

# HOME FITNESS TESTS

a fitness assessment program that can be  
done at home with minimal equipment



by Dr Rob Wood [www.homefitnesstest.com](http://www.homefitnesstest.com)

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# About the Home Fitness Test

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## Introduction

Whatever your fitness goals, it is important to regularly test your current fitness level and monitor your improvement over time.

Fitness testing does not need to be only for elite athletes. The *Home Fitness Test* (HFT) is designed for people of all levels—from those just starting out on a training program to high level athletes who want to monitor their own training effects with ease.

## Initial Test

The initial fitness testing assessment can be used to give you an idea where your fitness levels are at the start of a training program. Once a baseline level of fitness has been measured, regular testing can be used to monitor changes in fitness over time. A baseline is especially important if you are about to embark on a new training phase.

Fitness testing is also a useful form of motivation. The incentive to improve can often be provided by the 'goal' of a certain test score or rating. This document provides everything you need to measure and monitor your test results.

## Record and Compare Results

Fitness testing is important to establish your strengths and weaknesses. This is done by comparing your test results to others in the form of normative tables. By seeing how your results relate to others you can see the areas which need improvement. By determining the areas to focus on, valuable training time can be used more efficiently.

## More Online

This document provides all the information required to conduct the home fitness tests, and monitor changes in fitness over time, though there are no data to determine your rating or how you compare to others.

On the [Home Fitness Testing](#) website you will find the following resources:

- **detailed instructions and guide** to conducting the home fitness test.
- a recommended **warm up procedure** with diagrams.
- a **unique rating scale** to use with the home fitness test, where you can easily see which level you are at and where you need to get to.
- printable **recording sheets** to record all test results.
- details of **alternative and additional tests**
- a **contact form**, to get all your questions answered.
- online **calculators to help calculate test scores**
- a means of **submitting your scores** and see how you rank with other users.

For all this and more, visit <http://www.homefitnesstest.com>.

# Instructions

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All the details you need to complete the ten home fitness tests are in this document. First timers should complete the Physical Activity Readiness Questionnaire. For more details, see the [Home Fitness Test](#) website.

## Complete the Physical Activity Readiness Questionnaire

Being more active is very safe for most people, and for most people should not pose any problem or hazard. However, some people should check with their doctor before they start becoming much more physically active. The list of questions should be completed by anyone who is looking to start an exercise program, to increase their current activity level, or to undertake a fitness testing assessment. The questionnaire helps to determine how safe it is for you.

## Warm up

It is important to do a warm up prior to any testing. The warmup should include some general exercise followed by stretches specific to the areas being tested.

## Follow Test Instructions

There are detailed instructions for each of the 10 fitness tests. The tests are best performed in the listed order, and as described. Record your results. Re-test regularly to monitor the changes in your fitness over time.

## Equipment Required

Unlike many of the more advanced tests used by sport scientists, these tests have been chosen so that little or no equipment is required. All the equipment needed are basic items that you can find around the house or purchase for low cost.

To complete all of the tests of the *Home Fitness Test* you will need at least the following equipment and facilities:

- **Areas found around most homes** – a wall, step (or box) and clear floor space.
- **Scales** – bathroom type weight scales.
- **Chair** – stable four legged chair.
- **Measuring Tape** – cloth tape like used in sewing.
- **Ruler** – just like the one you used at school.
- **Toilet Paper Roll** – or something soft of similar height
- **Timer** - for many tests you can use a clock with a second hand, though some tests require a digital watch with a stopwatch function.
- **Markers** – a household object, chalk or tape.
- **Recording Sheet** – printout of page 20.
- **Pen** – for writing down your results.

# Physical Activity Readiness Questionnaire

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The questionnaire is suitable for those aged between 15 and 69. If you are over 69 years of age, and you are not used to being very active, check with your doctor first. Common sense is your best guide in answering these questions. Read the questions carefully and answer each one honestly.

## Answer Yes or No

- Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?
- Do you feel pain in your chest when you do physical activity?
- In the past month, have you had chest pain when you were not doing physical activity?
- Do you lose your balance because of dizziness or do you ever lose consciousness?
- Do you have a bone or joint problem that could be made worse by a change in your activity?
- Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart condition?
- Do you know of any other reason why you should not do physical activity?

## If you answered YES

If you answered “yes” to one or more questions, talk with your doctor before you start becoming much more active or before you have a fitness test. Tell your doctor about the PAR-Q and which questions you answered “yes”.

## If you answered NO

If you answered “no” honestly to all of the questions, you can be reasonably sure that you can start becoming much more physically active or take part in a physical fitness appraisal – begin slowly and build up gradually. This is the safest and easiest way to go.

## Things Change

Even if you answered “no” to all questions, you should delay becoming more active if you are temporarily ill with a cold or a fever, or if you are or may be pregnant. If your health changes so that you then answer “yes” to any of the above questions, tell your fitness or health professional and ask whether you should change your physical activity plan.

# test1

## Resting Heart Rate



There is a relationship between resting heart rate and fitness - as you get fitter your resting heart rate often goes down. Also, regularly measuring your resting heart rate is a good way to monitor your health and the body's response to fitness training.

### Equipment Needed

- **Timer** - you can use your watch with a second hand, or a digital watch with a seconds display.

### Instructions

The measurement of resting heart rate should be taken a few minutes after waking whilst still lying in bed. If you are not able to take your resting heart rate first thing in the morning, make sure you lie down for at least 10 minutes before taking a measurement. Taking the pulse measurement at the wrist is usually the easiest method.

Place your index and middle fingers together on the opposite wrist in line with the index finger, about 2cm (½ inch) on the inside of the joint. Once you find a pulse, count the number of beats you feel within a one minute period.

### Get a Baseline Measure

Measure the heart rate each morning for a few weeks. After a while you will get an idea of what your average resting heart rate is. Once a normal resting heart rate level has been established, it becomes easy to determine if significant changes occur.

### Heart Rate Changes

During a period of training, small changes in resting heart rate can reflect changes in fitness, or just normal responses to the previous days training load. Resting heart rate can also be affected by ensuing illness, fatigue and overtraining. Also be aware that other factors such as smoking and caffeine, and some medications, can cause changes in resting heart rate. If you find that your resting heart rate is consistently 10 beats per minute or greater above your baseline measurement, you may want to see your doctor.

### Results

Normal resting heart rates range anywhere from 40 beats per minute up to 100 beats per minute, with the average resting heart rate for a man 70 and for a woman 75 beats per minute.

As you get fitter, your resting heart rate should decrease. This is due to the heart getting more efficient at pumping blood around the body, so at rest more blood can be pumped around with each beat, therefore less beats per minute are required.

