

PROJECT ViTAL

ViTAL (Vitality Through Active Living) FIJIAN
PROJECT



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CREATING A HEALTHY REVITALIZED COMMUNITY WITHIN FIJI

Physical inactivity, along with other lifestyle-related health risk factors such as an unhealthy diet, is becoming increasingly prevalent in developing countries which face rapid economic and social development, urbanization and industrialization. The importance of physical activity as a means of NCD prevention and control is recognized in developing countries, as well as the need for suitable programmes, policies and guidelines. However, the evidence on implementing physical activity interventions in a developing country context is sparse. It is evident from research findings that encouraging participation in health-enhancing physical activity is a public health issue of urgent concern. A healthy revitalised community is one that is concerned about the well-being of the community, protection of the environment and investing into future generations. Research stresses that physical activity interventions carried out in developing countries include strategies to:

- raise awareness of the importance and benefits of physical activity among the community,
- educate the whole population and/or specific community groups,
- conduct local physical activity programmes and initiatives;
- build capacity among individuals implementing local physical activity programmes through training of potential programme coordinators; and
- create supportive environments that facilitate participation in physical activity;

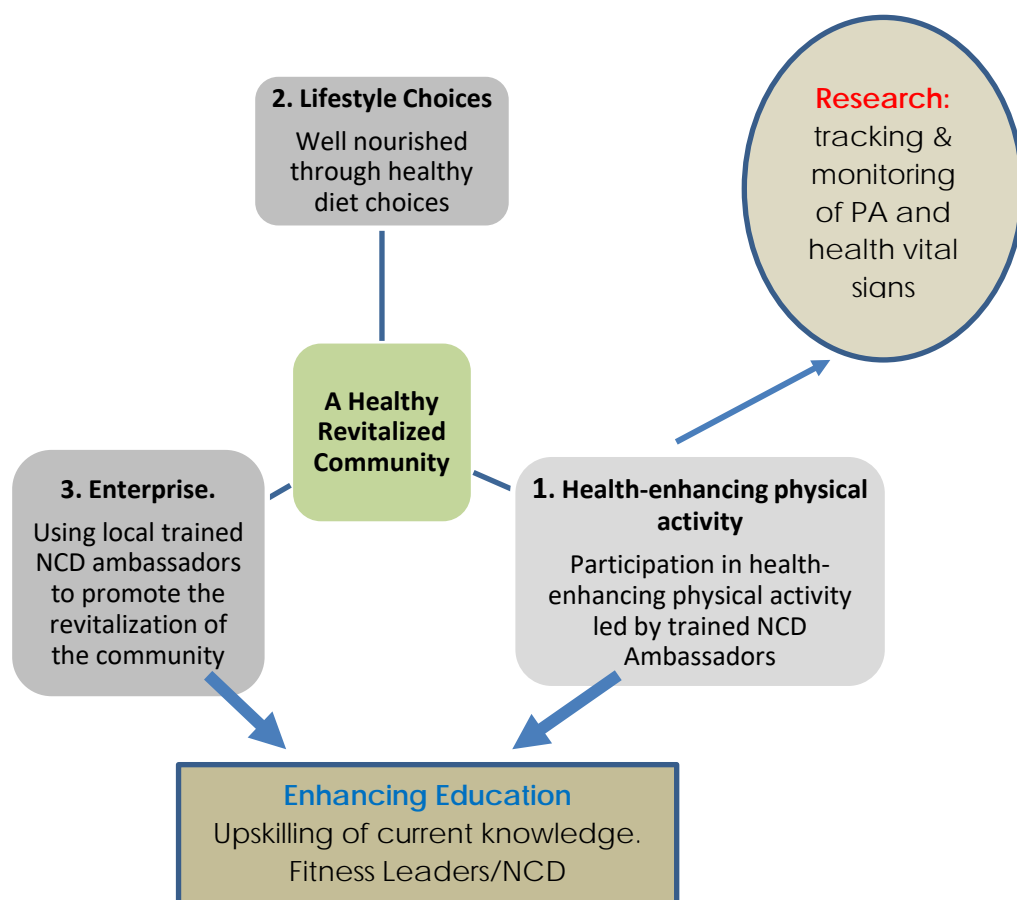


Figure 1: Three prong approach to community revitalization

As evident from research, for the ViTAL project to add value, it requires a three-prong approach (figure 2) which incorporates recommendations found in research:

1. Participation in health-enhancing physical activity

Physical activity experiences are an integral part of human development. They contribute to people's physical health and well-being, growth, personal development, and self-esteem. Physical inactivity increases the risk of many chronic diseases, such as cardiovascular diseases, diabetes and cancer. Overweight affects many adults globally. Physical inactivity causes an estimated 600 000 deaths per year globally, and leads to a loss of 5.3 million years of healthy life expectancy per year. The economic consequences of physical inactivity have been shown to be substantial for health care costs, but even greater on indirect costs, which include the value of economic output lost because of illness, disease-related work disability and premature death. Encouraging GPs or health workers to 'prescribe' physical activity (also known as exercise referral) can also be an effective behaviour-change intervention. The prescription is tailored to the health needs of the individual patient, and can be as simple as a written suggestion of an activity or a much more comprehensive solution, supported by an activity organiser such as volunteer or sports organisations.

