Chapter 3
Medical history and physical examination

Serge Gauthier

Key points

- The healthcare professional performing the diagnostic assessment needs information about the earliest symptoms and their progression over time.
- A complete physical examination is conducted with emphasis on signs of cardiovascular health and a neurologic examination including balance and gait.

This is a chapter of the *World Alzheimer Report 2021, Journey to a Diagnosis of Dementia* which can be accessed in full at: https://www.alzint.org/resource/world-alzheimer-report-2021/

General background

When assessing dementia, a progressive decline in memory regarding recent events is the most common clinical presentation. However, there may also be other early signs present such as searching for one's words (dysphasia), misjudging distances or directions (spatial disorientation), failure to recognise familiar faces (prosopagnosia), difficulty managing finances and uncertainty making decisions (executive impairment). A crucial step in the diagnostic process is providing the healthcare professional with as much information as possible, whether it be from the person experiencing cognitive changes or their family and friends. This includes when the initial symptoms became apparent. Keeping a written record of these as well as their frequency and duration is a useful tool to share during the medical visit.

The potential impact of cognitive decline on activities of daily living is an essential part of the history taking needed for a dementia diagnosis. For instance, memory decline may lead to missed appointments, forgetting a grandchild's birthday or leaving a water tap running. The healthcare professional may use a semi-structured interview approach or a task checklist encompassing leisure activities (such as playing cards), instrumental tasks such as meal preparation, using the telephone, housework, managing finances and correspondence, going on an outing, keeping to a medication schedule, and basic activities such as dressing, personal hygiene, continence and eating. All of these are markers about whether a person can safely remain at home. This information must be substantiated by family and friends as human nature often dictates that we downplay our own difficulties. At times, an activities of daily living checklist is completed while in the healthcare professional's waiting room, at home or online prior to the visit (1,2).

BOX 1: Important issues to address with a doctor during consultation

1. Bring a partner, friend or family member for support and to provide needed information.
2. Recount all instances of memory, thinking and behavioural changes that has been noted in the last few years.
3. Inform the doctor when these changes started.
4. Describe how these changes progress – slowly, quickly and stepwise decline.
5. Inform the doctor about any medical circumstances surrounding these changes including health conditions, current or new medications and family history.

Anxiety, social withdrawal, irritability and depressive feelings are some of the psychological symptoms associated with cognitive decline. These may be attributed to the changes in the brain as the dementia progresses, emotional reactions that speak to the uneasiness and confusion about what is happening, or a combination of both. Thus, questions about such symptoms during the history taking are to be expected. As a fuller picture of daily life will best serve the needs of a person with dementia, expect that the accompanying family member or friend also be questioned. This is not meant to offend, simply to obtain as much information as possible. Occasionally, a checklist is completed ahead of the visit (2).

When seeing someone for the first time, the healthcare professional will typically review past medical history and medications. It would be beneficial to be prepared beforehand with a list of past and current health diagnoses as well as a complete list of medications, either prescribed or over-the-counter and supplements.

The physical examination is much like the one when first meeting a new doctor, with emphasis placed on measuring vital signs such as heart rate, blood pressure, listening to the heart and major blood vessels such as the carotid arteries in the neck. The neurological examination is built into the physical head-to-toe examination, such as evaluating eye movement speed or the ability to walk steadily with or without distractions to evaluate balance and gait.

Background for clinicians

History, history, history. This is still the number one step required in diagnosing dementia. If time is limited during the first visit, the assessment can be divided into sequential steps. A common problem healthcare professionals encounter is the unavailability or unreliability of the person's history, which requires a follow-up with a well-informed person who may not have been present at the first visit. For people living alone, a visit to their residence by a member of the healthcare team may be necessary. The history should describe the cognitive status, the onset and trajectory of the present cognitive symptoms, as well their impact on the person's autonomy and independence (Figure 1) (3).

In general, the physical examination in a new case of possible dementia should be comprehensive and in-person, looking for prevalent comorbid conditions such as cardiovascular diseases, carotid stenosis, organomegalies, hypothyroidism (perhaps evidenced by an enlarged thyroid gland), B12 or folate deficiency (possibly suggested by a red depapillated tongue). The neurological examination should look for any asymmetry in motor tone, strength, reflexes; this possibly due to a silent stroke. The reappearance of the involuntary unilateral grasp reflex may indicate a contralateral frontal, structural, vascular or tumoral lesion. Gait assessment is also vital for the diagnosis. One leg dragging may suggest stroke while short hesitant steps may be due to a parkinsonian syndrome.

