

Quality Resource Guide

Preventative Oral Care for the Elderly Dental Patient

Author Acknowledgements

RACHEL KEARNEY, BSDH MS

Associate Professor and Chair
The Ohio State University
College of Dentistry
Division of Dental Hygiene
Columbus, Ohio

Ms. Kearney has no relevant financial relationships to disclose.

Educational Objectives

Following this unit of instruction, the learner should be able to:

1. Discuss the growing population of older adults.
2. List factors that may impact the ability of an elderly patient to maintain oral health.
3. Discuss oral diseases that are more prevalent in the elderly.
4. List preventative oral care measures to assist in maintaining oral health for the elderly.
5. Assist an elderly patient or their caregiver in maintaining their oral health.

MetLife designates this activity for **1.0 continuing education credit** for the review of this Quality Resource Guide and successful completion of the post test.

The following commentary highlights fundamental and commonly accepted practices on the subject matter. The information is intended as a general overview and is for educational purposes only. This information does not constitute legal advice, which can only be provided by an attorney.

© 2024 MetLife Services and Solutions, LLC. All materials subject to this copyright may be photocopied for the noncommercial purpose of scientific or educational advancement.

Originally published July 2020. Updated and reviewed February 2024. Expiration date: February 2027.

The content of this Guide is subject to change as new scientific information becomes available.

ADA CERP® | Continuing Education
Recognition Program

Accepted Program Provider FAGD/MAGD Credit **05/01/21 - 06/31/25**.

MetLife is an ADA CERP Recognized Provider. ADA CERP is a service of the American Dental Association to assist dental professionals in identifying quality providers of continuing dental education. ADA CERP does not approve or endorse individual courses or instructors, nor does it imply acceptance of credit hours by boards of dentistry. Concerns or complaints about a CE provider may be directed to the provider or to ADA CERP at <https://ccepr.ada.org/en/ada-cerp-recognition>.

Address comments or questions to:

DentalQuality@metlife.com - or -
MetLife Dental Continuing Education
501 US Hwy 22
Bridgewater, NJ 08807

Cancellation/Refund Policy:

Any participant who is not 100% satisfied with this course can request a full refund by contacting us.

Introduction

In our advancing society, people are benefiting from longer life expectancy, and are, in reality, as old as they feel. However, in the United States, life expectancy is around 76 years¹ and the Centers for Disease Control and Prevention (CDC) defines elderly or older adults as people older than age 65.² It is estimated that over 57.9 million people in the United States are aged 65 and over. Women tend to live longer than men, 63.7% of those over age 85 are women.³ As the population continues to age, dental care providers are likely to see an increase in the number of patients who are elderly. As people live longer, they are retaining their natural teeth longer and have an increased need for dental care later in life.⁴

Patient Factors That May Impact Ability to Maintain Oral Health

As individuals age, numerous factors may influence their overall and oral health. Many of these factors make it challenging to maintain oral health. These factors include a decline in motor skills, cognitive changes, multiple systemic diseases and medications, living situations and the need for caregivers, finances, and diminished health literacy. While not all older patients will face challenges with each of the above factors, they are often prevalent within the elderly population. These factors may make compliance with oral hygiene instructions difficult or patients may be unable to remember the instructions. Instructions should be written so the patient does not have to rely on remembering them. In addition, if there are caregivers they should also receive the written instructions.

• Decline in motor and sensory skills

Older adults may experience a decline in motor skills for several reasons. Bone density decreases gradually after the age of 40 and joints become less elastic.⁵ Osteoarthritis, rheumatoid arthritis, joint pain or joint disease, may limit a patient's ability to maintain adequate oral home care. Recommendations for modified grasps on toothbrushes or the use of a power toothbrush

may be easier for patients with hand or finger mobility limitations.⁶ Vision loss may affect older adults, such as those with cataracts or glaucoma. Vision loss may make a dental appointment more difficult for an older patient. Large print materials and good lighting may assist a patient in filling out forms or reading information. In addition, patients with vision loss may not be able to see non-verbal communications in a conversation.⁶ Hearing loss is also common among older adults. Dental care providers should be sure to speak slowly and loudly to patients who experience hearing loss. When talking to the patient, providers should face the patient and make sure their lips are visible by removing their mask. If a patient is wearing a hearing aid they may want to adjust or remove the hearing aid during treatment, especially if the treatment creates noise.⁶

