Integrative Modalities for Dermatology
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We will cover -

• Foods can increase or decrease inflammation
  – Elimination diet
  – Specific carbohydrate diet (SCD)
  – Anti-inflammatory diet

• Supplements and their role as anti-inflammatories

• Stress and inflammation
  – Mind body techniques to decrease stress response
How to determine the clinically appropriate use of Complementary/Alternative Medicine (CAM) in pediatrics

<table>
<thead>
<tr>
<th>Safe Yes</th>
<th>Safe No</th>
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<tbody>
<tr>
<td>effective <strong>Yes</strong></td>
<td><strong>Recommend</strong></td>
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<tr>
<td>effective <strong>No</strong></td>
<td><strong>Tolerate</strong></td>
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Specific diet/derm correlations you know

- Low nickel diet in nickel sensitivity
- Dermatitis herpetiformis and gluten/ceeliac disease
Food Sensitivities and Allergies

• **Most common**
  - Egg
  - Soy
  - Dairy (commonly occurs with soy sensitivities)
  - Wheat
  - Corn (may be GMO only, try organic)
  - Nuts
  - Shellfish
Elimination diet

• An authentic elimination diet removes ('eliminates') all possible food allergens, of which the eight most common are milk, eggs, peanuts, tree nuts, soy, wheat, fish and crustacean shellfish. The American Dietetic Association has proposed an elimination diet for people, usually children, with food allergies. This diet works by eliminating the major food allergens for a period of time (1–4 weeks), after which foods containing the allergens are added back into the diet (reintroduced or 'rotated') to determine whether or not the child is sensitive to this food.
Elimination diet

- Gluten
  - need at least 3 months
- Dairy/soy
  - faster clearing, 2-4 weeks
- Other food intolerances
Dairy/Casein in?

- Everything!!
- Obvious – milk, yogurt, cheese
- Added to many prepared foods
- Substitutes: almond milk, coconut yogurt, dairy/soy free cheese, goats milk cheese (for some)
Other names for casein

- **Contain Milk:**
  - Butter [artificial butter, artificial butter flavor, butter, butter extract, butter fat, butter flavored oil, butter solids, dairy butter, natural butter, natural butter flavor, whipped butter]
  - Casein & caseinates [ammonium caseinate, calcium caseinate, magnesium caseinate, potassium caseinate, sodium caseinate, hydrolyzed casein, iron caseinate, zinc caseinate]
  - Cheese [cheese (all types), cheese flavor (artificial and natural), cheese food, cottage cheese, cream cheese, imitation cheese, vegetarian cheeses with casein]
  - Cream, whipped cream
  - Curds
  - Custard
  - Dairy product solids
  - Galactose
  - Ghee
  - Half & Half
  - Hydrolysates [casein hydrolysate, milk protein hydrolysate, protein hydrolysate, whey hydrolysate, whey protein hydrolysate]
  - Ice cream, ice milk, sherbet
  - Lactalbumin, lactalbumin phosphate
  - Lactate solids
  - Lactyce yeast
  - Lactitol monohydrate
  - Lactoglobulin
  - Lactose
  - Lactulose

Milk [acidophilus milk, buttermilk, buttermilk blend, buttermilk solids, cultured milk, condensed milk, dried milk, dry milk solids (DMS), evaporated milk, fat-free milk, fully cream milk powder, goat’s milk, Lactaid® milk, lactose-free milk, low-fat milk, malted milk, milk derivative, milk powder, milk protein, milk solids, milk solid pastes, non-fat dry milk, non-fat milk, non-fat milk solids, pasteurized milk, powdered milk, sheep’s milk, skim milk, skim milk powder, sour milk, sour milk solids, sweet cream buttermilk powder, sweetened condensed milk, sweetened condensed skim milk, whole milk, 1% milk, 2% milk]
Other names for casein cont

- Milk fat, anhydrous milk fat
  Nisin preparation
  Nougat
  Pudding
  Quark
  Recaldent
  Rennet, rennet casein
  Simpless (fat replacer)
  Sour cream, sour cream solids, imitation sour cream
  Whey [acid whey, cured whey, delactosed whey, demineralized whey, hydrolyzed whey, powdered whey, reduced mineral whey, sweet dairy whey, whey, whey protein, whey protein concentrate, whey powder, whey solids]
  Yogurt (regular or frozen), yogurt powder

- May Contain Milk:
  Natural flavoring
  Flavoring
  Caramel flavoring
  High protein flour
  Lactic acid (usually not a problem)
  Lactic acid starter culture
  “Non-dairy” products may contain casein
  Rice cheese
  Soy cheese

Should be Safe:
- Lactoferrin
  Tagatose (Naturlose)

These milk derivatives should be safe for most individuals with milk allergy, but check with your doctor before using.

