

SYMPTOM IMPACT AND CONSIDERATION CHART

INTRODUCTION AND GENERAL GUIDANCE

People with MS have unique combinations of symptoms that can vary day to day and impact their ability to participate in exercise. This document outlines common MS symptoms that can impact exercise and special considerations for each symptom. First, it is important to avoid pushing participants beyond their abilities and understand when modifications are needed to optimize the exercise experience. Consider bad form, stress, time of day, lack of sleep or poor nutrition may exacerbate various symptoms. Allow for frequent breaks and checking in with clients about their symptoms before, during and after workouts. Change the intensity, frequency and/or duration of the workout if fatigue post-workout exceeds 2 hours and symptoms do not return to baseline. Note that some clients may not need a mobility aid or as much support at the beginning of a workout, but may need support at the end due to increases in symptoms. **Refer to a healthcare provider if walking challenges, muscles tightness, spasms, spasticity or pain interfere with safe exercise participation, or if a client is experiencing new symptoms or worsening of existing symptoms for more than 24 hours. Some medications or medication timing can impact exercise. Encourage clients to speak to their healthcare provider if they are taking medications that are impacting their ability to exercise.**

SYMPTOM: FATIGUE – MS FATIGUE

Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “My body feels heavy” • “I am overwhelmingly exhausted” • “I am running on empty” (and no amount of caffeine will help) • “I just woke and I am still tired” 	<ul style="list-style-type: none"> • All symptoms can be exacerbated by fatigue • Total amount of movement in a day can be impacted by fluctuating fatigue • Balance may be compromised and increase susceptibility to falls 	<ul style="list-style-type: none"> • Practice mild interval training • Try mild cardio exercises (i.e., stationary bike, swimming) • Gentle/slow stretching 	<ul style="list-style-type: none"> • Recognize when fatigue is at baseline, all forms of exercise can have positive impact on MS fatigue • Fatigue can vary significantly day to day or within a day • Each person experiences fatigue differently • Allow for extra rest between activities • Frequently check in using RPE (before/during/after exercise)

SYMPTOM IMPACT AND CONSIDERATION CHART

SYMPTOM: COGNITIVE FATIGUE AND COGNITIVE CHALLENGES

Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “My thinking feels slow” • “My brain feels foggy” • “I feel like my thinking is in slow motion” • “My brain is fried” 	<ul style="list-style-type: none"> • Decreases capacity to clearly understand/ comprehend directions • Performing an exercise while receiving instruction may be compromised • Multitasking or multi-step exercises may be difficult • Frustration may decrease motivation • Safety could be compromised if participant struggles with instructions involving exercise technique/form 	<ul style="list-style-type: none"> • Focus on fewer tasks/exercises • Use one-step directions • Utilize stationary equipment (i.e., bike, elliptical, weight machines) • Avoid fast, dynamic group exercise 	<ul style="list-style-type: none"> • Write down directions • Minimize distractions to allow for concentration • Repeat directions frequently • Take a break, focus on breathing to quiet the mind • Routine and organization can be a useful tool to substitute for cognitive challenges

SYMPTOM IMPACT AND CONSIDERATION CHART

SYMPTOM: WEAKNESS AND MUSCULAR FATIGUE

Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “My body just tires/wears out after a short while” • “My muscles just stop working” • “My leg feels heavy and slow” • “The connection from my brain to my arms and legs slows down” 	<ul style="list-style-type: none"> • Slows speed of movement • Compromises balance • Gait changes may worsen with exertion: foot drop, shuffling, compensatory movements of trunk • Asymmetry in movements or exercises 	<ul style="list-style-type: none"> • Decrease weight/repetitions • Transition to seated options if fatigue is observed • Consider variety of positions and strategies especially during strength training • Alternate between upper and lower body activities 	<ul style="list-style-type: none"> • Allow for longer/more frequent rest breaks between exercises • Frequently check in using RPE • Rate and pace of exercise intensity progression may be slightly slower

SYMPTOM: HEAT SENSITIVITY

Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “I feel like I’m melting” • “I am having a hot flash or is it the MS?!” • “It feels like my symptoms are starting to flare up” • “I feel like my energy is being zapped” 	<ul style="list-style-type: none"> • Heat causes a “pseudo exacerbation” – temporary worsening of existing symptoms (vision, weakness, balance, numbness/tingling, fatigue, etc.) 	<ul style="list-style-type: none"> • Utilize indoor activities in a cool environment • Consider aquatics (water temp <85 degrees) 	<ul style="list-style-type: none"> • Hydrate • Provide a cool environment with adequate fans, AC, cooling towels • Frequent rest to decrease core temperature • Wear breathable clothes/layers • Consider cooling devices (vests, wrist packs, etc.) • Use cooling strategies before, during and after exercise

SYMPTOM IMPACT AND CONSIDERATION CHART

SYMPTOM: WALKING CHALLENGES (Examples: Drop Foot, Staggered Gait, Buckling Knees, Shuffling)

Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “My knee buckles when I stand” • “I trip on my toes” • “I catch my leg on the ground when nothing is in the way” • “I feel like I am going to fall over” • “My legs are slow to move” 	<ul style="list-style-type: none"> • Increases risk of falls/injury • Need for assistive device/mobility aid or braces 	<ul style="list-style-type: none"> • Use stable surface to assist with balance (i.e., parallel bars, chair for balance or balance bar) • Utilize assistive device/mobility aid • Consider activities that provide additional support (aquatics, stationary bike, weight machines) • Exercise in safe environment when performing balance and weight shifting • Incorporate safe exercise to improve balance: balance ball, uneven surfaces, etc. • Focus on strengthening major muscle groups in legs (quads, glutes, hamstrings) 	<ul style="list-style-type: none"> • Use gait belt/stand close to prevent falls • Use chair/parallel bars/balance bar for support • Avoid quick directional changes to prevent loss of balance • Monitor for fatigue • Monitor for correct mobility device fit, refer to physical or occupational therapist if incorrect fit

SYMPTOM IMPACT AND CONSIDERATION CHART

SYMPTOM: SPASTICITY			
Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “My legs feel tight” • “I experience deep muscle pain” • “My muscles feel stiff and heavy when I try to move” 	<ul style="list-style-type: none"> • Slows speed and pace of movements • Impacts ability to complete quick, transitional movements • Elevates fall risk 	<ul style="list-style-type: none"> • Minimize quick, transitional movements/exercises • Devote more time to warming up muscles/ optimizing range of motion • Focus on available range of motion and be aware asymmetry may be present • Use slow, gentle, rotational stretching • Utilize stationary bike, seated stair stepper • Consider aquatic exercises • Perform strengthening exercises for opposing muscle groups 	<ul style="list-style-type: none"> • Avoid forceful movements • Encourage slow, static stretching • Gentle massage may be helpful • Spasticity often most optimally managed with personalized exercise strategies/ medical management.

SYMPTOM IMPACT AND CONSIDERATION CHART

SYMPTOM: PAIN AND SENSORY CHANGES

Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “My hands/feet/skin feel tingly and numb” • “I constantly feel pins and needles in my body” • “I feel an uncomfortable tightness or hug around my trunk (MS hug)” • “I have pain in my face (trigeminal neuralgia)” 	<ul style="list-style-type: none"> • Increases risk for falls if sensation in feet is impaired • Changes in pain/sensations can cause movement hesitation/avoidance patterns 	<ul style="list-style-type: none"> • Do not encourage clients to push through pain or discomfort • Perform most activities, but frequently check on status • Focus on breathing • Consider mild-to-moderate intensity to avoid exacerbating 	<ul style="list-style-type: none"> • Avoid exercises that exacerbate pain • Focus on deep breathing

SYMPTOM: MOOD AND EMOTIONAL CHANGES

Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “I feel irritated and angry” • “I am sad and unmotivated” • “I don’t enjoy doing much of anything anymore” 	<ul style="list-style-type: none"> • Decreases motivation • Increases fatigue 	<ul style="list-style-type: none"> • Identify exercises that have positive effect/are enjoyable • Provide encouragement • Focus on deep breathing • Consider yoga/stretching 	<ul style="list-style-type: none"> • May be a symptom of the disease or a response to the challenges the disease presents • Ask “how are you doing?” • Take frequent breaks to focus on deep breathing • Be positive, supportive • Encourage client to speak with healthcare provider if they are experiencing mood symptoms

SYMPTOM IMPACT AND CONSIDERATION CHART

SYMPTOM: L'HERMITTE'S SIGN

Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “I feel an electric shock sensation down the back of my neck when I look down” 	<ul style="list-style-type: none"> • Experiences uncomfortable electric sensation when flexing neck towards chest 	<ul style="list-style-type: none"> • Maintain neutral neck position and avoid neck flexion exercises 	

SYMPTOM: VISION PROBLEMS (Optic Neuritis, Visual Motor/Tracking Problems)

Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “I can’t see out of my left eye sometimes” • “I see two of everything” • “I can’t focus well” • “My eyes feel shaky/jumpy sometimes when I turn my head too fast” • “I feel pain deep in my eyes” 	<ul style="list-style-type: none"> • Increases risk of falls • Impacts balance and coordination • Increases fatigue 	<ul style="list-style-type: none"> • Consider stationary exercise equipment • Use adaptive walking devices • Utilize wall, balance bar, parallel bars with movements • Avoid exercises with head movements that may impact visual field, tracking and/or ability to focus 	<ul style="list-style-type: none"> • Recognize vision symptoms may be constant, or can worsen with fatigue or as the workout progresses • Ensure workout space is clear of tripping hazards and keep area well lit

SYMPTOM IMPACT AND CONSIDERATION CHART

SYMPTOM: BLADDER/BOWEL			
Client May Say...	Impact	Exercise Suggestions	Special Considerations
<ul style="list-style-type: none"> • “I have the urge to go, but when I get to the bathroom, nothing happens” • “I am constantly leaking” • “When I have to go to the bathroom, I have to go right away” 	<ul style="list-style-type: none"> • Impacts the intensity and duration of exercises • Increases risk of accidents • Limits ability to participate in aquatic exercises 	<ul style="list-style-type: none"> • Practice lower abdominal strengthening/core strengthening • Utilize gluteal and adductor exercises • Practice consistent breathing with exertion • Avoid Valsalva as intra-abdominal pressure can impact bowel/bladder 	<ul style="list-style-type: none"> • Implement a hydration plan • Allow for frequent bathroom breaks • Exercise near a bathroom • Encourage use of pads

Created by Emily Reilly, CPT and Mandy Rohrig, PT, DPT, MSCS