Let Me Hear Your Body Talk
The Nutrition-Focused Physical

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www.coconewton.com
Webinar, Dietitians in Integrative & Functional Medicine
September 18, 2014
Each system, cell, and atom of the body is in constant communication with each other.
Figure 3. Searching for the answer to the pain puzzle
VALUE of Nutrition-Focused Physical

*Enhances* successful outcomes

*Enhances* therapeutic relationship
Collective Wisdom

- Adele Huls, PhD, RD nutritionfocusedexam.com
- Cindy Hamilton, MS, RD, CNSD (webinar, eatright.org) The Use of Nutrition Focused Physical Exam & Functional Parameters to Determine Malnutrition Dietitians in Nutrition Support DPG (10/20/11)
- Kathie Swift, MS, RD (instructor) Nutrition-Focused Physical Exam in “Nutrition in Practice” Food As Medicine, Center for Mind-Body Medicine cmbm.org/fam (2012)
Collective Wisdom


- Mary D. Litchford, PhD, RD, LDN (author) casesoftware.com
Collective Wisdom

• Michael Stone, MD, MS (instructor)  
  *Nutrition-Related Physical Exam for Nutrition Professionals*  
  Applying Functional Nutrition for Chronic Disease Prevention & Management Course  
  at Institute for Functional Medicine (2010-2012)

• Ruth Leyse-Wallace, PhD, RD  
  *Nutrition Focused Physical Examinations*  
  ruthlysewallace.com
• Nutrition-focused physical exam: checklist
  http://www.dietetics.kumc.edu/events/nutrition-focused-physical-exam-checklist.pdf

• Key terms for performance of nutrition-focused physical exam
  http://www.dietetics.kumc.edu/events/Key-Terms-Performance%20-Nutrition-focused-Physical-Exam.pdf

• Resources for the nutrition-focused physical exam
  http://www.dietetics.kumc.edu/events/Nutrition-focused-physical-exam-Resources.pdf

• Most commonly observed clinical signs and symptoms

• Nutrition-focused physical examination: observations
  http://www.dietetics.kumc.edu/events/Nutrition-focused-Physical-Examination-Observations.pdf

KUMC Clinical Nutrition Seminar (11/4/11)
http://www.dietetics.kumc.edu/events/clinical-nutrition-seminar.html
Nutrition-Focused Physical Exam

Deborah Ford, MS, RD; Sudha Raj, PhD, RD, CDN; Rita Kashi Batheja, MS, RD, CDN; Ruth DeBusk, PhD, RD, LDN; Dave Grotto, RD, LDN; Diana Noland, MPH, RD; Elizabeth Redmond, PhD, MMSc, RD, LD; Kathie Madonna Swift, MS, RD, LDN. American Dietetic Association: Standards of Practice and Standards of Professional Performance for registered dietitians (competent, proficient, and expert) in Integrative and Functional Medicine. J Am Diet Assoc. 2011;111:902-913
Tools

1. Bioelectrical Impedance Analysis
2. Tape measure
3. ETOH glass or Temporal Artery thermometer
4. Blood pressure
5. Pen light
6. Pulse oximeter
7. Reflex hammer
8. Scale
9. Tongue depressor
1\textsuperscript{st} impression?
Looking for Nutritional Imbalances

Body Composition
Skin
Hair
Nails
Eyes
Mouth
BODY COMPOSITION
Waist:Height better CVD predictor than BMI

- 300,000 people
- Goal = waist circumference ≤ ½ height

19th conference on Obesity in Lyon, France (May 12, 2012)
http://www.health-calc.com/body-composition/waist-to-height-ratio
Osteoporosis/Fatty Bone

OBESITY- 30% trabecular bone volume, porosity, stiffness

ANOREXIA- fat in bone marrow


Ecklund K et al. Bone marrow changes in adolescent girls with anorexia nervosa. *J Bone Min Res* Feb 2010
Skin

- Color
- Temperature
- Moisture
- Texture
- Turgor
- Rashes

- Wounds & Ulcers
- Lesions
- Scars
- Bruising
- Vascularity

Mary D. Litchford, PhD, RD, LDN
Nutrition-Focused Physical Assessment: Making Clinical Connections 2012
Low EFA’s:
skin function & appearance