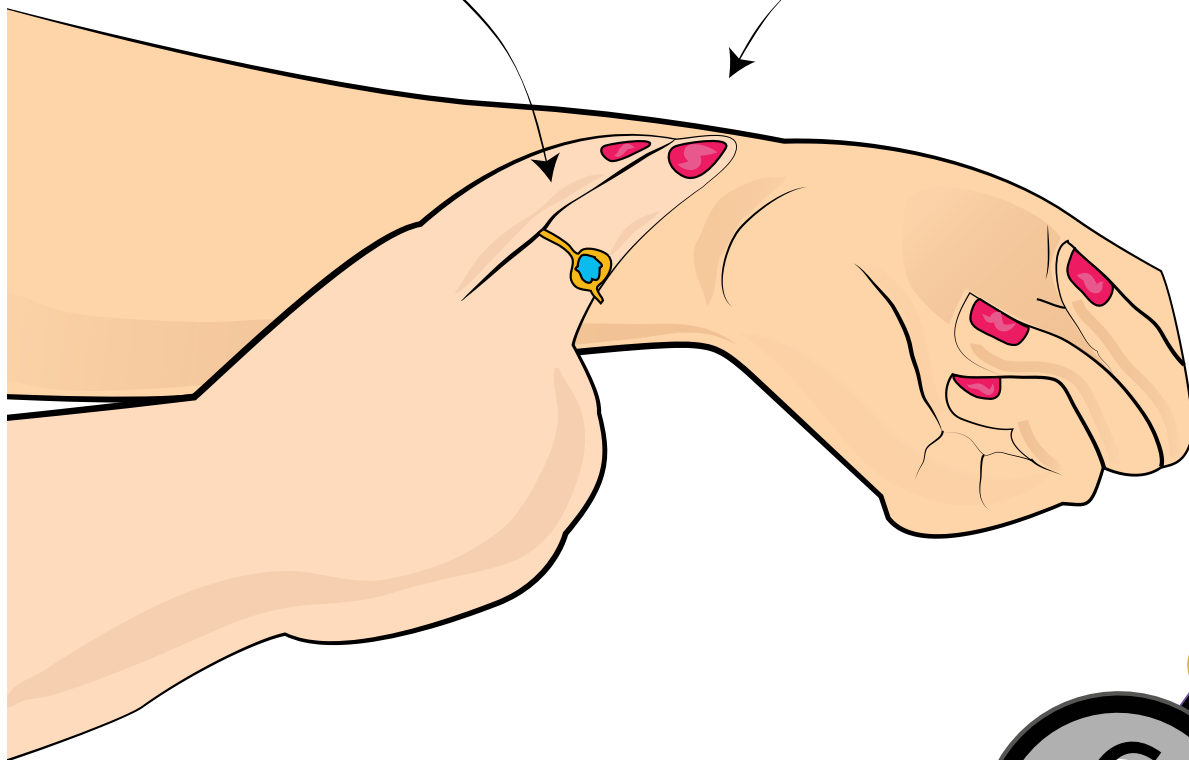
# test1

## Resting Heart Rate

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*use two fingers*

*find the pulse*



*measure each morning  
and record results*



# test2

## Body Size & Composition

The main aim of fitness training for many people is to modify body composition, such as to increase muscle mass or decrease body fat, so it is important to monitor these measures. Additionally, changes in body composition can also have an effect on the results of the physical tests.

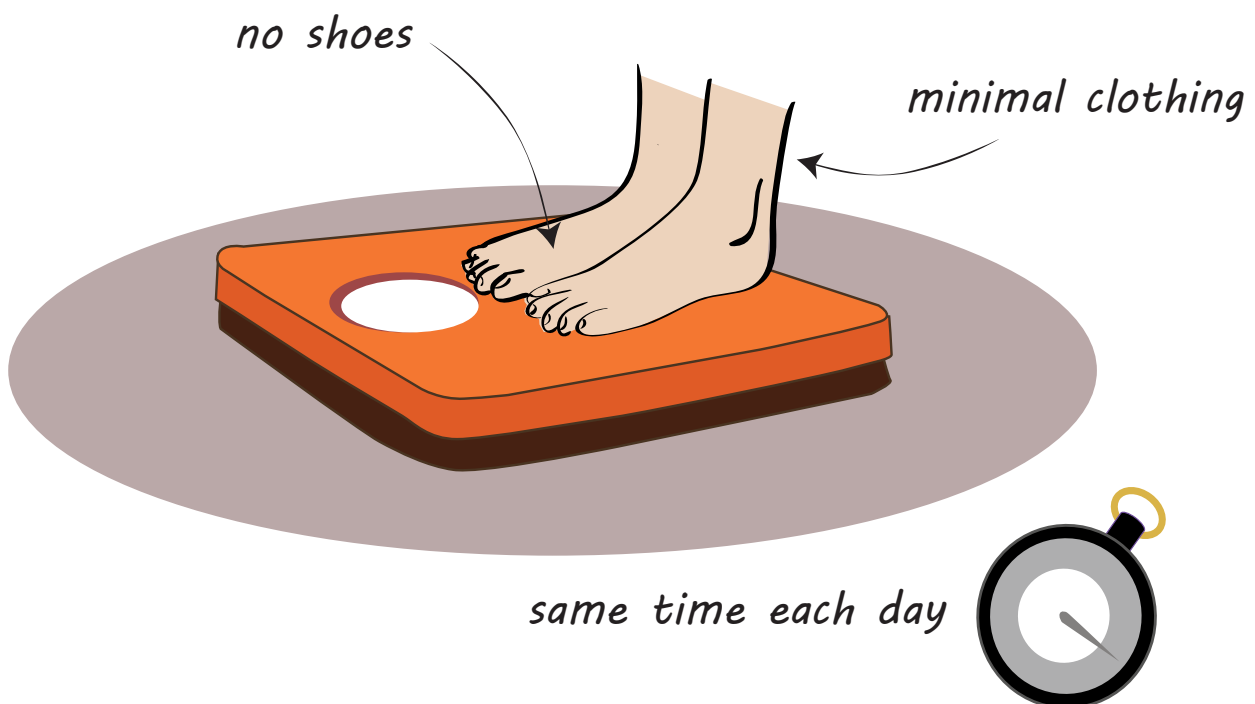
This test includes measures of body size and calculations to determine body composition. Measuring height and weight is important for the interpretation of body composition changes due to fitness training. Girths are circumference measures at standard anatomical sites around the body and can be used for monitoring changes in muscle mass and fat levels.

### Equipment Needed

- **Wall** - for standing up against
- **Scales** - bathroom type weight scales.
- **Cloth Tape** - measuring tape like used for sewing.
- **Marker Pen** - for indicating landmarks on the skin

