Integrative Medicine: 
*It's Not Alternative Anymore*

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Helpful Health Resources

Medicine Lodge Ranch

www.DrLowDog.com

The Times They Are A-Changing

Mortality from Infectious Disease, USA, 1900 vs. 2010

Mortality from Heart Disease and Cancer, USA, 1900 vs. 2010
• If the American public embraced a healthier lifestyle:
  • no smoking
  • no or moderate alcohol consumption
  • limited or no exposure to toxic chemicals
  • healthy nutrition
  • balance of exercise and rest
  • stress management
  • and healthy social networks

  93% of diabetes, 81% of heart attacks, 50% of strokes, and 36% of all cancers could be prevented.


Epigenetics

• The mapping of human genome was one of the greatest scientific undertakings of past century, detailing with incredible accuracy the blueprint of our species.

• It also paved the way for field of epigenetics, which has shown that when it comes to our genes, nurture is inextricably linked with nature.

• That it is the way we live our lives - from the moment of conception to our last breath - that influences the expression of our genes.

The Future

• It is increasingly clear that much of the modern burden of disease stems from lifestyle behaviors.

• Our health care system must expand its focus to incorporate nutrition, exercise, environmental health, stress management, dietary supplements, motivational interviewing and more.

Integrative Medicine

• Takes account of the whole person including lifestyle
• Emphasizes relationship between practitioner and patient
• Is informed by evidence
• Makes use of all appropriate therapies
Nutritional Guidance

- Despite overwhelming evidence that relatively small dietary changes can significantly improve health, clinicians seldom discuss nutrition with patients.
- Poor nutritional intake and nutrition-related health conditions, such as cardiovascular disease, diabetes, obesity, hypertension, and many cancers, are highly prevalent in the United States, yet only 12% of office visits include any counseling about diet.


Blood Sugar: Macronutrients

- The impact of macronutrients on blood glucose levels

Sugar Consumption and Tooth Decay

- Sugars contribute to dental caries and periodontal disease: bacteria ferment them and produce acid, demineralizing tooth structure.
- Children who consume sugary drinks and sweets, particularly as snacks, have higher incidence of dental decay.
- Canada (2015), average daily total sugars consumption 101 grams (24 teaspoons) for children aged 1-8, 115 grams (27 teaspoons) children aged 9-18, and 85 grams (20 teaspoons) for adults.


Sugars

- Table sugar (sucrose): one glucose + one fructose molecule
- High fructose corn syrup: 55% fructose, 42% glucose and 3% other sugars.
- Every cell in body readily converts glucose into energy. But liver cells are one of few types of cells that can convert fructose to energy.
- Large amounts of “free” fructose taxes the liver and increases risk of non-alcoholic fatty liver disease.
Glycemic Index/Load

- **Glycemic load** measurement of impact of carbohydrates on blood sugar/insulin.
- **International consensus** conference concluded that given the consistency of the scientific evidence, diets low in glycemic index/load should be promoted in the prevention and management of diabetes and coronary heart disease, and are particularly important in individuals with insulin resistance.


Glycemic Load and Mood

- 82 healthy weight and healthy overweight or obese adults enrolled in randomized, crossover controlled feeding study.
- Compared to a low GL diet, consumption of high GL diet resulted in:
  - 38% higher score for depressive symptoms (P = 0.002)
  - 55% higher score for total mood disorder (P = 0.05)
  - 26% higher score for fatigue/inertia (P = 0.04), compared to low GL diet.

Pain

• Affects >100 million Americans, more than those with heart disease, cancer, and diabetes combined.
• 25.3 million adults suffer from daily chronic pain, while 23.4 million report severe pain.
• Incidence of chronic low back pain, neck pain, and arthritic pain as high as 29%, 15.7%, and 28%, respectively, in adult population.


IOM Report

• Cultural transformation is necessary to better prevent, assess, treat, and understand pain of all types.
• Healthcare providers should increasingly aim at tailoring pain care to each person's experience and self-management of pain should be promoted.

A Broader Approach

• Truly integrated approach would include treatments that address mind-body (e.g., meditation, yoga, tai-chi), nutrition (e.g., emphasis on plant based diet to reduce inflammation), manual medicine (e.g., massage, chiropractic), pain modulation (e.g., acupuncture, massage, botanicals, nutraceuticals), sleep and mood (e.g., cognitive behavioral therapy, guided imagery, botanicals, nutraceuticals).
Temporomandibular Disorder

- Impacts 5-12% of the population. Second most common musculoskeletal condition (after chronic low back pain) resulting in pain and disability.
- Common TMD include arthralgia, myalgia, local myalgia, myofascial pain, myofascial pain with referral, degenerative joint disease, subluxation, and headache.


