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## Integrative Medicine

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## Objectives



- Understand the definition and core principles of Integrative Medicine
- Examine the evidence for the role of Integrative Medicine in patient care and quality outcomes
- Explore how Integrative Medicine can be incorporated into practice



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## Integrative Medicine

Healing-oriented medicine that takes account of the whole person (body, mind, and spirit), including all aspects of lifestyle. It emphasizes the therapeutic relationship and makes use of all appropriate therapies, both conventional and alternative.

University of Arizona, Center for Integrative Medicine



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## The Core Tenets of 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, body, spirit and community
- Health promotion and the prevention of illness are paramount
- Appropriate use of both conventional and alternative methods to facilitate the patient's innate healing response



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## The Core Tenets of Integrative Medicine

- Effective interventions that are natural, less expensive and less invasive should be used whenever possible and when appropriate
- Integrative medicine neither rejects conventional medicine nor accepts alternative therapies uncritically
- Good medicine is based in good science. It is inquiry-driven and open to new paradigms.
- **Root causes for illness and disease are sought, rather than simply managing symptoms**



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## Why Integrative Medicine?

- Despite spending in the billions...
  - ✦ 2/3 adult population overweight/obese
  - ✦ 18-20% children overweight/obese
  - ✦ Alarming increases in rates of diabetes, heart disease, cancer

**“Doing more of the same,  
even if we do it better,  
will not fix this problem.”**

Tracy Gaudet, MD  
Director, Patient-Centered Care and Cultural Transformation  
VA Health System



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## More of the same...



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## Early influences



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## 3 Pillars of WellNESS


Nutrition      Exercise      Sleep/Stress Mgt




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The Japanese eat very little fat and suffer fewer heart attacks than the Americans.

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On the other hand, the French eat a lot of fat, drink a lot of red wine and also suffer fewer heart attacks than the Americans.




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The Japanese drink very little red wine and suffer fewer heart attacks the Americans




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The Italians drink excessive amounts of red wine and also suffer fewer heart attacks than the Americans.




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Conclusion: Eat or drink what you like.  
It's being American that kills you.

- Anonymous



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## Food?



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## Standard American Diet (SAD)

- Processed foods and meats
- Added fats and sugars
- Lots of refined grains

*Essentially an overabundance of everything  
except vegetables, fruits and whole grains*

- Pollan, Food Rules, 2009

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## Western Diet. . . leads to Western Diseases

- Obesity – nearly 100%
- T2DM – nearly 100%
- Cardiovascular Disease – 80%
- Cancer – 30-40%

- Pollan, Food Rules, 2009

- Miller, The Jungle Effect, 2008



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## Indigenous Diets



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## MEDITERRANEAN DIET

- Lyon Diet Heart Study
  - 600 men and women with h/o prior MI
  - Mediterranean vs “prudent” diet 2yrs
  - 72% fewer MIs
  - 60% fewer deaths
    - de Lorgeril, 1999
- Indo-Mediterranean Diet Heart Study
  - 1000 pts w/ CHD
  - Mediterranean vs NCEP diet 2yrs
  - 49-51% fewer CVD events and MIs
  - 62% fewer sudden deaths
    - Singh, 2002



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For non-acute CAD, what is the risk reduction for death or recurrent MI?

Mediterranean Diet

PCI/PTCA

**72%**

**0%**


-Lancet, 2009  
-Arch Intern Med 2012



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# The Mediterranean Diet

- [Scientific Studies on Mediterranean Diet](#)
  - Decreased overall mortality
  - Decreased CVD, HTN, Dyslipidemia
  - Decreased metabolic syndrome and DM
  - Decreased chronic diseases of aging (Alzheimer's, Parkinson's)
  - Improve depression
  - Fight certain cancers
  - Weight loss and maintenance
  - Improve rheumatoid arthritis
  - Eyes, teeth, lungs, **fertility, healthier babies**

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# Mediterranean Diet

- [www.oldwayspt.org](http://www.oldwayspt.org)



## Diet, Anxiety and Depression

- 1,046 women ages 20-93
- **Traditional diet** (vegetables, fruit, meat, fish, whole grains)
  - Major depression/low mood - ↓34%
  - Anxiety - ↓32%
- **Western diet** (processed/fried foods, refined grains, sugary products, beer)
  - Major depression/low mood ↑38%

**“Better diet = less psychological symptoms”**

*Jacka, FN et al, Amer JI of Psych, 2010*



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## If I could sum up nutrition in one sentence:

*Stop eating processed, refined and manufactured foods*

*Dr. Andrew Weil, lecture U of AZ, 2010*



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## Modern Stress



A woman in a red sweater and brown pants is juggling several items that represent modern stressors: a baby, a plate of spaghetti, a smartphone, a laptop, a tablet, and a pen. She has a look of concentration and strain on her face.