### Measuring Body Weight

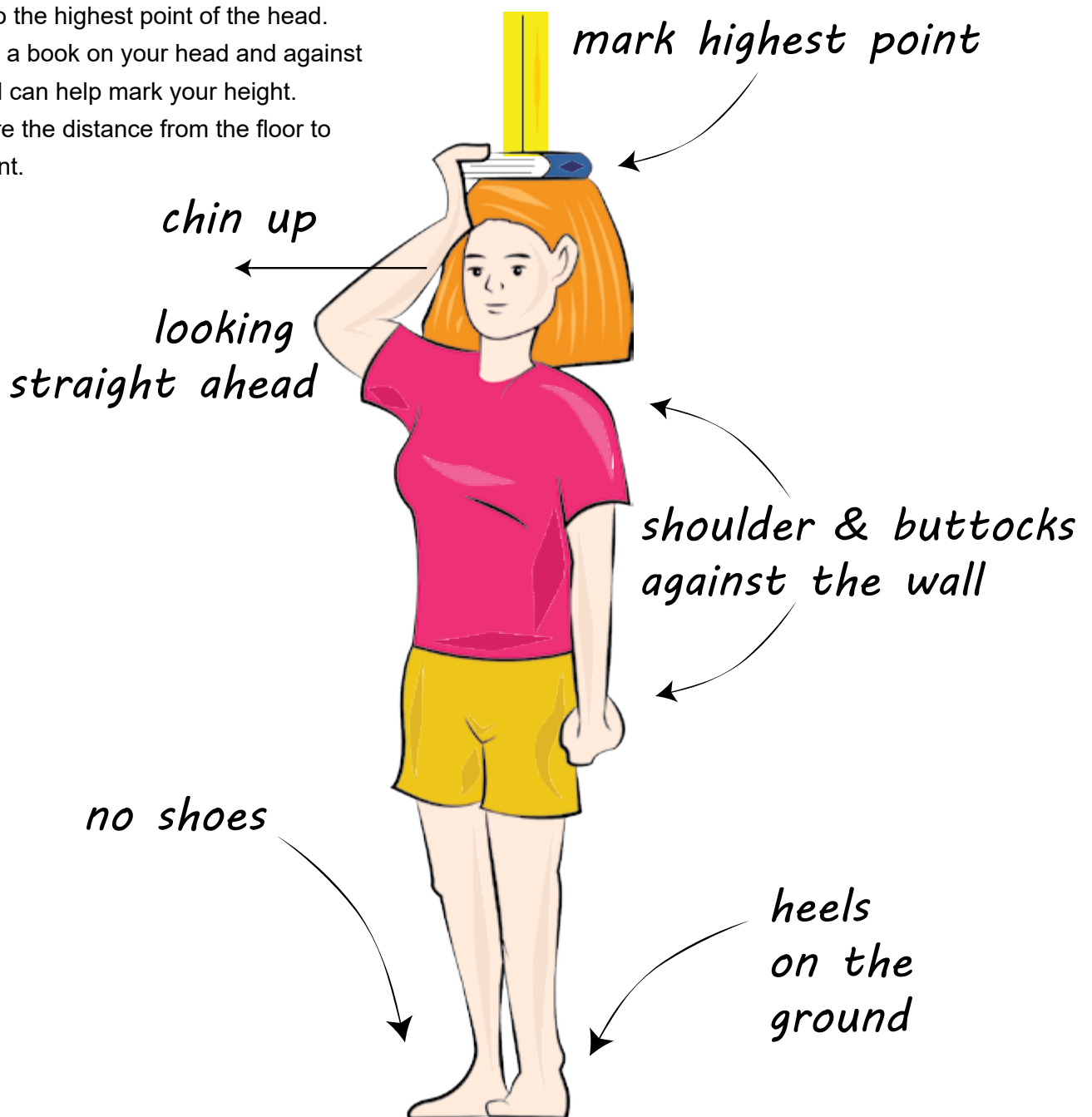
Shoes and excess clothing should be removed. Stand on the scale with minimal movement with hands by your side. To improve reliability, measure body weight in the morning after voiding the bladder and before breakfast. Record the time of day and amount of clothing so that this can be repeated next time. Record the weight.





### Measuring Height

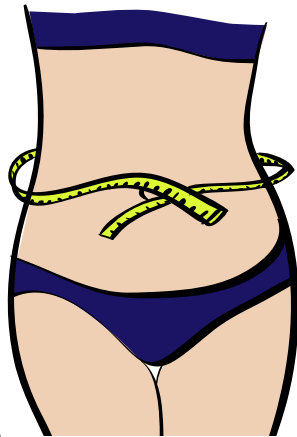
Remove your shoes. Stand with your back against a wall, facing directly ahead with your feet together. Heels, buttocks and upper back should all be in contact with the wall. Mark the wall at the point equal to the highest point of the head. Placing a book on your head and against the wall can help mark your height. Measure the distance from the floor to this point.



**Measuring Girths:** For all girth measurements any clothing over the site should be removed if possible to make sure measuring tape is positioned correctly and that the correct circumference is determined. When recording, you need to make sure the tape is not too tight or too loose, is lying flat on the skin, and is horizontal.

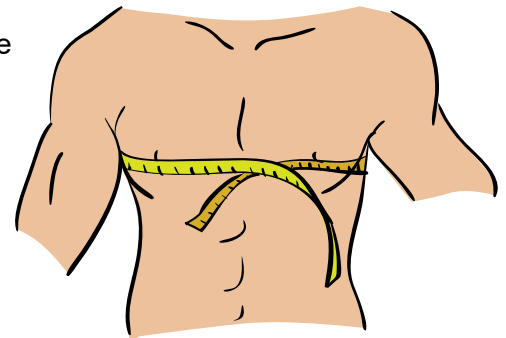
## Waist Girth

The waist measurement is taken at the narrowest waist level, or if this is not clear, take the measurement at the mid-point between the lowest rib and the top of the hip bone. If you are unsure if this measurement was taken at the narrowest level, take several measurements at different levels and record the smallest measurement.



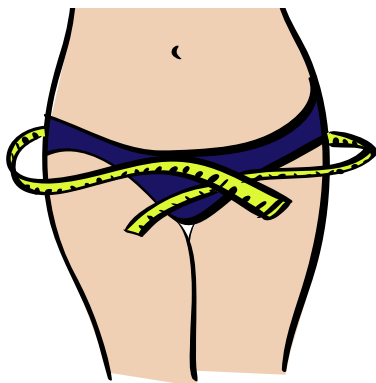
## Chest Girth

The chest girth measure is taken at the level of the middle of the sternum (breast-bone), with the tape passing under the arms. After the tape is in position, the arms should be relaxed by the side, and the measurement taken at the end of a normal exhalation.



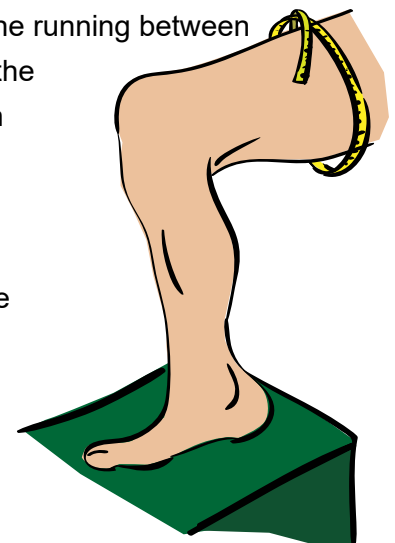
## Hip Girth

The hip girth measurement is taken over minimal clothing, at the level of the greatest protrusion of the gluteal muscles (buttocks). Make sure you are standing erect with your weight evenly distributed on both feet and legs slightly apart - making sure not tense the gluteal muscles.



## Thigh Girth

Take this measurement on the right thigh. First measure and mark the level of the mid-point of the thigh. Place your foot on a chair, and mark the mid-point of a line running between the hip crease and the tip of the knee. With the leg remaining resting on the chair, measure the thigh circumference at the level marked.





# Body Size & Composition

## CALCULATIONS

### Body Mass Index

Body Mass Index or BMI is calculated by dividing your weight by your height squared. Metric units are used, so you may need to convert them first. Follow the calculations steps below. When done, transfer your results to the recording and rating sheet. Generally, the higher the BMI score the more overweight you are.