- Hyper-proliferation of epidermis
- Dermatitis
- Photo-damage
- Wound healing
- Sensitivity
- Trans-epidermal water loss crucial to barrier function
- Eicosanoids (signaling)
Stress: “psycho-dermatology”

- Nerve endings from organs are connected to skin.
- As emotions play out neurologically, they can be expressed through the skin. **Examples:** acne, hives, psoriasis, eczema, rosacea, alopecia, vitiligo
<table>
<thead>
<tr>
<th>Signs</th>
<th>Symptoms</th>
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<tbody>
<tr>
<td>Acne</td>
<td>Arthritis</td>
</tr>
<tr>
<td>Hives</td>
<td>Fatigue</td>
</tr>
<tr>
<td>Eczema</td>
<td>Fibromyalgia</td>
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<tr>
<td>Chronic vaginitis</td>
<td>Autoimmune</td>
</tr>
<tr>
<td>Fungal nails</td>
<td>Food Allergies</td>
</tr>
<tr>
<td>Easily bruised skin</td>
<td>Psoriasis</td>
</tr>
<tr>
<td>Rosacea</td>
<td>Depression/anxiety</td>
</tr>
<tr>
<td>Dilated cheek capillaries</td>
<td>IBD</td>
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<tr>
<td>Dermatitis Herpetiformis</td>
<td>Chronic infections</td>
</tr>
<tr>
<td></td>
<td>Pancreatic function</td>
</tr>
<tr>
<td></td>
<td>Celiac/gluten</td>
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<tr>
<td></td>
<td>Malabsorption</td>
</tr>
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<td></td>
<td>Hashimoto’s</td>
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</table>

**CHECK IF POSITIVE FOR:**
- BACTERIA
- PARASITES
- YEAST
Gluten & Dermatitis Herpetiformis

>90% of patients

↑ IgA, neutrophils

↑ HLA-A1, HLA-B8, HLA-DR3, HLA-DQ2

- **Gut** Tissue Transglutaminase (t-TG) cross-reacts with **Epidermal** Tissue Transglutaminase (e-TG)
Atopic Dermatitis aka Eczema

Red, scaly areas
Small, rough bumps
Thick, leathery patches
Bumps that leak fluid and crust over
In darker-skinned people, the affected area might be lighter or darker.
Acne & Traditional Chinese Medicine

- Digestive System and Bladder
  * More fruits, vegetables and water.

- Between Eyebrows
  Liver
  * Cut down rich foods and alcohol.

- Lower Forehead
  Heart

- Ears
  Kidneys
  * Drink more water
  * Cut down on salt and caffeine.

- Lower Cheeks
  Gum and Teeth

- Sides of Chin
  Hormonal Imbalance and Genitals
  Stress

- Neck and Chest

- Upper Cheeks
  Lungs
  * Avoid smoking and dirty areas.

- Nose
  Pancreas
Raynaud’s Syndrome

- Vasospasms - triggered by cold, stress
- Pain, numbness
- Skin color (red, white, blue)
- Consider auto-immune diseases and food allergies
- Consider Magnesium, Fish Oil, Niacin, L-Carnitine, L-Arginine
Skin: B12 deficiency signs

Polymorphic maculo-papular lesions

Hyperpigmentation

SYMPTOMS

Depression
Fatigue
Poor memory
Numbness
Tingling

Angular stomatitis

Vitiligo

Skin & Cardio-Metabolic Syndrome

Diagonal earlobe crease
Scleroderma diabeticorum
Diabetic dermopathy
Eruptive xanthoma
Disseminated granuloma annulare
Digital sclerosis
Skin Tags & Diabetes

25% of people have DM
Insulin Resistance
Abnormal Blood Fats

Van Hattem MD, Simone; Bootsma MD PhD, Aart H; Thio MD PhD, H Bing.
Skin Manifestations in Diabetes. *Cleveland Clinic Journal of Medicine* 2008 75(11):772-787
Acanthosis Nigricans

- Insulin resistance
- Type 11 Diabetes
- PCOS
- Addison’s disease
- Hypothyroidism
- Oral contraceptives
- Other drug induced, idiopathic, familial

➢ resolves when causes are treated
Hereditary Hemachromatosis

1 in 200 Caucasians

Increases chances of DM, CHF, OA, Hypothyroid
Skin’s “chemical barrier” defends against Metabolic Syndrome!

