REFERRAL GUIDELINES: NEUROLOGY

LAST REVIEWED 8/15/2025 LISA TORAN, MD

These guidelines cover the most common referral reasons but are by no means exhaustive. Please let us know if you have suggestions for additional information.

SYMPTOM-BASED GUIDELINES

DIZZINESS

It is helpful diagnostically to categorize dizziness and vertigo as one issue. Further characterize dizziness as acute/constant/ongoing vs episodic, and then as provoked vs unprovoked. See Appendix for dizziness exam tips (HINTS exam) and diagnostic flow sheet.

Migrainous vertigo is a central vertigo that is normally episodic, unprovoked, and can occur without headache.

OTHER	• Full orthostatic vitals ○ **Refer to neurology** for evaluation of neurogenic OH if patient has orthostatic hypotension **without** a compensatory increase in HR of at least 15 points
COMMENTS	• Persistent dizziness following head injury should be referred to Neuro Rehab Physiatry for concussion/TBI. • Consider sending any patient with chronic dizziness who has had a negative workup for stroke/central lesion to PT for vestibular rehab.

GAIT AND BALANCE ISSUES

In the elderly population, gait and balance issues are often due to a neurodegenerative disorder-- cognitive decline and gait decline go hand in hand. Additionally, gait disorders in this group are often multifactorial and difficult to treat.

In middle aged population, alcohol-related cerebellar dysfunction and neuropathy, diabetic neuropathy, are common contributors to balance problems. Typical Parkinson's with onset in middle age affects gait later in its course; atypical parkinsonisms and late onset Parkinson's can affect gait and cause falls earlier in disease course

IMAGING/STUDIES	Middle-aged patients: • MRI brain +/- gad
LABS	Consider prior to visit: • B12 • Folate • TSH • HbA1c • RPR
OTHER	Accurate and up to date alcohol history

HEADACHE

IMAGING/STUDIES	Chronic orthostatic/postural headaches • MRI brain with and without contrast prior to visit to evaluate for evidence of low CSF pressure due to a dural tear.

	MRI +/- gad prior to visit for the following: • Headache in immunocompromised or cancer patient • New onset headache in patients > 50 years old • Headache with focal signs/symptoms or altered mental status • New headache worsened with Valsalva, cough, or exertion • Headache escalating in severity and frequency and change in quality • New headache in a pregnant patient: • MRI **without** contrast
COMMENTS	New onset thunderclap headache: • **ER eval with emergent CT and CTA head and neck**

MEMORY LOSS

Due to long wait times in the Neurology Department, it is recommended you offer the patient a consultation with **Synapticure**, a Neurology tele-health company with dementia experts. They can also offer neuropsych testing. This referral can be placed in Epic: **REF46S SYNAPTICURE.** If your patient does not want to see a telehealth provider, please place a referral to Neurology instead.

Memory loss in patients under age 60 is frequently due to psychological conditions such as adult ADD, PTSD, major depression, schizophrenia, and related conditions.

We do not have capability to perform neuropsychological testing in our department at this time. Patients wanting access to clinical trials or requiring extensive neuropsychological testing would benefit from referral to UW Dementia Clinic.

LABS	**Required** prior to Neurology visit or Synapticure referral (Previously drawn labs collected after symptom onset are adequate): • B12 • TSH • Syphilis Syphilis screen is recommended in workup if you determine there is risk for neurosyphilis and should be sent in atypical presentations and younger patients.
COMMENTS	Typical and uncomplicated short-term memory loss in patients > 80 years old is almost always secondary to Alzheimer's disease, or MCI. • Consider referral to geriatrics and palliative care rather than Neurology Memory loss in patients < 60 years old, refer to neurology if: • Family history of early onset dementia • Presence of neurological symptoms like Parkinsonism, abnormal gait, involuntary movements, seizures Memory loss in patients of all ages, refer to neurology if: • Rapid onset/progression of cognitive issues (i.e., weeks)

NUMBNESS

Numbness may either be due to central nervous system (MS, stroke, spinal cord inflammation), or peripheral nervous system (neuropathy) issues.