TMP Pain Screening Tool

- For clinical use, responses from the screener can be used as part of the diagnostic process for a pain-related TMD diagnosis.
- Sensitivity 99.1% for both short (3 questions) and long questionnaire (6 questions): specificity was 95.98%.
- Radiographic imaging confirms TMD diagnosis.
- Patients are interested in treatment.


Splint Versus Self Exercise

- 52 people with anterior disc displacement without reduction randomly assigned to splint or a joint mobilization self-exercise treatment group.
- Warm-up, small mouth-opening and closing movements several times. Then, individual placed fingertips on edge of mandibular anterior teeth and slowly pulled the mandible down until pain occurred on the TMJ-affected side. 3 cycles of 30 seconds each were done 4 times per day.
- Participants in the splint group wore a maxillary stabilization appliance while sleeping at night. Splint was adjusted to ensure occlusal contact of all mandibular teeth in centric relation and mandibular canine guidance in eccentric movement.
- All outcome variables significantly improved after 8 weeks of treatment in both groups (mouth opening range with and without pain, maximum daily pain intensity, limitation of daily functions. In particular, the mouth opening range increased more in the exercise group than in the splint group.


Acupuncture and Dry Needling

- Dry needling or acupuncture of lateral pterygoid and posterior, periarticular connective tissue, masseter and temporalis muscles shows improvements in pain and disability in patients with TMD.

“The lesson from both our agricultural and medical experience is remarkable for its consistency: Ignoring the evolutionary attributes of biological systems can only be done at the peril of ecological catastrophe.”

Marc Lappe, *When Antibiotics Fail*

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**Antibiotic Prescribing**

- At least 30% of antibiotics prescribed in US are unnecessary, according to data published in *Journal of the American Medical Association* by the CDC, in collaboration with Pew Charitable Trusts and other public health and medical experts.
- ~44% outpatient antibiotic prescriptions written to treat acute respiratory conditions (e.g., sinus infections, middle ear infections, pharyngitis, viral upper respiratory infections (i.e., the common cold), bronchitis, asthma, allergies, and influenza) are unnecessary.

https://www.cdc.gov/media/releases/2016/p0503-unnecessary-prescriptions.html

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**Antibiotic Resistance: Global Problem**

- Emergence and rapid spread of antibiotic resistant bacteria has led to increasing concerns about the potential environmental and public health risks.
- In US, at least 2 million people become infected with antibiotic resistant organisms and 23,000 people die each year as a direct result.
- 33,000 people in Europe die each year due to infections caused by antibiotic-resistant bacteria.

Bavrakis C. et al., *Ecotoxicology and Environmental Safety*, Volume 91, 1 May 2013, Pages 5-8


Smith R, Coast J, *BMJ*, 2013, 346, f1493

The Need for Other Solutions

- In addition to using antibiotics far more judiciously, removing them from non-medical use in animals, and continuing to expand our pipeline (which is running dry) - a broader way of thinking is necessary.
- Exploring natural strategies for enhancing host resistance should be a high priority for both clinicians and researchers.
- New rapid testing to determine when antibiotics are necessary.

CDC Guidance for Influenza

- Caused by RNA viruses resulting in fever/myalgia in infected people.
- Seasonal influenza leads to three to five million severe illness cases and around 250,000 to 500,000 deaths in world yearly.
- Most common in US during fall/winter months, increasing in Oct/Nov; peaking between December and February and can last until May.
- CDC recommends annual flu vaccine for everyone 6 months and older. Optimal timing is October but recommend through end of January. ~2 weeks for antibodies to develop.
Most people with the flu have mild illness and do not need medical care or antiviral drugs. “If you get sick with flu symptoms, in most cases, you should stay home and avoid contact with other people except to get medical care.”

Antiviral drugs can be used for those at risk for serious flu complications (i.e., children younger than 5, adults 65 and older, pregnant women, people with long-term medical conditions, residents of nursing homes/long-term care facilities) and people who are hospitalized for flu.

Three FDA approved antivirals: oseltamivir (generic and Tamiflu®), zanamivir (Relenza®), and peramivir (Rapivab®).

