Overview of Nutrition Focused Physical Examination in Adults (AODA Webinar)

April 20, 2016
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This work was funded in part by grants from the Rutgers Centers for Global Advancement & International Affairs and the Foundation of the Academy of Nutrition & Dietetics Colgate Research Fellowship

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Objectives of this component

- Define Nutrition focused physical exam (NFPE) and differentiate between NFPE and malnutrition screening
- Differentiate between NFPE and nutrition focused physical assessment (NFPA)
- Describe the role of the RDN in NFPE and integration of NFPE findings into practice
- Be familiar with the components of orofacial NFPE and their utility and practice
- Be familiar with benefits of NFPE to the patient and the clinician.

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Overall Focus on Patient Physical Condition

Nutrition Focused Physical Exam (NFPE)
Actual conduct of the physical exam: extra- & intra-oral screening, &, cranial nerve & dysphagia screening

Nutrition Focused Physical Assessment (NFPA)
Assessment of extra & intra-oral screening & cranial nerve & dysphagia screening using information gathered from the medical record or conduct of the actual exam

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Malnutrition Screening
Disease-focus on 1 aspect of NFPE
Includes: Physical exam for weight change, edema, fat or muscle loss, functional status, hypothermia & signs of macro & micro nutrient deficiencies.

Academy of Nutrition & Dietetics 2012 SOP & SOPP: Std 1: Nutrition Assessment
States “Nutrition focused physical findings assessment. Assesses findings from evaluation of body systems, muscle & subcutaneous fat wasting, oral health, hair, skin & nails, signs of edema, suck/swallow/breathe ability, & affect”

How does the RDN assess the findings or get the findings to assess if s/he doesn’t know how to do the exam?

NFPE
Is a component of Nutrition Assessment
It provides
- Insight into ‘physical’ factors that may impact the patient’s ability to ingest or digest foods and fluids
- Visual & physical signs of nutrition related problems that the dietitian can manage directly via diet or nutrition intervention or indirectly through referral to another discipline
Historically
Doctors & many other health professionals are trained to touch and diagnose VS
Dietitians are trained to ask, listen & counsel

21st Century:
Doctors & other health professionals are being trained to listen & work together with the patient
Dietitians are being trained to TOUCH & DIAGNOSE.

What is the role of the RDN when it comes to Integrating NFPE into our nutrition assessment practice?

Can this paradigm shift work?

What is within the RDN’s Scope of Practice:

- **We CAN:**
  - differentiate normal from abnormal
  - assess findings relative to nutrition status / diet considering
    - Patient complaints, symptoms, disease manifestations
    - History, diagnosis(es), medications
    - Ability to bite, chew, swallow
    - Impact on disease management
  - diagnose using eNCP
  - manage relative to nutrition / diet
  - refer / consult other disciplines as needed

- **We CANNOT:**
  - Diagnose medical or dental or other non-nutrition diseases/disorders

Oral manifestations of diabetes: xerostomia, burning mouth

Without examining the patient’s musculature, nerves, soft & hard tissues used to open one’s mouth, eat, drink and swallow does the dietitian really know ALL the factor’s impacting the patient’s ability to eat, drink & swallow hence their dietary intake???

Does interviewing limit us to what they say?
Does reading a chart limit us to what other providers find?
What tools do you need to perform a dysphagia focused NFPE?

Stepwise Approach to Step 2

- Face
- Skin
- Temporal muscle, orbital fat pads
- Nasolabial folds
- Muscles of mastication, TMJ
- Cranial Nerves: Trigeminal, Facial Nerves
- Swallow & Cough Reflex
A well-nourished individual will have slightly bulged fat pads with taut skin.

Mid to moderate fat wasting is evidenced by slightly dark circles, and a somewhat hollow look under the eyes.

Severe fat wasting is evidenced by a hollow, depressed look with dark circles and loose skin under the eyes.