2. Well-nourished community through Lifestyle choices

A balanced diet can help individuals maintain good health and prevent various types of chronic diseases. A strong link exists between diet and disease. Consuming a diet rich in fruits and vegetables reduces the risk for heart attack, colon cancer, diabetes, and high blood pressure, and may reduce the risk of stroke.

Financially, socially and environmentally it makes sense to help the community learn how to provide more of their own healthy food. This model is self-sustaining and financially robust. Community gardens are recognised worldwide as a great way to grow food, improve your health, meet people, and cultivate vibrant communities. Community gardens often provide enough food to share the surplus and/or develop community enterprises. Food and Nutrition for a Healthy community, encourages the whole community to get involved in creating a positive environment that supports making healthy food choices thus leading to a healthier community.

3. Enterprise.

Community programmes led by trained NCD/PAL's that are placed back into their community, could have a major influence on their community physical activity levels. They are role models, and they influence the community by their own attitudes to, and involvement in, physical activity. Trained NCD/PAL's within their communities are more likely to become involved in what their communities are learning in lifestyle modification programmes and to help them to value physical activity and be active for life. NCD/PAL's are well placed to ensure that a positive physical activity culture is established and maintained. Using community members to resource the community led programme is a way in promoting sustainable use of local resources, optimizing the capacity of the community to develop new sustainable sources of income.

The human body was meant to move, and several terms can be used to encourage and enable people to move about. Depending on the Fiji need/situation, the ViTal project design could be a programme that incorporates “physical activity”, or “active living” or “sport” or any combination of these three.

Active living is a way of life that integrates physical activity into daily routines. The goal is to accumulate at least 30 minutes of activity each day. Individuals may do this in a variety of ways, such as walking or bicycling for transport, performing fitness exercises, participating in sports (both organized and informal), playing in the park, working in the garden, taking the stairs and using recreational facilities.

Physical activity is any bodily movement produced by skeletal muscles that results in energy expenditure above resting level. This includes walking or cycling for transport, dance, traditional games and pastimes, gardening and housework as well as sport or deliberate exercise.

All forms of physical activity can be beneficial, but the goal is to enjoy health-enhancing physical activity, defined as any form of physical activity that benefits health and functional capacity without undue harm or risk. This is best achieved by incorporating physical activity of at least a moderate intensity (such as brisk walking and other activities that make you breathe harder and feel warmer) into daily life.

Sport usually involves some form of competition, although this guide is mainly concerned with the sport for all movement, which stresses participation, fun and skill development rather than winning and elite performance. Organized sport is an integral part of Fiji culture am starting to believe.

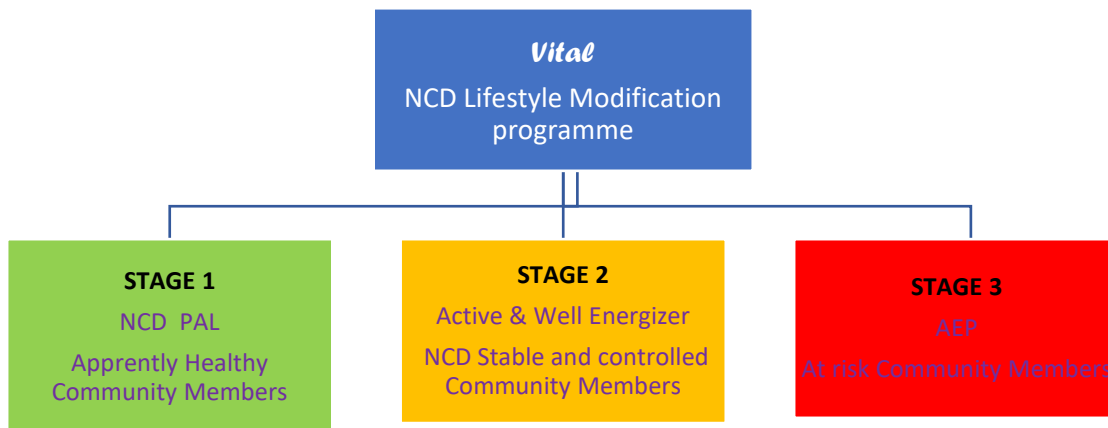
END GOAL

Revitalize a community to be a well-nourished, healthy, active and innovative community.

A healthy community is not one that has achieved a particular health status. Rather, it is a community that is conscious of health and striving to improve it. What is required is a commitment to health and a process and structure to achieve it. A healthy, active community is one that is continually creating and improving opportunities in the built and social environments and expanding community resources to enable all its citizens to be physically active in day-to-day life.

