



## APTA Geriatrics' Guiding Principles for Best Practices in Geriatric Physical Therapy: An Executive Summary

Michelle G. Criss, PT, DPT, PhD<sup>1</sup>; Mariana Wingood, PT, DPT, PhD, MPH<sup>2</sup>; William H. Staples, PT, DPT, DHSc, FAPTA<sup>3</sup>; Veronica Southard, PT, DHSc<sup>4</sup>; Kenneth L. Miller, PT, DPT<sup>5</sup>; Traci L. Norris, PT, DPT<sup>6</sup>; Dale Avers, PT, DPT, PhD, FAPTA<sup>7</sup>; Cathy H. Ciolek, PT, DPT, FAPTA<sup>8</sup>; Carole B. Lewis, PT, DPT, MSG, MPA, PhD, FSOAE, FAPTA<sup>9</sup>; Ellen R. Strunk, PT, MS<sup>10</sup>

### ABSTRACT

Geriatric physical therapy requires a unique skill set and knowledge to provide best practice care. The skill set requires clinicians to recognize the significance of the continuum of

aging from optimal to pathology-influenced aging and how psychosocial, environmental, behavioral, accessibility, and economic factors affect this aging continuum, optimal health, and wellness. Employing this distinctive skill set while also utilizing evidence-based practice, acknowledging the variability observed in older adults, and utilizing interwoven care systems that impact outcomes are key characteristics of best practice. The Academy of Geriatric Physical Therapy developed best practice guidelines consisting of 6 principles needed to ensure patients receive the care that they deserve. Best practice principles include person-centered care, anti-ageist beliefs, holistic assessment using sound outcome measures, evidence-based interventions, physical activity promotion, and interprofessional collaborative practice. This executive summary presents these principles along with suggested action steps for each element of best practice. The aims are to encourage individual self-assessment, promote improvement in practice on an individual and facility/system level, increase communication and collaboration with other health care providers about global best practices for older adults, and to further target education, resources, and advocacy toward achieving best practice on a larger scale.

**Key Words:** best practice, geriatrics, implementation, older adults, physical therapy

(*J Geriatr Phys Ther* 2022;45(2):70-75.)

<sup>1</sup>Doctor of Physical Therapy Program, School of Health Sciences, Chatham University, Pittsburgh, Pennsylvania.

<sup>2</sup>Department of Rehabilitation and Movement Sciences, College of Nursing and Health Sciences, University of Vermont, Burlington.

<sup>3</sup>Krannert School of Physical Therapy, University of Indianapolis, Indianapolis, Indiana.

<sup>4</sup>Department of Physical Therapy, School of Health Professions, New York Institute of Technology, Old Westbury, New York.

<sup>5</sup>Department of Physical Therapy, University of North Texas Health Science Center, Fort Worth.

<sup>6</sup>Barnes-Jewish Hospital Rehabilitation Department, Saint Louis, Missouri.

<sup>7</sup>Department of Physical Therapy Education, SUNY Upstate Medical University, Syracuse, New York.

<sup>8</sup>Living Well With Dementia, LLC, Wilmington, Delaware.

<sup>9</sup>Department of Geriatrics, College of Medicine and Great Seminars and Books, George Washington University, Washington, District of Columbia.

<sup>10</sup>Rehab Resources and Consulting, Inc, Birmingham, Alabama.

The authors declare no conflicts of interest.

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Web site ([www.jgptonline.com](http://www.jgptonline.com)).

Address correspondence to: Michelle G. Criss, PT, DPT, PhD, Doctor of Physical Therapy Program, School of Health Sciences, Chatham University, 236 Eastside Campus, Woodland Rd, Pittsburgh, PA 15232 (MCriss1@Chatham.edu).

Copyright © 2022 APTA Geriatrics, An Academy of the American Physical Therapy Association.

DOI: 10.1519/JPT.0000000000000342

### INTRODUCTION

Between 2014 and 2060, the number of Americans 65 years and older is projected to increase from 46 million to more than 98 million, rising from 15% to 24% of the US population.<sup>1</sup> Biological aging is not a linear process, and older adults comprise a heterogeneous group of individuals that require individualized and comprehensive health care. This heterogeneity is attributed to factors such as genetics, level of participation in health-promoting behavior, physical and social environments, socioeconomic status, education, and area of residency.<sup>2</sup> Of these factors, only genetics is not a modifiable risk factor. Through interventions to improve modifiable risk factors, health care providers, including physical therapists (PTs) and physical therapist assistants

(PTAs), play a large role in optimizing the experiences of aging through prevention, promotion, and treatment.<sup>3</sup>

