



FUNCTIONAL ASSESSMENT OF THE ELDERLY

Objectives

To determine who should have a functional assessment.

To describe the type of screening used in evaluating frail and cognitively impaired older adults, including the function and use of the following screening instruments:

- Katz ADL Scale
- Lawton-Brody IADL Scale
- Get Up and Go Test and Timed Get Up and Go Test
- Clock Drawing Test
- Mini-Mental Exam
- Geriatric Depression Scale.

To understand how functional assessment benefits the patient and family.

Overview



With the aging of the population, more frail patients are being seen by their primary care physicians. Frailty is more often seen in patients 75 and older who have cognitive or physical impairments that interfere with the performance of their activities of daily living. Physical frailty is defined as dependence in at least one activity of daily living, or cognitive deterioration or decreased outside mobility.

The prevalence of frailty is somewhat difficult to determine, but of those living outside of institutions, 5 to 8% of persons over 65 and more than 33% of those over 85, need assistance with at least one basic activity of daily living.

In 1997, there were over 4.5 million (14.2%) elders who reported having difficulty carrying out **activities of daily living** (ADL's) and 6.9 million (21.6%) who indicated difficulties with **instrumental activities of daily living** (IADLs). ADLs include bathing, dressing, toileting, transferring, continence, and feeding. IADLs include ability to use the telephone, shopping, food preparation, housekeeping, laundry, using transportation, responsibility for medications, managing money, using the telephone, doing housework, and responsibility for taking medications.

Age remains the best indicator of morbidity and morbidity determines the increasing use of health care services. Many frail elderly have multiple health problems, accompanied by multiple medications. Their medical and psychosocial problems are difficult to address in a "simple" visit to their primary care physician. Often the patient's ability to "function" in their environment is also at risk.

The comprehensive functional assessment, which is discussed in the following sections, can decrease the number of medical specialist visits and overall health care costs and increase patient satisfaction and quality of life. A functional assessment is often used to determine the current and future health care and psychosocial needs of frail elderly. The comprehensive assessment of the frail elderly patient provides useful diagnostic and prognostic information and serves as a baseline for better understanding immediate and long-term patient and family needs and wishes.



Useful screening techniques or instruments can provide valuable clinical and psychosocial information and can expedite the efficient assessment of patients once they are routinely utilized and understood. Many of the instruments can be administered by trained office staff or completed by patients or their caregivers. However, good observation skills are essential in order to clearly understand the status of the patient and even the caregiver responsibilities and burden. Without a healthy caregiver system, the frail elderly person is unlikely to be able to remain independent in his or her own home. When the primary caregiver is at risk the patient is also at risk.

A functional assessment is a multidimensional and often interdisciplinary diagnostic process, which assesses and quantifies an older adult's medical, psychosocial and functional status. Information gathered in this process is used by practitioners, the patient, and family to develop a comprehensive plan for therapy and future care decisions and can also help in the process of long-term care decision-making.

Primary care practitioners, both physicians and nurses, are in a pivotal position to assess patient functional status and target interventions to prevent further loss of function and to maintain the self-care status of many elders. Performing an office-based functional assessment measures the elder's ability to perform self-care and fulfill the important social roles of everyday life.

The functional assessment is one of the trademarks of the geriatric assessment, distinguishing it from the evaluation of a younger person. Achieving a complete cure is often unrealistic since many conditions affecting the elderly are chronic in nature. While major improvements in the older adult's functional abilities may not be possible, even small changes may significantly improve the individual's quality of life. For example, regaining the ability to move from the bed to the chair or the chair to the toilet may mean the difference between returning home from the hospital or skilled nursing home or being institutionalized.

Comprehensive Geriatric Assessment:

A comprehensive geriatric assessment often requires the involvement of a trained multidisciplinary team and enough time to do a thorough patient work-up. Standard and potentially complicated testing may be involved. Members of the "core team" generally include the geriatrician (internist or family physician with post-residency training in geriatric medicine), a social worker and nurse academically and/or experientially trained in gerontology. Often Geriatric Assessment clinical programs are offered in academic medical centers and in Veteran's Administration Medical Centers.

Other health care disciplines are often involved in initial or subsequent assessment visits, such as the medicine specialties of neurology and psychiatry and other staff such as a dietitian, pharmacist, physical therapist, occupational therapist and psychologist.