As the rates of NCDs continue to rise, research shows that greater efforts and resources are being invested in how to best encourage people to live a healthier lifestyle, including making better physical activity and nutritional choices. Research over the past few decades has provided a greater understanding of the factors influencing whether or not an individual or community is physically active and well nourished. In recent years there has been a shift away from encouraging individual behaviour change to an approach that addresses wider, population-level factors. Individualised behaviour change is often not sustainable or effective unless it becomes habit-forming. Changing the overall environment makes behaviour change more sustainable. There are different levers that can be used at the population level to change both the social environment and the built environment, which together influence the health and diet choices made by individuals. Factors in the social environments known to influence participation in physical activity are socioeconomic status, cultural beliefs, and opportunities to improve social cohesion in the neighbourhood, city and regions. Factors in the built environment that influence participation in physical activity are urban design, transport (traffic), availability of green space, and land-use patterns. Fostering long-term behaviour change requires overcoming perceived barriers that need to be overcome to get regular employment, letting in a lack of motivation and a shortfall of time.

THE VITAL PROJECT MODEL



STAGE 1:

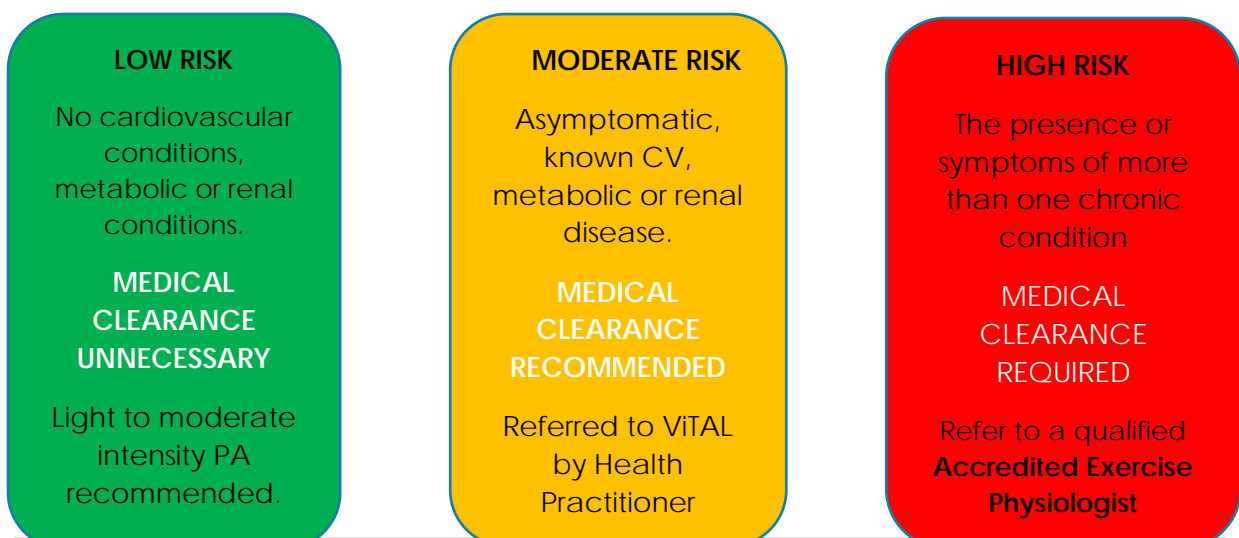
NCD /PAL's = Fijian Sport Commission trained Fitness leader. These community leaders lead the programme for *low risk* apparently health community members. Members do not need medical clearance but must undergo appropriate screening.

STAGE 2:

ACTIVE & WELL energizer = (FNU Grad Diploma in Health and Wellness) These leaders lead the programme for *low to moderate risk* community members. (Have a controlled and stable NCD). Must be referred by Health Practitioner.

STAGE 3:

AEP = University trained postgraduate graduated and accredited AEP (Either do our programme or FNU programme). Community members are *moderate to High risk clients*, must be *medically cleared* and have been referred by the Energiser.





PROJECT ViTAL

What is ViTAL?

Vital is an eight-week lifestyle modification programme. The acronym ViTAL stands for

Vitality

Through

Active

Living

Program Objectives

- To improve understanding regarding dietary misconceptions.
- To support participants to become more physically active and to participate in regular physical activity.
- To promote and improve healthy eating.
- To improve nutrition knowledge.
- To develop skills in goal setting and behaviour.
- To develop skills required to maintain a healthy lifestyle.

