

Cycling program

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Introduction

If you enjoy outdoor activities, cycling might just be the thing for you! Not only is cycling a healthy activity, it can also be very practical in your daily life. Cycling is a very efficient way of commuting to work or going for groceries. It allows you to bridge distances that are too big for walking, but do not necessarily need the use of a car. Cycling can also be done indoors with the use of a home trainer. Scientists have found that a reduction in car trips in a large population can really decrease the number of cardiovascular disease and type 2 diabetes cases. This is due to the positive effects of cycling on:

- Blood pressure
- Lipid profile
- Endothelial function (the way your blood vessels can dilate during exercise)
- Systematic inflammation
- Antithrombotic effects
- Damage due to atherosclerosis
- Immune function
- Obesity
- Psychological functioning

Another research group found that if you cycle for 3 hours/week (>3 hours does not seem to result in greater effect) this reduces the risk for all-cause mortality with 38%! Important to know is that effects can only be achieved when the intensity of cycling is high enough. Increasing intensity is more effective than increasing duration of a training session in reducing cardiovascular risk factors. They once did a study in Copenhagen over a very long period, which showed that men and women who cycled faster during their commuting activities lived longer in comparison with men and women who cycled slow. The fast cyclists lived 5.3 and 3.9 years longer compared to the slow cyclists and the average cyclists lived 2.9 and 2.2 years longer (respectively for men and women). High intensity exercise does not need be performed in a continuous manner. A good way to incorporate high intensity activities in your life is by doing interval training. Interval training means that you switch bouts of high intensity exercise with bouts of exercise at a much lower pace and heart rate. Another advantage of higher intensity is that you can achieve the same results as you would with low intensity exercise, but in a shorter duration! High intensity exercise is therefore more time efficient and may be easier to adhere to because of this reason.

When it comes specifically to cycling there are a lot of ways to increase and decrease the intensity of the exercise. First there is the pace. Cycling faster will increase the intensity and will cause a faster heartbeat and respiration. The same happens when you cycle up a hill or against a headwind. Cycling with a greater gear will not only cause a higher intensity, but will also make sure you are doing more strength training because you have to push against greater resistance. On the other hand, cycling with a smaller gear increases the rounds per minute you have to make and leads to a more endurance type of training. When cycling uphill or against a headwind, a smaller gear can

make the effort easier and thus decrease the intensity. All these factors were taken into account when designing the proposed cycling programs presented below. However, when you are not doing one of the proposed cycling sessions but just want to go for a tour, just take a moment to remember these things because they may come in handy and are great for mixing up your cycling session.

Getting started and building up

Cycling is an activity that usually can be performed with a longer duration from the start. This is due to the fact that you only need your legs and that you can regulate the intensity of the exercise yourself by switching gears, slowing down or even by letting your legs rest for a few seconds. It is therefore recommended to start at 30'. In the beginning, when you are still getting used to the activity, don't pay too much attention to the intensity. For some people, finishing the 30' is a challenge by itself. Once you feel confident cycling for 30', try to increase the duration and/or frequency of your trips little by little until you reach a duration and frequency you are comfortable with and that fits your schedule. Only after you have increased the volume (duration x frequency), you can start increasing the intensity. This is done to first let your body get acquainted with the movement and to avoid overtraining.

As always, it is the goal to reach 150' of moderate activity/week or 75' of vigorous activity/week or a combination of the two. You can do this by only cycling, but is also acceptable if you combine cycling with other activities (walking, swimming, PATHway exerclasses) to achieve the recommended quantity of physical activity/week.

The look of a training session

- Warming up: consists of a stimulus for your cardiorespiratory system to get your blood pumping. Typically this is done by cycling calmly the first couple of minutes of your training.
- Technique: spend a short period of time in the beginning of your cycling session to pay attention to correct form. Make sure your saddle has a correct height and you are pushing on the pedals with your toes or at least the front of your feet. When you push down, also push your heel down so you get a circular motion in your ankles.
- The main part: consists of one of the training programs mentioned below or when you understand the principles of endurance and interval training and feel creative, you can make your own training session.
- Cool down: Likewise as the warm-up, spend the last few minutes of your session slowing down. When back home (or at the car or...), perform a couple of static stretches as you can find in the PATHway system.

Proposed cycling programs

The SAINTEX-CAD protocols

AIT (Aerobic Interval Training)

Warm-up	Main part	Cool-down
10' cycling at 60-70% of peak heart rate	4x4' interval at 90-95% of peak heart rate. After every high-intensity block of 4', you cycle for 3' at an intensity of 50-70% of peak heart rate	The last block of 4' high-intensity is followed by the last block of 3' at low intensity to cool-down. Stretching as learnt in the PATHway exerclasses for the leg muscles is recommended

MCT (Moderate Continuous Training)

Warm-up	Main part	Cool-down
5' cycling at 60-70% of peak heart rate	37' cycling at moderate intensity which is 65-75% of peak heart rate	5' cycling at 60-70% of peak heart rate. Stretching as learnt in the PATHway exerclasses for the leg muscles is recommended

Protocols as used by Tschentscher et al.

