

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement A. Detailed results of the checklist

Walking difficulties	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment
Due to weakness	Dalfampridine Side effects: difficulty falling asleep or staying asleep.	Strengthening, Stretching, Aerobic, Ankle-foot orthosis, Scooter, Wheelchair
Due to balance		Eye muscle exercises, Cane, Aerobic, Strengthening, Walker, Stretching, Scooter, Wheelchair
Due to numbness		Scooter, Wheelchair
Due to MS	Dalfampridine, Gabapentin Side effects: Feeling sleepy, tired or dizzy, Feeling sick (nausea), Being sick (vomiting), Diarrhea Baclofen Side effects: Feeling sleepy, tired, dizzy or weak, Feeling or being sick (nausea or vomiting) , Diarrhea, Headaches, Problems sleeping,	Functional electrical stimulation, Treadmill walking, Wheelchair, Exercise, Scooter, Wheelchair, Scooter

Cognitive problems	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
Verbal fluency	Donepezil Side effects: nausea, vomiting, diarrhea. loss of appetite, weight loss Rivastigmine Side effects:	Cognitive rehabilitation	Getting enough sleep	Short neuropsychological batteries * Brief Neuropsychological Battery (BNB) Symbol Digit Modalities Test

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Supplement A. Continued

Cognitive problems	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
	nausea, vomiting, diarrhea, stomach pain, loss of appetite, or weight loss			(SDMT) Processing Speed Test (PST) Computerized Speed Cognitive Test (CSCT) Multiple Sclerosis Neuropsychological Screening Questionnaire (MSNQ) Brief International Cognitive Assessment for Multiple Sclerosis (BICAMS) Brief Repeatable Neuropsychological Battery (BRNB)

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Cognitive problems	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
				Minimal Assessment of Cognitive Function in MS (MACFIMS)
Visual-spatial abilities				
Speed of information processing	<p>Amantadine</p> <p>Side effects: dry mouth. constipation. nausea. vomiting. decreased appetite</p> <p>Donepezil</p> <p>Side effects: nausea. vomiting. diarrhea. loss of appetite. weight loss</p> <p>Rivastigmine</p>			

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Cognitive problems	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
	<p>Side effects:nausea, vomiting, diarrhea, stomach pain, loss of appetite, or weight loss</p> <p>Lisdexamfetamine Side effects: sleepiness. dizziness. headache. dry mouth. constipation</p> <p>Memantine Side effects: dizziness. confusion. aggression. depression. headach</p> <p>Ginkgo Side effects: stomach upset, headache, dizziness</p>			

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Cognitive problems	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
	Donepezil Dalfampridine			
Attention and concentration	Donepezil Rivastigmine	Cognitive rehabilitation	Getting enough sleep, Practice focusing on one thing at time	
Memory	Memantine, Ginkgo, Turmeric Side effects: stomach upset, nausea, dizziness, or diarrhea Donepezil, Rivastigmine, Dalfampridine Methylphenidate Side effects: nervousness, irritability, difficulty falling asleep or staying asleep, dizziness, nausea.	Stress management, Cryo stimulation, Counseling, Cognitive rehabilitation, Psychotherapy, Mind game with puzzles, Brain stimulation, Yoga, Videogames, Speech therapy rehabilitation, Occupational therapy	Use mental pictures, Posting notes on the refrigerator, Getting enough sleep, Writing things down in notebooks, Memoryaids	

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Sleep disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Measurement index
Sleepiness	<p>Lorazepam Side effects: drowsiness. dizziness. tiredness. weakness. dry mouth. diarrhea.</p> <p>Clonazepam Side effects: drowsiness, dizziness; feeling tired or depressed; memory problems</p> <p>Pramipexole Side effects: Dizziness, lightheadedness, or fainting, especially when standing up suddenly from a sitting/lying position</p> <p>Zolpidem Side effects:</p>	Massage therapy	Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS)

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Sleep disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Measurement index
	drowsiness. tiredness. headache. dizziness. lightheadedness. Pramipexole Side effects: mentioned Zolpidem Side effects: mentioned		
Due to RLS	Pramipexole, Clonazepam, Lorazepam, Zolpidem		

