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# Treating Patients with Alzheimer's Disease

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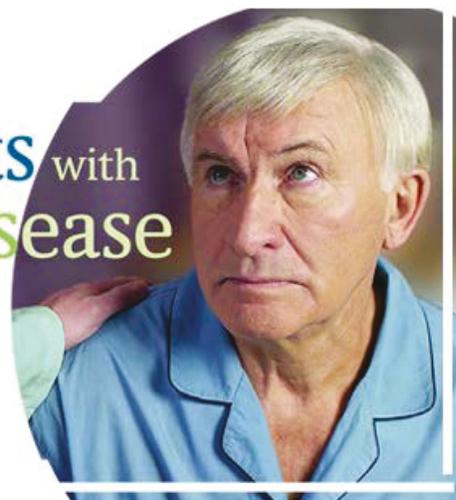
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## Treating Patients with Alzheimer's Disease

What you need to know in order to provide the best possible care for patients suffering from this progressive brain disorder.

By Renee Prajer, RDH, MS, and Mark Kacerik, RDH, MS



As people live longer, the number of elderly patients requiring dental care continues to grow. In order to provide comprehensive care, dental hygienists need to recognize and understand diseases and conditions associated with aging. Alzheimer's disease is defined as a progressive brain disorder that gradually destroys memory and the ability to reason, to learn, to make judgments, to communicate, and to carry out daily activities.<sup>1</sup> Alzheimer's disease affects the brain's neurons. These neurons sever associations with other nerve cells, resulting in nerve cell death.<sup>2</sup> Dr. Alois Alzheimer first identified altered brain tissue changes in 1906 in an individual who died of an atypical mental illness. These changes in brain tissue are referred to as plaques and tangles.<sup>3</sup>

Two types of lesions affect the brains of individuals with Alzheimer's disease. Beta-amyloid plaques are sticky clumps of protein fragments and cellular material that develop outside and around neurons.<sup>2</sup> Neurofibrillary tangles are insoluble twisted fibers mostly made up of the protein that accumulates inside nerve cells.<sup>2</sup> The protein that forms plaques is created naturally in the body, however, the clumping of protein that is found in patients with Alzheimer's disease is abnormal.<sup>4</sup> Tangles, also composed of protein, lead to the disruption of neuronal transport and, ultimately, to the destruction of affected neurons.<sup>5</sup> Although these structures are the key markers of the disease, whether they are the cause or a byproduct of the disease is unclear.<sup>2</sup> Research is ongoing to determine how these plaques and tangles can be prevented and/or controlled.

### Early Vs Late Onset

Two types of the Alzheimer's disease exist—early-onset and late-onset. Early-onset, also known as familial Alzheimer's disease, is strongly associated with genetics. There is a 50% chance of inheriting the mutated gene responsible for early-onset Alzheimer's when a parent is a carrier.<sup>1</sup> Three mutated genes are associated with early-onset Alzheimer's disease—Presenilin 2 (PS-2), Presenilin 1 (PS-1), and beta-amyloid precursor protein (BAPP).<sup>6</sup> If the mutated gene is not passed on, there is no increased risk of developing Alzheimer's disease. Familial Alzheimer's disease is generally referred to as

early-onset because most cases occur before the age of 60. Early-onset Alzheimer's disease is very rare, with approximately 200 family lines worldwide carrying such mutations.<sup>1</sup> Late-onset Alzheimer's disease or sporadic Alzheimer's, is the more common form of the disease and is not directly associated with a specific gene. However, the presence of apolipoprotein E epsilon 4 allele gene is associated with an increased risk of late-onset Alzheimer's disease.<sup>6</sup> It occurs most frequently in individuals between 70 and 80 years of age.<sup>1</sup> A probable diagnosis of Alzheimer's disease can be obtained through a complete medical history assessment, laboratory tests, physical examination, brain scans, and neuropsychological tests. Confirmation of the diagnosis can only be achieved through an autopsy identifying the presence of plaques and tangles associated with the disease.<sup>2</sup>

Alzheimer's disease is recognized as the most common form of dementia with no known cause and no cure.<sup>4</sup> Although there is no known cause, the Alzheimer's Foundation of America notes the following risk factors: age, inflammation of the brain, traumatic head injuries, family history/genetics, neuron damage associated with free radicals, and environmental factors.<sup>2</sup> The incidence of Alzheimer's disease increases significantly with age, doubling approximately every 5 years after the age of 65.7 In the year 2000, approximately 4.5 million people in the United States were diagnosed with Alzheimer's disease. This number is estimated to increase to 13.2 million by 2050.<sup>8</sup>

## Symptoms

The slowly progressive nature of Alzheimer's disease may prevent the recognition of early symptoms, which often present as mild forgetfulness. Many of the symptoms of Alzheimer's disease can be confused with what is considered normal behavior in an elderly person. Symptoms may include: difficulty remembering recent events, names of familiar people, disorientation, problems with language, impaired decision making, and difficulty solving basic math problems.<sup>1,9,10</sup>

