La riabilitazione nella malattia di Parkinson: le evidenze in letteratura

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Neuroriabilitazione -

AO S.Gerardo

Is Physical Exercise Beneficial for Persons with Parkinson's Disease?

Alexander Michael Crizzle, MPH and Ian J. Newhouse, PhD*

Clin J Sport Med • Volume 16, Number 5, September 2006

Aumento livello di dopamina
Aumento longevità dei muscoli
Rallentamento declino fisico

Aumento lunghezza passo
Velocità cammino,
capacità funzionali, ADL

Minor aumento dosi farmaci
Ridotti effetti collaterali

In gruppo: riduzione paura

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There is considerable literature that physical exercise of moderate intensity leads to an increase in the level of dopamine, which suggests that an exercise program for PD patients would be beneficial.[1] One experiment determined

the underlying factor in reducing symptoms of PD. Rehabilitation programs increase longevity of muscles and attempt to postpone the inevitable physical decline that results from PD. Programs often focus on neurological symptoms of PD, functional limitations (walking, stair climbing, reaching, grasping), and disabilities (hobbies and social activities). Physiotherapy programs for PD aim to maximize functional ability and to minimize secondary complications through movement rehabilitation.[3] Common exercises conducted in

generation by substituting external reference points. Therapy in a group setting may also help in relieving some psychosocial fears for the patient and family as well as providing a supportive setting for educational programs about PD. In

movement rehabilitation.[3] Common exercises conducted in physical therapy include gait training, training of daily activities, relaxation therapy, and breathing exercises. The

general, studies of physical therapies have found significant and stable improvements in stride length, walking speed and ability, and activities of daily living (ADL).[1,4] Furthermore,

ability, and activities of daily living (ADL).[1,4] Furthermore,
adding physiotherapy treatments for patients with PD with the resulting improvements in functional abilities raises the possibility of delaying increases in medication doses, thus reducing for a longer time the risk of unfavorable side effects.[5]

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Tempestività

Timing of Interventions and Predictors of Success

There is a growing body of evidence that early intervention is beneficial in preserving or improving physical performance of people who are in relatively early stages of PD.[9,10] These improvements could be instrumental in preserving independence. Physical interventions that enhance balance and muscle strength and reduce falls are relatively inexpensive interventions that help prevent dysfunction and dependence in persons with PD.[11] The physical exercise programs would probably have to be continuous to remain effective. There is a lack of studies that address the problem of

Interplay of Neurological and Musculoskeletal Impairments

Exercises should be designed in such a way as to acknowledge the connection between the neurological impairments that relate directly to PD (such as rigidity, tremor, motor planning) and the musculoskeletal impairments that follow (such as stooped flexed posture, loss of extremity, and spine flexibility). It has been suggested that rigidity in combination with bradykinesia contributes to loss of axial mobility, resulting in the stooped posture of people with PD. Loss of spinal flexibility contributes to impaired balance. Such an interplay would suggest that exercises designed to improve spinal flexibility should also improve balance and function despite rigidity, bradykinesia, and motor planning deficit.[12]

Azione sulle menomazioni neurologiche:
Rigidità, tremore, programmazione motoria
E muscoloscheletriche:
Postura flessa, ridotta flessibilità rachide e estremità.

The Effectiveness of Exercise Interventions for People with Parkinson's Disease: A Systematic Review and Meta-Analysis

Victoria A. Goodwin, MSc,[1]* Suzanne H. Richards, PhD,[1] Rod S. Taylor, PhD,[1]
Adrian H. Taylor, PhD,[2] and John L. Campbell, MD[1]

