

Intervention 1: Yoga. Abbreviations: Parkinson Disease (PD), Stretching and Resistance Training Exercise (SRTE), Movement Disorders Society-Sponsored Revision of the Unified Parkinson's Disease Rating Scale part 3: Motor Exam (MDS-UPDRS III)

Title/Author/ Year	Number of Subjects	Inclusion/ Exclusion Criteria	Outcome Measures and Timeframe	Description of Intervention	Results	Conclusions for Community Program
<p>Effects of Mindfulness Yoga vs Stretching and Resistance Training Exercises on Anxiety and Depression for People With Parkinson Disease: A Randomized Clinical Trial</p> <p>Jojo Kwok, Jackie Kwan, M. Auyeung</p> <p>2019</p>	<p>138</p> <p>Yoga group: n=71</p> <p>STRE group n=67</p>	<p>Inclusion: clinical diagnosis of idiopathic PD, able to stand and walk without assistance (with or without assistive device)</p> <p>Exclusion: currently receiving pharmacologic or surgical interventions for psychiatric disorders, currently participating</p>	<p>Primary outcome: Hospital Anxiety and Depression Scale (HADS)</p> <p>Secondary outcomes: Movement Disorder Society Unified Parkinson's Disease Rating Scale [MDS-UPDRS], Part III motor score (motor symptoms); Timed Up and Go Test (mobility); 8-item Parkinson Disease Questionnaire (Health-related quality of life)</p>	<p>Experimental group: 90 minutes of a group Hatha yoga program 1x/week for 8 weeks. Mindfulness Yoga for PD (MY-PD) protocol includes 15 minutes of breathing exercises, 15 minutes of mindfulness practice, and 60 minutes of yoga separated into 15 min warmup, 30 min modified sun salutations, and 15 min cool down.</p> <p>Comparison group: group SRTE class, 60 minutes 1x/week.</p>	<p>The yoga group had statistically and clinically significant improvements in reported anxiety and depression symptoms at 8 weeks and 20 weeks.</p> <p>Control group had no significant improvement on the HADS.</p> <p>Both groups showed improvement in PD motor symptoms; however, the yoga group also had greater improvement than the SRTE</p>	<p>Yoga is an effective intervention to address the impairments of PD; and a yoga program provided mobility benefits that are comparable to SRTE, which are already highly utilized in PD rehabilitation.<sup>3</sup></p> <p>Incorporating yoga to an exercise community program can provide additional benefits for psychological distress, spiritual well-being, and HRQOL.<sup>3</sup> This is significant because</p>

		<p>g in another trial or exercise program, significant cognitive impairment</p>	<p>(HRQOL)); Holistic well-being scale;</p> <p>Measured at baseline, 8 weeks (end of intervention), and 20 weeks</p>	<p>All participants were also encouraged to perform 20-minute home practice 2x/week for their intervention.</p>	<p>group in spiritual well-being (perceived hardships and equanimity), and PD-specific HRQOL.</p>	<p>depression and anxiety are nonmotor symptoms prevalent in the PD population, and living with a progressive disease can cause distress. Addressing psychospiritual health can make the program more comprehensive.</p> <p>The MY-PD protocol was designed to accommodate the impairments of PD. Using this protocol can be very helpful to design the yoga portion of the community program. Furthermore, the majority of participants in this study were at Hoehn and Yarn</p>
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						Stage 3, demonstrating its appropriateness and effectiveness for those with moderate PD. <sup>3</sup>
<p>Functional Improvements in Parkinson's Disease Following a Randomized Trial of Yoga</p> <p>Marieke Van Puymbroeck, Alysha Walter, Brent L. Hawkins, Julia L. Sharp, Kathleen Worschkolup, Enrique Urrea-Mendoza, Fredy Revilla, Emilie V. Adams, Arlene A. Schmid</p> <p>2018</p>	<p>27</p> <p>Yoga group n=15 Wait-list control n=12<sup>4</sup></p>	<p>Inclusion: PD diagnosis, modified Hoehn and Yahr Scale rating 1.5-3, able to stand and walk 10 meters with or without assistive device, endorses a fear of falling, English-speaking, at least 4/6 on the short Minimental Status Exam.<sup>4</sup></p>	<p>MDS-UPDRS III, Mini-BESTest, Functional Gait Assessment (FGA), Freezing of Gait Questionnaire (FoG)<sup>4</sup></p> <p>Measurements at baseline and 8 weeks (end of intervention)<sup>4</sup></p>	<p>Interventions: Group class of standardized progression of Hatha yoga 60 minutes/session, 2x/week for 8 weeks.<sup>4</sup> Sessions included modified yoga postures in sitting, standing, and supine; breathing exercises; and meditation.<sup>4</sup></p> <p>Control: wait-list for 8 weeks with no intervention.<sup>4</sup></p>	<p>The experimental yoga group had greater functional gait post-intervention with a large effect size of 1.72.<sup>4</sup> Scores for motor function, measured by the MDS-UPDRS, improved with a clinically important difference of 6.40 points for the experimental group.<sup>4</sup> Increase in mean mini-BESTest scores from 19.47 to 24.87 post-</p>	<p>This study's results indicate that yoga can lead to significant improvements in motor function, balance, gait, and freezing of gait in those with PD.<sup>4</sup></p> <p>Preventing falls is crucial in the PD population because falls can lead to increased disability, costly and serious complications, decreased independence, or death.<sup>4</sup></p> <p>Incorporating a yoga intervention into a community-based program for those with PD may</p>