Well-Nourished

Non-severe wasting

Severe wasting

Assessing orbital fat pads

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On the Face, beneath the skin: Muscles, Joints, Nerves & Glands

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Let’s Start with the Muscles of Mastication:

- Lightly palpate using the balls of your gloved finger along the Masseter, Temporalis, Pterygoid muscles
- Ask about any pain or discomfort

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Next, Palpate the Temporomandibular Joint (TMJ)

- Gently Palpate –
- Ask about pain or tenderness with or without palpation
- Ask about & listen for Joint Sounds –
  - Clicking and ‘crepitus’ without pain may be normal

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Mandibular Opening

- Now that you’ve palpated the muscles of mastication & the TMJ:
- How wide can the patient open their jaw?
- Mandibular opening directs how wide we can open our jaw.
- The goal is a mandibular Opening => 3 fingers

The clavicle of a well-nourished male may not be visible, but may be slightly visible in a female. The muscle behind the clavicle should feel firm as you scoop your fingers under the clavicle. The trapezius will also feel firm, not stringy.

A male with mild to moderate wasting has a visible clavicle, while a female will have a prominent clavicle. However, well-nourished individuals may have a prominent clavicle due to muscle wasting as well as bone.

An individual with severe muscle loss will have a significantly protruding, prominent bone. Indentations above and below the clavicle will be significant, and ribs may be visible around the sternum. The muscles at the base of the neck will feel stringy and loose.

Assessing the clavicular area
Can you really do dysphagia screening without assessing related cranial nerves?

Let's look at some of the cranial nerves and tell me what you think!

Nerves

- Functions (in general)
  - Sensory (perception)
  - Motor (function)
- Categories
  - Spinal Nerves
    - Spinal cord
  - Cranial Nerves
    - Brain stem
    - Motor function
    - Sensory function
    - 5 important in dysphagia screening
      - Trigeminal (CN V)
      - Facial (TN VII)
      - Glossopharyngeal (IX)
      - Vagus (X)
      - Hypoglossal (XII)

Anatomy of the Swallow

- Tongue
- Soft palate
- Nasopharynx
- Oropharynx
- Pharynx
- Larynx
- Epiglottis/ Vocal cords
- Upper Esophageal Sphincter
- Esophagus
- Lower Esophageal Sphincter
CN V – Trigeminal Nerve

- 3 branches
  - Ophthalmic
  - Maxillary
  - Mandibular

- Sensory
  - touch: sharp, dull
  - compare bilateral sensation

- Motor
  - muscles of mastication
    - masseter, temporalis, pterygoid
  - jaw movement

CN VII – Facial Nerve

- Motor
  - While the patient is smiling, observe the nasolabial folds.
  - What you see are normal nasolabial folds –
    - flatterning would reflect weakness

- Motor (continued)
  - Ask the patient to make a series of facial expressions
    - Blow out cheeks
    - Smile
    - Wrinkle forehead
    - Raise eyebrows
    - Pucker lips
CN XII – Hypoglossal Nerve
Motor Functions explore:
• Tongue range of motion
• Tongue strength
• Tongue midline

Compare strength bilaterally
Look for:
Limited tongue movement
Deviation from center

CN XII – Hypoglossal Nerve
Ask the patient to:
1. Protrude their tongue at the ‘midline.
2. Move it side to side & up, in & out of their mouth & up & down to check range of motion
3. Push their tongue against the inside of each cheek while you hold your hand against the cheek to check strength

Swallow and Cough Reflex
• Ask patient to cough
  – Protective not reflexive
• Ask patient to perform dry swallow
  – Look for coordinated swallow
  – Use fingers to feel sequential swallow
Focus on Step 4

Step 4 Intraoral exam: Go from the outside IN

• Lips
• Visual assessment of teeth, debris, overall
• Labial, buccal & lingual mucosa
• Soft & hard palate
• Gag reflex
• Wetness (Stenson’s & Wharton’s ducts)
• Tongue
• Dentition & Occlusion
• Dentures?
• Cranial nerves IX (glossopharyngeal), X (vagus) & XII (hypoglossal)

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Step 4: Intra-Oral Screen – Explain what you are doing to the patient

• 1. Go from the OUTSIDE to the INSIDE:
  – Lips, Gingiva, Tongue, Teeth, Saliva
  Evert lips gently but fully

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The Intra-Oral Perspective

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Looking inside the mouth!

