HIIT Training, are you really doing it?

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To HIIT or not to HIIT

Just about everyone and his mama has heard about High Intensity Interval Training, or HIIT for short. HIIT has been found to have various advantages over other forms of exercise for both fat loss and retaining muscle mass. It seems everyone has jumped on the HIIT bandwagon and regularly talk about how they do 40 minutes or so of HIIT and so on. The problem is, most of the people who claim to be doing HIIT are not. A quick hint: if the person was doing true HIIT, they would not be able to do 20 minutes of it, much less 40!

Many, if not most, people seem to confuse HIIT with regular interval training. HIIT is in fact a form of interval training, but not all interval training is HIIT. Put simply, Interval training is a varying of intensities within the same workout, where you alternate a low intensity bout with a higher intensity bout. Thats the general nature of interval training, but it aint HIIT training folks. HIIT training, is a low intensity/no intensity bout alternated with a maximal intensity bout. By maximal, I mean 100% effort, which of course, no one can achieve for more then 20-30 seconds at a time.

There are various ways to perform HIIT, but all have that in common, and what most people think they are doing for HIIT is really just old fashioned interval training. For example, the other day I did 4 minutes of walking on a treadmill at 3.5mph hour followed by 1 minute of running at 8.5mph (which for my short legs is pretty fast pace!) and repeated the cycle 5 times, which meant I was doing a 1:4 run/walk that lasted about 30 minutes including warm up and warm down. Was that HIIT? No, it was not. It was interval training, which is effective and productive training, but its not HIIT.

There are many ways to perform HIIT training, from Tabata protocols (the most intense form of HIIT) which may only last 4-5 minutes to other versions. For example, my current HIIT protocol goes like so: after a brief warm up 5 minutes or so on the treadmill I will use a stair stepper type machine and will do 1 minute low intensity followed by 30 seconds all out, and repeat. I will do that for 10 minutes, which is literally all I can stand. When I say all out I mean **100% intensity, nothing held back, as fast and as hard as my legs can move me,** similar say to a full sprint on a track.

I like the stair stepper because its non-impactive on the joints and its easy to speed up and slow down quickly, but there are many ways to do HIIT training. The fact is however, most people claiming to do HIIT are not. Another essential point is, **HIIT is not for everyone.** It requires a higher level of fitness, and many people are better off starting with various interval programs similar to what I wrote above vs. HIIT. Done too often, and or combined with other forms of high intensity exercise (e.g., weight lifting, etc.) HIIT can and will lead to over training and or injury, or as James Krieger concludes in his excellent review on the topic below

HIIT carries a greater risk of injury and is physically and psychologically demanding, making low- and moderate-intensity, continuous exercise the best choice for individuals that are unmotivated or contraindicated for high-intensity exercise.

Dont gloss over that part.

Personally, I do HIIT training no more then once per week when combining it with weight training and will usually do the interval training outlined above, or something like it, and keep the HIIT to once per week, and as part of the **Hybrid Training** program I developed, is very taxing and intense. I will also take time off from the HIIT for a time, and then add it back in for a few months at a time. What follows

is a nice review of the science of HIIT worth reading, but keep in mind the realities of HIIT training.

HIGH-INTENSITY INTERVAL TRAINING: THE OPTIMAL PROTOCOL FOR FAT LOSS?

By James Krieger

As exercise intensity increases, the proportion of fat utilized as an energy substrate decreases, while the proportion of carbohydrates utilized increases (5). The rate of fatty acid mobilization from adipose tissue also declines with increasing exercise intensity (5). This had led to the common recommendation that low- to moderate-intensity, long duration endurance exercise is the most beneficial for fat loss (15). However, this belief does not take into consideration what happens during the post-exercise recovery period; total daily energy expenditure is more important for fat loss than the predominant fuel utilized during exercise (5). This is supported by research showing no significant difference in body fat loss between high-intensity and low-intensity submaximal, continuous exercise when total energy expenditure per exercise session is equated (2,7,9). Research by Hickson et al (11) further supports the notion that the predominant fuel substrate used during exercise does not play a role in fat loss; rats engaged in a high-intensity sprint training protocol achieved significant reductions in body fat, despite the fact that sprint training relies almost completely on carbohydrates as a fuel source.

Some research suggests that high-intensity exercise is more beneficial for fat loss than low- and moderate-intensity exercise (3,18,23,24). Pacheco-Sanchez et al (18) found a more pronounced fat loss in rats that exercised at a high intensity as compared to rats that exercised at a low intensity, despite both groups performing an equivalent amount of work. Bryner et al (3) found a significant loss in body fat in a group that exercised at a high intensity of 80-90% of maximum heart rate, while no significant change in body fat was found in the lower intensity group which exercised at 60-70% of maximum heart rate; no significant difference in total work existed between groups. An epidemiological study (24) found that individuals who regularly engaged in high-intensity exercise had lower skinfold thicknesses and waist-to-hip ratios (WHRs) than individuals who participated in exercise of lower intensities. After a covariance analysis was performed to remove the effect of total energy expenditure on skinfolds and WHRs, a significant difference remained between people who performed high-intensity exercise and people who performed lower-intensity exercise.

Tremblay et al (23) performed the most notable study which demonstrates that high-intensity exercise, specifically intermittent, supramaximal exercise, is the most optimal for fat loss. Subjects engaged in either an endurance training (ET) program for 20 weeks or a high-intensity intermittent-training (HIIT) program for 15 weeks. The mean estimated energy cost of the ET protocol was 120.4 MJ, while the mean estimated energy cost of the HIIT protocol was 57.9 MJ. The decrease in six subcutaneous skinfolds tended to be greater in the HIIT group than the ET group, despite the dramatically lower energy cost of training. When expressed on a per MJ basis, the HIIT groups reduction in skinfolds was nine times greater than the ET group.

A number of explanations exist for the greater amounts of fat loss achieved by HIIT. First, a large body of evidence shows that high-intensity protocols, notably intermittent protocols, result in significantly greater post-exercise energy expenditure and fat utilization than low- or moderate-intensity protocols (1,4,8,14,19,21,25). Other research has found significantly elevated blood free-fatty-acid (FFA) concentrations or increased utilization of fat during recovery from resistance training (which is a form of HIIT) (16,17). Rasmussen et al (20) found higher exercise intensity resulted in greater acetyl-CoA carboxylase (ACC) inactivation, which would result in greater FFA oxidation after exercise since ACC is an inhibitor of FFA oxidation. Tremblay et al (23) found HIIT to significantly increase muscle 3-hydroxyacyl coenzyme A dehydrogenase activity (a marker of the activity of b oxidation) over ET. Finally, a number of studies have found high-intensity exercise to suppress appetite more than lower

intensities (6,12,13,22) and reduce saturated fat intake (3).

Overall, the evidence suggests that HIIT is the most efficient method for achieving fat loss. However, HIIT carries a greater risk of injury and is physically and psychologically demanding (10), making low- and moderate-intensity, continuous exercise the best choice for individuals that are unmotivated or contraindicated for high-intensity exercise.