• Cognitive changes

Older adults may also develop cognitive changes as they age. An estimated 6.7 million Americans are living with dementia, and Alzheimer's Disease is the most common. Almost all members of this group are older than 65 years of age.⁷

Alzheimer's disease is an irreversible, progressive brain disorder that causes problems with memory and thinking skills. Patients may present with various stages of Alzheimer's disease. Beginning changes to the brain occur in the Preclinical Stage, but there are very few symptoms or memory loss. Mild Cognitive Impairment (MCI) is the next phase. In this phase patients start to experience cognitive decline that is not characteristic of their age, but it does not significantly interfere with day-to-day activities. Family members may be the only ones who notice changes during this stage. The most severe phase is dementia due to Alzheimer's Disease. This stage is characterized by noticeable memory, thinking, and behavioral changes that impair a person's ability to function in daily life.⁷

Patients with Alzheimer's disease may not be able to accurately communicate their medical history or medication lists. Therefore, it is important to confirm medications with a physician or a caregiver. Written instructions that a patient

can take home with them are mandatory for patients with Alzheimer's or dementia, and their caregivers.

Patients with dementia are at an increased risk for caries, periodontal disease and infection because their cognitive impairment makes it difficult to engage in routine home care. Older people with dementia have oral problems that are most associated with soft tissue; high levels of plaque, gingival bleeding, periodontal disease, stomatitis, mucosal lesions, and reduced salivary flow.⁸ Older adults with dementia may also have difficulty communicating oral pain and may avoid eating if they are experiencing dental pain. Oftentimes caregivers need to be involved in the oral care plan for patients with dementia.⁹

• Multiple systemic diseases and medications

The health of older adults can vary widely, but most older adults have at least one chronic health condition. The most frequent diseases of older adults are hypertension, arthritis, heart disease, cancer and diabetes.² Because of the prevalence of systemic diseases in older adults it is common that older adults are taking more than one prescription medication. Thirty-nine percent of people 65 years old and older report using five or more prescription medications (polypharmacy).¹⁰ Prescription medications can often cause xerostomia, dry mouth, or salivary gland dysfunction.¹¹ Recommendations on managing xerostomia as a side effect of medications can be found later in this Quality Resource Guide (QRG).

Xerostomia and polypharmacy may have an impact on the diet of the elderly. Xerostomia can make it difficult to chew some foods and some medications may impact the ability to taste.¹² These difficulties may cause an elderly patient to change their diet to foods that are more tolerable or easier to swallow. This may cause a lack of some nutrients in their diet. Patients with dental problems or missing teeth may have difficulty masticating certain types of food. Lack of Vitamins B2, B6, and B12 may result in

cheilosis or glossitis. A deficiency of vitamin C may result in gingival enlargement or bleeding.^{13,14} Changes in diet are common in the elderly and may relate to the oral health of the patient.

- **Considerations of caregivers, residential settings, and financial means**

As adults age and if their health deteriorates there is often a need to have a caregiver assist a patient in maintaining their personal and oral hygiene. If a caregiver is needed to provide oral healthcare for a patient they should be educated along with the patient about proper care. If more direct care is needed for the elderly they may move to an assisted living or nursing home. Over 8.7 million Americans use long term care services and that is expected to grow with the increase in life expectancy.¹⁵ Dental care in many assisted living facilities has been shown to be poor.¹⁶

Daily oral hygiene care in assisted living facilities is often done by the nursing staff. It has been shown that proper training of the staff may result in better oral health outcomes,¹⁷ though many staff members lack training in oral care and perceive lack of time and priority for oral care of patients in assisted living facilities.¹⁸ Often dental care is sought outside of the assisted living facility.¹⁹ This can be challenging not only related to the ability to be transported to a dental care facility, but older adults are the least likely group of people to have private dental insurance, causing their utilization of dental care to decrease.²⁰ Older adults with a lower income have been shown to have a greater incidence of tooth loss.²¹ Elderly individuals needing caregiving, living in an assisted living facility or having low income face significant barriers in accessing dental care.