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Look at the teeth &/or dentures

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Steps 5 & 6

- Signs of micronutrient deficiencies ±:
- Diagnosis(es) + history > determine tests to order
- Dysphagia screening:
  - Medical history +
  - Cranial nerves +
  - Swallow +
  - Positioning +
  - Voice quality +
- Cough reflex +
- Nutrition hx + behavior + responsiveness + respiratory status + mealtime observation

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Why should RDNs integrate a nutrition focused physical exam into their nutrition assessment of patients with diabetes?

- 60 yo female with prediabetes
- 5' / 150 lbs, HbA1C = 9 presents with:
  - polydipsia, xerostomia, burning tongue, fungal infection

Will the NFPE findings make a difference to the RDN's approach to care?

Bridges' Patient Symptoms & Complaints with Nutrition & Medical Diagnoses

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Diversified Impacts of Systemic Diseases & Oral Cavity Integrity

Clinical manifestation of a systemic disease in which intake is affected & diet is needed to manage the disease

Clinical Manifestation of a nutrient deficiency

Discomfort / pain
Reduced food/fluid intake
Malnutrition

Clinical Manifestation of a disease which can cause malnutrition

BUT Lack of intake can worsen the oral manifestation

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Oral manifestations of Diabetes

Increased risk & severity of: periodontal disease, fungal & other infections

Increased risk & severity of dental caries

In poorly controlled diabetes: Candida, xerostomia, burning mouth, dysgeusia

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Candidiasis

Who wants to eat with this on their palate?

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Diabetes Control

PD is an infection which adversely affects metabolic control. Treating the PD can improve HbA1c. If diabetes is uncontrolled, PD risk is greater.

Diet

Improving diet can help metabolic control. Poor diet can worsen metabolic control.

Integrating in step 5 - If anything looks abnormal consider how it will impact eating ability & whether it’s a sign of a potential micronutrient deficiency

<table>
<thead>
<tr>
<th>Clinical Manifestation</th>
<th>Risk for Deficit / Altered function</th>
</tr>
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<tbody>
<tr>
<td>Gingiva</td>
<td>Spongy, bleeding, redness Lesions, ulcerations Vitamin C Systemic disease Impaired eating</td>
</tr>
<tr>
<td>Tongue</td>
<td>Glossitis Atrophic, smooth/slick Folate, Niacin, B6, B12, Iron, Riboflavin B12, Iron, Folate</td>
</tr>
<tr>
<td>Teeth</td>
<td>Missing, broken, lack of occlusion Eating ability</td>
</tr>
</tbody>
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What are the benefits of NFPE to the patient? To the clinician?

- Enhance the scope of clinical nutrition care by beginning with NFPA while learning how to do NFPE
- Provide interprofessional care by consulting with & referring patients to oral health care professionals (may increase your referrals also!)
- Collaborate with dentists, hygienists & physicians in care of patients

What are the TANGIBLE benefits to the patient? To the clinician?

- Potential for earlier diagnosis leading to earlier intervention
- Will patient outcomes increase by earlier referrals?
- In some cases, targeted to meet feeding ability

- The more we know, the less we know & "the more there is to be known" August JPEN 28:4, 201
- Gain the Knowledge & Skills to perform NFPE & integrate into practice
- Look at the Whole Patient/client
  - Differentiate normal from non-normal
  - Go beyond nutrient deficits, look at motor & sensory deficits, associated disorders/diseases/medications