



American
Occupational Therapy
Association

AOTA ECHO Series on Occupational Therapy Interventions for Adults with Multiple Sclerosis

January 19, 2023



Preparing for the session



To ensure sessions run smoothly, please follow the [AOTA Event Code of Conduct](#).



Use the Q&A feature to submit questions.



Comments in the chat will go to AOTA staff and speakers.



Reminder: The session is being recorded.

Today's Speakers



Rebecca Cunningham
OTD, OTR/L, MSCS



Ashley Uyeshiro Simon
OTD, OTR/L, MSCS

Objectives

1. Describe the process AOTA uses for developing practice guidelines
2. Describe the AOTA OT Practice Guidelines clinical recommendations related to adults with MS
3. Discuss how clinical recommendations can be applied to your clients

Overview of Practice Guidelines Development Process

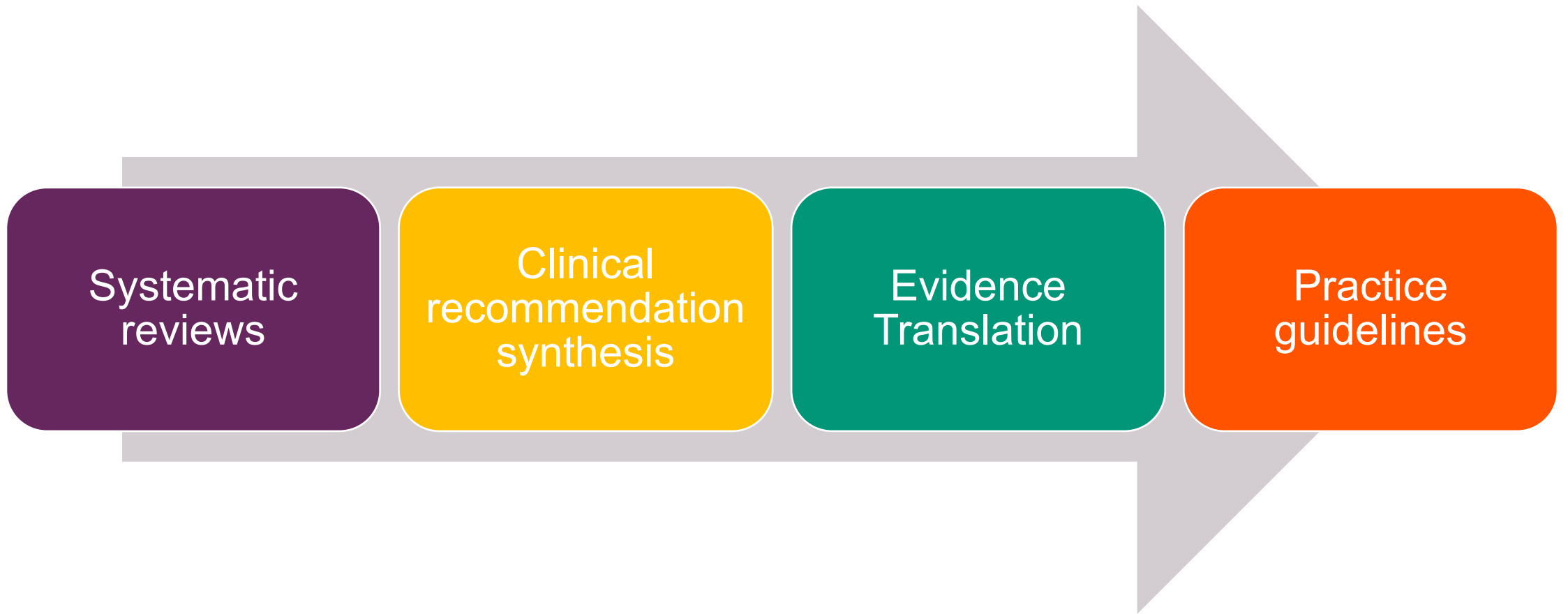
Practice Guidelines Purposes

Help OTPs to understand OT's role in providing services to adults with MS by translating relevant research findings from systematic reviews into practice

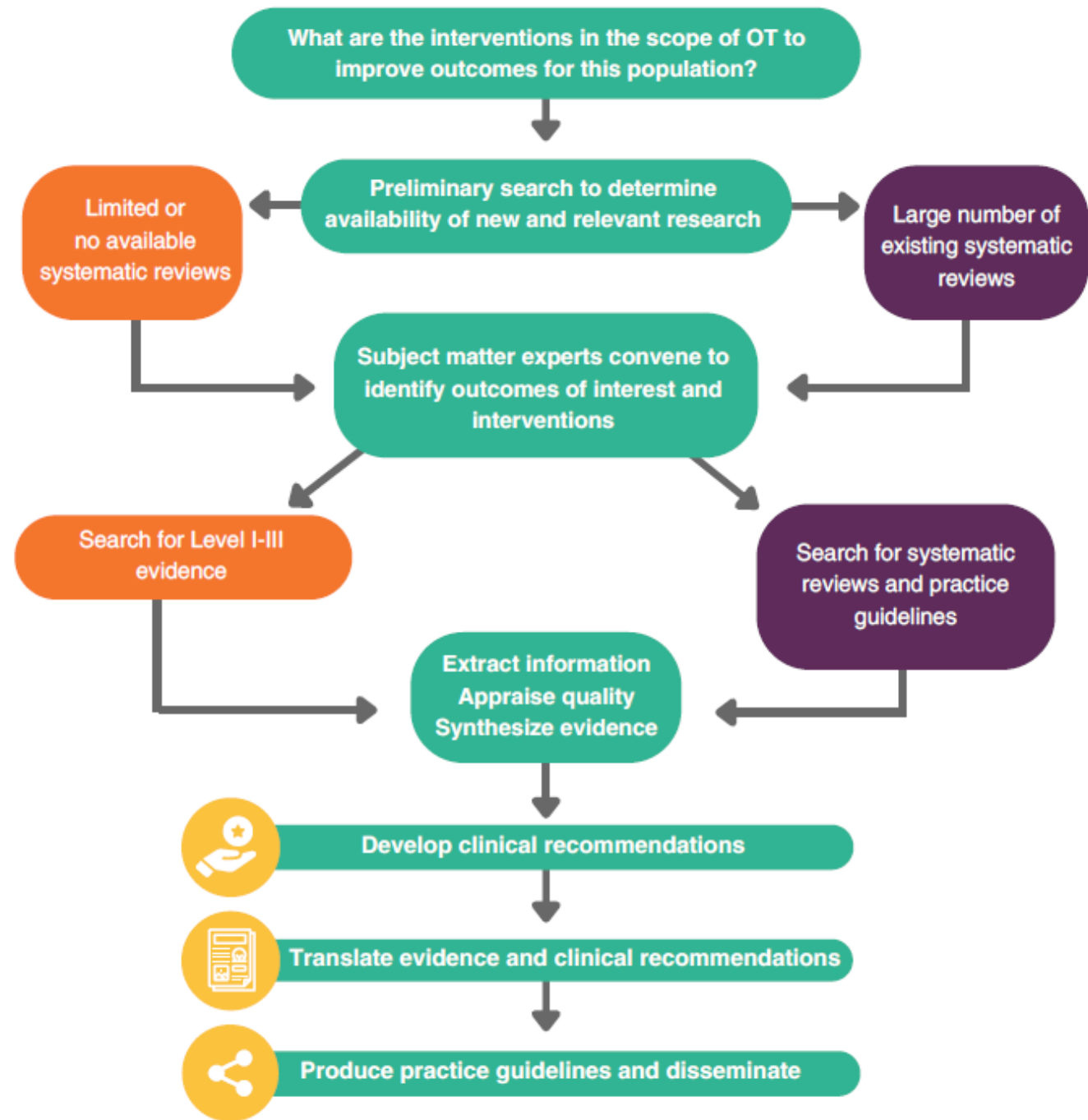
Support those who manage, reimburse, or set policy regarding OT services understand OT's role in providing services to adults with MS