- See more at: http://www.kidswithfoodallergies.org/resourcespre.php?id=37#sthash.pxacLU9a.dpuf
Prevalence for gluten intolerance/sensitivity

- Hard to estimate
- Reported at 6-7 % in articles (Dr. Fasano, director of the University of Maryland Center for Celiac Research) but I could not find studies to back this up.
Gluten in?

- Gluten is a common ingredient in many foods
  - Wheat, spelt, rye, Kamut, barley are grains that all contain gluten
- Thickener for many foods
- Soy sauce
- www.celiac.org – good resource for foods containing gluten
Gluten Sensitivity vs Celiac disease

- Celiac disease is an autoimmune reaction in the gut to gluten
- Incidence rising – Finland saw increase from 1-2 %
- Estimated doubling in incidence every generation
- Commonly thought of as a GI disease but has non GI manifestations – fatigue, peripheral neuropathy, restless leg syndrome, depression, irritability, alopecia, psoriasis, eczema and dermatitis herpetiformis
Why is celiac disease increasing?

- Changes in the wheat grown
- Increased gluten content of current wheat
- Better understanding and testing?
- More exposure - Gluten is a common food additive for thickening, we eat more processed food
- Is gluten a trigger or a toxin the trigger that allows the antibody formation?
- ? Leaky gut syndrome
- Intestinal dysbiosis?
• **Tests?**
  
  – If concerned, test for celiac disease before going off gluten. Cannot test for celiac disease on a gluten free diet – tests with be normal.
  
  – **TTG IgA** with IgA levels most specific and sensitive (both 95%) for celiac disease
  
  – Other lab tests?
Inti- Inflammatory Diet

- Aim for variety.
- Include as much fresh food as possible.
- Minimize consumption of processed foods and fast food.
- Eat an abundance of fruits and vegetables.
- Look for carbohydrates with low Glycemic index – goal is level insulin response.
From Dr Weil

HEALTHY SWEETS (such as plain dark chocolate) Sparingly

RED WINE (optional)
No more than 1-2 glasses a day

SUPPLEMENTS
Daily

TEA (white, green, oolong)
2-4 cups a day

HEALTHY HERBS & SPICES (such as garlic, ginger, turmeric, cinnamon) Unlimited amounts

OTHER SOURCES OF PROTEIN (high quality natural cheeses and yogurt, omega-3 enriched eggs, skinless poultry, lean meats) 1-2 a week

COOKED ASIAN MUSHROOMS
Unlimited amounts

WHOLE SOY FOODS (edamame, soy nuts, soymilk, tofu, tempeh) 1-2 a day

FISH & SEAFOOD (wild Alaskan salmon, Alaskan black cod, sardines) 2-6 a week

HEALTHY FATS (extra virgin olive oil, expeller-pressed canola oil, nuts - especially walnuts, avocados, seeds - including hemp seeds and freshly ground flaxseeds) 5-7 a day

WHOLE & CRACKED GRAINS
3-5 a day

PASTA (al dente)
2-3 a day

BEANS & LEGUMES
1-2 a day

VEGETABLES (both raw and cooked, from all parts of the color spectrum, organic when possible) 4-5 a day minimum

FRUITS (fresh in season or frozen, organic when possible) 3-4 a day
Specific Carbohydrate Diet

- Restrictive diet eliminating many grains, fruits and vegetables.
- Decreases inflammation
- Main body of evidence in GI immune disorders
- Might be worth a try in significant dermatological severity
‘natural’ anti-inflammatories

- Tumeric
- capciatan
- Omega 3 fatty acids – EPA and GLA
- ALA – precursor to omega 3 fatty acids
- Vitamin D
Natural Anti microbials

- **Tea tree oil**
- **Oregon grape**  
  
  
  - A report on three recent clinical trials using *Mahonia aquifolium* 10% topical cream and a review of the worldwide clinical experience with *Mahonia aquifolium* for the treatment of plaque psoriasis.
  
  *Gulliver WP*¹, *Donsky HJ*.  

¹ Gulliver WP.
Omega 3 and 6 pathways

Linoleic acid (LA) and α-linolenic acid (ALA) share a common elongase enzyme.

- **Linoleic acid (LA)**:
  - C18:2-6
  - Arachidonic acid (AA) (C20:4-6)
  - Cyclic endoperoxides
    - TXA2
    - TXA3
    - PGH2
    - PGJ2
  - Thromboxanes and prostaglandins
  - Pro-inflammatory

- **α-linolenic acid (ALA)**:
  - C18:3-3
  - Eicosapentaenoic acid (EPA) (C20:5-3)
    - LTA4
    - LTA5
    - LCB4
    - LTB5
    - LTC4
    - LTC5
  - Leukotrienes
  - Pro-inflammatory

- **Docosahexaenoic acid (DHA)** (C22:6-3)
  - Pro-inflammatory
  - Less-inflammatory
Omega 3 fatty acids