As with all patients, obtaining consent for dental procedures is an essential step in providing care for elderly patients with special needs. When consent is obtained, patients should have a full understanding of the procedure that is to be performed and the risks, benefits, and alternatives to that procedure. They should have time to ask questions about the procedure before deciding on consent. An essential part of the consent

process is that the person providing consent has the capacity to fully participate in the informed consent process.

Elderly patients may have impaired decision-making capacity,^{22,23} that may be difficult to discern as many problems with memory or dementia go undiagnosed. There are screening tools, such as the Mini-Cog, that may help determine if the patient is suffering from dementia. The Mini-Cog is a two-part test that takes 3-5 minutes to complete.²⁴ It is administered by first asking the patient to listen carefully and remember three unrelated words (*i.e.*, hat, penny, car). Next, the examiner asks the patient to draw the face of a clock on a sheet of paper at a specific time (*i.e.*, 11:45). Then the examiner asks the patient to repeat the three words they were asked to remember. If the patient misses all the three words the first time this indicates some impaired cognition. If only one or two words are missed this indicates possible dementia.²⁵ If the dental care provider finds that the patient has impaired cognition they should suggest a medical evaluation or include family members or caregivers in the consent process.

It also can be helpful to review consent verbally and in writing for elderly patients and possibly in large print if a patient has vision problems. Consent requires communication between the provider and the patient and the provider should ensure that the patient is able to understand and consent to dental procedures.

Health Literacy

Health literacy is defined as the degree to which an individual has the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.²⁶ The health literacy of older adults has been shown to be less than that of younger adults.²⁷ Higher levels of health literacy are associated with better oral health status and better patient-dentist communication. Those with higher health literacy will more often receive regular dental care.²⁸ The low health literacy of older adults can cause a barrier to preventative care and treatment of oral diseases.

If an elderly patient experiences one or more of the factors above it may impact his/her ability to maintain adequate oral health. Dental professionals should be aware of these factors and consider the factors that may affect their patients' ability to receive oral care and/or maintain oral health. Considering these factors, dental professionals should provide recommendations on preventative measures that will assist their patients in maintaining their oral health.

Oral Diseases and Preventative Measures

Because there are multiple factors that may influence an elderly person's ability to maintain their oral health there are several oral diseases that may be associated with elderly patients. Many oral diseases occur as a result of diminished ability to maintain oral hygiene.

- **Poor oral hygiene**

Many of the oral diseases covered below relate in some way to poor oral hygiene. Poor oral hygiene can be the result of decreased cognitive ability, decreased motor skills, and low health literacy. Oral hygiene recommendations should be tailored to each patient's specific needs, but below are general recommendations that may be made to elderly patients.

Plaque biofilm removal procedures through brushing will assist in dislodging bacteria, food, and plaque biofilms that accumulate in the oral cavity. Brushing is the most common technique used for biofilm removal. As people age, brushing may become more difficult due to a decrease in dexterity in their hands. Patients may benefit from a power toothbrush or a larger handle added to a manual toothbrush. The power toothbrush generally has a larger grip and creates the movement of the bristles without movements that require full dexterity. Some patients may need assistance or supervision when using a power toothbrush to avoid misuse or possible damage to the mouth. A larger handle on a manual toothbrush may assist a patient who has difficulty grasping a small handle due to a decrease in motor skills or other diseases, such as arthritis,

that limit the ability to grasp. A common way to modify a manual toothbrush is to purchase a bicycle handle cover and insert the manual toothbrush into the handle (**Figure 1**). An easier and more convenient option is to build up the toothbrush handle with aluminum foil to increase the diameter of the handle. These are inexpensive ways to modify a toothbrush that allows the patient to better grasp the brush and more thoroughly remove plaque biofilm. Complete plaque biofilm removal also includes interproximal cleaning. There are numerous ways to clean interproximal tooth surfaces; flossing, interproximal brushes, oral irrigation, and various types of toothpicks.

