

Walk With Ease Annotated Bibliography

Altpeter, M., Houenou, L. O., Martin, K. R., Schoster, B., & Callahan, L. F. (2011). Recruiting and retaining hard-to-reach populations: Lessons learned and targeted strategies from arthritis physical activity intervention studies. In *Arthritis Care and Research* (Vol. 63, Issue 7, pp. 927–928). <https://doi.org/10.1002/acr.20474>

A growing menu of physical activity programs offer adults with arthritis many choices that support self-management and facilitate improved functional mobility and health outcomes. Yet many of these programs have not been adequately evaluated among hard-to-reach populations, which may be due in part to recruitment challenges (1). Our research team conducted evaluations of 4 community-based interventions among adults with self-reported arthritis: the Arthritis Foundation Exercise Program, Active Living Every Day, Walk With Ease, and the Tai Chi Program (2-5). While our studies were not exclusively designed to recruit and retain hard-to-reach populations, our methods did target these groups. Our combined sample of 1,517 participants included rural residents (33%), African Americans (19%), men (13%), and those with a high school diploma or less (32%), and one study purposefully recruited employed participants. We share overarching approaches and describe strategies we found salient for specific subgroups.

Brady, T. J., Brick, M., Berktd, J., Sonnefeld, J., Gaddes, R., & Bartenfeld, T. (2016). Expanding the Reach of Evidence-Based Self-Management Education and Physical Activity Interventions: Results of a Cross-Site Evaluation of State Health Departments. *Health Promotion Practice, 17*(6), 871–879. <https://doi.org/10.1177/1524839916652844>

Participation in community-based self-management education and physical activity interventions has been demonstrated to improve quality of life for those who have arthritis and other chronic diseases. The Centers for Disease Control and Prevention Arthritis Program funded 21 state health departments to expand the reach (defined as the number of people who participate in interventions) of 10 evidence-based interventions in community settings. The Arthritis Centralized Evaluation assessed the strategies and tactics used by state health departments to expand the reach of these evidence-based interventions. The evaluation compared and contrasted processes used by the states to expand reach. Engaging multisite delivery system partners, prioritizing reach, embedding interventions within partners' routine operations, and collaborating across chronic disease program areas were all dissemination strategies that were correlated with expanded intervention reach. However, states also encountered challenges that limited their ability to successfully engage delivery systems as partners. These barriers included difficulty identifying delivery system partners and the lengthy time periods partners needed to adopt and embed the interventions.

Bruno, M., Cummins, S., Gaudiano, L., Stoos, J., & Blanpied, P. (2006). Effectiveness of two Arthritis Foundation programs: Walk With Ease, and YOU Can Break the Pain Cycle. *Clinical Interventions in Aging, 1*(3), 295–306. <https://doi.org/10.2147/ciia.2006.1.3.295>

Objective: To evaluate the effectiveness of two Arthritis Foundation programs: Walk With Ease (WWE) and YOU Can Break The Pain Cycle (PC).

Design: Quasi-experimental, repeated measures design. Retested at six weeks and four months.

Setting: Community based intervention.

Participants: Volunteer sample of 163 adults with arthritis recruited through mailings, newspapers, and flyers.

Interventions: Subjects participated in a 90 minute seminar (PC, Group A), a six-week walking program (WWE, Group B), or both programs (Group C).

Main outcome measures: Survey assessment of arthritis knowledge, general health, self-management activities, confidence, physical abilities, depression, health distress, and how arthritis affects their life. A Squat Test, a Six Minute Walk test, and a Timed Functional Walk Test were also administered.

Results: Subjects in Group B were more confident, less depressed, had less health distress, and less pain than subjects in Group A. Scores of Group C were between Group A and B scores. Differences in groups over time indicated that the WWE resulted in increased confidence, physical abilities, time spent in self-management activities and decreased pain and fatigue. All groups increased in walking endurance at six weeks, and increased in health distress at four months.

Conclusion: Subjects in different programs differed on impact of arthritis. These programs provide effective arthritis management opportunities.

Callahan, L. F. (2009). Physical activity programs for chronic arthritis. In *Current Opinion in Rheumatology* (Vol. 21, Issue 2, pp. 177–182).
<https://doi.org/10.1097/BOR.0b013e328324f8a8>

The purpose of this review is to evaluate recent trials and studies of different types of physical activity programs for individuals with chronic arthritis and to discuss recommendations and findings from systematic reviews of physical activity interventions. Recent randomized control trials of different multicomponent land-based, aquatic, Tai Chi, and strength training programs report moderate benefits after intervention and at 6 and 12 months for individuals with various types of chronic arthritis. Reported benefits include increasing physical activity, strength, and balance, improving functional status, reducing symptoms, and enhancing self-efficacy. Recent systematic reviews recommend evidence-based, land-based, aquatic, Tai Chi, and strength training programs for individuals with arthritis. There is a preponderance of strong scientific evidence that both aerobic and muscle strengthening exercises, alone or in combination, are safe and moderately effective for individuals with chronic arthritis.

Callahan, L. F., Rivadeneira, A., Altpeter, M., Vilen, L., Cleveland, R. J., Sepulveda, V. E., Hackney, B., Reuland, D. S., & Rojas, C. (2016). Evaluation of the Arthritis Foundation's Camine Con Gusto Program for Hispanic Adults With Arthritis. *Hispanic Health Care International*, 14(3), 132–140. <https://doi.org/10.1177/1540415316665202>

Camine Con Gusto (CCG) is the Hispanic version of an evidence-based walking program for people with arthritis. This study examined CCG outcomes, feasibility, tolerability, safety, and acceptability and potential tailoring. A pre and post 6-week evaluation was

conducted in Hispanic people with arthritis. Outcomes included pain, stiffness, fatigue, functional capacity, helplessness, and self-efficacy. A formative evaluation with program participants and key stakeholders explored program tailoring. Participants' mean age was 46.9 years, 44.4% had a high school degree or less, 2.5% were born in United States, 60.1% spoke only Spanish, and 74.7% were female. Moderate effect sizes were found: 0.50 for pain, 0.75 for fatigue, 0.49 for stiffness, 0.33 for function, 0.26 for helplessness, and 0.24 for self-efficacy. There were 285 participants recruited with an 82% 6-week retention (feasibility), no adverse events were reported (safety), and 98% reported program satisfaction (acceptability). Recommended adaptations included simpler language, more pictures and content addressing nutrition and chronic conditions, shortened materials, and inclusion of motivational strategies. CCG showed improvement in outcomes in Hispanic individuals comparable to those noted in non-Hispanic White and Black individuals with arthritis.

Callahan, L. F., Shreffler, J. H., Altpeter, M., Schoster, B., Hootman, J., Houenou, L. O., Martin, K. R., & Schwartz, T. A. (2011). Evaluation of group and self-directed formats of the arthritis foundation's Walk With Ease program. *Arthritis Care and Research*, 63(8), 1098–1107. <https://doi.org/10.1002/acr.20490>

OBJECTIVE: To evaluate the effects of a revised 6-week walking program for adults with arthritis, Walk With Ease (WWE), delivered in 2 formats, instructor-led group or self-directed.

METHODS: In an observational pre-post study design, 462 individuals with self-reported arthritis selected either a group format (n = 192) or a self-directed (n = 270) format. Performance and self-reported outcomes were assessed at baseline and at 6 weeks. Self-reported outcomes were assessed at 1 year. Adjusted mean outcome values for group and self-directed participants were determined using regression models, adjusting for covariates.

RESULTS: At 6 weeks, significant adjusted mean improvements ($P < 0.05$) were seen for nearly all self-report and performance measures in both formats. Modest to moderate effect sizes (ES) were seen for disability (ES 0.16-0.23), pain, fatigue, and stiffness (ES 0.21-0.40), and helplessness (ES 0.24-0.28). The Arthritis Self-Efficacy (ASE) pain and symptom scales had modest improvements (ES 0.09-0.21). The performance measures of strength (ES 0.29-0.35), balance (ES 0.12-0.36), and walking pace (ES 0.12-0.32) all showed modest to moderate improvements. No adverse events were reported for either format. At 1 year, both formats showed modest improvement in ASE pain, but there were 5 outcomes where self-directed participants showed significant improvement, while the group participants did not.