- Omega 3 fats are anti-inflammatory
- Omega 6/9 are pro-inflammatory
- Most of our diets are out of balance 1:25 with more omega 6 and 9 fatty acids where we are supposed to be 10:1 omega 3 to 6.
- Deficiency will cause dry sensitive skin
- Useful in inflammatory skin conditions like eczema
Fish oil

• All fish oil is not the same – total mg not how many omega 3 fatty acids it contains.
• Active ingredients EPA and DHA
• Read the label.
Fatty Acid content of Fats
Alpha-linolenic Acid (ALA)

- Flax oil or seeds (need to be ground to absorb oil)
- Evening primrose oil
- Main problem with ALA as supplement is conversion to omega 3 fatty acids, low conversion rate (10%) and even lower if you are omega 3 deficient.
• Good evidence in atopic dermatitis
  – Prevention – pregnant mom’s then their infants at high risk
  – Treatment
  – Usually use lactobacillus GG (culturelle is one brand name for this, has doses on box for children)

- Probiotics for the treatment or prevention of atopic dermatitis: a review of the evidence from randomized controlled trials.
- *Betsi GI*, Papadavid *E*, Falagas ME.
- Probiotic supplement reduces atopic dermatitis in preschool children: a randomized, double-blind, placebo-controlled, clinical trial.
Stress and the skin

• Correlation between exacerbation of skin conditions with chronic stress
• Thought to be secondary to increased cortisol and immunosuppression
The Response of Skin Disease to Stress: Changes in the Severity of Acne Vulgaris as Affected by Examination Stress

Annie Chiu, BS; Susan Y. Chon, MD; Alexa B. Kimball, MD, MPH

Conclusions Patients with acne may experience worsening of the disease during examinations. Furthermore, changes in acne severity correlate highly with increasing stress, suggesting that emotional stress from external sources may have a significant influence on acne.

Influence of a Mindfulness Meditation-Based Stress Reduction Intervention on Rates of Skin Clearing in Patients With Moderate to Severe Psoriasis Undergoing Phototherapy (UVB) and Photochemotherapy (PUVA)

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Mast cells are not only necessary for allergic reactions, but recent findings indicate that they are also involved in a variety of neuroinflammatory diseases, especially those worsened by stress. In these cases, mast cells appear to be activated through their Fc receptors by immunoglobulins other than IgE, as well as by anaphylatoxins, neuropeptides and cytokines to secrete mediators selectively without overt degranulation. These facts can help us better understand a variety of sterile inflammatory conditions, such as multiple sclerosis (MS), migraines, inflammatory arthritis, atopic dermatitis, coronary inflammation, interstitial cystitis and irritable bowel syndrome, in which mast cells are activated without allergic degranulation.

Mind Body

- Stress reduction
  - Mindfulness based stress reduction
  - Breathing
  - Biofeedback
- Hypnosis
  - Healing
  - Relaxation
  - Reframing thoughts
  - Turning off sensations
Breathing

- Balances sympathetic/parasympathetic activity
- Easy self calming that can be done anywhere
4-7-8 Breath

- This exercise also uses belly breathing to help you relax. You can do this exercise either sitting or lying down.
- To start, put one hand on your belly and the other on your chest as in the belly breathing exercise.
- Take a deep, slow breath from your belly, and silently count to 4 as you breathe in.
- Hold your breath, and silently count from 1 to 7.
- Breathe out completely as you silently count from 1 to 8. Try to get all the air out of your lungs by the time you count to 8.
- Repeat 3 to 7 times or until you feel calm.
- Notice how you feel at the end of the exercise.
Hypnosis in pediatrics

- Kids are great at it, they go in and out of a trance state naturally – think daydreaming
- Can use hypnotic language as part of your conversation. Helps whether you use hypnosis or not.
Hypnosis in dermatology

- Procedural anxiety
- Warts
- Speed up healing
- Decrease pain
- Decrease symptoms – itching, redness
- Limit behaviors - picking, hair pulling, thumb sucking
Hypnosis

- Review of literature looking at hypnosis and dermatology
- Results  A wide spectrum of dermatologic disorders may be improved or cured using hypnosis as an alternative or complementary therapy, including acne excoriée, alopecia areata, atopic dermatitis, congenital ichthyosiform erythroderma, dyshidrotic dermatitis, erythromelalgia, furuncles, glossodynia, herpes simplex, hyperhidrosis, ichthyosis vulgaris, lichen planus, neurodermatitis, nummular dermatitis, postherpetic neuralgia, pruritus, psoriasis, rosacea, trichotillomania, urticaria, verruca vulgaris, and vitiligo

- Hypnosis has been studied extensively for treating warts. In one controlled trial, which compared hypnosis to no treatment at all, 53% of the hypnotized patients — but none of the unhypnotized patients — lost at least some of their warts. Another trial compared hypnotic suggestion (of the warts healing and shrinking) to salicylic acid (the standard treatment for warts), placebo salicylic acid, and no treatment. The hypnotized participants lost significantly more warts than subjects in the other three groups.