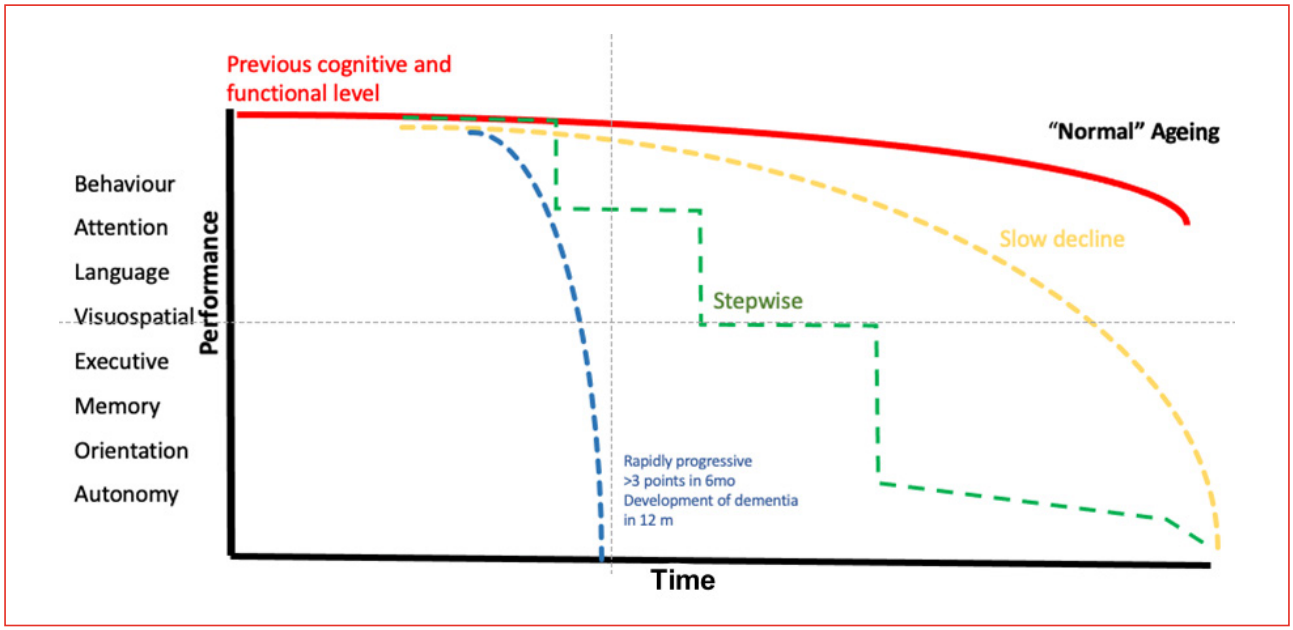

Figure 1. The clinical history should identity the cognitive domains affected and their trajectory since onset. The initial diagnosis will be derived from the analysis of this data.

Survey results

The survey participants unanimously indicated that clinical history, cognitive testing, and physical examination were part of the routine clinical examination.

The 1,111 multidisciplinary clinicians who responded to this survey indicated that 76% complete a basic medical history, physical examination and cognitive screening while 63% complete a full consultation. Only 16% refer the individual to a colleague after the basic assessment or immediately after discovering that there is a cognitive, functional, or behavioural issue suggestive of dementia.

Assessment goals

1. Identify cognition deficits involving more than one cognitive domain (learning and memory, language, executive function, complex attention, perceptual-motor, social cognition) or behaviour. If necessary, plan a visit with a neuropsychologist or with a psychiatrist.
2. Ascertain that the cognitive deficits represent a decline from the previous level of function.
3. Document the impact of the cognitive deficits in the person's autonomy and independence.
4. Identify neurological signs associate with disease.
5. Ascertain the absence non-degenerative causes of cognitive decline.
6. Whenever possible, identify the presence of disease pathophysiology with biomarkers.

What is your usual approach to the initial clinical assessment of a person with cognitive complaints or decline?

