're aiming for around 80–95% of your maximum effort during the intense intervals.



A simple way to check:

- **Talk test:** During a high-intensity interval, you shouldn't be able to say more than a few words without gasping.
- **Perceived exertion:** On a scale from 1 to 10, aim for 8 or 9 during the 'hard work' phase.
- **Heart rate:** If you use a heart rate monitor, you're aiming for 75–90% of your max heart rate during work intervals, and about 50–65% during recovery. Note: Your maximum heart rate = $220 - \text{Your age (years)}$.

Remember to listen to your body. Intensity is relative... What feels like a 9 for you may be different from someone else's 9.



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Goal-Based HIIT Recommendations

We all have different goals and aspirations for our health and fitness. Here are some ideas on how to tailor HIIT to your specific goals:

Weight Loss & Fat Burning

HIIT is fantastic for weight loss because of the enduring metabolic benefits after your exercise sessions (EPOC, increased muscle mass and increased basal metabolic rate).

For best weight loss results:

- Focus on shorter rest periods (e.g., 30:15 or 40:20 work-to-rest ratios)
- Include full-body, compound movements like burpees, jump squats, mountain climbers
- 20–30 minute sessions, 3–5 times per week

Muscle Tone & Strength

HIIT has tremendous power to optimise your muscle metabolism, strength and power.

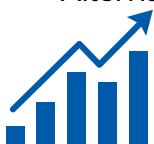
Because you are exerting yourself almost to the point of muscle failure during HIIT, you activate particular specialised muscle fibres (Type IIb) that are associated with improved overall wellness and longevity. Here are some strategies to make HIIT work best for you if you want to focus on muscle health:

- Add resistance: Dumbbells, kettlebells, resistance bands, or bodyweight exercises like push-ups, lunges, planks
- Rest periods may be a bit longer (e.g., 30:30 or 40:40) to maintain form and proper technique
- Aim for 2–4 sessions per week, allowing muscle recovery in-between

Cardiovascular Fitness

Having a healthy heart and circulatory system is essential if you want to enjoy a long and active life. Although cardiovascular fitness may not be your top priority, it should feature in your exercise routine at least twice a week. The great news with HIIT is that you don't need to spend hours running to achieve a significant improvement in cardiovascular fitness. Even 10 minutes of high-intensity cardio will do wonders for your overall fitness level. Try to:

- Incorporate high-speed aerobic intervals (sprints, fast cycling, rowing, skipping) into your training schedule 2-3 times per week
- Alternate longer intervals (e.g., 60 seconds work, 60 seconds rest) for endurance



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Safety Tips: Get the Most From HIIT... Without the Hurt

HIIT is powerful, but it's also intense. Be wise and practical in your approach. It is far better to build up strength and stamina over time, than to start with too much enthusiasm and suffer an injury.

Remember:

- Warm up properly: 5–10 minutes of dynamic movement (jogging, arm swings, leg kicks) is essential before you start.
- Take a few minutes after your HIIT session to cool-down and stretch. When your muscles are warm, this is a great opportunity to work on your flexibility and balance.
- Prioritize form over speed and number of reps: Especially with strength-based movements. Quality over quantity!
- Start slow: If you're new, begin with shorter sessions or longer rest periods.
- Don't skip recovery: Give your muscles time to repair. Aim for at least 48 hours between intense sessions. Time for recovery is vital, especially if you want to improve your muscle strength and tone.
- Stay hydrated and fuel appropriately: Especially if you're doing longer HIIT circuits or combining it with other training. Pay particular attention to your protein intake. If you are doing regular HIIT sessions, you will likely benefit from eating larger helpings of protein-based foods.

If you have a medical condition or are brand new to exercise, check in with a healthcare provider before diving in.





15-MINUTE WORKOUT

Here's an example of a 15-minute full-body HIIT workout that trains all your major muscle groups in a time-efficient and highly effective way. No equipment required.

► NOTES

Rest 10-15 seconds between exercises or as needed.

Adjust the duration/intensity based on your fitness level.

Perform 1-2 rounds depending on available time and energy.

This quick workout is designed to hit all major muscle groups, boost metabolism, and improve your strength and endurance.

► LOW-IMPACT OPTIONS

Instead of Jumping Jacks:
Step-Out Jacks

Instead of High Knees Running:
Knee Lifts

Instead of Burpees:
Step-Back Burpees

You can modify this work-out according to your abilities and level of fitness

If push-ups and triceps dips are too strenuous, you can use resistance bands to work those muscle groups.

WARM-UP

Walk fast on the spot (30 seconds)
Jumping Jacks (30 seconds)
Arm Circles while walking on the spot (30 seconds)
High Knees Running (30 seconds)



LEGS & GLUTES

Bodyweight squats / Jump squats (45 seconds)
Lunges (45 seconds per leg)



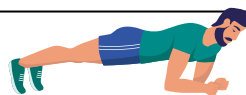
ARMS & CHEST

Push-ups (30-60 seconds)
Triceps dips (30-60 seconds)



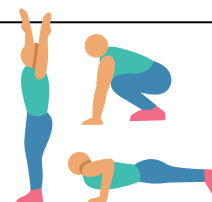
CORE

Plank (45-60 seconds)
Bicycle crunches (30-60 seconds)



FULL-BODY

Burpees (45-60 seconds)



COOL DOWN / STRETCH

Full-body fold / touch your toes (30 seconds)
Cat-cow stretch (30 seconds)
Child's pose (30 seconds)



► IMPORTANT!

Maintain good form and body alignment when performing these exercises.

Do the exercises slowly and with good posture and control.

It is better to do fewer good-quality repetitions than more reps if you can't maintain good form.



