Extra S.U.B.I.T.O.
EXcercise TReatement Appropriate S.U.B.I.T.O. !

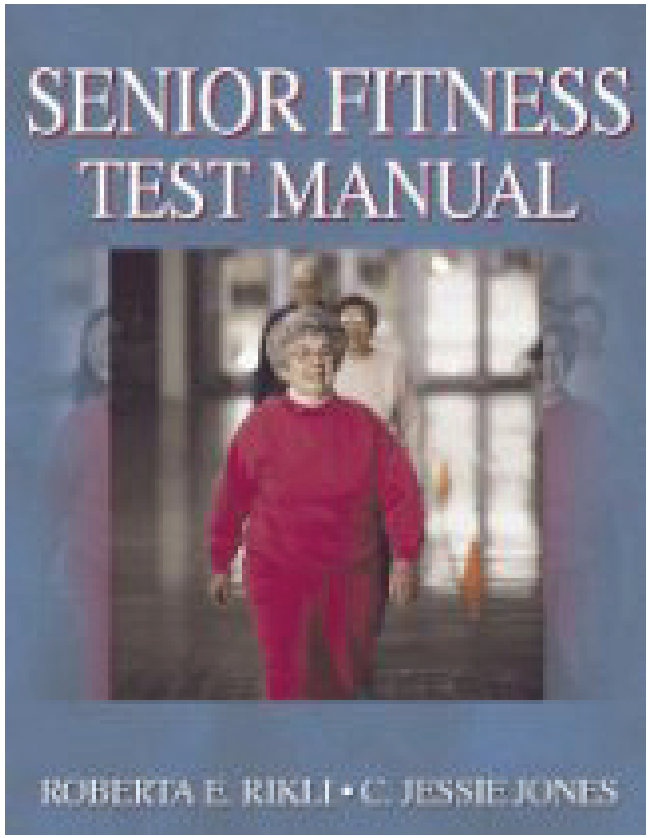
MASTER FORMAZIONE FORMATORI

Il 6' Walking test (6MWT)
L'utilizzo nella pratica clinica

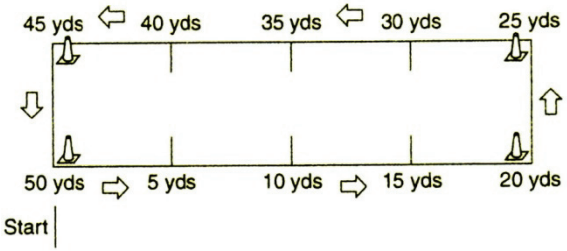
C. De Fazio

Roma 20-21 aprile 2012

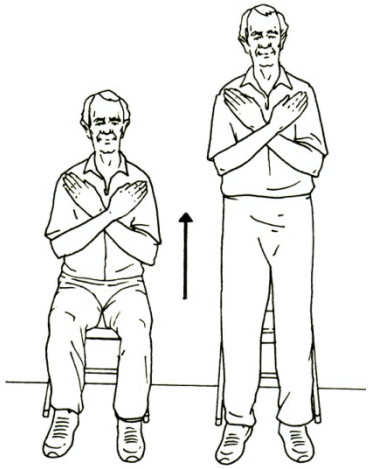
Il 6' Walking test (6MWT)



Back scratch

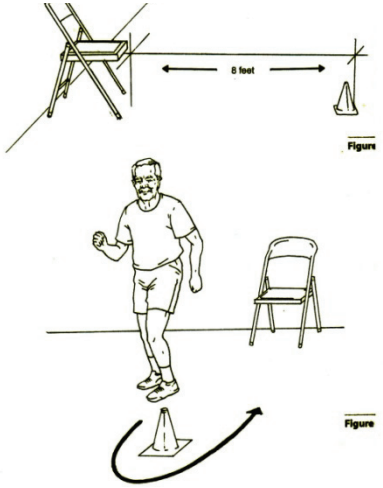


Chair stand



Chair sit and reach

Foot up and go



Arm curl

2min step test

Il 6' Walking test (6MWT) Caratteristiche

The Walking Test: Use in clinical practice

Flavio Acquistapace[1], Massimo F. Piepoli[2]

ABSTRACT: *The Walking Test: Use in clinical practice. F. Acquistapace, M.F. Piepoli.*

Exercise Capacity is the expression of the cardiovascular and of metabolic organic efficiency and represents a important prognostic marker. The Six Minute Walking Test is adopted in the practice for exercise capacity evaluation in the normal subject as in pneumologic or cardiac rehabilitation programs, and in both pediatric and elderly ages. The aim of the work is to present a practical summary of the application of the six minutes walking test, according to the American Thoracic Society statement. We reviewed the various experiences of its application, and reported the indications, clinical interpretation parameters, relationship and correlation between functional and clinical parameters (hospitalization, quality of life, therapy and exercise control response and compliance), the basic and advanced protocol, the application modality, the reporting models, and the educational checklist.

