

# Clinical Stages of Alzheimer's

The 7 stages of Alzheimer's were outlined by Dr. Barry Reisberg and his team in 1982. Dr. Reisberg was a Professor, in the Department of Psychiatry at the New York University Langone Medical Center (NYULMC) and Adjunct Professor at the Centre for Studies in Aging, of the Faculty of Medicine, McGill University, Montreal, PQ, Canada. Dr. Reisberg directed research over the past three decades which significantly advanced the current understanding and treatment of Alzheimer's disease (AD). He was the first to describe many of the most important symptoms of AD and the characteristic clinical course of the disease.

( Ref: Reisberg, B., Ferris, S.H., de Leon, M.J., Crook, T. The global deterioration scale for assessment of primary degenerative dementia. *American Journal of Psychiatry*, 1982, 139:1136-1139)

The stages of Alzheimers can be summarised as follows:-

Stage	Stage Name	Characteristics	Mental age	Lost Abilities
1	Normal adult	No deficits Mentally healthy	Adult	None
2	Normal elderly adult	Forgetfulness Finding the right word when speaking Subjective work difficulties	Adult	none
3	Mild cognitive impairment	Job performance may decline Decreased organisational capacity Difficulty in travelling May not be able to master new computer skills	12+ years	Holding down a job
4	Mild Alzheimers	Decreased ability to perform complex tasks, eg finances, preparing meals, cleaning etc. Forgetting to pay bills Mistakes with day, month or year Denial of deficits (dominant defence mechanism) Decreased knowledge of current and recent events Withdraws from challenging situations	8-12 years Independent survival still possible	Handle simple finances
5	Moderate Alzheimers	Needs help selecting clothing Tend to wear same clothing day after day Unable to manage on their own in the community 'Predatory' strangers may become a problem May forget their address or phone No. May forget names of close family members Unable to count backwards	5-7 years Patient can no longer survive in the community without part-time assistance	Selecting proper clothing
6a	Moderately severe AD	Need assistance to put clothes on correctly	5 years	Dressing properly
6b	Moderately severe AD	Difficulty in adjusting water temperature in bath/shower Unable to bathe properly	4 years	Bathe unaided
6c	Moderately severe AD	Unable to handle the mechanics of toileting, eg, forgets to flush, doesn't dispose toilet paper properly, doesn't wipe properly Need assistance with cleanliness in toileting	4 years Personality and emotional changes occur	Unable to use toilet without assistance
6d	Moderately severe AD	Urinary incontinence	3-4 <sup>1</sup> / <sub>2</sub> years Personality and emotional changes occur	Unable to control urine
6e	Moderately severe AD	Faecal incontinence Little or no knowledge of their current life circumstances	2-3 years Personality and emotional changes occur	Unable to control bowels
7a	Severe Alzheimer's	Speech becomes circumscribed, limited to about half a dozen intelligible words a day	15 months	Make a sentence
7b	Severe Alzheimer's	Speech limited to use of a single word during the course of a day	1 year	Speech
7c	Severe Alzheimer's	Unable to walk without assistance	1 year	Mobility
7d	Severe Alzheimer's	Unable to sit up without assistance	6-10 months	Sitting up
7e	Severe Alzheimer's	Loss of ability to smile	2-4 months	Smiling
7f	Severe Alzheimer's	Unable to hold head independently	1-3 months	Life

## Some further clarification.

**Stage 4:** The ability to independently market for food and groceries also becomes compromised in this stage. Persons who previously prepared meals for family members and/or guests begin to manifest decreased performance in these skills. Similarly, the ability to order food from a menu in a restaurant setting begins to be compromised. Frequently, his is manifest in the patient handing the menu to the spouse and saying 'you order'.

The dominant mood at this stage is frequently what psychiatrists term a flattening of affect and withdrawal. In other words, the patient often seems less emotionally responsive than previously. This absence of emotional responsiveness is probably intimately related to the patient's denial of their deficit, which is often also notable at this stage. Although the patient is aware of their deficits, this awareness of decreased intellectual capacity is too painful for most persons and, hence, the psychological defence mechanism known as denial, whereby the patient seeks to hide their deficit, even from themselves where possible, becomes operative. In this context, the flattening of affect occurs because the patient is fearful of revealing their deficits. Consequently, the patient withdraws from participation in activities such as conversations. In the absence of complicating medical pathology, the diagnosis of Alzheimer's can be made with considerable certainty from the beginning of this stage.

**Stage 5:** At this stage, deficits are of sufficient magnitude as to prevent independent, catastrophe-free, community survival. Patients can no longer manage on their own in the community. If they are ostensibly alone in the community then there is generally someone who is assisting in providing adequate and proper food, as well as assuring that the rent and utilities are paid and the patient's finances are taken care of. For those who are not properly watched and/or supervised, predatory strangers may become a problem.

