UNIT NO. 6

ORAL HEALTH

Dr Hilary P. Thean, A/Prof Robert Yee

ABSTRACT

Oral health problems such as edentulousness, dental caries, periodontal disease, oral cancer and xerostomia are some of the common oral conditions which can impact the everyday activities of the older adults. This can impact their quality of life, through social effects and nutritional status. Of pertinence to primary care doctors is the relationship between oral health and general health. Poor oral health and chronic diseases are interrelated due to common risk factors. Poor oral health can also be a risk factor for many common chronic diseases and poor periodontal health has been associated with cardiovascular disease, diabetes mellitus and aspiration pneumonia. Conversely, poor physical and mental health in the elderly has an effect on their oral health. The prevalence of poor mental health, dementia, depression, Alzheimer's disease, Parkinson's disease and physical function impairment increases with age and are associated with poor maintenance, greater risk of periodontal problems, edentulousness, poor oral function and pain.

Keywords: Quality of life; Oral Health; Chronic disease; Physical function; Elderly; Older adults

SFP2012; 38(1) Supplement: 38-45

BACKGROUND

Missing teeth due to oral diseases (decayed teeth and periodontal conditions) are highly prevalent in Singapore amongst the elderly, affecting 100% of 60-64-year-olds (mean number of missing teeth = 13); 99.4% of 65-69-year-olds (mean number of missing teeth = 15) and 100% of 70-74-year-olds (mean number of missing teeth = 16). A large survey of Singapore adults aged 20 years and above (n=6,560) conducted by HPB in 2003 showed that 88.9% of adults brushed their teeth at least twice a day but only 32.8% flossed at least once a day and 45.5% visited a dentist once a year. No specific information was available on elderly Singaporeans. However with increasing age, males and low educational attainment were found to be significantly associated with less favourable tooth-brushing practices.

Oral health problems such as edentulousness, dental caries, periodontal disease, oral cancer and xerostomia are some of the common oral conditions which can impact the everyday activities of the older adults. This can impact their quality of life, through social effects and nutritional status. For example, a patient with ill-fitting dentures or who experiences pain when he eats because of tooth decay, can avoid eating and experience weight loss.

Of pertinence to primary care doctors is the relationship between oral health and general health. Poor oral health and chronic diseases are interrelated due to common risk factors. Poor oral health can also be a risk factor for many common chronic diseases and poor periodontal health has been associated with cardiovascular disease, diabetes mellitus and aspiration pneumonia. For example, the presence of periodontitis has been found to increase the risk of the worsening glycaemic control over time, while diabetes is a strong risk factor for periodontitis[1,2,3].

Conversely, poor physical and mental health in the elderly has an effect on their oral health. The prevalence of poor mental health, dementia, depression, Alzheimer's disease, Parkinson's disease and physical function impairment increases with age and are associated with poor maintenance, greater risk of periodontal problems, edentulousness, poor oral function and pain[4].

Salivary hypofunction and xerostomia which is prevalent amongst older adults, affecting approximately 30%, is also often caused by systemic conditions, their treatment (e.g. radiotherapy and chemotherapy) and multiple use of medications such as antidepressants, antipsychotics, antihistamines and anticholinergics. Having a dry mouth not only affects the quality of life through difficulty in chewing and swallowing, but may also increase the risk of periodontal problems, dental caries and oral infections[5,6].

In addition, the risk of oral cancer, oral pharyngeal cancer and oral premalignant lesions is high in the age group above 60 years, due to the decline in the immune system, the common risk factors related to oral health and general health, and limited social and psychological support.

ASSESSMENT

The Oral Health Assessment Tool (OHAT) developed by The Iowa Geriatric Education Centre is the recommended best practice oral health assessment; it includes 8 charts with images that can be used to easily recognise the categories of poor oral health.

An Oral Health Screening Checklist (modified OHAT) for screening markers can also be used. Nurses aides can be trained to use the revised version in community functional screening.

For further details about the OHAT, refer to Annex OH1.