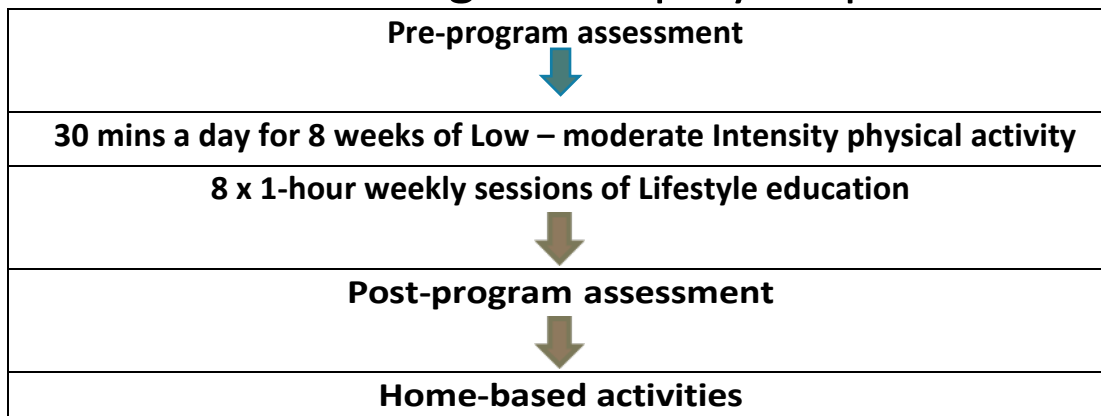
ViTAL Project Delivery

STAGE 1

The **Stage 1 *Vitality through Active Living (ViTAL)*** project is an eight-week lifestyle modification program delivered by trained NCD ambassador/physical activity leaders, that supports apparently healthy community members to develop lifelong healthy eating and physical activity habits. The project covers lifestyle education and physical exercise through one hour per week of healthy eating and lifestyle education, complemented by daily 30 minutes of low to moderate intensity exercise in a supportive group environment. The program can be delivered in a variety of community settings, and empowers participants to take responsibility for their own health, leading to long-term improvements in health and wellbeing. One-on-one health consultations to assess current fitness, measure and assist ongoing progress are also provided.

- At the start of the program
- After the 8 weeks of classes
-

Stage 1: Step by Step



Participants were deemed to have completed the program if they had attended at least six of the eight Lifestyle sessions and daily 30 minutes of physical activity. On completion each participant will receive a programme of home-based activities and or a home exercise program.

Project Assessments

Test 1: Resting Heart Rate

Test 2: Body Size and Composition

Test 3: Flexibility

Test 4: Balance

Test 5: Core Strength

Test 6: Lower Body Strength

Test 7: Upper Body Strength

Test 8: Leg Power

Test 9: Speed and Agility

Test 10: Endurance

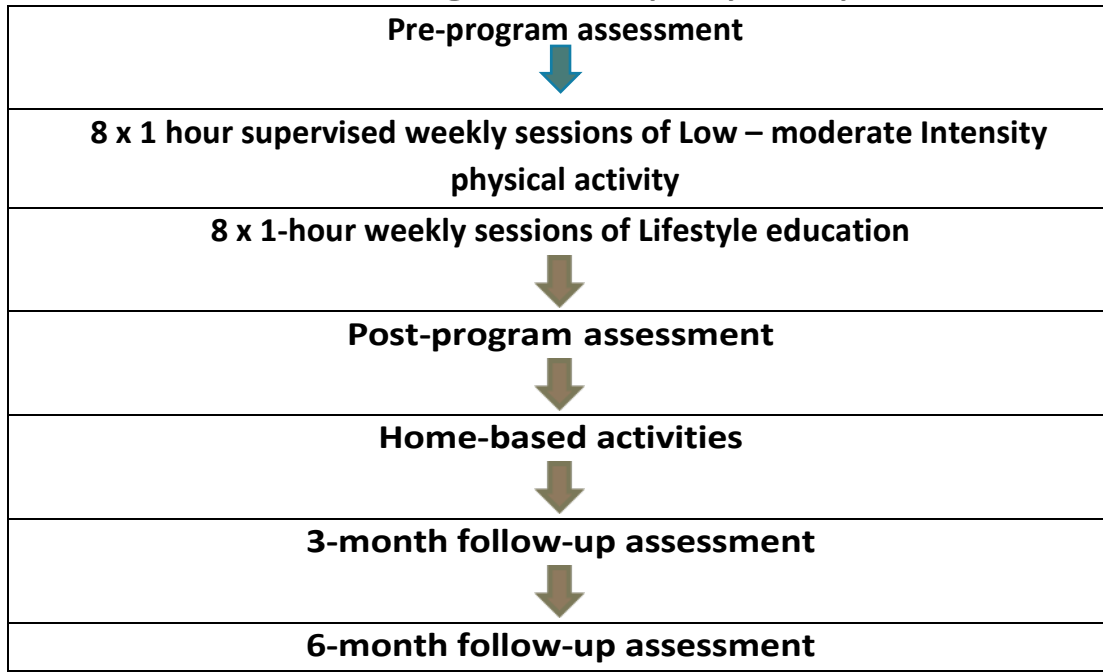
- At the start of the program
- After the 8 weeks of classes