If not already, convert weight to kgs (1 kg = 2.2 lbs) and height in inches to meters (1 m = 39.37 inches)

$$\begin{aligned} \text{weight in lbs} \div 2.2 &= \text{_____ kg} \\ \text{height in inches} \div 39.37 &= \text{_____ meters} \end{aligned}$$

get the square of the height (in meters)  
 $\text{height}^2 = \text{height} \times \text{height} = \text{_____}$

$$\begin{aligned} \text{BMI} &= \text{weight} \div \text{height}^2 \\ &= \text{_____} \div \text{_____} \\ &= \text{_____} \end{aligned}$$

### Waist:Hip Ratio

The waist to hip ratio (WHR) measurement has been shown to be related to the risk of coronary heart disease. Once the waist and girth measures have been collected, it requires only a simple calculation of the waist girth divided by the hip girth. As this calculation is a ratio measure, it is only important that both measures are in the same measurement units (cm, meters, inches), no conversion is required.

$$\begin{aligned} \text{WHR} &= \text{waist girth} \div \text{hip girth} \\ &= \text{_____} \div \text{_____} \\ &= \text{_____} \end{aligned}$$

## Results

Calculate your BMI and WHR scores by following the instructions above. Record these figures in addition to the results for height, weight.

Girth measurements will be affected by changes in muscle mass and the amount of body fat. You can use these measures to monitor changes in these parameters, though on their own it is not easy to determine if the changes are due to fat storage or muscle mass changes.

Use girth values in conjunction with the changes in body weight to interpret the results.

If you have finished growing, your height and other physical dimensions are not expected to change—you will have to make the most of what you have. Dieting and exercise can help to decrease body fat, and specific exercises can be tailored to increase muscle mass.

# test3 Flexibility

## Testing Flexibility

Flexibility is important for reducing injuries and having the range of motion to perform activities freely. The sit and reach test is commonly used to measure the flexibility of your hamstrings and lower back. This test has long been used as a general test to represent a person's flexibility, though actual flexibility may differ around the body.

## Sit and Reach Test

Remove your shoes and sit on a flat surface, legs extended in front of the body, toes pointing up and feet slightly apart, with the soles of the feet against the base of the step (if there is no step, just any flat surface will do).

Place the ruler on the ground between your legs or on the top of the step. Place one hand on top of the other with the fingertips together, then reach slowly forward, keeping your legs straight. At the point of your greatest reach, hold for a couple of seconds, and measure how far you have reached.

If you have trouble straightening your legs, get a friend to help by holding the knees down flush with the ground.

Perform the test three times and record the best score.

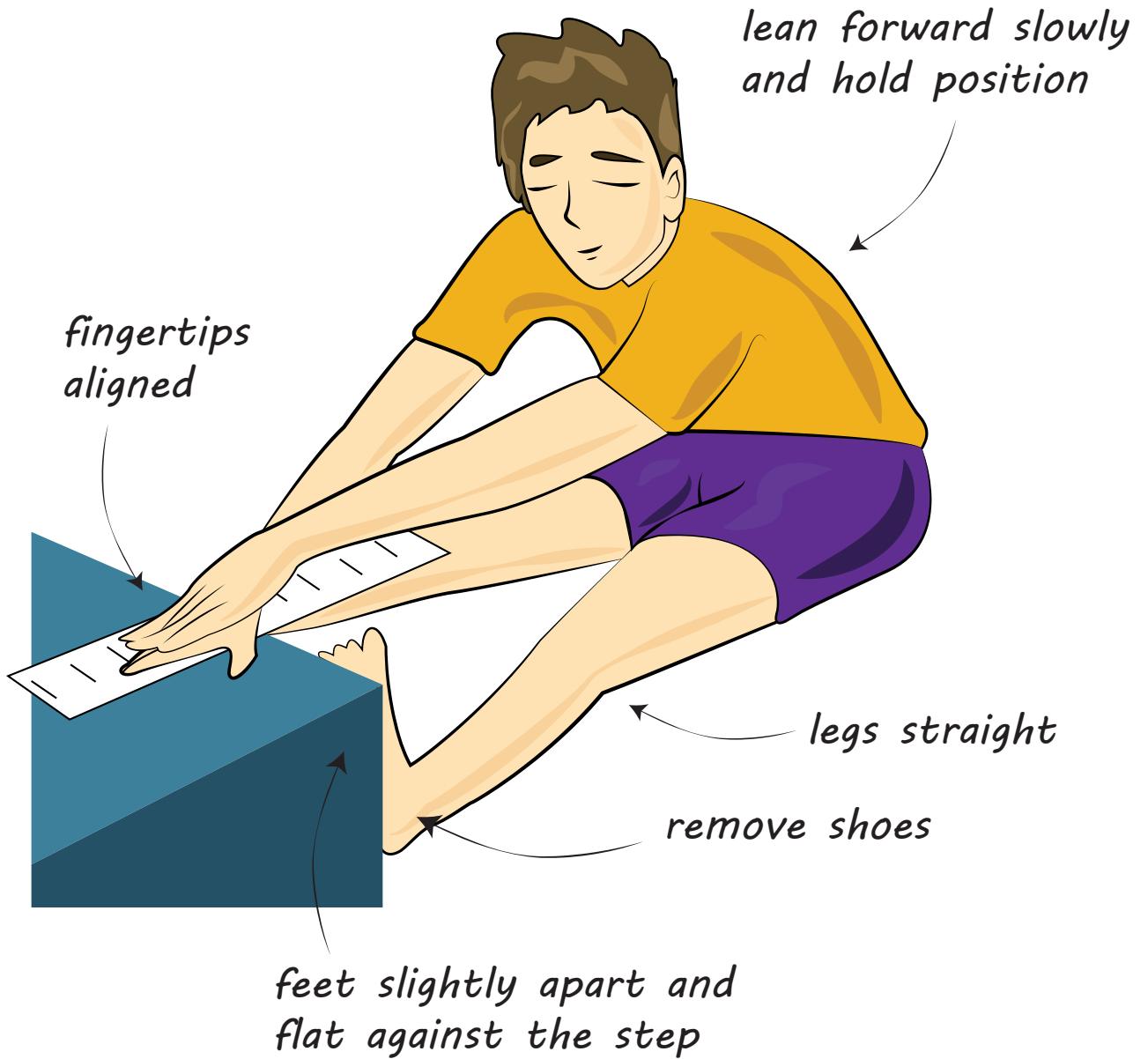
## Equipment Needed

- **Step or low box** – for placing the feet up against
- **Cloth Tape or Ruler** – for measuring distance reached.

## Results

Take a measure in cm or inches of how far beyond the base of your foot you reached, or if you did not reach your toes, measure how far before the feet you were (a negative measurement score).

Flexibility is specific to the joints and muscles of the body. You can increase your flexibility by doing regular stretching exercises.





## Testing Balance

Balance is the ability to stay upright or stay in control of body movement. Balance is an important component of many sports. We use our eyes, ears and 'body sense' to help retain our balance. It also requires a certain amount of muscle strength and control.

The balance test used here, the Stork Test, is a simple test of whole body static balance.

## Stork Test

This test measures how long you can balance on one leg.

Remove your shoes and stand with your hands on your hips. Bring one foot up and place it against the inside knee of the supporting leg. When you are ready to start the test, rise up the heel to balance on the ball of the foot, and hold this position for as long as possible.

You can spend some time practicing this first. The test is easier to conduct if you can get someone else to time for you, otherwise you need to be able to see a clock as you do the test.