LABS	Screening for the more common, treatable central and peripheral nervous system disorders: • HbA1c • B12 • Folate • Vitamin D • ESR • CRP • ANA reflex • ANCA
COMMENTS	Accurate and up to date alcohol history. In most cases it is best for the neurologist to determine whether EMG/NCS testing is appropriate. However, for cases that clearly suggest a focal neuropathy (such as carpal tunnel syndrome, ulnar entrapment syndrome, or cervical or lumbosacral radiculopathy), it is appropriate for the referring provider to order EMG/NCS testing. • Please note that for simple compression neuropathies and radiculopathies, **the testing may be scheduled either with neurology OR with physiatry**. • Please send referrals **for back and neck pain with radiculopathy** to Spine Clinic, rather than neurology.

SEIZURE

First time, new onset, unprovoked seizure in an adult will be prioritized for an urgent evaluation. Following any unprovoked loss of consciousness or seizure, the patient should be counseled on driving restrictions for 6 months.

Antiepileptic medication is typically not started after a first-time seizure; exceptions include patients who presented with multiple seizures or status epilepticus, or patients with a known potential seizure focus such as prior stroke or brain tumor.

IMAGING/STUDIES	New onset, unprovoked seizure - complete prior to visit: • Outpatient EEG • MRI +/- gad with seizure protocol

TWITCHES, TREMORS, AND TICS

Imaging is not always required for these conditions**,** and it is not necessary to order MRI prior to neurology evaluation.

The most common causes of iatrogenic tremor are metoclopramide (and other D2 blockers), aripiprazole (and other typical and atypical antipsychotics), and valproic acid. Amiodarone, beta agonists, and stimulants also cause tremor

LABS	New onset tremors: • TSH Restless legs – complete prior to visit • Ferritin ○ Ferritin level below 75 is associated with worsening RLS. If ferritin is below 75 start iron supplementation and reassess for clinical and lab improvement before referring patients to Neurology. • Iron studies

WEAKNESS

Weakness may be due to any of a myriad of conditions of the central and peripheral nervous systems. The neurological history and exams are utilized to determine whether workup should focus on peripheral or central nervous system etiologies.

Rapidly progressive (days to weeks) new onset extremity or bulbar (facial/throat) weakness is considered an emergency. If gait, swallowing, or other function is impaired, the patient should be evaluated in the ER for AIDP (Guillan Barre) or Myasthenic crisis.

Slow progressive weakness or subjective weakness can be evaluated in neurology clinic.

LABS	• TSH • CK and aldolase levels • ESR/CRP • LFTs • CBC • Vitamin D • B12

DIAGNOSIS-RELATED GUIDELINES

ALS

Patients with established ALS diagnoses need multidisciplinary supportive and palliative care. The neurology department here does not currently have an ALS-specific multidisciplinary clinic, but we do diagnose and care for patients with ALS.

Multidisciplinary ALS clinics are available at Sacred Heart in Spokane or in Seattle at Harborview and Swedish. In addition, the Neurology tele-health company can care for and assist patients with ALS.

COMMENTS	Ensure that all **EMG/NCS reports from outside hospitals** are in the chart, and all **MRI brain/spine images and reports** should be available on PACS.

ALZHEIMER'S DISEASE/DEMENTIA (SYNAPTICURE)

Due to long wait times in the Neurology Department, it is recommended you offer the patient a consultation with Synapticure, a Neurology tele-health company with dementia experts. They can also offer neuropsych testing. This referral can be placed in Epic: **REF46S SYNAPTICURE**. If your patient does not want to see a telehealth provider, please place a referral to Neurology instead.

Patients with atypical forms of Alzheimer's, Lewy Body dementia, vascular dementia, frontotemporal dementias may be followed in neurology for help with management, diagnostic clarity, and palliative care.

Patients with typical late-onset Alzheimer's are managed primarily by the geriatrics and palliative care teams and often do not require a neurology referral.

LABS	**Required** prior to Neurology visit or Synapticure referral (Previously drawn labs collected after symptom onset are adequate): • TSH • B12 • Syphilis Syphilis screen is recommended in workup if you determine there is risk for neurosyphilis and should be sent in atypical presentations and younger patients.

ENCEPHALITIS

Patients who have been discharged from the hospital with a diagnosis of HSV encephalitis, NMDA-R encephalitis, or any form of autoimmune or paraneoplastic encephalitis are appropriate to follow in the neurology clinic.

This is especially indicated if they had seizures or other complications.

Though HSV encephalitis is usually monophasic, some patients can relapse or develop NMDA encephalitis, and surveillance in the neurology clinic is important.