3 systems

1. Xenobiotic/drug biotransformation system
2. ROS scavenging system
3. Sweat & sebaceous glands excretion systems


CK. Svensson Drug Metabolism & Disposition. 2009 Feb 37(2):247-253

Biotransformation http://www.eoeearth.org/view/article/150674/
Wrinkles: Bone Density and Vitamin K2

↑ Wrinkle score ↓ Bone Density (suggests that collagen contributes to both) The Endocrine Society June 6, 2011

↓ Vitamin K2 ↑ Wrinkles (fewer GLA matrix proteins that prevent calcification of elastin) Lab Invest. 2007 Oct;87(10):998-1008.

Dehydration: fluid loss as % body wt.
5% = mild  
10% = moderate  
15% = severe

Hypotenar eminence test

Capillary nail refill test

Skin pinch test more difficult to assess in elderly
HAIR
<table>
<thead>
<tr>
<th>Hair Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss (alopecia)</td>
</tr>
<tr>
<td>Breakage</td>
</tr>
<tr>
<td>Easy pluck</td>
</tr>
<tr>
<td>Shine</td>
</tr>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Strength</td>
</tr>
<tr>
<td>Thin/thick</td>
</tr>
<tr>
<td>Course/fine</td>
</tr>
<tr>
<td>Curliness</td>
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<tr>
<td>Elasticity</td>
</tr>
</tbody>
</table>

“Bad-Good”
Lack of shine, thin, sparse, loss

- ↓ protein, zinc, iron, biotin, linoleic acid
- Thyroid/Adrenal imbalances, PCOS
- Color treatment (H2O2 + monoethanolamine)
- ↑ stress
- Very low calorie diets
- Rapid weight loss after bariatric surgery

Krause’s Food & The Nutrition Care Process p.1075-1076 (2012)
Hair, Skin:
Eating Disorders

1. Xerosis
2. Lanugo-like body hair
3. Telogen Effluvium
4. Carotenoderma, Acne
5. Russell’s signs
6. Acrocyanosis
7. Petechiae
8. Livedo Reticularis
9. Nail dystrophies

Strumia, Renata. Dermatologic Signs in Patients with Eating Disorders.
Hirsutism

- **Hirsutism** PCOS causes excess hair growth (coarse, dark) where typically hair is very fine or non-existent.
- ↑androgens, insulin resistance, DM, cholesterol, sleep apnea.
- Also causes **frontal baldness & acne**
Male Pattern Baldness \( \uparrow \text{CHD} \)

\( \uparrow 9\% \) risk frontal baldness
\( \uparrow 36\% \) risk vertex baldness
\( \uparrow 79\% \) risk vertex baldness + HTN

Oxidative Stress plays a major role in the aging process and development of gray hair.

2-3 years of constant stress can cause gray hair
Gray.... “hair today gone tomorrow?”

Gray Hair & Diet/Nutrition

↑ CATALASE: proanthocyanadins from green apples, cinnamon, cocoa

↑ Cysteine: eggs, sesame seeds

↑ Methionine: sesame seeds, pistachios, macadamias, brazil nuts, kidney beans, black beans, fish, meat

↑ Sulfur: cruciferous veggies, garlic, onions

SUPPLEMENTS: N-Acetyl Cysteine, Alpha-Lipoic Acid, Selenium, B12, B6, Folate, other antioxidants, Glutathione
All nutritional imbalances affect nails!
Spoon nails
- CVD
- Anemia
- Hypothyroid

Beau’s lines
- Malnutrition
- DM
- PVD
- Zinc

Leukonychia
- Protein
- Zn

Muehrcke’s Lines
- Zinc
- Albumin
Clubbing
- IBD
- CHD
- Cirrhosis
- Iodine deficiency

Fungal nails
- DM

Erythema
- DM

Terry’s nails
- DM
- CHF
Onycholysis

Vertical Ridges
Aka “nail wrinkles”
Ridges are thinnest spot so don’t buff!

Soft, flaky, split easily

Bacteria
Fungus
Thyroid
Fe anemia

Age

Mg
Biotin
Fungal Nails

Also, check:
- Athlete’s foot
- Anal itching
- Itchy skin rashes
- Itchy ears
- Vaginal yeast infection
- Dandruff
- Muscle twitching
- IBS
- UTI
- Chronic fatigue
- Etc.
• Ocular signs of systemic disease may occur before other manifestations or diagnosis.