## Equipment Needed

- **Timer** - you can use your watch with a second hand, or a digital watch with a seconds display.

## Results

The timing starts as the heel is raised from the floor, and ends when any of the follow occur:

- the hand(s) come off the hips.
- the supporting foot swivels or moves (hops) in any direction.
- the non-supporting foot loses contact with the knee.
- the heel of the supporting foot touches the floor.

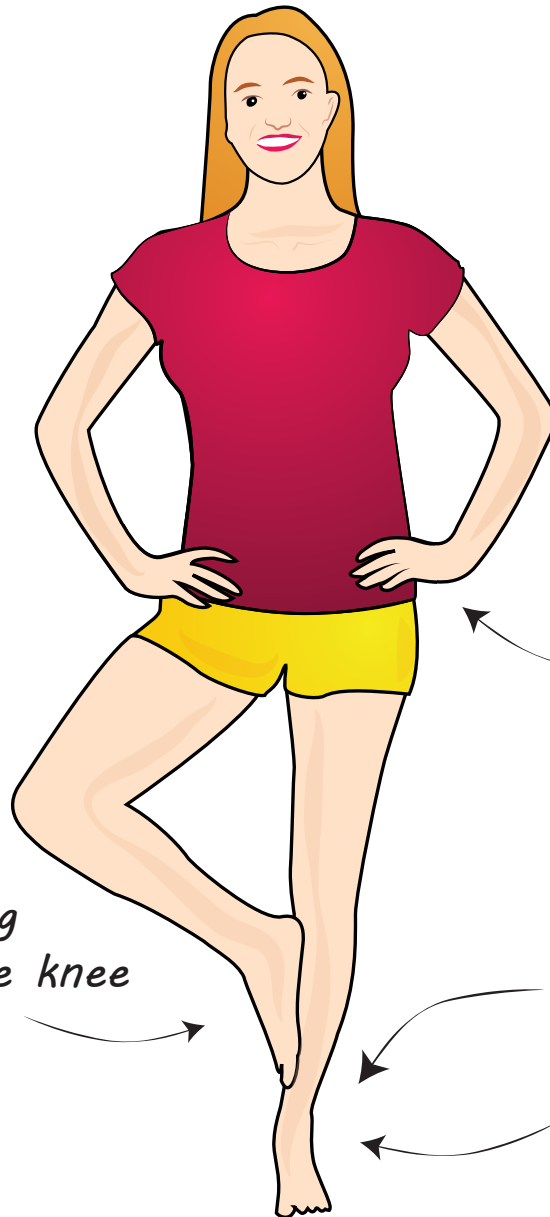
Repeat the test using the other leg, and take the average time in seconds of the two tests.

A higher score means better balance. Balance can be improved with any exercise that strengthens your legs and core support muscles, as well as activities such as tai chi and yoga.

# test4

## Balance (Stork Test)

how long can you hold this position?



hands on hips

one foot resting against opposite knee

rise up onto ball of foot

shoes off

# test5

## Core Strength (Sit Ups)



### Testing Core Strength

It is important to test your abdominal muscles, as abdominal strength and muscle endurance is an indicator of core strength and therefore core stability and support of the lower back.

### Sit Up Test

The aim of this test is to perform as many sit-ups as you can in one minute.

The starting position is lying on your back with your knees bent at right angles and feet flat on the floor. The arms are stretched out in front of you, with the hands resting on your thighs.

This test can be done with or without anchoring your feet. Your feet can be anchored under a chair or bed, or if available a second person can hold your ankles.

When ready, start the sit up by raising your upper body forward, sliding your hands along your thighs until the fingertips reach the top of your knees, and then lower the torso until the shoulder blades touch the ground. This is one complete sit up.

No bouncing or arching of the lower back is allowed, and the buttocks must remain in constant contact with the floor throughout the test. If required, resting during the test is permitted in either the up or the down position.

### Equipment Needed

- **Timer** - you can use your watch with a second hand, or a digital watch with a seconds display.

### Results

Count the total number of correctly performed sit-ups in one minute. Do not count any that were not performed correctly as per the directions.

If your abdominal test performance is poor, there are a wide range of abdominal workouts to help improve abdominal strength and endurance. Avoid the fad abdominal workout machines; you can work the core muscle groups adequately with traditional exercises.



# test5

## Core Strength (Sit Ups)

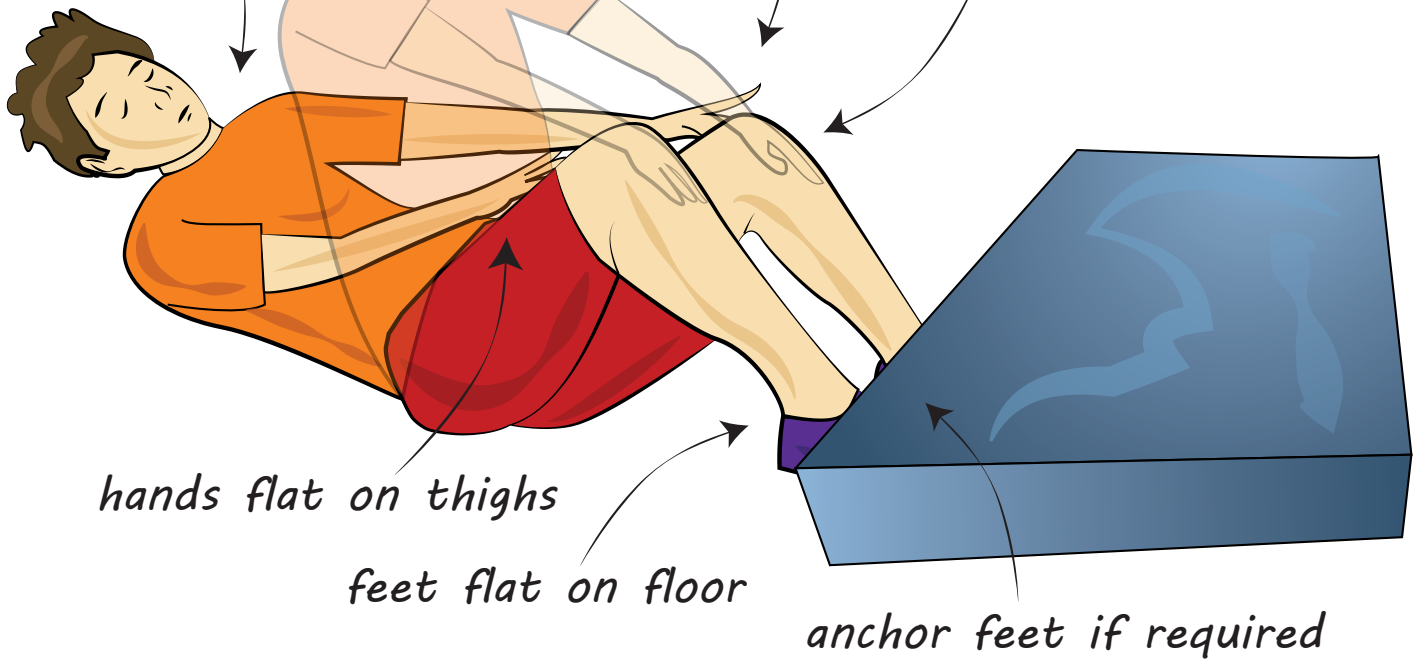
how many in a minute?



return to  
shoulders  
touching  
ground

rise up until  
fingertips reach knees

knees at right angles



hands flat on thighs

feet flat on floor

anchor feet if required

### Testing Lower Body Strength

Lower body strength is important for many everyday activities, and in sports it is important for such things as jumping and running.

