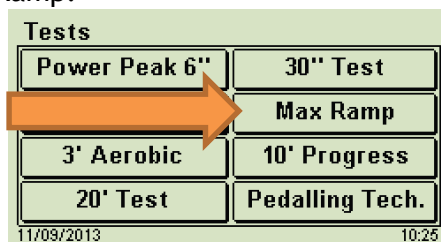


Maximal ramp test

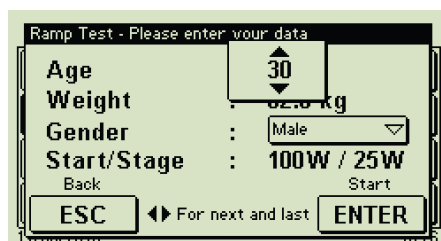
This test is designed for clients who have previously been inactive through to those that take part in moderate activity on a regular basis. This includes regular gym users, people who run or cycle and people who play sport recreationally.

Setting up the test on a Wattbike

1. Before you begin the test, review the list of contraindications (p.6-7) to ensure it safe to proceed. Be aware that this test is near maximal and is designed for regular exercisers.
2. Ensure the bike is correctly set up.
3. Ensure the heart rate belt on and is linked to the Wattbike. To do this, use the down arrow to move to 'set up', and press enter. Use the down arrow again to choose 'HR', and press enter. A screen will appear with a list of heart rate monitors that the computer has picked up. Select the code for your strap. You will then return to the welcome screen. If you do not have the heart rate belt you will need to use another heart rate monitor such as a wearable.
4. Perform a resting blood pressure and check where you are on the Borg RPE scale (p.8). If over 11 while performing no exertion, abandon the test.
5. Warm up for 5 minutes at a cadence of 50-60 RPM on air resistance setting 8 on 'Just Ride'.
6. From the Main menu select Workout/Tests and then Tests - the Tests screen appears, select Max Ramp.



Input age, body mass in kg, gender, ramp start power (W) and stage ramp power (W)



Input age

Ramp Test - Please enter your data

Age : 30

Weight : 82.0 kg

Gender : [dropdown]

Start/Stage : 100W / 25W

Back Start

ESC For next and last ENTER

Input body mass in kg

Ramp Test - Please enter your data

Age : 30

Weight : 82.0 kg

Gender : [dropdown]

Start/Stage : [dropdown]

Back Start

ESC For next and last ENTER

Input gender

Ramp Test - Please enter your data

Age : 30

Weight : 82.0 kg

Gender : [dropdown]

Start/Stage : [dropdown]

Back Start

ESC For next and last ENTER

Input start power (W): 55w for women and unfit men and 100w for fit men

Ramp Test - Please enter your data

Age : 30

Weight : 82.0 kg

Gender : [dropdown]

Start/Stage : [dropdown]

Back Start

ESC For next and last ENTER

Input stage ramp power (W) to 15w

7. Pedal in a seated position for 1 minute at the starting power.
8. Increase cadence as necessary every minute to ensure a 15 W increase in power (W) output every minute. If required also tweak the fan level i.e. setting 8 to 8.5
9. The power (W) output increases by 15W each minute until you fail the 'talk test' or are at level 18 out of 20 on the Borg RPE scale (p.8).
10. The test may be terminated prematurely if you experience any adverse symptoms detailed on the stop criteria form, need to stop or experience an emergency situation.
11. Upon reaching your stop criteria try your best to lie down but if unable to sit down immediately. Watch the heart rate reduction to note the 1 and 2 minute heart rates.

NOTE: Above 265 W the air resistance will need to increase to level 9 to maintain cadence at no more than 100 rpm and above 295 W the magnet resistance will also need to be engaged. At higher starting levels it is possible to use air resistance levels 9 and 10 to reduce the number of gear changes needed.

Maximal ramp test cadence - air resistance 8

Stage (minutes)	Power (W)	Approx. Cadence (rpm)
1	55	56
2	70	62
3	85	67
4	100	70
5	115	74
6	130	77
7	145	80
8	160	83
9	175	86
10	190	88
11	205	91
12	220	93
13	235	96
14	250	98
15	265	100
16	280	100 at level 9
17	295	100 at level 10
18	310	100 at level 10 + magnet 3
19	325	100 at level 10 + magnet 4
20	340	100 at level 10 + magnet 5

Setting up the test on a treadmill

1. Before you begin the test review the list of contraindications (p.6-7) to ensure it safe to proceed. Be aware that this test is near maximal and is designed for regular exercisers.
2. Ensure the heart rate monitor or belt is on and is linked to the treadmill.
3. Perform a resting blood pressure (if possible) and check where you are on the RPE scale (p.8). If over 11 while performing no exertion, abandon the test.
4. There is no need to perform a warm-up as the test starts very light.
5. Increase the gradient and speed of the treadmill every 3 minutes as denoted by the stage by stage table.
6. Keep working through the stages until you fail the 'talk test' or are at level 18 out of 20 on the Borg RPE scale (p.8).
7. The test may be terminated prematurely if you experience any adverse symptoms detailed on the stop criteria form, need to stop or experience an emergency situation.
8. Upon reaching your stop criteria try your best to lie down but if unable to sit down immediately. Watch the heart rate reduction to note the 1 and 2 minute heart rates.