HILARY P. THEAN, Visiting Consultant, National University Health System

ROBERT YEE, Associate Professor, Oral Sciences, Faculty of Dentistry, National University of Singapore

INTERPRETING RESULTS

Abnormal Results

Individuals with oral pain, dry mouth, poor dentition status, poor periodontal health, in need of oral prosthesis or who have existing prosthesis in need of repair/relining are referred to a dentist.

Assess the oral health status of the patient, especially if the patient has:

- Decreased functional capability, or
- Poor mental health
- Diabetes
- Cardiovascular disease
- Poly-pharmacy
- Complaints of pain, dry mouth, swelling or persistent ulcers

Instruments to be used for the assessment include: gauze, tongue depressor and penlight.

1. Lips

Source: OHAT (from The Iowa Geriatric Education Centre)
Note: Fungal infections can cause redness and ulceration at the corners of the mouth (angular cheilitis). (Figure 1)

2. Tongue

Using the gauze to hold the tongue, check the lateral sides and floor of mouth for ulceration, swellings or white/red patches. There is a predilection for squamous cell carcinoma (the most common oral malignancy) to be found on the lateral tongue surfaces and anterior floor of mouth.

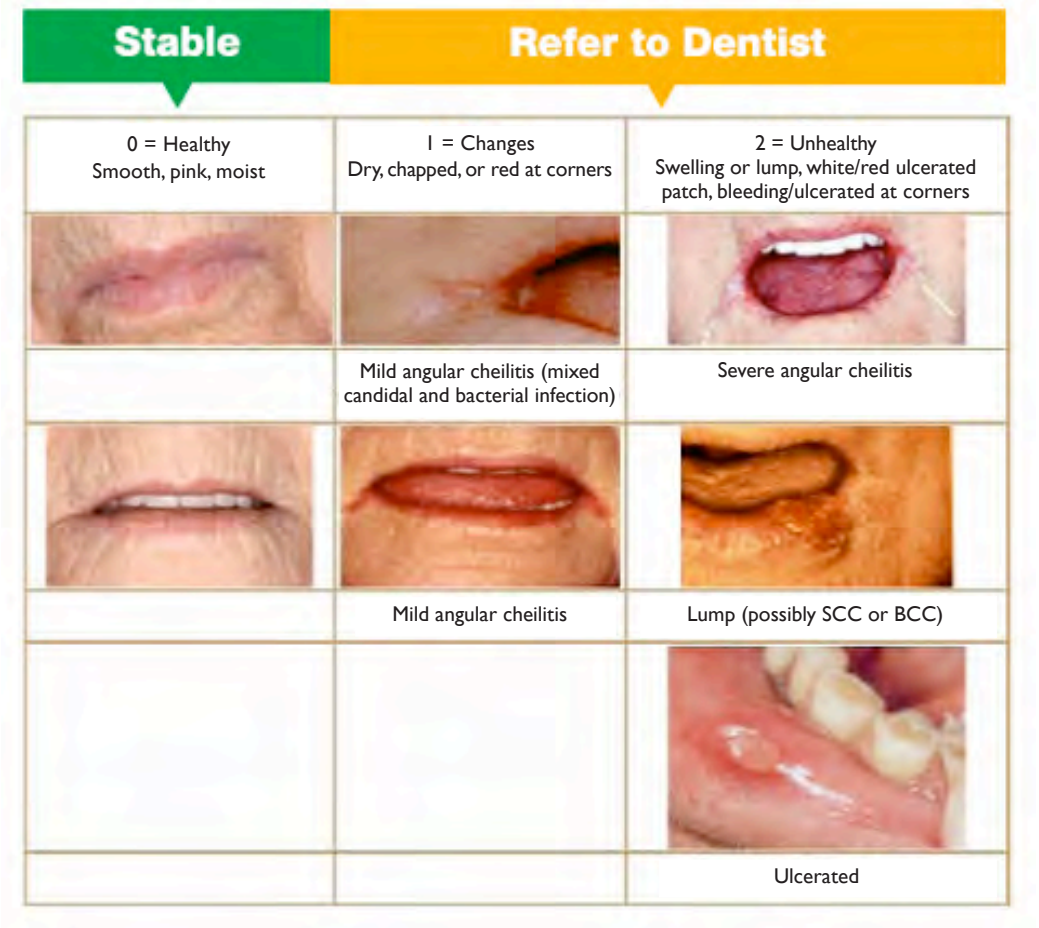
3. Gums & Tissues

Source: OHAT(from The Iowa Geriatric Education Centre)
Note: Candida infections can be common in denture wearers or the immunocompromised older adult. Periodontal health is a risk factor for some chronic illnesses. (Figure 2)