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## It's all in your head....




A photograph of a whole yellow lemon and two lemon slices, one cut in half and one cut into a ring, arranged on a light-colored surface.

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## 4-7-8 Breathing Exercise

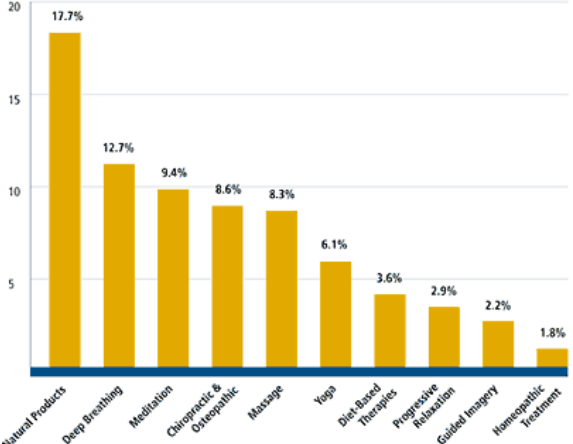


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## Use of CAM in U.S.

### 10 Most Common CAM Therapies Among Adults - 2007



Therapies with significant increases between 2002 and 2007 are		
	2002	2007
Deep breathing	11.6%	12.7%
Meditation	7.6%	9.4%
Massage	5.0%	8.3%
Yoga	5.1%	6.1%

Source: Barnes PM, Bloom B, Nahin R. CDC National Health Statistics Report #12. Complementary and Alternative Medicine Use Among Adults and Children: United States, 2007. December 2008.

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## Supplements for the OB/Gyne: Fish Oil

- Fish Oil: n-3 long chain polyunsaturated fatty acid
  - Omega-3 Fatty Acids: DHA and EPA
- Double-blind, randomized controlled trial
  - N = 350
  - 600 mg DHA daily <20 wk gestation to birth
- RESULTS:
  - Higher maternal and cord DHA ( $p < 0.001$ )
  - Longer gestation duration ( $p = 0.041$ )
  - Greater birth weight ( $p = 0.004$ ), length ( $p = 0.022$ ) and head circumference ( $p = 0.012$ )
  - No safety concerns



J Clin Nutrition 2013

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## Supplements for the OB/Gyne: Probiotics and Atopy

- Probiotic: single- or multiple-organism supplement of symbiotic normal flora
- When administered prenatally:
  - Decreased levels of IgE ( $p = 0.044$ )
  - Reduced risk of atopic sensitization ( $p = 0.035$ )
  - No impact on asthma/wheeze
- **Lactobacillus rhamnosus GG** seemed to be linked with the greatest reduction in risk of atopy, while lactobacillus acidophilus had increased risk



Pediatrics, 2013

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## Supplements for the OB/Gyne: Vitamin D

- “Vitamin D in the maternal-fetal-neonatal interface: clinical implications and requirements for supplementation”
  - ✦ Journal of Maternal-Fetal & Neonatal Medicine, 2013
- Review of literature:
  - Skeletal maturation and growth
  - Depends on maternal status at birth
  - May help prevent development of T1DM
  - AAP supplement of 400 IU only for those with sufficient levels at birth
  - 4000 IU daily achieves optimal 25(OH)D concentrations at birth with NO risk of hypervitaminosis D in the mother



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## Acupuncture/Acupressure and Nausea

- P6 acupoint stimulation prevented **PONV** (Cochrane, 2009)
  - Nausea RR 0.71 (95% CI 0.61 to 0.83)
  - Vomiting RR 0.70 (95% CI 0.59 to 0.83)
  - Rescue antiemetics RR 0.69 (95% CI 0.57 to 0.83)
- P6 acupressure wristbands, as well as acupuncture, aid in the management of **NVP** (Sheehan, 2007)
  - improved both subjective measures of nausea and vomiting severity and
  - objective measures of ketonuria in women hospitalized with hyperemesis gravidarum (Shin, 2007).