To enhance the care patients receive, all assessments and interventions performed by PTs and PTAs need to be person-centered and evidence-based. Unfortunately, person-centered and evidence-based care does not occur routinely even with well-established, evidence-based practices like assessment of vital signs and physical activity levels.<sup>4-6</sup> During the 2020 inaugural Carole B. Lewis Award Lecture, Dr Dale Avers provided a rally-cry for clinical practice: “We can do better!” Dr Avers urged PTs to promote their value and to adopt best practice principles.<sup>7</sup> Calls for geriatric best practice have been increasing across disciplines, and examples include frameworks like the Geriatric 5Ms of competent care, which include Mind/Mentation, Mobility, Medication, Multicomplexity, and what Matters most,<sup>8</sup> social media campaigns (eg, #OldNotWeak), best practice guidelines for older adults,<sup>9,10</sup> and clinical practice guidelines for specific conditions found in this population.<sup>11-13</sup>

The Geriatrics 5Ms help focus care for older adults by providing value and maximizing outcomes regardless of the pathology or condition that causes the need for medical care. Mobility, a key element of the 5Ms model, is of prime importance to older adults and is the frequent focus of rehabilitation.<sup>14</sup> Since the movement system is a hallmark of physical therapy practice,<sup>15</sup> mobility and functional status are central to PT and PTA practice. The 5Ms model highlights the importance of employing a team approach to the care of older adults, including PT and PTA collaboration. One example of the team approach is related to important observations about mind/mentation, when PTs and PTAs screen, document, and communicate fluctuations or subtle changes in cognition and mental health. In doing so, all geriatric care team members support rapid diagnosis and intervention efforts.<sup>14</sup> While the Geriatric 5Ms provide a strong framework for best practice, they do not provide specific guidance for PT. To our knowledge, best practice guidelines for care in older adults have not previously been developed for the PT profession.

Given the paucity of perspective and guidance for physical therapy best practice principles, and persistent inappropriate underdosing of exercise among older adults, there is a need to develop PT-specific guidelines.<sup>7,16</sup> Therefore, the American Physical Therapy Association’s Academy of Geriatric Physical Therapy (APTA Geriatrics) placed best practice at the forefront of its 2021-2023 Strategic Plan as a way to support the mission of the Academy to optimize the aging experience.<sup>17</sup> The development, dissemination, and adoption of best practices ensure the PT profession will advance confidently beyond its first 100 years through health care innovation and leadership. To achieve this mission, APTA Geriatrics convened a panel of clinical experts consisting of board-certified geriatric PTs from academia and practice settings across the continuum of care. Through biweekly meetings held between July and December 2020 and literature searches for previously published geriatric

best practice guidelines, the expert panel identified 6 key best practice principles to address the current practice gaps that produce suboptimal care for aging adults. The identification of best practices across practice settings with an overt commitment to anti-ageist health care drove the development of these principles and their associated specific action steps. These Best Practice Guiding Principles were approved by the APTA Geriatrics Board of Directors in December 2020. Print-friendly, bulleted summaries of these approved principles and action steps are provided in Supplemental Digital Content 1 (available at: <http://links.lww.com/JGPT/A106>) and Supplemental Digital Content 2 (available at: <http://links.lww.com/JGPT/A107>).

## FOUNDATION OF BEST PRACTICE PRINCIPLES

In alliance with the Mission and Vision of APTA Geriatrics, the physical therapy care of older adults encompasses the entirety of the aging person’s abilities within their unique environment and throughout their aging process.<sup>17</sup> We believe the PT/PTA must advocate to reduce health disparities and health care inequities, improve access to health care services, and address the health, wellness, and preventive health care needs of people. Concurrently, the PT must consider the influence and effects of a person’s environment consistent with the American Physical Therapy Association’s Code of Ethics.<sup>18</sup> The pervasive culture of ageism also requires advocacy through lobbying efforts for improved access and appropriate payment, negotiation with providers about optimal practices, and referral to appropriate community programs and resources. Through this advocacy, the PT/PTA team is integral to optimize the aging process.

Best practice care requires value-based care, defined as the health outcomes achieved per dollar spent and reflective of the patient’s experience of care.<sup>19</sup> Physical therapists are accountable for providing best practice care, which is safe, effective, patient-/client-centered, timely, and efficient.<sup>20</sup> Accountability includes both a lifelong dedication to learning and a recognition that as knowledge, skills, and cultural understanding evolve, so must one’s practice.