A simple and effective way to provide home-care instructions is to use the Tell, Show, Do method. (**Table 1**). This method allows a patient or the caregiver to learn about the recommended technique, have a demonstration of the technique and to try the technique with guidance from an oral healthcare professional. This method also allows the oral health professional to evaluate the patient and/or caregiver's ability to perform the oral hygiene procedure and to make modifications if needed.²⁹ This method of instruction ensures the patient and the caregiver receive clear instructions and gives them a chance to practice the instruction before trying it at home.

• Caries

Dental caries is a disease that is often associated with children, but dental caries often occurs in the elderly population. Most frequently in older adults,

dental caries occurs on the root surfaces of the teeth. The incidence of root caries has increased due to the fact that people are living longer and maintaining their natural teeth longer.^{30,31} Root caries are caused in a similar manner to caries on the crown of the tooth; cariogenic biofilm and carbohydrates form an acid that breaks down the tooth structure. However, root caries can progress almost twice as quickly as caries on the crown of a tooth due to the less mineralized dentin on the root of the tooth.^{32,33} Root caries often occur in older adults because the root surface is exposed due to gingival recession progressing with age. In addition, the difficulties in performing adequate plaque removal through brushing cause plaque to accumulate on the root surfaces. Adults living in long-term care facilities have been shown to have a very high rate of root caries.³⁴

To help prevent caries, patients should use a dentifrice containing fluoride. Patients at high risk for caries should be prescribed a fluoride toothpaste containing 1000 ppm fluoride. The fluoride in prescription toothpaste can facilitate remineralization of tooth structure. Fluoride rinses that contain 0.5% sodium fluoride can reduce both coronal and root caries. Fluoride varnish can significantly reduce caries, particularly root caries when applied every three months at recall visits.³⁵

In addition to fluoride prevention, older patients with dental caries would benefit from oral hygiene using other agents.³⁵ Xylitol candy used at a dose of 5-8 grams per day 2-3 times per day has been

shown to be effective in the prevention of caries. Additionally, chlorhexidine varnish has been shown to reduce root caries in older adults.³⁶ Root caries can also be treated effectively with silver diamine fluoride (SDF), especially in situations where a restoration is difficult to place or the when patient has limited financial resources.³⁷

An expanded discussion of caries management in adult patients may be found in the MetLife QRG – Zandona AF: Caries Risk Assessment and Management for Adults in a General Practice.

• Periodontal Disease

Periodontal disease is one of the most prevalent chronic conditions in older adults with teeth. Generally, in older adults, periodontal disease is more severe as a result of it being a chronic condition. Periodontal disease may be difficult to treat, especially if a patient has other inflammatory systemic diseases. In addition, older adults often have gingival recession. For those older patients with periodontal disease, regular supportive periodontal therapy can help maintain oral health and prevent further progression of periodontal disease. More frequent intervals for periodontal maintenance may be considered. Oral hygiene instruction should be provided to patients with periodontal disease in order to reduce plaque and biofilm accumulation.³⁸ Stannous fluoride dentifrice may also be recommended to reduce plaque accumulation and gingivitis.³⁹

Figure 1



Toothbrush handles modified for easier gripping.

Table 1 - Tell, Show, Do Method for Oral Hygiene Instruction

Step	Explanation of Step
Tell	Explain the procedure to the patient and/or caregiver. Use simple, clear terms.
Show	Demonstrate the procedure to the patient and/or caregiver. A typodont or the patient's own mouth can be used to demonstrate the procedure.
Do	Have the patient and/or caregiver try the technique that was just demonstrated. Evaluate the patient's ability to perform the procedure and make modifications as necessary.

• **Prostheses**

Even though people are retaining their teeth longer, many older adults wear some type of removable prosthesis. Partial dentures allow older adults to maintain the ability to chew and retain facial structure. Elderly patients who wear prostheses should be taught how to care for the dentures and the oral tissues that surround the prosthesis. Patients should be instructed to remove dentures at night. The mouth should be cleaned and tissues under the denture massaged to enhance circulation to the area. The denture should be cleaned by brushing and rinsing with a non-abrasive denture cleaner and should be stored in water or a denture cleaning solution overnight to help them maintain their shape and prevent them from drying out. Individuals should never place their dentures into hot or boiling water as it may change the shape of the denture and cause them to not fit. Denture adhesive may be used to assist in holding the denture in place when wearing them, but a patient should be instructed to use only 3-4 pea-sized dollops on each denture. Ill-fitting dentures may be in indication that the denture should be replaced.⁴⁰ Dentures should be examined regularly or as needed by a dentist for cracks, broken wires, lost acrylic, or other needed repairs to prevent soft tissue injury. Educating patients with dentures on proper care of their oral cavity and dentures is an essential role of the dental professional.