STAGE 2

The **Stage 2** *Vitality through Active Living (ViTAL)* project is an eight-week lifestyle modification program delivered by trained ACTIVE & WELL energizers (FNU Grad Diploma in Health and Wellness), that supports low risk community members with stable and controlled NCD's, to develop lifelong healthy eating and physical activity habits. Community participants are recommended to obtain medical clearance and be referred to the programme by a health practitioner. The project covers lifestyle education and physical exercise through one hour per week of healthy eating and lifestyle education, complemented by supervised one on one weekly sessions of low to moderate intensity exercise in a supportive environment. The program can be delivered in a variety of community

settings, and empowers participants to take responsibility for their own health, leading to long-term improvements in health and wellbeing. One-on-one health consultations to assess current fitness, measure and assist ongoing progress are also provided.

Stage 2: Step by Step



Participants were deemed to have completed the program if they had attended at least six of the eight Lifestyle sessions and one on one physical activity sessions. On completion each participant will receive a programme of home-based activities and or a home exercise program.

Project Assessments

Test 1: Chair Stand Test — testing lower body strength

Test 2: Arm Curl Test — testing upper body strength

Test 3: Chair Sit and Reach Test — lower body flexibility test

Test 4: Back Scratch Test — upper body flexibility test

Test 5: Timed Up and Go Test — agility test

Test 6: Step in Place Test (2 minutes) endurance test

Test 7: The 4-Stage Balance Test

STAGE 3:

Stage 3 of the Vitality through Active Living (ViTAL) project is an eight-week lifestyle modification program delivered by university trained accredited exercise physiologists (AEP). This stage of the ViTAL project is specifically designed to assist people who are obese, have diabetes or are at high risk of chronic disease or who have one or more chronic diseases such as heart disease and diabetes. People who are ready to change their behaviour will benefit most from participating in this stage. The individualised exercise sessions involve low to moderate intensity aerobic & resistance activities and may be modified to suit individual needs. It is a requirement of this stage, that clients undertaking this project, be medically cleared and referred to an AEP by a Health Practitioner.

This stage involves individualised assessment, exercise advice, prescription, behavioural change counselling and support for people with chronic and complex disease(s). Clinical exercise prescription is based on evidence based research and may include cardiorespiratory and/or resistance exercise advice and support for increasing incidental exercise, balance, agility, coordination and strategies for reducing sedentary behaviours. The prescription would incorporate an individualised combination of these modalities which would be balanced with the client's goals, readiness to change, knowledge, skills and access to resources.

Assessment for this stage are depend on the client's condition and needs.

STAGE 1: TEST PROTOCOLS

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.

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.

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?
<input type="checkbox"/>	<input type="checkbox"/>	Do you feel pain in your chest when you do physical activity?
<input type="checkbox"/>	<input type="checkbox"/>	In the past month, have you had chest pain when you were not doing physical activity?
<input type="checkbox"/>	<input type="checkbox"/>	Do you lose your balance because of dizziness or do you ever lose consciousness?
<input type="checkbox"/>	<input type="checkbox"/>	Do you have a bone or joint problem that could be made worse by a change in your physical activity?
<input type="checkbox"/>	<input type="checkbox"/>	Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart condition?
<input type="checkbox"/>	<input type="checkbox"/>	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.

Equipment Required

•

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

- **Ruler** – just like you used at school.
- **Toilet Paper Roll** – or something 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. Used in the running tests and the 1 minute sit up.
- **Markers** – marker cones (any object really), chalk or tape, used to mark out the starting and turning points for many tests.
- **Pen** – for marking down your results.
- **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

This test consists of ten tests:

Test 1: Resting Heart Rate

Test 2: Body Size and Composition

Test 3: Flexibility

Test 4: Balance

Test 5: Core Strength

Test 6: Lower Body Strength

Test 7: Upper Body Strength

Test 8: Leg Power

Test 9: Speed and Agility

Test 10: Endurance

TEST 1: RESTING HEART RATE

Measuring the radial pulse. Make sure you lie down for at least 10 minutes before taking a measurement. Place the tips of the index and second fingers of one hand on the inside wrist of the other hand. Position the fingers just below the base of the thumb to take the radial pulse at the wrist.

The following are steps to take when measuring your pulse: • Step One: Apply light to moderate pressure with the fingers until the blood pulsing beneath the fingers is felt. If no pulse is felt, move the fingers around slightly, up or down, until a pulse is felt. Do not apply excessive pressure. This may compress the artery and distort the measurement. Once the pulse is felt, move to step two. • Step Two: Using a watch or clock with a second hand, count the number of beats felt in 30 seconds, then multiply that number by two to compute a heart rate, expressed in BPM (beats per minute).



TEST 2: BODY COMPOSITION

a. 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 going to the toilet and before breakfast. Record the time of day and amount of clothing so that this can be repeated next time. Record the weight.



