Learning Objectives

• Define the principles of integrative and functional medicine.
• Examine integrative and functional nutrition clinical tools in practice.
• Apply the nutrition care process to a case using an integrative and functional nutrition lens.
Why?

http://cmcd.sph.umich.edu/about/about-chronic-disease/

Stress in America Report, 2015

http://cmcd.sph.umich.edu/about/about-chronic-disease/

Stress in America Report, 2015

http://cmcd.sph.umich.edu/about/about-chronic-disease/
The trend in the life expectancy of humans during the past thousand years has been characterized by a slow, steady increase...Unless effective population-level interventions to reduce obesity and chronic disease associated with it are developed, the steady rise in life expectancy observed in the modern era may soon come to an end and the youth of today may, on average, live less healthy and possibly even shorter lives than their parents.


Meet Helen

- IBS without diarrhea K58.9
- Chronic fatigue, unspecified R53.82
- Hypothyroidism, unspecified E03.9
- Restless legs syndrome G25.81
- Overweight E66.3
- Anxiety disorder, unspecified F41.9
- Hyperlipidemia, unspecified E78.5
- Malabsorption due to intolerance, not elsewhere classified K90.4

Chronic Disease Burden

- The nature of chronic disease is multifactorial
- Multiple morbidity (i.e., coexistence of several chronic diseases) is increasing dramatically
- One of the most important challenges in clinical medicine today
- An evolution away from the single disease focus is required


"The convergence of patient-activated social networks, big data and their analytics, and systems medicine has led to a P4 medicine that is predictive, preventative, personalized and participatory."

- Leroy Hood, MD, PhD

N = 1

- Individuals are genetically and biochemically distinct
- Risk factors determined for populations cannot be applied to individuals
- Move towards n=1 clinical trials


**Goals of Survey:**
- Beliefs and attitudes about IM
- Level of acquisition of knowledge and skills in IM
- Use of IM modalities
- Education and professional development for IM

**Results of IM Survey:**
- 5,164 AND member responses
- Gaps in RDN integrative medicine education identified
- Call to action for education in IM

**Table 1.** Definitions of practice types related to integrative medicine (IM) and survey respondents self-identification as practicing in these areas or not

<table>
<thead>
<tr>
<th>Practice type and definition</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrative medicine (The discipline concerned with using the combination of conventional allopathic medicine, and alternative medicine to address the biological, psychological, social, and spiritual aspects of health and illness.)</td>
<td>562</td>
<td>9.7</td>
</tr>
<tr>
<td>Functional medicine (Addresses the whole person, not just an isolated set of symptoms, and better addresses the underlying causes of disease, using a systems-oriented approach and engaging both patient and practitioner in a therapeutic partnership.)</td>
<td>622</td>
<td>11.9</td>
</tr>
<tr>
<td>Complementary medicine (Therapeutic practices that are not currently considered an integral part of conventional allopathic medical practice.)</td>
<td>823</td>
<td>15.9</td>
</tr>
<tr>
<td>Alternative medicine (Non-mainstream approach to treat conventional medicine.)</td>
<td>162</td>
<td>3.2</td>
</tr>
<tr>
<td>Holistic health care (views physical, mental, and spiritual aspects of life as closely interconnected and equally important with regard to treatment approaches.)</td>
<td>547</td>
<td>9.7</td>
</tr>
</tbody>
</table>

The survey was sent to a sample of Nutrition and Dietetics practitioners and 5,164 respondents completed. The survey was designed to gather information on the current state of integrative medicine practice.

**5 Guidelines to Keep in Mind**

1. Honor your roots!
Science, History & Tradition

- Cooking Schools
- Hospital Dietetics
- Clinics
- Military

All Forms of Evidence

Research

Experts and Guidelines

Clinicians

Patients


Greenlagh, T. Evidence-based medicine: a movement in crisis? BMJ 2014;348:g3725 doi: 10.1136/bmj.g3725 (Published 13 June 2014)

2. Fertilize a beginner’s mind!
Bravewell Report

- Top two interventions used in treating 20 different conditions:
  1. Food/Nutrition
  2. Dietary Supplements

What is Integrative Medicine (IM)?

“Integrative medicine is the practice of medicine that:
- reaffirms the importance of the relationship between practitioner and patient,
- focuses on the whole person,
- is informed by evidence, and
- makes use of all appropriate therapeutic approaches, healthcare professionals and disciplines to achieve optimal health and healing.”

Consolidation of Academic Health Centers for Integrative Medicine

Core Principles: Integrative Medicine

- Patient and practitioner are partners in the healing process
- All factors that influence health, wellness, and disease are taken into consideration, including mind, spirit, and community, as well as the body.
- Appropriate use of both conventional and alternative methods facilitates the body’s innate healing response.
- Effective interventions that are natural and less invasive should be used whenever possible.