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## Acupressure

- P6 Neiguan point
  - 2-3 finger breadths proximal to wrist crease between the tendons about 1 cm deep
  - Using the fingers from the other hand, pressure is applied to the P6 point for 5 minutes every four hours as needed
- Take Home
  - Excellent safety profile
  - Practitioners can feel comfortable in supporting acupressure/puncture bands



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## Acupuncture Migraine – Cochrane 2009

- “Consistent evidence that acupuncture provides additional benefit to treatment of **acute migraine**
- Acupuncture is at least as effective as, or possibly more effective than, **prophylactic** drug treatment, and has fewer adverse effects
- Acupuncture should be considered a treatment option for patients willing to undergo this treatment.”



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## Patient-centered outcomes and cost savings for Integrative Therapies

- Allina Hospital/Penny George Institute, MPLS
  - ✦ Pain reduction
    - \$2000/patient 2009 (all charges, all payers)
    - **\$2.2 million savings** in 6 month period
    - ROI 1.82
- ASMC – Joint Academy
  - Guided Imagery for total hip and knee replacement
  - Initial results indicate decreased hospital stay and decreased costs **\$777.80** per patient



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## Patient Cases

- Dyslipidemia
- Infertility
- Migraine



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## Case #1: 63-yr-old female with mixed hyperlipidemia

Before		After
Cholesterol	278	→ 212
Triglycerides	273	→ 121
HDL	45	→ 56
LDL	160	→ 132
Chol/HDL	6.2	→ 3.8



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## How did she do it?

- Mediterranean diet
- Exercise
- 20 lb weight loss
- Fish oil 2g daily



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## Case #2- Recurrent Miscarriages

- 35 yo F G4P0, 4 miscarriages at 6-8 wks, recent w/ chromosomal anomalies
- Hematology
  - ? Protein S deficiency
  - “perplexed”. . . Plans to retest in future
  - “also noted was a microcytic anemia, however the pt has been taking a PNV”
- Couple planning in vitro
- History of “irritable bowel syndrome”