CONCLUSION: The revised WWE program decreases disability and improves arthritis symptoms, self-efficacy, and perceived control, balance, strength, and walking pace in individuals with arthritis, regardless of whether they are taking a group class or doing the program as self-directed walkers. At 1 year, some benefits are maintained, particularly among the self-directed. This is a safe, easy, and inexpensive program to promote community-based physical activity.

Cisternas, M. G., Murphy, L. B., & Carlson, S. A. (2019). Walking and the 2-year risk of functional decline: An observational study of US adults with arthritis. *Preventive Medicine, 119*, 100–107. <https://doi.org/10.1016/j.ypmed.2018.12.022>

Recent studies of middle age and older adults with, or at risk for, arthritis demonstrate that engaging in physical activities like walking - even at levels below the current aerobic physical activity guideline of ≥ 150 min of moderate-intensity activity - can protect against onset of functional limitations. Using a large nationally representative sample of US adults ≥ 18 years with arthritis, we investigated whether, among those not meeting the aerobic activity guideline, walking ≥ 10 min/week vs. < 10 min/week reduced the risk of six outcomes (fair/poor health and five physical limitations) over 2 years. We conducted a prospective cohort study among adults with arthritis in the 2010 National Health Interview Survey who participated in the 2011-2012 Medical Expenditure Panel Survey (n = 1426). Among adults not meeting the guideline, we examined the effect of walking on risk of developing each of six outcomes using hazard ratios (HRs) estimated from multivariable Cox regression models. Among adults with arthritis not meeting the guideline, compared to walking < 10 min/week, walking ≥ 10 min/week was associated with a statistically significant decreased risk for all five limitations: walking three blocks (HR: 0.3 [95% CI = 0.2-0.6]), climbing 10 stairs (HR: 0.5 [95% CI = 0.3-0.8]), stooping/kneeling (HR: 0.4 [95% CI = 0.2-0.8]), reaching overhead (HR: 0.5 [95% CI = 0.5-0.8]), and grasping (HR: 0.4 [95% CI = 0.2-0.7]). The decrease in risk was not significant for fair/poor health. Even limited walking may prevent the onset of physical limitations among adults with arthritis of all ages not meeting the aerobic activity guideline.

Clinton-Lont, J., Kaye, C., & Martinson, A. (n.d.). *A Primary Care Approach to Managing Chronic Noncancer Pain*. www.fedprac.com

The Primary Care Chronic Pain Program (PC-CPP) of the Women's Primary Care Clinics at the VA Salt Lake City Health Care System (VASLCHCS) in Utah was the first VA primary care clinical service to incorporate patient participation in obtaining chronic opioid medications in the treatment of chronic noncancer pain. In addition, the program used a multimodality approach for chronic pain treatment and veteran education about the relationship between physical and mental health issues.

Conte, K. P., Held, F., Pipitone, O., & Bowman, S. (2019). The Feasibility of Recruiting and Training Lay Leaders During Real-World Program Delivery and Scale-up: The Case of Walk With Ease. *Health Promotion Practice, 20*(1), 1-10. <https://doi.org/10.1177/1524839919840004>

INTRODUCTION: To maximize limited resources, many health promotion programs are designed to be delivered by volunteer lay leaders. But this model poses challenges to implementation in real-world settings and barriers to successfully scaling-up programs. This study examines the current lay leader training model for Walk With Ease, a Centers for Disease Control and Prevention-funded evidence-based arthritis program delivered at-scale.

METHOD: Recruited volunteers (n = 106) opted into free online or in-person training and agreed to deliver one Walk With Ease program within the following year-only 49%,

however, did. Using logistic regression models and qualitative interviews, we explored predictors of volunteer delivery.

RESULTS: Volunteers had higher odds of delivering programs if they trained online (odds ratio [OR] = 9.04, 95% confidence interval [CI: 2.30, 48.36]), previously taught health programs (OR = 15.52, 95% CI [3.51, 103.55]) or trained in the second year of implementation (OR = 27.08, 95% CI [2.63, 415.78]). Qualitative findings underscored that successful volunteers were readied by their previous health education experience.

CONCLUSIONS: While online training modes appear effective to prepare experienced volunteers, lay leaders required additional support. This calls into question whether lay-led delivery models are suitable for scaling-up programs with limited resources. Given the many lay-led health interventions for chronic disease self-management, investing in common training and infrastructures for lay leader development could advance the quality and sustainability of real-world program delivery.

Conte, K. P., Marie Harvey, S., & Turner Goins, R. (2017). "During early implementation you just muddle through": factors that impacted a statewide arthritis program's implementation. *Translational Behavioral Medicine*, 7(4), 804–815. <https://doi.org/10.1007/s13142-017-0478-0>

The need to scale-up effective arthritis self-management programs is pressing as the prevalence of arthritis increases. The CDC Arthritis Program funds state health departments to work with local delivery systems to embed arthritis programs into their day-to-day work. To encourage organizational ownership and sustainability of programs, funding is restricted to offset program start-up costs. The purpose of this study was to identify factors that impacted the success of implementing an evidence-based arthritis self-management program, funded by the CDC Arthritis Program, into the Oregon Extension Service. We interviewed staff and partners involved in implementation who had and had not successfully delivered Walk With Ease (N = 12) to identify barriers and facilitators to scaling-up. Document analysis of administrative records was used to triangulate and expand on findings. Delivery goals defined by the funder were not met in Year 1: only 3 of the expected 28 programs were delivered. Barriers to implementation included insufficient planning for implementation driven by pressure to deliver programs and insufficient resources to support staff time. Facilitators included centralized administration of key implementation activities and staffs' previous experience implementing new programs. The importance of planning and preparing for implementation cannot be overlooked. Funders, however, eager to see deliverables, continue to define implementation goals in terms of program reach, exclusive of capacity-building. Lack of capacity-building can jeopardize staff buy-in, implementation quality, and sustainability. Based on our findings coupled with support from implementation literature, we offer recommendations for future large-scale implementation efforts operating under such funding restrictions.

Conte, K. P., Odden, M. C., Linton, N. M., & Marie Harvey, S. (2016). Effectiveness of a scaled-up arthritis self-management program in Oregon: Walk with ease. *American Journal of Public Health*, 106(12), 2227–2230. <https://doi.org/10.2105/AJPH.2016.303478>

OBJECTIVES: To evaluate the effectiveness of Walk With Ease (WWE), an evidence-based arthritis self-management program that was scaled up in Oregon in 2012 to 2014.
METHODS: Guided by the RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework, we collected participant surveys and attendance records and conducted observations. Preprogram and postprogram, participants self-reported pain and fatigue (scale: 0-10 points; high scores indicate more pain and fatigue) and estimated episodes of physical activity per week in the last month.

RESULTS: Recruitment successfully reached the targeted population—sedentary adults with arthritis (n = 598). Participants reported significant reduction in pain (-0.47 points; P = .006) and fatigue (-0.58 points; P = .021) and increased physical activity (0.86 days/week; P < .001). WWE was adopted by workplaces and medical, community, faith, and retirement centers. Most WWE programs were delivered with high fidelity; average attendance was 47%.

CONCLUSIONS: WWE is suitable for implementation by diverse organizations. Effect sizes for pain and fatigue were less than those in the original WWE studies, but this is to be expected for a large-scale implementation. Public Health Implications. WWE can be effectively translated to diverse, real-world contexts to help sedentary adults increase physical activity and reduce pain and fatigue.

Conte, & Kathleen P. (n.d.). *Title: Factors That Influence the Statewide Scaling-up of an Evidence-Based Arthritis Self-Management Program: Walk With Ease.*

Objectives. To evaluate the effectiveness of Walk With Ease (WWE), an evidence-based arthritis self-management program that was scaled up in Oregon in 2012 to 2014.