Keywords: six minute walking test, exercise functional capacity evaluation, clinical practice guidelines.

Monaldi Arch Chest Dis 2009; 72: 3-9.

praticità

semplicità

adattabilità/ flessibilità

tollerabilità

Riflesso attività quotidiana

Valutazione funzionale integrata

Distanza in mt percorsa

ATS-statement: guidelines for the six-minute walk test, ATS Committee on Proficiency Standards for Clinical Pulmonary Function Laboratories. Am J Respir Crit Care Med 2002; 166 (1): 11-117.

Perché il 6' Walking test riflette il reale stato funzionale per la vita quotidiana?

Self pace

Indicazione principe

Capacità di esercizio

Stato di autonomia

Stato funzionale

Condizioni e cause di interruzione

Dolore improvviso al petto

Dispnea parossistica

Crampi arti inferiori

Mancanza di forza improvvisa

barcollamenti

vertigini

pallore

Setting, Strumenti e Metodi

- Percorso rettilineo
- Superficie di marcia rigida
- Segnato e privo di ostacoli
- ≥30mt ≥(50-150mt)

- Percorso contrassegnato (traccia a terra)
- Linea di partenza
- Punto di svolta (cono/paletto)
- No pedana mobile
- Contagiri (check list)

- Seggiola/appoggio leggero
- Scala di Borg
- Cronometro
- Tabella di refertazione clinica e dei parametri

- No test a digiuno ≥1h postprandiale
- Vestiti comodi (tuta ginnica)
- Scarpe comode (da ginnastica, suola di gomma)

- No EF vigoroso 2h pre-test
- Abituale terapia pre-test
- Osservazione tecnica dalla linea di partenza (no camminata col paziente)

Modalità di esecuzione e di applicazione

Educazione all'esecuzione del test (possibile traccia standardizzata)

Sig./ra….Adesso eseguiremo un test dove dovrà camminare per 6'. L'obiettivo principale è quello di finire i 6' cercando di non fermarsi; il 2° obiettivo è quello di far più strada possibile (quindi deve cercare di andar più svelto possibile che può secondo quello che si sente). Ogni 2' le faremo vedere la scala di percezione della fatica mentre cammina e dovrà indicarci la fatica che prova in quell'istante. L'avviseremo ad ogni minuto di test per darle la possibilità di adeguare il suo sforzo per portare a termine il test nel miglior modo possibile. Se durante il test sentirà la necessità di respirare con la bocca non solo può farlo ma deve!!! Se invece avrà qualche sensazione particolare (sudorazione eccessiva, palpitazioni, dolori) non interrompa il test ma ci avvisi immediatamente, le diremo noi cosa

Monitoraggio parametri pre-test

Sesso, età, BMI, HbA1c, glicemia, complicanze, FC a riposo, Scala di Borg, indicazioni terapeutiche

Durante l'esecuzione del test (possibile traccia standardizzata)

In base all'osservazione del soggetto ed alla rilevazione della Scala di Borg lo si invita a rallentare, tenere o aumentare il ritmo di camminata: se vuole e se la sente può provare ad arrivare ad una fatica più intensa…..ad aumentare il passo……..vedo che non sta né sudando né affannando, provi ad aumentare il suo passo.

Monitoraggio parametri post-test

Distanza totale percorsa, Scala di Borg, glicemia

Guida all'interpretazione clinica del 6MWT

Valori soglia della capacità funzionale

-Soggetti sani (<70anni)
buona capacità funzionale = 400-700 metri
scarsa capacità funzionale < 400 metri

-Soggetti anziani (over 70)
buona capacità funzionale = 300-400 metri
scarsa capacità funzionale < 300 metri

-Bambini (4-14 anni)
buona capacità funzionale = 400-500 metri
scarsa capacità funzionale < 400 metri

-Cardiopatici
buona > 400 metri
sufficiente = 300-400 metri (suscettibile di incremento mediante l'ottimizzazione delle terapie e del training fisico
scarsa < 300 metri (valutazione al prolungamento della fase di ricovero e di cura riabilitativa e controlli)
molto scarsa < 200 metri (necessità di cure più aggressive e riabilitazione controllata)