Minimal Clothing

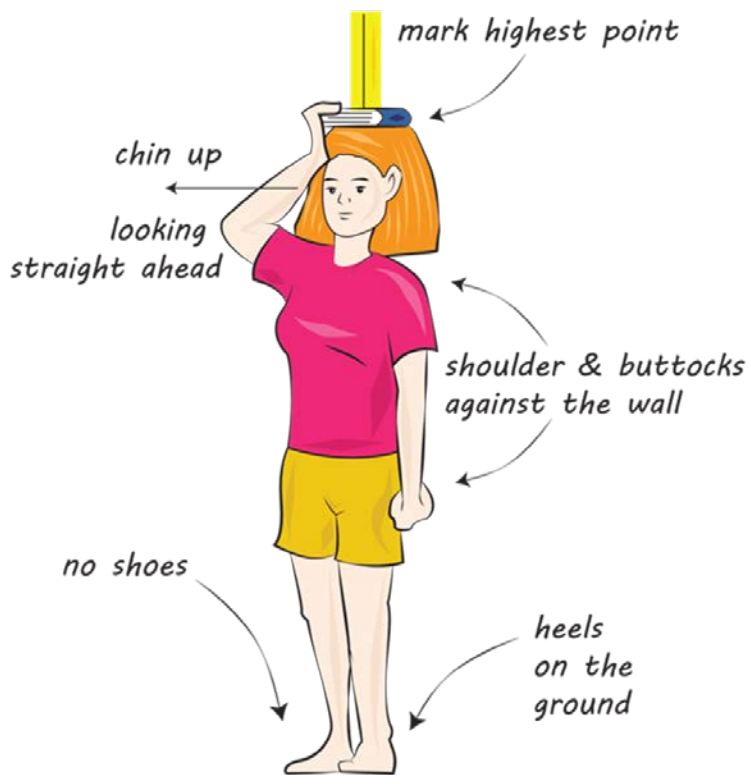


Measure at the same time of day each test period.

b. 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.



c. 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.

i. 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.



ii. 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.



CALCULATIONS

a. 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.

Get the square of the height (in meters)

$height^2 = height \times height = \underline{\hspace{2cm}}$

$BMI = weight \div height^2 = \underline{\hspace{2cm}}$

b. 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.

WHR = waist girth ÷ hip girth

= _____ ÷ _____

= _____

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.

Test 3: 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.

Equipment Needed

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

i. 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.



Results

Take a measure in cm 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.

Test 4: 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.

Equipment Needed

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

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.

*how long can you
hold this position?*





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.

Test 5: 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.

Equipment Needed

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

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 crossed and placed on your chest..

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, until your elbows touch 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.



how many in a minute?



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.

Test 6: 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. This is one of the 10 tests included in the Home Fitness Test Manual. See the list of other Fitness Tests you can do at home.

Equipment Needed

- Chair or Bench - of appropriate height

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.



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.

Test 7: Upper Body Strength

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

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.

Push Up Test

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

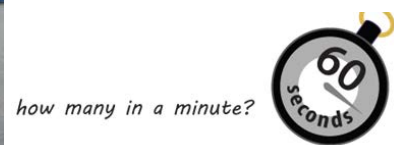
The starting position is with your arms straight, elbows locked, body straight, hands placed slightly wider than shoulder-width apart with fingers pointing forward and both feet on the floor.

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.



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.

Test 8: Leg Power

Leg power is important for any sport which requires sprinting or jumping. This test is designed to measure your explosive leg power. This is one of the 10 tests included in the Home Fitness Test Manual. See the list of other Fitness Tests you can do at home.

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.

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



Results

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

$$\text{Vertical Jump} = \text{Jump Height} - \text{Reach Height}$$

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.

Test 9: Speed and 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).

Equipment Needed

- Markers - chalk or tape for marking the ground.

- Timer - a stopwatch or a clock with a second hand

Quadrant Jump Test

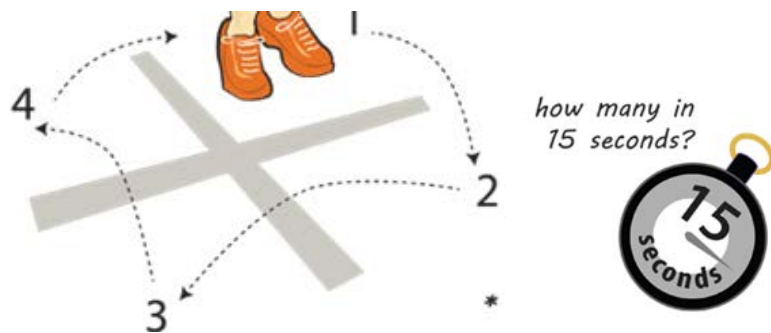
A quadrant is marked out on the ground, as illustrated in the diagram, with numbered quadrants. Start with both feet together in the first quadrant.