THE PRINCIPLES: A SCIENCE BASED FIELD OF HEALTHCARE

- Biochemical individuality based on genetic and environmental uniqueness
- Patient centered versus disease centered
- Dynamic balance of internal and external factors
- Web-like interconnections of physiological factors
- Health as a positive vitality – not merely the absence of disease
- Promotion of organ reserve – health span

FUNCTIONAL MEDICINE MATRIX


Root Causes

“STAIN”
Stress
Toxin(s)
Adverse Food Reaction(s)
Infection(s)
Nutritional

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About 75% of the food in the Western diet is of limited or no benefit to the microbiota in the lower gut!

There is an increase in adverse food reactions in adults. Despite recent advances, the mainstay of management for adverse food reactions is still avoidance of food triggers; thus, support by a trained nutrition professional is essential.
IFN Conventional Lab Cliff Notes

- There are differences between pathological and functional lab ranges.
  - A **pathological** range is used to diagnose disease.
  - A **functional range** is used to assess risk for disease before disease develops.
- The main difference between the functional and pathological range is the degree of deviation allowed within the normal ranges.
- **Normal does not always mean healthy!**
10 most common complementary health approaches among adults—2012

[Bar chart showing the most common complementary health approaches among adults—2012.]

http://www.cdc.gov/nchs/data/databriefs/db146.pdf

Experiment!

- Integrative nutrition self-assessment  
  - www.kathieswift.com
- Food, symptom and lifestyle journals
- Elimination diet, dietary supplements
- Conventional and functional lab testing
- Meditative movement therapies (yoga, qigong, etc.) for self-care

Meditative Movement Therapies (MMT)

- Results suggest MMT may improve health related quality of life (HRQOL) in adults with selected conditions.
- MM consistently produced reductions in measures of anxiety and depression when compared with non-active controls in studies of anxiety or depression. MM is a system of considerable scope, sophistication, complexity, and potential power.
  - Sawynok J & Lynch M. Qigong and fibromyalgia: randomized control trials and beyond. Evidence-Based Complementary and Alternative Medicine Volume 2014, Article ID 379715, 14 pages
- There is considerable potential for qigong to be a useful complementary practice for the management of fibromyalgia.
  - Saperstein I & Lynch M. Qigong and Fibromyalgia: randomized controlled trials and beyond. Evidence-Based Complementary and Alternative Medicine Volume 2014, Article ID 379715, 14 pages

Mind-Body Microbial Continuum

- Review of 15 omics trials, from small pilot studies to large trials
- Examine gene expression changes brought about by mind body therapies
- Intriguing connections to the immune system via genes related to inflammatory response
- Field of mind-body genomics is in its infancy but growing considering the number of diseases that are stress-related...

Mind-Body Microbial Continuum

[Diagram showing the gut-brain axis and the mind-body microbial continuum.]

Nutrition Forecast 2020

- Microbiome
- Gene Expression
- Inflammation
- Energy Metabolism
- Cancer
- Aging
- Food and Nutrition Security (UN Decade on Nutrition 2025)
- Smart Tools and Technologies


Tools & Technology
5. Cultivate collaborative relationships

Assessment forms & Questionnaires

- Nutrition assessment forms
  - Short forms
  - Comprehensive long forms
  - Food records
  - Symptom questionnaires
  - Condition specific questions

Always Curious

- What concerns you the most?
- How would you rate your health?
- Does your life have meaning and purpose?
- What is getting in the way of your self-care?
- What is the most important thing you should do to improve your health?
Critical Thinking

• Is this person at risk for any particular health condition? If so, does this person require a more aggressive approach to reduce those risks?

• What does this person require to improve function and support health and healing?

• What does this person need to remove to improve function and support health and healing? (i.e., root causes)

Credit: Dr. Sydney Baker, Functional Medicine Pioneer

Case Report: Ellen, 58y

• Presenting concern(s): heartburn/GERD (~ 6 months); “Dr. wants me to take Prilosec but I don’t want to”; desires weight loss ~10-12 lbs.

• Family Hx: Mother 72y diabetes; Father deceased @ 65 y heart disease; no siblings

• Medical Hx:
  – Vaginal delivery, bottlefed
  – Healthy child, immunizations
  – Teen/College, healthy, active
  – 20-40’s, gyn issues (hysterectomy); no children
  – 40’s, car accident, broken nose; dental implants
  – 50’s, menopausal weight gain, heartburn/GERD

  – No allergies to meds or foods; some environmental (hayfever)

Credit: Dr. Sydney Baker, Functional Medicine Pioneer

Ellen

• Rx’s: Advil & Advil pm for sleep; HRT (patch);
  Supplements: Multivitamin (hit or miss); vitamin D, 1000 IUs; recently started Curamed curcumin supplement for healthy aging/aches/pain

• Lifestyle: Non-smoker; Works out 5 days/week and walks dog daily 20 min; girlfriends; book club; church; brother in law ill with cancer and work stress

Root Causes

“STAIN”
Stress
Toxin(s)
Adverse Food Reaction(s)
Infection(s)
Nutritional

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Anthropometrics

• Waist Circumference
  • F: < 35”
  • M: < 40”