• **Xerostomia**

Xerostomia, or dry mouth, occurs in 30% of patients above 65 years of age and 40% of patients older than 80 years of age.⁶ Xerostomia is a common side effect of numerous regularly prescribed medications and is most likely present

in a patient who takes four or more prescription medications. Xerostomia can also be associated with patients who have diabetes, Alzheimer's disease, or Parkinson's disease. Xerostomia can be uncomfortable and can lead to mucositis, caries, and cracked lips.⁶

There is little that can be done to prevent xerostomia, but patients who experience xerostomia should be instructed to drink or sip water throughout the day and avoid regular exposure to sugary drinks. Patients who may not be able to greatly increase their fluid intake can use a spray bottle to mist their mouth to provide comfort without the intake of additional fluids. In addition, there are over-the-counter toothpastes, rinses, and gels that can help the oral mucosa to retain moisture. Over-the-counter products should not contain alcohol, as alcohol-containing products may have a drying effect on the mucosa.⁶

An expanded discussion of xerostomia may be found in the MetLife QRG - Miller C: Managing Dental Patients with Xerostomia and Hyposalivation.

• **Swallowing difficulties**

Dysfunction in swallowing, called dysphagia, is commonly associated with diseases more likely to occur with advanced age. Patients with Parkinson's disease, strokes, cardiovascular disease, Huntington's disease, and multiple sclerosis may develop dysphagia.⁴¹ A patient with a swallowing difficulty may be unable to swallow water or saliva as well as healthy patients during dental care.

Aspiration is a risk during dental treatment for patients with dysphagia. Patients may be unable to control and manage fluids during a dental procedure. Special consideration should be given to provide adequate high-volume evacuation during the procedure. In addition, the patient should not be reclined in the full supine position as this may cause inadvertent aspiration. It is recommended that the chair not be placed further back than 45 degrees. Protection of the airway is also important during the treatment of dysphagic patients. A rubber dam or gauze should be used to prevent debris from falling in the oropharynx. Small tools can be secured with dental floss attached outside the mouth for easy retrieval if there is inadvertent loss of grip. A runny impression mix or an excessive amount of impression material should be avoided when taking impressions on a patient with dysphagia. High volume evacuation should also be used to remove impression material that may remain in the mouth.⁴²

Summary

As the elderly population grows, the need for dental care for this population will increase. Dental professionals should be aware of the specific factors that may affect the ability of an elderly person to maintain their oral health. Older adults may experience caries, periodontal disease, xerostomia, poor oral hygiene and prostheses. There is no one strategy that will work for all patients and oral health professionals should consider each patient's individual situation when making treatment recommendations. Oral health professionals should focus on educating patients on oral hygiene strategies that will help the elderly to maintain good oral health.