Echinacea and Elderberry

- *Echinacea purpurea* has demonstrated strong activity against influenza virus strains.
- 473 patients with flu symptoms less than 48 hours randomized to 240 mg echinacea herb/root extract + elderberry fruit (Vogel Bioforce) or tamiflu.
- No difference between recovery rates, antibiotic use, intermediate doctor visits, use of over-the-counter medications for symptoms, “ability to return to normal daily activities,” or physician- and patient-reported efficacy of the treatments.

2016 Meta-Analysis: Flu Drugs

Oseltamivir and zanamivir cause small reductions in time to first alleviation of influenza symptoms in adults (8-12 hours)

Oseltamivir increases risk of nausea, vomiting, psychiatric events in adults and vomiting in children and has no protective effect on mortality among patients with 2009A/H1N1 influenza.

Prophylaxis with either drug may reduce symptomatic influenza in individuals and in households.

The balance between benefits and harms should be considered when making decisions about use of antiviral for either prophylaxis or treatment of influenza.

Table 1. Human clinical studies on the effects of various sanitochic agent combinations against influenza

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment</th>
<th>Time</th>
<th>Average</th>
<th>Mood</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zaleski, 1995</td>
<td>Serbuckilf 4 tablet daily for 4 days</td>
<td>25 +</td>
<td>No difference in symptoms or side effects</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>Zaleski, 2006</td>
<td>Serbuckilf 4 tablet daily for 4 days</td>
<td>27</td>
<td>No difference in symptoms or side effects</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>Kono, 2008</td>
<td>Elderberry relative to placebo</td>
<td>66</td>
<td>No difference in symptoms or side effects</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>Tekine, 1515</td>
<td>Tamiflu capsule 2 capsule/bid daily</td>
<td>26</td>
<td>Improved symptoms and side effects</td>
<td>0.43</td>
<td></td>
</tr>
</tbody>
</table>

All studies were randomized, double-blind, and placebo-controlled, with acceptable patient compliance.

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Probiotics and Prebiotics

- Review: 12 studies with children, adults, and elders not at high risk for URTI.
  - Moderate-quality evidence shows fewer people develop URTI when taking probiotics
  - Moderate quality evidence probiotics probably reduces duration of a URTI by approximately 2 days.

Vaccine Adjuvant

- 20 studies found “supplementation of influenza vaccines with probiotics or prebiotics before vaccination increased the immunogenicity to specific influenza viral strains, including the H1N1, H3N2, and B strains.”
  - Longer duration of pre-supplementation, the greater the response. The older the adult, the more protection offered.
  - Strains most active were *L. casei*, *L. paracasei*, and *B. longum*.

Clinical Resource Tool: www.usprobioticguide.com
Click next to brand name to see evidence......

Evidence is ranked using grading system of I, II, III. You can then see the references for your review.


Accessed January 17, 2019

Vitamin D and Respiratory Infection

- Acute respiratory infection kills ~2.65 million people/year.
- 25 randomized controlled trials (n=10,933, aged 0-95 years).
- Vitamin D supplementation reduced risk of acute respiratory infection among all participants and those who were vitamin D deficient experienced the most benefit (NNT=4)

High levels of stress hormones linked to high blood pressure, high cholesterol, high blood sugar, insulin resistance, insomnia, weight gain, headaches, mood swings, depression, and increased risk of infections.

Scientists believe that prolonged elevation of stress hormones may shorten our lifespan by 15 years.
• 400% increase in anti-depressant prescriptions since 1980s. Rates of anxiety/depression in adolescents and young adults skyrocketing.
• JAMA review: For severe depression, benefit of medications over placebo is substantial; however, magnitude of benefit may be minimal or nonexistent, on average, for those with mild or moderate symptoms.


Real State of Our Nutrition

• 90 million Americans are vitamin D deficient (using the Endocrine Society guidelines < 20ng/mL)
• 30 million are deficient in vitamin B6
• 18 million people have B12 deficiency
• 16 million have vitamin C deficiency
• 13% of Latinos and 16% of African American women (ages 12-49) are iron deficient
• Women 25-39 overall have borderline iodine insufficiency

Many Factors at Play.....
All Must be Addressed...