4. Saliva

Many medications can cause salivary hypofunction which can lead to xerostomia.

Figure 1: Assessing changes to the lips



Source: OHAT (from The Iowa Geriatric Education Centre)

5. Natural Teeth

Source: OHAT (from The Iowa Geriatric Education Centre)
Note: Decayed teeth can lead to pain and the lack of teeth can affect chewing function. (Figure 3)

6. Dentures

Source: OHAT (from The Iowa Geriatric Education Centre)
Note: Ill-fitting dentures can cause pain and irritation to the tissue causing hyperplastic growth. Poor denture hygiene may lead to Candida infection. (Figure 4)

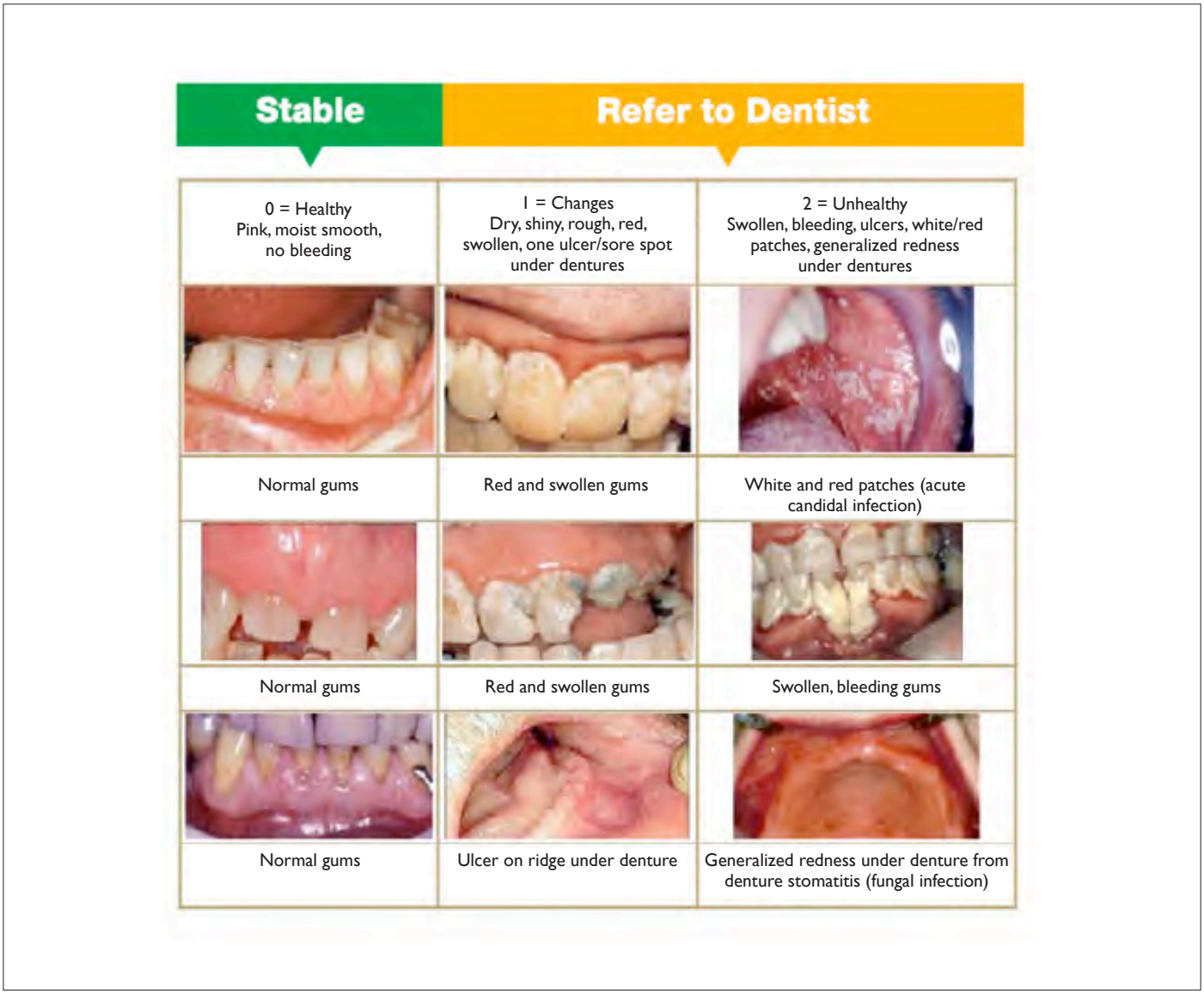
7. Oral Cleanliness

Source: OHAT (from The Iowa Geriatric Education Centre)
Note: Poor oral hygiene can lead to problems with bleeding gums, loss of bone support for the teeth, loss of teeth and is a risk factor for cardiovascular disease, diabetes, aspiration pneumonia. (Figure 5)

8. Dental Pain

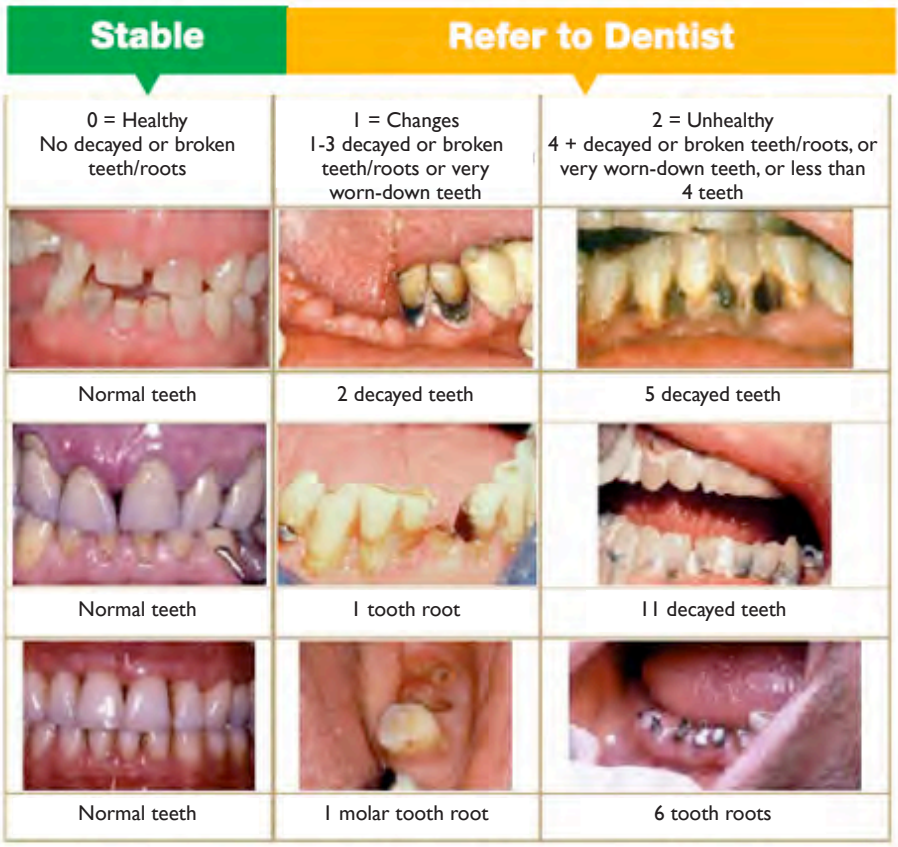
Source: OHAT (from The Iowa Geriatric Education Centre)
Note: Oral facial pain can lead to impaired function and affect the older adult's quality of life. (Figure 6)