### Squat Test

For this test you need a chair or bench at a height that makes your knees at approximately right angles when you are sitting. Measure and record the actual height of the chair. Try and use the same chair for any retesting.

Stand in front and facing away from a chair or bench with your feet about shoulder width apart. Place your hands out in front.

When ready, squat down, and lightly touch the chair with your buttocks before standing back up. Keep moving at a consistent and steady pace, and do not rest in either the top or bottom position. Keep your head up and looking ahead and your back straight.

Do as many squats until you are unable to continue. Remember, no resting is allowed.

### Equipment Needed

- **Chair or Bench** - of appropriate height

### Results

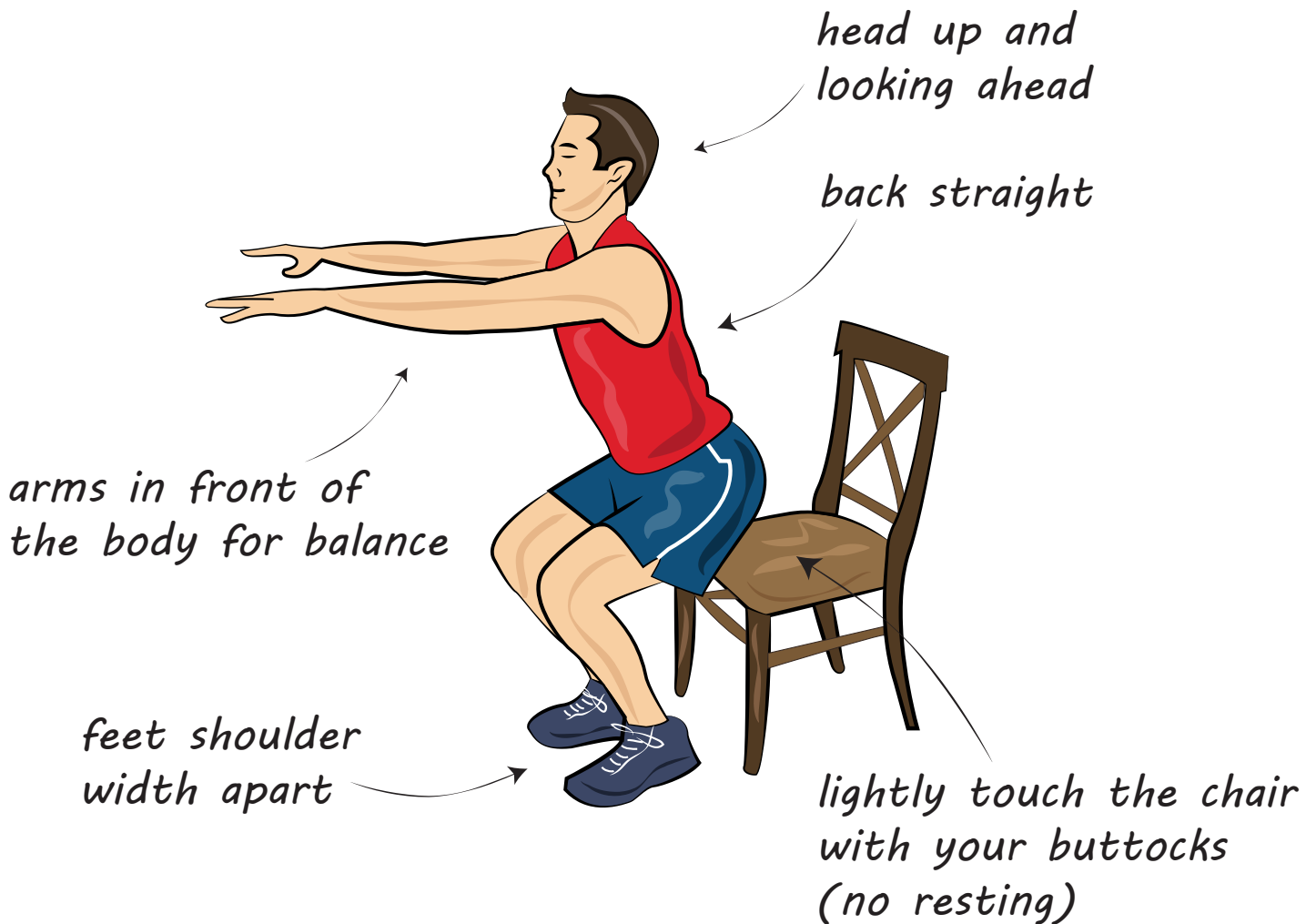
Count the total number of squats you could do. The more you can do obviously means greater leg strength and endurance.

Leg strength can be improved by performing resistance leg exercises and running and jumping activities.

# test6

## Lower Body Strength (Squats)

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This test measures the strength endurance of the chest, shoulder, and triceps muscles. Upper body strength is important for lifting and in sports requiring catching or tackling.

### Push Up Test

The aim of this test is to perform as many push-ups as you can in one minute.

The starting position is with your arms straight, elbows locked, body straight, hands placed slightly wider than shoulder-width apart with fingers pointing forward and both feet on the floor.

Mid-way between your hands you should place a toilet paper roll or something similar to indicate the depth of each push-up. This will ensure consistency for each push up.

If you are performing this test on your own, you can place a watch on the ground just in front of you to monitor the time elapsed, otherwise have someone call out the time and count the number of push-ups.

When ready, start timing and bend your elbows and lower your body until the chest touches the paper roll, then return to the starting position. Pausing to rest is permitted only in the up (starting) position. Repeat as many times as you can within a minute.

For the push up to be counted, the body must remain rigid in a generally straight line, and move as a unit while performing each repetition. The chest must also touch the object on the floor each time.

### Equipment Needed

- **Toilet Paper Roll** – for indicating the depth of the push-up (or something similar)
- **Timer** – you can use your watch with a second hand, or a digital watch with a seconds display.