• Waist: Hip
  • F: <.8-.9
  • M: <.9-1.0

• Waist: Height
  • Waist < ¼ height
  • Ex. 64” height, waist <32”

• Body Composition
  • Body fat %
  • Lean body mass (LBM)
  • Arm muscle circumference (AMC)
  • Bioelectrical impedance analysis (BIA)
  • Body adiposity index (BAI): hip and height

• Height: 5’6”
• Weight: 159 lbs.
  – + 10 lbs in past decade
• BMI: 25.7
• Waist: 32” inches
  (M<40”; F<35”)
• Hip: 39 inches

• Waist: Hip: .82
  (Moderate risk .8-.85)
• Waist: Height: 48.8 (46-49 Healthy weight)
• Body Adiposity Index (BAI): 27.5 % (Healthy)
• Blood Pressure: Stated: “Always good”; no measurements

Credit: Dr. Sydney Baker, Functional Medicine Pioneer
Nutrition Focused Physical

Nutrition-related physical characteristics associated with pathophysiological states, impaired nutrient status, metabolic and cellular dysfunction

- Nutrient deficiency signs
  - Observed & verified (objective data)

- Physical symptoms
  - What the person feels & experiences (subjective data)

Ellen

- Clear, glowing skin, no broken capillaries
- No dark circles, no inner white eyelids
- No loss of outer eyebrow hair
- No mouth sores, cracks, no tongue coating, healthy gingiva
- No difficulty swallowing, no chronic cough, no nausea and vomiting, occasional sour taste in mouth
- Nail polish on fingers and toes

- Symptoms: heartburn, occasional loose bowels after eating out, some aches and pains post-exercise workouts ("why I started the Curamed"); menopausal sleep issues (hard time falling asleep and staying asleep)

Ellen’s Diet

- B: Hot water with lemon; coffee with cream; yogurt/berries/flax or veggie omelet or whole grain cereal, milk, banana
- L: Soup or salad with protein & dressing; sometimes sandwich or burger with sw potato fries if out with office
- Snack: Fruit; work snacks (cakes, chocolate, candies…); coffee with cream
- 2 glasses wine (sometimes more on weekends)
- D: Varies- fish, poultry, meat; lots of vegetables, potatoes/rice/ quinoa, butter; peppermint or other herbal tea before bed

- Other:
  - Enjoys cooking, summer abundant garden
  - Richer food when eating out and bread!
  - Sweets and wine can be my downfall

Supporting Clinical Data

- No recent labs
- No Gastroenterology consult scheduled
- MD recommendation re: start Prilosec

What are the clues and your suspicions?

What will Ellen need to remove?

Is there anything Ellen can add (she requires) that will help?

What is Ellen willing to do?
Ellen’s Initial NCP

- **Food:**
  - In: Raw apple cider vinegar diluted in water 1x daily (2 tbsp/8 ounces H2O); fermented vegetables
  - Out: Chocolate, wine, afternoon coffee; peppermint & peppermint teas

- **Supplements:**
  - Get: DGL lozenges; Endoza by ProThera/Klaire Labs; Melatonin 3mg/bedtime
  - Go: Curamed

- **Lifestyle:**
  - Integrate: Mindful, slow eating; short walk after eating; sleep hygiene & positioning
  - Release:

- **Labs:**
  - Have: None
  - Get: CMP & CBC with differential; H. pylori if not improved in 1-3 months

- **Referrals/Resources:**
  - Explore: Qigong for Healthy Digestion DVD; Yoga Nidra DVD
  - Collaborate: Care with PCP

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The IFN Care Plan Process

- Distill Ellen’s story and clinical data through an integrative and functional nutrition lens, considering 3 key components:
  1. **HANDS-on™ Nutrition Assessment**
     - History
     - Anthropometrics & vitals
     - Nutrition focused physical
     - Diet and food habits
     - Supporting clinical data
  2. **Root Causes**
  3. **Systems Imbalances**

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The 5 R’s:

- **GERD**
  - Sleep hygiene & positioning; Walk after meals; Qigong & Yoga Nidra
  - DGL lozenges; Endoza

- **Betaine HCL**

- **Curamed**

- **Fermented vegetables; raw apple cider vinegar**

- **DGL lozenges; Endoza**

- **Melatonin 3mg/bedtime**

- **Qigong & Yoga Nidra**

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**The IFN Care Plan Process**

- **Food:** Diet and food habits (how, when, what)
- **Supplements:** vitamins, minerals, fatty acids, probiotics, botanicals...
- **Lifestyle:** Sleep, physical activity, stress, relationships, nature, culture...
- **Labs:** Conventional, genomics, functional

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1. Honor your roots.
2. Fertilize a beginner’s mind.
3. Till your inner landscape.
4. Mulch your integrative toolkit.
5. Cultivate collaborative relationships.

Thank-you!

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