Seizure	Pharmacological treatment (Drug name, and side effects)
GTCS	Pregabalin Side effects: blurred vision, double vision, clumsiness, unsteadiness

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Seizure	Pharmacological treatment (Drug name, and side effects)
	<p>Valproicacid Side effects: Diarrhea, dizziness, drowsiness, hair loss, blurred/double vision, change in menstrual periods</p> <p>Carbamazepine Side effects: Nausea, vomiting, dizziness, drowsiness, constipation, dry mouth, or unsteadiness</p> <p>Levetiracetam Side effects: Dizziness, Headache, Irritability, Loss of strength and energy, Mood and behavior changes, Sleepiness</p> <p>Gabapentin</p> <p>Lamotrigine Side effects: Blurred vision, changes in vision, chest pain, discomfort, or tightness, clumsiness or unsteadiness, decreased urine output, dilated neck veins</p> <p>Phenytoin Side effects: Feeling nervous, unsteady or shaky. ... Feeling or being sick (nausea or vomiting) ... Constipation. ... Sore or swollen gums.</p>

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Seizure	Pharmacological treatment (Drug name, and side effects)
Partial	Pregabalin
	Side effects: mentioned
	Valproicacid
	Side effects: mentioned
	Carbamazepine
	Side effects: mentioned
	Levetiracetam
Side effects: mentioned	
Gabapentin	
Lamotrigine	
Side effects: mentioned	
Phenytoin	

Heatin tolerance

Cooling devices

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Dysphagia	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment
Dysphagia	Percutaneous Endoscopic Gastrostomy, Speech therapy rehabilitation, Resistance training, Neuromuscular electrical stimulation, Functional dysphagia therapy, Percutaneous Electrical Nerve Stimulation	Keep the chin parallel with the table, clear your throat and swallow low again, Double swallows may be recommended, Brush your teeth and tongue thoroughly twice a day, Take one small bite, Sit up right when eating or drinking

Sexual dysfunction	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation
Decreased libido	<p>Alprostadil</p> <p>Side effects: bleeding after an injection; a painful erection that lasts 4 hours or longer; new or worsening pain in your penis; or. redness, swelling, tenderness, lumps, unusual shape or curving of the erect penis</p> <p>Phentolamine</p> <p>Side effects: acute and prolonged hypotensive episodes. fast heart rate. cardiac arrhythmias. weakness. dizziness. flushing.</p>	Pelvic floor, Penile prosthesis, EMG biofeedback	
Due to fatigue	Modafinil		

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Sexual disfunction	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation
	<p>Side effects:</p> <p>Black, tarry stools.</p> <p>blurred vision or other vision changes.</p> <p>chest pain.</p> <p>chills or fever.</p> <p>clumsiness or unsteadiness.</p> <p>dizziness or fainting.</p> <p>increased thirst and urination</p> <p>Methylphenidate</p>		
Bladder and bowel symptoms	<p>Oxybutynin</p> <p>Side effects:</p> <p>dry mouth.</p> <p>headache.</p> <p>feeling dizzy, sleepy, or a spinning sensation (vertigo)</p> <p>Diarrhea or being sick (vomiting)</p> <p>constipation.</p> <p>farting and burping (wind)</p> <p>Side effects:</p> <p>Hypotension, drowsiness, headache, dizziness, tremor, dysgeusia, blurred vision, palpitation</p>		<p>Minimize caffeine and tobacco,</p> <p>Conducting self catheterization or voiding just before sexual activity, Restricting fluid intake for an hour or two before sex,</p> <p>Wearing a condom, Minimize urinary problems</p>

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Sexual disfunction	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation
	<p>Tolterodine</p> <p>Side effects:</p> <p>dry mouth.</p> <p>headache.</p> <p>feeling dizzy, sleepy, or a spinning sensation (vertigo)</p> <p>Diarrhea or being sick (vomiting)</p> <p>constipation.</p>		
Erectile and ejaculation problems	<p>Apomorphine</p> <p>Side effects:</p> <p>Redness/swelling/pain/itching at the injection site, nausea, vomiting, headache</p> <p>Tadalafil</p> <p>Side effects:</p> <p>Headache, stomach upset, back pain, muscle pain, stuffy nose, flushing,</p> <p>Vardenafil</p> <p>Side effects:</p> <p>Headache, flushing, or dizziness</p> <p>Sildenafil</p>	Penile prosthesis	

