

# Implementation of simple cost-effective tests of physical performance for the screening of frail people at risk for physical decline in different clinical settings

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## Background

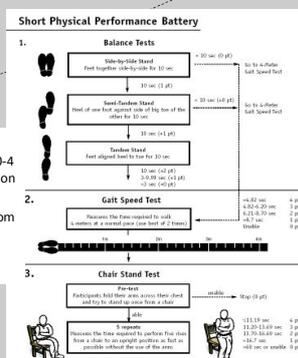
A number of studies have demonstrated that simple objective tests of physical performance may identify non-disabled older persons at high risk of functional decline and disability. The four-meter usual walking speed, the balance test and the repeated chair raise tests (Short Physical Performance Battery, SPPB) are among the most studied prognostic tools.

## Preliminary Field Experience

### Ferrara



- Three components
- Each component scored 0-4 based on normative data on over 5,000 persons
- Summary score ranges from 0-12



### Parma

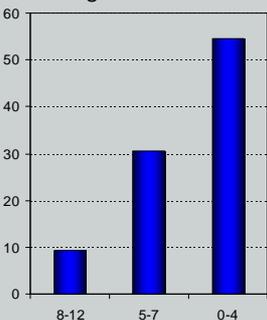


### 93 geriatric Patients Hospitalized for Acute

#### Predictive Value of the Short Physical Performance Battery Following Hospitalization in Older Patients

Risk of incident ADL disability according to SPPB at discharge

Risk of new hospitalization or death according to SPPB score at discharge



SPPB Categories	Outcome %	Model 1 OR (95% C.I.)	Model 2 OR (95% C.I.)
0-4 (n. 16)	75.0	3.72 (1.52-9.08)	5.38 (1.82-15.9)
5-7 (n. 27)	65.4	2.95 (1.38-6.28)	2.63 (1.16-6.01)
8-12 (n. 44)	52.3	1.0	1.0
†SPPB (continuous)		0.87 (0.78-0.97)	0.86 (0.75-0.98)

Volpato et al, JGMS 2011

### 141 older community-dwelling people (Medesano, Parma) assessed using the 6-minute walking test, 4 and 10 meter- walking test (with and without accelerometer) and SPPB

- **Disable:** 5.2%
- **Frail:** 60.8%
- **Robust:** 34%

**METHODS:** 667 non-disabled older persons were contacted and screened from the team of Geriatric Clinic of the School of Geriatrics of University-Hospital of Parma after an initial evaluation of GPs of Val Taro and Val Ceno Districts (Azienda USL of Parma). 220 subjects were assessed in the Nuclei della Salute of Medesano, Parma. A Comprehensive Geriatric assessment including objective measures of physical Function, such as gait speed (10mGS), SPPB and 6 minute walking test, was performed in a final sample of 141 older community dwellers (58 men and 83 women).  
**RESULTS:** The mean age ±SD of population was 78.5 ± 5.5 years. Subjects were categorized according to SPPB. 118 subjects (60%) with SPPB score from 4 to 9 were identified as physical frail. 10mGS was significantly associated with SPPB (women r 0.35, p=0.002, men r 0.38, p=0.007) and 6MWT (women r 0.30, p=0.009, men r 0.64, p=0.001) in both sexes. 8 subjects with SPPB between 4 and 9 were enrolled in an ongoing European RCT testing the effects of nutritional supplementation in older physical frail individuals.  
**CONCLUSION:** The Platform University-Hospital-Territory is essential to detect physical frailty in community dwellers older individuals and in order to start treatment aimed at preventing disability.

Score SPPB	N	%
0	1	0.5
2	4	2.1
3	5	2.6
4	11	5.7
5	10	5.1
6	16	8.2
7	11	5.7
8	30	15.5
9	40	20.6
10	28	14.4
11	25	12.9
12	35	6.7

Maggio M et al, 2013 submitted

## AIM OF THE PROJECT:

1. To spread the use of the simple functional evaluation tools in the everyday clinical practice in different clinical settings of the regional healthcare service;
2. To implement more objective tools for walking speed assessment;
3. To achieve the rational for the implementation of interventions aimed at postponing or preventing functional decline, hospitalization and disability.

## INNOVATION

1. **Process and organizational innovations:** verification of feasibility and transferability of instruments, validated in epidemiological (Guralnik, NEJM 1995; Studensky JAMA 2011) and clinical settings (Volpato JGMS 2011), to the everyday clinical practice scenario of new assessment tools;
2. **Technological:** standardized walking speed assessment (4 and 10 meters test) using accelerometers (actigraphy).

## EXPECTED RESULTS

We wish to be able to identify older people at high risk of functional decline and loss of independence, with a better risk stratification and a more efficient implementation of preventive and therapeutic interventions (physical exercise, rehabilitation, and nutritional support) at an early stage and to standardize the process.