



## **Kessler Foundation Neglect Assessment Process**

**KF-NAP<sup>®</sup> 2023 Manual**

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## Preface

Welcome to the updated 2023 edition of the Kessler Foundation Neglect Assessment Process (KF-NAP®) Manual.

In 2012, the first edition of KF-NAP Manual was developed from an article titled “Functional Assessment of Spatial Neglect: A Review of the Catherine Bergego Scale and an Introduction of the Kessler Foundation Neglect Assessment Process” in the journal *Topics in Stroke Rehabilitation* [1]. The Manual has since been revised several times and distributed internationally. In fact, KF-NAP 2015 Manual has been translated into six other languages and we estimate it is used in at least 15 countries worldwide.

Over the past 11 years we have continued to offer lectures, courses, and workshops for clinicians, researchers, and students worldwide, made possible through our implementation project [2], national and international conferences, and events hosted by independent healthcare organizations. These opportunities have allowed for further discussions about KF-NAP involving users like you and us, the authors. Some dialogues have included aspects of KF-NAP you liked or disliked or whether any features should be changed to improve implementation and user experience. These types of conversations and experience sharing led to this 2023 revision in which we have further clarified our instructions and refined the assessment process. Specifically, this version of the Manual includes descriptions on how to use the scoring criteria, clarification on “*Cleaning after Meals*,” and what to do if a patient has communication problems such as aphasia.

A common question asked was “*How many missed items or unassessed categories are allowed when using KF-NAP?*” In 2022, our colleague Timothy Rich, PhD, at Kessler Foundation, helped us analyze a consecutive clinical sample of patients from 16 rehabilitation facilities in the U.S. to determine the maximum permissible number of missed items [3]. Our findings concluded that if missed scale items (i.e., categories not observed or scored) must occur, clinicians can confidently interpret a prorated score when 7 or more items are scored. Another frequently asked question was related to *where* KF-NAP can be used. In the 2023 Manual, we suggest usage in inpatient facilities, outpatient clinics, and homes. We continue conducting research studies to provide feasibility and validity evidence.

Even though the 2023 Manual is detailed, we feel hands-on training programs on how to use KF-NAP provide more effective learning, though we recognize that in-person workshops can be costly and time consuming. To address these issues, we have produced a remote, virtual-training module to be used in conjunction with the Manual. If you are interested in learning more about this training, please contact us directly.

We hope you find the updated KF-NAP 2023 Manual helpful in your assessment of spatial neglect during activities of daily living.

West Orange, NJ  
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## I. INTRODUCTION

### Spatial Neglect

**Spatial neglect** is a neurological disorder, which is often caused by damage to the ventral attention network in the brain [4-6] and can also occur after damage to the dorsal attention network or subcortical structures [7-10]. Each cerebral hemisphere is critical for orienting attention and deploying resources toward the contralateral side of space. The two hemispheres are consistently interacting with each other, leading to a state of balance [11,12]. The inter-hemispheric interaction is mediated through the dorsal attention network, which is closely connected with the ventral attention network [5,13]. Damage to one hemisphere's attention network changes the inter-hemispheric balance, resulting in stronger activation of the intact hemisphere over the damaged hemisphere. In the case of right brain damage, for example, the imbalance causes excessive processing bias toward the right side of space and at the same time, stimuli located on the left side receive no or limited processing resources. Hence, the person "neglects" the left side of space.

Spatial neglect affects spatial perception and representation, mental imagery, and motor-action planning. Individuals with spatial neglect show a failure or slowness to report, respond, orient, or initiate action towards stimuli in the side of space opposite to the primary brain injury [14]. Because the ventral attention network is larger in the right than left hemisphere [15], **individuals with right brain damage are more likely to have spatial neglect (left-sided neglect) than individuals with left brain damage (right-sided neglect)** [16].

The prevalence of the disorder depends on the methods of assessment. We and others have shown that using a functional or ecological assessment, such as KF-NAP, leads to greater prevalence rates than using a non-ecological assessment, such as most neuropsychological or paper-based tests [16-18]. In our implementation project with 16 rehabilitation hospitals [2], 56% of the assessed patients (N = 4454) were identified having spatial neglect by using KF-NAP. Among the patients with spatial neglect, 64% and 36% of them had left-sided and right-sided spatial neglect, respectively. These patients were within their first month post stroke.