Movement Disorders, Vol. 23, No. 5, 2008

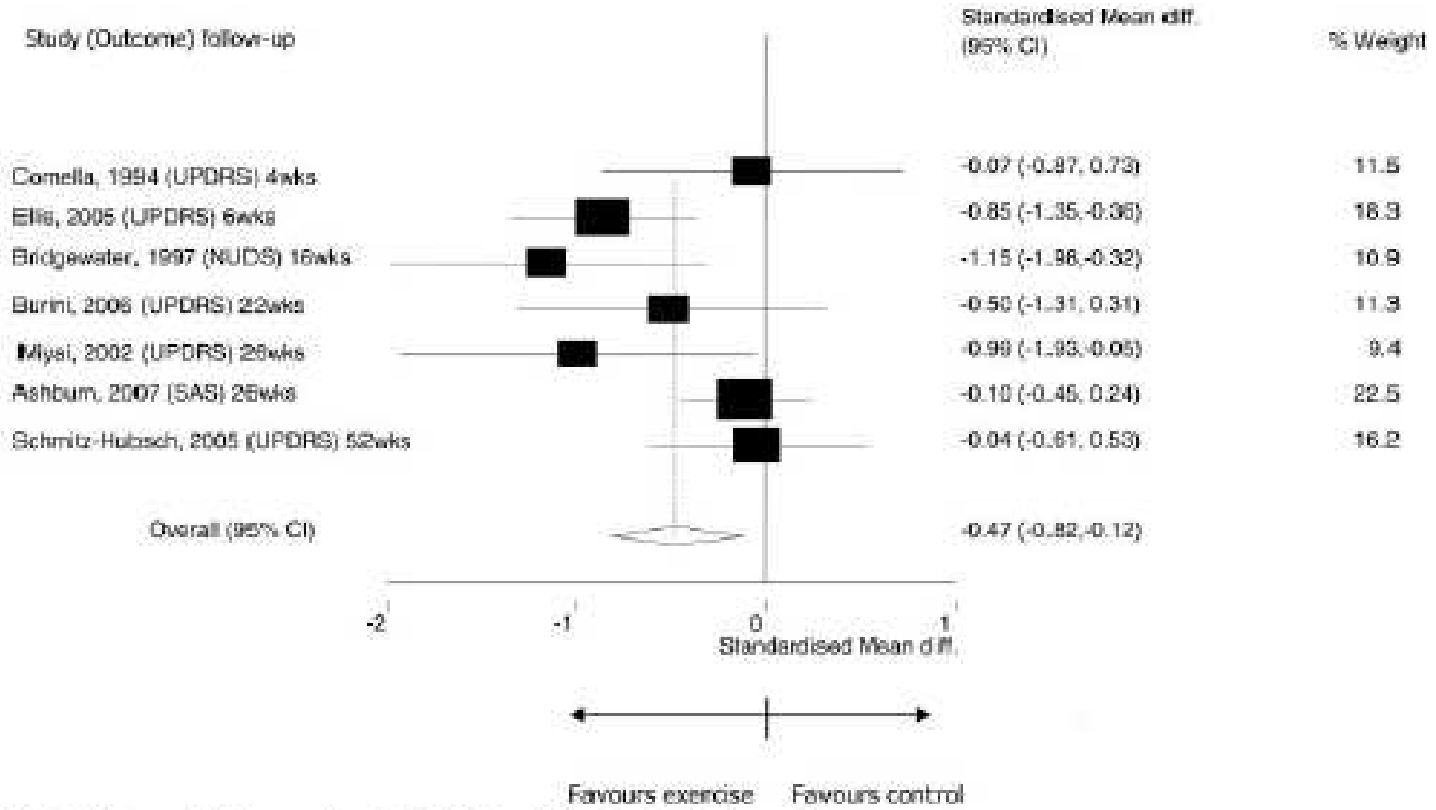

FIG. 2. Meta-analysis for exercise and physical functioning (random effects model).