Serve as a reference for healthcare professionals, healthcare facility managers, education professionals, third-party payers, managed care organizations, and those who conduct research to advance care of adults with MS

Practice Guidelines Development



Practice Guideline Development Process



Systematic Review Questions

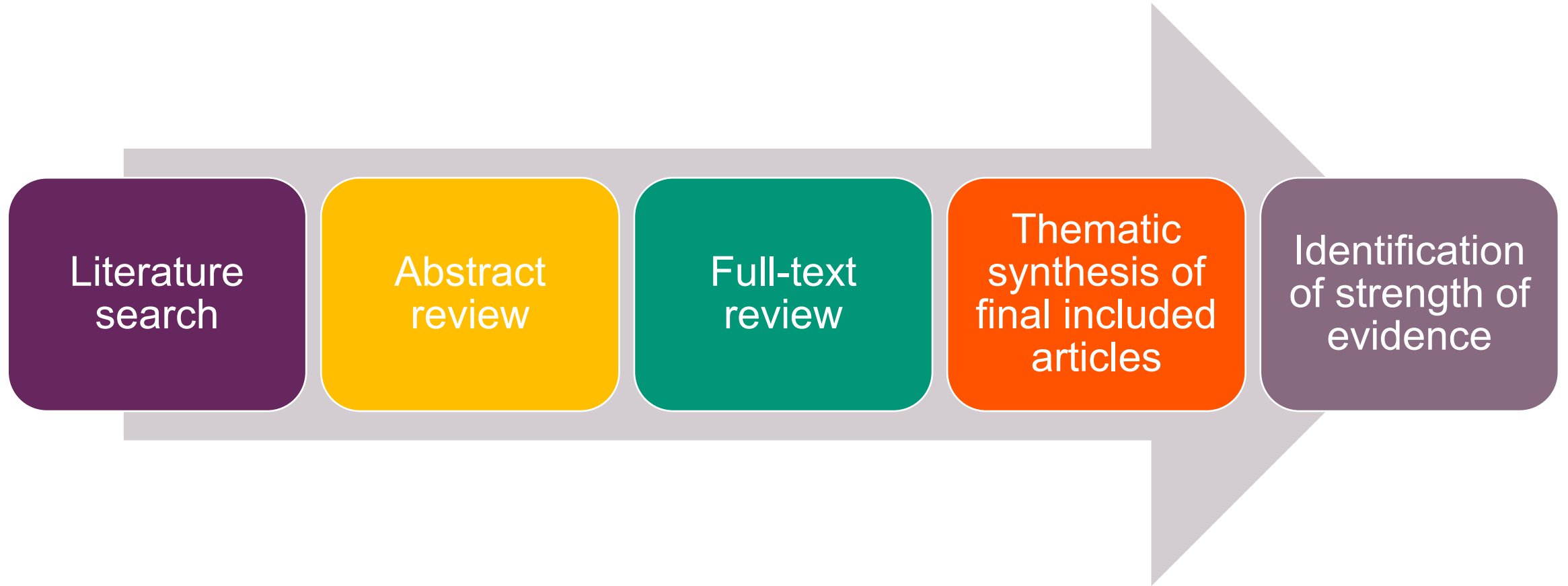
ADLs, sleep, and
rest (PwMS)

IADLs (PwMS)

Education, work,
volunteering,
leisure, and social
participation (PwMS)

Participation in
caregiver role (CG
for PwMS)

Systematic Review Process



Clinical Recommendation Synthesis

- Findings from each systematic review are graded in terms of how confident a practitioner can feel that using the presented intervention will improve targeted client outcomes
- Grade of confidence is based on:
 - Specificity of intervention
 - Number of studies supporting the intervention
 - Levels of evidence of studies
 - Quality of studies
 - Significance of studies' findings

Clinical Recommendation Synthesis

Grade A

- Strong evidence OTPs should routinely provide the intervention to eligible clients
- Strong evidence found that intervention improves important outcomes
- Benefits substantially outweigh harms

Grade B

- Moderate evidence OTPs should routinely provide the intervention to eligible clients
- High certainty that net benefit is moderate OR moderate certainty net benefit is moderate to substantial

Grade D

- Recommended that OTPs NOT provide intervention to eligible clients
- At least fair evidence was found that intervention is ineffective OR harms outweigh benefits

Practice Guidelines Components

Clinical recommendations and supporting evidence

Clinical case studies and algorithms

Strengths and limitations of current body of evidence

Clinical gaps in the evidence

General implications for occupational therapy

Using PG Clinical Recommendations

Questions to Ask

Exactly what intervention do I need to provide?

