



# VIVIFRAIL

## MULTI-COMPONENT PHYSICAL TRAINING PRESCRIPTION GUIDE

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Multicomponent physical exercise program to prevent frailty  
and the risk of falls.  
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# PHYSICAL EXERCISE PASSPORT VIVIFRAIL

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# STEPS FOR PRESCRIBING THE PHYSICAL EXERCISE PROGRAM

## 1 SELECTION OF THE PARTICIPANT

Persons of 70 years of age or older can participate in the physical exercise program; henceforth named elderly persons. Check the list of contraindications before beginning with the presentation of the program.

## 2 PRESENTATION OF THE PROGRAM

Inform the elderly person about the need to carry out the physical exercise program. Show them initial poster.

## 3 VIVIFRAIL TEST

Perform the test found on page 5 of this guide, and show them poster of Vivifrail Test components and recommended physical exercise programs.

## 4 PRESCRIPTION

Inform them of the result they have obtained in the test. Give them the corresponding passport, and explain it to them.

# CONTRAINDICATIONS

- Acute myocardial infarction or recent unstable angina.
- Uncontrolled atrial or ventricular arrhythmias.
- Dissecting aortic aneurysm.
- Severe aortic stenosis.
- Endocarditis / acute pericarditis.
- Uncontrolled high blood pressure.
- Acute thromboembolic disease.
- Acute or severe heart failure.
- Acute or severe respiratory failure.
- Uncontrolled postural hypotension.
- Acute decompensated diabetes mellitus or uncontrolled low blood sugar.
- A recent fracture in the last month (strength training).
- Any other circumstance that you would consider prevents you from performing physical activity.

# PRESENTATION OF THE PHYSICAL EXERCISE PROGRAM

You can use poster 1 to explain to the elderly person the process you are going to follow and the type of individual program that best suits their initial situation.

Inform the person that, due to their age and characteristics, they're a candidate for continuous exercise. Explain that in order to determine the appropriate activity program, you will carry out several tests to assess their functional capacity.

Let them know that once you have completed the tests, you will provide them with an activity program with the exercises they should complete.

# VIVIFRAIL TEST

The VIVIFRAIL test allows you to determine the most appropriate type of multicomponent physical program regarding the functional capacity and risk of falls of the older adults.

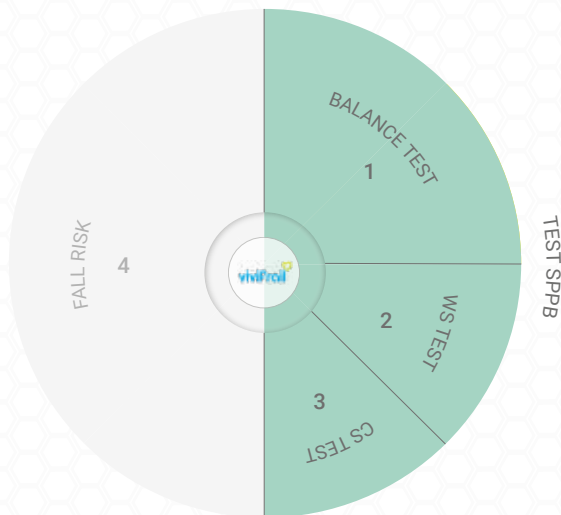
The VIVIFRAIL test consists of assessing functional capacity through the SPPB test and a battery of 4 measures that allow assessing the risk of falls. In the case of limitations in performing the SPPB, it is recommended to measure walking speed over 6 meters.

The SPBB can be applied in approximately 15 minutes and consists of 7 tests. Once the tests are complete you can follow the scheme shown on page 15 to obtain the result.

# SPPB TEST FRAILTY

The SPPB test to determine the level of frailty is a composite of the following three separate measures:

- 1.- Balance test.
- 2.- Walking speed test over 4 meters.
- 3.- Test of getting up from a chair.



# BALANCE TEST

(SPPB-BALANCE TEST)  
TEST 1



## ONE FOOT NEXT TO THE OTHER

Standing with your feet together, side-by-side. Measure how long you can stand in that position.

**Score 1** = 10 seconds.

**Score 0** = less than 10 seconds.

If the score is zero, go directly to test 2.



## SEMI-TANDEM POSITION

Standing with heel of one foot placed by the big toe of the other foot. Measure how long you can stand in that position.

**Score 1** = 10 seconds.

**Score 0** = less than 10 seconds.

If the score is zero, go directly to test 2.



## TANDEM POSITION

The heel of one foot in contact with the tip of the other foot. Measure how long you can stand in that position.