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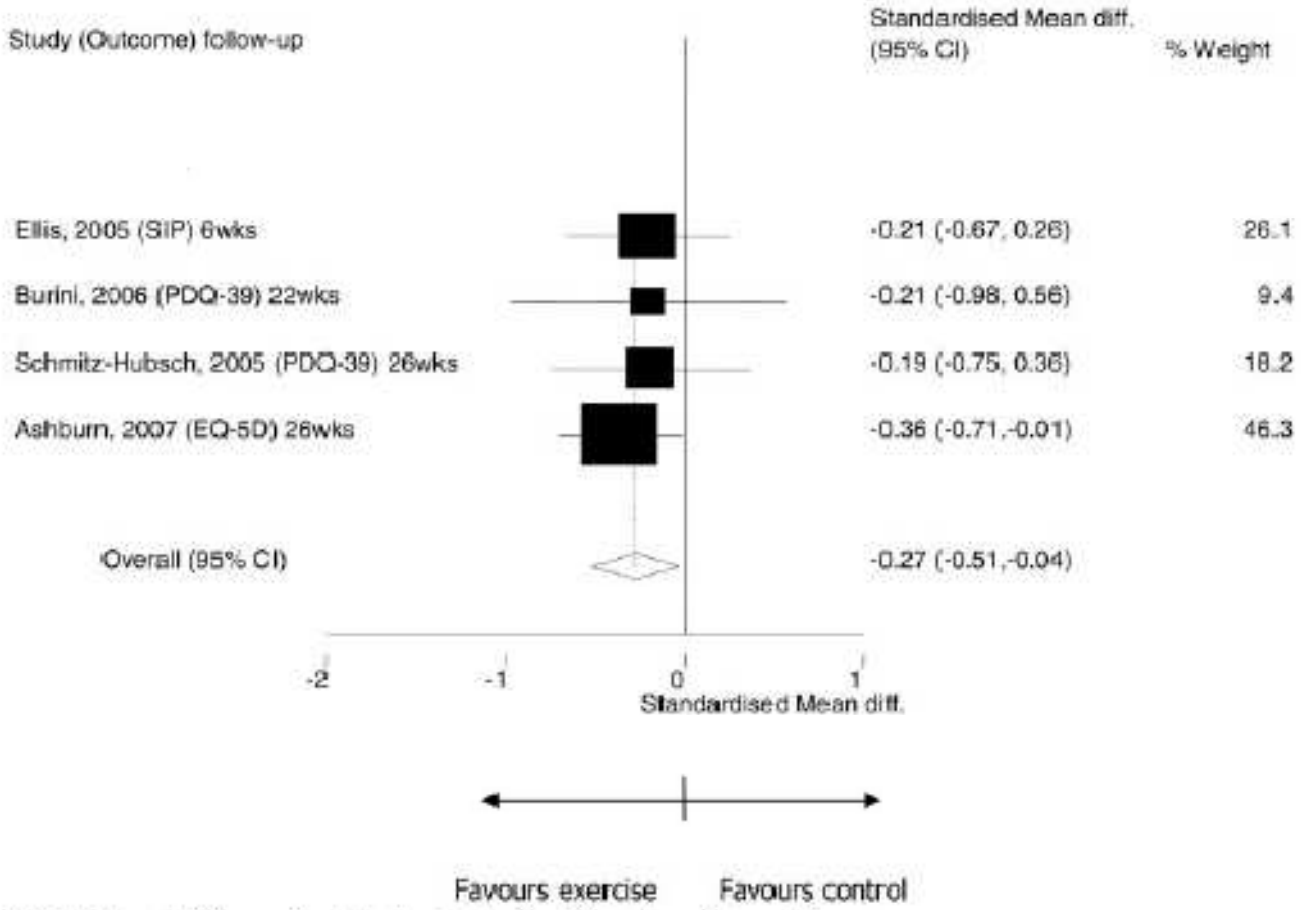


FIG. 3. Meta-analysis for exercise and health-related quality of life (random effects model).

The effects of exercise on balance in persons with Parkinson's disease: a systematic review across the disability spectrum.
Dibble LE, Addison O, Papa E. 2009

L’esercizio migliora la stabilità posturale e l’equilibrio.