<p>**This article is a continued investigation from the intervention and population in article #4, and thus has the same participant criteria and intervention</p>		<p>Exclusion: self-reported life expectancy of under 12 months, unable to attend twice weekly sessions, currently receiving physical therapy or enrolled in an intervention study.<sup>4</sup></p>			<p>intervention also demonstrates a reduced fall risk for the experimental group based on the 20/32 points cut-off for detecting fallers.<sup>4</sup> Subjective reports of freezing of gait also show an improvement with a medium effect size of 0.69 in the yoga group.<sup>4</sup></p> <p>The control group had statistically significant, but smaller, improvements in FGA and MiniBESTest; and no significant change in FOG or MDS-UPDRS III scores.<sup>4</sup></p>	<p>specifically address falls risk for participants.<sup>4</sup></p>
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<p>Changes in Nonmotor Symptoms Following an 8-Week Yoga Intervention for People with Parkinson's Disease</p> <p>Alysha A. Walter, Em V. Adams, Marieke Van Puymbroeck, Brandi M. Crowe, Enrique Urrea-Mendoza, Brent L. Hawkins, Julia Sharp, Kathleen Woschkolup, Freddy J. Revilla, Arlene A. Schmid</p> <p>2019</p>	<p>27</p> <p>Experimental yoga group m=15<sup>5</sup></p> <p>Wait-list control n=12<sup>5</sup></p>	<p>Inclusion: PD diagnosis, modified Hoehn and Yahr Scale rating 1.5-3, able to stand and walk 10 meters with or without assistive device, endorses a fear of falling, English-speaking, at least 4/6 on the short Minimental Status Exam.<sup>5</sup></p> <p>Exclusion: self-reported life expectancy of under 12</p>	<p>Parkinson's Fatigue Scale, Activities Balance Confidence Scale, Falls Management Scale (FMS), Falls Control Scale (FCS), Activities Constraint Questionnaire, Parkinson's Disease Questionnaire-8 (PDQ-8).<sup>5</sup></p> <p>Measurements at baseline and 8 weeks (end of intervention)<sup>5</sup></p>	<p>Interventions: Group class of standardized progression of Hatha yoga 60 minutes/session, 2x/week for 8 weeks.<sup>5</sup> Sessions included modified yoga postures in sitting, standing, and supine; breathing exercises; and meditation.<sup>5</sup></p> <p>Control: wait-list for 8 weeks with no intervention.<sup>5</sup></p>	<p>The experimental group showed improvements in balance confidence, perceived ability to manage and get up from falls, activity constraints, and PD-related quality of life with moderate-to-large effect sizes (0.81, 0.62, 1.06, 0.64 respectively).<sup>5</sup> Participants demonstrated a mean change of 8.00 on the PDQ-8, which is a clinically important difference.<sup>5</sup></p> <p>Both groups showed significant and similar improvements in fatigue, and</p>	<p>Together, articles 3-5 show a multitude of physical, mental, emotional, and benefits of yoga for those with PD.<sup>3-5</sup></p> <p>Nonmotor symptoms of PD can greatly impact participation in valued activities and health-related quality of life.<sup>5</sup> A yoga intervention that involves getting down and up off the ground many times practices an important skill for falls management.<sup>5</sup> This is very relevant for the PD population, in which falls are relative common. Yoga can also foster balance and falls confidence in</p>
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		months, unable to attend twice weekly sessions, currently receiving physical therapy or enrolled in an intervention study. <sup>5</sup>			neither showed significant change in perceived ability to control falls. <sup>5</sup>	<p>those with PD, which can allow increased participation in other physical activities.<sup>5</sup> The goal of this community program is lasting changes in physical activity; and yoga, combined with supplemental education, may effectively address what may be a large barrier for participants.</p> <p>This article included a table of the sequence of breathing exercises and yoga postures included in each week's intervention.<sup>5</sup> This can be useful in combination with the protocol from article #3 to design</p>
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						the yoga portion of the community program.
