

Sedentary conditions during the lockdown and movement opportunities for the Italian elderly

Abstract

The active lifestyle benefits are recognized for all age groups. In the over 65 year's old population, the advantages deriving from active lifestyles and from the increase in the levels of physical activity assume particular relevance especially for the aging effect contrast.

The effects of aging, in fact, involve all systems and all systems and can be counteracted by adopting active lifestyles the measures to combat the contagion have been progressive, from 8 March to 11 March and have disciplined and conditioned numerous individual and collective behaviors. The subsequent closure of parks, gardens and equipped green areas prevented the use of these spaces for recreational motor activity or for walking.

The purpose of this study is to describe the strategies adopted and the motor tasks identified in a particular period of limitation of individual and group travel for the over 65 years old population.

The motor skills to be solicited must meet two criteria: they must be related to the daily life and senior independence skills; they must be identified among those most affected by a period of forced suspension of activities or forced sedentary lifestyle.

Keywords: elderly, home-based training, home-based exercise, Covid19

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Health comes from movement for over 65 years old

The benefits of active lifestyles are recognized for all age groups.¹⁻⁵

In the elderly population, the advantages deriving from active lifestyles and from the increase in the levels of physical activity assume particular importance especially for the contrast of the aging effects.

Indeed, the aging effects involve all systems and processes and can be counteracted by adopting active lifestyles.^{1,6,7}

Physical activity improves health and functional mobility in adults, including those with chronic conditions.⁸

Physical activity also improves strength, cardiopulmonary function, postural stability, cognitive health^{6,9} as well as functional strength and walking speed.¹⁰⁻¹²

In addition, both specific programs and general or recreational physical activity increase balance and reduce the risk of falls.¹³⁻¹⁷

Recent studies carried out on the levels of physical activity and on the monitoring of the type of physical activity carried out by people over 65 highlight both the relationship between sedentary lifestyle and pathological conditions and the relationship between low levels of physical activity and greater risk of the onset of chronic pathologies,⁷ such as increased body fat¹⁸ or systemic inflammation.¹⁹⁻²¹

The restrictions related to individual mobility and the indications recently provided by the Italian Government regarding the maintenance of social distances to contrast the Covid 19 spread and contagion, have reduced the movement opportunities for people over 65 years old.

The measures to combat the contagion have been progressive, from 8 March to 11 March and have disciplined and conditioned numerous individual and collective behaviors. The subsequent closure of parks,

gardens and equipped green areas prevented the use of these spaces for recreational motor activity or for walking.

The indications provided relating to limiting the movements actually necessary also reduced the senior's ability to walk even for activities related to daily life.

The regulations provided to the population, although they have been progressively restrictive, have changed the behaviors in a very sudden way and have not given the opportunity to identify alternative strategies to the usual ways of using environmental and professional resources related to physical activities present in urban contexts, almost all different from each other.

This picture has substantially reduced physical activity levels in the over 65 years old.

In advanced adulthood, the effects of the reduction or suspension of the motor activities usually performed outline a picture of effective detraining especially with regard to walking speed, cognitive performance, strength of upper and lower limbs;²²⁻²⁵ for some authors, the suspension of motor practice also predisposes to a greater risk of cardiovascular pathologies, for example through the minimum blood pressure values.²³

The Home exercise or the home training are experiences of motor activities widely used in the context of strategies for increasing physical activity levels: in fact, in the literature, it is possible to find numerous studies that analyze the motor activity carried out within the home.

This activity is mainly carried out by subjects with pathologies,²⁶⁻³⁰ by subjects who have undergone transplants or prostheses,^{31,32} by subjects who have undergone amputations³³ or as a motor activity with specific prevention programs.^{34,35}

Until now in Italy, due to the cultural characteristics of the adult and elderly population, on the contrary, this type of activity has not had a significant diffusion, both for the home training modalities and

for the modalities that included motor activities supervised by experts.

The Italian strategies with over 65 years old

The indications and obligations provided by the Italian government have substantially changed the habits of the entire population.

The press agencies in Italy, only belatedly, urged the population to practice home training.

The choice to suggest exercises to be carried out at one's home anticipated the indications provided by WHO in relation to the need to comply with nutritional regimes appropriate to the particular period and above all regarding the indispensability of exercising at least 30 minutes for adults and about one hour for children.³⁶

Therefore, the most popular Social Media (WhatsApp®, Instagram®) have been used to allow the over 65 years old usually active or those who have seen further reduce motor activities related to everyday behaviors (newspaper purchase, daily shopping, social life, etc.).

In some cases, indications have been popularized both to increase physical activity linked to daily needs, and that of an intentional and organized type through, for example, the sending of cards describing the fundamental exercises for the individual autonomy extension and videos that explained and demonstrated more complex motor tasks.

The goal was twofold: a) increase the movement opportunities related to domestic life, b) increase the physical activity levels by stimulating those motor skills strongly conditioned by sedentary lifestyles or by detraining.

The purpose of this study is to describe the strategies adopted and the motor tasks identified in a particular period of limitation of individual and group travel for the over 65 years old population. The strategies and contents also lend themselves to be adopted even in situations similar in which the senior cannot reach the fitness center for several reasons.

What motor tasks for this age group?

The motor skills to be solicited must meet two criteria: they must be related to the daily life and senior independence skills; they must be identified among those most affected by a period of forced suspension of activities or forced sedentary lifestyle.