Figure 2: Assessing changes to the gums & tissues



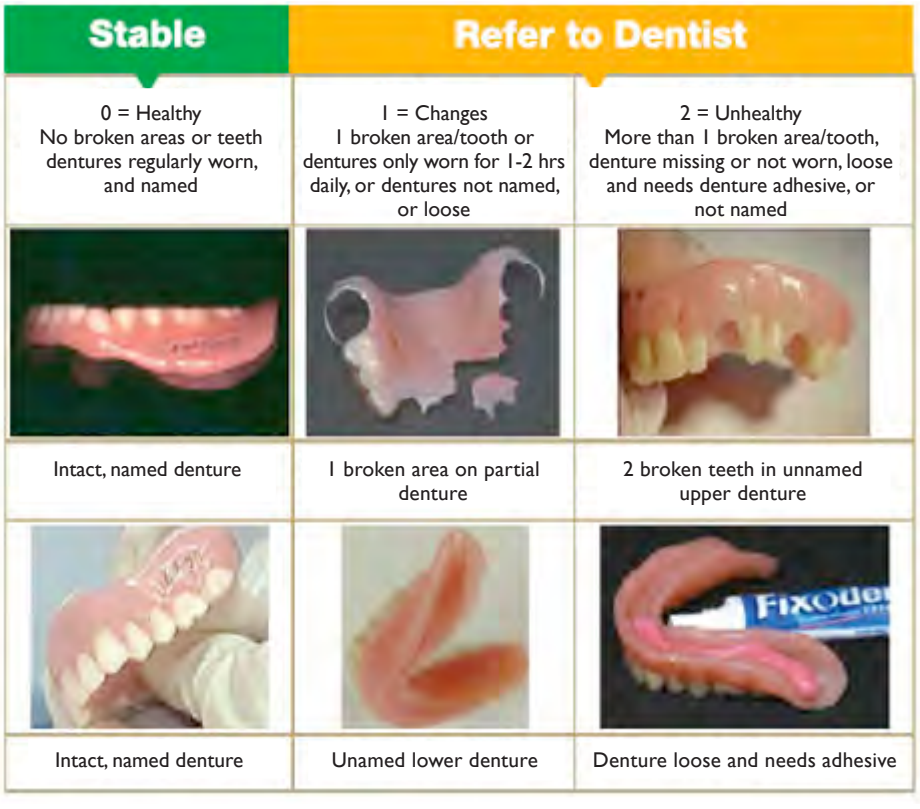
Source: OHAT (from The Iowa Geriatric Education Centre)