**The prevalence rate of spatial neglect decreases over time.** One third of the individuals who have spatial neglect initially (< 3 months post onset) still suffer from it at the chronic stage (> 6 months post onset) when spontaneous improvement is highly unlikely [9,19,20].

### Terminology and Style

The terms "left-sided" and "right-sided" used in this Manual are related to the patient's body (i.e., the body-centered or egocentric frame of reference). There are other forms of spatial neglect based on different frames of references such as object-centered or allocentric spatial neglect [21,22]. **KF-NAP concerns only body-centered spatial neglect.**


To make the Manual easier to follow, we focus on left-sided spatial neglect, which often occurs after right brain damage. However, you can use the same principles to assess individuals with left brain damage who may demonstrate right-sided spatial neglect. Here are a few other things to notice throughout the Manual:

- The Manual is written for you, the clinician or practitioner using KF-NAP. When referring to the patient, we use the pronouns "they/them"
- When we mention KF-NAP categories in different sections of the Manual, they are italicized and underlined (i.e., *Gaze Orientation*, *Personal Belongings*, and *Meals*)

- Things we do not recommend are identified with underlined words such as no, do not, or without
- We have included a “Questions to Consider” section in each category to help you identify answers to frequently asked questions
- While the ® symbol is not used throughout the main content of the Manual, KF-NAP is a registered trademark owned by Kessler Foundation. We do not use the “the” in front of the work because “the” is not part of the trademark
- The Scoring Sheet is applicable to both left- and right-sided spatial neglect




## Eligible Patients

Use KF-NAP to assess individuals who suffer from brain damage or injuries after a cardiovascular accident (i.e., stroke), traumatic brain injury (TBI), surgical procedure, or brain tumors, etc. [2,23,24]. We stress that you should assess patients without a preconceived notion of whether the patient has spatial neglect. In fact, this would only bias prevalence rates. Since spatial neglect might not always be detected without standardized testing, **it is essential that you assess all patients with acquired brain injury** regardless of their etiology, condition, or time elapsed post event.

**Patients with communication difficulties (e.g., aphasia)** can also be assessed using KF-NAP. For example, you can write down and show the instruction to the patient by saying and pointing to each word slowly. Related instructions and suggestions are provided throughout the Manual, identified with the  symbol to help you locate this information.

## Settings

KF-NAP can be administered in a variety of settings. We identify setting-specific instructions using the following symbols to help you find this information successfully throughout the Manual.

-  For inpatient settings (e.g., acute care hospitals, rehabilitation units, subacute facilities)
-  For outpatient settings (e.g., clinics, adult day care centers)
-  For home settings

## General Principles

### 1. Do not use lateralized cues

As a practitioner (e.g., occupational therapist), you may often give your patients verbal instructions to initiate, or try to initiate, certain behaviors or engage them in a task during a therapy session. However, during KF-NAP administration, it is extremely important that your verbal instructions do not involve spatial or any type of cues to elicit a response that may help improve spatial attention. For example, phrases like, “*Look more to the left*” or “*What is on the left of the tray?*” may prompt false responses to what should be an observed presentation. To avoid these issues, allow time for the patient to spontaneously explore the environment and permit them to freely use their limbs and move their eyes.

## 2. Look for lateralized or asymmetrical behavior

You must look for patient behavior that is biased toward one side of space. For example, check whether their eyes, limbs, or body often move toward one side but pay less attention to the other side. It is important that both the left and right sides are equally assessed before a conclusion is made that the patient shows left-sided or right-sided spatial neglect behaviors. Therefore, to reduce bias in your judgement, you might test one side and assess the other side later during the session.

## 3. Determine observation time frame and order of categories

**All 10 categories should be observed during the same session, by the same person.** If KF-NAP is to be used in follow-up assessments (e.g., at the start of the inpatient stay and then prior to the hospital discharge), we recommend you observe the patient at the same time of day and in the same location as the first session. By following this approach, you will reduce the impact of wakefulness, mood, motivation variations, and other factors which can change during the day and affect the precision of the assessment.