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Sexual disfunction	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation
	Side effects: Bladder pain. burning feeling in the chest or stomach. cloudy or bloody urine. increased frequency of urination. pain on urination. stomach upset.		
Due to spasm	Baclofen Side effects: mentioned Tizanidine Side effects: dizziness. drowsiness. weakness. nervousness. depression. vomiting	Physical therapy	
Burning	Divalproexsodium Side effects: Diarrhea, dizziness, drowsiness, hair loss, blurred/double vision, Gabapentin,		

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Sexual disfunction	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation
	Side effects: Feeling sleepy, tired or dizzy, Feeling sick (nausea), Being sick (vomiting), Diarrhea Carbamazepine, Phenytoin		
Orgasmic dysfunction	Vardenafil Side effects: mentioned Sildenafil, Side effects: mentioned Tadalafil Side effects: mentioned		
Emotional challenges	Tadalafil Side effects: mentioned Vardenafil Side effects: mentioned Sildenafil, Mirtazapine Side effects: drowsiness. dizziness.		

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Sexual disfunction	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation
	<p>anxiousness. confusion. increased weight and appetite. dry mouth.</p> <p>Mianserin Side effects: drowsiness and dizziness</p> <p>Nefazodone Side effects: headache. difficulty concentrating. dry mouth. heartburn. flushing or feeling warm</p>		
Decreased vaginal lubrication	<p>Topical emollients, Side effects: burning, stinging, redness, or irritation</p> <p>lubricating jelly Side effects:</p>	Pelvic floor	

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Sexual disfunction	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation
	rash; hives; itching; red, swollen, blistered, or peeling skin		
Sensory changes	Divalproex sodium,		
Muscular weakness	Side effects: Diarrhea, dizziness, drowsiness, hair loss, blurred/double vision		Using pillows to improve position in gand reduce muscles train, Oral sex
Distractibility	Gabapentin, Side effects: Feeling sleepy, tired or dizzy, Feeling sick (nausea), Being sick (vomiting), Diarrhea Carbamazepine, Phenytoin		Engaging in erotictouching, Minimize Distractibility, Using sensual musican dlighting, Creating aromantic mood and setting, Talking in sexy ways
Tingling	Divalproexsodium, Side effects: mentioned Gabapentin, Side effects: mentioned Carbamazepine, Phenytoin		

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Urinary disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
Nocturia	Desmopressin, Side effects: confusion, hallucinations, muscle cramps, severe weakness, vomiting, loss of coordination OnabotulinumtoxinA Side effects: Redness, bruising, infection, and pain at the injection site		Limited evening fluid intake	Neurogenic Bladder Symptom Score (NBSS) is the International Consultation on Incontinence- Urinary Incontinence (ICIQ-UI), Overactive Bladder Questionnaire (OAB-Q), Kings Health Questionnaire (KHQ), and Total Health-Related Quality of Life (HRQOL). The Actionable Bladder Symptom and Screening Tool (ABSST)
Emptying dysfunction	Tizanidine, Silodosin, Side effects: dizziness, diarrhea, orthostatic hypotension Tamsulosin,	Timed voiding, Self-Catheterization		

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Urinary disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
	<p>Side effects: sleepiness. difficulty falling asleep or staying asleep. weakness. back pain. diarrhea.</p> <p>Prazosin, Side effects: Headache, drowsiness, tiredness, weakness, blurred vision</p> <p>Doxazosin, Side effects: Feeling weak, sleepy or dizzy. Headaches. Swollen feet, ankles or fingers. Urinary tract infection (UTI) or cystitis. Stomach pain or back pain</p> <p>Terazosin, Side effects:</p>			