References

1. FastStats. Published February 8, 2023. Accessed January 25, 2024. <https://www.cdc.gov/nchs/fastats/life-expectancy.htm>
2. Centers for Disease Control and Prevention. Indicator Definitions - Older Adults. Published January 21, 2019. Accessed February 12, 2024. <https://www.cdc.gov/cdi/definitions/older-adults.html>
3. Bureau UC. Exploring Age Groups in the 2020 Census. Census.gov. Accessed February 12, 2024. <https://www.census.gov/library/visualizations/interactive/exploring-age-groups-in-the-2020-census.html>
4. Dye BA, Weatherspoon DJ, Lopez Mitnik G. Tooth loss among older adults according to poverty status in the United States from 1999 through 2004 and 2009 through 2014. *J Am Dent Assoc* 1939. 2019;150(1):9-23.e3. doi:10.1016/j.adaj.2018.09.010
5. Yellowitz JA. Geriatric health and functional issues. *ADA Pract Guide Patients Med Cond*. Published online 2015:405-422.
6. American Dental Association. Aging and Dental Health. Published August 24, 2023. Accessed February 12, 2024. <https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/aging-and-dental-health>
7. Alzheimer's Association. 2023 Alzheimer's disease facts and figures. *Alzheimers Dement J Alzheimers Assoc*. 2023;19(4):1598-1695. doi:10.1002/alz.13016
8. Delwel S, Binnekade TT, Perez RSGM, Hertogh CPM, Scherder EJA, Lobbezoo F. Oral hygiene and oral health in older people with dementia: a comprehensive review with focus on oral soft tissues. *Clin Oral Investig*. 2018;22(1):93-108. doi:10.1007/s00784-017-2264-2
9. Taverna MV, Nguyen CA, Hicks BM. Oral hygiene and self-care in older adults with dementia. *Generations*. 2016;40(3):43-48.
10. Kantor ED, Rehm CD, Haas JS, Chan AT, Giovannucci EL. Trends in Prescription Drug Use Among Adults in the United States From 1999-2012. *JAMA*. 2015;314(17):1818-1831. doi:10.1001/jama.2015.13766
11. Tan ECK, Lexomboon D, Sandborgh-Englund G, Haasum Y, Johnell K. Medications That Cause Dry Mouth As an Adverse Effect in Older People: A Systematic Review and Metaanalysis. *J Am Geriatr Soc*. 2018;66(1):76-84. doi:10.1111/jgs.15151
12. Mojon P, Budtz-Jørgensen E, Rapin CH. Relationship between oral health and nutrition in very old people. *Age Ageing*. 1999;28(5):463-468. doi:10.1093/ageing/28.5.463
13. Walls AWG, Steele JG. The relationship between oral health and nutrition in older people. *Ageing Gut*. 2004;125(12):853-857. doi:10.1016/j.mad.2004.07.011
14. Bailey RL, Harris Ledikwe J, Smiciklas-Wright H, Mitchell DC, Jensen GL. Persistent oral health problems associated with comorbidity and impaired diet quality in older adults. *J Am Diet Assoc*. 2004;104(8):1273-1276. doi:10.1016/j.jada.2004.05.210
15. Harris-Kojetin L, Sengupta M, Park-Lee E, et al. Long-term care providers and services users in the United States: data from the National Study of Long-Term Care Providers, 2013-2014. *Vital Health Stat 3*. 2016;(38):x-xii; 1-105.
16. Kistler CE, Scott J, Ward K, et al. Mouth Care in Assisted Living: Potential Areas for Improvement. *J Am Med Dir Assoc*. 2021;22(6):1190-1193.e2. doi:10.1016/j.jamda.2020.11.038
17. Coleman P, Watson NM. Oral care provided by certified nursing assistants in nursing homes. *J Am Geriatr Soc*. 2006;54(1):138-143.
18. DeBiase CB, Austin SL. Oral health and older adults. *J Dent Hyg*. 2003;77(2).
19. Petersen PE, Kandelman D, Arpin S, Ogawa H. Global oral health of older people-call for public health action. *Community Dent Health*. 2010;27(4):257-267.
20. Kiyak HA, Reichmuth M. Barriers to and enablers of older adults' use of dental services. *J Dent Educ*. 2005;69(9):975-986.