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Intervention 2: Resistance Training. Abbreviations: Parkinson Disease (PD), Progressive Resistance Exercise (PRE), Progressive Resistance Training (PRT)

<b>Title/Author/Year</b>	<b>Number of Subjects</b>	<b>Inclusion/Exclusion Criteria</b>	<b>Outcome Measures and Timeframe</b>	<b>Description of Intervention</b>	<b>Results</b>	<b>Conclusions for Community Program</b>
<p>A two-year randomized controlled trial of progressive resistance exercise for Parkinson's disease</p> <p>Daniel M Corcos, Julie A Robichaud, Fabian J David, Sue E Leurgans, David E Vaillancourt, Cynthia Poon, Miriam R Rafferty, Wendy M Kohrt, Cynthia L Comella</p>	<p>48 randomized; 38 at conclusion of study.</p> <p>PRE n=20, MFC n=18<sup>1</sup></p> <p>Participants were paired by sex and UPDRS-III score and then randomly assigned<sup>1</sup></p>	<p>Inclusion: Idiopathic PD, age 50-67, on stable dopaminergic therapy, able to walk 6 minutes<sup>1</sup></p> <p>Exclusion: neurologic history besides PD, significant arthritis, failed Physical Activity Readiness</p>	<p>Primary measure: off-medication scores on the Unified Parkinson's Disease Rating Scale, motor subscale (UPDRS-III)</p> <p>Secondary measures: Off-medication strength &amp; movement speed (measured at elbow using manipulandum), Functional ability (modified</p>	<p>Both Groups' Intervention: 2x/week for 24 months, total of 208 sessions, 60-90 minutes/session 1-on-1 with personal trainer 2x/week in first 6 months; 1x/week with trainer for months 7-24.<sup>1</sup></p> <p>Experimental group: Progressive Resistance Exercise (PRE) of 11 movements, progressing based on 1 rep max. 2 alternating 8-week protocols (3x8</p>	<p>Mean UPDRS-III scores decreased (indicating improvement in PD motor signs) similarly in both groups at 6 months. (PRE -6.4 +/- 3.0, MFC -5.4 +/- 2.8)<sup>1</sup></p> <p>Between-group UPDRS-III differences at 12, 18, and 24 months were significant with mean 24-month change for PRE: -7.4, which is a moderate,</p>	<p>A community program that incorporates structured PRE with high resistance, individualized progressions, and high doses of exercise can improve the motor signs of PD, QoL, and physical functioning.<sup>1</sup></p> <p>However, the average Hoehn and Yahr staging for each group was 2.2-2.3.<sup>1</sup> Thus, this intervention may be more effective</p>

<p>2013</p>		<p>Questionnaire, cognitive impairments (MMSE&lt;23), already exercising, have had surgery for PD<sup>1</sup></p>	<p>Physical Performance Test-mPPT). QoL (Parkinson's Disease Questionnaire-39) medication dosage, on-med UPDRS-III scores</p> <p>Measured at baseline, 6, 12, 18, and 24 months<sup>1</sup></p>	<p>reps emphasizing strength &amp; 2x12 reps emphasizing strength + speed).<sup>1</sup> The following 11 exercises were used: 1) chest press, 2) lateral pull down, 3) reverse flys, 4) double leg press, 5) biceps curl, 6) shoulder press, 7) triceps extension, 8) back extension, 9) knee extension, 10) hip extension, and 11) rotary calf.<sup>1</sup></p> <p>Comparison: Modified Fitness Counts (MFC) program (focus on stretching, balance exercises, breathing, nonprogressive strengthening)<sup>1</sup></p>	<p>clinically important change; for MFC -0.1 compared to baseline.<sup>1</sup></p> <p>Quality of life (Mean PDQ-39 score) showed the PRE group had significantly improved QoL compared to MFC group at 6 months; similar scores at 24 months.<sup>1</sup></p> <p>Both interventions led to improvements in physical function (mPPT), No significant difference in change scores.<sup>1</sup></p>	<p>for those with higher motor functioning, and PTs may need to modify movements based on impairments. Additionally, in a group program, PTs' attention will be split among multiple participants, which may impact effectiveness.</p> <p>The detailed, published PRE protocol can be used to help design resistance training portion of community program.</p> <p>Many gains of this study occurred in a time frame that is longer than a typical community exercise program. Therefore,</p>
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						education and garnering motivation to continue exercise after the program ends is crucial.