The order of the categories to be assessed and scored is not critical. You may change the order based on the time you have available to complete the assessment or the environment in which the assessment is taking place. For instance, the category that takes the most amount of time is Meals, so we suggest you observe it at the end of the assessment. But if you are in an inpatient rehabilitation setting and the meal tray arrives while you are entering the room, prioritize doing Meals first so the patient can have warm food. Similarly, Grooming is listed before Navigation and Collisions, but the bathroom or sink is in another room and the patient is familiar with the route, you may assess Navigation and Collisions to reach that location before Grooming. However, keep in mind that Gaze Orientation and Limb Awareness should be scored based on your observation throughout the entire session.

## 4. Score the deficits

KF-NAP measures the severity of spatial neglect during everyday activities. A category is scored from 0 to 3. A greater score means a more severe deficit or symptom. The scoring instruction of each category in the Manual begins with a description of the most severe symptoms (a score of 3) followed by descriptions of moderate (a score of 2), mild (a score of 1), and no symptom of spatial neglect (a score of 0). In some categories, what is not a symptom of spatial neglect is also clarified.

Giving a score of 3 or 0 is usually easier than giving a rating of 2 or 1. Many times, the difference between 2 and 1 is a matter of degree in the presentation of a specific symptom. For that reason, sometimes in the scoring instruction, you will see the description of “2” is continued onto “1”. Here are suggestions for certain categories:

- Gaze Orientation and Limb Awareness: Take the entire session as a continuous time period. If the patient shows left-right asymmetric performance in two thirds of the session, rate a score of 2. If the left-right asymmetric performance occurs in one third of the session, rate a score of 1.
- Dressing, Grooming, Meals, and Cleaning after Meals: If in doubt when observing these categories, ask yourself if “ineffective and incomplete” describes the patient’s performance. If so, you should probably give them a score of 2 rather than 1.

**Determining the final score requires a calculation, which is provided on the Scoring Sheet.** If all 10 categories are scored, the final score equals the sum score. If not all 10 categories are scored, the final score is the average score of the assessed categories, multiplied by 10. In other words, you will do the following.

- Take the sum of the scored categories
- Divide the sum by the number of scored categories, which gives you the average score of assessed categories
- Then multiply that average score by 10

#### **5. Determine when the patient finishes a task**

Some categories are based on pure observation without asking the patient to complete a task, for example, Gaze Orientation, Limb Awareness, and Auditory Attention. Other categories are based on performance of a task with a goal that is not easily defined, such as Dressing, Grooming, and Meals. When observing those categories, it is important to ask the patient, “*Are you finished?*” before moving on to the next category. This question gives the patient a chance to do one or more of the following: 1) Ask for your help, 2) get permission to stop, which they might not be able to do if they also experience perseveration (a common symptom that co-exists with spatial neglect) [25], and 3) let you know that they want to continue trying.

## II. INSTRUCTIONS

We provide instructions for assessing *left-sided spatial neglect*. You may use the same principles to assess *right-sided spatial neglect*. The **Scoring Sheet** is applicable to both *left-sided* and *right-sided* spatial neglect.

### 1. *Gaze Orientation* – observe throughout the entire session

Before starting, consult with the patient’s care team or medical charts to determine that the patient does not have any deficits that critically impair eye movement (e.g., cranial nerve palsy). If such deficits are determined, you will be unable to observe and score the *Gaze Orientation* category. If this is the case, mark “n/a” and make a note on the Scoring Sheet.

**I O H** Throughout the entire session, observe how the patient spontaneously shifts their gaze. Observe how they visually explore the environment or space around them. Take note of how much time the patient is engaged in exploring both the left and the right sides of the space.

#### Questions to Consider

Does the patient move their head when you are talking to them?

Does the patient look toward you with their eyes?

Does the patient look around the room?

What if the patient has a pre-existing vision impairment? How you score them depends on their vision impairment. For example, you can still observe the category if the patient has glaucoma. To differentiate between hemianopia (visual field cut) and spatial neglect, review our article written for clinicians [26].

#### Score Assignment

**Score = 3** The patient is easily able to direct their gaze toward the right side of space but does not attempt to orient their eyes toward the left side.

**Score = 2** There are constant and clear asymmetries in the gaze directions. The patient explores the environment by looking toward the right first, and after a long delay, slowly looks toward the left. During the entire session, the patient spends much more time looking to their right side than the left.

**Score = 1** There are inconsistent but observable asymmetries in the gaze direction. The patient explores an environment by looking toward the right first, and then slowly toward the left with some hesitation. During the entire session, the patient looks toward the right more often than the left.