Evidence-based practice is the foundation of best practice care. Evidence-based practice is care based on the best available evidence, the values of the patient/family, and the clinical reasoning and experience of the therapist.<sup>21</sup> Evidence-based care is translated and communicated with a person-centered framework<sup>22</sup> and with an anti-ageist attitude.<sup>23</sup> Best practices comprise intentional care that considers value, optimal communication, interprofessional collaboration, consideration of the continuum of care, and sound assessment and intervention techniques and skills. Best practices are the fundamental professional endeavor, with the understanding that these practices evolve continually. Presented next are the guiding principles for best practices in the provision of geriatric physical therapy, a brief rationale, and suggested action steps to assist with translation into clinical practice.

## PRINCIPLES

### Principle 1: Utilize Person-Centered Care to Elicit and Prioritize the Individual's Preferences, Values, and Goals to Drive the Plan of Care

Person-centered care is 1 of the 6 pillars from the Institute of Medicine that supports quality health care.<sup>20</sup> The PT and PTA should recognize the uniqueness of each individual when establishing a therapist-client relationship. During the initial episode of care, there must be efforts made to promote a person-centered approach based on trust, mutual respect, and understanding to ensure that the patient/client is empowered to be an active participant and driver of their care. Conversations must be initiated to understand the patient's unique values, goals, and preferences for the delivery of care and to ensure a successful and meaningful plan of care. The therapist needs to advocate to address barriers and promote successful implementation of the person-centered plan and provide resources when appropriate. Patient empowerment should be emphasized during and outside of the therapy session.

#### *Suggested action steps*

The patient is the primary driver of their plan of care. Look for the following key elements of best practice collaboration between the patient and the therapist: shared decision-making to create agreed-upon individualized, meaningful goals to ensure patient engagement<sup>24</sup>; inquiries about the patient's desires for and extent of involvement of individuals important to them in the creation of the plan of care<sup>24,25</sup>; provision of time and preparation to consider goals and plan of care options<sup>10</sup>; and avoidance of ageist practices including paternalism, persuasion, and coercion during the goal setting process.<sup>26</sup> Creating an authentic patient-client relationship is dependent upon mutual trust, respect, active listening, being wholly present during the therapy session, acknowledgment of patients' concerns and viewpoints, and the use of clear effective communication strategies.<sup>27</sup> Additionally, PTs and PTAs should establish an environment that encourages self-efficacy during each encounter.<sup>27</sup> Patient autonomy can be fostered through education regarding outcomes and promotion of self-monitoring. For example, monitor and communicate clinical measurements and provide context by comparing those numbers against a sample of a similar population with use of strategies such as "people like me" charts to encourage patient monitoring.<sup>28</sup> Promote patient engagement with individualized, higher intensity intervention programs that directly relate to the patient's stated goals.<sup>29,30</sup> Utilize proactive risk management, including assessing positive risk of an activity for the individual in the medical, physical, psychological, and social domains.

"Care providers and health professionals have both a duty to uphold the basic rights and freedoms of their resident, and a duty of care to protect them from foreseeable harm. It is important to recognize that it is not possible to eliminate risk entirely, and that it is essential that residents

are given the freedom of choice and the right to make their own decisions, on everything from how they want to be cared for, to how they want to spend their free time."<sup>31(p516)</sup>

### Principle 2: Strive for Anti-Ageist Practice

Anti-ageist practice resists the powerful stereotypes that demean individuals because of their age. Without overcoming these stereotypes there is greater risk for substandard care, increased health care costs, and shorter life span for patients who internalize ageist beliefs.<sup>32-34</sup> An anti-ageist attitude is a proactive stance of valuing the aging adult, supporting the person's intentional aging, and empowerment to make informed decisions within the individual's value system and available resources.

#### *Suggested action steps*

To start, assess for implicit/unconscious bias and negative attitudes about age using freely available tools, for example the geriatric attitudes<sup>35</sup> or the Harvard implicit bias tests,<sup>36</sup> although due diligence concerning reliability and validity when selecting any test is recommended. Avoid images and language that portray youth as positive and age as negative.<sup>37-39</sup> Use framing strategies to advocate for policy issues to reduce ageism. Framing strategies leverage common communication language and priorities to increase the effectiveness of a shared anti-ageist message.<sup>40</sup> Suggested effective communication strategies include considering older individuals as an untapped resource that builds momentum with age rather than slows with decline; using discussions of justice to offer purpose to all marginalized populations including older adults; and explaining implicit bias and that ageism is one of those biases.<sup>40</sup> Finally, be willing to reflect on practice, including an honest assessment of how or if we honor dignity and value the unique qualities/experiences of others. Physical therapists and physical therapist assistants should be open to lessons that live within each individual regardless of ability or age.<sup>39</sup>

### Principle 3: Conduct a Holistic Assessment and Evaluation Utilizing Sound Outcome Measures That Help Inform the Treatment Plan and Relate to the Patient's Stated Goals

A PT's assessment is comprehensive and identifies the movement deficits and risk for frailty that impact the patient's ability to accomplish their personal goal(s). The assessment should also contain domains of health promotion, prevention, and rehabilitation across the life span.