How well do the conditions in which I will provide the intervention match those in the studies?

How flexible is the intervention, and how much can I modify or adapt it?

Using PG Clinical Gap Information

Questions to Ask

What evidence exists?

What are my client's preferences and values?

What experience and expertise do I have that can help guide my decisions?

Will the health system or system organization be supportive of this intervention?

Knowledge Translation Resources related to Practice Guidelines

- AJOT Evidence Connection articles
 - Provide examples of how evidence from Systematic Reviews can be translated into practice and clinical decision-making for one case example
- HOT Evidence Infographics
- Evidence-Informed Intervention Ideas Checklists
- Everyday Evidence Podcasts

HOT Evidence
Adults With Multiple Sclerosis, Work and Social Participation

Why This Matters

Approximately 400,000 Americans and 2.5 million people worldwide are affected by multiple sclerosis (MS).

Occupational therapy practitioners play an important role in helping older adults with MS in the areas of **education, work, volunteering, leisure, and social participation.**

Improving Work & Social Participation
Evidence-Based Interventions

- Online work-related training modules, including interactive components
- Individualized, goal-oriented interdisciplinary rehabilitation
- Group yoga exercises

Find the Evidence

Visit www.aota.org to review this Critically Appraised Topic Paper: *OT Interventions Addressing Work and Social Participation for Adults With Multiple Sclerosis.*

AOTA American Occupational Therapy Association

OT Practice Guidelines for Adults with MS

Cunningham, R., Uyeshiro Simon, A., & Preissner, K. (2022). Practice Guidelines—Occupational therapy practice guidelines for adults with multiple sclerosis. *American Journal of Occupational Therapy*, 76, 7605397010. <https://doi.org/10.5014/ajot.2022.050088>

MS Systematic Review Questions

What is the evidence for the effectiveness of interventions within the scope of OT practice to improve and/or maintain sleep and rest and performance and participation in ADLs for adults with MS?

What is the evidence for the effectiveness of interventions within the scope of OT practice to improve and maintain performance and participation in IADLs among adults with MS?

What is the evidence for the effectiveness of interventions within the scope of OT practice to improve and/or maintain the performance and participation in education, work, volunteering, leisure, and social participation among adults with MS?

What is the evidence for the effectiveness of interventions for caregivers of people with MS within the scope of OT practice that facilitate and maintain participation in the caregiver role?

Clinical Recommendations for ADLs, Sleep, Rest - STRONG

Address Sexual Function

- Women with MS
- 4 weekly 60-120 minutes sessions
- Community based setting
- Based on PLISSIT or Ex-PLISSIT model
- Improve management of sexual dysfunction
- Khakbazan et al., 2016; Daneshfar et al., 2017

Falls Prevention

- Ambulatory adults with MS
- Physical activity intervention to address balance, strength, and stretching
- Group or home based
- 4-10 sessions over 10-12 weeks
- Reduce number of falls
- Coote et al., 2013; Sosnoff et al., 2014

Clinical Recommendations for ADLs, Sleep, Rest - MODERATE

Address Sleep – Intervention Type 1

- Adults with MS
- Mindfulness meditation intervention
- 1 session/week for 8 weeks
- Online context
- Improve short-term sleep problems
- Cavalera et al., 2019

Address Sleep – Intervention Type 2

- Women with MS
- CBT outpatient program
- Group or individual
- 90 minute session/week for 8 weeks
- Improve sleep quality
- Abbasi et al., 2016; Kiropoulos et al., 2016

Clinical Recommendations for IADLs - STRONG

Address Physical Activity Health Management Routines

- Adults with MS
- Combination of 4-15 educational materials plus 7-15 1:1 coaching sessions
- Video or phone coaching sessions
- Online, newsletter, or DVD educational materials
- Improve participation in physical activity
- Dlugonski et al., 2012; Motl et al., 2017; Pilutti et al., 2014; Sandroff et al., 2014; Suh et al., 2015; Turner et al., 2016

Clinical Recommendations for IADLs - MODERATE

Address Medication Health Management Routines

- Adults with MS
- CBT and MI informed counseling or coaching
- 3-5 weeks of telephone based 1:1 sessions
- Improve adherence with medication regimen
- Bruce et al., 2016; Turner et al., 2014

Clinical Recommendations for Work, Education, Volunteering, Leisure, Social Participation - MODERATE

Address Work

- Adults with MS
- 7 "Work and MS" educational modules over 4 weeks
- Online program
- Improve confidence in career goals and problem solving for workplace difficulties
- Dorstyn et al., 2018; Dorstyn et al., 2017

Clinical Recommendations for Caregivers - STRONG

Address Caregiver Needs

- Caregivers of people with MS
- Collaborative care or psychoeducation sessions
- 6-12 weeks of in-person group intervention
- Improve support to caregivers
- Pahlavanzadeh et al., 2015; Rakhshan et al., 2018

Clinical Recommendations for Caregivers - MODERATE

Address Caregiver Needs

- Couples in which 1 partner has MS
- In-person group intervention
- 5-8 sessions
- Improve relationship quality
- Navidian et al., 2017; Tompkins et al., 2013