<p>Progressive resistance training improves gait initiation in individuals with Parkinson's disease</p> <p>Chris K Hass, Thomas A Buckley, Chris Pitsikoulis, Ernest J Barthelemy</p> <p>2012</p>	<p>18</p> <p>PRT n=9, control n=9</p>	<p>Inclusion: idiopathic PD diagnosed by neurologist, modified Hoehn and Yahr stage 1-3, can ambulate without assistance.<sup>2</sup></p> <p>Exclusion: history of significant cardiovascular, musculoskeletal, vestibular, or other neurological disorder; use of</p>	<p>Biomechanical gait initiation testing while in reported clinical "on" phase.<sup>2</sup></p> <p>5 trials of gait initiation performed along a 4-meter walkway with 8-camera motion capture system and the Helen Hayes marker system.<sup>2</sup> Participants used their self-selected pace. Measurements include ground reaction force for center of pressure displacement,</p>	<p>Experimental group: Progressive resistance training 2x/week for 10 weeks. Participants performed 2 sets of 12–20 reps to fatigue of 6 exercises: seated leg press, knee extension, knee flexion, abdominal curl, back extension, seated calf raise. Then dorsiflexion, plantarflexion, inversion, and eversion using theraband.<sup>2</sup></p> <p>1 Rep Max was measured for each movement. Resistance was initiated at 70% 1</p>	<p>The experimental group demonstrated a statistically significant 29% increase in posterior displacement during anticipatory postural adjustments (APA) of gait initiation.<sup>2</sup> This helps generate forward momentum needed to take a step.<sup>2</sup> No significant change in lateral displacement.<sup>2</sup></p> <p>PRT group had an increase in gait velocity of</p>	<p>PRT can lead to more efficient APA, improved parameters of initial steps, and significant improvements in strength.<sup>2</sup> Therefore, including PRT in a community program may improve gait dysfunction and reduce risk of falls in the initial steps of gait.<sup>2</sup></p> <p>In a community program, I would select an ambulation outcome measure as opposed to biomechanical gait analysis to detect changes in</p>

		assistive device; recent participation in a balance or resistance-training program. <sup>2</sup>	step length, velocity, and lower extremity strength via 1 Rep Max. <sup>2</sup>  Performed at baseline and 11- week follow-up. <sup>2</sup>	Rep Max for knee flexion/extension. <sup>2</sup> Other movements' resistance increased 10% from previous measurement/training session. <sup>2</sup>  Researchers used the daily-adjusted progressive resistance exercise protocol for training progressions. <sup>2</sup>  Control group: no change in exercise or lifestyle	0.08m/s, which is clinically meaningful change. PRT group had mean increase in stride length of 0.05 meters. <sup>2</sup>  PRT group significantly improved 1Rep max of knee extension by 76% and knee flexion by 57%. <sup>2</sup>  No significant changes in gait or strength in control group. <sup>2</sup>	gait. Furthermore, based on this and the previous study, a community program should meet in a gym/clinic/recreational facility that provides access to strengthening gym equipment for PRT sessions.