### Time

10 s

3 - 9 s

< 3 s

### Points

2

1

0





# WALKING SPEED TEST

(SPPB- WALKING SPEED TEST OVER 4 METERS)  
TEST 2

Ask the person to walk 4 meters at a normal pace, 3 times. Measure the time each case. Using the lowest of the times, assign the corresponding points:

Time	Points
< 4,82 s	4
4,82 - 6,20 s	3
6,21 - 8,70 s	2
> 8,7 s	1
Unable	0



# GETTING UP FROM A CHAIR

(SPPB-RISING TEST)

TEST 3

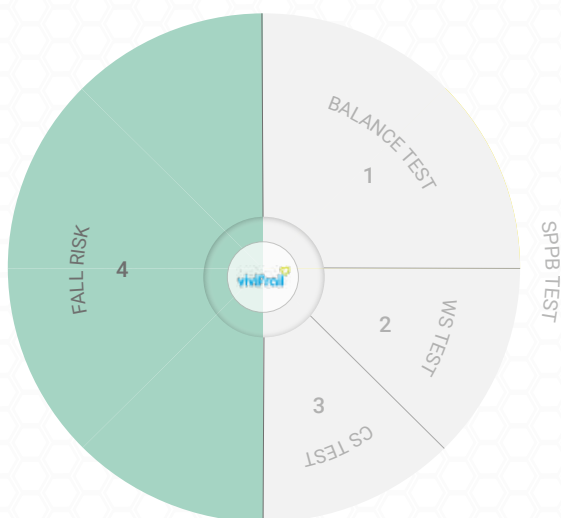
Ask the person to stand up 5 times from their chair, as fast as possible, with their back straight and their arms crossed. The test starts in the sitting position and ends in the standing position. The test measures the time it takes to stand up 5 times. Check the table to establish the score:

Time	Points
< 11,19 s	4
11,20 - 13,69 s	3
13,70 - 16,69 s	2
16,7 - 59 s	1
> 60 s	0

# FALL RISK TEST

In order to detect a high risk of falls and to be able to prescribe a specific training program for this type of person, the following assessment should be carried out:

- Recent falls
- Timed Up and Go.
- Walking speed test (6 m).
- Moderate cognitive deterioration.





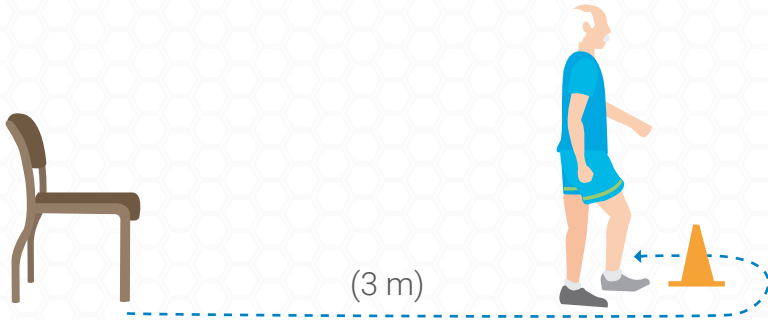
# RECENT FALLS

(FALL RISK)  
TEST 4

Ask the following question:

Have you had 2 or more falls in the last year or 1 fall that has required medical attention?

**Record if the answer is affirmative or negative.**



# TIMED UP AND GO

(FALL RISK)  
TEST 5

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.

Measure the time to complete the exercise.

Is the time greater than 20 seconds?

**Record if the answer is affirmative or negative.**



# WALKING SPEED TEST

(FALL RISK)  
TEST 6

Ask the person to walk 6 meters at a normal pace 2 times.

Measure the time required to walk the 6 meters and record the shortest of the times.

Is the time greater than 7.5 seconds?

**Record if the answer is affirmative or negative.**



# MODERATE COGNITIVE DETERIORATION

(FALL RISK)  
TEST 7

Has the patient been diagnosed with cognitive deterioration?

**Record if the answer is affirmative or negative.**

# GET THE RESULTS OF THE VIVIFRAIL TEST

The scheme shown below allows you to quantify the degree of physical frailty, and if there is a risk of falls.

## SPPB TEST – PHYSICAL FRAILITY

Add the points of the SPPB test (**1 to 3**) to determine the grade.

Points	WS(6m)*	Type
0-3	> 12 s	<b>A</b> Person with disability
4-6	12 - 7,5 s	<b>B</b> Person with frailty
7-9	7,4 - 6 s	<b>C</b> Person with pre-frailty
10-12	< 6 s	<b>D</b> Robust person

\*If due to limitations, you have not performed the SPPB test and you have elected to use the 6-meter walking test, the following values will be used to recommend the physical exercise program.

## FALL RISK TEST

The elderly person is at risk of falls if they have answered affirmatively to any of the questions made in tests **4 to 7**.



# TYPE OF PASSPORT

As you will see, there is a suitable passport for each elderly person according to the level of functionality. The passports with the "+" symbol are for those people at risk of falls. Consult the tips and recommendations for these people on pages 22 and 23.

- Type A** Person with disability
- Type B** Person with frailty
- Type B+** Person with frailty and risk of falls
- Type C** Person with pre-frailty
- Type C+** Person with pre-frailty and risk of falls
- Type D** Robust person



# ESTABLISH THE WEIGHT FOR THE BOTTLES

Exercise *Lift a bottle* is a strength exercise for which it is necessary to establish an adequate weight for each person:

- Fill 2 500 ml water bottles.
- Check whether the person is able to perform about 30 repetitions with the 500 ml bottle.
- Adjust the amount of water in the bottle until the person is able to do about 30 repetitions with some effort.
- Make a note of the amount of water on page 4 and on the exercise page of the passport.
- It is recommended that this weight is recalculated after 6 weeks and the new quantity of water in the bottle adjusted accordingly.

