



HIIT (high intensity interval training) is the latest fitness trend to, ahem, hit the gym. We found out what is so good about it and got volunteers to try it out at home

Even the most dedicated of us can find it hard to fit exercise into our day, but in a BBC documentary, *The Truth About Getting Fit*, Dr Michael Mosley demonstrated how we could fit just five minutes of high-intensity interval training (HIIT) into our day — without even changing into sportswear!

We spoke to Dr James Blackwell, a clinical research fellow at the University of Nottingham, who has researched HIIT's efficacy, to find out whether just five minutes, three times a week, can really deliver health benefits.

It's recommended to do 150 minutes per week of moderate aerobic exercise. So is five minutes of HIIT sufficient for all health benefits?

"HIIT is an increasingly popular method of exercise which has a growing research base to suggest rapid improvements can be made in certain exercise parameters. This is with the well-known caveat that there simply isn't a 'one size fits all' exercise method to tackle all of the fitness measures that regular exercise can modify.

"For example, low-intensity endurance training [e.g. jogging, swimming, cycling] may be great to reduce cardiovascular risk and fat mass, however may do little to improve muscular strength and power which is key to functional independence as we age. I would always advocate a multi-modal exercise plan with variety in the week if you're aiming to improve whole body health.

"Noteworthy, is the addition made to the WHO exercise guidelines which reflects the benefit seen with higher-intensity exercise, they now read: Adults aged 18-64 should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity activity."

If five minutes of HIIT is beneficial, is there any point to other aerobic exercises if one's goal is fitness?

"The answer to this question again comes down to what you might class as 'fitness'. Some gym goers might consider themselves very 'fit' because they can squat 150 kg yet cannot run a sub-20 minute 5 k. Another interesting example is in super trained athletes who actually suffer reduced immune function — does this make them too 'fit'?"

"Perhaps another way to look at this is what could HIIT offer me? Our research has shown that it can be used as a great way to kick start exercise in sedentary individuals. HIIT isn't necessarily a great way to lose weight in the short term; we tend to see that people stay relatively weight neutral given loss of fat mass but increase in muscle, which actually weighs more.

"Life is busy nowadays, previous research

would suggest that time is the biggest barrier to exercise, HIIT is compact and can easily be scheduled into the working day with minimal equipment requirement. More specifically in relation to fitness parameters, we have shown that both the lactate threshold (or anaerobic threshold) and the maximum exercise capacity (VO₂max) can be significantly improved in a short period (just four weeks) across a range of ages from 40–85 years old.”

Is HIIT recommended for people who do not usually exercise?

“HIIT has been shown to be safe and feasibly delivered in a wide spectrum of people. This ranges from sedentary healthy individuals to elite athletes.

“A large proportion of the clinical research base exploring HIIT has actually been conducted in patients following heart attack and numerous other disease groups including cancer.

“If you do not normally do any exercise at all it is always sensible to ‘start low and go slow’ in the first few weeks. This is of course whilst remembering that if you experience any untoward symptoms during any type of exercise (such as chest pain or tightness, dizziness, palpitations, undue shortness of breath etc.) you should seek medical advice prior to carrying on and certainly before pushing yourself too hard.”

Who would benefit the most from five minutes of HIIT?

“Most individuals... Like all exercise programmes, motivation and effort levels play an important part in who is likely to improve their fitness. We have correlated the amount of watts pushed (during a one minute exertion) to improvement in fitness (anaerobic threshold) following our HIIT protocol. This finding is in agreement with others in the field that believe there is likely a minimal exertion level required to get the desired benefit. Work has been done to suggest that even a one minute blast at high wattage causes enough stimulus at a cellular level to provoke positive change. This is quite remarkable and really raises questions about the molecular basis behind the often vast improvements seen with HIIT.”

What if I don't notice any difference?