COMMENTS	Ensure that any **EEGs and lab results from outside hospitals** are available in the chart, and all MRIs are available to view on PACS along with reports.

EPILEPSY

If patient is having events of loss of consciousness or periods of transient altered consciousness, it is imperative you counsel them they are legally not permitted to drive in WA state until free of these events for 6 months.

If patient has a pre-existing diagnosis of psychogenic nonepileptic spells/seizures they should be referred to behavioral health, not to Neurology. It would be appropriate to refer to neurology if the diagnosis of psychogenic nonepileptic spells is not certain.

IMAGING/STUDIES	Patients that have had a seizure-like event and you are concerned they could have epilepsy: • Order EEG along with the referral. • An MRI of the brain w/wo contrast should always be considered with seizure-like events as well, though is not a requirement before referral.
COMMENTS	For patients diagnosed with epilepsy at an outside hospital, all prior **EEG reports, neuropsychological testing reports, and MRI images and reports** should be available in the chart prior to referral.

IDIOPATHIC INTRACRANIAL HYPERTENSION (PSEUDOTUMOR CEREBRI)

All IIH patients require regular follow up with ophthalmology to monitor papilledema, visual acuity, and visual fields.

Vitamin A overuse, tetracycline group drug use, or steroid withdrawal should also be considered possible etiologies and addressed prior to referral.

IMAGING/STUDIES	• MRI brain +/- gad • MRV brain • Lumbar puncture with opening pressure
MEDICATIONS	If the diagnosis of IIH is certain, the **patient should be started on acetazolamide** and counseled to present to the Emergency Room if there is any vision loss. **It is not appropriate to wait several months before starting treatment once this diagnosis has been made due to risk of permanent vision loss**.
OTHER	• Referral to ophthalmology • Weight loss counseling and support • Comprehensive eye exam

MIGRAINE

Patients who have had 5 or more moderate to severe headaches lasting hours to days, which are throbbing in character, unilateral or holocephalic (never only on the same side), exacerbated by movement, and associated with photophobia, nausea, or phonophobia likely have migraine.

Any patient with multiple attacks per month, or one particularly disabling attack per month, should be offered preventive treatment.

Patients who fail preventative measures can be referred to neurology for consideration of Botox for migraine prevention, or CGRP-antagonist treatments.

MEDICATIONS	Preventative:
	• Topiramate 50mg qhs x 1 week then 50 bid thereafter; contraindicated with closed angle glaucoma and renal calculi. For menstrual migraine topiramate can be utilized for the week prior to menses only.
	• Verapamil
	• Propranolol
	• Duloxetine
	• Nortriptyline or Amitriptyline
	• Supplements with evidence for effectiveness:
	  ○ B2 400mg daily (turns urine orange)
	  ○ Mag citrate 400-800mg
	  ○ Amino acid bound magnesium like mag gluconate 1200mg daily or mag L-threonate
	  ○ coenzyme Q10 200mg daily.
	Abortive:
	• Triptans should be offered to patients without history of coronary artery disease or stroke, as first line abortive agents.
	  ○ Sumatriptan 100mg at onset of migraine; repeat after 2 hours.
	  ○ For patients who do not tolerate sumatriptan, try slow acting triptans like naratriptan.
	• Take triptans in combination with:
	  ○ High dose NSAID (e.g., 1000mg acetaminophen or ibuprofen)
	  ○ D2 blocker (like promethazine 25mg) at migraine onset for best effect.

COMMENTS	Do not prescribe opiates or butalbital/fioricet to patients with migraine. Analgesics of any kind (including triptans) should be restricted to two days of use per week or less.

MULTIPLE SCLEROSIS	
COMMENTS	Last 2-3 most recent notes from prior neurologist, and all MRI reports should be available in chart prior to referral. MRI brain, C, and T spine images should be requested from outside hospitals to be placed on our PACS system for review.

MYASTHENIA GRAVIS	
COMMENTS	Ensure EMG/NCS results, CT chest for thymoma, Myasthenia panel serologies, and any ongoing treatment plan such as IVIg are available for review.

NORMAL PRESSURE HYDROCEPHALUS (NPH)

If you have a **high clinical concern** for NPH the patient's care will be expedited by a referral directly to Neurosurgery at Swedish or University of WA and skip the referral to Confluence Neurology. This will allow the surgeon who would ultimately be placing the VP shunt to also perform the initial LP and assess themselves (or at least at their center) for post-LP gait improvement. This will bypass the patient waiting 2-4 months to see Neurology and then again wait for the Neurosurgery referral to be scheduled.