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Intervention 3: Home-Based Aerobic Exercise with Rhythmic Auditory Stimulation. Abbreviations: Parkinson Disease (PD), Rhythmic Auditory Stimulation (RAS)

<b>Title/Author/Year</b>	<b>Number of Subjects</b>	<b>Inclusion/Exclusion Criteria</b>	<b>Outcome Measures and Timeframe</b>	<b>Description of Intervention</b>	<b>Results</b>	<b>Conclusions for Community Program</b>
Walking to your right music: a randomized	50	Inclusion: idiopathic PD, Hoehn	Primary outcome:	Both groups participating in inpatient	Both gait trainings had a significant time	A contributing factor to gait abnormalities in PD

<p>control trial on the novel use of treadmill plus music in Parkinson's disease</p> <p>Rocco Salvatore Calabro, Antonio Naro, Serena Filoni, Massimo Pullia, Luana Billeri, Provvidenza Tomasello, Simona Portaro, Giuseppe Di Lorenzo, Concetta Tomaino, Placido Bramanti</p> <p>2019</p>	<p>RAS group n=25<sup>6</sup></p> <p>Non-RAS group n=25<sup>6</sup></p>	<p>and Yarr stage 2-3, Mini-Mental State Examination test score &gt;23, normal executive function tests, no changes in antiparkinsonian drug treatment in the previous 6 months<sup>6</sup></p> <p>Exclusion: history of neoplasm; severe cardiovascular, respiratory, visual, auditory, or musculoskeletal disease; other</p>	<p>Functional Gait Assessment<sup>6</sup></p> <p>Secondary outcome: EEG detecting brain oscillation changes related to gait cycle<sup>6</sup></p> <p>Tertiary outcomes: Tinetti Falls Efficacy Scale (FES), Berg Balance Scale (BBS), 10-meter walk test (10MWT), Timed Up and Go (TUG) test, United Parkinson Disease Rating Scale (UPDRS), Gait Quality Index (GQI) from gait analysis sensor during non-RAS walking<sup>6</sup></p>	<p>rehabilitation 5 days/week of: 45 min activities of daily living training, 30 min speech therapy, 45 min of upper and lower extremity biomechanical training, and 45 min of conventional overground gait training.<sup>6</sup></p> <p>Experimental group: additional 30 minutes of treadmill training with RAS 5x/week for 8 weeks.<sup>6</sup> The intervention used the GaitTrainer3 that provides real-time visual feedback on step length, speed, symmetry.<sup>6</sup> Initially rhythmic cueing was set to match the participants' baseline gait</p>	<p>effect in all outcome measures besides the 10MWT; and both groups had similar improvements on the BBS and TUG.<sup>6</sup> The RAS group had greater increases on the FES, FGA and UPDRS than the non-RAS group.<sup>6</sup></p> <p>The RAS group also had larger modifications in gait parameters, such as step cadence, stride length, and reduction in the stance/swing phase ratio.<sup>6</sup> Both groups had similar decreases in gait cycle duration and</p>	<p>is loss of automaticity and rhythmicity of movements.<sup>6</sup> RAS provides an external cue that may bypass and compensate for this deficit.<sup>6</sup> RAS training showed additional benefits in gait quality and dynamic stability over typical treadmill training.<sup>6</sup></p> <p>This program took place in an inpatient rehabilitation facility, which may not be as generalizable to the community PD population. Additionally, those with cognitive impairment were excluded (as in many of the previous articles).<sup>6</sup> Thus, it is unsure how effective</p>
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		<p>neurologic condition; neurologic music therapy in the past 3 months<sup>6</sup></p>	<p>Measurements at baseline and 8 weeks (end of intervention).<sup>6</sup></p>	<p>cadence. Then, frequency was increased gradually over the first 5 sessions to match a song with an emphasized beat of 120bpm.<sup>6</sup> Patients were instructed to synchronize their walking pace with the beat.<sup>6</sup></p> <p>Comparison group: 30 minutes of non-RAS treadmill training using the GaitTrainer3 5x/week for 8 weeks.<sup>6</sup></p>	<p>increases in speed of gait.<sup>6</sup></p>	<p>auditory cueing would be for those with program participants with cognitive impairment.</p> <p>In the community program, overground walking will be employed rather than treadmill walking, which may also limit the generalizability of this study. However, based on the parameters included, group leaders can help each participant find music they enjoy with a pace of 120bpm to use during their walking program to facilitate gait improvements.<sup>6</sup> Furthermore, if this also makes walking more enjoyable, RAS may also promote longer</p>
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						participation in ambulation, allowing participants to gain more health benefits from aerobic activity.