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.



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.

Test 10: 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.

Equipment Needed

- step or bench - about 30 cm high
- timer - a clock with a second hand

Step Test

Find a bench or step that is as close to 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.



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.

STAGE 2 TEST PROTOCOLS

Test 1: Chair Stand Test — testing lower body strength

Test 2: Arm Curl Test — testing upper body strength

Test 3: Chair Sit and Reach Test — lower body flexibility test

Test 4: Back Scratch Test — upper body flexibility test

Test 5: Timed Up and Go Test — agility test

Test 6: Step in Place Test (2 minutes) endurance test

Test 7: The 4-Stage Balance Test

Test 1: Chair Stand Test

The chair stand test is similar to a squat test to measure leg strength. This test is part of the Senior Fitness Test Protocol, and is designed to test the functional fitness of seniors.

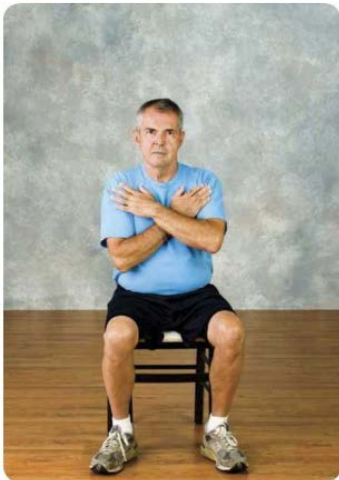
Equipment required:

a straight back or folding chair without arm rests (44 cm high),
stopwatch.

Procedure:

Place the chair against a wall, or otherwise stabilize it for safety. The subject sits in the middle of the seat, with their feet shoulder width apart, flat on the floor. The arms are to be crossed at the wrists and held close to the chest. From the sitting position, the subject stands completely up, then completely back down, and this is repeated for 30 seconds. Count the total number of complete chair stands (up and down equals one stand). If the subject has completed a full stand from the sitting position when the time is elapsed, the final stand is counted in the total.

Results: the score is the number of completed chair stands in 30 seconds.



Test 2: Arm Curl Test

The Arm Curl test is a test of upper body strength, and is designed to test functional fitness .

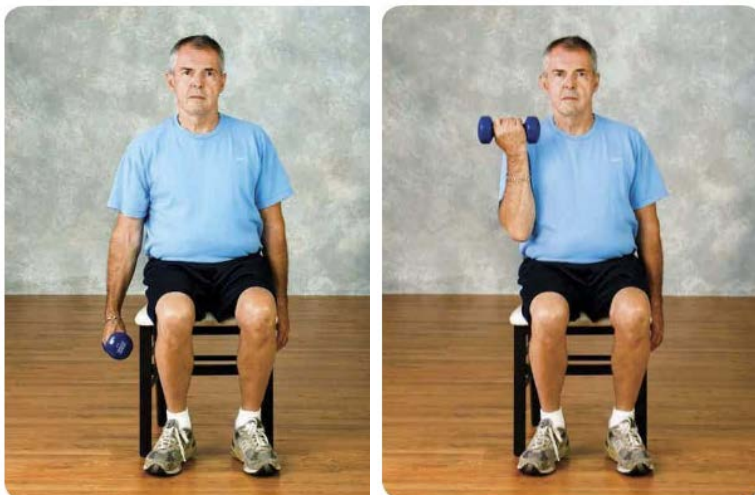
equipment required:

4 pound weight (women, AAHPERD), 5 pound weight (women, SFT), 8 pound weight (for men). A chair without armrests, stopwatch

procedure:

The aim of this test is to do as many arm curls as possible in 30 seconds. This test is conducted on the dominant arm side (or stronger side). The subject sits on the chair, holding the weight in the hand using a suitcase grip (palm facing towards the body) with the arm in a vertically down position beside the chair. Brace the upper arm against the body so that only the lower arm is moving (tester may assist to hold the upper arm steady). Curl the arm up through a full range of motion, gradually turning the palm up (flexion with supination). As the arm is lowered through the full range of motion, gradually return to the starting position. The arm must be fully bent and then fully straightened at the elbow.. Repeat this action as many times as possible within 30 seconds.

scoring: The score is the total number of controlled arm curls performed in 30 seconds.



Test 3: Chair Sit and Reach Test

The Chair Sit and Reach test is part of the Senior Fitness Test Protocol, and is designed to test the functional fitness of seniors. It is a variation of the traditional sit and reach flexibility test.

purpose: This test measures lower body flexibility.

equipment required: ruler, straight back or folding chair, (about 17 inches/44 cm high)

procedure: The subject sits on the edge of a chair (placed against a wall for safety). One foot must remain flat on the floor. The other leg is extended forward with the knee straight, heel on the floor, and ankle bent at 90°. Place one hand on top of the other

with tips of the middle fingers even. Instruct the subject to Inhale, and then as they exhale, reach forward toward the toes by bending at the hip. Keep the back straight and head up. Avoid bouncing or quick movements, and never stretch to the point of pain. Keep the knee straight, and hold the reach for 2 seconds. The distance is measured between the tip of the fingertips and the toes. If the fingertips touch the toes then the score is zero. If they do not touch, measure the distance between the fingers and the toes (a negative score), if they overlap, measure by how much (a positive score). Perform two trials. See also video demonstrations of the Sit and Reach Test.

scoring: The score is recorded to the nearest 1/2 inch or 1 cm as the distance reached, either a negative or positive score. Record which leg was used for measurement.