#### *Suggested action steps*

Physical therapists should include best practice elements in all assessments. A comprehensive history should contain at least the following information: a comprehensive falls/fall risk assessment; assessment of functional mobility including getting up off the ground, walking a ¼ mile without stopping, crossing the street in time, and climbing a flight of stairs; general health rating and the reasoning behind that rating; current and recent changes in medications, and

any known side effects experienced; any difficulties with bowel or bladder continence; vision and hearing including frequency of regular assessments and if any difficulties have been noticed; mental health including if the patient has been feeling down, depressed, and or anxious; detailed participation in physical activity and exercise and other lifestyle behaviors; the extent of the client's social network and support; societal roles (eg, occupation, work, community activities, and household activities); and environmental factors that impact the ability to complete goals such as access to food, technology, shelter, and safety.

Perform a functional mobility examination that aligns with the patient's stated goals and minimally includes the following measures identified as critical at the time of this publication: mobility (usual and fast walking speeds), strength (30-second sit to stand and handgrip dynamometry), balance with an appropriate and challenging measure (eg, with lower-level patients the Four Stage Balance Test, and for higher-level patients the Four Square Step Test), and endurance (6-minute walk test or 2-minute step test).<sup>41</sup> To maintain the outcome measure's fidelity and ability to apply its psychometric properties, do not modify the standardized methodologies published in the original manuscript.

Before implementing new outcome measures, critically appraise the literature and the outcome measure's psychometric properties.<sup>42</sup> Best practice also provides regular reassessment/examination to ensure the patient's goals are updated and the plan evolves to remain consistent with patient preferences and needs.<sup>25</sup>

#### **Principle 4: Provide Positive Outcomes of Physical Therapy Care by Completing Intervention(s) That Are Based on the Best Available Evidence**

Interventions must be informed by best available evidence, and then implemented with appropriate challenge, relevance, and creativity to empower patients to achieve what matters most to them.

##### ***Suggested action steps***

Use high-intensity exercise whenever possible for strength, balance, endurance, and functional training. Prescription of high-intensity exercise is intentional and requires monitoring.<sup>43</sup> Provide and advocate for appropriate dosage and challenge levels for exercise and physical activity. For example, over 50 hours of progressive and challenging balance activities are needed to obtain optimal balance outcomes.<sup>44</sup> Design unique programs that fit the individual's needs based on goals and abilities, time commitment, travel concerns, financial limitations, and available resources. Exercises and training activities should be progressive, creative, variable, and challenging to enhance outcomes and patient engagement.

#### **Principle 5: Prioritize Physical Activity to Promote Health, Well-being, Chronic Disease Management, and Enhance Mobility**

Physical activity is the cornerstone of health, continued mobility, and quality of life. Yet, only 8% of older

adults participate in the recommended 150 minutes of moderate-intense physical activity and 2 sessions/week of strengthening exercise.<sup>45,46</sup> Every effort should be made to mitigate sedentary behaviors and promote physical activity appropriate to each individuals' abilities and readiness to participate.

##### ***Suggested action steps***

Examine bouts of sedentary time and physical activity levels in all patients/clients. The *Exercise Is Medicine* Health Care Providers' Action Guide has useful information to improve practice regarding physical activity.<sup>47</sup> Design physical activity programs that align with the patient's abilities, desires, interests, environment, and access. Utilize and create relationships with community resources to assist patients in the continuum of care (eg, National Council on Aging, Agency on Aging, and APTA Geriatrics Partnership Materials). Engage caregivers and other members of the patient's social network where appropriate to improve physical activity levels.<sup>45</sup>

#### **Principle 6: Champion Interprofessional Collaborative Practice That Is Inclusive of Patients and Their Caregivers**

Skilled PTs and PTAs working with older adults integrate their clinical expertise into a collaborative patient-informed management plan as equal partners with the patient, their caregivers as appropriate, and other health care team members bridging across all transitions of care.

##### ***Suggested action steps***

Understand, respect, and utilize the different strengths and roles of the health care team members. Engage in clear, closed loop communication with the patient, caregivers, and other health care team members bridging across all transitions of care. Promote clarity by exchanging information with the patient, caregivers, and other health care team members to create an environment that promotes shared decision-making. Advocate for all team members to be accountable for patient needs and be available to ask and answer questions regarding the patient's management plan, especially when patient safety is at risk. Consider the patient's preferences, values, and beliefs in formulation of the patient/person-centered management plan to achieve positive patient outcomes.