As the stages of Alzheimer's disease progress, so do the physical impairments. Individuals may experience changes in personality and behavior, such as anxiety, suspiciousness or agitation, as well as delusions or hallucinations.<sup>1</sup> In advanced and terminal stages of the disease, there is profound comprehension difficulty, aggression, inability to recognize family members, physical immobility, dysphagia (difficulty swallowing), mutism, and unawareness of environment.<sup>11</sup>

The symptoms of Alzheimer's are typically divided into three stages: mild, moderate, and severe. They can be divided into categories of cognitive/intellectual or psychiatric.<sup>1,11</sup> The four A's of Alzheimer's (in the cognitive/intellectual category) include: amnesia: loss of memory, aphasia: difficulty communicating effectively, apraxia: difficulty performing preprogrammed motor tasks, and agnosia: impairment of the ability to recognize or comprehend the meaning of various sensory stimuli. Psychiatric symptoms include changes in personality, depression, delusions, and hallucinations. Behavioral problems are more evident in clients with psychiatric symptoms, which can be reduced through the use of appropriate medications.<sup>2,12</sup>

## Oral Health Care

Even in the early stages of the disease individuals with Alzheimer's need assistance with their personal and oral hygiene. The oral health care provider must recognize the impairments associated with this disease and make decisions that allow for the most appropriate care. Dexterity, hyposalivation of the salivary glands, medications, and dietary changes should be assessed. Oral hygiene instructions should involve the patient as well as the primary caregiver. In the mild stage of Alzheimer's, patients may be capable of performing oral hygiene care, however, patients may need to be reminded or supervised when carrying out the task. Frequent professional care, modified or powered tooth brushes, fluoride, saliva substitutes, and antimicrobial products are adjunctive and preventive aids that should be discussed with the primary caregiver and recommended based on the patient's ability to use such items. Decreased salivary flow should be noted as it can increase the risk of dental disease and affect proper denture placement and digestion.

Antidepressants and antipsychotic medications are commonly prescribed for patients with dementia.<sup>13</sup> Differentiating symptoms into categories of cognitive/intellectual or psychiatric is important to determine if antipsychotic or anti-anxiety medications are necessary.<sup>2</sup> The Food and Drug Administration has approved the following drugs for the treatment of Alzheimer's disease: tacrine (Cognex<sup>®</sup>), donepezil hydrochloride (Aricept<sup>®</sup>), rivastigmine (Exelon<sup>®</sup>), galantamine hydrobromide (Reminyl<sup>®</sup>), and memantine HCl (Namenda<sup>™</sup>). Although they do not offer a cure, these medications help slow the worsening of symptoms.<sup>2</sup> The oral health care provider should be aware of side effects that may accompany these medications, such as xerostomia, glossitis, coated tongue, alteration of taste, dizziness, sedation, and orthostatic

hypotension.

Communicating with patients who have Alzheimer's disease is a challenge. As the disease progresses, Alzheimer's patients may not be aware of the need to keep their teeth clean, how to express the need for dental care, or express symptoms such as pain.<sup>15</sup> Chaining, bridging, and rescuing are communication techniques useful in the dental practice for dementia and Alzheimer's disease. Chaining involves a provider starting a task and the patient assisting to help finish the task, such as tooth brushing. Bridging uses several of the patient's senses, especially sight and touch, to help them understand the task. This may involve allowing the patient to see and touch the prophylaxis cup prior to selective polishing. Rescuing is employed when one provider begins a task and the patient becomes noncompliant at which time another provider attempts to complete the task.<sup>13</sup> In addition to these techniques, providers may find greater success by scheduling the patient at a time that is best for the patient and when the office is least crowded.<sup>15</sup> When an individual with Alzheimer's disease is no longer able to communicate effectively with words, the caregiver may recognize the need for dental care if the individual refuses to eat, is pulling at the face or mouth frequently, or refuses to wear his or her dentures.<sup>15</sup>

Caring for patients with Alzheimer's disease requires patience, understanding, and a comfortable environment.<sup>16</sup> Both the patient and the dental provider may find it helpful to have the caregiver in the operatory during treatment. The caregiver can provide comfort and reassurance by reducing stress and anxiety in the patient. Behavior associated with Alzheimer's is a symptom of the disease and should not be taken personally. Dental hygienists should listen to what the Alzheimer's patient is saying and focus on the feeling behind the words. Dental providers should use a slow, calm tone of voice and avoid sudden movements while keeping directions basic.<sup>15</sup>

The demand for dental hygienists who specialize in treating age-related diseases such as Alzheimer's is increasing. Understanding the disease, its symptoms, and treatment considerations allow the dental hygienist to provide quality, comprehensive care.



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