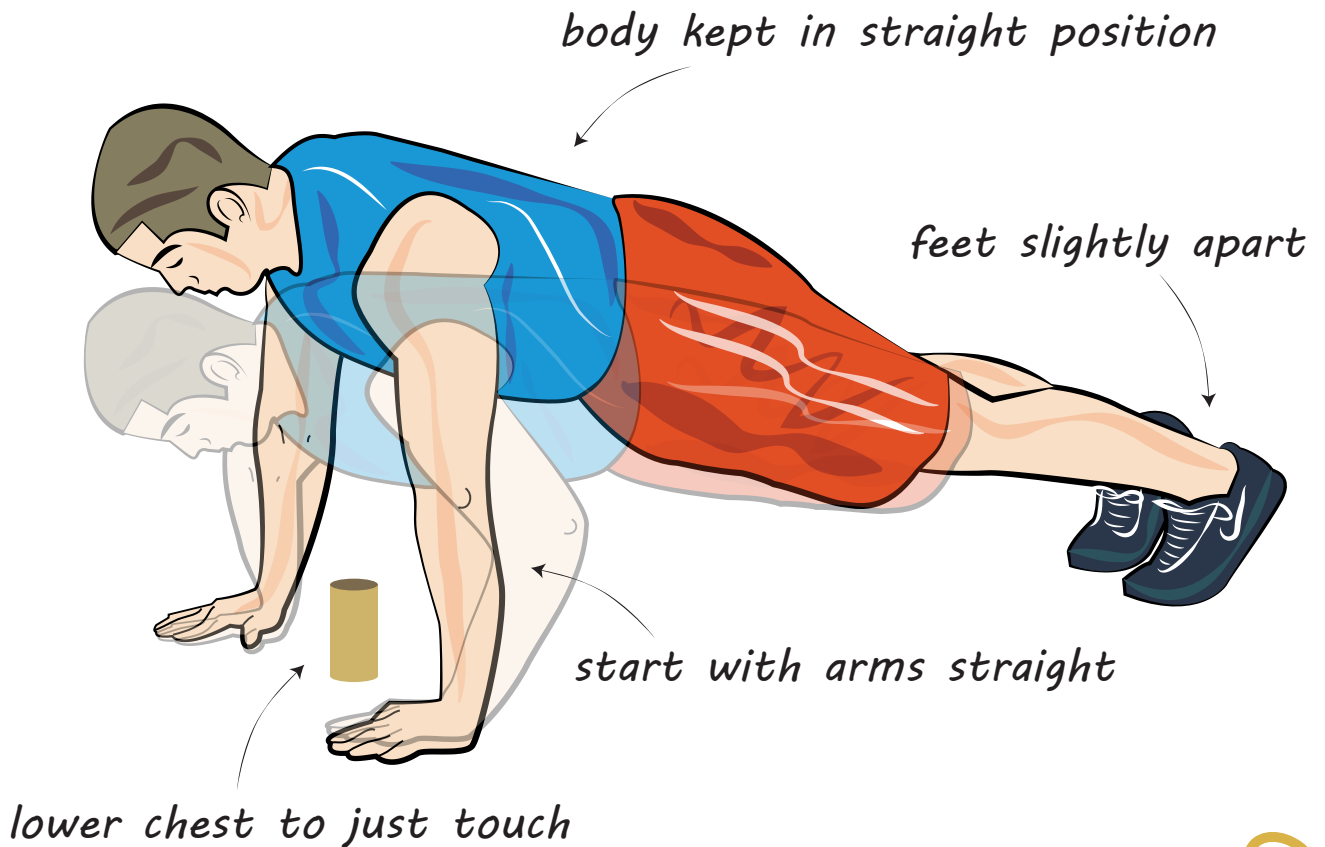
### Results

Count the total number of push-ups you could do in a minute. Do not count any which you did not perform as described.

Upper body strength can be improved with resistance exercises, such as weight lifting in the gym. There are many body weight exercises you can do too such as chin-ups, push-ups and dips.

# test7

## Upper Body Strength (Push Ups)



how many in a minute?



## Testing Leg Power

Leg power is important for any sport which requires sprinting or jumping. This test is designed to measure your explosive leg power.

## Vertical Jump Test

Find a high wall, such as the outside of a building, which has a bit of room around the base so you can jump and land safely.

Start by standing side on to the wall and reach up as high as you can with the hand closest to the wall. Make note of how high you can reach. This is called the 'standing reach height'. Then stand a little away from the wall, and jump as high as possible using both arms and legs to assist in projecting the body upwards. Attempt to touch the wall at the highest point of the jump. Make note of where you touched the wall at the maximum height of the jump.

You can assist in recording your score by holding a piece of chalk in your hand and using it to mark the wall. If the wall already has horizontal lines, such as a brick wall, it will be easier to note your jump height. Have as many attempts as you need to get the best possible score. Practice your technique, as the jump height can be affected by how much you bend your knees before jumping, and the effective use of the arms. You also need to hit the wall at the peak of the jump, which can take some practice.

## Equipment Needed

- **Wall** – a high enough wall to jump against and a clear space around it.
- **Cloth Tape** – measuring tape like used for sewing, for measuring the reach and jump height.

## Results

Calculate your vertical jump score by subtracting your reach height from your jump height

Vertical Jump = Jump Height - Reach Height

The higher the score, the better your leg power. Leg power can be improved by increasing leg strength and with plyometric (bounding) exercises and sprint training.

# test8

## Leg Power (Vertical Jump)

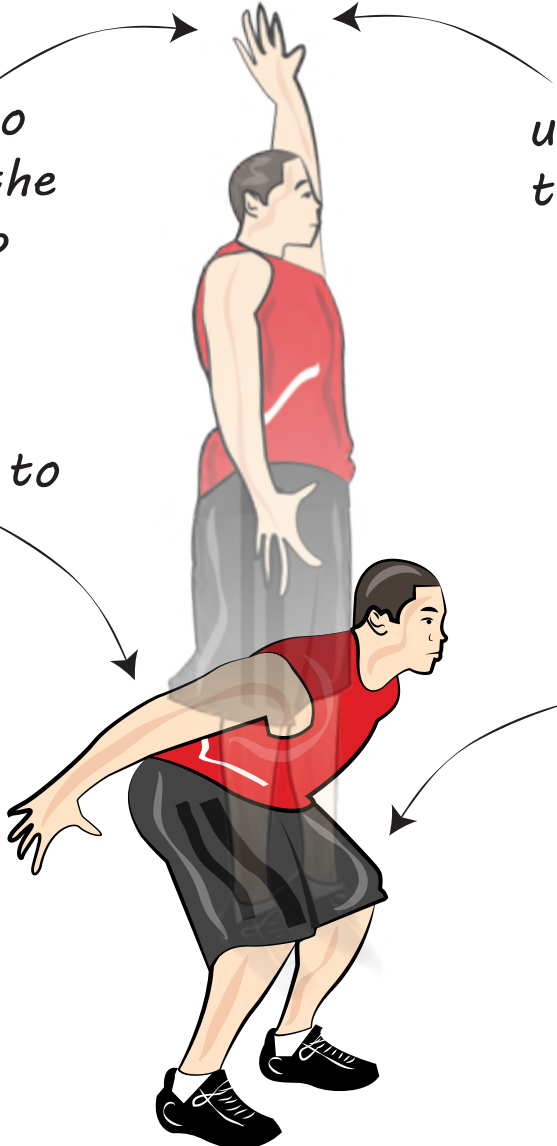
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*practice timing to hit the wall at the peak of the jump*

*use chalk on fingers to mark the wall*

*swing both arms to assist the jump*

*bend legs to give extra power*



## Testing Speed & Agility

Agility is important in many sports in which you have to run and change direction and/or evade opposition players. This is a whole body agility test, measuring the ability to move with maximum speed while maintaining balance and control (coordination).

## Quadrant Jump Test

A quadrant is marked out on the ground, as illustrated in the diagram, with numbered quadrants. Start with both feet together in the first quadrant.

This test is easier to conduct if there is an assistant to time the test and record the number of jumps, though you can do it on your own if you can see a clock with a second hand as you perform the test.

When ready, jump ahead across the line into the second quadrant, then in sequence successively into quadrants 1, 2, 3, 4, 1, 2, etc (moving clockwise). Keep the body facing ahead in the same direction as you go around the quadrant. Continue this pattern as rapidly as possible for 15 seconds, and count the total number of jumps.