Practice Guidelines Algorithms

Sleep
interventions

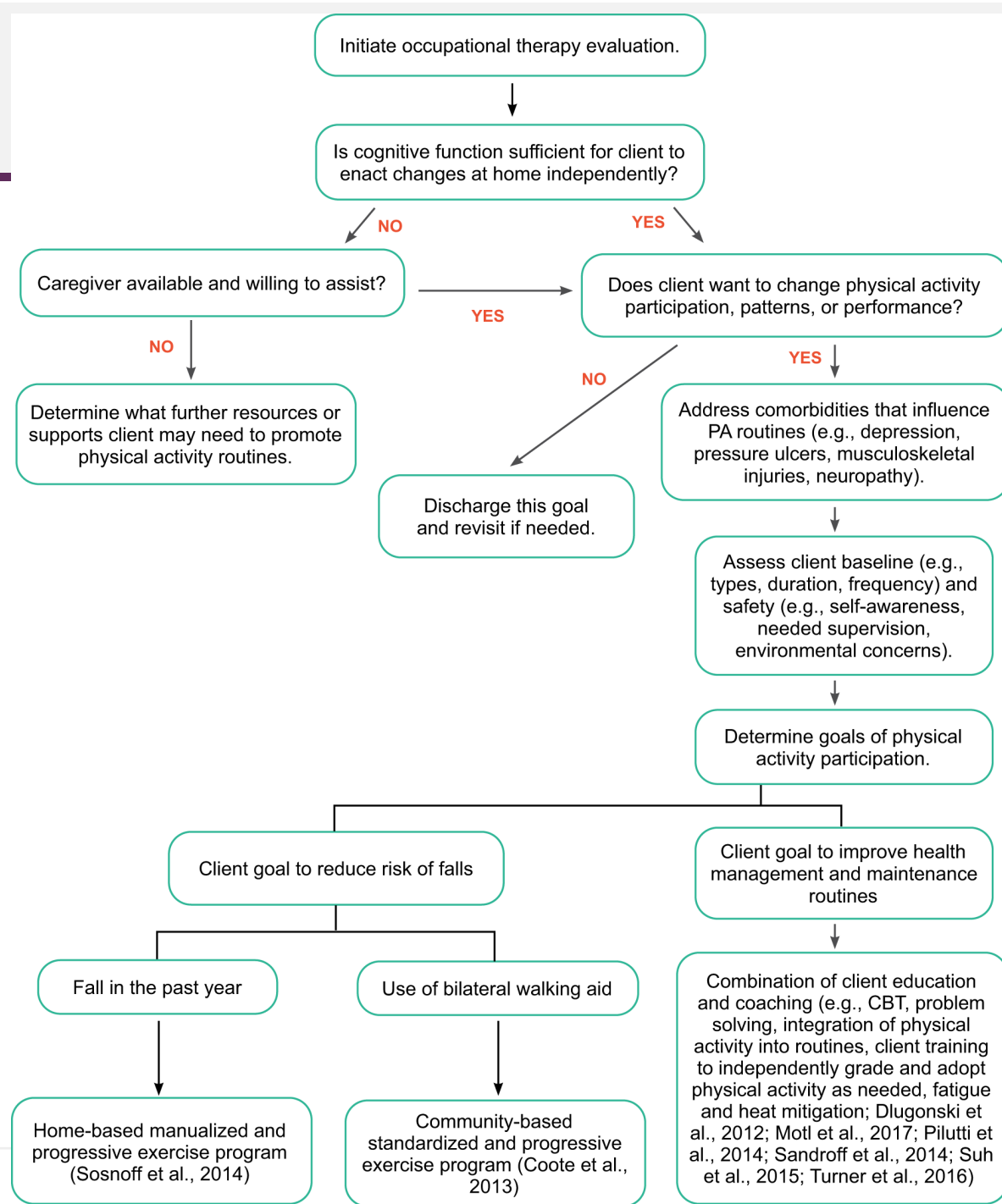
Physical activity
health
management
interventions

Sexual activity
ADL
interventions

Interventions to improve or maintain physical activity for adults with MS.

Note. Occupational therapy practitioners should always consider the client's personal preferences, access to resources, and interests when developing the plan of care and selecting interventions. CBT = cognitive-behavioral therapy; PA = physical activity.

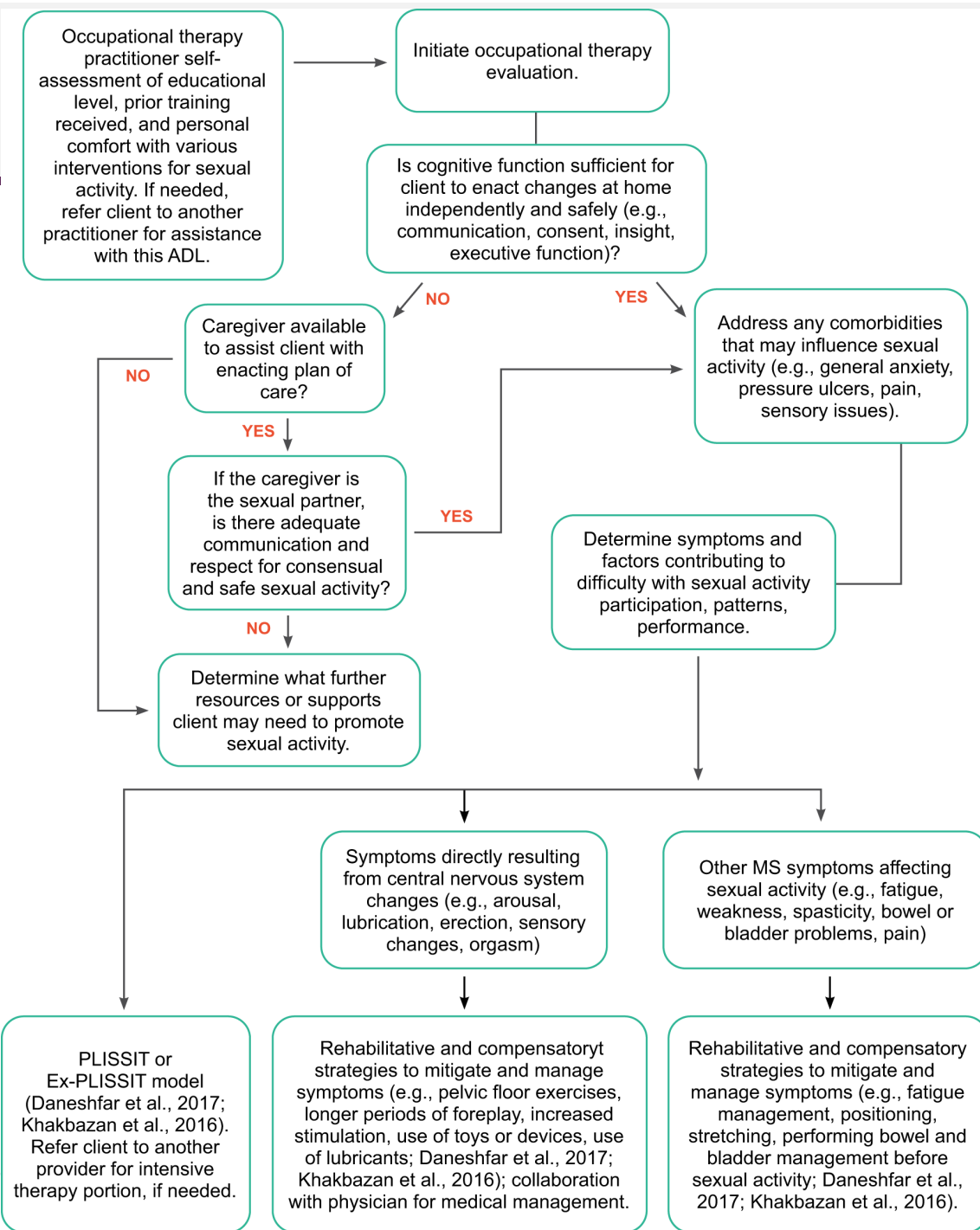
Am J Occup Ther. 2022;76(5). doi:10.5014/ajot.2022.050088