Once all of the assessment components have been reviewed, including testing information, the core team meets with the patient and family for a summary conference. This meeting includes a review of the assessment and recommendations for future care decisions. If a community-based provider has referred the patient, information is sent to the practitioner for future action.

The process described above, while ideal, may not be practical in many locations and in many practices. The typical primary care practitioner does not have the staff available to comprehensively assess a frail elderly patient, but there are many aspects of the functional assessment that can be performed in the office and can help older patients add quality to their lives.

Office Assessment of the Frail Elderly Patient

I. Source of Referrals

The patient's family or caregivers are often the source of the patient referral. Trained office staff will generally be able to ascertain the need for a comprehensive functional assessment and plan physician time accordingly. In reality, few patients who would benefit from a comprehensive functional assessment are self-identified. The role of family members and formal or informal caregivers is extremely important in maintenance of community-dwelling frail elders.

II. Identification of Patients Needing Geriatric Assessment

It is ideal if primary care practitioners can train their appointment scheduler to try to identify frail elderly new patients on the telephone and schedule adequate time for an initial appointment. The appointment may be made by the patient or by a concerned family member or caregiver. It is useful to gather as much information as possible about the patient and living situation prior to the visit.

Who made the appointment? If a family member or caregiver made the appointment there may be concern about patient safety or ability to live independently.

Did your patient come in alone or with family members? This might indicate that the patient has become forgetful, has lost interest in usual activities, appears depressed, and is no longer able to drive a car or live alone. It may also suggest the nature and extent of the patient's caregiver support system.

What brings the patient to the office? Who has the complaint or concern, the patient or the family? Relatives often answer for the patient when they think the patient is unable to answer or might not give an accurate response. The patient and the family may present different versions of the main complaint. This may give some insight as to how each view the complaint and each other. Sometimes it is necessary to meet separately with family members or caregivers. If the patient's primary language is different from yours, make sure family members are not minimizing symptoms that can be related to functional decline.

What is the chief complaint? Chronic conditions or unrecognized diseases may be the cause of physical or intellectual decline as well as depressive symptoms. Determine what the patient's priorities are and acknowledge them.

Does the patient appear to have lost weight or to be malnourished? Ask what the patient ate yesterday. Check on the patient's oral health. Are there teeth missing, tooth decay, gum disease or poorly fitting dentures. Any of these may make it difficult for the patient to eat properly. Try to determine if the patient has enough food. Is the patient able to shop or do they have someone to shop for them? Is there money available to buy nutritious food? With practice these issues can be handled quickly and in a sensitive manner.

Can the elderly person walk alone or do they need support? Observe the patient walk, sit, rise from a chair, and climb on or off the examining table. Can they use stairs? If they have difficulty with any of these there may be obvious orthopedic or neurological problems or the patient may need simple exercises to develop strength and stamina or could benefit from a physical therapy assessment.

What kind of medication is the patient taking, both prescription and over-the-counter (OTC)? Patients are often asked to bring in all their medications (OTC and prescriptions) to the office on their first visit and subsequent visits if appropriate. Is the patient taking prescribed medicine? Is the medicine being taken correctly? Sometimes patients discontinue medications without telling their doctors because they have a reaction or don't think the medication is helping. Is the patient not taking a medication because they can't afford it? Sometimes patients "stretch" a prescription because they can't afford to fill the prescription fully.

III. Patient Background Information

The office appointment scheduler should be trained to gather as much information over the telephone as possible from the patient or the primary caregiver and to record that information anecdotally. The patient or caregiver should be asked to bring the following to their first appointment:

- Hearing aids
- Eyeglasses
- Any assistive devices (canes, walkers, etc.)
- All medications, prescription and OTC (over-the-counter)

If there are medical records available have them sent to the office prior to the first visit. Review the medical history, previous laboratory and imaging studies to identify previously identified medical and related issues.

Assessment Questionnaire: Ideally, a questionnaire which has been modified to reflect an emphasis on patient functioning and care giving issues can be mailed to the patient or caregiver prior to the visit with a request for them to complete it prior to the visit and bring it with them to the appointment. Review the completed questionnaire prior to seeing the patient.

IV. Initial Assessment Visit

Review Assessment Questionnaire, available medical records and comments made by scheduler during “telephone interview”.

