

## Overview of CAM for Autism and how the educational team can be involved

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## Objectives

- How can teachers, therapists, families and physicians work together in the care of a child with special needs.
- For the participant to get an introduction to Complimentary and Alternative therapies in Autism
- We are going to divide therapies into three large categories,
  - Complimentary Medicine
  - Nutritional and diet management
  - Off Label Medical interventions
- We will review the data on a few therapies

## Teachers, Therapists and Aides What do you need to know about CAM?

- My hope today is that you can gain some basic understanding of what interventions people are trying in their kids.
- Good, healthy dialogue between families, doctors and therapists is important.
- What kind of changes are important for you to track and document to help us as physicians choose interventions.

## What does one expect to see?

- I often say, my goal is to help them be more "present" to participate in their day.
- Eye contact, attention, irritability, sensory distraction are the most regular changes we see quickly when we find an intervention that helps a child.
- Many times quantity of Language will increase
- A medical intervention should NEVER replace a quality behavior and educational plan. But if we work together then the child can come ready to grow each day.

## Ways to communicate change

- CGI, cognitive global index
- Basic scale of 1-3, great day, ok day, bad day in regards to perhaps three of the child's worst symptoms. Tracked on a calendar.
- Autism tracker APP
- Daily or weekly emails with scaled answers of performance, not on specific educational skills, but on the child's ability to participate.

## Use of CAM in ASD

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### Parental Perceptions and Use of Complementary and Alternative Medicine Practices for Children with Autistic Spectrum Disorders in Private Practice

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**\*92% Use of CAM Therapies\***

## Recent Published Reviews

- Lofthouse, N, Hendren, R, et al. A review of complimentary and alternative treatments for autism spectrum disorders. *Autism Res. Treat.* 2012
- Newmark: *Ped Clinics of NA* 2007
- Levy, Hyman: *Child Adolescent Psych Clinics of NA* 2008
- Rossignol, DA. Novel and emerging treatments for autism spectrum disorders: a systematic review. *Ann Clin Psychiatry.* 2009 Oct-Dec;21(4):213-36.

## AAP Guidelines

- Complementary and Alternative Medicine; Provisional Section on Complementary, Holistic, and Integrative Medicine. *of complementary and alternative medicine in pediatrics.* *Pediatrics* 122: 1374-1386, 2008.
- Myers SM, Johnson CP; AAP Council on Children with Disabilities: *Management of children with autism spectrum disorders.* *Pediatrics* 120: 1162-1182, 2007.
- *families who choose complementary and alternative medicine for their child with chronic illness or disability* 598-601, 2001.

Liptak GS, et al: Satisfaction with primary health care received by families of children with developmental disabilities. *J Pediatr Health Care.* 2006

- "Physicians' knowledge about complementary and alternative medicine and their qualifications to manage developmental disabilities ranked worse than neutral. Families with a child with autism had more spontaneous negative comments and rated their primary care physicians lower on several aspects of care. They requested more information on complementary and alternative medicine and more support in the community."

## We need better dialogue

- Currently many in the Academic Autism Community consider any intervention outside of Behavioral therapy or Psychiatric medication to be CAM ( complimentary and alternative medicine)
- We need as a community to better delineate the modalities, and then refer to them appropriately
- Once we can divide these therapies into appropriate categories, we can utilize and research them better.

## My Proposed Treatment Categories

- Complimentary and Alternative Medicine
- Nutritional and Dietary interventions
- Off label medical Interventions

## Complimentary and Alternative Medicine

- Modalities that utilize a different paradigm of medicine to approach health and wellness
- Many times these modalities are whole person in orientation, and not disease specific. They are neither designed to be disease specific or researched in such manner.
- This is in contrast to the "mainstream" paradigm of medicine that studies medicine in disease focused methodologies
- This is where the communication between practitioners and researchers break down.