Methods. Guided by the RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework, we collected participant surveys and attendance records and conducted observations. Preprogram and postprogram, participants self-reported pain and fatigue (scale: 0–10 points; high scores indicate more pain and fatigue) and estimated episodes of physical activity per week in the last month.

Results. Recruitment successfully reached the targeted population—sedentary adults with arthritis (n = 598). Participants reported significant reduction in pain (-0.47 points; P = .006) and fatigue (-0.58 points; P = .021) and increased physical activity (0.86 days/week; P < .001). WWE was adopted by workplaces and medical, community, faith, and retirement centers. Most WWE programs were delivered with high fidelity; average attendance was 47%.

Conclusions. WWE is suitable for implementation by diverse organizations. Effect sizes for pain and fatigue were less than those in the original WWE studies, but this is to be expected for a large-scale implementation.

Public Health Implications. WWE can be effectively translated to diverse, real-world contexts to help sedentary adults increase physical activity and reduce pain and fatigue.

Falck, R. S. (2014). *Scholar Commons The Effects of Arthritis Foundation's "Walk With Ease" Program on Cognitive Function.* <https://scholarcommons.sc.edu/etd>

Physical activity (PA) is believed to improve cognitive function, particularly executive function, in older adults. However, few interventions in community settings have been performed to improve executive function through PA. The purpose of this study was to

determine the effects of a community-based walking program on executive function in older adults (60+ years). Older adults from senior centers throughout Lexington County, SC were recruited for participation in this intervention. Exclusion criteria included currently exercising >30 minutes and exercising $\geq 2x/week$ or scoring ≤ 25 on the Mini-Mental State Exam. The intervention consisted of an evidenced-based community walking program, the Arthritis Foundation's "Walk With Ease", which met two times a week for 9 weeks. Participants were tested at baseline and follow-up on the following measures: executive function (Stroop Color-Word, Trail Making Test A and B, Semantic Fluency, and Phonetic Fluency), physical performance (Timed Up-and-Go, Gait Speed, Chair Stand), depressive symptoms, disease management self-efficacy, and PA levels. Participants also reported demographics and subjective health status. Paired t-tests and repeated measures ANOVA were conducted for all outcomes of interest, along with effect sizes. Participants (N=56) were predominantly female (80.4%) and overweight (BMI= 29.81 ± 5.92). No significant improvements for any cognitive function measure or physical performance measure were found following the intervention. Repeated measures ANOVA revealed a significant improvement following the intervention for both PA (B= 17.79 ± 5.42 MET hours/week, $p < 0.01$) and disease management self-efficacy (B= 5.77 ± 2.53 , $p = 0.03$). The results of this community-based single group pretest-posttest study does not provide enough evidence that the WWE is associated with improvements in cognitive function or improvements in physical performance. This study indicates that WWE increases PA levels and disease management self-efficacy of older adults. Larger studies of longer duration may be needed to reveal impacts on cognitive function.

Hootman, J. M., Helmick, C. G., & Brady, T. J. (2012). A public health approach to addressing arthritis in older adults: The most common cause of disability. *American Journal of Public Health, 102*(3), 426–433. <https://doi.org/10.2105/AJPH.2011.300423>

Arthritis is highly prevalent and is the leading cause of disability among older adults in the United States owing to the aging of the population and increases in the prevalence of risk factors (e.g., obesity). Arthritis will play a large role in the health-related quality of life, functional independence, and disability of older adults in the upcoming decades. We have emphasized the role of the public health system in reducing the impact of this large and growing public health problem, and we have presented priority public health actions.

Jones, D. L. (2011). A public health perspective on physical activity after total hip or knee arthroplasty for osteoarthritis. *Physician and Sportsmedicine, 39*(4), 70–79. <https://doi.org/10.3810/psm.2011.11.1941>

Total hip arthroplasty (THA) and total knee arthroplasty (TKA) are common treatments for osteoarthritis (OA) with good-to-excellent outcomes. As the US population ages, rates of OA and THA/TKA will continue to rise. People with OA and THA/TKA are less active than those without arthritis or arthroplasty, respectively. With the numerous documented health benefits obtained from physical activity, it is imperative from a public health perspective that patients are sufficiently active to maintain health after surgery. Increasing moderate-intensity physical activity is a safe, efficacious, and cost-effective mechanism for improving health and reducing health care costs in this population. The return to

leisure/sporting activities after THA/TKA is not as well studied as other aspects of functional recovery. In particular, no evidence-based guidelines for physical activity after THA/TKA are available. Most recommendations have been derived from cross-sectional surveys of orthopedic surgeons. Based on the literature, the general consensus for recommendations appears to be to: 1) return to low- to moderate-intensity activities and no-, low-, or intermediate-impact activities within 3 to 6 months postoperatively, 2) discourage high-impact activities, 3) avoid high-contact athletic activities, and 4) educate rather than dissuade patients from resuming leisure/sporting activities. Sports medicine physicians are in an ideal position to counsel patients in regard to leading active lifestyles. The physician can evaluate and treat any remaining functional limitations postoperatively, as well as prescribe the appropriate dose (ie, type, intensity, frequency, and duration) of physical activity. The 2008 Physical Activity Guidelines for Americans can help guide physicians in prescribing the appropriate dose of activity. Finally, physicians can refer patients to evidence-based, community-delivered group exercise and/or behavioral change interventions that are approved by the Centers for Disease Control and Prevention for people with arthritis.

Jones, L. C., Watkins, Y., & Alva, D. (2018). Operation Change: A New Paradigm Addressing Behavior Change and Musculoskeletal Health Disparities. *Journal of Racial and Ethnic Health Disparities*, 5(6), 1264–1272. <https://doi.org/10.1007/s40615-018-0473-2>

BACKGROUND: In this study, we examined the implementation and efficacy of Operation Change, a community-based, culturally sensitive program to stimulate behavioral changes in activity level and improve musculoskeletal health in African-American (AA) and Hispanic/Latina (H/L) women with obesity and early-stage osteoarthritis.

METHODS: Sixty-two women (32 AA and 30 H/L), 40-75 years old, with nontraumatic knee pain and body mass index values > 30, participated in a 12-week program of presentations, motivational interviewing, goal setting, and physical activities. Assessments (at 0, 6, and 12 weeks) included a demographic questionnaire, physical assessment, timed 50-ft walking test, Western Ontario and McMaster Universities Arthritis Index (WOMAC), Short Form-36 Health Survey (SF-36), 8-Item Physical Health Questionnaire (PHQ-8), and motivational interview assessment.

RESULTS: Walking time improved significantly for H/L women ($P < 0.0001$) but not AA women ($P = 0.0759$). Both groups had significant mean weight loss ($P < 0.05$) with high variability among individuals. WOMAC scores for both groups indicated decreased pain ($P < 0.0001$) and stiffness ($P < 0.0001$) and improved physical functioning ($P < 0.0001$) by 12 weeks. SF-36 results were comparable to those of the WOMAC. PHQ-8 results improved significantly for H/L women ($P < 0.0001$) but not AA women ($P = 0.077$).

Participants scored the motivational interviewing component of the program favorably.

CONCLUSIONS: Participation in Operation Change increased physical activity, resulting in improvements in pain and function scores. This supports a new paradigm for behavioral modification that helps AA and H/L women take an active role in living with osteoarthritis.

Licensee OA Publishing London 2013. Creative Commons Attribution License (CC-BY) The role of walking programmes in the conservative management of lower limb osteoarthritis: A review CJ Minns Lowe. (n.d.).*

Introduction: People with long-term musculoskeletal conditions such as osteoarthritis are increasing in prevalence, are significantly more likely to be less active than adults without arthritis and are at increased risk of either having or developing further co-morbidity. More than half of adults with arthritis undertake minimal/little walking per week. Walking is popular and can substantially lower the risk of many chronic diseases. This review aims to summarise the available literature regarding the role of walking programmes for people with osteoarthritis.