Observe patient mobility.

Identify the chief complaint in order to identify any acute problems which might require immediate attention.

Functional Assessment

Screening Instruments. Functional capacity can be assessed partially by validated questionnaires and screening instruments that can be administered by trained office staff. These instruments will provide valuable information on functional status of the patient.

Patients with positive screens will need additional evaluation during the initial visit or a subsequent visit.

Activities of Daily Living – Basic ADLs

The ADL’s are divided into two levels, from the more basic to the more advanced and are necessary for self-care. At each level, the purposes of the functional assessment and the implications of changes in function are different. The basic activities of daily living (ADLs) involve personal care--feeding, being continent, transferring, toileting, dressing, and bathing. Normally, these activities are performed independently. As the frail elderly becomes progressively unable to do these tasks, they require more and more caregiving assistance. The amount of assistance depends on the type of help needed; an older adult who only needs help with bathing may require assistance every few days, whereas someone who has difficulty transferring might require full-time help.

The loss of independence in the performance of an ADL may be a sign of a chronic illness such as dementia, depression or heart failure. The loss of continence is a predictor for placement in long term care facilities.

The [Katz Index of Independence in Activities of Daily Living \(ADL\)](#)¹ is the most used scale to screen for basic functional activities of older patients. Data can be collected by trained office staff from the patient, family member or other caregiver. Patients who are not able to perform one basic ADL will need daily assistance in their home. For example, a family member or home health aide may need to assist with bathing or dressing.

Instrumental Activities of Daily Living – IADLs

The IADL screening instrument can uncover more subtle disabilities. These are tasks necessary for independent functioning in the community. They include cooking, cleaning, doing laundry, shopping, using the telephone and means of transportation, taking medicines, and managing money. The IADLs are influenced by a person’s cultural background to a greater degree than are the basic tasks of everyday living. For example,

some older women may never have managed the household's money, and some men were never expected to do laundry. Therefore, it is more important to assess whether the individual could complete the task if needed than to determine whether he or she is currently doing it. It is also important to determine whether there is a substitute--either a family member or aide or a social program, such as Meals on Wheels--that could perform the task if the individual could not do so.

The IADLs are assessed using the [Lawton-Brody Instrumental Activities of Daily Living \(IADL\) Scale \(http://www.medicine.uiowa.edu/igec/tools/default.asp\)](http://www.medicine.uiowa.edu/igec/tools/default.asp)² which can also be administered by trained office staff. If a patient is not able to perform one or more IADLs, assistance will be needed for activities such as shopping, meal preparation, housework, medicine organization and paying bills. If caregiver supports are not adequate and the patient becomes at risk, a change in living situation (assisted living or nursing home) may be needed.

Mobility:

Balance and gait disorders affect 10-15% of elderly patients who thus suffer an increased risk of falling. Costs related to the care of fall-related fractures cost nearly \$10 billion each year. Older patients commonly show changes in their gait that result in imbalance, muscular weakness, and falls.

Performance of basic ADL's depends on the patient's ability to maneuver safely and effectively in their environment. Direct assessment is necessary to identify problems with gait, balance, maneuverability, ability to transfer and joint function. Some functional losses may be restored by exercise and rehabilitation and thus reduce the risk of falls. Training and equipment can also provide benefits to patient functioning. Inquire about recent falls and test gait performance in all older patients. Directly observe the patient's sitting balance, transfers (supine-to-sitting, sit-to-chair, sit-to-stand) and pivoting. This can provide added information on strength, safety, and level of independence.

The **Get Up and Go Test**³ (see below) is a practical balance and gait assessment test for an office assessment. The **Timed Up and Go Test**⁴ is another test of basic functional mobility for frail elderly persons. Balance can also be evaluated using the Functional Reach Test. In this test the patient stands next to a wall with feet stationary and one arm outstretched. They then lean forward as far as they can without stepping. A reach distance of less than six inches is considered abnormal. If further testing is advisable, the [Tinetti Balance and Gait Evaluation](#)⁵ is the standard.

Get Up and Go Test

Staff should be trained to perform the “Get Up and Go Test” at check-in and query those with gait or balance problems for falls.