• Occasionally arteriosclerosis is recognized exclusively by eye signs.

• This also applies to generalized pathologic conditions, infections, metabolic disturbances and vitamin deficiencies.

Arthur Alexander Knapp. The eye as a guide to latent nutritional deficiency diseases. The New York Academy of Medicine, Feb 19, 1945
Carbohydrate nutrition is associated with changes in the retinal vascular structure and branching pattern in children, B. Gopinath, et. al, Am J Clin Nutr May 2012

2,353 12 y olds studied
Narrowing of retinal arteries- precursor to CVD
High risk = 1+ glasses soft drinks daily
Most significant in girls
Eyes: nutritional & metabolic imbalance

Anemia

Dry Eye
- Oxidative stress
- Auto-immune
- Vit A
- DM

Bitot Spots
- Vit A
Eyes: cardio-metabolic disease

Arterial Narrowing  Cataracts

Corneal Arcus < 60yrs  Xanthelasma

CVD  CHD

↑ Chol
Eyes

Conjunctivitis
Blepharitis
Dry eyes

Type 2 DM
sometimes the 1st signs of a prolonged subclinical course

Correlation HbA1C and dry eye in 70% of patients

Ocular microbiome contributes to infectious and autoimmune diseases of the eye.


Meibomian Gland Dysfunction

Oxidative stress ➔ lipid peroxidation, stagnation, bacterial overgrowth, inflammation

Wakamatsu TH et al. Tearful relations: oxidative stress, inflammation and eye disease.
Look inside the mouth
Halitosis

- fungal or bacterial infections
- sinus, GI tract dysbiosis, GERD, respiratory infections, periodontal pockets, tonsil stones

The trapped debris combines with volatile sulfur compounds (produced by anaerobic bacteria beneath tongue surface) and putrefies in the back of the throat.
Tongue

Yellow/white coating, fissures

Fungus
Bacteria
Biotin

Courtesy Dr. David Regiani
Oral Health & Nutrients

Taste Bud Atrophy
B12, Fe

Glossitis
B12, Fe, Folate

Candida Cheilitis “thrush”
B12, Fe

Geographic Tongue
Chemical sensitivity, allergies, B Vit, Zn
Taste, Smell & Nutritional Imbalances

80% $\uparrow$ taste due to loss of smell

Food allergies
$\downarrow$ Zinc
$\downarrow$ Vit A
$\downarrow$ B12

Testing for Smell & Taste

Weak sense of taste linked to weaker immune system. Weak sense of smell linked to Alzheimer’s and Parkinson’s.

Taste test for zinc adequacy, insufficiency or deficiency

http://neurology.ufl.edu/2013/10/14/uf-researchers-find-that-peanut-butter-test-can-help-diagnose-alzheimers-disease/

http://www.anh-usa.org/studies-delicious-smells-and-tastes-are-directly-linked-to-a-strong-immune-system/
1,053 randomly selected individuals aged 70 - 79 from the Health ABC Study

Gingival inflammation was most strongly associated with cognitive impairment and was the only factor that predicted cognitive decline.

Treponema denticola, Tannerella forsythia, and Porphyromonas gingivalis crosses the blood brain barrier and only found in dementia patients.

Mouth- Eating Disorders

Enamel erosion
Cavity formation
Mouth:

elemental mercury vapor exposure

Mood swings
Insomnia
Headache
Tremors
Weakness

increased risk neurological, CHD, DM

Ziff, S et al. Dental Mercury Detox
International Academy of Oral Medicine and Toxicology (IAOMT) pg. 9 (2007)
Periodontal Disease

2X risk of CHD
“6th complication of diabetes”

Newly Identified Oral Bacterium Linked to Heart Disease and Meningitis. ScienceDaily Feb. 20, 2012
Dissected pathologic **carotid plaque** with bacterial contents from same patient with **periodontal plaque** surrounding existing dentition are **identical**.