Refer to:

- Neurosurgery at Swedish Cherry Hill Swedish Cherry Cerebrovascular Clinic. Phone 206-320-3470; Fax 206-320-3471
- University of Washington Neurosurgery

If the patient does not have gait issues it is almost impossible to evaluate for NPH (also very unlikely they have NPH) because the process involves high volume lumbar puncture followed by pre- and post-LP gait evaluation. If there is notable improvement in gait after LP then patient will be referred to Swedish or UW neurosurgery for VP shunt placement.

If the patient/family **would not want** to consider having a VP shunt placed, then evaluating for NPH is not recommended.

If you do not know if they have NPH, but they have enlarged ventricles and gait imbalance +/-cognitive decline, +/- urinary incontinence it is appropriate to first refer them to Confluence Neurology.

IMAGING/STUDIES	Patients with enlarged ventricles on imaging being referred to "rule out NPH": • MRI brain/Head CT (MRI brain preferred)
LABS	Patients with cognitive issues (**required** prior to referral): • TSH • B12 Syphilis screen is recommended in workup if you determine there is risk for neurosyphilis and should be sent in atypical presentations and younger patients.

PARKINSON'S DISEASE	
COMMENTS	Patients with deep brain stimulators: have operative report and last 2-3 programming sessions with prior neurologist in the chart. Ensure that medications are up to date in the chart. Any outside neuroimaging such as MRI or DAT scan should be uploaded in the chart.

PERIPHERAL NEUROPATHY/CIDP	
COMMENTS	All outside EMG/NCS results and prior laboratory testing should be available for review in Epic. Infusion treatment plans such as IVIg or rituximab should be available for review in chart.

STROKE	
We have a stroke clinic that is meant for patients who were seen and treated at Central Washington Hospital. **Follow up in this clinic should be arranged upon discharge**. Patients with recent stroke treated at an outside hospital will be scheduled with a physician or APP for a New Patient visit, not in the stroke clinic.	
MEDICATIONS	High intensity statin such as atorvastatin 40-80mg is **indicated for all patients post stroke**.
COMMENTS	**Ensure availability in chart**: • CT, CTA, MRI images and reports describing location of stroke • CTA neck or carotid ultrasound • Echocardiogram if done • Cardiac monitoring/ Zio patch results • Summary of the patient's risk factors for stroke • Presence or absence of afib • Current antiplatelet or anticoagulation plan

APPENDIX

APPENDIX A: DIZZINESS EVALUATION AND MANAGEMENT

HINTS EXAM

For differentiating central from peripheral vertigo (only useful while patient is symptomatic). Even in high-risk patients, if exam indicates peripheral vertigo, the risk of missing a stroke is 2.5%.