Interventions for sexual activity for adults with MS.

Note. Occupational therapy practitioners should always consider the client's personal preferences, access to resources, and interests when developing the plan of care and selecting interventions. ADL = activity of daily living; MS = multiple sclerosis; EX-PLISSIT = Extended Permission PLISSIT; PLISSIT = Permission, Limited Information, Specific Suggestion, Intensive Therapy.

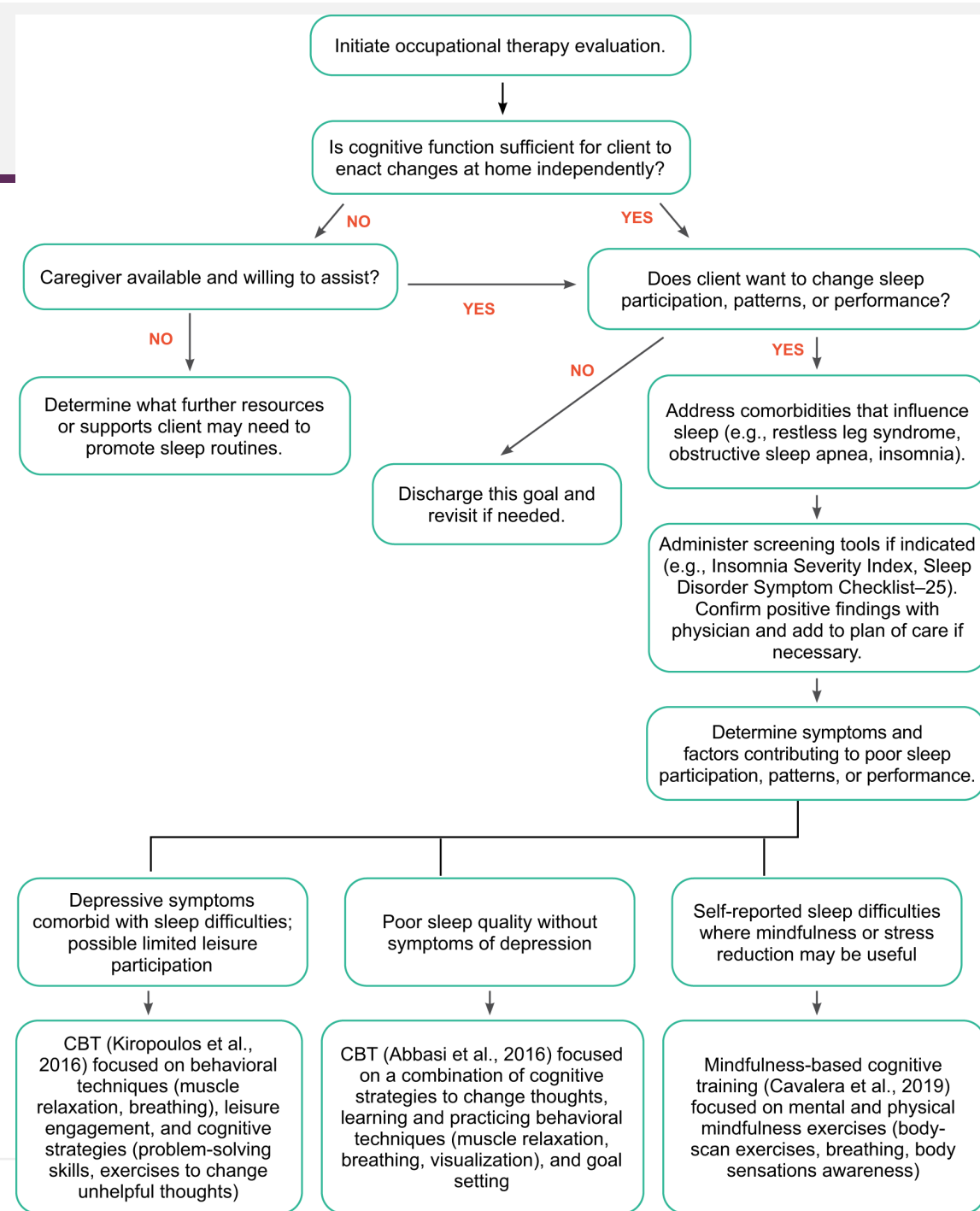
Am J Occup Ther. 2022;76(5). doi:10.5014/ajot.2022.050088



Interventions to improve sleep for adults with MS.

Note. Occupational therapy practitioners should always consider the client’s personal preferences, access to resources, and interests when developing the plan of care and selecting interventions. CBT = cognitive-behavioral therapy.