21. Seerig LM, Nascimento GG, Peres MA, Horta BL, Demarco FF. Tooth loss in adults and income: Systematic review and meta-analysis. *J Dent*. 2015;43(9):1051-1059. doi:10.1016/j.jdent.2015.07.004
22. Stanley B, Guido J, Stanley M, Shortell D. The Elderly Patient and Informed Consent: Empirical Findings. *JAMA*. 1984;252(10):1302-1306. doi:10.1001/jama.1984.03350100032025
23. Pérez-Cárceles MD, Lorenzo MD, Luna A, Osuna E. Elderly patients also have rights. *J Med Ethics*. 2007;33(12):712-716. doi:10.1136/jme.2006.018598
24. Borson S, Scanlan J, Brush M, Vitaliano P, Dokmak A. The mini-cog: a cognitive 'vital signs' measure for dementia screening in multi-lingual elderly. *Int J Geriatr Psychiatry*. 2000;15(11):1021-1027.
25. Doerflinger DMC. How to try this: the mini-cog. *AJN Am J Nurs*. 2007;107(12):62-71.
26. U.S. Department of Health & Human Services. Health Literacy Online. Published June 8, 2016. Accessed February 12, 2024. <https://health.gov/healthliteracyonline/>
27. Koh HK, Rudd RE. The Arc of Health Literacy. *JAMA*. 2015;314(12):1225-1226. doi:10.1001/jama.2015.9978
28. Guo Y, Logan HL, Dodd VJ, Muller KE, Marks JG, Riley JL. Health Literacy: A Pathway to Better Oral Health. *Am J Public Health*. 2014;104(7):e85-e91. doi:10.2105/AJPH.2014.301930
29. Fields Jr HW, Machen JB, Murphy MG. Acceptability of various behavior management techniques relative to types of dental treatment. *Pediatr Dent*. 1984;6(4):199-203.
30. Lamster IB. Geriatric periodontology: How the need to care for the aging population can influence the future of the dental profession. *Periodontol 2000*. 2016;72(1):7-12.
31. Takahashi N, Nyvad B. Ecological hypothesis of dentin and root caries. *Caries Res*. 2016;50(4):422-431.
32. Featherstone JD. Fluoride, remineralization and root caries. *Am J Dent*. 1994;7(5):271-274.
33. Burgess JO, Gallo JR. Treating root-surface caries. *Dent Clin*. 2002;46(2):385-404.
34. Chalmers JM, Carter KD, Spencer AJ. Caries incidence and increments in community-living older adults with and without dementia. *Gerodontology*. 2002;19(2):80-94.
35. Saunders RHJ, Meyerowitz C. Dental caries in older adults. *Dent Clin North Am*. 2005;49(2):293-308. doi:10.1016/j.cden.2004.10.004
36. Rethman MP, Beltrán-Aguilar ED, Billings RJ, et al. Nonfluoride caries-preventive agents: Executive summary of evidence-based clinical recommendations. *J Am Dent Assoc*. 2011;142(9):1065-1071. doi:10.14219/jada.archive.2011.0329
37. Hendre AD, Taylor GW, Chávez EM, Hyde S. A systematic review of silver diamine fluoride: Effectiveness and application in older adults. *Gerodontology*. 2017;34(4):411-419.
38. Renvert S, Persson GR. Treatment of periodontal disease in older adults. *Periodontol 2000*. 2016;72(1):108-119. doi:10.1111/prd.12130
39. Paraskevas S, van der Weijden GA. A review of the effects of stannous fluoride on gingivitis. *J Clin Periodontol*. 2006;33(1):1-13. doi:10.1111/j.1600-051X.2005.00860.x
40. American Dental Association. Denture Care and Maintenance. Accessed February 12, 2024. <https://www.ada.org/en/member-center/oral-health-topics/dentures>
41. Fucile S, Wright PM, Chan I, Yee S, Langlais ME, Gisel EG. Functional oral-motor skills: Do they change with age? *Dysphagia*. 1998;13(4):195-201. doi:10.1007/PL00009571
42. Quek HC, Lee YS. Dentistry considerations for the dysphagic patient: Recognition of condition and management. *Proc Singap Healthc*. 2019;28(4):288-292. doi:10.1177/2010105819868252