Materials and methods: PUBMED and the Cochrane library searches were performed to locate articles. Key terms used in PUBMED searches included ‘walking program*’, ‘physical activity*’ and ‘osteoarthritis’ whilst Cochrane searches included the same search terms without truncation and also by browsing records under ‘osteoarthritis’. Searches were performed in English. Reference lists of identified articles were checked to identify further articles for the review.

Results: Seven studies were identified and included: three randomised clinical trials, two pilot or feasibility studies (one uncontrolled) and two quasi-experimental studies. The study characteristics, including participants, interventions, outcomes and summarised findings, are presented. The theoretical rationales, content and dosages showed wide variation.

Compliance rates decreased over time. Attrition rates ranged from 10% to 47%.

Conclusion: Limited evidence currently suggests that walking programmes can safely improve pain and quality of life. Programmes improve function and quadriceps strength in the short term and may have a role in weight management. Short-term improvements in function may not be maintained in the longer term. Such programmes can offer an inexpensive, accessible, flexible treatment and self-management option; however many treatment parameters require further investigation.

LL-09 Childhood arthritis and rheumatology research alliance/lupus foundation of america childhood onset systemic lupus erythematosus research prioritization survey. (2018). *Lupus Science & Medicine*, 5(Suppl 2), A71–A71. <https://doi.org/10.1136/lupus-2018-lsm.119>

Background: Compared to adult-onset SLE, childhood onset SLE (cSLE) tends to present with more severe disease and more widespread organ involvement. Additionally, cSLE associated with higher mortality and damage accrual. However, despite the severity of the disease few commonly used SLE medications have been rigorously studied in children, and important knowledge gaps remain concerning the epidemiology, natural history, pathophysiology, genetics and optimal treatment of cSLE. In order to identify high priority areas for future research in cSLE, the Lupus Foundation of America (LFA) and the Childhood Arthritis and Rheumatology Research Alliance (CARRA) partnered to perform and cSLE research prioritization survey.

Methods: Using information from the 2013 CARRA Lupus Group Research Prioritization Exercise and the most recent LFA Parent and Caregiver Survey, we identified areas of clinical and research need in cSLE. A work group was assembled to develop and refine survey questions which ask clinicians and researchers to rank research topics that are most

urgent advance patient outcomes. The survey was programmed using Qualtrics software. The survey was beta tested by a separate group of clinicians and researchers. The proposed survey administration was deemed not to be human subjects research by the University of Utah and Nationwide Children's Institutional Review Boards. Descriptive statistics will be used to analyze survey responses.

Results: The survey will be administered to members of CARRA and also to collaborators in the inflammatory skin disease interest group of the Pediatric Dermatology Research Association (PeDRA) and the glomerulonephritis interest group of the Midwestern Pediatric Nephrology Consortium (MWPNC). Together, these organizations include over 800 clinicians and researchers.

Conclusions: The results of the CARRA/LFA Research Prioritization Survey will be used to guide funding programs for cSLE within the Lupus Foundation of America, to share with potential donors, and to use in advocacy efforts promoting state and federal funding for cSLE.

Murphy, S. L., Robinson-Lane, S. G., & Niemiec, S. L. S. (2016). Knee and Hip Osteoarthritis Management: A Review of Current and Emerging Non-Pharmacological Approaches. In *Current Treatment Options in Rheumatology* (Vol. 2, Issue 4, pp. 296–311). Springer International Publishing. <https://doi.org/10.1007/s40674-016-0054-7>

Osteoarthritis (OA) is a leading cause of disability in the USA. Numerous clinical practice guidelines specify non-pharmacological strategies as the core management approach for OA. Although several of these strategies are efficacious, clinical practice remains primarily focused on analgesic use and invasive treatments such as joint replacements. This practice gap may be due to several factors such as a lack of accessibility or awareness of non-pharmacological interventions in clinical care, concentration on pain alone—which neglects other disability-related symptoms such as fatigue, and sleep difficulty, and placement of prevention and wellness with this lifelong disease as lower priority on the part of providers and payers. As referral patterns to rehabilitation for OA are scant, future research should focus on how to package established non-pharmacological interventions and increase accessibility at the point of care when patients are seeking services. Providers then would have the means to link patients to the plethora of community resources for OA management. Furthermore, a more holistic approach to symptom management that targets physical activity, diet, education, and behavior change is needed, with interdisciplinary healthcare professionals playing a larger role in tailoring non-pharmacologic interventions to individuals.

Nyrop, K. A., Deal, A. M., Choi, S. K., Wagoner, C. W., Lee, J. T., Wood, A., Anders, C., Carey, L. A., Dees, E. C., Jolly, T. A., Reeder-Hayes, K. E., & Muss, H. B. (2018). Measuring and understanding adherence in a home-based exercise intervention during chemotherapy for early breast cancer. *Breast Cancer Research and Treatment*, 168(1), 43–55. <https://doi.org/10.1007/s10549-017-4565-1>

PURPOSE: Ensuring and measuring adherence to prescribed exercise regimens are fundamental challenges in intervention studies to promote exercise in adults with cancer. This study reports exercise adherence in women who were asked to walk 150 min/week

throughout chemotherapy treatment for early breast cancer. Participants were asked to wear a Fitbit™ throughout their waking hours, and Fitbit steps were uploaded directly into study computers.

METHODS: Descriptive statistics are reported, and both unadjusted and multivariable linear regression models were used to assess associations between participant characteristics, breast cancer diagnosis, treatment, chemotherapy toxicities, and patient-reported symptoms with average Fitbit steps/week.

RESULTS: Of 127 women consented to the study, 100 had analyzable Fitbit data (79%); mean age was 48 and 31% were non-white. Mean walking steps were 3956 per day. Nineteen percent were fully adherent with the target of 6686 steps/day and an additional 24% were moderately adherent. In unadjusted analysis, baseline variables associated with fewer Fitbit steps were: non-white race ($p = 0.012$), high school education or less ($p = 0.0005$), higher body mass index ($p = 0.0024$), and never/almost never drinking alcohol ($p = 0.0048$). Physical activity variables associated with greater Fitbit steps were: pre-chemotherapy history of vigorous physical activity ($p = 0.0091$) and higher self-reported walking minutes/week ($p < 0.001$), and higher outcome expectations from exercise ($p = 0.014$). Higher baseline anxiety ($p = 0.03$) and higher number of chemotherapy-related symptoms rates "severe/very severe" ($p = 0.012$) were associated with fewer steps. In multivariable analysis, white race was associated with 12,146 greater Fitbit steps per week ($p = 0.004$), as was self-reported walking minutes prior to start of chemotherapy ($p < 0.0001$).

CONCLUSIONS: Inexpensive commercial-grade activity trackers, with data uploaded directly into research computers, enable objective monitoring of home-based exercise interventions in adults diagnosed with cancer. Analysis of the association of walking steps with participant characteristics at baseline and toxicities during chemotherapy can identify reasons for low/non-adherence with prescribed exercise regimens.

Nyrop, Kirsten A., Callahan, L. F., Cleveland, R. J., Arbeeva, L. L., Hackney, B. S., & Muss, H. B. (2017). Randomized Controlled Trial of a Home-Based Walking Program to Reduce Moderate to Severe Aromatase Inhibitor-Associated Arthralgia in Breast Cancer Survivors. *The Oncologist*, 22(10), 1238–1249. <https://doi.org/10.1634/theoncologist.2017-0174>

BACKGROUND: In postmenopausal women diagnosed with breast cancer (BC), most BC tumors are hormone receptor positive and guidelines recommend adjuvant endocrine therapy that includes an aromatase inhibitor (AI). This study investigates the impact of a 6-week, home-based, self-directed walking program on the commonly reported side effect of AI-associated arthralgia (AIAA).

