Effects of Oral Health Screening on Aspiration Pneumonia Risk for Adults with Dementia in Residential Aged Care

DCRC
Dementia Centre for Research Collaboration

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Vulnerability to Aspiration Pneumonia

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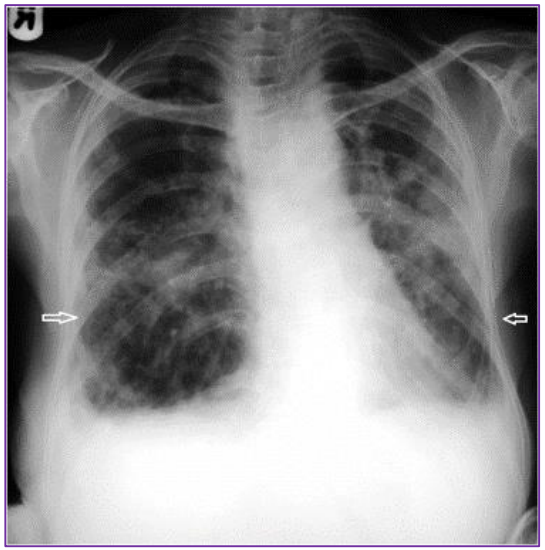
Aspiration pneumonia accounts for 80.1% of pneumonia-related hospitalisations for people >70 years of age

Kenzaka et al. (2018). *Clinical Interventions in Aging*



People with dementia in residential aged care are particularly vulnerable

- **Dependency on others for feeding**
- **Dependency on others for oral care**

This co-related dependency is a strong predictor for aspiration pneumonia

Langmore et al. (2002). *Dysphagia*

With this dependency, swallowing problems, frailty, and poor oral care

- Pathological oral microorganisms from saliva, tooth decay, and an unclean mouth can migrate into the lungs
- If adults are unable to cough and clear the aspirated material, pneumonia results
- Also weight loss, and increasing illness as immunity to disease decreases

Reducing Aspiration Pneumonia

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One potential strategy to prevent this cascade of events is to screen the oral function of adults when they move into residential aged care

Aged Care Assessment Testing (ACAT) – but information is often out dated

Residential Aged Care communities

- Have intake procedures to meet Principles of Care and Accreditation standards, including oral and nutritional health, but the focus on oral health may not be strong

Oral health screening appears a cost effective strategy to identify and address health issues preventatively

Four Screening Measures

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Oral Health Assessment Tool (OHAT)

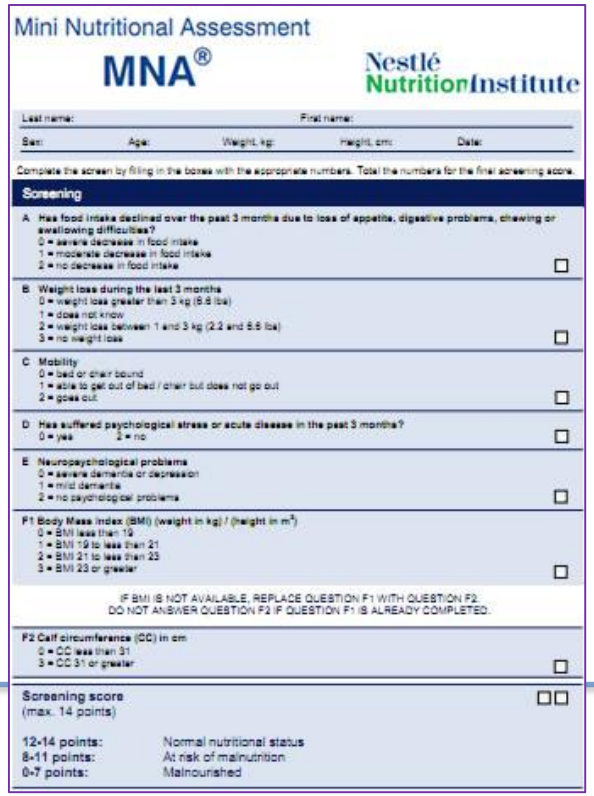
Fricker & Lewis (2009). Australian Government, Dept. of Health and Ageing

Focus on:

- Lips
- Tongue,
- Gum and oral tissue
- Saliva
- Natural teeth
- Dentures
- Oral cleanliness, and
- Oral pain

MNA

- Has food intake declined over the past 3 months?
- Weight loss?
- Mobility?
- Stress or disease?
- Dementia or depression?
- Body Mass Index



Mini Nutritional Assessment

MNA®

Nestlé NutritionInstitute

Last name: First name:

Sex: Age: Weight, kg: Height, cm: Date:

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

Screening

A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?
0 = severe decrease in food intake
1 = moderate decrease in food intake
2 = no decrease in food intake

B Weight loss during the last 3 months
0 = weight loss greater than 3 kg (6.6 lbs)
1 = does not know
2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs)
3 = no weight loss

C Mobility
0 = bed or chair bound
1 = able to get out of bed / chair but does not go out
2 = goes out

D Has suffered psychological stress or acute disease in the past 3 months?
0 = yes 2 = no

E Neuropsychological problems
0 = severe dementia or depression
1 = mild dementia
2 = no psychological problems

F1 Body Mass Index (BMI) (weight in kg) / (height in m²)
0 = BMI less than 19
1 = BMI 19 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater

IF BMI IS NOT AVAILABLE, REPLACE QUESTION F1 WITH QUESTION F2.
DO NOT ANSWER QUESTION F2 IF QUESTION F1 IS ALREADY COMPLETED.