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The Science of Recovery: How to Bounce Back After Exercise

Getting fitter and stronger isn't just about what you do during your exercise sessions—it's also about how well you recover in between. Whether you're lifting weights, sprinting, playing team sports or doing a long run, your body needs time and the right strategies to repair, rebuild, and come back even stronger.

If you already incorporate exercise into your routine, or if you are just starting out with more frequent physical activity, it's super helpful to understand what's happening in your body when you use your muscles. You will discover that recovery is necessary for best results, and that there are specific strategies you can apply.

What Happens to Your Muscles When You Exercise?

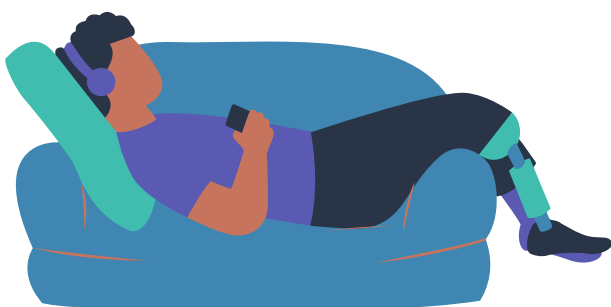
Every time you move, your muscles contract—they shorten and lengthen to generate force. Here's how it works:

1. Your brain sends a signal → Your nervous system tells your muscles to contract.
2. Your muscle fibres slide together → Like Velcro strips sticking together, tiny proteins in your muscle cells (actin and myosin) pull against each other to create movement.
3. Energy is used up → Your body burns fuel (carbs and fats) to power this process.

Strength & HIIT Training: The Micro-Tear Effect

When you lift weights or do high-intensity exercise (like sprinting or jumping), your muscles experience tiny tears at the microscopic level. This is completely normal! These micro-tears trigger your body to repair and rebuild the muscle—making it stronger and more resilient over time.

But here's the catch: Muscle growth and re-modelling doesn't happen during the workout. It happens during recovery.



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Types of Recovery: How to Help Your Body Repair Optimally

There are several strategies you can use to recover optimally between your HIIT sessions. Your choice of which forms of recovery are best for you will depend on your personal preferences, the intensity of your workouts, and what you feel your body needs at the time. Tune in to how you feel. If you are exhausted, then rest. If you are sore, but still quite energised... a more active form of recovery will be more suitable.

1. Rest & Sleep (Passive Recovery)

- This is when your body does most of its deep tissue repair.
- Growth hormone is released in significant amounts when you're asleep, encouraging protein production, new cell turnover, and rebuilding the micro-tears from your workout.
- How much sleep is ideal? Aim for 7-9 hours of quality sleep per night. Remember that poor sleep or inadequate sleep slows down recovery.

2. Active Recovery

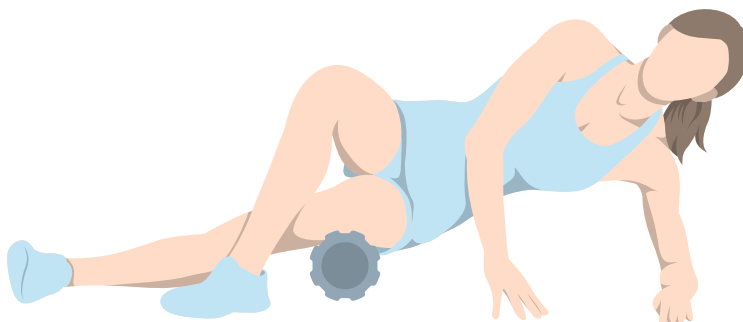
- Low-intensity movement helps increase blood flow without putting too much strain on your muscles. This helps remove waste products (like lactic acid) and delivers oxygen and nutrients to speed up healing.
- Examples: Walking, gentle cycling, stretching, yoga, or swimming.

3. Foam Rolling & Stretching

- Helps release tight muscles and improve flexibility.
- Can reduce muscle soreness and stiffness after intense workouts.

4. Cold & Heat Therapy

- Ice baths or cold showers can help with swelling and inflammation after hard workouts.
- Heat (sauna, warm baths, heating pads) helps relax tight muscles and improve circulation.



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Optimal Nutrition for Recovery & Performance

HIT places some serious demands on your body, during your training sessions and during recovery when your muscles are healing. If you want to get the most benefit from HIT (or any form of physical exercise for that matter), you need to fuel your metabolism and your muscles optimally. Focus on:

- Protein (for muscle repair): Lean meats, eggs, poultry, fish and seafood, dairy, legumes and dried beans provide amino acids, the building blocks used to manufacture muscle fibres and the enzymes required for muscle contraction.



- Healthy fats (to reduce inflammation and provide a concentrated source of energy) – Nuts, seeds, avocado, olive oil, and coconut are good additions to your meals when you are recovering from a strenuous workout.



- Hydration – Water is key, and if you sweat a lot, electrolytes (sodium, potassium, magnesium) are useful to help restore balance.



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HIIT Isn't for Everyone, but It Might Be for You

The best exercise for you is the exercise you'll stick with because you enjoy it and you see results.

HIIT isn't magic, but it is a very efficient, effective, and adaptable way to train. It meets you where you are and challenges you to go just a bit beyond.

You don't need fancy equipment. You don't need to work out for an hour. You just need 15–30 minutes, a little grit, and a willingness to sweat.

If you're a busy person, if you are looking for faster results, or if you want to challenge your body (and your mind) in a new way, then try HIIT.

Whether you're doing jumping jacks in your living room or sprinting up a hill, remember: You're doing something amazing for your body—and your future self will thank you.