**Score = 0** The patient spontaneously directs their gaze toward the right and left sides of space without hesitation and without any prompting.

## 2. *Limb Awareness* – observe throughout the entire session

Depending on the activity being assessed, the term limb or limbs can refer to either the upper or lower extremities, or both.

Because of right brain damage, patients may have significant weakness in their left arm and leg. However, this does not mean all patients with brain injury neglect their weaker or more-affected arms or legs. If they care for their more-affected limbs, you may see the patient straighten out the fingers of their left hand to avoid cramping or discomfort. The same may be observed for the left leg because attention to left limbs is normal.

**I O H** Throughout the entire session, observe how the patient spontaneously demonstrates their care for the affected upper or lower limb.

### Questions to Consider

Does the patient have any reported pain or limb injury (for example, co-existing post stroke or other brain injuries), which might be limiting movement?

Does the patient try to use their affected arm when attempting to perform a task that typically requires both arms, such as opening a milk carton during breakfast, even though you have seen them move the affected arm sporadically?

### Score Assignment

**Score = 3** The patient completely ignores their left limbs and never attempts to move their left arm and/or leg, with or without the assistance of the right hand. They do not verbally acknowledge any discomfort in their left arm and/or leg. You cannot observe any spontaneous care for the left limbs.

**Score = 2** Time spent caring for their left limbs is short with incomplete performance. For example, during the entire session, they care for their left arm once, by moving it over to the arm rest, but for the rest of the session, they do not care much for it and let it accidentally hang outside the chair. Another example is when asked to wash their hands: The act of washing their left hand is sometimes unintentional or performed incompletely. If you view the entire session as a continuous time period and notice that the patient attends to only their left limbs for one third of the total time, give them a score of 2.

**Score = 1** The patient takes care of their left limbs two thirds of time.

**Score = 0** The patient pays attention and cares for their left limbs as much as they do for their right limbs, even if they complain of difficulty in moving their left limbs and/or ask for help. These actions mean they are paying attention to, or have awareness of, their left limbs.

### 3. **Auditory Attention** – observe when making loud noise

Before you start, make sure that the patient does not have severe hearing loss in both ears. A bilateral hearing deficit makes it difficult to hear anything at all, and you will be unable to assess this category. Be sure to note the hearing loss on the Scoring Sheet. However, even with loss of hearing in one ear, you can still perform the assessment because impairment in one ear does not necessarily decrease the ability to locate the source of a sound.

**I O H** Make sure to be out of the patient’s sightlines, and then, without warning, make a loud noise to the patient’s right or left side. You can drop an object, like a trash can, or clap loudly. Do it once to the right side: The non-impaired side is tested first so that you have a baseline for comparison. Make the same sound with the same level of intensity again to the left side later in the session. It is recommended to have a second observer present if you must stand behind the patient and are unable to determine if they are just moving their eyes to the sound. You could also position the patient in front of a mirror as long as they cannot see you making the noise.

#### Questions to Consider

Does the patient show an immediate, startled reaction such as blinking, wincing, or a quick turn of the head toward the location of the sound?

#### Score Assignment

**Score = 3** The patient shows an immediate reaction to the sound from the right side but no reaction from the left side at all.

**Score = 2** The patient shows an immediate reaction to the sound from the right side, but the reaction to the sound from the left is inadequate and incorrect. For example, the patient may state that they heard something but is not able to identify the location of the noise that was made on their left side. Another example is the patient may shift their eyes, head, or body to their right when the noise is actually coming from the left.

**Score = 1** The patient immediately reacts to the sound from the right correctly. They also correctly locate the sound on the left side but take an observably longer time, or you notice there is hesitation to acknowledge the sound from the left.

**Score = 0** All the reactions observed are correct and immediate on both left and right sides.

4. **Personal Belongings** – observe by asking for locations of 3 personal belongings on the patient’s right side, and then 3 on their left side

An object can be considered a “personal belonging” only if it is almost always kept at a certain location by the patient, regardless of where the session is conducted. For example, the patient always hangs their coat in a specific closet, keeps their sunglasses in a particular drawer, or places flowers by a specific window. Do not hide or arrange the objects for the patient to find.