## **DISCUSSION**

The success of best practice principles depends on the implementation efforts put forth by individuals, coworkers, interdisciplinary team members, managers, facility or corporate structures, and policy stakeholders.<sup>48</sup> Individually and together these entities can set expectations for best practice, monitor the implementation success through metrics related to quality care and patient outcomes, collaborate with the patient and other health care providers, and research efforts related to best practice. The action steps outlined earlier can increase ease of implementation,

as they aim to provide examples of intentional efforts that will assist with adoption of these principles.

Individual clinicians are encouraged to self-reflect about their own practice and identify which of the aforementioned action steps are currently used and which need to be improved. Self-assessment should be used to guide continuing education and lifelong learning. Reflective practice and metacognition are hallmarks of expert clinical care, consisting of thinking about one's practice (reflection) as well as self-monitoring that reflective process (metacognition). Such expert practice involves not only review of knowledge and clinical reasoning, but analysis of what did and did not work for the patient with reflection on inconsistencies or similarities in data collected, and an understanding of the extreme importance of collaboration with the patient and other providers.<sup>49</sup>

Clinicians with highly self-reflective behaviors are more likely to use evidence-based practice and take actions to correct current practice patterns.<sup>50,51</sup> While evidence-based practice barriers of time, access to articles, and organizational support are associated with reduced evidence-based practice implementation, high self-reflection behavior has a larger effect size than commonly cited barriers.<sup>51</sup> This indicates that self-reflection is an essential skill that fosters evidence-based practice. For those working with older adults, self-reflection needs to include an honest self-assessment about attitudes and potential biases related to aging. By eliminating ageist practice, PTs and PTAs have the opportunity to improve a patient's health and the cost of health care.<sup>32,34</sup> By elevating anti-ageist practice to a guiding principle, APTA Geriatrics makes a strong statement on the importance of viewing each individual's possibilities in addition to age-related challenges. By sharing the therapist's self-reflection assessment process and verbalizing goals for improvement with colleagues, a culture of best practice can be facilitated. For example, discussing how language perpetuates ageism and then asking for and providing feedback based upon what is seen and heard during patient interactions can be a powerful way to raise awareness of implicit age bias. Workplace support and application of evidence to each clinician's specific clinical practice through shared experiences are powerful motivators for using evidence.<sup>52,53</sup>

At the organizational level, use of the suggested guiding principle action steps to identify policies and practices that need refinement to develop best practice is strongly encouraged. Robust discussion with clinicians about where improvements can be made should be initiated. Organizational support in terms of time and resources to embark on an evidence-based project is essential.<sup>53</sup> Consider how to efficiently incorporate best practice principles into a facility's regular routine. Decisions should be made collectively, rather than with a top-down mandate, to increase willingness to change and progress toward best practice. For instance, would having large wall posters with a rate of perceived exertion scale best encourage clinicians to monitor intensity, or would pocket cards with that

information work better? With facility endeavors, consider using a structured quality improvement or implementation process to undertake best practice efforts one at a time with evidence to guide decisions. Discussions of knowledge implementation best practices are beyond the scope of this article, but excellent references exist to guide this process.<sup>54-58</sup>

APTA Geriatrics has a role in the facilitation of best practice beyond the establishment of these guiding principles. First, as the professional voice for physical therapy care of older adults, dissemination of best practice is needed not only within APTA Geriatrics, but to physical therapy colleagues in all areas of practice. With the world's aging population, PTs and PTAs in nearly all practice settings will treat older individuals regardless of whether they consider themselves to be in "geriatrics" work settings. These best practices should be used to guide education of students and practicing clinicians through academic education, continuing education offerings, and residency/fellowship training aligned with these recommendations. There is a need to increase education about shared decision-making, support for patient/client self-efficacy, key examination and intervention strategies that foster a more active and properly dosed plan of care, and mechanisms for improved intra- and interprofessional collaboration between practice settings and across the continuum of care.

Finally, the APTA Geriatrics Best Practice Guiding Principles are useful for all care providers and should be disseminated to other geriatric care team members to highlight our common interests, share our vision, and encourage adoption of age-friendly care principles. APTA Geriatrics should add its voice to many such efforts, collaborating with, for example, Reframing Aging, Age-Friendly Health Systems, and Exercise Is Medicine.<sup>40,47,59</sup> Collectively, mutual agreement that we all need to provide better care for our older clients and an emphasis on shared common ground may encourage an optimal aging experience through increased physical activity, engagement with research priorities, and advocacy for policy improvement.