CET (Continuous Endurance Training)

Warm-up	Main part	Cool-down
5' cycling at 60-70% of peak heart rate	33' cycling at 65-85% of peak heart rate	5' cycling at 60-70% of peak heart rate. Stretching as learnt in the PATHway exerclasses for the leg muscles is recommended

HIT (High Intensity Training)

Warm-up	Main part	Cool-down
5' cycling at 60-70% of peak heart rate	4x4' at 85-95% of peak heart rate with after every 4' of high-intensity cycling a rest period of 3' at 60-70% of peak heart rate	The last block of 4' high intensity cycling is followed by 5' of cycling at 60-70% of peak heart rate. Stretching as learnt in the PATHway exerclasses for the leg muscles is recommended

PYR (Pyramid training)

Warm-up	Main part	Cool-down
5' cycling at 60-70% of peak heart rate	1' 75% of peak heart rate 1' 80% of peak heart rate 1' 85% of peak heart rate 2' 90% of peak heart rate 1' 85% of peak heart rate 1' 80% of peak heart rate 1' 75% of peak heart rate 2' 70% of peak heart rate Repeat 3x	The last 1' at 75% of peak heart rate is followed by 5' of cycling at 60-70% of peak heart rate. Stretching as learnt in the PATHway exerclasses for the leg muscles is recommended

Adapted from a training schedule for beginning triathletes (<http://www.beginnertriathlete.com>)

Monday	30	10' warm up and then 10x30" at 100 rpms with 1' recovery between sets. Cool down for 5' after the last rep.
Tuesday	0	
Wednesday	48	15' warm up. Then 4x4' at 55-65 RPMS at quite a heavy gear. Recovery is 3' easy spinning between sets. Easy 5' cool down.
Thursday	30	30' easy spin, keep the effort conversational and the cadence between 85-92 RPMS.
Friday	0	
Saturday	45	Long aerobic day – ride from 45-75', as you feel
Sunday	0	.

Monday	38	10' warm up and then 15x30" at 100 rpms with 1' recovery between sets. Cool down 5' after the last rep.
Tuesday	0	
Wednesday	52	15' warm up. Then 4x5' at 55-65 RPMS at quite a heavy gear. Recovery is 3' easy spinning between sets. Easy cool down for 5'.
Thursday	30	30' easy spin, keep the effort conversational and the cadence between 85-92 RPMS.
Friday	0	
Saturday	55	Long aerobic day – ride from 55-75', as you feel.
Sunday	0	

Monday	33	10' warm up and then 10x45" at 105 rpms with 1' recovery between sets. Cool down for 5' after the last rep.
Tuesday	0	.
Wednesday	56	15' warm up. Then 4x6' at 55-65 RPMS at quite a heavy gear. Recovery is 3' easy spinning between sets. Easy cool down for 5'.
Thursday	40	40' easy spin, keep the effort conversational and the cadence between 85-92 RPMS.
Friday	0	
Saturday	60	Long aerobic day – ride from 60-80', as you feel.
Sunday	0	

Monday	36	10' warm up and then 12x45" at 105 rpms with 1' recovery between sets. Cool down for 5' after the last rep.
Tuesday	0	
Wednesday	60	15' warm up. Then 4x7' at 55-65 RPMS at quite a heavy gear. Recovery is 3' easy spinning between sets. Easy 5' cool down.
Thursday	40	40' easy spin, keep the effort conversational and the cadence between 85-92 RPMS.
Friday	0	
Saturday	70	Long aerobic day – ride from 70-85', as you feel.
Sunday	0	

Cycling program for beginners from the "British Heart Foundation" (www.bhf.org.uk)

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 hour long ride	Rest	45 mins including hills session 1 (3 mins by 6)	Rest	45 mins easy	Rest	45 mins easy
2	2 hour long ride	Rest	45 mins including intervals 30/30 for 10 mins	Rest	60 mins easy	Rest	45 mins easy
3	2.5 hour long ride	Rest	60 mins including hills session 2	Rest	45 mins including intervals 30/30 for 15 mins	Rest	50 mins easy
4	2 hour long ride	Rest	45 mins including hills session 1 (3 mins by 6)	Rest	45 mins easy	Rest	45 mins easy
5	2.5 hour long ride	Rest	60 mins including hills session 2	Rest	45 mins steady	Rest	50 mins easy

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
6	2.5 hour long ride	Rest	60 mins including hills session 1 (3 mins x 7)	Rest	60 mins including intervals 5x5	Rest	60 mins easy
7	3 hour long ride	Rest	60 mins including 20 mins of 30/30	Rest	60 mins including intervals 5x5	Rest	60 mins easy
8	3.5 hour long ride	Rest	60 mins including hills session 1 (4 mins by 6)	Rest	60 mins steady	Rest	50 mins easy
9	2.5 hour long ride	Rest	60 mins including 5x5	Rest	45 mins easy	Rest	45 mins easy
10	2 hour long ride	Rest	60 mins including 15 mins of 30/30	Rest	45 mins easy	Rest	Event day

References

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