The motor tasks, therefore, are to be oriented to stimulate the muscle strength of both the lower and upper limbs, the trunk, aerobic capacity, joint mobility and the ability to balance (static and dynamic condition).

The main feature of the tasks identified and sent was the absolute absence of material or tools through which to perform the movements.

The need to have even small tools is a potential danger of reduced adherence to the program.

The other necessary condition of each task was to ensure execution in maximum safety, limiting the risk of falls: the main extrinsic risk factors, in fact, are present in the home (carpets, vases, slippery floors, etc.).

The senior often lives alone and such a risk represents a real danger to health.

The methods in which they were proposed envisaged a twofold

organization to foster the widest adhesion according to personal needs and individual preferences, and above all to respect what is known from the literature in relation to break long periods of daily sedentary life.^{37,38}

- Traditional session, indicating series, repetitions and pauses for each proposed task
- Active intervals or active breaks, to be repeated at indicated time intervals (usually every two hours), characterized by a maximum of 3 different tasks lasting a total of 5–6'.

The Table 1 summarizes the main motor tasks identified and sent classified by type of motor capacity.

Capacità motoria	Compiti motori
Balance	Flexion and extension of the lower limb resting on the chair
	Abductions of the lower limb resting on the chair
	Hip extensions alternating between the lower limbs
	One-leg stance, flexion and extension of the upper limbs on the frontal / sagittal plane (with eyes closed for those who want to increase the executive difficulty)
	One-leg stance, slowly surround the upper limbs
	Alternate hip flexion, keeping the position for 2 sec
	Alternate hip flexion, keeping the position for 2 sec (with eyes closed for those who want to increase the executive difficulty)
	Sitting in the chair, reach upright position and flex your thigh on your pelvis
	Sitting in the chair, reach upright position and lift your heels
	On-site step for 10 sec, recovery 30 sec
Aerobic ability (intermittent exercise)	Step forward / backward for 10 sec, recovery 30 sec
	Side step left and right for 10 sec, recovery 30 sec
	On-site step and upper limb circles for 10 sec, recovery 30 sec
	<i>In the hallway home:</i>
	Walk forward for 5 steps and 5 steps on site for 15 sec, recovery 45 sec
	Walk sideways for 5 steps and 5 steps on site for 15 sec, recovery 45sec (repeat for both sides)
	Walking with hip flexion for 5 steps, with leg flexion for 5 steps for 15 sec, recovery 45 sec
For those with stairs (even outside their apartment):	
Go up a flight of stairs (rec. 45 sec) go down the same ramp (rec. 30 sec)	

Table Continued

	Go up a flight of stairs and perform steps on-site for 10 sec (rec. 45 sec) go down the same ramp (rec. 30 sec)
	Climb the flight of stairs sideways (first with one lower limb then with the other), rec. 45 sec
	Cervical spine mobility with head flexion and extensions, inclinations and rotations
	Lower limb circles on the different planes
	Thoracic spine flexion and extension combined with inspiration and expiration
	Thrusts of the upper limbs on different planes associating a trunk torsion
Joint mobility	While standing in front of the wall, elbows resting, allow the elbows to slide upwards, associating a forced inhalation
	Torso lateral flexions starting from lower limbs spread on the frontal plane or in a tandem position
	Lower limb flexions and extensions on different planes
	Foot circles (ankle joint) in chair support or in an upright station
	Sit to stand with body weight
	Sit to stand with two water bottles (the filling of which can be freely chosen by everyone)
	Lower limbs (slow) bending up to the sitting position (first in 3 sec then in 5 sec)
	Side step and leg half-bending
Strength	Trunk twisting, keeping two bottles (the filling of which can be freely chosen by everyone)
	From the split position, perform lower limb half-bending with the upper limbs free or with the hands on the hips
	Step back and hold the position for 3 sec, then return to the starting position
	In one-leg stance on a step (stairs), brake the descent (eccentric contraction) until the foot touches the lowest step
	On the stairs: rice the step and lift your heels

The motor load

The indications provided essentially concerned the type of tasks, leaving each one the choice of the load. The only exception was made for the tasks related to the balance capacity where technically some positions must be maintained and controlled (they must not be a transitory moment) and for those related to the aerobic capacity that need a minimum load to be really effective. In addition, the indications were provided regarding the order in which to carry out the exercises spread with the videos: the indication was to provide for

the mobility and flexibility exercises in the initial phase; in the second part, everyone could orient themselves towards strength, balance or aerobic exercises. For the aerobic exercise, it was suggested to always foresee them in the final phase rather than in the initial one, in order not to tire the senior.

Conclusions

The striking contrast between what is necessarily imposed for the purpose of reducing the infection spread and what is suggested by the WHO regarding the minimum levels of physical activity useful for the protection of health, has given rise to the need to provide Italian senior with a series of useful information to counter the aging and sedentary lifestyle effects in this phase.

Finally, the videos sent in support of the exercises through the various social media facilitated the execution of the exercises but also allowed to weaken the loneliness and social isolation caused by the events.

They also made it possible to follow government instructions without renouncing to carry out physical activity useful for the health of the senior.

The possibility of dialogue through social media has allowed not only to provide the type and execution methods of the exercises, but above all the adaptations of the same if someone did not have any particular environments or furnishings.

The home training strategy remains, perhaps, the only one that can be traveled at a time when travel is prohibited but, surely, it cannot be extended to the whole duration of a course of physical activity, where the presence of the teacher becomes fundamental and irreplaceable in the correction of errors and in the motor learning path of the senior over 65 years old.

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