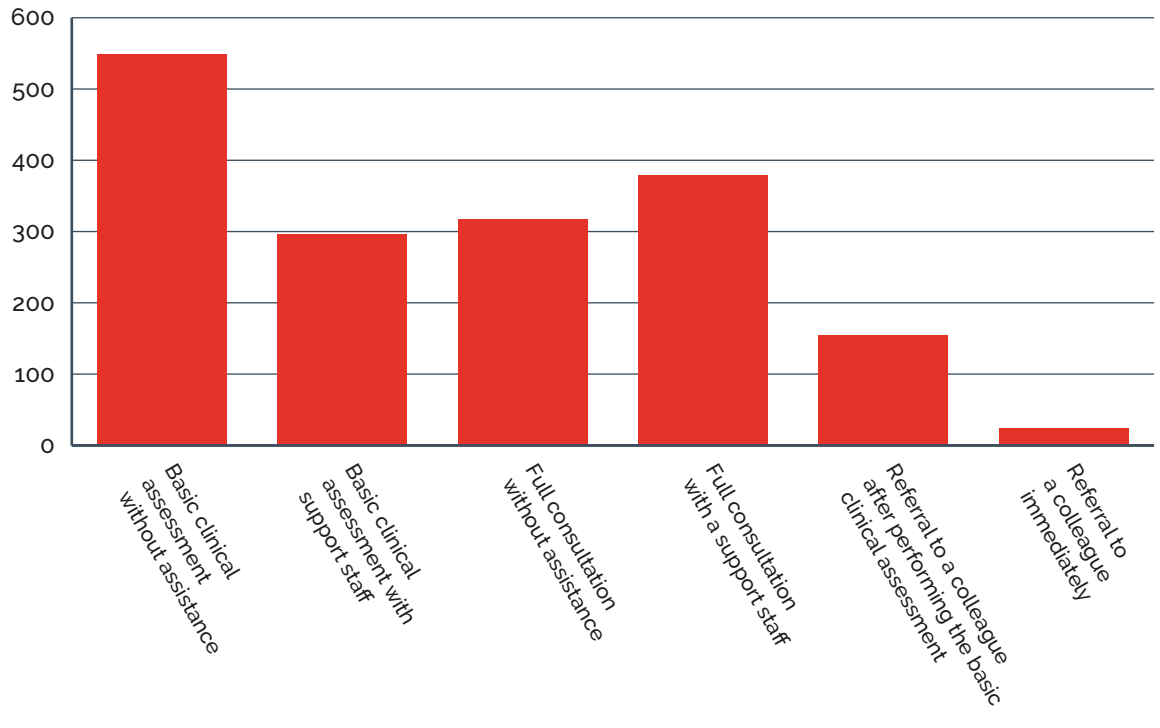

Chart 1. Clinician responses (multiple answers selected).

Conclusions

Cognitive decline has the potential to greatly impact a person's activities of daily living. That is why gathering as much information as possible is crucial to the diagnostic process. The healthcare professional may use a two-pronged approach combining interviews and task checklists to obtain a complete medical history, along with a comprehensive physical examination to assess which major neurocognitive domains are affected.

A complete diagnostic picture also includes details about when symptoms began or became noticeable, their frequency and duration. This may be provided by the person concerned or a partner, friend of family member who has witnessed the behaviour. All these are key elements to the diagnosis of dementia and its underlying causes.

Upcoming chapters will delve further into assessments of cognition, neuropsychiatric symptoms, and functional assessments (4).

Additional references

1. Galasko D. The diagnostic evaluation of a patient with dementia. Contin Lifelong Learn Neurol [Internet]. 2013 Apr [cited 2021 Jul 19];19(2):397–410. https://pubmed.ncbi.nlm.nih.gov/23558485/.
2. Apostolova LG. Alzheimer disease. Contin Lifelong Learn Neurol [Internet]. 2016 Apr 1 [cited 2021 Jul 19];22(2, Dementia):419–34. https://journals.lww.com/continuum/Fulltext/2016/04000/Alzheimer_Disease.8.aspx.
3. Arvanitakis Z, Shah RC, Bennett DA. Diagnosis and Management of Dementia: Review. JAMA – J Am Med Assoc [Internet]. 2019 Oct 22 [cited 2021 Jul 9];322(16):1589–99. https://pubmed.ncbi.nlm.nih.gov/31638686/.
4. Sorbi S, Hort J, Erkinjuntti T, Fladby T, Gainotti G, Gurvit H, et al. EFNS-ENS Guidelines on the diagnosis and management of disorders associated with dementia. Eur J Neurol [Internet]. 2012 Sep 1 [cited 2021 Jul 19];19(9):1159–79. https://onlinelibrary.wiley.com/doi/full/10.1111/j.1468-1331.2012.03784.x.