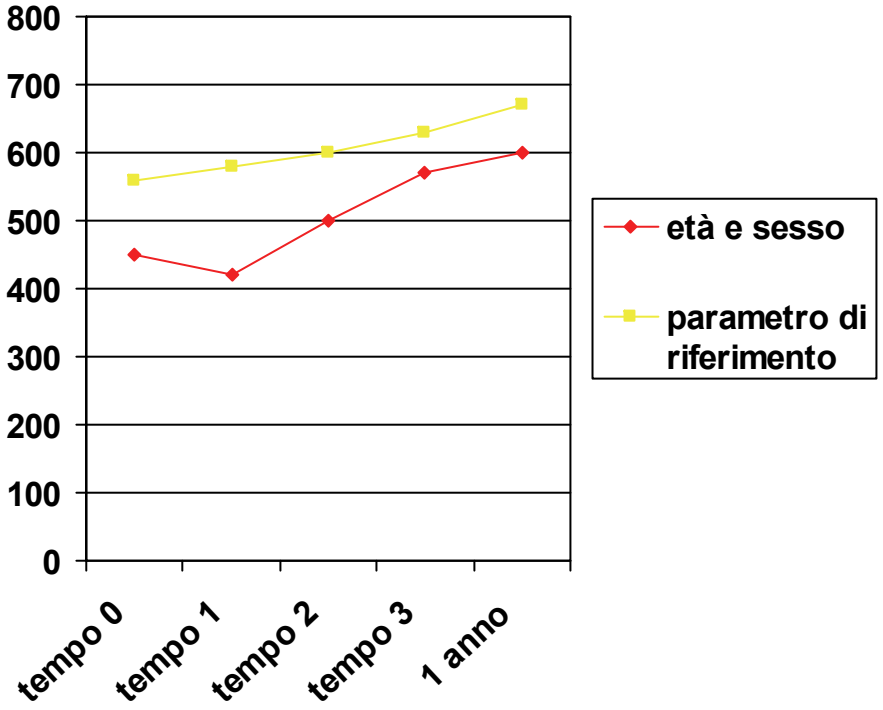
TEST	Età (anni)						
	60-64	65-69	70-74	75-79	80-84	85-89	90-94
M	557.78-672.08	512.06-640.08	498.34-621.79	429.76-585.21	406.90-553.21	347.47-521.20	278.89-457.20
F	498.34-603.50	457.20-580.64	438.91-562.35	393.19-534.92	352.04-493.77	310.89-466.34	251.46-402.33

C.J. Jones and R.E. Rikli., Measuiring functional fitness of older adults. The Journal on Active Aging, March-April 2002.
C.J. Jones and R.E. Rikli., Senior Fitness Test Manual, Human Kinetics, 2001.

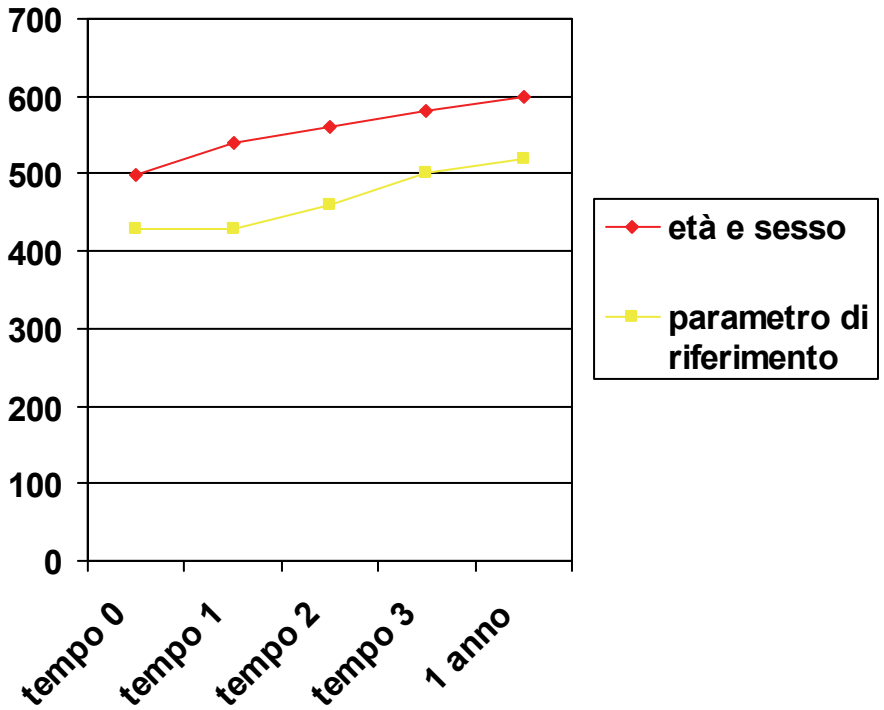
6MWT in serie ad intervalli programmati

Informazioni sul trend funzionale: incrementi o decrementi in funzione anche della terapia farmacologica

Uomo (60-64 anni)



Donna (60-64 anni)



La scala di Borg (RPE) per la percezione dello sforzo e sua correlazione con i valori di FC a diverse età

Scala di Borg RPE	Percezione dello sforzo	% FC max	FC a 40 anni (bpm)	FC a 60 anni (bpm)
6	Nessuno sforzo	< 40	< 60	< 60
7	Estremamente leggero	< 40	< 70	< 60
8		40	72	64
9	Molto leggero	50	90	80
10		55	99	88
11	Leggero	60	108	96
12		65	117	104
13	Un po' pesante	70	126	112
14		75	135	120
15	Pesante	80	144	128
16		85	153	136
17	Molto pesante	90	162	144
18		95	171	152
19	Estremamente pesante	100	180	160
20	Massimo sforzo	esaurimento	esaurimento	esaurimento

FORMULA GIBBONS W.J. Et al.