## REFERENCES

- Colby SL, Ortman JM. *Projections of the Size and Composition of the U.S. Population: 2014 to 2060*. US Census Bureau; 2014.
- World Health Organization. Ageing and Health. Fact Sheet. Published 2018. Accessed March 1, 2021. <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>
- World Health Organization. Rehabilitation for health in the 21st century. Rehabilitation 2030—a Call to Action. Published 2017. Accessed January 7, 2021. <https://www.who.int/disabilities/care/KeyForHealth21stCentury.pdf>
- Severin R, Wang E, Wielechowski A, Phillips SA. Outpatient physical therapist attitudes toward and behaviors in cardiovascular disease screening: a national survey. *Phys Ther*. 2019;99(7):833-848. doi:10.1093/ptj/pzz042
- Severin R, Sabbahi A, Albarrati A, Phillips SA, Arena S. Blood pressure screening by outpatient physical therapists: a call to action and clinical recommendations. *Phys Ther*. 2020;100(6):1008-1019. doi:10.1093/ptj/pzaa034
- Rethorn ZD, Covington JK, Cook CE, Bezner JR, Rock R. Physical activity promotion attitudes and practices among outpatient physical therapists: results of a national survey. *J Geriatr Phys Ther*. 2021;44(1):25-34. doi:10.1519/JPT.0000000000000289
- Avers D. We can do better—aging and the value of physical therapy. Oral conference presentation. Published 2020. <https://geriatricspt.org/lectures/Carole-B-Lewis/>