POST-TEST

Internet Users: This page is intended to assist you in fast and accurate testing when completing the “Online Exam.” We suggest reviewing the questions and then circling your answers on this page prior to completing the online exam.

(1.0 CE Credit Contact Hour) Please circle the correct answer. 70% equals passing grade.

1. **What factors contribute to the challenges faced by elderly patients in maintaining oral health?**
 - a. financial stability and social status
 - b. cognitive changes and multiple systemic diseases
 - c. genetic predisposition and environmental factors
 - d. availability of dental services and technological advancements
 - e. lack of access to transportation and mobility issues
2. **A decline in motor skills is common among the elderly because:**
 - a. joints become less elastic as a person ages.
 - b. osteoarthritis creates increased flexibility.
 - c. bone density increases.
 - d. rheumatoid arthritis creates decreased flexibility.
3. **When considering patients with a vision impairment an oral healthcare provider should:**
 - a. Limit written consent forms
 - b. Make sure a caregiver is present
 - c. Take your mask off when speaking
 - d. Avoid the use of non-verbal communications
4. **How many Americans are living with Alzheimer’s dementia or other forms of dementia?**
 - a. 1.1 million
 - b. 3.2 million
 - c. 6.7 million
 - d. 10 million
5. **Thirty-nine percent of the population over age 65 take at least how many medications:**
 - a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5
6. **How can dental professionals assist elderly patients with xerostomia?**
 - a. advising against water intake to avoid discomfort
 - b. recommending alcohol-based mouthrinses for moisture
 - c. encouraging regular consumption of sugary drinks
 - d. suggesting over-the-counter products without alcohol
 - e. providing dietary supplements to increase saliva production
7. **Most oral problems for older adults are related to**
 - a. Dementia
 - b. Caregiver neglect
 - c. Periodontal disease
 - d. Poor oral hygiene
8. **In the “Do” part of the Tell, Show, Do method an oral healthcare provider should:**
 - a. Evaluate the patient’s ability to perform the procedure
 - b. Describe the procedure in detail
 - c. Use concise, clear language
 - d. Demonstrate the procedure on the patient’s mouth
9. **What is an essential aspect of caring for dentures in elderly patients?**
 - a. using abrasive denture cleaners for thorough cleaning
 - b. storing dentures in hot or boiling water to maintain shape
 - c. applying excessive amounts of denture adhesive for better retention
 - d. educating patients on proper denture care, including removal at night
 - e. ignoring cracks or ill-fitting areas
10. **To prevent caries in older adults, all of the following may be recommended EXCEPT:**
 - a. Review oral hygiene instructions
 - b. Use a prescription fluoride dentifrice containing 1000 ppm fluoride
 - c. Use a fluoride rinse with 0.5% sodium fluoride
 - d. Apply fluoride varnish to root surfaces of teeth
 - e. Remove plaque from coronal surfaces only

Registration/Certification Information (Necessary for proper certification)

Name (Last, First, Middle Initial): _____

PLEASE PRINT CLEARLY

Street Address: _____ Suite/Apt. Number _____

City: _____ State: _____ Zip: _____

Telephone: _____ Fax: _____

Date of Birth: _____ Email: _____

State(s) of Licensure: _____ License Number(s): _____

Preferred Dentist Program ID Number: _____ Check Box If Not A PDP Member

AGD Mastership: Yes No

AGD Fellowship: Yes No Date: _____

Please Check One: General Practitioner Specialist Dental Hygienist Other

FOR OFFICE USE ONLY

Evaluation - The Role of Fluoride Therapy for Adults 2nd Edition

Providing dentists with the opportunity for continuing dental education is an essential part of MetLife's commitment to helping dentists improve the oral health of their patients through education. You can help in this effort by providing feedback regarding the continuing education offering you have just completed.

Please respond to the statements below by checking the appropriate box, using the scale on the right.

1 = POOR 5 = Excellent

1 2 3 4 5

- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------------|
| <ol style="list-style-type: none"> 1. How well did this course meet its stated educational objectives? 2. How would you rate the quality of the content? 3. Please rate the effectiveness of the author. 4. Please rate the written materials and visual aids used. 5. The use of evidence-based dentistry on the topic when applicable. 6. How relevant was the course material to your practice? 7. The extent to which the course enhanced your current knowledge or skill? 8. The level to which your personal objectives were satisfied. 9. Please rate the administrative arrangements for this course. | <table border="0"> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> N/A |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

10. How likely are you to recommend MetLife's CE program to a friend or colleague? (please circle one number below:)

10 9 8 7 6 5 4 3 2 1 0
 extremely likely neutral not likely at all

What is the primary reason for your 0-10 recommendation rating above?

11. Please identify future topics that you would like to see:

Thank you for your time and feedback.