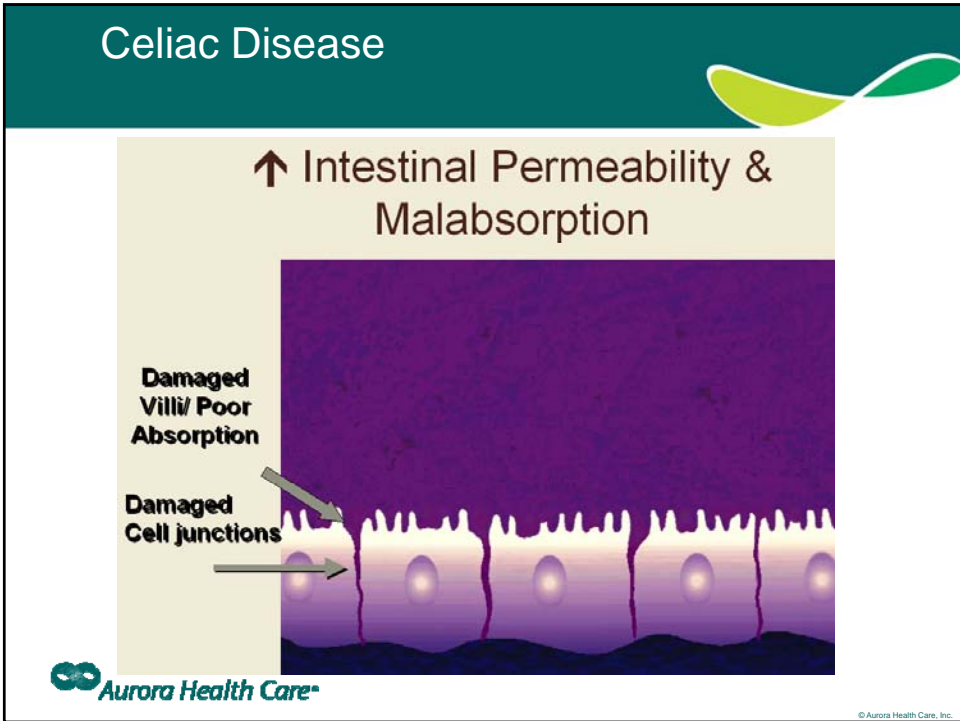
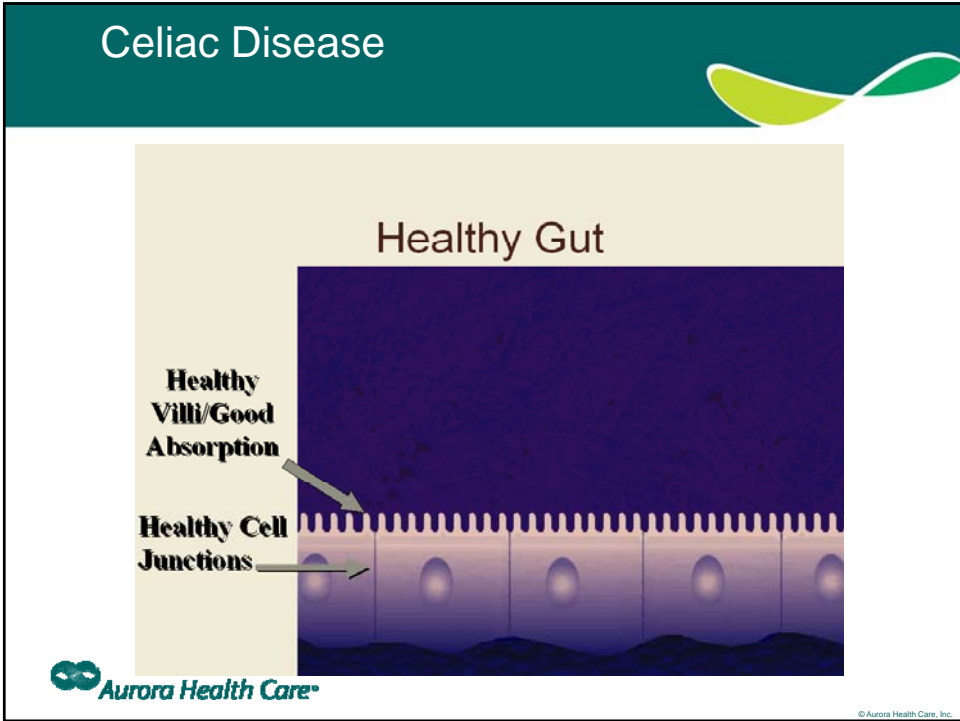
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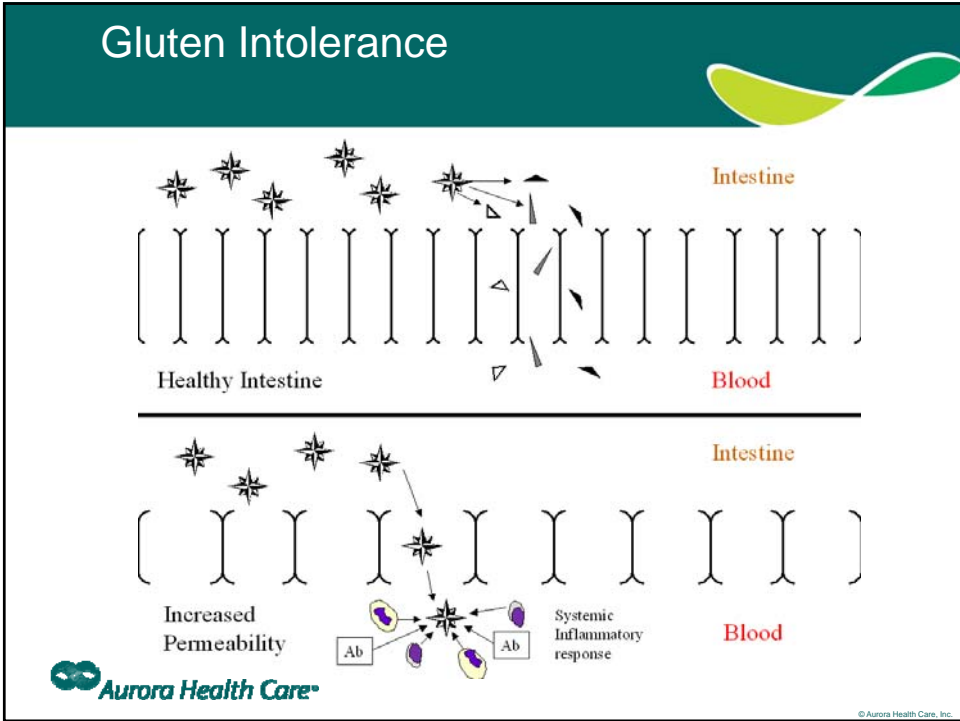
## Case #2 – Miscarriages