# PRESCRIPTION OF PASSPORT TYPE A

## PASSPORT DELIVERY

Let the person know that passport type A is for an elderly person who cannot rise from a chair or a bed. Explain that by carrying out the program, they may be able to get up again or, at least, gain safety and autonomy and decrease their risk of falls. Let them know that the program lasts 12 weeks and that they must do a daily round of approximately 30–45 minutes.

*The walking exercise will start only when the elderly person has improved their muscle strength.*

Check the passport with the elderly person, section by section, and complete the personal data section.

Encourage them to make an effort to stay on the program until the end, and make an appointment for that moment.

# PREScription OF PASSPORT TYPE B and B+

## PASSPORT DELIVERY

Let the person know that passport type B (frail) is for an elderly people who can walk with difficulty or help. Explain that by carrying out the program they may be able to walk again without help or, at least, gain autonomy and balance. Let them know that the program lasts 12 weeks and that they must do a daily round of approximately 45–60 minutes.

*For passport type B+, it is recommended to review the recommendations for people at risk of falls (pages 22 - 23).*

Check the passport, section by section, with the elderly person and complete the personal data section.

Encourage them to make an effort to stay on the program until the end, and make an appointment for that moment.

# PREScription OF PASSPORT TYPE C and C+

## PASSPORT DELIVERY

Let the person know that passport type C (pre-frail) is for an elderly person who has slight difficulties when walking and also has difficulty getting up or with balance. It is very important that they exercise to continue enjoying their walks. Let them know that the program lasts 12 weeks and that they must do a daily round of approximately 45–60 minutes.

*For passport type C+, it is recommended to review the recommendations for people at risk of falls (pages 22 - 23).*

Check the passport with the elderly person, section by section, and complete the personal data section.

Encourage them to make an effort to stay on the program until the end, and make an appointment for that moment.

# **PRESCRIPTION OF PASSPORT TYPE D**

## **PASSPORT DELIVERY**

Let the person know that the passport type D (robust) is for elderly person who has minimal physical limitations or no limitations. It is very important that they perform physical exercise so that they are able to preserve their autonomy for many years. Let them know that the program lasts 12 weeks and that they must do a daily round of approximately 45–60 minutes.

Check the passport with the elderly person, section by section, and complete the personal data section.

Encourage them to make an effort to stay on the program until the end, and make an appointment for that moment.

# TIPS AND RECOMMENDATIONS FOR PEOPLE AT RISK OF FALLS

- If there is a vitamin D deficiency ( $<20$  ng / ml), its supplementation with at least 800 IU should be assessed if there are no contraindications. It is necessary to ensure an adequate oral intake of calcium.
- In patients with diabetes it will be necessary to readjust the treatment of low blood sugar.
- If there are symptoms compatible with postural hypotension, review the number and doses of antihypertensive drugs.
- Overmedication should be reviewed and minimized with special attention to psychotropic drugs. In this sense, the use of tools such as the START / STOPP criteria can be useful.
- A nutritional assessment should be carried out in frail patients. A useful screening tool is the MNA. If malnutrition is found, one must intervene and ensure a protein intake of 1.2–1.5 gr/kg/day.
- When using protein-calorie supplements, it must be considered that the greatest benefit is obtained when they are combined with an individualized program of multicomponent physical exercise. These supplements should be taken after the training session to optimize their benefits.

# TIPS AND RECOMMENDATIONS FOR PEOPLE AT RISK OF FALLS

- It is essential to assess the risk of falls in patients with cognitive problems.
- Patients with dementia have a high risk of falling and fractures and so early intervention is needed to prevent this.
- Falls, osteoporosis and fractures must be managed together. Patients with osteoporosis should be assessed to determine the risk of falls and fractures should be made to the patient with osteoporosis. Similarly, patients with a previous fracture must be treated for osteoporosis.
- The main objectives in a patient with a previous fracture should be preventing any deterioration of functional capacity and preventing new falls and fractures.
- Concerning patients with recurrent falls, it is essential to evaluate and intervene on environmental risks at home (adaptation of bathrooms, carpets, footwear, etc.).
- All older adults should undergo a comprehensive geriatric assessment, especially those who are frail, since it is the main tool to detect problems and make decisions.



# MORE VIVIFRAIL

If you wish, more information and new tools can be found at:

<http://vivifrail.com/resources>

We have also put at your disposal an App to perform the Vivifrail Test and to follow the exercise program corresponding to your degree of frailty and risk of falls.

To download the App, you only have to search for Vivifrail App on Google Play or the App Store and install it on your Android or iPhone device, as appropriate.



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Partnership for  
European Regional  
Development



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Multicomponent physical exercise program to prevent frailty and the risk of falls.  
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