- Rise from an armless chair without using hands
- Stand still momentarily
- Walk to a wall 10 feet away
- Turn around without touching the wall
- Walk back to the chair
- Turn around
- Sit down

Individuals with difficulty or demonstrate unsteadiness performing this test require further assessment.

Shoulder Function

Age-related changes in the shoulder joint can impair range of motion (ROM). Twenty-five percent of older people have shoulder pain, nearly half go unreported. Most are due to soft tissue lesions and are responsive to nonsurgical treatments. Many older patients may be unaware of shoulder limitations since dysfunction develops insidiously and without pain. Lack of shoulder mobility can impede a person’s ability to drive, dress, and reach items in a closet or kitchen. Long term problems may result in muscle weakness, reduced endurance, chronic pain, sleep disturbance and reduced range of motion. This is also a prediction of reduced grip strength and difficulty in performing ADLs.

A simple test is to inquire about pain and observe range of motion. Ask the patient to put their hands behind their head and then in back of their waist. If any pain or limitation is present, a more complete examination and potentially referral are recommended.

Hand Function

Normal hand function may be impaired from arthritis, neurological problems, vascular disease or trauma. The ability grasp and pinch are needed for dressing, grooming, toileting and feeding.

Hand and finger dexterity can be evaluated by asking the patient to pick up small objects (coins, eating utensils, cup) from a flat surface. Another measure is of **grasp strength**. The patient is asked to squeeze two of the physician or examiner’s fingers with each hand. **Pinch strength** can be assessed by having the patient firmly hold a paper between the thumb and index finger, while the examiner tries to pull it out. If the patient has difficulty with this test, physical or occupational therapy may be useful.

Vision Impairment

Older persons with visual impairment are twice as likely to have difficulties performing ADLs and IADLs. Changes in vision affect quality of life, mental health, life satisfaction and involvement in home and community activities. Persons with visual impairments will have difficulty reading prescription labels and handling personal finances.

Aging is associated with an increased prevalence of visual impairment.

Black Americans have a rate of visual impairment almost twice the rate of white Americans. From 65 years there is a steady decrease in visual acuity, contrast sensitivity, glare tolerance, and visual fields. Depth perception worsens after age 75. The leading causes of visual impairments in the elderly are:

- Cataracts (38%)
- Age-related macular degeneration (14.2%)
- Diabetic retinopathy (6.6%)
- Glaucoma (4.7%)
- Other retinal disorders (7.3%)

Macular degeneration is the most common cause of blindness among elderly white Americans and glaucoma is the most frequent cause of blindness among black Americans.

Simple Visual Testing can be done by asking patients to read a few lines from a newspaper. If a patient can read both a headline and a sentence there is normal acuity. If only the headline is read there is moderate impairment and there is severe impairment if neither can be read. Observation of ambulation is also useful – does the patient bump into things and note whether the patient meets target handshake.

Hearing Impairment

Hearing loss prohibits patients from understanding conversations, contributes to cognitive decline, and leads to social isolation. This impairment is the third most chronic impairment among older people. It is also useful to ask the patient and family if they have noticed any changes in hearing, to describe any changes and if they have had any prior treatment.

Otosopic examination for cerumen or serous otitis is essential. Cerumen obstruction commonly contributes to hearing loss and removal can significantly improve hearing. Removal should be done prior to testing for hearing loss. Other simple tests include asking the patient to identify the sound of a ticking watch or the sound of two fingers rubbing together by the ear.

There are three commonly used methods to screen for hearing impairment in the elderly:

The Hearing Handicap Inventory for the Elderly is a short questionnaire which can be answered either in the office or before the patient's visit. It helps to determine how much difficulty the person is having in daily functioning due to hearing impairment.

The **Whisper Test** can be performed with the physician a fixed distance behind the patient's ear and whispering a short set of random words. The patient should not be able to see the examiner's lips and the opposite ear should be occluded. The patient is asked to repeat the words; if they can repeat less than half of the words a formal audiologic examination is indicated.

Another well validated test is using the Welch Allyn Audioscope 3. This should be set at 40dB. Tones are delivered over 500, 1000, 2,000, and 4000Hz. More formal testing should be done if the patient cannot hear either the 1000 or 2000 frequencies in one or both ears.