**I** If the patient does not have personal items in their room, especially in an acute care setting, then this category cannot be observed or scored. However, if the patient does have personal items in their room, **we recommend completing KF-NAP approximately 4 days after their admission date to ensure familiarity and item availability.**

**O** Ask the patient to bring a few personal belongings such as a coat, glasses, handbag, or backpack to the clinic. Ask them to place the items in the examination room at the beginning of the session. If they need help, you can walk or move them to the location where they would like to place an item. This outpatient modification may not be feasible if, for example, they are in a shared space without an available private examination room or other clinicians may move the items unintentionally.

**I O H** Observe if the patient can tell you where their personal objects are located. They may answer you verbally or by pointing to the location. When asking the patient to locate the objects, it is important not to phrase your question in such a way that shows spatial bias. For example, rather than saying, “*Can you tell me whether your glasses are on your right or on your left?*” you should say, “*Can you tell me where your reading glasses are?*”

Ask for the same number of objects on the patient’s left and right sides. We suggest you ask for 3 or 6 objects on each side to make it easy for you to determine which score to assign the patient. If there are a limited number of objects, you may ask for the same objects later in the session when the patient’s position relative to the object has changed. For example, at the beginning of the session, the patient was facing the door with the toothbrush and reading glasses on the left and the sweater on the right. Later in the session, when the patient has turned around, the relationship to the objects is reversed: the sweater is now on the left, and the toothbrush and reading glasses are on the patient’s right.

**?** Answering by pointing is acceptable and encouraged. If the patient has communication problems such as aphasia, you can present picture cards or write down the items you are asking them to locate. When showing the picture card or written words, clearly name the object or say the words.

As part of the Personal Belongings assessment, you can ask the patient to locate their coat and then move on to Dressing.

Score Assignment

**Score = 3** The patient always locates and points to the objects on their right side but fails to locate any object on their left side.

**Score = 2** The patient always locates and points to the objects on their right side but fails to locate two thirds of the objects on their left side.

**Score = 1** The patient always locates and points to the objects on their right side but fails to locate and point to one third of the objects on their left side.

**Score = 0** The patient does not hesitate to locate and point toward all objects on their right and left sides.

## 5. **Dressing** – observe by asking patient to put on an open-front shirt or coat

- I** If available, use an open-front shirt or a button-down coat owned by the patient. If the patient does not have one with them at the inpatient setting, you can bring a large shirt that accommodates most body sizes.
- O** Ask the patient to bring a button-down shirt or coat to the clinic. Or you can include a large shirt in your Examiner’s Kit to accommodate most body sizes if the patient forgets to bring their own.
- H** Use an open-front shirt or a button-down coat from the patient’s home.
- I O H** You can instruct the patient by saying, “*Would you please put this on?*” or “*Show me how you would put this on.*” After the instruction, add, “*Let me know when you need help.*” Observe how the patient goes about the task. Look for differences in performance on the left and right sides of their body.
- ?** If the patient has communication problems such as aphasia, you can write down the instruction and show it to them. When showing the written instruction, say and point to each of the words slowly and clearly.

### Questions to Consider

Does the person ask for help during the task? The answer will affect scoring. See below.

### Score Assignment


- Score = 3** The patient only attempts to dress their right arm and completely ignores their left arm. The patient makes no attempt to put their left arm through the sleeve, does not fix the shirt at all on the left side, and does not acknowledge a need for help.
- Score = 2** The patient starts by putting their right arm in the sleeve and continues to the left. However, they spend significantly less time dressing their left arm and the shirt is messy or disheveled on the left side. In the end, the performance on the left side is incomplete and ineffective.
- Score = 1** The difference between a score of 1 and 2 is a matter of degree. The patient starts with their left side but quickly moves to their right side and is more successful there. Or, they first attend to their right side, putting their right arm in the sleeve and eventually with some hesitation, work their left arm into its sleeve as well. In the end, the patient is able to put on the shirt. The left side may be completely pulled down but does not appear as orderly as the right side.
- Score = 0** The patient either dresses with attention to both limbs or does not complete the task but almost immediately asks for help with the left side of the body. This means they are paying attention to their left arm by trying hard to complete the task on the left side.

**Why might you give a score of 0 to someone who is unable to complete the task?** Because you are not assessing their ability to dress, but rather their awareness of the disability. This is an important distinction. If the patient is physically unable to put on the shirt over their left shoulder or onto their left arm, but is aware of their disability and asks for help, it indicates that they do not neglect their left arm during the dressing activity.