MATERIALS AND METHODS: In this phase II trial, consented BC patients were randomized to walking Intervention ($n = 31$) or Wait List Control (WLC; $n = 31$). Eligibility criteria included: stage 0-III BC, on AI for at least 4 weeks, ≥ 3 on a 5-point scale inquiring about joint symptom intensity "at its worst," and exercising ≤ 150 minutes per week. Outcomes were self-reported joint symptoms and psychosocial measures. Analyses comparing Intervention and WLC groups were conducted on an intention-to-treat basis to assess intervention impact at 6 weeks (postintervention) and at 6-months follow-up. Adjusted means were calculated to assess differences in two groups.

RESULTS: In our final sample ($n = 62$), mean age was 64 years, 74% were white, and 63% had a body mass index of 30 or higher. At postintervention, Intervention group participants reported significantly increased walking minutes per week, reduced stiffness, less difficulty with activities of daily living (ADL), and less perceived helplessness in managing joint symptoms. At 6-months follow-up (postwalking period in both Intervention and WLC), walking minutes per week had decreased significantly; however, improvements in stiffness and difficulty with ADLs were maintained.

CONCLUSION: This study adds to the growing evidence base suggesting exercise as a safe alternative or adjunct to medications for the management of AIAA.

IMPLICATIONS FOR PRACTICE: Breast cancer survivors whose adjuvant endocrine treatment includes an aromatase inhibitor (AI) often experience the side effect of AI-associated arthralgia (AIAA). This study investigates the impact of a 6-week, home-based, self-directed walking program in the management of AIAA. Compared with Wait List Control, women in the Intervention group reported significantly increased walking minutes per week, reduced stiffness, less difficulty with activities of daily living, and less perceived helplessness in managing joint symptoms. This study adds to the growing evidence base suggesting exercise as a safe alternative or adjunct to medications for the management of AIAA.

Nyrop, Kirsten A., Callahan, L. F., Rini, C., Altpeter, M., Hackney, B., DePue, A., Wilson, A., Schechter, A., & Muss, H. B. (2016). Aromatase inhibitor associated arthralgia: the importance of oncology provider-patient communication about side effects and potential management through physical activity. *Supportive Care in Cancer*, 24(6), 2643–2650. <https://doi.org/10.1007/s00520-015-3065-2>

PURPOSE: Breast cancer survivors on aromatase inhibitors (AI) often experience side effects of joint pain, stiffness, or achiness (arthralgia). This study presents findings from a qualitative study of survivors on an AI regarding their knowledge of potential joint pain side effects and how both AI side effects and their management through moderate physical activity could be discussed during routine visits with their oncology provider.

METHODS: Qualitative data from semi-structured interviews were content analyzed for emergent themes. Descriptive statistics summarize sample characteristics.

RESULTS: Our sample included 36 survivors, mean age of 67 (range 46-87); 86 % Caucasian and 70 % had education beyond high school. AI experience are as follows: 64 % anastrozole/Arimidex, 48 % letrozole/Femara, and 31 % exemestane/Aromasin.

Participants expressed interest in having more information about potential joint pain side effects when the AI was prescribed so they could understand their joint symptoms when they appeared or intensified. They were relieved to learn that their joint symptoms were not unusual or "in their head." Participants would have been especially motivated to try walking as a way to manage their joint pain if physical activity had been recommended by their oncologist.

CONCLUSIONS: Breast cancer survivors who are prescribed an AI as part of their adjuvant treatment want ongoing communication with their oncology provider about the potential for joint pain side effects and how these symptoms may be managed through regular physical activity. The prescription of an AI presents a "teachable moment" for

oncologists to recommend and encourage their patients to engage in regular physical activity.

Nyrop, Kirsten A., Callahan, L. F., Rini, C., Altpeter, M., Hackney, B., Schecher, A., Wilson, A., & Muss, H. B. (2015). Adaptation of an evidence-based arthritis program for breast cancer survivors on aromatase inhibitor therapy who experience joint pain. *Preventing Chronic Disease, 12*(6). <https://doi.org/10.5888/pcd12.140535>

Adding aromatase inhibitors (AIs) to adjuvant treatment of postmenopausal women with hormone-receptor-positive breast cancer significantly reduces cancer recurrence. A common side effect of AIs is noninflammatory joint pain and stiffness (arthralgia) similar to arthritis symptoms. An evidence-based walking program developed by the Arthritis Foundation - Walk With Ease (WWE) - reduces arthritis-related joint symptoms. We hypothesized that WWE may also reduce AI-associated arthralgia. However, the potential for different barriers and facilitators to physical activity for these 2 patient populations suggested a need to adapt WWE before testing it with breast cancer survivors. We conducted qualitative research with 46 breast cancer survivors to explore program modification and inform the development of materials for an adapted program (Walk With Ease-Breast Cancer). Our process parallels the National Cancer Institute's Research-Tested Intervention Programs (RTIPs) guidelines for adapting evidence-based programs for cancer populations. Findings resulted in a customized 8-page brochure to supplement existing WWE materials

Nyrop, Kirsten A., Charnock, B. L., Martin, K. R., Lias, J., Altpeter, M., & Callahan, L. F. (2011). Effect of a six-week walking program on work place activity limitations among adults with arthritis. *Arthritis Care and Research, 63*(12), 1773–1776. <https://doi.org/10.1002/acr.20604>

OBJECTIVE: To conduct an exploratory evaluation of the impact of the Arthritis Foundation's evidence-based Walk With Ease (WWE) program on work place activity limitations of adults with self-reported or doctor-diagnosed arthritis.

METHODS: WWE participants who were self-identified as "employed" completed the Workplace Activity Limitation Scale (WALS) at 6-week (postintervention; n = 94) and 1-year followup (n = 69). Paired t-tests were used to determine whether reduced work place limitations were reported at 6 weeks and maintained at 1-year followup.

RESULTS: Participants were on average age 55 years, 88% women, and 61% white. The mean body mass index was 32 kg/m², and 81% had more than a high school education. Overall WALS scores improved significantly from a mean \pm SD of 6.7 \pm 3.99 at baseline to 5.5 \pm 4.20 at 6-week followup (P < 0.001, effect size 0.30). Improvements were maintained at 1-year followup, i.e., no change from 6-week followup (P = 0.87). Work place activities reported by participants as "some" or "a lot" of difficulty at baseline, i.e., "crouch/bend/kneel/work in awkward positions," "stand for long periods," and "lift/carry/move objects," showed some of the highest improvements at 6 weeks. "Concentrate/keep your mind on the job" also improved significantly, although it was not rated as a substantial difficulty at baseline.

CONCLUSION: Our study provides encouraging evidence that WWE, a brief, low-cost, and easy-to-do community-based walking program, may provide both immediate and sustained benefits for people with self-reported arthritis who also report a range of work place limitations related to their arthritis symptoms.

Nyrop, Kirsten A., Cleveland, R., & Callahan, L. F. (2014b). Achievement of exercise objectives and satisfaction with the Walk with Ease program-group and self-directed participants. *American Journal of Health Promotion*, 28(4), 228–230.
<https://doi.org/10.4278/ajhp.120920-ARB-453>

PURPOSE: This study presents group (instructor-led) and self-directed (nongroup) participant achievement of exercise objectives and satisfaction with the Arthritis Foundation's Walk With Ease (WWE) program at 6 weeks postintervention and 1-year follow-up.

DESIGN: Secondary data analysis.

SETTING: Rural and urban counties in North Carolina.

SUBJECTS: Four hundred sixty-two adults with self-reported joint pain/stiffness or physician-diagnosed arthritis, age ≥ 18 years, no serious medical condition, no cognitive impairments, English speaking. Intervention. WWE is a 6-week community-based walking program offered in two formats-group and self-directed.

MEASURES: Self-report measures collected at baseline, 6 weeks, and 1 year.

ANALYSIS: Descriptive statistics, χ^2 and t-tests.

RESULTS: Individuals self-selected either group ($n = 192$) or self-directed ($n = 270$) format. On average, participants were age 67, Caucasian (70%), and female (88%). Mean minutes per walk increased from 16.7 at baseline to 34.2 minutes at 1 year among group participants, and from 16.5 to 33.7 minutes among self-directed. At 1 year, 59.6% of group and 69.3% of self-directed participants reported continued walking ($p = .06$). Group participants were more likely than self-directed to do recommended stretching ($p < .02$) and warm-up/cool-down exercises ($p < .01$).