- **Labs**
  - IgA AGA 157 (nl <20)
  - IgA tTGA 148 (nl <20)
  - Villous atrophy on small bowel bx
- **Further work-up**
  - 25-OH Vit D 23ng/mL
  - Ferritin 2
  - Vit B12 943 (254-1320)
  - Folate 22 (>5.4)
  - TSH 1.16 (0.35-5.00)



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- ## Modified Mediterranean Diet
- 5 meals per day
  - Rich in protein
    - Fish, chicken, meat, legumes
  - Rainbow veggies
    - Leafy greens, red peppers, cruciferous etc.
  - Less carbs/grains
    - Quinoa, amaranth, brown rice
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## Case #2 – Miscarriage: Celiac Disease

- Treatment
  - Diet: worked with nutritionist/health coach
    - ✦ Gluten free/modified Mediterranean diet
  - Supplements
    - ✦ MVI, Fish oil, Vit D, Aloe, Probiotics, Zn, L-glutamine



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## Case #2 - Outcome

- 6mo later, she planned IFV
- 1 wk before IVF. . .

*Positive home pregnancy test!!!*



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### Case #3: 35 y.o. female classic migraine with aura

- Weekly headaches, somewhat responsive to triptans, but SEs limit use
- Has tried
  - TCAs for prophylaxis, SEs limit use
  - B-blocker, CCB, SEs limit use
- No clear menstrual component



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### Magnesium

- Mg deficiency - role in migraine pathogenesis
  - Altered neurotransmitter release
  - Hyper-aggregation of platelets
  - Vasoconstriction
- Two placebo-controlled trials demonstrated decreases in the frequency and severity of migraine headaches with 600 mg/day of magnesium supplementation
  - Mauskop, 1998
  - Peikert, 1996



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## Riboflavin (Vit B2)

- Co-factor in Krebs cycle
- Possible mitochondrial dysfunction in migraine
- Riboflavin may improve energy metabolism
- Studies mixed
  - Alt Med Review, 2008
- Deficiency not uncommon in pregnancy, infancy, elderly
  - Powers, 2003
- 200-300 mg po daily, safe, well tolerated



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## Integrative Treatment Plan Chronic Migraines

- Nutrition
  - Anti-inflammatory diet
  - Headache diary, avoid triggers (dehydration, missed meals, alcohol, caffeine, MSG, aspartame)
- Supplements
  - Mg 500-600 mg at bedtime
  - Riboflavin 200-300 mg daily
- Additional interventions
  - Acupuncture 2x weekly for one month, then monthly
  - Stress management – yoga
  - Sleep



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## Fellowship Training in Integrative Medicine

### University of Arizona Center for Integrative Medicine

- Created by Andrew Weil, MD in 2000
- International recognition as the leading integrative medical education program in the world
- 1,000 hour, two-year distance/on-site learning program
- Fellows from over 35 medical specialties
- Graduates over 120 fellows annually

### American Board of Physician Specialists

- Integrative Medicine board certification 2014



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## On-line CME

- [University of Arizona Integrative Medicine](http://www.integrativemedicine.arizona.edu)

- [www.integrativemedicine.arizona.edu](http://www.integrativemedicine.arizona.edu)



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## Wrap-up

- Understand the definition and core principles of Integrative Medicine
- Examine the evidence for the role of Integrative Medicine in patient care
- Explore how Integrative Medicine can be incorporated into practice



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