Note:

Question/Test ⁶	Time to Administer	Comments
Audioscope	1-2 minutes	Sensitivity 87-90%, specificity 70-90%
Whisper test	1 minute	Sensitivity 80-100%, specificity 82-89%
Hearing handicap	2 minutes	Sensitivity 48-63%, specificity 75-86% at cutpoint >8

Referral can be made to audiometry testing to determine further hearing loss.

Cognitive Function – Dementia

Dementia is defined as significant decline in two or more areas of cognitive functioning and is the most common cause of mental decline among the elderly. It is increasingly common with advancing age. About 3 – 11% of 65 year olds and 20 – 50% of community dwelling elders 85 years and older have dementia. The majority of dementias are either Alzheimer's disease or vascular dementia. The ability to live independently is severely compromised by dementia and it is a major cause of loss of ADL and IADL function. It is associated with physical decline, increased risk of falling, and delirium, and is associated with depression, caregiver strain and long-term care placement.

While no curative treatment is available for most dementias, it is important to identify and treat those factors that are reversible or partially reversible. Medications and behavioral management techniques are available once dementia is identified.

Screening for cognitive functioning can be done easily and quickly with the **Clock Drawing Test (See Below)**. Patients with abnormal clock drawing tests can be further evaluated with the **Folstein Mini-Mental State Examination (MMSE)** (<http://www.medicine.uiowa.edu/igec/tools/default.asp>)⁷ In patients who score less than 24 correct responses in the MMSE, there is generally cognitive impairment.

Clock Drawing Directions:

Ask the patient to draw the face of a clock and put the numbers in the correct position. Then ask the patient to draw in the hands at a particular time (such as 11:20). Instructions can be repeated, but no additional instructions should be given. Give the patient as much time as is needed.

Scoring:

Draws closed circle:	Score 1 point
Includes all 12 correct numbers:	Score 1 point
Places numbers in correct positions:	Score 1 point
Places hands in correct positions:	Score 1 point

Any cut off score is subjective and arbitrary. It is unlikely that a cognitively impaired person will produce a perfect clock. A low score indicates need for further evaluation

Bladder Continence

Urinary problems can be evaluated with a minimum of testing and most initial treatment approaches are non-surgical. Urinary incontinence (UI) jeopardizes a person's independence and is a leading cause of nursing home placement. The prevalence of UI for older women is nearly twice that of older men.

Simple screening for incontinence can be done by asking the patient if they have ever "lost urine or gotten wet". If there is an affirmative answer, additional follow-up is appropriate.

Nutrition

The determination of malnutrition in the elderly is not easy. A useful indicator is a loss of weight from baseline or the development of anorexia. Weight loss of more than five percent of total body weight or five pounds in one month or more than ten percent or ten pounds in six months is significant. Record the weight of elderly patients routinely. Patients or caregivers may acknowledge clothes fitting more loosely or belts notched more tightly. Diet diaries can give useful data about food intake. Combining data about changes in weight, appetite, and clothing with serial weight measurements may be the best way of assessing the nutritional status of the elderly patient.

Alcoholism

Older adults who begin or maintain alcohol abuse patterns retain higher circulating levels of alcohol and more prolonged toxic effects than younger patients. Alcohol abuse contributes to 10 – 20% of all psychiatric, nursing home and hospital admissions. Alcoholism in older adults is associated with anxiety and depressive disorders, confusional states, sleep problems, falls, incontinence, malnutrition, gastrointestinal diseases and dementia. In addition, even if use is infrequent, alcohol use can cause impaired balance, diuresis, left ventricular dysfunction, arrhythmias, and temperature

dysregulation. The effects of interactions with medicines should also be considered and may be especially dangerous for patients with a history of falls, gastrointestinal bleeding or those taking warfarin.

Screening can be accomplished through an open-end inquiry such as, " Please tell me about your drinking." If appropriate this can be followed by the four-item **CAGE** screening tool. Interviews about drinking can be uncomfortable and unless approached in a sensitive manner, may inhibit further disclosure by the patient.

The CAGE Questionnaire

The CAGE questionnaire is a self-report screening tool for alcoholism. Among validated instruments, it is perhaps the shortest. It consists of four questions:

1. Have you felt the need to **C**ut down on your drinking?
2. Do you feel **A**nnoyed by people complaining about your drinking?
3. Do you ever feel **G**uilty about your drinking?
4. Do you ever drink an **E**ye-opener in the morning to relieve the shakes?