CONCLUSION: Group and self-directed participants have similar self-reported walking outcomes but have some differences in their utilization of WWE recommendations.

Nyrop, Kirsten A., Muss, H. B., Hackney, B., Cleveland, R., Altpeter, M., & Callahan, L. F. (2014). Feasibility and promise of a 6-week program to encourage physical activity and reduce joint symptoms among elderly breast cancer survivors on aromatase inhibitor therapy. *Journal of Geriatric Oncology*, 5(2), 148–155.
<https://doi.org/10.1016/j.jgo.2013.12.002>

BACKGROUND: National guidelines suggest that women with hormone receptor positive breast cancer be considered for adjuvant endocrine treatment with an aromatase inhibitor (AI). Joint symptoms (arthralgia) are a common AI side-effect. There is a need for effective approaches to arthralgia management that enable survivors to remain on AI therapy while optimizing as pain-free a life as possible. This feasibility study investigates a 6-week self-directed walking program in a sample of elderly female breast cancer survivors on AIs reporting joint pain.

INTERVENTION: Walk With Ease (WWE) goal--minimum 30 min of walking 5 days a week (150 min per week). Eligibility: age >65; Stage I-III breast cancer; ≥ 3 months of AI therapy; self-reported joint pain/stiffness.

MEASURES: (1) walking--number of days/week and number of minutes/walk, (2) visual analog scales (VAS) for joint pain, fatigue and stiffness, and (3) arthritis self-efficacy (ASE) to manage joint pain and fatigue.

STATISTICS: t-tests, correlation coefficients and effect sizes.

RESULTS: Sample target of 20 was achieved--mean age 71 (65-87), 85% Caucasian, mean BMI 29. Proportion walking 150 min/week increased from 21% at baseline to 50% at 6 weeks ($p < 0.001$). Mean joint pain at baseline (39.7 ± 26.9) decreased 10% ($p = 0.63$), fatigue (37.4 ± 33.3) decreased 19% ($p = 0.31$), joint stiffness (46.1 ± 27.2) decreased 32% ($p = 0.07$).

CONCLUSIONS: A self-directed walking program among elderly breast cancer survivors on AI therapy significantly increased total time of walking per week over a 6 week period. Joint pain, stiffness, and fatigue also decreased, although not significantly. Testing within a larger sample is warranted.

Pinheiro, L. C., Callahan, L. F., Cleveland, R. J., Edwards, L. J., & Reeve, B. B. (2016a). The performance and association between patient-reported and performance-based measures of physical functioning in research on individuals with arthritis. *Journal of Rheumatology*, 43(1), 131–137. <https://doi.org/10.3899/jrheum.150432>

OBJECTIVE: To evaluate the association between patient-reported outcome (PRO) and performance-based (PB) measures of physical functioning (PF) among individuals with self-identified arthritis to inform decisions of which to use when evaluating the effectiveness of a physical activity intervention.

METHODS: Secondary data analysis of a nonrandomized 2-arm pre-post community trial of 462 individuals who self-identified as having arthritis and participated in the Walk with Ease (WWE) intervention. Two PRO and 8 PB assessments were collected at baseline (preintervention) and at 6-week followup. We calculated correlations between PB and PRO measures, assessed how measures identified changes in PF from baseline to followup, and compared PRO and PB measures to arthritis symptoms of pain, stiffness, and fatigue.

RESULTS: Strength of correlations between PB and PRO measures varied depending on the PB measure, ranging from 0.21 to 0.54. PRO and PB measures identified PF improvements from baseline to followup, but none showed significant differences between the 2 WWE modalities (instructor-led or self-directed groups). Correlations with arthritis symptoms were stronger for PRO (0.30-0.46) than PB measures (0.03-0.31).

CONCLUSION: PRO measures may provide us with insights into aspects of PF that are not identified by PB measures alone. Use of PRO measures allows patients to communicate

their perceptions of PF, which may provide a more accurate representation of overall PF. Our study does not suggest abandoning the use of PB measures to characterize PF in patients with self-identified arthritis, but recommends that PRO measures may serve as complementary or surrogate endpoints for some studies.

Public Health Interventions for Osteoarthritis - updates on the Osteoarthritis Action Alliance's efforts to address the 2010 OA Public Health Agenda Recommendations. (n.d.).

Osteoarthritis (OA) is a painful joint disease affecting more than 32.5 million adults in the US and over 350 million adults worldwide. The prevalence is expected to rise continually over the next several decades with significant impacts to societal health and economic costs as well as individuals' daily activities and quality of life. In 2008, the Centers for Disease Control and Prevention (CDC) and the Arthritis Foundation (AF) led a collaborative effort to address approaches to reduce the burden of OA via public health interventions, policies (systems and environmental), and communication strategies. This collaboration resulted in the National Public Health Agenda for OA (OA Agenda), which was vetted by more than 75 stakeholder organisations and released in 2010. The OA Agenda listed ten recommendations focused on public health interventions for OA including weight management, physical activity, self-management education, and injury prevention, and policies, systems, communication, research and evaluation. In 2011, the CDC and AF mobilised the OA Action Alliance (OAAA), a national coalition of organisations concerned with mitigating the public health impact of OA, to operationalise the recommendations set forth in the OA Agenda. Since then, the OAAA has grown to include more than 110 organisations that work collectively to increase awareness about the prevention and management of OA, provide educational resources, and expand access to evidence-based programmes for target audiences including individuals with OA, community-based organisations, healthcare systems and providers, and policymakers. This review highlights the OAAA's progress to date in addressing the OA Agenda recommendations; successes and challenges in delivery of effective communication, programmes, and resources; and future implications.

Reese, K. N. (2013). *Impact of the Arthritis Foundation's Walk with Ease Program on Self-Efficacy, Quality of Life and Pain Reduction in a Group Format.*
<https://dc.uwm.edu/etd/223>

Objective: To evaluate the effectiveness of the Arthritis Foundation's Walk With Ease Program for individuals with self- or medically-diagnosed arthritis within a group format. The study also investigates the individuals' perceptions on self-efficacy, quality of life and pain reduction pre- and post- intervention.

Background: The prevalence of arthritis is increasing and this places a major burden on individuals, health systems and social care systems globally. Osteoarthritis, the most common arthritis condition, is a major cause of impaired mobility and disability for aging populations. Osteoarthritis affects millions of people around the world. Self-management programs like the Walk With Ease Program have proven evidence-based interventions that

aim to reduce pain and disability, increase a person's sense of control and quality of life and help prolong pharmacological and surgical interventions.

Methods: The Walk With Ease Program was publicized in flyers sent to local senior centers, hospitals, rehabilitation hospitals, health clinics, public health departments, and various employers within the Maricopa County Area. An observational pre-post study design was used to evaluate the effects of the Arthritis Foundation's Walk With Ease Program on perceived pain reduction, increased self-efficacy, and quality of life. Twenty iii eight individuals with self-reported or medically-diagnosed osteoarthritis or rheumatoid arthritis completed the program within two separate group sessions. The baseline mean values of all variables were calculated and the differences were examined with paired ttests. The paired sample t-tests were used to determine whether significant differences between the average values of the same measurement were made pre/post intervention.

Results: Twenty eight participants were recruited on a voluntarily basis. After 6 weeks of participation in the program, significant adjusted mean improvements were seen for nearly all self-report measures. Statistical significance was seen for self-efficacy (1.42), pain level (-1.82), physical function (9.04) and mental function (8.39).