Figure 3: Assessing changes to the teeth



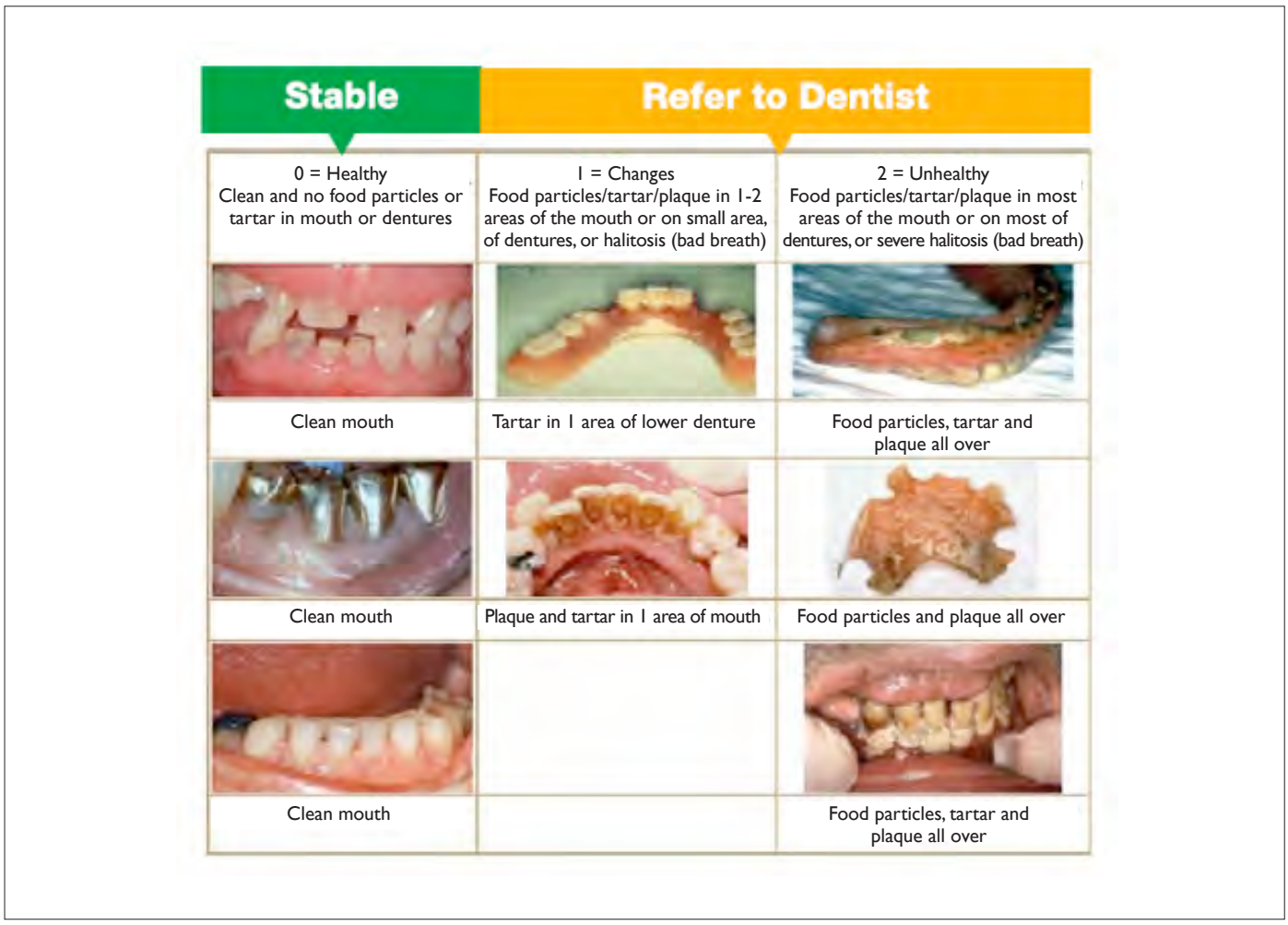
Source: OHAT (from The Iowa Geriatric Education Centre)

Figure 4: Assessing changes to the dentures



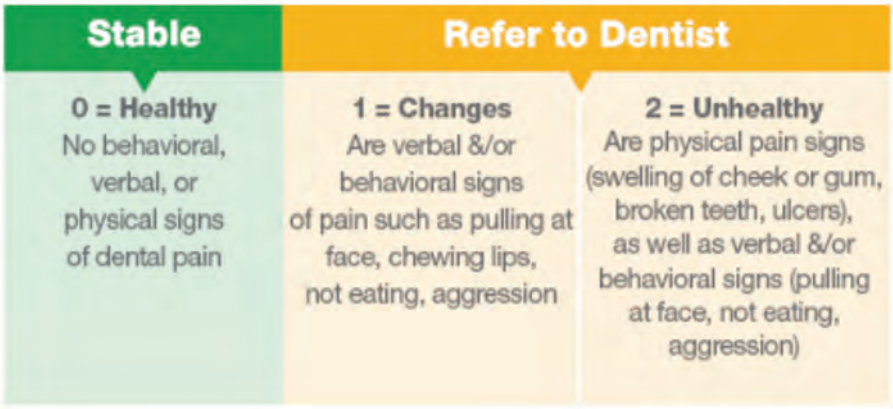
Source: OHAT (from The Iowa Geriatric Education Centre)