Am J Occup Ther. 2022;76(5). doi:10.5014/ajot.2022.050088



Strengths and Limitations of Current Body of Evidence

Strengths

- Following best-practice methodology through each stage
- Input at every stage from practitioners, researchers, consumers, and experts
- Systematic review questions developed with focus on occupation-based outcomes
- Avoided overlap with practice guidelines from other diagnoses

Limitations

- Predominately female sample size across studies which limits generalizability to males, especially in caregiver studies
- Prevention and prevention-related intervention language not included in systematic review questions

Clinical Gaps

Fatigue Management Interventions

Interventions to Address Social and Emotional Regulation Health Management

Interventions to Address Cognition

Bowel and Bladder Management Interventions

Caregiver Involvement

General Implications for Occupational Therapy

Occupation as
ends and
means

Coaching
interventions to
support health
management

Online or virtual
service delivery
methods

Occupation-
based
performance
assessments

Q & A

Participant Questions

- How do you address executive function impairment in MS?
- What are effective goals for "just right challenge" with MS when signs or symptoms are not clear and vary depending on the day in the same individual?
- Does the red marrow of the brain have anything to do with MS?
- How do you recommend addressing a person's fatigue and preventing over-exertion in the context of a high-intensity inpatient rehab setting where patients are seen for 75-90 minutes 5x/week?

Participant Questions

- What are some short-term goals for patients with MS regarding cognitive integration such as sensory processing?
- Why is it that other countries' treatment protocols cannot be available or considered appropriate for people in our country with MS?
- What are the broader roles and functions of occupational and physical therapy for the ongoing treatment of clients with MS?

Participant Questions

- Do you have any recommendations for adaptive equipment for self-catheterizing or specific brands for people who have fine motor deficits?
- Could you explain what infusion is and what the benefits are for people with MS?
- Work at a MS center in the Eastern part of the US - we notice that hand function many times is an early indicator of further/future MS symptoms. What evaluations do you use and what treatments do you find are most effective for maintaining or preventing decline in hand function?

Participant Questions

- Any evidence regarding the use of weights to limit tremors?
- In our health system we have multi-D clinics where multiple providers (rehab, psych, MD, respiratory, etc.) will see a client on the same day. This can maximize real time collaboration with populations such as individuals with ALS. Have you seen this model adopted for clients with MS?
- What have you found is the most common concern expressed among clients with MS?

Participant Questions

- Is poor insight (into abilities/deficits) more common in MS than in other cognition-affecting diagnoses?
- When working with a person with MS do you have any suggestions for differentiating between DM associated neuropathy or MS neuropathy like pain?
- Can you briefly say more about pseudobulbar affect impact and how that may alter your treatment approach?

Participant Questions

- How can OT and the rest of the care team approach patient burnout? (i.e., - I have a client who's had MS for 25+ years and has become more "noncompliant" in recent years)
- Various types of stress can trigger many chronic illnesses. What are the strategies used to address stress for health management? (i.e., realistic to prevent relapses by managing stress)
- What are some cognitive behavioral management [strategies/methods] involved with short term goals with MS clients?

Application and Case Example

Case Example: Social History

- Connie (she/her/hers) is 35 years old
- Connie lives with her partner
- Connie identifies difficulties communicating with partner impacts participation in sexual activities and pattern of partner overcompensating for Connie during home management IADLs and meal prep IADLs
- Connie worked full-time as an elementary school administrator, and resigned due to the impact of her MS symptoms on work performance

Case from Cunningham, Uyeshiro Simon, & Preissner (2022). <https://doi.org/10.5014/ajot.2022.050088>



Case Example: Health History

- Connie was diagnosed with MS five years ago
- Connie identifies the following MS symptoms: fatigue, heat sensitivity, and urinary symptoms (incontinence, frequency, urgency)
- Connie recognizes that overexertion and stress contribute to MS symptom presentation
- Connie is independent to modified independent with all ADLs

Case Example: Health History

- Connie's symptoms make home management and meal prep IADLs more difficult, but she expresses desire to participate more in these occupations
- Connie values her relationship with her partner and would like to engage more in sexual-intimacy activities
- Connie would like to return to work
- The MS comprehensive care center's nurse practitioner has referred Connie to OT to address her occupational concerns

Case Example: Occupational Profile

Client Report	<p>Reason the client is seeking service and concerns related to engagement in occupations (p. 16)</p>	<p><i>Why is the client seeking services, and what are the client's current concerns relative to engaging in occupations and in daily life activities? (This may include the client's general health status.)</i></p> <p>Connie is seeking treatment due to occupational deficits in work, sexual-intimacy activities, home management IADLs, and meal prep IADLs caused by fatigue, heat sensitivity, and urinary symptoms (incontinence, frequency, and urgency) secondary to MS.</p>
	<p>Occupations in which the client is successful and barriers impacting success (p. 16)</p>	<p><i>In what occupations does the client feel successful, and what barriers are affecting their success in desired occupations?</i></p> <p>Connie is independent to modified independent with all ADLs.</p> <p>Connie identifies difficulties communicating with her partner as a barrier to occupational engagement in sexual intimacy/expression activities, home management IADLs, and meal prep IADLs. Connie's partner currently completes the majority of home management IADLs and meal prep IADLs, but Connie has expressed desire to do more in these occupational domains. Connie's symptoms also interfere with her previous job performance resulting in her resignation.</p>
	<p>Occupational history (p. 16)</p>	<p><i>What is the client's occupational history (i.e., life experiences)?</i></p> <p>Connie is a 35-year-old African American woman who <u>was diagnosed</u> with MS 5 years ago. Connie was previously an elementary school administrator.</p>
	<p>Personal interests and values (p. 16)</p>	<p><i>What are the client's values and interests?</i></p> <p>Connie values her relationship with her partner. She desires to engage in sexual-intimacy activities and be an active participant in home management IADLs and meal prep IADLs. Connie also desires to return to work.</p>