Conclusion: Self-management programs like Walk With Ease are important to individuals with self- and medically-diagnosed arthritis. Individuals with arthritis demonstrated significant improved quality of life and self-efficacy, as well as significant decreased pain. This study strongly suggests more self-management benefit individuals with arthritis by proving positive effects on quality of life, self-efficacy and decreased level of pain. Additionally, it is a brief, low-cost, and easy-to-do community-based walking program

Reeve, B. B., & Umble, K. (n.d.). *Association between Patient--Reported and Performance--Based Measurements of Physical Function in an Arthritis Sample.*

To evaluate the association between patient-reported outcome (PRO) and performance-based (PB) measures of physical functioning (PF) among individuals with self-identified arthritis to inform decisions of which to use when evaluating the effectiveness of a physical activity intervention. Methods: Secondary data analysis of a nonrandomized 2-arm pre-post community trial of 462 individuals who self-identified as having arthritis and participated in the Walk with Ease (WWE) intervention. Two PRO and 8 PB assessments were collected at baseline (preintervention) and at 6-week followup. We calculated correlations between PB and PRO measures, assessed how measures identified changes in PF from baseline to followup, and compared PRO and PB measures to arthritis symptoms of pain, stiffness, and fatigue. Results: Strength of correlations between PB and PRO measures varied depending on the PB measure, ranging from 0.21 to 0.54. PRO and PB measures identified PF improvements from baseline to followup, but none showed significant differences between the 2 WWE modalities (instructor-led or self-directed groups). Correlations with arthritis symptoms were stronger for PRO (0.30-0.46) than PB measures (0.03-0.31). Conclusion: PRO measures may provide us with insights into aspects of PF that are not identified by PB measures alone. Use of PRO measures allows patients to communicate their perceptions of PF, which may provide a more accurate representation of overall PF. Our study does not suggest abandoning the use of PB measures to characterize PF in patients with self-identified arthritis, but recommends that PRO measures may serve as complementary or surrogate endpoints for some studies.

Schoster, B., Altpeter, M., Meier, A., & Callahan, L. F. (2012). Methodological tips for overcoming formative evaluation challenges: The case of the arthritis foundation walk with ease program. In *Health Promotion Practice* (Vol. 13, Issue 2, pp. 198–203). <https://doi.org/10.1177/1524839910384060>

Formative evaluation is an effective first step in guiding program improvement by identifying participant preferences and yielding information pertinent to making program decisions. As program evaluators working with service providers are increasingly encouraged to adopt evidence-based health promotion programs, a discrete set of real-world recommendations may help extend the use of this methodology to respond to community-specific contexts and improve health impact. This article describes the authors' step-by-step process of conducting a formative evaluation of the Arthritis Foundation Walk With Ease (WWE) program. Data collection targets (leaders, coordinators, and participants in the original program and leaders and participants in the revised piloted program) as well as methods (written surveys, focus groups, structured telephone interviews, and expert reviews) were triangulated. The authors describe the challenges they faced and conclude with practical methodological recommendations about managing time and resources, communications with respondents, and accountability systems for organizing triangulated data.

Sharpe, P. A., Wilcox, S., Schoffman, D. E., & Baruth, M. (2017). Participation, satisfaction, perceived benefits, and maintenance of behavioral self-management strategies in a self-directed exercise program for adults with arthritis. *Evaluation and Program Planning*, *60*, 143–150. https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=lhh&AN=20173075709&site=ehost-live&scope=site

A process evaluation was conducted in conjunction with a controlled trial of a self-directed exercise program among people with arthritis to describe the program's reach; self-management behaviors, exposure to materials, program perceptions, satisfaction, and perceived benefits; compatibility with targeted participants' needs; and maintenance. Participants (n = 197) were predominantly white, middle-aged, college-educated women. At 12 weeks, 73.2% had read $\geq 90\%$ of the program materials (at nine months $>70\%$ had "occasionally" or "often" looked back over each of the five parts of the materials); 63.3% had set goals (52.5% at nine months), and 83.9% had "some" or "a lot" of success following their plan (64.2% at nine months), while 90.4% rated the program "good" or "excellent" (87.5% at nine months). At 12 weeks, the majority (89.3%) used written logs to self-monitor (mean = 9.3 logs); by nine months, $>70\%$ never kept logs. Most ($>80\%$) rated twelve of thirteen program components as helpful, and 98.6% would recommend the program. From 38% to 62.4% endorsed each of eight program benefits, with small declines of $\leq 9\%$ at nine months. Qualitative response identified ways the program met and did not meet expectations. The main program compatibility issue was targeting all adults with arthritis, while featuring older adults in materials.

Sheikh, S. Z., Kaufman, K., Gordon, B. B., Hicks, S., Love, A., Walker, J., Callahan, L. F., & Cleveland, R. J. (2019b). Evaluation of the self-directed format of Walk With Ease in

patients with systemic lupus erythematosus: the Walk-SLE Pilot Study. *Lupus*, 28(6), 764–770. <https://doi.org/10.1177/0961203319846387>

OBJECTIVE: To conduct a proof-of-concept pilot evaluation of the self-directed format of Walk With Ease (WWE), a 6-week walking program developed for adults with arthritis, in patients with systemic lupus erythematosus (SLE).

METHODS: This was a single arm, 6-week pre- and post-evaluation of the self-directed WWE program to assess feasibility, tolerability, safety, acceptability, and effectiveness. Adult patients with physician-diagnosed SLE were recruited to participate during regularly scheduled visits to an academic rheumatology clinic. Self-reported outcomes of pain, stiffness, and fatigue were assessed by visual analog scales (VAS) and the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-fatigue) scale at baseline and at completion of the 6-week program. Patients also completed a satisfaction survey at the end of the program. Multivariate linear regression models were used to calculate mean changes between baseline and 6-week follow-up scores, adjusting for covariates. Mean change scores were used to estimate effect sizes (ES).

RESULTS: At 6 weeks, 48 of the 75 recruited participants completed the WWE program. Participants experienced modest improvements in stiffness and fatigue (ES = 0.12 and ES = 0.23, respectively, for VAS scores; ES = 0.16 for FACIT-fatigue score) following the intervention. The majority of participants reported satisfaction with the program (98%) and benefitted from the workbook (96%).

CONCLUSIONS: The self-directed format of WWE appears to reduce stiffness and fatigue in patients with SLE. It also seems to be a feasible and acceptable exercise program to patients with SLE. Larger studies are needed to confirm these findings.

Siebes, A. (2016). *SELF-MANAGEMENT PROGRAM ON PAIN AND FUNCTION 1 Self-Management Program on Pain and Function in Patients with Osteoarthritis of the Knee*.

Over 27 million people suffer with osteoarthritis in the United States, a chronic disabling condition. The purpose of the pilot project was to determine whether an education self-management program of physical activity in adult patients with osteoarthritis of the knee, at a large urban academic medical center whom presented to the emergency department and orthopedic clinic setting, improved pain and function. The project study design was quasi-experimental with pre and post testing at 6 weeks. The evidence-based intervention was an educational self-management program from the National Physical Activity Guidelines. The outcomes measured for a difference in pain and function by the Western Ontario and McMaster Universities scale index pre and post the intervention. After 6 weeks, the participants reported lower WOMAC scores ($p = .021$, $p = .037$), reflecting a better outcome overall and in function respectively. Pain score difference ($p = .051$) was marginally close but was not statistically significant. In an effort to address the societal cost and impact of osteoarthritis, health providers can provide early education to osteoarthritis patients to self-manage their symptoms.

Somers, T. J., Wren, A. A., & Shelby, R. A. (2012). The context of pain in arthritis: Self-efficacy for managing pain and other symptoms. *Current Pain and Headache Reports*, 16(6), 502–508. <https://doi.org/10.1007/s11916-012-0298-3>

Arthritis pain may be best understood in the context of a biopsychosocial model of pain. The biopsychosocial model of pain suggests that adjustment to arthritis pain is multifaceted and is influenced by biological, psychological, and social factors. One psychological construct that appears to be particularly helpful in understanding arthritis pain is patients' self-efficacy for managing pain and other symptoms. In recent work, investigators have included self-efficacy for managing pain and other symptoms as key outcome measures in behavioral and psychosocial intervention studies. The goal of this article was to review recent intervention studies that have examined the effect of behavioral and psychosocial interventions on self-efficacy for managing pain and other symptoms. Throughout the article, we make several suggestions for future clinical and research considerations regarding the role of self-efficacy for managing pain and other symptoms in the context of arthritis pain.