Stage	Minutes	% grade	km/h	MPH	METS
1	3	10	2.7	1.7	5
2	6	12	4.0	2.5	7
3	9	14	5.4	3.4	10
4	12	16	6.7	4.2	13
5	15	18	8.0	5.0	15
6	18	20	8.8	5.5	18
7	21	22	9.6	6.0	20

Setting up without equipment

1. Before you begin the test review the list of contraindications (p.6-7) to ensure it safe to proceed. Be aware that this test is near maximal and is designed for regular exercisers.
2. Find a flat surface to jog/run on that has no obstacles or traffic and you can run uninterrupted for 7-18 minutes.
3. Ensure the heart rate monitor is on.
4. Perform a resting blood pressure (if possible) and check where you are on the Borg RPE scale (p.8). If over 11 while performing no exertion, abandon the test.
5. There is no need to perform a warm-up as the test starts very light.
6. Start walking at a fast pace to find an RPE just above your state where you were standing before start of the test. For most people this would be 7/8 on the Borg RPE scale.
7. Every minute go up the Borg RPE scale to the next number by walking faster, jogging and finally running. You need to hold each stage for 1 minute.
8. Keep working through the stages until you fail the 'talk test' or are at level 18 out of 20 on the Borg RPE scale.
9. The test may be terminated prematurely if you experience any adverse symptoms detailed on the stop criteria form, need to stop or experience an emergency situation.
10. Upon reaching your stop criteria try your best to lie down but if unable to sit down immediately. Watch the heart rate reduction to note the 1 and 2 minute heart rates.

Absolute Contraindications

The contraindications to fitness testing include any of the following exclusion criteria detailed below:

- A recent significant change in the resting ECG suggesting significant ischemia
- Recent myocardial infarction (within two days)
- Any acute cardiac event
- Unstable angina
- Uncontrolled cardiac arrhythmias causing symptoms or blood flow compromise
- Severe symptomatic aortic stenosis
- Uncontrolled symptomatic heart failure
- Acute current or recent pulmonary embolus or pulmonary infarction
- Acute myocarditis, pericarditis, endocarditis
- Suspected or known aneurysm
- Any acute infections
- Chest pains suggestive of cardiac disease, shortness of breath, dizziness, fainting, palpitations
- Coronary artery bypass graft <1 year
- Atrial flutter/fibrillation
- Conduction abnormalities - LBBB
- Wolff-Parkinson-White syndrome
- 2nd or 3rd degree heart block
- Diastolic murmur - particularly mitral stenosis
- BP > 160 systolic, 100 diastolic
- BP systolic < 90
- Heart rhythm < 40 - excludes athletes or very fit individuals
- Current or recent DVT of inflammation of the leg veins
- Clinical anaemia
- Uncontrolled asthma
- Drug treatment by digoxin
- Recent high caffeine intake
- Pseudoephedrine cold cures
- Antiarrhythmic therapy
- Tricyclic anti-depressants
- Beta-blockers (including systemic beta-blockers, i.e. eye drops)
- Evidence of recent alcohol intake or tranquilizer
- Pregnancy and up to 4 weeks post-partum
- Being fitted with pacemakers

Relative Contraindications

At the discretion of the health assessment Doctor, the following relative contraindications may be overlooked:

- Moderate stenotic valvular heart disease
- Electrolyte abnormalities - hypokalemia, hypomagnesaemia etc
- Tachy-arrhythmias or Brady-arrhythmias
- Left main coronary stenosis
- Hypertrophic cardiomyopathy and other forms of outflow tract obstruction
- Neuromuscular, musculoskeletal or rheumatoid disorders that are exacerbated by exercise
- High degree atrioventricular (AV) block
- Ventricular aneurysm
- Uncontrolled metabolic disease - diabetes, thyrotoxicosis, myxedema etc
- Chronic infectious disease - mononucleosis, hepatitis, AIDS etc

Termination Guidelines

- Progressive angina pain
- Extremely rapid increase in heart rate
- Failure of HR and BP to rise during test
- Headache, blurred vision, pale or clammy skin, or extreme fatigue
- Marked dyspnoea or cyanosis
- Dizziness or near fainting
- Physical or verbal manifestations of severe fatigue (i.e. breathlessness, unable to talk)

Rating of Perceived Exertion Borg RPE Scale

6	Very, very light	How you feel when lying in bed or sitting in a chair relaxed. Little or no effort.
7		
8		
9		
10		
11	Fairly light	
12	Somewhat hard	Target range: How you should feel with exercise or activity.
13		
14		
15		
16	Hard	
17	Very hard	How you felt with the hardest work you have ever done.
18		
19		
20		
	Very, very hard	
	Maximum exertion	Don't work this hard!