## 6. *Grooming* – Observe by asking patient to perform 3 grooming tasks

**I O H** This observation requires a sink that has a mirror over it, which is usually available in a bathroom or restroom. Supplies are required such as a comb or hairbrush, soap, face lotion, wash cloth or paper towels, electric shaver, and makeup.

Ask the patient to perform at least 3 grooming tasks before assigning a score. For example, ask the patient to wash their face, wipe clean and dry their face, apply lotion to their face, and to comb or brush their hair. If the patient cannot brush their hair (for example, they have no hair after having a craniotomy), choose another task such as applying makeup or shaving their face.

When asking them to perform a task, provide the item rather than asking them to find it. For example, hand them a towel before asking them to wipe clean their face. This can be especially helpful for someone with aphasia; just hand them the item and use minimal directions. 

While washing hands is not part of *Grooming*, you can ask the patient to wash their hands and observe if they take care of both hands or determine if they ignore the left or the right hand. This will help the observation of *Limb Awareness*.

**I** You may need to complete this observation with an overbed or bedside table, which may occur in acute care settings if the patient cannot get out of bed due to precautions or the acute nature of their condition. You can use the Examiner’s Kit for setups.

**O** If the bathroom is unavailable or inaccessible (e.g., it is shared by other individuals working or visiting the clinic), you may need to complete this observation in an examination room using a plastic basin and mirror with a stand placed on a table. We suggest you tell the patient before they visit the clinic that you will be asking them to wash their face. Let them know they can bring their own hairbrush, make-up, or electric shaver. However, just in case, you should still prepare to bring grooming supplies such as soap, towel, and disposable face wipes (review the list in the Examiner’s Kit section).

**H** You can also ask the patient to search for personal belongings **in their own bathroom at home** – such as a toothbrush, towel, comb or other supplies, which can be considered for scoring *Personal Belongings*.

### Questions to Consider

Where is this category being observed? Do not assess *Personal Belongings* while observing *Grooming* if the assessment does not take place at the patient’s home. In other settings, such as a clinic or hospital, it is likely that toiletries will be moved about without the patient’s awareness, especially if the patient is sharing the space.

### Score Assignment

**Score = 3** In all three tasks, the patient only pays attention to the right and always ignores the left side.

**Score = 2** The patient always takes care of the right side first, and misses the left side in at least one of the tasks.

**Score = 1** The patient completes all 3 tasks in a satisfactory manner, but the patient always takes care of the right side first, and spends significantly shorter time and less effort on the left.

**Score = 0** The patient completes all 3 tasks with no apparent left-right asymmetry.

## 7. **Navigation** – Observe by asking the patient for directions to a familiar place with equal numbers of left and right turns

Before you start, consult with the therapy team, the doctor, or family members to determine the extent of the patient’s mobility. If you are not trained in how to ambulate or transfer a person who may need help, please ask for proper assistance.

**I O H** This category requires the patient to **find their way to a familiar place** such as the bathroom, cafeteria, kitchen, or any landmark of the indoor setting where the assessment is taking place. If the patient is able to push the wheelchair independently using their hands or feet, they can use the wheelchair during this observation. If the patient is able to walk with or without an assistive device, then the patient can walk during this observation. If the patient has limited mobility (cannot walk or use a wheelchair), you will push the patient’s wheelchair while they direct you to the location using hand gestures (pointing) or verbal directions.

It is necessary that reaching the destination requires an equal number of “right turn” and “left turn” options. We suggest at least 3 of each to help you assign a score. When there are a limited number of turns on the route, you may ask the patient to find their way to the destination and then back to the original location. It is best if the distance traveled between locations is far enough to determine if there is a deficit in spatial awareness.

**I** We recommend you observe this category by choosing a designation outside the patient’s room. You can say, “*Can you take me to the therapy gym?*”

If the option of leaving the patient’s room is not available, you can ask them to navigate to the bathroom or sink located in the room, which can be a way to transition to Grooming. When the Grooming observation is completed, you can ask the patient to navigate back to their bed. This way you will have at least one right and left turn.

### Questions to Consider

Are there hospital policies around ambulating a patient? This question may arise in acute care settings. If you are not the primary therapist, you may not be allowed to provide assistance in mobility tasks. In this case, we suggest you keep the patient in the wheelchair with you pushing them (even if they are able to use the wheelchair independently or have the ability to walk).