Vilen, L., Candidate, B., & Altpeter, M. (2018). *Factors Affecting Implementation and Sustainability of the Walk with Ease Program for Adults with Arthritis in Community Organizations Receiving Short-Term Grants*.

Background: The Arthritis Foundation's evidence-based Walk with Ease (WWE) program improves symptoms, function, and psychosocial measures among adults with arthritis, and is feasible for widespread adoption and implementation in community organizations. This study examines barriers and facilitators to WWE implementation and sustainability among a subset of organizations receiving year-long grants to implement WWE. The research aims were: 1) identify factors affecting the implementation and plans for sustainability of WWE, 2) identify major barriers to implementation and sustainability, and solutions that grantees have employed to overcome these barriers, and 3) determine what minimum resources would improve grantees' likelihood to sustain the program post-grant.

Methods: Five grantees that had begun yearlong WWE grants in April 2017 were selected for interviews: three Early Success Cases (ESCs) (>30% of goal participants reached by 6-mo. progress report) and two Early Delay Cases (EDCs) (no participants reached by 6-mo. progress report). One interviewer conducted semi-structured interviews with program managers from these grantees. The interviewer then transcribed and coded for themes using an integrated approach based on the Planning for Sustainability Framework and the Consolidated Framework for Implementation Research. Grantees' responses were grouped by reported likelihood to sustain the program ("definitely will" vs. "hope to") and by ESC/EDC status to identify differences in barriers and facilitators between these groups.

Results: Three grantees indicated they "hoped to sustain" the WWE program after funding ends, while two grantees indicated they "definitely will". The strength of WWE's evidence-base, its potential to supplement other programs, and strong, developed community partnerships facilitated implementation and confidence for sustainability. Rigid program design (3x/week instructor-led), difficulties recruiting and retaining volunteer leaders, and organizational upheaval impeded implementation; organizational upheaval especially was a major reason for early delays experienced by EDCs. While all grantees experienced barriers to WWE implementation, most barriers that ESCs experienced had concrete solutions while some barriers experienced only by EDCs, like organizational upheaval and competing staff priorities, did not. Organizations reported a variety of resources that would

improve likelihood of sustainability. Notably, many of these resources were non-financial and could be provided by an outside advocacy organization or through community partnerships.

Implications: WWE is effective and relatively easy to implement in community organizations. Reducing the rigidity of WWE's program design, improving its ability to supplement other programs for participants with diseases other than arthritis, and promoting development of sustainable community partnerships during a grant period can promote the program's successful implementation and sustainability in communities.

Vilen, L., Cleveland, R. J., & Callahan, L. F. (2018b). Educational attainment, health status, and program outcomes in Latino adults with arthritis participating in a walking program. *Preventing Chronic Disease, 15*(10). <https://doi.org/10.5888/pcd15.180129>

Introduction: Latinos are disproportionately likely to lack a high school diploma, compared with non-Hispanic whites, a trend associated with worse outcomes in arthritis and indicating a need for health interventions. *Camine Con Gusto* (CCG) is the Spanish version of the evidence-based Walk With Ease program for arthritis. This study compared baseline health status and examined differences in program efficacy and adherence among Latino adults with and without a high school diploma enrolled in a pre-post evaluation of CCG.

Methods: CCG participants (n = 233) were classified into 2 groups: high school diploma or more (n = 129) and less than high school diploma (n = 104). We used logistic regression to estimate odds ratios (ORs) and 95% confidence intervals (CIs) for associations of education with measures of baseline health and program adherence. We computed effect sizes for the difference between education groups by using mean change scores for arthritis symptoms, physical function, and psychosocial variables.

Results: The group without a high school diploma was more likely to report worse general health (OR = 2.40; 95% CI, 1.28–4.53) and lower levels of arthritis self-efficacy (OR = 1.95; 95% CI, 1.05–3.63) than the group with a high school diploma. CCG improved outcomes for both groups, with no significant between-group differences. The group without a high school diploma was less likely to read most of the program workbook (OR = 0.51; 95% CI, 0.27–0.97), but we found no significant differences in the amount of walking between the 2 groups.

Conclusion: CCG was equally effective among Latinos with and without a high school diploma; however, education did affect participants' engagement with the program workbook. Adaptation of interventions for Latinos should consider how information can best be conveyed to those with lower levels of formal education.

Williams, G. R., Nyrop, K. A., Deal, A. M., Muss, H. B., & Sanoff, H. K. (2015). Self-directed physical activity intervention in older adults undergoing adjuvant chemotherapy for colorectal cancer: Design of a randomized controlled trial. *Contemporary Clinical Trials, 42*, 90–97. <https://doi.org/10.1016/j.cct.2015.03.008>

BACKGROUND: Colorectal cancer (CRC) diagnosis and treatment can have substantial detrimental impacts on health related quality of life (HRQOL) and physical function. This is especially true for older CRC patients and is of paramount concern in chemotherapy treatment decision making; yet, few studies to date have focused on understanding and

managing fatigue in older CRC patients. We present the design of a study to evaluate the feasibility and impact of a home-based, self-directed physical activity intervention on fatigue in older CRC patients receiving adjuvant chemotherapy treatment. Secondary aims pertain to intervention impact on HRQOL, physical function, and self-efficacy for managing fatigue.

METHODS/DESIGN: Multi-site, randomized controlled trial of physical activity intervention compared to usual care in a sample of older adults undergoing adjuvant chemotherapy for CRC. Forty CRC patients will be recruited and study questionnaires/assessments will be performed at baseline, 3 months, and after completion of adjuvant chemotherapy. The primary outcome is a comparison of the change in fatigue from baseline to 3 months between Intervention and Control arms. We will also compare changes in engagement in physical activity, HRQOL, physical function, and self-efficacy. Exploratory analyses will compare Intervention and Control arms with regard to changes in muscle mass and a biomarker aging that is known to increase during chemotherapy (p16(INK4a)).

DISCUSSION: If positive, findings from this pilot study would suggest the potential for improving the care of older persons with CRC undergoing adjuvant chemotherapy through a home-based physical activity intervention to manage fatigue, HRQOL, and physical function.

Wyatt, B., Mingo, C. A., Waterman, M. B., White, P., Cleveland, R. J., & Callahan, L. F. (2014a). Impact of the arthritis foundation's walk with ease program on arthritis symptoms in African Americans. *Preventing Chronic Disease, 11*(11). <https://doi.org/10.5888/pcd11.140147>

INTRODUCTION: Inadequate program design and lack of access to evidence-based programs are major barriers to the management of chronic diseases such as arthritis, particularly for African Americans. This study evaluates the effectiveness of the Arthritis Foundation's Walk With Ease Program (WWE) in a subsample of African Americans who were part of a larger study that established evidence of the program's efficacy.

METHODS: Participants were African Americans (N = 117) with self-reported arthritis who chose to participate in either a self-directed (n = 68) or group (n = 49) 6-week WWE program. Arthritis-related symptoms (ie, pain, fatigue, stiffness; measured using visual analog scales) were assessed at baseline, 6 weeks, and 1 year. Independent samples t tests were conducted to examine group differences (ie, self-directed vs group) in arthritis-related symptoms at baseline, and paired sample t tests were conducted to examine differences over time (ie, baseline to 6 weeks and baseline to 1 year) in symptoms. Satisfaction was examined by descriptive statistics.

RESULTS: Younger, more educated individuals chose the self-directed format (P < .001, P = .008; respectively). After the 6-week intervention, participants reported a decrease in pain (P < .001), fatigue (P = .002), and stiffness (P < .001). At 1 year, the decrease in pain (P = .04) and stiffness (P = .002) remained constant. Overall, participants were satisfied with both program formats.

CONCLUSION: The individualized and group formats of the WWE program improved arthritis-related pain, fatigue, and stiffness in African Americans. Culturally appealing arthritis interventions ultimately may increase the use of existing arthritis interventions