• Processed, nutrient depleted diet
• Poor sleep and inadequate rest
• Lack of physical activity
• Increased exposure to environmental toxins
• Social isolation and soul pain
• Strong focus on image, money, high achievement, having “stuff”
• Weaker personal and community networks

ADHD

• Number of children diagnosed with ADHD according to CDC:
  - Ages 2-5: ~388,000 children
  - Ages 6-11: ~2.4 million children
  - Ages 12-17: ~3.3 million children
• 5.2% of all children 2-17 years of age take ADHD medication
  
  https://www.cdc.gov/ncbddd/adhd/data.html
  Accessed January 18, 2019
Bisphenol A

- **Prenatal** exposure to BPA associated with higher levels of anxiety, depression, aggression, and hyperactivity in children.
- **BPA exposure in childhood** is associated with higher levels of anxiety, depression, hyperactivity, inattention, and conduct problems.
- 132 mother-infant pairs in Alberta Pregnancy Outcomes and Nutrition study: higher maternal BPA exposure increased baseline cortisol in females, and increased reactivity in males.
- Changes in HPA axis function consistent with animal models.

Pesticide Exposure and ADHD

- Pound for pound, children drink 2.5 times more water, eat 3-4 times more food, and breathe 2 times more air. They are exposed to more pesticide.
- Studies have found significant association between urinary pesticide levels and hyperactive-impulsive symptoms.
- Using data from NHANES – children with typical levels of pesticide exposure from eating pesticide-treated fruits/vegetables, have higher risk of developing ADHD.
- Children ages 8-15 with higher urinary levels of pesticide residues had twice the odds of ADHD when compared with children with low or undetectable levels.

Organophosphates

- Systematic review: most studies evaluating prenatal OP exposure observed negative effect on mental development and increase in attention problems in preschool and school children.
- Consumption of organic diet for one week significantly reduced OP pesticide exposure in adults as measured by urinary metabolites.
- Mean total OP metabolites in organic phase 89% lower than when participants were eating conventional foods.
- EWG has useful handouts (www.ewg.org)

Movement is Life……

- 80 million Americans 6 years and older are entirely inactive
- Relationship between physical activity and cardiovascular, metabolic, neurological, immunological and bone health well-established.
- Shown to reduce the harmful effects of stressors when performed at moderate intensities.
- Meta-analysis of 398 studies consistently shows exercise benefits mood, depression and anxiety.
Meditation

- Excellent for reducing stress perception and pain intensity, while elevating mood.
- Long-time meditators have greater activation of areas responsible for sustaining attention, processing empathy, integrating emotion and cognition.
- Review 47 trials: meditation improves
  - Anxiety
  - Depression
  - Pain

Meditation Resources

- Guided Mindfulness Meditation: A Complete Guided Mindfulness Meditation Program from Jon Kabat-Zinn
- Insight Timer - ~4,000 guided meditations from more than 1,000 teachers (self-compassion, nature, stress, podcasts and more). More than 750 meditation music tracks. Free.
- Headspace – very good for beginners with 10 minute meditations. Free.
- The Mindfulness App – nice 5 day guided mediation program to get you started. Can be personalized and integrated into other health apps. Free.

Loneliness, Social Isolation & Your Health

- Poor social relationships associated with 29% increase in risk of heart disease and 32% increased risk of stroke.
- 148 studies on the effects of social isolation on health found it is:
  - As bad as smoking 15 cigarettes a day
  - As dangerous as being an alcoholic
  - As harmful as never exercising
  - Twice as dangerous as being obese

"But until a person can say deeply and honestly, “I am what I am today because of the choices I made yesterday,” that person cannot say, “I choose otherwise.”

Stephen Covey
1. **Move more.** Whether it's the 7 minute workout, cycling, yoga, or taking long walks - one of the surest ways to maintain heart, brain, bone and muscle health is daily exercise. It's not optional. **Just do it.**

2. **Eat food.** Minimally processed, **low glycemic load**, diverse, and largely **plant based diet.** Organic, local, and/or **humanely raised** when possible,

3. **Meditate.** Meditation widens the gap between trigger and response, allowing you to feel a greater calm and awareness. It's a **game changer** for almost anyone.

4. **Stay connected.** Social isolation and loneliness is as dangerous as being an alcoholic or being obese. **Invest in your friends and family.**

5. **Take a multi.** Many lack when it comes to key micronutrients. A food based multi can be insurance against the gaps. **Age and gender appropriate.**

6. **Be tech smart.** Technology makes life easier and more complex. Use **blue light blocking glasses** at night, make one day each week **tech free** or tech "light", and **limit work email in the evening.**

7. **Nurture spirit.** The search for meaning and purpose is a fundamental part of being human. A **richly nourished inner life** is a source of strength during hard times. **Look inward. Honor mystery.**