<p>A pilot study of a minimally supervised home exercise and walking program for people with Parkinson’s disease in Jordan</p> <p>Hanan Khalil, Monica Busse, Lori Quinn, Mohammad Nazzal, Waleed Batyha</p> <p>2017</p>	<p>30</p> <p>Intervention group n=16<sup>7</sup></p> <p>Control group n=14<sup>7</sup></p>	<p>Inclusion: diagnosis of idiopathic PD, modified Hoehn and Yahr stage 1-4 while in “on” phase of medication, stable medical regime for 3 weeks prior to initiation of study.<sup>7</sup></p> <p>Exclusion: unstable medical condition, presence of other</p>	<p>Unified Parkinson's disease rating scale (MDS-UPDRS-III), 10-Meter Walk Test (10MWT), 6-Minute Walk Test (6WMT), 30 second chair stand, Mini-Best test, Falls Efficacy Scale, Physical Performance Test</p> <p>Interview about feasibility, acceptability, barriers, and enablers of participating in the program. Content thematic</p>	<p>Intervention group: 8 weeks of home-based exercise using an exercise DVD.<sup>7</sup> Participants were introduced to the activities in person, and then instructed to perform the exercise 3x/week.<sup>7</sup> The DVD program includes warm-up, flexibility activities, strengthening/ endurance activities tailored to PD, functional training, relaxation and breathing.<sup>7</sup> Participants were also instructed to perform one 45-minute walking session per week, using the Borg</p>	<p>Mean adherence rate to the program was 77% of the total 32 prescribed sessions.<sup>7</sup> Enablers to engaging in the program were: use of exercise DVD, perceived improvement, continuous monitoring, social interaction and relationship with the therapist, family support. Reported challenges include: disease-specific factors (ie: fatigue,</p>	<p>Community walking ability is important for participation in community, work, and leisure activities.<sup>7</sup> Based on these results, incorporating a home walking program into the community exercise program may be feasible and have high adherence rates in the PD population.<sup>7</sup></p> <p>Interview results underscore the importance of educating patients and family members about the benefits of exercise to enhance perceived benefits,</p>

		<p>disorders that may affect balance, any medical or musculoskeletal condition that would make the exercise intervention unsafe.<sup>7</sup></p>	<p>analysis found common themes.</p> <p>Weekly phone calls Calculation of retention and adherence rates based on participation</p>	<p>Rating of Perceived Exertion scale to self-monitor intensity.<sup>7</sup> Each participant received a weekly phone call from a physical therapist to discuss progress, questions, and to record frequency of exercise.<sup>7</sup> Participants also were asked to keep an exercise diary.<sup>7</sup></p> <p>Control group: instructed to not change their routine of physical activity and exercise. Participants were offered the intervention at the end of the study.<sup>7</sup></p>	<p>depression), lack of time, lack of outcome expectations, denial of PD diagnosis, stigma.</p> <p>MDS-UPDRS III and FES mean difference scores were significantly improved compared to the control group. Participants with MDS-UPDRS scores that decreased by greater than 11 points tended to have a higher average adherence rate (96%).</p>	<p>family support, and program adherence.<sup>7</sup> Additionally, adherence was helped by care providers supervising participants who have instability or a fear of falling.<sup>7</sup> In the community program, family members will be encouraged to attend educational meetings and provide social support by assisting participants when needed.</p> <p>Furthermore, routine support calls from the clinician helped minimize attrition.<sup>7</sup> In the community program, participants will be paired together and instructed to have a phone call once</p>
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						<p>weekly to increase peer social support and accountability for walking program adherence.</p> <p>Finally, the authors conclude social support by the clinician important for initial adoption and maintenance of a self-supervised exercise program in this population.<sup>7</sup> In the community program, leaders will emphasize not only education and exercise instruction, but also fostering relationships with participants to increase clinician-support.</p>
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Health Behavior Change: Social Cognitive Theory. Abbreviations: Parkinson Disease (PD), Social Cognitive Theory (SCT)

<b>Title/Author/ Year</b>	<b>Number of Subjects</b>	<b>Inclusion/ Exclusion Criteria</b>	<b>Outcome Measures and Timeframe</b>	<b>Description of Intervention</b>	<b>Results</b>	<b>Conclusions for Community Program</b>