Contexts		<i>What aspects of their contexts (environmental and personal factors) does the client see as supporting engagement in desired occupations, and what aspects are inhibiting engagement?</i>	
	Environment (p. 36) (e.g., natural environment and human-made changes, products and technology, support and relationships, attitudes, services, systems and policies)	<p><i>Supporting Engagement</i></p> <p>Connie has a supportive partner</p> <p>Connie has strong relationships with friends and previous colleagues that provide emotional support</p>	<p><i>Inhibiting Engagement</i></p> <p>Difficulties maintaining full-time employment due to symptom presentation</p>
	Personal (p. 40) (e.g., age, sexual orientation, gender identity, race and ethnicity, cultural identification, social background, upbringing, psychological assets, education, lifestyle)	<p><i>Supporting Engagement</i></p> <p>Connie has strong insight into the connection between activity choices and symptom presentation</p>	<p><i>Inhibiting Engagement</i></p> <p>Connie has difficulties communicating her needs to her partner regarding sexual intimacy, and her desire to participate more in home management IADLs and meal prep IADLs</p>

Performance Patterns	<p>Performance patterns (p. 41) (e.g., habits, routines, roles, rituals)</p>	<p><i>What are the client's patterns of engagement in occupations, and how have they changed over time? What are the client's daily life roles? (Patterns can support or hinder occupational performance.)</i></p> <p>Connie identifies that she historically participated more in home management IADLs and meal prep IADLs, and she feels that her partner is currently overcompensating for her in these tasks. Connie also has experience working full time, but currently her symptoms are affecting her ability to perform essential work roles and functions. Connie recognizes that she may be able to participate in part-time work.</p>	
	Client Factors		<p><i>What client factors does the client see as supporting engagement in desired occupations, and what aspects are inhibiting engagement (e.g., pain, active symptoms)?</i></p>
<p>Values, beliefs, spirituality (p. 51)</p>		<p><i>Supporting Engagement</i></p> <p>Desire to engage in sexual-intimacy activities with partner</p> <p>Desire to increase involvement in home mgmt. and meal prep tasks</p> <p>Strong social support system</p>	<p><i>Inhibiting Engagement</i></p> <p>Difficulty with communication and self-advocacy</p>
<p>Body functions (p. 51) (e.g., mental, sensory, neuromusculoskeletal and movement-related, cardiovascular functions)</p>		<p><i>Supporting Engagement</i></p> <p>Higher cognitive functions Sensory functions intact</p>	<p><i>Inhibiting Engagement</i></p> <p>Fatigue Heat sensitivity Urinary symptoms (urgency, frequency, and incontinence)</p>
<p>Body structures (p. 54) (e.g., structures of the nervous system, eyes and ears, related to movement)</p>		<p><i>Supporting Engagement</i></p> <p>Gross motor Fine motor Functional mobility</p>	<p><i>Inhibiting Engagement</i></p> <p>None</p>

Client Goals

Client's priorities and desired targeted outcomes (p. 65)

What are the client's priorities and desired targeted outcomes related to the items below?

Occupational Performance – home management IADLs, meal prep IADLs, sexual activity ADLs and intimate partner relationships, social and emotional health promotion management, and urinary symptom/condition health management

Prevention – symptom/condition health management

Health and Wellness - social and emotional health promotion management

Quality of Life – sexual activity ADLs; Intimate partner relationships; social and emotional health promotion management

Participation – Employment interests and pursuits; Employment seeking and acquisition


Role Competence – intimate partner relationships

Well-Being - social and emotional health promotion management

Occupational Justice – employment seeking and acquisition

Discussion

How does using the Occupational Profile support addressing the needs of clients with multiple sclerosis?



How can the Occupational Profile uncover ways multiple sclerosis may be impacting occupational performance?

Discussion



What are the client's health management challenges?




How does the client's context affect performance and participation related to health management?

Discussion

- What skills does the client need to use and/or develop to be successful with health management and other occupations?
- What would the client's day to day life look like if OT was successful in supporting the client to successfully address health management and other occupations?

Discussion

The next step of the evaluation process is the Analysis of Occupational Performance.



Based on the Occupational Profile, what are some ways the practitioner could then analyze occupational performance?

Wrap Up

- Post-Session Questionnaire
- [ECHO MS Post-Session 2 Survey: Clinical Recommendations MS Practice Guideline - Formstack \(aota.org\)](#)
- Questions and Cases for Discussion
- A submission link will be included in the follow-up email
- Questions: ebp@aota.org
 - Or see the [Welcome Packet](#)

Next Session

- Don't forget to join us for the next AOTA ECHO session on February 2nd.
- **Ensuring Quality OT Services and Addressing Gaps in the Practice Guidelines**



Kathleen Zackowski
PhD, OTR



Rebecca Cunningham
OTD, OTR/L, MSCS



Ashley Uyeshiro Simon
OTD, OTR/L, MSCS

References

- Abbasi, S., Alimohammadi, N., & Pahlavanzadeh, S. (2016). Effectiveness of cognitive behavioral therapy on the quality of sleep in women with multiple sclerosis: A randomized controlled trial study. *International Journal of Community Based Nursing and Midwifery*, 4, 320–328.
- Bruce, J., Bruce, A., Lynch, S., Strober, L., O'Bryan, S., Sobotka, D.,...Catley, D. (2016). A pilot study to improve adherence among MS patients who discontinue treatment against medical advice. *Journal of Behavioral Medicine*, 39, 276–287. <https://doi.org/10.1007/s10865-015-9694-6>
- Cavalera, C., Rovaris, M., Mendozzi, L., Pugnetti, L., Garegnani, M., Castelnuovo, G., . . . Pagnini, F. (2019). Online meditation training for people with multiple sclerosis: A randomized controlled trial. *Multiple Sclerosis Journal*, 25, 610–617. <https://doi.org/10.1177/1352458518761187>
- Coote, S., Hogan, N., & Franklin, S. (2013). Falls in people with multiple sclerosis who use a walking aid: Prevalence, factors, and effect of strength and balance interventions. *Archives of Physical Medicine and Rehabilitation*, 94, 616–621. <https://doi.org/10.1016/j.apmr.2012.10.020>
- Cunningham, C., Uyeshiro Simon, A., & Preissner, K. (2022). Occupational Therapy Practice Guidelines for Adults With Multiple Sclerosis. *American Journal of Occupational Therapy*, 76(5), 7605397010. doi: <https://doi.org/10.5014/ajot.2022.050088>
- Daneshfar, F., Behboodi-Moghadam, Z., Khakbazan, Z., Nabavi, S. M., Nayeri, N. D., Ghasemzadeh, S., & Montazeri, A. (2017). The influence of Ex-PLISSIT (extended permission, limited information, specific suggestions, intensive therapy) model on intimacy and sexuality of married women with multiple sclerosis. *Sexuality and Disability*, 35, 399–414. <https://doi.org/10.1007/s11195-017-9482-z>
- Dlugonski, D., Motl, R. W., Mohr, D. C., & Sandroff, B. M. (2012). Internet-delivered behavioral intervention to increase physical activity in persons with multiple sclerosis: Sustainability and secondary outcomes. *Psychology, Health and Medicine*, 17, 636–651. <https://doi.org/10.1080/13548506.2011.652640>