Bacterial Mouth Infections May 23, 2012 medscape.com
Nutrition-Focused Physical and Toxins
Signs of heavy metal toxicity

“Mees’ Lines”
Arsenic, Flouride

Erythematous papules
Mercury

Gingivostomatitis
Mercury

Lead lines

Amalgam tattoos

Scott Moses, MD. fpnotebook.com 9/4/12
Endocrine: Thyroid

Hashimoto’s
Grave’s
Sub-clinical
Signs and symptoms of Hypothyroidism

Psychological
- Poor memory and concentration
- Poor hearing

Pharynx
- Hoarseness

Heart
- Slow pulse rate
- Pericardial effusion

Muscular
- Delayed reflex relaxation

Extremities
- Coldness
- Carpal tunnel syndrome

General
- Fatigue
- Feeling cold
- Weight gain with poor appetite

Hair loss
Outer eyebrow loss

Lungs
- Sortness of breath
- Pleural effusion

Skin
- Paresthesia
- Myxedema

Intestines
- Constipation
- Ascites

Reproductive system
- Menorrhagia
Thyroid Exam

Looking for puffiness, nodules/cysts, enlargement

Achilles tendon reflex- delayed return
Hypothyroid

Peri-orbital edema

Outer eyebrow thinning

Hair loss

Scalloped tongue

Thin brittle nails
Hyperthyroid

Plummer’s Nails

Goiter

Exophthalmos
Endocrine: Adrenal

Addison’s
Cushing’s
Sub-clinical
Hyperpigmentation in Addison’s Disease
Cushing’s Syndrome
# Key Nutrients

<table>
<thead>
<tr>
<th>Thyroid</th>
<th>Adrenals</th>
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</thead>
<tbody>
<tr>
<td>Protein</td>
<td>B vits (B5, B6)</td>
</tr>
<tr>
<td>Iron</td>
<td>Vit E</td>
</tr>
<tr>
<td>Selenium</td>
<td>Mg</td>
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<tr>
<td>Iodine</td>
<td>Celtic sea salt</td>
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<tr>
<td>Vit A</td>
<td>Vit C</td>
</tr>
<tr>
<td>Zinc</td>
<td>Trace minerals</td>
</tr>
<tr>
<td>L-Tyrosine</td>
<td></td>
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</tbody>
</table>
Hearing Loss & Nutritional Imbalances

↑ Homocysteine
↓ B6, B12, Folate
↓ Zn, Mg
↓ COQ10
↓ Vit D
↓ Omega-3 fatty acids
↓ Vitamin C

Hypothyroidism, Hypoglycemia

Am J Clin Nutr June 2014 vol. 99 no. 6 1407-1413
http://ajcn.nutrition.org/content/early/2014/09/10/ajcn.114.091819.full.pdf+html
**Food Allergy: Symptoms**

- **Respiratory symptoms:**
  - asthma
  - hoarseness

- **Skin / mucous membrane symptoms:**
  - urticaria
  - angio-oedema
  - rhinitis
  - conjunctivitis

- **Cardiovascular symptoms:**
  - anaphylactic shock

- **Gastrointestinal symptoms:**
  - abdominal pain
  - vomiting
  - diarrhea

*Check food 1st*
Food Allergies & Sensitivities: 
Signs & Symptoms

**Head:** chronic headaches, migraines, difficulty sleeping, dizziness

**Mouth, throat:** coughing, sore throat, hoarseness, swelling/pain, gagging, frequent clearing throat, sores (gums, lips, tongue)

**Eyes, ears, nose:** runny/stuffy nose, post-nasal drip, ears ringing, blurred vision, sinus problems, watery/itchy eyes, hay fever, excessive mucus, dark circles, swollen/red/sticky eyelids

Elizabeth Lipski, PhD, CCN, CHN
Digestive Wellness 4th Ed. 2012 (exclusive of photos)
Food Allergies & Sensitivities: Signs & Symptoms

Heart, lungs: irregular heartbeat, asthma, chest pain and congestion, bronchitis, SOB, difficulty breathing

Skin: hives, rashes, psoriasis, eczema, dry skin, excessive sweating, acne, hair loss, irritation around eyes

Muscles, joints: general weakness, aches, pains, swelling, stiffness, arthritis
ALS Body Talk... when speech can’t tell the story

Ensure Diabetes/Insulin GI distress

Liquid Hope No Diabetes/Insulin GI happiness

Nutrition for inflammation, immunity, gut, mitochondria, detoxification, personalized...

2009 2014

2011 2014

functionalformularies.com Tube & Oral Formulas
“The body never lies”.
- Martha Graham
  (1894 -1992)

“I speak two languages, Body and English”.
- Mae West
  (1893-1980)
Thank you for attending!
Coco