Two or more affirmative responses suggest that the client is a problem drinker. A discussion of the CAGE questionnaire and other alcoholism screening techniques appears in the following article: Allen, J.P., Eckardt, M.J., and Wallen, J. Screening for alcoholism: techniques and issues. *Public Health Reports* 103:586-592, 1988.

The physician should consider whether alcohol may be a contributing factor in a patient's medical, functional, or psychosocial problems – even if use seems minimal.

Caregiver Availability and Stress

An important aspect of an assessment of a community dwelling frail elder is the availability of a social support network. Networks often involve family (related and non-related), friends, and neighbors. The network may provide physical care, psychosocial support, and financial support, thus closing the gaps left when a frail elder is no longer able to perform daily activities.

Primary caregivers may become overburdened and unable to continue in the role. An assessment should include the availability, willingness, and physical and cognitive abilities of current and potential primary caregivers. Periodic assessment and follow-up of the caregiver support system is as important as the periodic follow-up evaluation of the older frail patient. The stress and burden can negatively affect the health of the caregiver(s) as well and can lead to health declines of both the caregiver and the older person. A brief, private interview with the caregiver at the close of the functional assessment can bring to light difficult situations.

Caregiver stress is a common problem among families and/or spouses of community-dwelling frail elderly. The tension and stress of caring for an ill older adult can also negatively affect the quality of care provided and can increase the risk of physical and psychological abuse (elder abuse). The frail elderly patient should be reviewed for physical and psychological signs of abuse.

Depression

The psychosocial and functional losses that accompany the aging process can often result in depression. Depression is one of the most common psychiatric problems among the elderly. Major depression often accompanies Alzheimer's Disease as well as major illnesses such as a recent stroke, CABG or myocardial infarct. Elder abuse is also a cause of depression and should be investigated as a possibility.

An initial screening question such as: "Do you often feel sad or depressed?", or "With your recent problems, are you feeling depressed?" An affirmative answer suggests further inquiry. The [Geriatric Depression Scale](http://www.medicine.uiowa.edu/igec/tools/default.asp) (<http://www.medicine.uiowa.edu/igec/tools/default.asp>)⁸ (short form) is a simple way to discover low mood. It is completed by the patient and takes 10-15 minutes to complete. The patient should be interviewed following any screening that suggests depression.

Social and Living Situation

A brief inquiry into the patient's living situation can target patients who would benefit from an evaluation by a social worker. A social worker evaluation might be appropriate when there is significant sensory loss, i.e. visual or hearing impairment, moderate to severe dementia, difficulty performing one or more ADLs or IADLs, patient is living alone, weight loss, and caregiver stress.

Safety in the home is an important factor in determining if the home environment can support the patient's needs. Are there barriers to mobility that will lead to confinement, falls, and social isolation? Is there adequate room for equipment and can functional supports be installed? A [Home Safety Checklist](http://www.merck.com/mrkshared/mm_geriatrics/tables/20t3.jsp) (http://www.merck.com/mrkshared/mm_geriatrics/tables/20t3.jsp) can be administered by trained office staff. This will help to determine if a home visit by a trained social worker or nurse would be appropriate.

Targeted Physical Examination

This should follow the functional assessment. Due to time constraints, certain parts of the customary examination (e.g. funduscopic examination) that are not immediately useful may be deferred. Common areas to address in the frail elderly are: orthostatic hypotension, pressure sores, malnutrition, and physical abuse.

The most useful laboratory studies are: complete blood count, chemistry profile, thyroid stimulating hormone, and serum cobalamin (vitamin B12) level.

Closure of Initial Visit

At the end of the initial visit, the physician should meet briefly with the patient and caregiver and summarize main findings and plans for further evaluation and management.

Information on services available for frail and/or cognitively impaired elderly in the community should be provided to patients and families.

References

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Web Sites

Assessment Instruments:

Merck Manual of Geriatrics Assessment instruments are identified in [Chapter 4. Comprehensive Geriatrics](#), Iowa City, Iowa
(http://www.merck.com/mrkshared/mm_geriatrics/sec1/ch4.jsp)

[The University of Iowa, Geriatric Education – Library](#)
(<http://www.medicine.uiowa.edu/igec/tools/default.asp>)

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