References

- Dorstyn, D., Roberts, R., Murphy, G., Kneebone, I., Craig, A., & Migliorini, C. (2018). Online resource to promote vocational interests among job seekers with multiple sclerosis: A randomized controlled trial in Australia. *Archives of Physical Medicine and Rehabilitation*, 99, 272–280. <https://doi.org/10.1016/j.apmr.2017.08.475>
- Dorstyn, D., Roberts, R., Murphy, G., Kneebone, I., Migliorini, C., Craig, A., . . . Field, D. (2017). Piloting an email-based resource package for job seekers with multiple sclerosis. *Disability and Rehabilitation*, 39, 867–873. <https://doi.org/10.3109/09638288.2016.1161847>
- Khakbazan, Z., Daneshfar, F., Behboodi-Moghadam, Z., Nabavi, S. M., Ghasemzadeh, S., & Mehran, A. (2016). The effectiveness of the Permission, Limited Information, Specific Suggestions, Intensive Therapy (PLISSIT) model based sexual counseling on the sexual function of women with multiple sclerosis who are sexually active. *Multiple Sclerosis and Related Disorders*, 8, 113–119. <https://doi.org/10.1016/j.msard.2016.05.007>
- Kiropoulos, L. A., Kilpatrick, T., Holmes, A., & Threader, J. (2016). A pilot randomized controlled trial of a tailored cognitive behavioural therapy based intervention for depressive symptoms in those newly diagnosed with multiple sclerosis. *BMC Psychiatry*, 16, 435. <https://doi.org/10.1186/s12888-016-1152-7>
- Motl, R. W., Hubbard, E. A., Bollaert, R. E., Adamson, B. C., Kinnett-Hopkins, D., Balto, J. M., . . . McAuley, E. (2017). Randomized controlled trial of an e-learning designed behavioral intervention for increasing physical activity behavior in multiple sclerosis. *Multiple Sclerosis Journal—Experimental, Translational and Clinical*, 3, 2055217317734886. <https://doi.org/10.1177/2055217317734886>
- Navidian, A., Rezaee, N., Baniasadi, F., & Shakiba, M. (2017). Effect of a couples' relationship enrichment program on the quality of marital relationships from the perspective of spouses of patients with multiple sclerosis. *Issues in Mental Health Nursing*, 38, 756–762. <https://doi.org/10.1080/01612840.2017.1294221>
- Pahlavanzadeh, S., Dalvi-Isfahani, F., Alimohammadi, N., & Chitsaz, A. (2015). The effect of group psycho-education program on the burden of family caregivers with multiple sclerosis patients in Isfahan in 2013–2014. *Iranian Journal of Nursing and Midwifery Research*, 20, 420–425. <https://doi.org/10.4103/1735-9066.161000>
- Pilutti, L.A., Dlugonski, D., Sandroff, B.M., Klaren, R., & Motl, R.W. (2014). Randomized controlled trial of a behavioral intervention targeting symptoms and physical activity in multiple sclerosis. *Multiple Sclerosis Journal*, 20, 594–601. <https://doi.org/10.1177/1352458513503391>

References

- Rakhshan, M., Ganjalivand, S., Zarshenas, L., & Majdinasab, N. (2018). The effect of collaborative care model-based intervention on hope in caregivers and patients with multiple sclerosis: A randomized controlled clinical trial. *International Journal of Community Based Nursing and Midwifery*, 6, 218–226.
- Sandroff, B. M., Klaren, R. E., Pilutti, L. A., Dlugonski, D., Benedict, R.H. B., & Motl, R. W. (2014). Randomized controlled trial of physical activity, cognition, and walking in multiple sclerosis. *Journal of Neurology*, 261, 363–372. <https://doi.org/10.1007/s00415-013-7204-8>
- Sosnoff, J. J., Finlayson, M., McAuley, E., Morrison, S., & Motl, R. W. (2014). Home-based exercise program and fall-risk reduction in older adults with multiple sclerosis: Phase 1 randomized controlled trial. *Clinical Rehabilitation*, 28, 254–263. <https://doi.org/10.1177/0269215513501092>
- Suh, Y., Motl, R. W., Olsen, C., & Joshi, I. (2015). Pilot trial of a social cognitive theory-based physical activity intervention delivered by nonsupervised technology in persons with multiple sclerosis. *Journal of Physical Activity and Health*, 12, 924–930. <https://doi.org/10.1123/jpah.2014-0018>
- Tompkins, S. A., Roeder, J. A., Thomas, J. J., & Koch, K. K. (2013). Effectiveness of a relationship enrichment program for couples living with multiple sclerosis. *International Journal of MS Care*, 15, 27–34. <https://doi.org/10.7224/1537-2073.2012-002>
- Turner, A. P., Hartoonian, N., Sloan, A. P., Benich, M., Kivlahan, D. R., Hughes, C., . . . Haselkorn, J. K. (2016). Improving fatigue and depression in individuals with multiple sclerosis using telephone administered physical activity counseling. *Journal of Consulting and Clinical Psychology*, 84, 297–309. <https://doi.org/10.1037/ccp0000086>
- Turner, A. P., Sloan, A. P., Kivlahan, D. R., & Haselkorn, J. K. (2014). Telephone counseling and home telehealth monitoring to improve medication adherence: Results of a pilot trial among individuals with multiple sclerosis. *Rehabilitation Psychology*, 59, 136–146. <https://doi.org/10.1037/a0036322>



Thank you!



American
Occupational Therapy
Association