“There are a few things to consider here. HIIT by definition has to achieve >85 per cent maximal predicted heart rate to be classed as ‘high intensity’. Broadly, maximal predicted heart rate can be worked out as (220 – your age) x 0.85 (i.e. 220 – 31 years old = 189 x 0.85 = 160 bpm [beats per minute]). So this means that I would need to achieve >160 bpm during each repetition to

be sure that I had actually completed ‘HIIT’ — this can be pretty hard work, but if you’re not actually doing HIIT then the reduction in volume (i.e. only five minutes exercise) might be why you aren’t reaping the benefits! It’s difficult to measure your pulse during a session by hand at these kinds of rates so invest in a reasonably priced heart rate watch to be sure you’re training in the right heart rate zone.

“The second factor to mention would be that there is likely a strong genetic basis behind which types of exercise you will respond to and others that you won’t. Rat models show this clearly, and work is ongoing to investigate this further in humans... two people can go to the gym and lift weights, one gets huge muscles (hypertrophy) and the other, despite their

best efforts, just doesn’t get any bigger — this is probably genetics in action! If you find no benefit from HIIT then it just might not be for you.

“The easiest way to know if you are improving your fitness level is probably to stringently count the repetitions of each exercise you are able to complete in one minute. This will give you an objective number to match or beat each session. If you start finding the exercises easy or aren’t able to achieve the required heart rate then you will need to adapt those exercises to maintain intensity which is the key element to low volume HIIT.”

The Truth About Getting Fit:
www.bbc.co.uk/programmes/p05w69pz

We asked a random group of volunteers to follow the five-minute routine as demonstrated by Dr Michael Mosley, for however long it appealed to them, and to feed-back their experiences. Ours was an informal ‘review’ of the five-minute HIIT routine, with no stats taken. The aim was for people of different ages and fitness levels to try the routine, and report back on whether it inspired them to be more active on a regular basis.

One comment from women was the need for a sports bra — so whilst Mosley only needed to change into trainers, this was not the case for most women. Another comment from some women was that because of the impact of having given birth on bladder control, it may be necessary to wear pads. Other comments included:

“I liked it as an option for when the weather made it difficult to get outside.”

“I tried it! I liked it especially as I was able to do the star jumps without completely wetting myself. But I wanted to keep up with my stretches that I need to keep my shoulder and knees mobile, so I combined the bits I really liked with my stretches — that means each morning I do my stretches and include 40 squats. I left out the star jumps as my bedroom wasn’t quite big enough, and the running as well as I feel like a plonker running on the spot. I also find that it just adds that extra time which means I get later and later each day for leaving the house.”

“I felt I got something out of it — I had a minute timer and found it incredibly hard the first couple of times. In fact, the first time I had to stop half-way through. I liked the fact that I could fit it in to my day and it gave me no excuse not to exercise. But then I took up Couch to 5 k. I think the HIIT was probably the catalyst for that. Since then, despite my good intentions, I haven’t done the HIIT routine. I clearly need to schedule it into my week!”

“I didn’t realise the break between each minute was only 90 seconds, so was sitting down and playing Candy Crush between each minute of exercise.”

“Loved it. Still doing it. Modified it to suit my ability (i.e. run on mini trampoline, squats, star jumps on trampoline, stationary bike, cool down with walking on the spot.) I cycle daily too. Overall, I do feel better. More muscle definition and fitness level improving — can feel that with the endurance ability.”

“I started doing it with my teenage daughter so we could do it together, but often when I get home she has already done it and I don’t feel motivated to do it by myself, so I don’t do it very often. I prefer to do exercises with somebody so a work colleague has said that maybe we can do it together in our lunch break.”

“I started off as I wanted to get fit. I did the session twice and, physically, did not find it that tough. However, I really did not enjoy it, in fact hated it. It did make me realise that I was not as unfit as I thought. So it motivated me to start Couch to 5 k. I am really enjoying exercising outdoors and the sense of the achievement once a session is done. So all in all, my experience of the five minute HIIT has been really positive.”

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