

Oral Health Assessment of Older Adults: The Kayser-Jones Brief Oral Health Status Examination (BOHSE)

By: *Leslie-Faith Morritt Taub, PhD, DNSc, A/GNP-BC, CDE, C-BSM, CME (DOT) FAANP*
New York University Rory Meyers College of Nursing

WHY: The bidirectional effects of systemic diseases such as cardiovascular disease, cerebrovascular accident (CVA), human immunodeficiency virus (HIV), diabetes, and pneumonia on oral health in older adults is well recognized (National Academies (IOM), 2011). Almost 49 million Medicare beneficiaries have no dental coverage (Willink, Schoen, & Davis 2016) and states may elect to provide dental coverage to adult Medicaid recipients however less than half provide comprehensive dental care (U.S. Department of Health and Human Services, 2012). By the time older adults enter nursing homes this unmet need for dental care may take back seat to the myriad demands imposed by comorbid conditions. Additionally, chronic diseases and the side effects of medications prescribed to treat them can further adversely affect oral health (Tavares, Lindefeld Calabi, & San Martin, 2014). The National Academies of Sciences Engineering, Medicine: Health and Medicine Division (previously known as Institute of Medicine) report (2011) *Improving Access to Oral Health Care for Vulnerable and Underserved Populations* recognizes the barriers to oral care in the current health system and supports training nondental health professionals such as nurses to perform oral disease screening.

BEST TOOL: In a systematic review of oral health assessment by nurses and others in the care of cognitively impaired institutionalized residents, the Kayser-Jones Brief Oral Health Status Examination (BOHSE) was found to be the most comprehensive, validated and reliable screening tool (Chalmers & Pearson, 2005). The 10-item examiner-rated BOHSE catalogues oral health problems with a higher score identifying more problems. The BOHSE assessment begins with observation and palpation for enlarged cervical lymph nodes and includes a complete oral cavity evaluation. Using a pen light, tongue depressor, and gauze, the conditions of the oral cavity, surrounding tissues, and natural/artificial teeth are examined and categorically graded from 0 (normal) to 2 (significantly problematic).

TARGET POPULATION: The BOHSE was designed to evaluate the oral condition of nursing home residents, with and without cognitive impairment, by those providing nursing care. The BOHSE has been employed in a variety of populations including community-dwelling and hospitalized older adults, nursing home residents, and individuals with cognitive impairment (Chalmers, Spencer, Carter, King, & Wright, 2009; Chen, Chang, Chyun & McCorkle, 2005; Lin, Jones, Godwin, Godwin, Knebl, & Niessen, 1999; Yu, Lee, Hong, Lau, & Leung, 2008).

VALIDITY AND RELIABILITY: Statistically significant test-retest reliability ($r=.83-.79$), inter-rater reliability ($r=.68-.40$), and content validity have been established by six field experts (Kayser-Jones, et al, 1995).

STRENGTHS AND LIMITATIONS: The BOHSE is a screening tool with demonstrated reliability and validity that should be used by nursing personnel in residential settings. Systematic use of this tool at scheduled times can facilitate oral health triaging of residents to allow for timely care provided by the dentist.

FOLLOW-UP: Although the cumulative score is helpful, individuals who score on items with an asterisk that are underlined should be referred for a dental evaluation and exam and follow-up immediately. In general, a semi-annual checkup is recommended by a dentist for oral health assessment.

MORE ON THE TOPIC:

Best practice information on care of older adults: www.ConsultGeri.org.

Chalmers, J.M., Spencer, A.J., Carter, K.D., King, P.L., & Wright, C. (2009). Caring for oral health in Australian residential care. Dental statistics and research series no. 48. Cat. no. DEN 193. Canberra: AIHW.

Chalmers, J.M., Pearson, A. (2005). A systematic review of oral health assessment by nurses and carers for residents with dementia in residential care facilities. *Special Care Dentist*, 25(5), 227-232.

Chen, C.-H., Chang, C.K., Chyun, D., & McCorkle, R. (2005). Dynamics of nutritional health in a community sample of American elders. *Advances in Nursing Science*, 28(4), 376-389.

Douglass, A.B., Maier, R., Deutchman, M., Douglass, J.M., Gonsalves, W., Silk, H., Tysinger, J.W., Wrightson, A.S. (2010). Smiles for Life: A National Oral Health Curriculum. 3rd Edition. Society of Teachers of Family Medicine. Course 8: Geriatric Oral Health. www.smilesforlifeoralhealth.org.

Kayser-Jones, J., Bird, W.F., Paul, S.M., Long, L., & Schell, E.S. (1995). An instrument to assess the oral health status of nursing home residents. *The Gerontologist*, 35(6), 814-824.

Lin, C.Y., Jones, D.B., Godwin, K., Godwin, R.K., Knebl, J.A., & Niessen, L. (1999). Oral health assessment by nursing staff of Alzheimer's patient in a long-term care facility. *Special Care in Dentistry*, 19(2), 64-71.