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Urinary disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
	<p>Dizziness, lightheadedness, tiredness, nausea, drowsiness, blurred vision</p> <p>Alfuzosin</p> <p>Side effects:</p> <p>tiredness.</p> <p>headache.</p> <p>runny or stuffy nose.</p> <p>pain.</p> <p>stomach pain</p>			
<p>Detrusor sphincter dyssynergia</p>	<p>Baclofen,</p> <p>Side effects: mentioned</p> <p>Capsaicintopical,</p> <p>Side effects:</p> <p>Bloating or swelling of the face, arms, hands, lower legs, or feet.</p> <p>burning, crawling, itching, numbness, prickling, "pins and needles", or tingling feelings.</p> <p>eye irritation or pain.</p> <p>increased sensitivity to pain or touch.</p>			

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Urinary disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
	scarring of the skin. Tamsulosin, OnabotulinumtoxinA, Alfuzosin, Oxybutynin			
Storage dysfunction	Hyoscyamine, Side effects: drowsiness. dizziness or lightheadedness. headache. blurred vision. flushing (feeling of warmth) dry mouth. constipation. difficulty urinating Tolterodine, Fesoterodine, Side effects: Bladder pain.	Pessary, Bladder retraining, External Urine Collection Devices, Kegel		

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Urinary disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
	<p>bloating or swelling of the face, arms, hands, lower legs, or feet.</p> <p>bloody or cloudy urine.</p> <p>body aches or pain.</p> <p>burning feeling while urinating</p> <p>Imipramine, Side effects: nausea. drowsiness. weakness or tiredness. excitement or anxiety. nightmares. dry mouth</p> <p>Oxybutynin,</p> <p>Desipramine, Side effects: chest pain, slow/fast/irregular heartbeat, seizures, fainting, trouble speaking</p>			

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Urinary disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
	<p>Trospium, Side effects: Bladder pain. bloody or cloudy urine. decrease in the frequency of urination. decrease in urine volume. difficult or burning urination</p> <p>Darifenacin Side effects: dry mouth. constipation. upset stomach. stomach pain. diarrhea</p> <p>Propantheline, Side effects: dry mouth. increased sensitivity of your eyes to light. dizziness. nervousness.</p>			

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Urinary disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
	difficulty sleeping. headache Mirabegron Side effects: feeling sick (nausea) constipation. Diarrhea. urinary tract infection (UTI) – pain or a burning sensation when peeing; smelly or cloudy pee. headache.			
Urinary tract infection	Cephalexin, Ciprofloxacin, Nitrofurantoin, Levofloxacin, Amoxicillin			
Overactive bladder	Mirabegron, Desipramine, Onabotulinumtoxin A	Kegel		
Upper urinary tract	Desmopressin, OnabotulinumtoxinA	sManeuver, Pelvic floor, Self-Catheterization, Timed voiding		

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Urinary disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation	Measurement index
Urinary tract dysfunction				
Lower urinary tract dysfunction				

Bowel disturbance	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Recommendation
Fecal Incontinence	Biperiden, Propantheline, Trihexyphenidyl		
Diarrhea	Atropine and diphenoxylate		Eating more fiber
constipation	Laxatives, Polyethyleneglycol3350, Docusate, Magnesium hydroxide	Colostomy	

Weakness	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment
Muscle weakness	Dalfampridine	Assistive devices, Exercise, Occupational therapy

Fatigue	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Measurement index
Fatigue due to sleep disorders	Clonazepam, Lorazepam		The Fatigue Severity Scale (FSS)

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Fatigue	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment		Measurement index
Fatigue due to depression and anxiety	Citalopram, Fluoxetine	Stress management		
Primary MS fatigue	Dalfampridine, Ginkgo, Amifampridine, Pemoline, Aspirin, Carbamazepine	Balance and coordination, Motorized scooters, Occupational therapy, Aquatic exercise, Treadmill walking, Yoga, Cycling, Aerobic, Stretching, Strengthening, Vestibular rehabilitation, Physical therapy, Cooling devices	Acupuncture, laugh therapy	