8. Molnar F, Frank CC. Optimizing geriatric care with the GERIATRIC 5Ms. *Can Fam Physician*. 2019;65(1):39.
9. Mohanty S, Rosenthal RA, Russell MM, Neuman MD, Ko CY, Esnaola NF. Optimal perioperative management of the geriatric patient: A best practices guideline from the American College of Surgeons NSQIP and the American Geriatrics Society. *J Am Coll Surg*. 2016;222(5):930-947. doi:10.1016/j.jamcollsurg.2015.12.026
10. American Geriatrics Society Expert Panel on the Care of Older Adults with Multimorbidity. Patient-centered care for older adults with multiple chronic conditions: a stepwise approach from the American Geriatrics Society. *J Am Geriatr Soc*. 2012;60(10):1957-1968. doi:10.1111/j.1532-5415.2012.04187.x
11. Dent E, Morley JE, Arai H, et al. International clinical practice guidelines for sarcopenia: screening, diagnosis and management. *J Nutr Heal Aging*. 2018;22(10):1148-1161. doi:10.1007/s12603-018-1139-9
12. Panel on Prevention of Falls in Older Persons AGS and BGS. Summary of the updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons. *J Am Geriatr Soc*. 2011;59(1):148-157. doi:10.1111/j.1532-5415.2010.03234.x
13. Shoemaker MJ, Dias KJ, Lefebvre KM, Heick JD, Collins SM. Physical therapist clinical practice guideline for the management of individuals with heart failure. *Phys Ther*. 2020;100(1):14-43. doi:10.1093/ptj/pzz127
14. Bean JF, Orkaby AR, Driver JA. Geriatric rehabilitation should not be an oxymoron: a path forward. *Arch Phys Med Rehabil*. 2019;100(5):995-1000. doi:10.1016/j.apmr.2018.12.038
15. American Physical Therapy Association. The movement system brings it all together. Published May 1, 2016. Accessed April 7, 2021. [www.apta.org/apta-magazine/2016/05/01/the-movement-system-brings-it-all-together](http://www.apta.org/apta-magazine/2016/05/01/the-movement-system-brings-it-all-together)
16. American Physical Therapy Association. Choosing Wisely. Published 2019. Accessed March 11, 2021. <https://www.choosingwisely.org/societies/american-physical-therapy-association/>
17. APTA Geriatrics. About APTA Geriatrics. Accessed March 1, 2021. <https://geriatricspt.org/about-academy-geriatrics-physical-therapy/>
18. American Physical Therapy Association. Code of Ethics for the Physical Therapist. Published 2020. Accessed April 7, 2021. [www.apta.org/sites/assets/pdfs/policies/code-of-ethics-pt.pdf](http://www.apta.org/sites/assets/pdfs/policies/code-of-ethics-pt.pdf)
19. Porter M, Teisberg E. *Redefining Health Care: Creating Value-Based Competition on Results*. Harvard Business School Press; 2005.
20. Institute of Medicine of the National Academies. *Crossing the Quality Chasm: A New Health System for the 21st Century*. National Academies Press; 2001.
21. Sackett DL, Rosenberg WM, Gray JM, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. *Br Med J*. 1996;312(7023):71-72. doi:10.1136/bmj.312.7023.71
22. McCormack B, McCance T, eds. *Person-Centered Practice in Nursing and Health Care: Theory and Practice*. 2nd ed. John Wiley & Sons; 2017.
23. Burnes D, Sheppard C, Henderson CR, et al. Interventions to reduce ageism against older adults: a systematic review and meta-analysis. *Am J Public Health*. 2019;109(8):E1-E9. doi:10.2105/AJPH.2019.305123
24. Rose A, Soundy A, Rosewilliam S. Shared decision-making within goal-setting in rehabilitation: a mixed-methods study. *Clin Rehabil*. 2019;33(3):564-574. doi:10.1177/0269215518815251
25. American Geriatrics Society Expert Panel on Person-Centered Care. Person-centered care: a definition and essential elements. *J Am Geriatr Soc*. 2016;64(1):15-18. doi:10.1111/jgs.13866
26. Gibson BE, Terry G, Setchell J, Bright FAS, Cummins C, Kayes NM. The micro-politics of caring: tinkering with person-centered rehabilitation. *Disabil Rehabil*. 2020;42(11):1529-1538. doi:10.1080/09638288.2019.1587793
27. Terry G, Kayes N. Person centered care in neurorehabilitation: a secondary analysis. *Disabil Rehabil*. 2020;42(16):2334-2343. doi:10.1080/09638288.2018.1561952
28. Kittelson AJ, Hoogbeem TJ, Schenkman M, Stevens-lapsley JE, van Meeteren NLU. Person-centered care and physical therapy: a "people-like-me" approach. *Phys Ther*. 2020;100(1):99-106. doi:10.1093/ptj/pzz13
29. Lenze EJ, Lenard E, Bland M, et al. Effect of enhanced medical rehabilitation on functional recovery in older adults receiving skilled nursing care after acute rehabilitation: a randomized clinical trial. *JAMA Netw Open*. 2019;2(7):e198199. doi:10.1001/jamanetworkopen.2019.8199
30. Gustavson AM, Malone DJ, Boxer RS, Forster JE, Stevens-Lapsley JE. Application of high-intensity functional resistance training in a skilled nursing facility: an implementation study. *Phys Ther*. 2020;100(10):1746-1758. doi:10.1093/ptj/pzaa126
31. Croft J. Enabling positive risk-taking for older people in the care home. *Nurs Resid Care*. 2017;19(3):e198199. doi:10.12968/nrec.2017.19.9.515
32. Levy BR, Slade MD, Chang ES, Kannoth S, Wang SY. Ageism amplifies cost and prevalence of health conditions. *Gerontologist*. 2020;60(1):174-181. doi:10.1093/geront/gny131
33. Nelson TD. Promoting healthy aging by confronting ageism. *Am Psychol*. 2016;71(4):276-282. doi:10.1037/a0040221