## What falls under This definition

- Manual medicine: Osteopathic treatments, Chiropractic, and Massage
- Energetic treatments: Reiki, Therapeutic touch, Homeopathy, Reflexology, Cranial Sacral Therapy, Accupuncture, Accupressure and Allergy Elimination Treatments
- Personal relaxation techniques: Yoga, meditation, breathing exercises
- Essential oils

## Overactive Sympathetic Nervous system and sensory processing deficits

- Pupil and salivary indicators of autonomic dysfunction in autism spectrum disorder. Anderson CJ, Colombo J, Unruh KE. *Dev Psychobiol.* 2012 May 29
- This is the most recent study documenting the role of the autonomic nervous system in Autism, but there are many
- Why does this matter?
- Many of the CAM modalities work by encouraging relaxation of the autonomic nervous system in non-pharmaceutical means. These children can use all the help they can get

## How would a parents decide if they want to use these therapies for a child

- They are generally recognized as safe
- They do not have disease specific outcomes for Autism
- The parents need to decide if the money and time spent on these modalities, is something they are willing to spend.
- Parents, therapists, teachers and physicians should all monitor the child to assess if they are providing improvement.

## Nutritional and Dietary interventions

- Dietary interventions attempt to address the changing U.S. food supply, it's limitations and effects on the neuro-immune system
- The research on diet is immense in regards to human health, and difficult to sort through for anyone, but especially a parent.
- In regards to Autism, we can separate these interventions into specialized diets, and nutritional supplements.

## The Gut-Immune System

- Ashwood P et al: Intestinal lymphocyte populations in children with regressive autism: evidence for extensive mucosal immunopathology. *J Clin Immunol* 23: 504-17, 2003.
- DeFelice ML, et al: Intestinal cytokines in children with pervasive developmental disorders. *Am J Gastroenterol* 98: 1777-1782, 2003.
- Vojdani A, et al: Immune response to dietary proteins, gliadin and cerebellar peptides in children with autism. *Nutr Neurosci* 7: 151-161, 2004.
- Jyonouchi H, et al: Dysregulated innate immune responses in young children with autism spectrum disorders: their relationship to gastrointestinal symptoms and dietary intervention. *Neuropsychobiology* 51: 77-85, 2005.

## Common diets used in Autism

- Popular diets:
  1. Gluten free and Casein Free
  2. Feingold Diet
  3. Specific Carbohydrate diet
  4. Paleo diet

## Books to read about these diets

- There are many books written on the the GFCF Diet, I think the simplest explanation of the rational behind the GFCF diet is in "the ADHD and Autism Cookbook" opening chapters
- Gut and psychology Syndrome, by Dr. Natasha Campbell-McBride reviews the Special carbohydrate diet
- The NDD book, Dr. William Sears discusses fodo dyes and additives in regards to children's health
- Eat like a dinosaur, "the Paleo Parents", reviews in a child friendly format the benefits of a grain restricted diet from a paleo diet perspective.

## Food Dyes

- The effects of a double blind, placebo controlled, artificial food colourings and benzoate preservative challenge on hyperactivity in a general population sample of preschool children
- B Bateman, J O Warner, E Hutchinson, T Dean, P Rowlandson, C Gant, J Grundy, C Fitzgerald, J Stevenson. Arch Dis Child 2004;89:506-511. doi: 10.1136/adc.2003.031435
- 277 children in a double blind, placebo, cross over challenge
- Great review of current studies "the color of controversy" [www.sciencenews.org](http://www.sciencenews.org) Aug 27, 2011

## Epigenetics



## Nutrient Supplementation

- I like to divide them in to 2 main categories
- 1. Corrections for the American Lifestyle
- 2. Corrections for Autism Physiology

## Corrections for the American Diet

- This is my own phrase to describe those nutrients that have become inadequate in our current culture, and have been linked to a large variety of health conditions, especially immune dysfunction.
  - Omega 3 fatty acids---Needed due to our meat supply being fed Corn, instead of grass
  - Probiotics----we eat pasturized, cooked food and we utilize a lot of antibiotics in our medicine
  - Vit D-----we stay inside, wear cloths and sunscreen

## Nutritional Interventions

- These aim at addressing cellular level abnormalities that have been identified in emerging autism research
- These are NOT usually symptom specific like typical drug management, so they are difficult to research in such manner.
- Some interventions show quick responses, like B12, others have long term effects, such as Omega 3 fatty acid supplementation.