- DISCUSSION AND CONCLUSIONS: Regardless of the strength of the evidence, the studies reviewed all report that exercise resulted in improvements in postural stability and balance task performance. Despite these improvements, the number and quality of the studies and the outcomes used were limited. There is a need for longer term follow-up to establish trajectory of change and to determine if any gains are retained long term. The optimal delivery and content of exercise interventions (dosing, component exercises) at different stages of the disease are not clear.

Striding out with Parkinson disease: evidence-based physical therapy for gait disorders.

Morris ME, Martin CL, Schenkman ML. 2010

Ogni tipo di approccio riabilitativo ha un valido posto nella gestione globale del PD e del cammino in particolare.

È variabile la composizione ottimale di tali approcci a seconda del paziente , dello stadio e della progressione della malattia e delle preferenze del paziente per l'esercizio, la sua capacità di imparare.

Treadmill training for patients with Parkinson's disease

Jan Mehrholz, Robert Friis, Joachim Kugler, Sabine Twork, Alexander Storch5, Marcus Pohl

- **Patients with Parkinson's disease who receive treadmill training are more likely to improve their impaired gait hypokinesia.**
- **However, the results must be interpreted with caution because there were variations between the trials in patient characteristics, the duration and amount of training, and types of treatment.**
- **Additionally, it is not known how long these improvements may last.**

Treadmill training for patients with Parkinson's disease
Velocità del cammino

Analysis 1.1. Comparison 1 Treadmill training versus no treadmill training, Outcome 1 Gait speed.

Review: Treadmill training for patients with Parkinson's disease

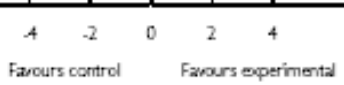
Comparison: 1 Treadmill training versus no treadmill training

Outcome: 1 Gait speed

Study or subgroup	Favours control N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Fixed,95% CI	Weight	Std. Mean Difference IV,Fixed,95% CI
Cakit 2007	21	2.61 (0.77)	10	1.86 (0.59)		17.3 %	1.02 [0.22, 1.82]
Fisher 2008	10	1.52 (0.19)	20	1.42 (0.17)		18.5 %	0.55 [-0.22, 1.32]
Kurtais 2008	13	1.13 (3.8)	14	1.16 (2.9)		19.4 %	-0.01 [-0.76, 0.75]
Miyai 2000	5	1.27 (0.3)	5	1.13 (0.44)		7.0 %	0.34 [-0.92, 1.59]
Miyai 2002	10	1.27 (0.36)	10	1.09 (0.37)		13.9 %	0.47 [-0.42, 1.36]
Pohl 2003	8	1.44 (0.18)	9	1.32 (0.18)		11.5 %	0.63 [-0.35, 1.62]
Protas 2005	9	1.45 (0.37)	9	1.27 (0.25)		12.4 %	0.54 [-0.40, 1.49]
Total (95% CI)	**76**		**77**			**100.0 %**	**0.50 [0.17, 0.84]**

Heterogeneity: $Chi^2 = 3.50$, $df = 6$ ($P = 0.74$); $I^2 = 0.0\%$

Test for overall effect: $Z = 2.97$ ($P = 0.0029$)