Figure 5: Assessing changes in oral hygiene



Source: OHAT (from The Iowa Geriatric Education Centre)

Figure 6: Assessing changes in oral facial pain

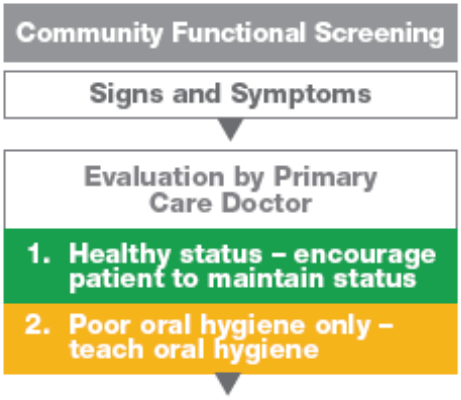


CLINICAL IMPLICATIONS

The primary care doctor can play an important role by reinforcing the need for regular oral examinations, early detection of problems and referral to a dentist for treatment (e.g. for decayed teeth, ill-fitting dentures, or swelling and pain of dental origin). As the older adult is more likely to visit a primary care doctor regularly, the opportunity for the doctor to screen for oral health problems and refer older patients for further treatment must not be overlooked.

CLINICAL PATHWAY

Figure 7: Clinical pathway from screening to intervention



Item	Referral to Dentist
Lips	❑ Swelling or lump: white/red/ulcerated patch ❑ Red/bleeding/ulcerated at corners
Tongue	❑ Areas which may be red &/or white, ulcerated, swollen
Gums & Tissues	❑ Swollen, bleeding, ulcers, white/red patches. ❑ Generalized redness under dentures
Saliva	❑ Patient complains of dry mouth or has difficulty swallowing
Teeth	❑ Broken teeth/roots or teeth/roots with holes
Dentures	❑ Broken/cracked area or tooth ❑ Dentures not worn regularly ❑ Loose/needs denture adhesive ❑ Patient not able to eat well
Oral Cleanliness	❑ Tartar in mouth or on dentures ❑ Patient complains of halitosis
Oral Pain	❑ Verbal complaint of pain or inability to eat, swallow, or speak

Source: 'Community Functional Screening Follow Up Resource for Primary Care Doctors', March 2011

MANAGEMENT AND REFERRAL

The main aim is for the primary care doctor to spot the significant lesions and do one of three things outlined below:

1. Healthy status - encourage the patient to maintain good oral hygiene.
2. Poor oral hygiene only - teach oral hygiene.
3. Lesions/broken prosthesis/require prosthesis - refer to a dentist.
4. For dry mouth - encourage the person to take more frequent sips of water and stimulate salivary flow by sucking on sugarless candy (e.g. Ricola, Fisherman's Friend). For people who are willing and able to use chewing gum, chewing on xylitol gum can also be helpful.

Simple oral hygiene tips:

1. Dental check-ups/visits at least once a year
2. Recommend cutting back on the number of cigarettes or consider quitting smoking as smoking causes gum disease, dry mouth as well as increases the risk of oral cancer
3. Care of dentures

RESOURCES

For further information, prescribe to the patient:

- HealthLine - 1800 223 1313 to speak to a Nurse Advisor (available in 4 languages)
- Health Promotion Board website - http://www.hpb.gov.sg

REFERENCES

1. Beck JD. Offenbacher S. The association between periodontal diseases and cardiovascular diseases: a state-of-the-science review. Ann Periodontal 2001;6(1):9-15. http://dx.doi.org/10.1902/annals.2001.6.1.9

2. Mealey BL, Oates TW. Diabetes Mellitus and Periodontal Disease J Periodontal 2006;77:1289-1303. http://dx.doi.org/10.1902/jop.2006.050459

3. Avlund K H-PP, Schroll M. Functional ability and oral health among older people: A longitudinal study from age 70 to 80. Journal of the American Geriatric Society 2001;49:954-62. http://dx.doi.org/10.1046/j.1532-5415.2001.49187.x