## Common Supplements implicated in cellular level defects in Autism

- MB12, Methylfolate/folinic acid, P5P ("methyl" B6) These address Methylation cycle defects. Many patients use SQ injectable forms. TMG and DMG, are "methyl donors", used for the same reasons.
- Anti-oxidants- CoQ10, Carnitine, Glutathione, NAC, selenium,
- Minerals- Zinc, magnesium, Calcium

## Off Label Medical Interventions

- Neuropsychiatric medications
  - Seizure Medications, SSRI's, Namenda
- Sympathetic Nervous system regulators:
  - Propranolol, clonidine and guanfacine
- Anti-microbials for GI dysbiosis
  - Anti-fungals, metronidazol, and antibiotics
- Antimicrobials for infectious triggers
  - Antivirals and antibiotics

## Fatty Acid Supplementation in Autism

(MIND institute; NIMH)

- Children ages 3-8 with an established diagnosis of ASD were randomly assigned to 12-weeks of omega-3 fatty acids (1.3 gms/day) or an identical placebo.
- Hyperactivity improved 2.7 ( $\pm 4.8$ ) points in the omega-3 group compared to 0.3 ( $\pm 7.2$ ) points in the placebo group.
- Correlations were found between decreases in five fatty acid levels and decreases in hyperactivity.

(Bent et al, JADD, 2011, 41:545-54)

Slide from Dr. Hendren

## Off Label Medical interventions

- Immune modulating products
  - Ivlg, prednisone, Naprosyn, leukotriene inhibitors, Mast cell stabilizers
- Chelation using medical chelating agents
  - DMSA, EDTA, ect.
- Low dose naltrexone
- Oxytocin
- HBOT

## Some "natural products" that are similar to pharmaceuticals

- Melatonin- a brain hormone that induces sleep, this is neither a nutritional or a botanical product
- Curcumin- extract of tumeric used in India, shown to have immune-modulatory action
- Natural antimicrobials, --grape seed extract, colloidal silver, oral use of essential oils

## If a drug is approved by the FDA, does that make it the safest and most effective option?

- side effects. Those side effects can be dramatic and serious, and still have approval.
- **Respiradol**- The only FDA approved drug for Autism, shows significant efficacy in Autism, but has a long list of known serious side effects, both in the short term and long term.
- **Clonidine**- which has not been approved for autism, but has been used in children for years, with minimal adverse side effects. Efficacy data on Autism is not published, but we do have it in ADHD.
- There are many studies that have looked the at the autonomic nervous system, and it's abnormally overactive sympathetic response, these blood pressure regulating products, work to decrease that response
- Brain Imaging Behav. 2010 Jun;4(2):189-97. Effect of propranolol on functional connectivity in autism spectrum disorder--a pilot study. [Narayanan A, et Source Integrated Biomedical Sciences Graduate Program, The Ohio State University, Columbus, OH, USA.](#)

## Let's do some examples

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- SSRI's
    - No significant end organ damage
    - It is a medication that attempts to treat a symptom, not an underlying mechanism
    - Can increase Seizure activity and aggression
    - Many clinicians report positive effects, but systematic review has not supported those reports
    - Data has pointed to serotonin overload in Autism ,so an SSRI, doesn't seem to fit their pathophysiology
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## More examples

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- Chelation
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    - can be significant
    - Biologic explanation relies on theory of metal exposure or lack of appropriate excretion being the cause of Autism
    - One reported case of death by IV chelation in Autism
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## More examples

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- Ivlg
    - Attempts to address the autoimmune component of Autism that is being documented in research, so it has a biologic mechanism
    - Has been used for years in other Autoimmune mediated neurologic conditions, such as MS
    - Very costly
    - Known and documented side effects and risks, some minor and some serious, (potential for deadly treatment reactions)
    - Dosing and administration is well established in children
    - Very expensive and not covered by insurance in most cases
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