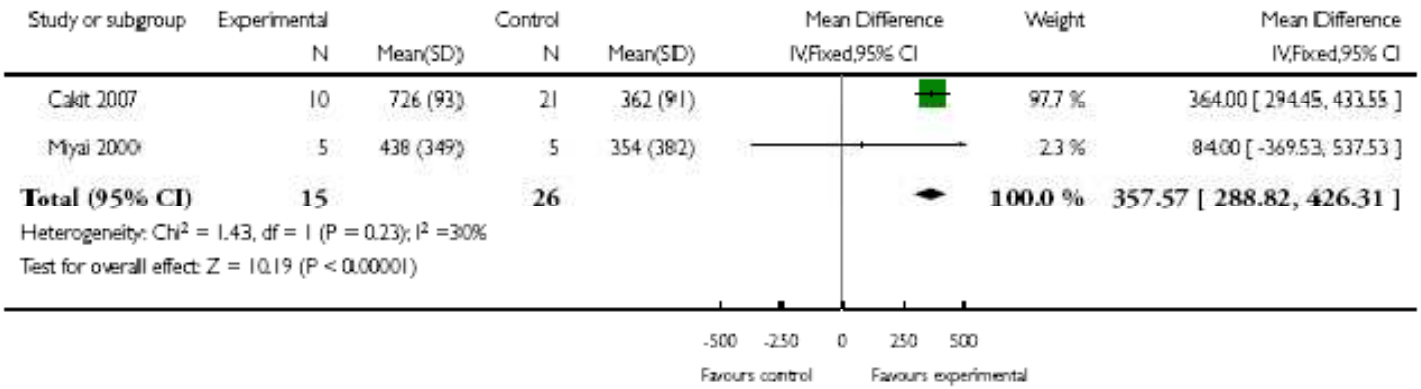
Treadmill training for patients with Parkinson's disease distanze percorse

Analysis 1.3. Comparison 1 Treadmill training versus no treadmill training, Outcome 3 walking distance.

Review: Treadmill training for patients with Parkinson's disease

Comparison: 1 Treadmill training versus no treadmill training

Outcome: 3 walking distance



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We have found exercise to be effective at improving physical functioning and HRQOL, leg strength, balance, and walking but there is currently insufficient evidence with regards effectiveness in the areas of falls prevention and the management of depression. Future research

Le stimolazioni ritmiche

La velocità del cammino dei pazienti con m.Parkinson può essere influenzata positivamente dall'utilizzo di stimoli uditivi ritmici. Non vi sono tuttavia evidenze di efficacia sull'autonomia nelle ADL e riduzione della frequenza delle cadute. (Lim 2005)

Sembra che i programmi di stimolazione ritmica siano scarsamente applicabili su pazienti con freezing.(Nieuwboer 2008)

Il treadmill associato a stimolazioni ritmiche uditive e visive sembra dare migliori risultati dei trattamenti più convenzionale. Il treadmill probabilmente agisce come stimolo esterno supplementare.(Frazzitta 2009)

Occupational therapy for patients with Parkinson's disease (Review)

Dixon L, Duncan DC, Johnson P, Kirkby L, O'Connell H, Taylor HJ, Deane K

Authors' conclusions

Considering the significant methodological flaws in the studies, the small number of patients examined, and the possibility of publication bias, there is insufficient evidence to support or refute the efficacy of occupational therapy in Parkinson's disease. There is now a consensus as to UK current and best practice in occupational therapy when treating people with Parkinson's disease. We now require large well designed placebo-controlled RCTs to demonstrate occupational therapy's effectiveness in Parkinson's disease. Outcome measures with particular relevance to patients, carers, occupational therapists and physicians should be chosen and the patients monitored for at least six months to determine the duration of benefit. The trials should be reported using CONSORT guidelines.

AFA Attività Fisica Adattata

In molte malattie croniche invalidanti la disabilità è aggravata dall'effetto additivo della sedentarietà che è causa di ulteriore peggioramento dello stato di salute.

Questo circolo vizioso può essere corretto con adeguati programmi di attività fisica regolare e continuata nel tempo

AFA Attività Fisica Adattata

- Programmi di esercizi fisici non sanitari, svolti in gruppo sotto forma di corsi, appositamente predisposti per persone con patologie croniche, nell'ambito di un percorso di riabilitazione**.**

- I Corsi sono diretti da istruttori qualificati e adeguatamente formati e sono finalizzati alla riduzione del dolore e al miglioramento della qualità della vita per tutte le persone che hanno subito una limitazione alla loro mobilità.

Grazie per l’attenzione

Proposte