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<p>Promotion of physical activity and fitness in sedentary patients with Parkinson's disease: randomised controlled trial</p> <p>Marlies van Nimwegen, Arlene D Speelman, Sebastiaan Overeem, Bart P van de Warrenburg, Katrijn Smulders, Manon L Dontje, George F Borm, Frank J G Backx, Bastiaan R Bloem,</p>	<p>586</p> <p>ParkFit program n=299<sup>8</sup></p> <p>ParkSafe program n=287<sup>8</sup></p>	<p>Inclusion: idiopathic PD diagnosis, aged 40-75 years, sedentary lifestyle (moderate intensity physical activity less than 150 minutes per week), Hoehn and Yahr stage less than or equal to 3.<sup>8</sup></p> <p>Exclusion: minimal state examination score &lt;24/30, co-morbidity that interfered with daily functioning, previous deep brain surgery, inability to complete questionnaires.<sup>8</sup></p>	<p>Primary measure: LASA Physical Activity Questionnaire (LAPAQ), which is an interview-based seven day recall of physical activities.<sup>8</sup></p> <p>Secondary measures: Activity diary, which includes frequency and total duration of 5 specific exercise activities;<sup>8</sup></p> <p>Ambulatory activity monitor (triaxial accelerometer) 14-day results;<sup>8</sup></p> <p>6-Minute Walk Test (6MWT);</p>	<p>Patients were allocated to one of two groups, each of which consisted of 30-minute treatment sessions, with a maximum of 35 sessions/year.<sup>8</sup></p> <p>Experimental group: ParkFit program, aimed at generating a sustained increase in physical activity levels based on SCT.<sup>8</sup></p> <p>Physiotherapists were trained on theories of behavioral change, strategies for helping patients overcome barriers, and goal setting.<sup>8</sup></p> <p>Participants were given a ParkFit</p>	<p>There was not a statistically significant difference between groups on the LAPAQ.<sup>8</sup></p> <p>Quality of life (PDQ-39) also did not differ between the groups.<sup>8</sup></p> <p>The activity diary showed a mean increase of 1.5 hours of physical activity compared to baseline for the ParkFit group, as opposed to a mean increase of 30 minutes for the ParkSafe group.<sup>8</sup></p> <p>The activity monitor showed a mean 12% increase in</p>	<p>A research design that incorporated multiple aspects of the SCT produced lasting changes in physical activity levels for adults with PD.<sup>8</sup></p> <p>In a community-based exercise program, having participants actively create their own short and long term goals may increase self-regulation skills.<sup>8</sup> Signing a health contract with the group leader may also promote increased accountability.<sup>8</sup> Creating educational materials is an effective way to communicate both benefits and outcome expectations of increasing physical activity levels.<sup>8</sup></p>
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<p>Marten Munneke</p> <p>2013</p>			<p>Parkinson's Disease Questionnaire-19 (PDQ-39).<sup>8</sup></p> <p>Measured at baseline, 6, 12, 18, and 24 months.<sup>8</sup></p>	<p>educational workbook about the benefits of physical activity and suitable activities for those with PD.<sup>8</sup> It also contained a health contract with long term activity goals that were created and signed by the patient and physiotherapist together.<sup>8</sup> Goals were realistic, concrete, and individualized; and in coaching sessions, patient and therapist evaluated these goals and any experienced barriers.<sup>8</sup> Participants were also given an ambulatory activity monitor that uploads</p>	<p>time spent on physical activity compared to baseline at 24 months.<sup>8</sup></p> <p>The ParkFit group also had a mean change of +4.8 meters on the 6MWT.</p>	<p>Addressing these psychological determinants, in addition to increased motivation from observational learning and vicarious experiences in a group exercise environment, may help facilitate behavior change. Furthermore, incorporating an activity diary to the community program may also be effective and cost-effective for tracking trends in physical activity.<sup>8</sup></p>
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				<p>data to a personalized website so they can monitor their progress.<sup>8</sup> Monthly personal coaching sessions were led by a physiotherapist, and patients were encouraged to participate in group exercise to receive social support from other patients.<sup>8</sup></p> <p>Control group: ParkSafe program, which consisted of regular physiotherapy sessions and promoted safety of movements.<sup>8</sup> Participants received a ParkFit</p>		
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				brochure; and an active lifestyle was not explicitly encouraged. <sup>8</sup>		
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References:

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