4. Sreebny LM, Schwartz SS. A reference guide to drugs and dry mouth-2nd edition. Gerodontology 1997;14(1):33-47. http://dx.doi.org/10.1111/j.1741-2358.1997.00033.x

5. "Improving Oral Health for the Elderly - An Interdisciplinary Approach" edited by Lamster IR and Northridge ME. New York: Springer Science & Business Media LLC, 2008. http://dx.doi.org/10.1007/978-0-387-74337-0

LEARNING POINTS

- **The Oral Health Assessment Tool (OHAT) developed by The Iowa Geriatric Education Centre is the recommended best practice oral health assessment.**
- **The prevalence of poor mental health, dementia, depression, Alzheimer's Disease, Parkinson's Disease and physical function impairment increases with age and are associated with poor maintenance, greater risk of periodontal problems, edentulousness, poor oral function and pain.**
- **Individuals with oral pain, dry mouth, poor dentition status, poor periodontal health, in need of oral prosthesis or who have existing prosthesis in need of repair/relining are referred to a dentist.**
- **The primary care doctor can play an important role by reinforcing the need for regular oral examinations, early detection of problems and referral to a dentist for treatment (e.g. for decayed teeth, ill-fitting dentures, or swelling and pain of dental origin).**

ANNEX OH1 – ORAL HEALTH SCREENING CHECKLIST

*For each category, tick the most severe condition that is seen in the patient. Please tick ONE box only.

Name:	**NRIC:**	**Completed by:**	**Date:** dd / mm / yy

Items	Healthy-No treatment needed	Oral-self care required	Unhealthy - Referral to dentist needed
Lips	Smooth, pink, moist ☐	Dry, chapped ☐	*Swelling or lump; white/red/ulcerated patch; red/bleeding/ulcerated at corners ☐
Tongue	Normal, moist roughness, pink ☐	Coated with plaque/ debris, easily removable by wiping with gauze ☐	Patchy, fissured, red *Patch that is red &/or white, ulcerated, swollen* ☐
Gums & Tissues	Pink, moist, smooth, no bleeding ☐	Slightly reddish gums around teeth only ☐	Red, swollen, one ulcer/sore spot under denture *Swollen, bleeding, ulcers, white/red patches, generalized redness under dentures* ☐
Saliva	Moist tissues, watery and free flowing saliva ☐	Dry, sticky tissues, little saliva present ☐	Tissues parched and red, very little/no saliva present, saliva is thick, resident think they have a dry mouth ☐
Natural Teeth (Yes/No) *delete where appropriate	No decayed or broken teeth/ roots ☐		*Decayed or broken teeth/roots* Less than 4 pairs of posterior teeth in occlusion (without dentures and pt unable to eat well) ☐
Dentures (Yes/No) *delete where appropriate	No broken/cracked areas or teeth, dentures regularly worn ☐		Broken/cracked area or tooth; Dentures not worn regularly Loose/needs denture adhesive Pt not able to eat well ☐
Oral Cleanliness	Clean and no food particles or tartar in mouth or dentures ☐	Food particles/ plaque in the mouth or dentures Halitosis (bad breath) ☐	Tartar in mouth or on dentures Patient complains of halitosis ☐
Dental Pain	No verbal or physical signs of dental pain ☐		*Verbal pain signs (complaint of pain on biting or not being able to eat) Physical pain signs (swelling of cheek or gum, broken teeth, ulcers) * ☐
	MAINTAIN GOOD ORAL HYGIENE	If any tick within this column please refer for oral hygiene instructions. ORAL HYGIENE INSTRUCTIONS ☐	If any tick within this column, please refer to a dentist. For patient with * conditions, please reinforce the need to see a dentist ASAP. REFER TO THE DENTIST ☐

Source: 'Community Functional Screening Follow Up Resource for Primary Care Doctors', March 2011

"The above extract is taken from the 'Community Functional Screening Follow Up Resource for Primary Care Doctors', published by the Health Promotion Board in partnership with Dr Hilary P. Thean and A/Prof Robert Yee, March 2011."