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# High Intensity Exercise

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High intensity exercise can be done with both cardio and weights. High intensity exercise has many health benefits including stimulating the building of new mitochondria, which is important in chronic disease prevention, improving hormone signalling, improving all-round fitness, reducing the risk for lifestyle-associated disease and more. An attractive feature of high intensity training is that the sessions are generally shorter and this often leads to better adherence rates.

Getting the intensity and volume correct ensures that the adaptation (change) will take place. People often don't get these variables correct and are then disappointed with their results. Women tend to shy away from heavy weights as they are concerned about becoming bulky, however, most women lack the ability to truly bulk up and can get fantastic results with **3-5 heavy weights sessions per week**. If your body shape is more inclined to building muscle, do less sessions and vice versa.

**NOTE:** high intensity training is simply another training technique - there is a time and place for both high and low intensity training!



During weight loss, one of the most important factors in preventing rebound weight gain is preserving lean body mass (LBM). LBM is often confused with muscle mass but muscle mass is simply a component of LBM, which is everything except for fat mass and includes things like muscle, connective tissue, bones, organs etc. There are two major factors responsible for preserving LBM: dietary protein and weight training. Both of these are crucial to not only preserving LBM during weight loss but also in building more muscle and preserving your metabolic pace. This means that weights are a crucial element to any successful weight loss program

High intensity interval training is an excellent way to improve cardiorespiratory fitness. HIIT is traditionally a cardio program however, it has been popularised to include weights-based exercises. For a traditional HIIT program, see our 4 x 4 programs or for a popularised HIIT session, see our conditioning programs. Generally speaking, people who do weights with a couple of HIIT or cardio sessions each week have the best body composition improvements.



The number one killer in Australia, and around the world, is cardiovascular disease (heart disease) and cardiorespiratory training offers significant protection against this disease, and many others. Research has also shown that a low cardiorespiratory fitness (CRF) is a more powerful predictor of mortality (death) than body mass index or adiposity. Therefore, improving CRF is more important than losing body fat for reducing risk of cardiovascular disease and all-cause mortality. Barry et. al. (2014) found that compared to normal weight-fit individuals, unfit individuals had twice the risk of mortality regardless of BMI. Overweight and obese-fit individuals had similar mortality risks as normal weight-fit individuals. This study highlights the importance of CRF.

Keep in mind, there are many ways to do a cardio program that don't involve jogging on the treadmill for hours on end. The 4 x 4 protocol is a research-based program shown to be very efficient and effective and it's super short. Our conditioning programs offer more variety and are a bit of fun when you do it with a friend!



# Heart Rate Calculations

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If you're serious about improving your CRF, then you need to calculate your heart rates.

## Karvonen Method or the Heart Rate Reserve Method

THR = target heart rate

MHR = maximum heart rate (220-age)

RHR = resting heart rate

$$\text{THR} = [(\text{MHR} - \text{RHR}) \times \text{intensity}] + \text{RHR}$$

### Example:

Rachel is 30 years old and has a resting heart rate of 60bpm.

1. Calculate estimated max heart rate

$$\text{MHR} = 220 - \text{age}$$

$$= 220 - 30$$

$$= 190 \text{ bpm}$$

2. Choose your intensity level.

For the 4x4 HIIT Protocol, intensity = 85-95%



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## 3. Calculation

a) 85%

$$\text{THR} = [(\text{MHR} - \text{RHR}) \times \text{intensity}] + \text{RHR}$$

$$\text{THR} = [(190 - 60) \times 0.85] + 60$$

$$\text{THR} = (130 \times 0.85) + 60$$

$$\text{THR} = 110.5 + 60$$

$$\text{THR} = 170.5 \text{ bpm}$$

b) 95%

$$\text{THR} = [(\text{MHR} - \text{RHR}) \times \text{intensity}] + \text{RHR}$$

$$\text{THR} = [(190 - 60) \times 0.95] + 60$$

$$\text{THR} = (130 \times 0.95) + 60$$

$$\text{THR} = 123.5 + 60$$

$$\text{THR} = 183.5 \text{ bpm}$$

Therefore, the target heart rate range during the 4 x 4 program =  
170 – 185bpm

Need some help with your calculations? Check out our video in the member's area.

The image shows two women smiling and posing in front of a sign that says "hustle hard". The woman on the left is making a peace sign. The sign also has "2020" written on it. The text "Time Frequency & Volume" is overlaid in a cursive font across the image.

# Time Frequency & Volume

Many people believe that more training is better and it's based on the faulty idea that cardio is a super calorie buster. However, research has shown us that a) cardio is not great for fat blasting and b) there is an ideal volume of training we should be doing.

When you are feeling tempted to do lots of cardio or more training than is recommended, remember that it is much MUCH better to do fewer, well executed sessions than many, poorly executed sessions. It is crucial to be well rested in-between training sessions to make sure you train properly, at the right intensity and with the correct volume

When you train high intensity, you need to lower the duration of your session and you need to ensure adequate recovery in-between each session (nutrition, rest, sleep, hydration etc.)

If you're training high intensity with weights, you must drop your reps accordingly and allow enough rest in-between each set. These principles not only ensure you will train safely but also effectively and for a good outcome.



The recovery process is absolutely crucial to maximising training adaptations and getting the most out of each session. What many people don't appreciate is that recovery is JUST as important as the training you do!

Train hard and recover hard!

The recovery process is made up of 4 key principles

- Nutrition
  - Protein 1.6-2.2g/kg/day
- Hydration
  - Drink so you're not thirsty
- Sleep
  - 7-8 hours unbroken sleep
- Rest
  - Meditation, relaxing, quietening the mind

After training it is crucial to ensure the utilisation of all 4 principles of the recovery process as this maximises the time in the gym. Ultimately the rule of thumb is that if a muscle is sore - don't train it and if you feel flat, have a rest!



We love training and seeing what our bodies are capable of and we want you to share in this passion! We want to see you get excited about making your body fit and strong and seeing what you are capable of!

This means that it's important to find something you love so you stick with it and actually want to go and do it each week. You also don't need to be killing yourself every time you train. Some sessions should be hard and some should be easier. And if you are going hard, drop the duration so you're more likely to want to do it and so that you don't get injured.

Whilst you may not love exercising at first, most people end up really enjoying it when they find their "thing". So if you're not enjoying it, then what you're doing isn't right for you. Our advice is to keep trying new things until you find what suits you! We want you to find something you love and then set regular goals for yourself.

**REMEMBER:** there are many paths to good health but nutritionally and with your training.