Test 4: Back Scratch Test — upper body flexibility test

The Back Scratch Test, or simply the Scratch Test, measures how close the hands can be brought together behind the back. This test is part of the Senior Fitness Test Protocol, and is designed to test the functional fitness of seniors. Another shoulder flexibility test designed for testing the elderly is the Shoulder Circumduction Test. back scratch flexibility test

purpose: This test measures general shoulder range of motion

equipment required: ruler or a yardstick

procedure: This test is done in the standing position. Place one hand behind the head and back over the shoulder, and reach as far as possible down the middle of your back, your palm touching your body and the fingers directed downwards. Place the other arm behind your back, palm facing outward and fingers upward and reach up as far as possible attempting to touch or overlap the middle fingers of both hands. An assistant is required to direct the subject so that the fingers are aligned, and to measure the distance between the tips of the middle fingers. If the fingertips touch then the score is zero. If they do not touch, measure the distance between the finger tips (a negative score), if they overlap, measure by how much (a positive score). Practice two times, and then test two times. Stop the test if the subject experiences pain.

scoring: Record the best score to the nearest centimeter or 1/2 inch. The higher the score the better the result.



Test 5: Timed Up and Go Test — agility test

1. Equipment: arm chair, tape measure, tape, stop watch.
2. Begin the test with the subject sitting correctly (hips all of the way to the back of the seat) in a chair with arm rests. The chair should be stable and positioned such that it will not move when the subject moves from sit to stand. The subject is allowed to use the arm rests during the sit – stand and stand – sit movements.
3. Place a piece of tape or other marker on the floor 3 meters away from the chair so that it is easily seen by the subject.
4. Instructions: “On the word GO you will stand up, walk to the line on the floor, turn around and walk back to the chair and sit down. Walk at your regular pace.
5. Start timing on the word “GO” and stop timing when the subject is seated again correctly in the chair with their back resting on the back of the chair.
6. The subject wears their regular footwear, may use any gait aid that they normally use during ambulation, but may not be assisted by another person. There is no time limit. They may stop and rest (but not sit down) if they need to.
7. Normal healthy elderly usually complete the task in ten seconds or less. Very frail or weak elderly with poor mobility may take 2 minutes or more.
8. The subject should be given a practice trial that is not timed before testing.

9. Results correlate with gait speed, balance, functional level, the ability to go out, and can follow

change over time.



Test 6: Step in Place Test (2 minutes) endurance test

2 Minute Step in Place Test

The 2 Minute Step in Place test is part of the Senior Fitness Test Protocol, and is designed to test the functional fitness of seniors. This test is performed as an alternative to the 6 minute walk test for people who use orthopedic devices when walking, as well as in the case of people who have difficulty balancing.

purpose: This test measures aerobic endurance.

equipment required: tape for marking the wall, stopwatch, wall.

procedure: The subject stands up straight next to the wall while the level corresponding to midway between the patella (knee cap) and iliac crest (top of the hip bone). The subject then marches in place for two minutes, lifting the knees to the height of the tape. Resting is allowed, and holding onto the wall or a stable chair is allowed. Stop after two minutes.

scoring: Record the total number of times the right knee reaches the tape level in two minutes.



Test 7: The 4-Stage Balance Test

The Four Stage Balance Test

Overview: The Four-Stage Balance Test, in conjunction with other measures such as the 30 Second

Chair Stand Test and Timed Up and Go (TUG) Test and an assessment of postural hypotension can help to indicate if a patient is at risk of falling.

Purpose: To assess static balance

Equipment: A stopwatch

The 4-Stage Balance Test Purpose: To assess static balance Equipment: A stopwatch

Directions: There are four progressively more challenging positions. Patients should not use an assistive device (cane or walker) and keep their eyes open. Describe and demonstrate each position. Stand next to the patient, hold his/her arm and help them assume the correct foot position. When the patient is steady, let go, but remain ready to catch the patient if he/she should lose their balance. If the patient can hold a position for 10 seconds without moving his/her feet or needing support, go on to the next position. If not, stop the test.



1. Stand with your feet side by side.

Time: seconds



2. Place the instep of one foot so it is touching the big toe of the other foot.

Time: seconds



3. Place one foot in front of the other, heel touching toe.

Time: seconds



4. Stand on one foot.

Time: seconds