868.8 – (2.99 x età) – (74.7 x sesso)

Uomo= 0

Donna= 1

Values for a multiple repetition 6 minute walk-test in healthy adults older than 20 years. Cardiopulm Rehabil 2001; 21 (2:87-93)

American Thoracic Society

ATS Statement: Guidelines for the Six-Minute Walk Test

This Official Statement of the American Thoracic Society was approved by the ATS Board of Directors
March 2002

CONTENTS

PURPOSE AND SCOPE

This statement provides practical guidelines for the 6-minute walk test (6MWT). Specifically, it reviews indications, details factors that influence results, presents a brief step-by-step protocol, outlines safety measures, describes proper patient preparation and procedures, and offers guidelines for clinical interpretation of results. These recommendations are not intended to limit the use of alternative protocols for research studies. We do not discuss the general topic of clinical exercise testing.

As with other American Thoracic Society statements on pulmonary function testing, these guidelines come out of a consensus conference. Drafts were prepared by two members (P.L.E. and R.J.Z.) and were based on a comprehensive Medline literature search from 1970 through 2001, augmented by suggestions from other committee members. Each draft responded to comments from the working committee. The guidelines follow previously published methods as closely as possible and provide a rationale for each specific recommendation. The final recommendations represent a consensus of the committee. The committee recommends that these guidelines be reviewed in five years and in the meantime encourages further research in areas of controversy.

BACKGROUND

There are several modalities available for the objective evaluation of functional exercise capacity. Some provide a very complete assessment of all systems involved in exercise performance (high tech), whereas others provide basic information but are low tech and are simpler to perform. The modality used should be chosen based on the clinical question to be addressed and on available resources. The most popular clinical exercise tests in order of increasing complexity are stair climbing, a 6MWT, a shuttle-walk test, detection of exercise-induced asthma, a cardiac stress test (e.g., Bruce protocol), and a cardiopulmonary exercise test (1, 2). Other professional organizations have published standards for cardiac stress testing (3, 4).

Assessment of functional capacity has traditionally been done by merely asking patients the following: "How many flights of stairs can you climb or how many blocks can you walk?" However, patients vary in their recollection and may report overestimations or underestimations of their true functional capacity. Objective measurements are usually better than self-reports. In the early 1960s, Balke developed a simple test to evaluate the functional capacity by measuring the distance walked during a defined period of time (5). A 12-minute field performance test was then developed to evaluate the level of physical fitness of healthy individuals (6). The walking test was also adapted to assess disability in patients with chronic bronchitis (7). In an attempt to accommodate patients with respiratory disease for whom walking 12 minutes was too exhausting, a 6-minute walk was found to perform as well as the 12-minute walk (8). A recent review of functional walking tests concluded that "the 6MWT is easy to administer, better tolerated, and more reflective of activities of daily living than the other walk tests" (9).

The 6MWT is a practical simple test that requires a 100-ft hallway but no exercise equipment or advanced training for technicians. Walking is an activity performed daily by all but the most severely impaired patients. This test measures the distance that a patient can quickly walk on a flat, hard surface in a period of 6 minutes (the 6MWD). It evaluates the global and integrated responses of all the systems involved during exercise, including the pulmonary and cardiovascular systems, systemic circulation, peripheral circulation, blood, neuromuscular units, and muscle metabolism. It does not provide specific information on the function of each of the different organs and systems involved in exercise or the mechanism of exercise limitation, as is possible with maximal cardiopulmonary exercise testing. The self-paced 6MWT assesses the submaximal level of functional capacity. Most patients do not achieve maximal exercise capacity during the 6MWT; instead, they choose their own intensity of exercise and are allowed to stop and rest during the test. However, because most activities of daily living are performed at submaximal levels of exertion, the 6MWD may better reflect the functional exercise level for daily physical activities.

INDICATIONS AND LIMITATIONS

The strongest indication for the 6MWT is for measuring the response to medical interventions in patients with moderate to severe heart or lung disease. The 6MWT has also been used as a one-time measure of functional status of patients, as well as a predictor of morbidity and mortality (*see* Table 1 for a list of these indications). The fact that investigators have used the 6MWT in these settings does not prove that the test is clinically useful (or the best test) for determining functional capacity or changes in functional capacity due to an intervention in patients with these diseases. Further studies are necessary to determine the utility of the 6MWT in various clinical situations.

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