F2 Calf circumference (CC) in cm
0 = CC less than 31
3 = CC 31 or greater

Screening score (max. 14 points)

12-14 points: Normal nutritional status
8-11 points: At risk of malnutrition
0-7 points: Malnourished

Yale Swallow Protocol

Leder & Suiter (2009, 2014). *Dysphagia*

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Able to drink 3oz (90 cc) water from a cup using a straw uninterrupted? Yes/No

- Pass = oral feeding and thin liquids
- Fail = Is unable to drink the entire amount, including
  stopping and starting
  Coughs or chokes during or
  immediately after completion

Exclusion criteria:

Resident is unable to remain alert for testing or is unable to follow directions

No thin liquids are to be taken due to pre-existing dysphagia (swallowing disorder)

Head-of-bed is restricted to < 30°

Tracheotomy tube (a breathing tube inserted in the throat above the collar bones) is present

Doctor has ordered nothing by mouth (nil-per-os) for medical or surgical reasons

Resident has a feeding tube inserted directly into the stomach

EuroQol-5D-3L

Agborsangaya et al. (2014). *Health and Quality of Life Outcomes*

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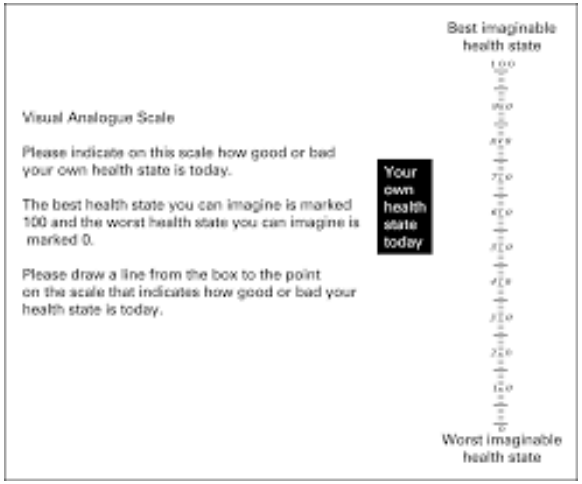
By placing a check-mark in one box in each group below, please indicate which statements best describe your own state of health today.

		Levels of perceived problems are coded as follows	
Mobility			
I have no problems in walking about	☑		
I have some problems in walking about	☐	1 ☑ 2 ☐ 3 ☐	Level = 1
I am confined to bed	☐		
Self-Care			
I have no problems with self-care	☑		
I have some problems washing or dressing myself	☐	1 ☑ 2 ☐ 3 ☐	Level = 1
I am unable to wash or dress myself	☐		
Usual Activities *(e.g. work, study, housework, family or leisure activities)*			
I have no problems with performing my usual activities	☑		
I have some problems with performing my usual activities	☐	1 ☑ 2 ☐ 3 ☐	Level = 1
I am unable to perform my usual activities	☐		
Pain / Discomfort			
I have no pain or discomfort	☐		
I have moderate pain or discomfort	☑	1 ☐ 2 ☑ 3 ☐	Level = 2
I have extreme pain or discomfort	☐		
Anxiety / Depression			
I am not anxious or depressed	☐		
I am moderately anxious or depressed	☐	1 ☐ 2 ☐ 3 ☑	Level = 3
I am extremely anxious or depressed	☑		

Health state 11123



Demographics

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Participants: 142 residents in two aged care communities; majority female

Mean Age: 82.4 years

Documented from medical files:

Diagnosis: Dementia/cognitive impairment/short term memory loss

Prescribed Medications:

To note:

(a) Number, reason, and need,

(b) Possible association with reported oral and nutritional issues

Chest and Respiratory Infections (in the 6 months prior to screening – which had been a reported issue in a previous accreditation report):

Site 1: 19

Site 2: 6

Results

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OHAT

- 78% warranted referral to a dentist

MNA

- 57% were at risk for malnourishment
- 13% were actually malnourished

Yale Swallow Protocol

- 70% failed or refused the swallow protocol, indicating difficulty with, or apprehension about, swallowing thin liquids safely

EURO-QOL

- Self-reported quality of life ranged from 34-95% (M = 65%).

Medications

From 122 resident notes:

- 10% (12) were taking highly anticholinergic medications
  - These slow the GI tract and reduce mouth secretions

- 41% (50) were taking potent proton pump inhibitors (PPIs)
  - All increase risk of pneumonia, are implicated in hypomagnesia, and clostridium difficile infections → nausea, loss of appetite, GI problems

- 16% (20) were taking SSRIs; another 6 were taking cholinesterase inhibitors
  - Both types of medications have gastric irritant properties

- 17% (22) were taking benzodiazepines
  - Have anticholinergic properties: dry mouth, constipation, drowsiness, cognitive impairment

- 13% (16) were taking antipsychotics

Decreasing Aspiration Pneumonia Risk

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Implications for staff:

Value of looking in a resident's mouth and asking him/her to remove dentures

Listening to residents - rich information about health

Realising the link between oral and nutritional health – and potential effects of medications

The value of a screening **team**

- Optimising available staff
- Empowering carers to screen, with guidance
- Establishing an interprofessional plan of action at the beginning of a resident's stay to identify and address issues and optimise oral health