Pain	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Surgery	Measurement index
Trigeminal neuralgia	Gabapentin, Baclofen, Pregabalin, Carbamazepine		Gamma Knife	Barrow Neurological Institute (BNI) criteria
Tension-type headache	Aspirin, Ibuprofen Side effects: dry mouth. increased sensitivity of your eyes to light. dizziness.	Cognitive Behavioral Therapy, Stress management, Biofeedback		

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Pain	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Surgery	Measurement index
Painful tonic spasms	Nabilone, Cannabis sativa L, Transcutaneous Electrical Nerve Stimulation			
Spasticity pain	Tizanidine, Nabiximols, CannabissativaL, Nabilone, Baclofen			
Backpain	Carbamazepine, Hydrotherapy, Pregabalin, Lamotrigine, Amitriptyline, Gabapentin	Physical therapy, Pilates, Yoga		
Ongoing extremity pain	Duloxetine, Nabiximols			
Migraine	Naproxen, lidocaine, Ibuprofen, Venlafaxine			

Emotional disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Measurement index
Anxiety	Duloxetine, Sertraline, Desvenlafaxine, Citalopram, Fluvoxamine, Venlafaxine, Fluoxetine, Levomilnacipran, Escitalopram, Paroxetine	Group therapy, Meditation, Mindfulness, Yoga, Reality therapy	Quality of life Tolerability mental health item of the SF-36,*
Irritability	Valproic acid, Quinidine, Dextromethorphan	Group therapy, Meditation, Mindfulness, Yoga	
Major depressive disorder	Fluoxetine, Escitalopram, Paroxetine, Duloxetine, Desvenlafaxine, Venlafaxine, Citalopram, Imipramine, Dalfampridine	Group therapy, Meditation, Mindfulness, Yoga Laugh therapy	

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Emotional disorders	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Measurement index
	, Fluvoxamine, Sertraline, Levomilnacipran		
Pseudobulbar affect	Citalopram, Fluoxetine, Fluvoxamine, Dextromethorphan, Paroxetine	Group therapy, Meditation, Mindfulness, Yoga	

	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment
Vertigo	Meclizine, Diphenhydramine, Betahistine Hydrochloride, Dimenhydrinate	Vestibular rehabilitation, Occupational therapy

	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment
Breathing	Metaxalone, Invasive ventilator, Ventilator, Cyclobenzaprine, Non-invasive ventilator, Carisoprodol	Vestibular rehabilitation, Continuous Positive Airway Pressure, Physical therapy, Pulmonary

Tremor	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Surgery	Recommendation	Measurement index
Resting tremor	Isoniazid, Trihexyphenidyl, Topiramate, Baclofen, Carbamazepine, Primidone, Gabapentin, Levetiracetam, Alprazolam, Propranolol, Clonazepam, Divalproex sodium	Braces, Plate sand cups with lips, Wrist rests	Thalamotomy	Weights fastened, Weighted spoons or forks, Weighted boots	Tremor and Coordination Scale (TACS)* Tremor-Related Activities of Daily Living scale score,

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Tremor	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Surgery	Recommendation	Measurement index
					tremor rating scale (TRS)
Intention tremor	Isoniazid, Trihexyphenidyl, Topiramate, Baclofen,	Braces, Plate sand cups with lips, Wrist rests	Thalamotomy	Weights fastened, Weighted spoons or forks, Weighted boots	
Postural tremor	Carbamazepine, Primidone, Gabapentin, Levetiracetam, Alprazolam, Propranolol, Clonazepam, Divalproexsodium	Braces, Plates and cups with lips, Wrist rests	Thalamotomy		

Vision problems	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Surgery	Recommendation
Diplopia		Fresnel	Diplopia surgery	Rest in or cooling down the eye, Short- term patching of one eye
Nystagmus	Amitriptyline, Gabapentin, Memantine			
Downbeating nystagmus	Baclofen, Fampridine, Amitriptyline, Gabapentin, Memantine, Dalfampridine			
Poor vision		Telescopic eyewear, Magnifier, Microscopic eyewear, CCTV		
Optic neuritis	Methylprednisolone, Intravenous immunoglobulin			