After a rest of at least a few minutes repeat the trial in the opposite direction (counterclockwise), jumping from quadrants 1 into 4, then 3, 2, 1, 4, 3, 2 etc..

Count the total number of jumps, though do not count them if you touch a line or land with one or both feet in an incorrect quadrant.

## Equipment Needed

- **Markers** - chalk or tape for marking the ground.
- **Timer** - a stopwatch or a clock with a second hand

## Results

The combined total from the two 15 second trials is your score. Remember, only correctly performed jumps are counted.

Leg speed and agility can be improved with sprint training and specific fast feet drills, and dynamic exercises. Core strength can also help improve control and stability which is important in this test.



# test9

## Speed and Agility

keep facing forward

keep feet together

how many in 15 seconds?

15 seconds

\* repeat anticlockwise, and combine scores

# test10 Endurance

## Testing Endurance

Aerobic endurance is one of the most important components of physical fitness. The aerobic step test provides a simple test requiring only limited equipment and space. The test is based on the principle that as you get fitter, your heart rate for any given exercise intensity will be reduced.

## Step Test

Find a bench or step that is as close to 12 inches (30cm) high as you can find. A box or small chair can also be used if it is stable. Record the height of the step, and try and use the same apparatus for any retesting.

The technique involves stepping up onto the step with one foot and then the other. Step down with the same leading foot first and followed by the other. Repeat this sequence starting with the same foot each time. Practice stepping at the rhythm of a four second cycle (one movement every second). You may also wish to practice finding your heart beat for the heart rate measurement at the end of the test.

Once you have practiced the technique and rhythm, start the test, keeping the rhythm steady for a full three minutes. At the end of three minutes, sit down immediately and measure your heart rate for the next minute by taking your pulse and counting the total number of beats.

## Equipment Needed

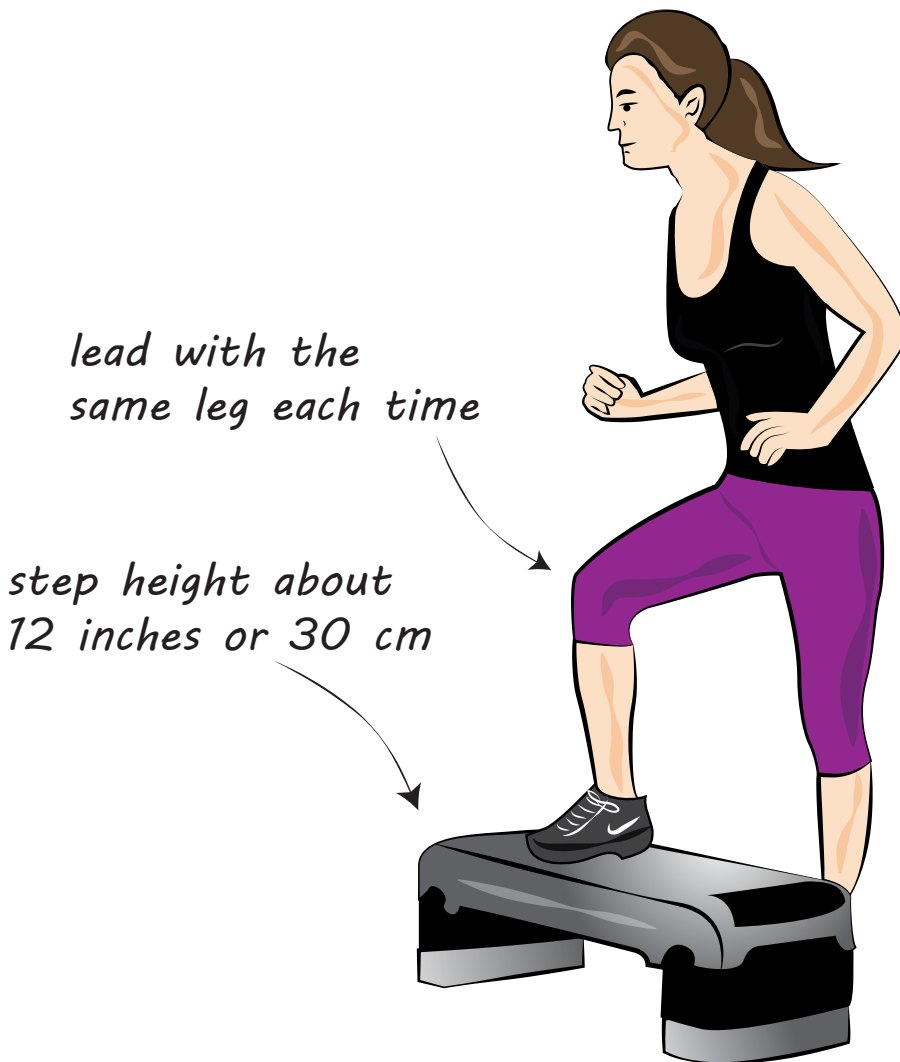
- **step or bench** - about 12 inches high
- **timer** - a clock with a second hand

## Results

Your score is your heart rate for the minute after the stepping. A lower heart rate indicates a better fitness level.

Endurance fitness can be improved by performing exercises, particularly whole body exercises such as running, swimming and cycling that elevate your heart rate for at least 30 minutes. Such exercises should be performed at least three times a week

# test10 Endurance



*lead with the same leg each time*

*step height about 12 inches or 30 cm*



*continue for three minutes*

*\* step rate 4 second cycle  
(one movement per second)*

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## About The Author

The author, Rob Wood, has the unique combination of a PhD in Exercise Physiology and qualifications in Graphic Design. These skills has seen him host and write the most comprehensive web site on fitness testing — [topendsports.com](http://topendsports.com)

During his studies in Human Movement at The University of Western Australia, he spent time at the Australian Institute of Sport and the Western Australian Institute of Sport. After gaining his doctorate (PhD) in Exercise Physiology from UWA in 1999, he was employed as an exercise physiologist at the Northern Territory Institute of Sport, where he was responsible for the training and testing on many of their elite athletes.



Following a personal interest in art and design, Rob studied graphic design at the Canberra Institute of Technology, graduating with an Advanced Diploma in 2002. He then worked as a graphic designer in Canberra before travelling and has been working full time on his web sites since.

## References

Information on fitness testing and a large list of tests can be found on [Topend Sports](http://Topend Sports). More information can also be found on the [Home Fitness Test](http://Home Fitness Test) website.

Here are some other references for those looking for more information about fitness testing.

- » **Guidelines for Exercise Testing and Prescription**, American College of Sports Medicine, 9th ed, Lippincott Williams & Wilkins , 2013.
- » **Physiological Tests for Elite Athletes by Australian Institute of Sport** , 2nd edition (eds Rebecca Tanner and Christopher Gore, 2012)
- » **Measurement and Evaluation in Human Performance With Web Study Guide-4th Edition** by James Morrow Jr., Allen Jackson, James Disch, Dale Mood. 2010
- » **Physiological Assessment of Human Fitness - 2nd Edition** by Peter Maud and Carl Foster (2005)
- » **Companion Guide to Measurement and Evaluation for Kinesiology**, David Tomchuk, 2010.
- » **Fitness Testing 101 - A Guide for Personal Trainers and Coaches** By Patrick S. Hagerman, 2001

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