34. Wurm S, Diehl M, Kornadt AE, Westerhof GJ, Wahl HW. How do views on aging affect health outcomes in adulthood and late life? Explanations for an established connection. *Dev Rev*. 2017;46:27-43. doi:10.1016/j.dr.2017.08.002
35. Reuben DB, Lee M, Davis JW, et al. Development and validation of a geriatrics attitudes scale for primary care residents. *J Am Geriatr Soc*. 1998;46(11):1425-1430. doi:10.1111/j.1532-5415.1998.tb06012.x
36. Project Implicit. Implicit Association Tests. Published 2011. Accessed March 30, 2021. <https://implicit.harvard.edu/implicit/takeatest.html>
37. Gendron TL, Welleford EA, Inker J, White JT. The language of ageism: why we need to use words carefully. *Gerontologist*. 2016;56(6):997-1006. doi:10.1093/geront/gnv066
38. Levy BR, Chung PH, Bedford T, Navrazhina K. Facebook as a site for negative age stereotypes. *Gerontologist*. 2013;54(2):172-176. doi:10.1093/geront/gns194
39. LeadingAge.org. Anti-ageism quick guide: changing the conversation. Published 2018. Accessed November 5, 2020. [https://www.leadingage.org/sites/default/files/Anti-Ageism Quick Guide\\_FINAL.pdf](https://www.leadingage.org/sites/default/files/Anti-Ageism Quick Guide_FINAL.pdf)
40. Frameworks Institute/Reframing Aging. Framing Strategies to Advance Aging and Address Ageism as Policy Issues. Published April 7, 2017. Accessed April 7, 2021. <https://www.frameworksinstitute.org/publication/framing-strategies-to-advance-aging-and-address-ageism-as-policy-issues/>
41. Rehab Measures Database. Shirley Ryan Ability Lab website. Accessed March 30, 2021. <https://www.sralab.org/rehabilitation-measures>
42. University of Oxford. Critical appraisal tools. Centre for Evidence Based Medicine website. Published 2021. Accessed March 1, 2021. <https://www.cebm.ox.ac.uk/resources/ebm-tools/critical-appraisal-tools>
43. Avers D, Brown M. White paper : strength training for the older adult. *J Geriatr Phys Ther*. 2009;32(4):148-152.
44. Shubert TE. Evidence-based exercise prescription for balance and falls prevention: a current review of the literature. *J Geriatr Phys Ther*. 2011;34(3):100-108. doi:10.1519/JPT.0b013e31822938ac
45. US Department of Health and Human Services. *Physical Activity Guidelines for Americans*. 2nd ed. US Department of Health and Human Services; 2018. Accessed March 15, 2021. [https://health.gov/sites/default/files/2019-09/Physical\\_Activity\\_Guidelines\\_2nd\\_edition.pdf](https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf)
46. Kruger J, Carlson SA, Buchner D. How active are older Americans? *Prev Chronic Dis*. 2007;4(3). [http://www.cdc.gov/pcd/issues/2007/jul/06\\_0094.htm](http://www.cdc.gov/pcd/issues/2007/jul/06_0094.htm)
47. American College of Sports Medicine. Exercise is Medicine—Health Care Providers' Action Guide. Published 2021. Accessed January 6, 2021. [https://www.exercisemedicine.org/assets/page\\_documents/EIM Health Care Providers Action Guide clickable links.pdf](https://www.exercisemedicine.org/assets/page_documents/EIM Health Care Providers Action Guide clickable links.pdf)
48. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci*. 2009;4(1):1-15. doi:10.1186/1748-5908-4-50
49. Jensen GM, Gwyer J, Shepard KF, Hack LM. Expert practice in physical therapy. *Phys Ther*. 2000;80(1):28-52. doi:10.1093/ptj/80.1.28
50. Krueger RB, Sweetman MM, Martin M, Cappaert TA. Self-reflection as a support to evidence-based practice: a grounded theory exploration. *Occup Ther Heal Care*. 2020;34(4):320-350. doi:10.1080/07380577.2020.1815929
51. Krueger RB, Sweetman MM, Martin M, Cappaert TA. Occupational therapists' implementation of evidence-based practice: a cross sectional survey. *Occup Ther Heal Care*. 2020;34(3):253-276. doi:10.1080/07380577.2020.1756554
52. Scurlock-Evans L, Upton P, Upton D. Evidence-based practice in physiotherapy: a systematic review of barriers, enablers and interventions. *Physiotherapy*. 2014;100(3):208-219. doi:10.1016/j.physio.2014.03.001
53. Condon C, McGrane N, Mockler D, Stokes E. Ability of physiotherapists to undertake evidence-based practice steps: a scoping review. *Physiotherapy*. 2016;102(1):10-19. doi:10.1016/j.physio.2015.06.003
54. Hudon A, Gervais MJ, Hunt M. The contribution of conceptual frameworks to knowledge translation interventions in physical therapy. *Phys Ther*. 2015;95(4):630-639. doi:10.2522/ptj.20130483
55. Wensing M, Grol R. Knowledge translation in health: how implementation science could contribute more. *BMC Med*. 2019;17(1):1-6. doi:10.1186/s12916-019-1322-9
56. Straus S, Tetroe J, Graham ID, eds. *Knowledge Translation in Health Care: Moving from Evidence to Practice*. 2nd ed. John Wiley & Sons; 2013.
57. Olswang LB, Prelock PA. Bridging the gap between research and practice: implementation science. *J Speech, Lang Hear Res*. 2015;58(6):S1818-S1826. doi:10.1044/2015\_JSLHR-L-14-0305
58. Joyce C, Schneider M, Stevens JM, Beneciuk JM. Improving physical therapy pain care, quality, and cost through effectiveness-implementation research. *Phys Ther*. 2018;98(5):447-456. doi:10.1093/ptj/pzy031
59. Institute for Healthcare Improvement. What is an age-friendly health system? Engage with IHI Initiatives webpage. Published 2021. Accessed April 6, 2021. <http://www.ihl.org/Engage/Initiatives/Age-Friendly-Health-Systems/Pages/default.aspx>