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Vision problems	Pharmacological treatment (Drug name, and side effects)	Non-pharmacological treatment	Surgery	Recommendation
Acquired pendular nystagmus	Dalfampridine, Fampridine, Baclofen, Amitriptyline, Gabapentin, Memantine			

Spasticity	Pharmacological treatment (Drug name, drug dose and, side effects)	Non-pharmacological treatment	Rehabilitation	Measurement index	Complementary treatment	Surgery
	<p>Baclofen. The main Side effects are somnolence, fatigue, constipation, nausea, vomiting</p> <p>Tizanidine The main Side effects are orthostatic hypotension, drowsiness, dry mouth, dizziness</p> <p>Diazepam The main Side effects are sedating and memory impairment</p> <p>Gabapentin. The main Side effects are somnolence, dizziness, ataxia, and fatigue.</p>	<p>Repetitive magnetic stimulation, electromagnetic therapy, transcutaneous electrical nerve stimulation, vibration therapy</p> <p>Stretching and motion exercises: Wheelchair seating system, gait and assistive devices.</p> <p>Timing exercises: Motor control, yoga and tai chi, biofeedback, relaxation</p>	<p>Kinect-based virtual rehabilitation, physical therapy, occupational therapy</p>	<p>Modified Ashworth Scale (MAS)</p>	<p>Acupuncture</p>	<p>Tenotomy, rhizotomy, neurectomy</p>

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Spasticity	Pharmacological treatment (Drug name, drug dose and, side effects)	Non-pharmacological treatment	Rehabilitation	Measurement index	Complementary treatment	Surgery
	<p>Onabotulinumtoxin A 5–200 U for upper-limb muscles and 10–400 U for lower-limb muscles. The main Side effects are pain, Bleeding and bruising, temporary partial weakening of the muscles injected.</p> <p>Dantrolene 20 mg; 250 mg intravenous powder for injection; 100 mg; 25 mg; 50 mg oral capsule. The main Side effects are liver problems, nausea, stomach pain, itching, tired feeling, loss of appetite, dark urine, clay-colored stools, or jaundice (yellowing of the skin or eyes).</p> <p>Nabilone The main Side effects are dizziness, drowsiness, dry</p>	<p>techniques such as progressive muscle meditation or deep-breathing exercises, massage.</p> <p>Strengthening exercises: Free weights, machines, theraband, swiss balls, or aquatic exercises.</p> <p>Balance and coordination exercises: Pool exercises, hydrotherapy, ankle-foot orthosis.</p>				

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Spasticity	Pharmacological treatment (Drug name, drug dose and, side effects)	Non-pharmacological treatment	Rehabilitation	Measurement index	Complementary treatment	Surgery
	<p>mouth, feeling "high", an exaggerated sense of well-being (euphoria), lightheadedness, head ache, trouble sleeping, or memory problems.</p> <p>Nabiximols 22-32 mg/day tetrahydrocannabinol and 20-30 mg/day cannabidiol. The main Side effects are dizziness, drowsiness, constipation or diarrhea, fatigue, memory or concentration problems, and a dry mouth or changed sense of taste.</p> <p>Phenol 2- 3 ml of oily phenol injection. Spray 5 times to the affected area every 2 hours. The main Side effects are difficulty with breathing, fever, headache, nausea, rash, swelling, vomiting,</p>					

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Spasticity	Pharmacological treatment (Drug name, drug dose and, side effects)	Non-pharmacological treatment	Rehabilitation	Measurement index	Complementary treatment	Surgery
	worsening of pain, redness, or irritation in or around the mouth					

	Non-pharmacological treatment	Surgery	Recommendation
Dysarthria problem	Speech therapy rehabilitation	Velopharyngeal surgery	Reduction of background noise, speaking half words one ach breath, Awareness of the body posture, Facing the partner while communicating

Symptom	Pharmacological treatment (Drug name and, side effects)	Recommendation
Facial myokymia	OnabotulinumtoxinA	
Hearing Loss	Steroids	visiting an ear specialist and checking for infection can also be used, hearing aids
Paresthesia		