Cognitively, persons at this stage frequently cannot recall such major events and aspects of their current lives as the name of the current president, the weather conditions of the day, or their correct current address. Characteristically, some of these important aspects of current life are recalled, but not others. Also, the information is loosely held, so, for example, the patient may recall their correct address on certain occasions, but not others. Remote memory also suffers to the extent that persons may not recall the names of some of the schools which they attended for many years. Orientation may be compromised to the extent that the correct year may not be recalled. Calculation deficits are of such magnitude that an educated person has difficulty counting backward from 20 by 2s. Functionally, persons at this stage have incipient difficulties with basic activities of daily life

**Stage 6:** In this stage the patient's cognitive deficits are generally of such magnitude that the patient may at times confuse their wife with their mother or otherwise misidentify or be uncertain of the identity of close family members. At the end of this stage, speech ability overtly breaks down. Recall of current events is generally deficient to the extent that the patient cannot name the current national head of state or other, similarly prominent newsworthy figures. Persons at this sixth stage will most often not be able to recall the names of any of the schools which they attended. They may, or may not, recall such basic life events as the names of their parents, their former occupation and the country in which they were born. They still have some knowledge of their own names; however, patients in this stage begin to confuse their spouse with their deceased parent and otherwise mistake the identity of persons, even close family members, in their own environment. Calculation ability is frequently so severely compromised at this stage that even well-educated patients had difficulty counting backward consecutively from 10.

Emotional changes generally become most overt and disturbing in this sixth stage of Alzheimer's. Although these emotional changes may, in part, have a neurochemical basis, they are also clearly related to the patient's psychological reaction to their circumstances. For example, because of their cognitive deficits, patients can no longer channel their energies into productive activities. Consequently, unless appropriate direction is provided, patients begin to fidget, to pace, to move objects around and place items where they may not belong, or to manifest other forms of purposeless or inappropriate activities. Because of the patient's fear, frustration and shame regarding their circumstances, as well as other factors, patients frequently develop verbal outbursts, and threatening, or even violent, behaviour may occur. Because patients can no longer survive independently, they commonly develop a fear of being left alone. Treatment of these and other behavioural and psychological symptoms which occur at this stage, as well as at other stages of Alzheimer's, involves counselling regarding appropriate activities and the psychological impact of the illness upon the patient, as well as pharmacological interventions.

The mean duration of this sixth stage of AD is approximately 2.3 years. As this stage comes to an end, the patient, who is doubly incontinent and needs assistance with dressing and bathing, begins to manifest overt breakdown in the ability to articulate speech. Stuttering (verbigeration), neologisms, and/or an increased paucity of speech, become manifest.

**Stage 7:** With the advent of the seventh stage of Alzheimer's, certain physical and neurological changes become increasingly evident. One of these changes is physical rigidity. Evident rigidity upon examination of the passive range of motion of major joints, such as the elbow, is present in the great majority of patients, throughout the course of the seventh stage.

In the final stages of Alzheimer's, patients manifest increasing rigidity. Rigidity is evident in stage 7 patient upon passive range of motion of major joints such as the elbow. In many patients, this rigidity appears to be a precursor to the appearance of overt physical deformities in the form of contractures. Contractures are irreversible deformities which prevent the passive or active range of motion of joints. In the early seventh stage (7a and 7b), approximately 40% of Alzheimer's patients manifest these deformities. Later in the seventh stage, in immobile patients (from stage 7d to 7f), nearly all Alzheimer's patients manifest contractures in multiple extremities and joints

Development of joint deformities known as contractures is an increasing problem in the stage 7 Alzheimer's disease. A contracture is a joint deformity which makes full range of movement of a joint impossible without producing severe pain. Approximately 40% of patients in stage 7a and 7b manifest these deformities to the extent that they cannot move a major joint more than half way. Approximately 95% of patients manifest these deformities which are usually present in many joints.

Neurological reflex changes also become evident in the stage 7 Alzheimer's patient. Particularly notable is the emergence of so-called 'infantile', 'primitive' or 'developmental' reflexes which are present in the infant but which disappear in the toddler. These reflexes, generally begin to re-emerge in the latter part of the sixth stage and are usually present in the stage 7 Alzheimer's patient. Because of the much greater physical size and strength of the Alzheimer's patient in comparison with an infant, these reflexes can be very strong and can impact both positively and negatively on the care provided to the Alzheimer's patient. Alzheimer's patients commonly die during the course of the seventh stage. The mean point of demise is when patients lose the ability to ambulate and to sit up independently. 'Primitive' reflexes, also known as 'infantile' reflexes or 'developmental' reflexes, such as the sucking reflex, are evident in the stage 7 Alzheimer's patient. Another infantile reflex seen in the stage 7 Alzheimer's patient is the Babinski reflex. This abnormal response to stimulation of the sole of the foot is marked by dorsiflexion of the great toe and fanning of the other digits of the foot.

The most frequent proximate cause of death is pneumonia. Aspiration is one common cause of terminal pneumonia. Another common cause of demise in AD is infected decubital ulcerations. Alzheimer's patients in the seventh stage appear to be more vulnerable to all of the common causes of mortality in the elderly including stroke, heart disease and cancer. Some patients in this final stage appear to succumb to no identifiable condition other than Alzheimer's.