Willink, A., Schoen, C., & Davis, K. (2016). Fewer older Americans have dental insurance. Johns Hopkins Bloomberg School of Public Health. Retrieved October 30, 2017 from <https://www.jhsph.edu/news/news-releases/2016/fewer-older-americans-have-dental-insurance.html>.

Tavares, M., Lindefeld Calabi, K.A., & San Martin, L. (2014) Systemic diseases and Oral health. *Dental Clinics of North America*, 58, 797-814.

The National Academies of Sciences Engineering, Medicine: Health and Medicine Division (previously known as Institute of Medicine) (2011). Improving access to oral health care for vulnerable and underserved populations. Retrieved November 12, 2017 from <http://www.nationalacademies.org/hmd/Reports/2011/Improving-Access-to-Oral-Health-Care-for-Vulnerable-and-Underserved-Populations.aspx>.

U.S. Department of Health and Human Services. (2012). Does Medicaid cover dental care? Retrieved on October 30, 2017 from <https://hhs.gov/answers/medicare-and-medicaid/does-medicaid-cover-dental-care/index.html>.

Yu, D.S., Lee, D.T., Hong, A.W., Lau, T.Y., & Yeung, E.M. (2008). Impact of oral health – related quality of life in Chinese hospitalized geriatric patients. *Quality of Life Research*, 17(3), 397-405.

The Kayser-Jones Brief Oral Health Status Examination (BOHSE)

Resident's Name _____

Date _____

Examiner's name _____

TOTAL SCORE _____

CATEGORY	MEASUREMENT	0	1	2
LYMPH NODES	Observe and feel nodes	No enlargement	Enlarged, not tender	<u>Enlarged and tender*</u>
LIPS	Observe, feel tissue and ask resident, family or staff (e.g. primary caregiver)	Smooth, pink, moist	Dry, chapped, or <u>red at corners*</u>	<u>White or red patch, bleeding or ulcer for 2 weeks*</u>
TONGUE	Observe, feel tissue and ask resident, family or staff (e.g. primary caregiver)	Normal roughness, pink and moist	Coated, smooth, patchy, severely fissured or some redness	<u>Red, smooth, white or red patch; ulcer for 2 weeks*</u>
TISSUE INSIDE CHEEK, FLOOR AND ROOF OF MOUTH	Observe, feel tissue and ask resident, family or staff (e.g. primary caregiver)	Pink and Moist	<u>Dry, shiny, rough red, or swollen*</u>	<u>White or red patch, bleeding, hardness; ulcer for 2 weeks*</u>
GUMS BETWEEN TEETH AND/OR UNDER ARTIFICIAL TEETH	Gently press gums with tip of tongue blade	Pink, small indentations; firm, smooth and pink under artificial teeth	<u>Redness at border around 1-6 teeth; one red area or sore spot under artificial teeth*</u>	<u>Swollen or bleeding gums, redness at border around 7 or more teeth, loose teeth; generalized redness or sores under artificial teeth*</u>
SALIVA (EFFECT ON TISSUE)	Touch tongue blade to center of tongue and floor of mouth	Tissues moist, saliva free flowing and watery	Tissues dry and sticky	<u>Tissues parched and red, no saliva*</u>
CONDITION OF NATURAL TEETH	Observe and count number of decayed or broken teeth	No decayed or broken teeth/roots	<u>1-3 decayed or broken teeth/roots*</u>	<u>4 or more decayed or broken teeth/roots; fewer than 4 teeth in either jaw*</u>
CONDITION OF ARTIFICIAL TEETH	Observe and ask patient, family or staff (e.g. primary caregiver)	Unbroken teeth, worn most of the time	1 broken/missing tooth, or worn for eating or cosmetics only	<u>More than 1 broken or missing tooth, or either denture missing or never worn*</u>
PAIRS OF TEETH IN CHEWING POSITION (NATURAL OR ARTIFICIAL)	Observe and count pairs of teeth in chewing position	12 or more pairs of teeth in chewing position	8-11 pairs of teeth in chewing position	<u>0-7 pairs of teeth in chewing position*</u>
ORAL CLEANLINESS	Observe appearance of teeth or dentures	Clean, no food particles/tartar in the mouth or on artificial teeth	Food particles/tartar in one or two places in the mouth or on artificial teeth	Food particles.tartar in most places in the mouth or on artificial teeth

Upper dentures labeled: Yes _____ No _____ None _____ Lower dentures labeled: Yes _____ No _____ None _____

Is your mouth comfortable? Yes _____ No _____ If no, explain: _____

Additional comments: _____

Underlined* -refer to dentist immediately

Kayser-Jones, J., Bird, W.F., Paul, S.M., Long, L., & Schell, E.S. (1995). An instrument to assess the oral health status of nursing home residents. *The Gerontologist*, 35(6), 814-824. Figure 2, p. 823.

Copyright © The Gerontological Society of America. Reproduced with permission from publisher.

The Hartford Institute for Geriatric Nursing would like to acknowledge the original author of this issue: Cheryl Chia-Hui Chen, DNSc, APRN, GNP, National Taiwan University School of Nursing, Taipei, Taiwan.