### Score Assignment

**Score = 3** The patient only tries to take right turns to get to the destination. The patient is usually unable to reach the destination.

**Score = 2** The patient makes more right turns than necessary and only turns left when there is no other option. At a left turn, they may hesitate for several seconds or more, and may take a longer route than necessary because of a preference to turn right. In the end, the patient is unable to reach the destination.

**Score = 1** The patient makes more right turns than necessary and some left turns to get to the destination. They hesitate at left turns and may take a longer route than necessary because of a preference to turn right. In the end, the patient is able to reach the final destination.

**Score = 0** The patient employs approximately an equal number of left and right turns to get to the final location. They are able to reach the final destination without an issue.

## 8. **Collisions** – observe when patient moves from one location to another by themselves

Before you start, consult with the therapy team, the doctor, or family members to determine the extent of the patient’s mobility. If you are not trained in how to ambulate or transfer a person who may need help, please ask for proper assistance.

**I O H** This observation requires that the patient is able to walk (with or without an assistive device) or use their wheelchair independently. Otherwise, mark “n/a” for “not applicable” and note the reason on the Scoring Sheet.

Observe Collisions when the patient is moving from location to location, which can be observed at the same time as Navigation. Collisions are most likely to occur when the patient makes a left or right turn. Usually, collisions with an object happen on the left side, which is the side where patients tend to pay less attention. Collisions are also likely to be observed when there are objects along a straight path, such as a doorway frame. You can strategically place items along the patient’s path if there are not enough already present. It is important that an equal number of these obstacles are on the right and left sides of the patient.

If at any time during the observation the patient places themselves in harm’s way or is in obvious and immediate danger of crashing into a wall or piece of furniture, step in to prevent that from happening. If it is obvious that a collision would have taken place if you hadn’t stepped in, you can record the incident as a collision.

### Questions to Consider

Is pushing a wheelchair advised? This may be a concern if patients have certain medical conditions such as cardiac deficits. If not advised, mark “n/a” and explain on the Scoring Sheet.

What if the patient veers when they are supposed to walk straight? Veering and collisions are different. Patients with spatial neglect can veer right or left when they are supposed to walk straight. Therefore, veering is not the best way to determine if patients neglect one side or the other. However, colliding with an object usually occurs on the left side, the side where patients pay little attention to.

### Score Assignment

**Score = 3** The patient bumps into objects or walls on the left side with almost every turn and movement.

**Score = 2** The patient bumps into objects or walls on the left side frequently and much more often than items on the right side.

**Score = 1** The patient bumps into objects or walls on the left side infrequently, but more often than into items on the right side.

**Score = 0** The patient does not collide into any objects along the path.

## 9. Meals – observe when patient is having a meal

**I O H** Observe and assess the patient’s attempt to eat a meal. However, you are not assessing the ability to chew or swallow, which also may be impaired. You are assessing how the patient locates, uses, or eats the items on a tray or placemat. We recommend the use of a tray or placemat for setting a well-defined workspace, which helps standardize the observation.

**Arrange items on the food tray or placemat before presenting it to the patient.** This includes all related items, such as food, utensils, napkins, water bottle, salt and pepper, coffee, creamer, sugar packets, etc. Everything should be organized in a conventional manner and must be **as symmetrical as possible**. If the patient takes a long pause and stops eating, it is permissible for you to ask, “Are you finished?” or “Would you like something else?”

Do not ask the patient to find an item. They should do so spontaneously as part of their experience having the meal.

**I** We recommend that you observe this category during a regular mealtime (e.g., breakfast time).

**O** We suggest you ask the patient or their caregiver to bring in food items. If the patient only brings a snack (e.g., a sandwich or a cookie), you should have a tray or placemat, plates, utensils, water bottles, and even non-perishable food on hand to provide an adequate number of items for the assessment (see the Examiner’s Kit).

### Questions to Consider

What if the patient doesn’t want to eat their meal at all? You can ask them the reasons for not having the meal and mark “n/a” on the Scoring Sheet.

What if the patient asks you for an item? You can respond by saying “It is on your tray.” If the person continues to search for an item for a significantly longer time than normal, and you are confident they will not be able to locate it by themselves, you can intervene so the meal can continue.