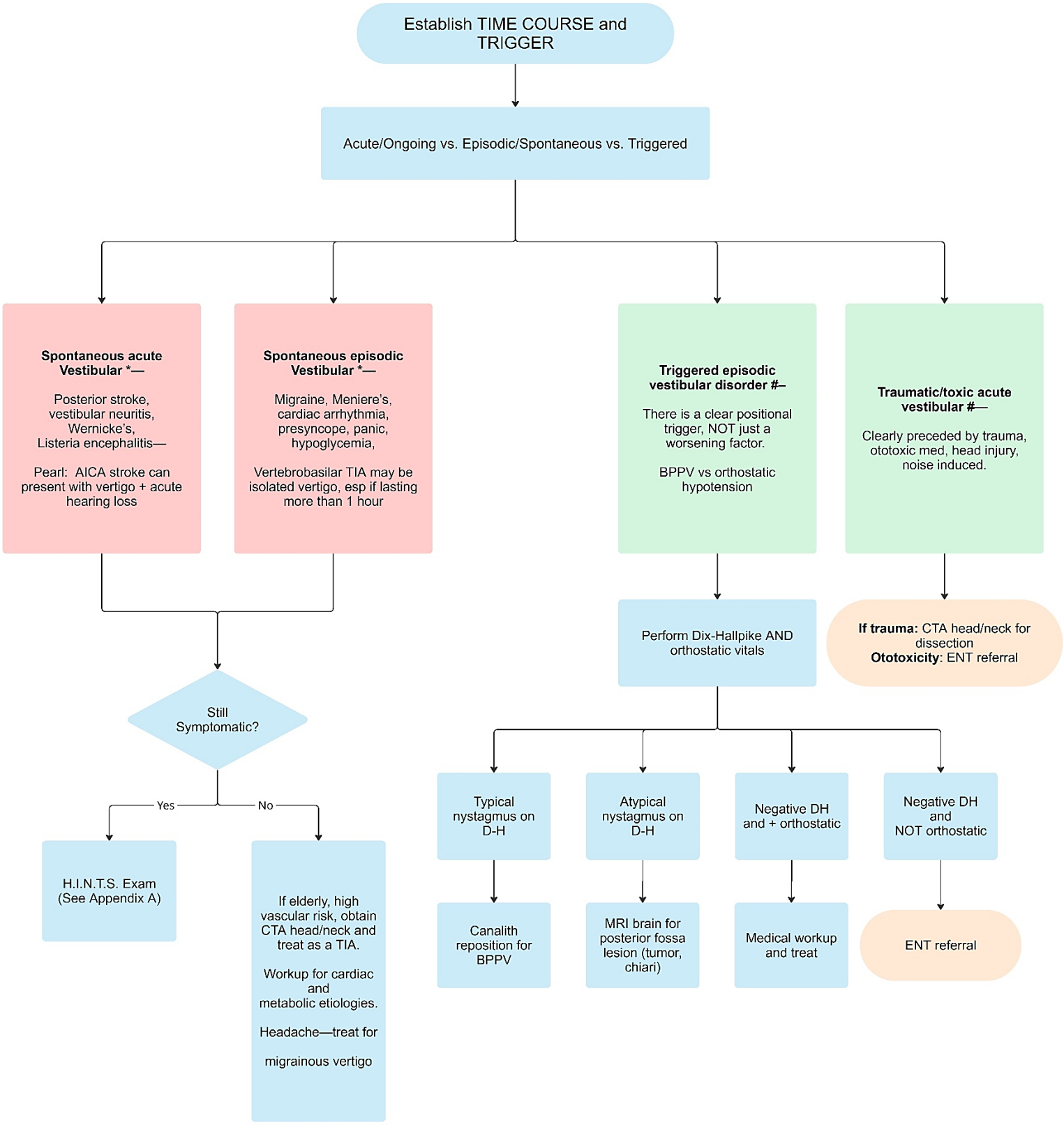
Head Impulse	Test of Skew	Nystagmus
Patient looks you straight in eyes, Grasp sides of their head, instruct them to keep eyes on yours, and quickly jerk head to one side. Observe for any corrective eye movement/loss of visual fixation. Do same on the other side.	The cover/uncover test: Patient directs eyes towards you, Alternately cover their right and left eye and observe for any vertical movement of the just uncovered eye.	Observe direction of nystagmus with lateral visual tracking.
YES, corrective saccade is seen = **PERIPHERAL** **NO** corrective saccade, maintains fixation = could be **CENTRAL.**	**YES**, movement seen– eyes vertically misaligned and likely a **CENTRAL** vertigo **NO** movement seen– eyes are vertically aligned and vertigo probably **PERIPHERAL.**	If beat direction does not change (i.e. left beating when tracking right or left) = **PERIPHERAL** If beat direction changes with direction of gaze = **CENTRAL** If any VERTICAL component = **CENTRAL** (Rotational nystagmus can be either but is typical with BPPV.)
All 3 **CENTRAL**	**Probable stroke:** Activate stroke code; stat head CT/CTA; tPA if ataxic, symptomatic.	
Not certain/conflicting	**Possible stroke:** < 48h post onset – obs admit for TIA/stroke protocol, and non-urgent MRI > 48h – obtain MRI from ED to determine dispo.	
All 3 **PERIPHERAL**	**Unlikely stroke:** Treat and discharge if walking, if too ataxic admit for rehab	

Video: Describes the 3-Component H.I.N.T.S. (Head Impulse, Nystagmus, Test of Skew) battery:

3-Component H.I.N.T.S. battery

APPENDIX B: DIZZINESS DIAGNOSTIC SUPPORT TREE

DO NOT DIFFERENTIATE "DIZZINESS" FROM "VERTIGO" – TREAT THE SAME



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