### Score Assignment

**Score = 3** The patient eats food only on the right side and is unable to find items on the left. For example, they ask for coffee despite it being on the tray. Once told that coffee is on the tray, they remain unable to look toward the left or find it.

**Score = 2** The patient eats food mainly on the right side and rarely eats food on the left side. The patient searches for food or other items from right to left, but they have a hard time finding items on the tray. They do not always find items on the left.

**Score = 1** The patient eats food mainly from the right side of the array and hesitates to eat food on the left side. The patient searches for food or other items from right to left.

**Score = 0** The patient shows no observable asymmetry. They are able to find, touch, and interact with all the items on the plate and on the tray.

## 10. *Cleaning after Meals* – observe when patient is having a meal and at the end of a meal

Cleaning after Meals can be observed at the same time as Meals or observed alone if the patient requires substantial assistance during a meal (e.g., someone hands the patient every item for them to feed themselves).

**I O H** Observe whether the patient wipes and cleans both sides of their mouth spontaneously. The category is named based on the cleanness of their mouth at the end of a meal, which is achieved by how the patient cleans during and after the meal.

### Questions to Consider

What if the patient doesn't wipe their mouth? If you are sure that the patient has finished eating (by asking, "*Are you finished eating?*"), you can present them with a napkin and say, "*Show me how you wipe your face.*"

Can you use the Grooming score on cleaning the face for this category? **No**. This category must be scored based on your observation of the patient immediately after a meal.

### Score Assignment

**Score = 3** The patient only wipes and cleans the right side of their mouth. During the meal, the patient rarely shows the need to wipe their mouth, and some food could remain on the left corner of the mouth after the meal.

**Score = 2** The patient wipes and cleans the right side of their mouth, but shows an incomplete and ineffective effort in cleaning the left side. The patient wipes the left side of the mouth a few times, but not as many times or as thoroughly as they do on the right side. At the end of the meal, there may be food still on or near the left corner of their mouth.

The difference between scores of 1 and 2 is a matter of degree. To quantify, if the patient wipes the right side roughly 3 times more often than the left, assign a score of 2.

**Score = 1** If the patient wipes the right side 2 times more often than the left, assign a score of 1. The left side, if wiped, is not as clean as the right.

**Score = 0** The patient cleans both the right and left sides of their mouth during and after the meal and leaves no food on or around the mouth.

## Examiner's Kit

We suggest you prepare and have a kit handy with the following items to help you observe and score Auditory Attention, Dressing, Grooming, Meals, and Cleaning after Meals.

### Auditory Attention

1. Empty garbage can, plastic basin, or anything safe to drop on the floor for making a loud noise

### Dressing

2. Lab coat or a large button-down shirt that fits most body sizes

### Grooming

3. Plastic basin filled with water
4. Mirror with stand
5. Grooming supplies: Hairbrush, comb, soap, wash cloth, paper towels, disposable face wipes, and other items

### Meals

6. Food tray or placemat
7. Eating utensils
8. Water
9. Non-perishable food

### Cleaning after Meals

10. Napkins

Date: \_\_\_\_\_

Name of Examinee: \_\_\_\_\_

Time: \_\_\_\_\_ am/pm

Examiner(s): \_\_\_\_\_

### KF-NAP® Scoring Sheet

How to use the Catherine Bergego Scale to assess spatial neglect

	Category	0 no neglect	1 mild neglect	2 moderate neglect	3 severe neglect	NA (provide reasons)
1	Gaze Orientation					
2	Limb Awareness					
3	Auditory Attention					
4	Personal Belongings					
5	Dressing					
6	Grooming					
7	Navigation					
8	Collisions					
9	Meals					
10	Cleaning after Meals					

**Neglected side** (circle one): *left-sided* spatial neglect *right-sided* spatial neglect

Sum of assigned scores: \_\_\_\_\_ × 10 = **Final score** \_\_\_\_\_

Number of scored categories: \_\_\_\_\_

**Neglect severity** (circle one): **Absent** (0); **Mild** (1-10); **Moderate** (11-20); **Severe** (21-30)

Notes

It is recommended that KF-NAP be administered by trained individuals only. KF-NAP may help clinicians make a diagnosis related to spatial neglect. Kessler Foundation is not responsible for any clinical diagnosis.

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