

## SCIENTIFIC CRITERIA FOR SELECTING FOODS AND DIETARY SUPPLEMENTS

## FOOD AND SUPPLEMENTS AND SCIENTIFIC CRITERIA FOR SELECTION

- The real basic question to be addressed:
- How do I decide which foods and supplements I should use for my family's needs?

## THE DIFFICULTY IN SELECTION



## SEPARATING THE FACTS AND TRUTHS FROM SALES/MARKETING HYPE/ADDS

- It's hard to determine what to believe and what not to believe----even at a conference
- There are positives and negatives on the internet regardless of the topic or subject
- Which supplements or foods should my family be consuming

## A GOOD GUIDELINE FOR SELECTING IS TO USE THE FOLLOWING CRITERIA

- Your own and your family's health
- Autism Diagnosis?
- Your family history/heredity (cancer, heart disease, diabetes, tendency toward illness)
- Your family's eating habits
- Your family's immune system response
- Special dietary requirements (allergens etc. ie casein, gluten, soy, corn, nuts, flavors, colors)
- Special diets (GF/CF or SCD)
- Physician recommendations
- Special needs conditions (sleep, cognition, gut health)

## TWO BASIC CONSIDERATIONS

- 1. Product types based on questions in previous slide.
- ★
- 2. Product quality once the product groups are selected.
- ★

## IF I EAT 3 WELL BALANCED MEALS DAILY I SHOULN'T NEED SUPPLEMENTS

- This may be somewhat true in a perfect world
- Not true in real life
- Baking, boiling and grilling destroy vitamins A, B vitamins, C, D, good flora
- Special needs Kids' diets (chicken and fries) are not balanced

## SELECTING NEEDED PRODUCT TYPES FOR SUPPLEMENTATION

- Categories to consider
  - a) Vitamins-Minerals (the basic daily forms)
  - b) Immune support
  - c) Probiotics and gastrointestinal aids
  - d) Essential Fatty Acids
  - e) Products for cognitive improvement
  - f) Antioxidants
  - g) Coenzyme Q-10
  - h) Digestive Enzymes
  - i) Specific Specialty Products/Special Needs Conditions
  - j) Amino acids, biochemical and pathway assistance

## RECAP OF CRITERIA FOR SELECTION

- Your health and family health
- History/hereditary
- Eating habits
- Autism diagnosis
- Special dietary needs/special needs condition
- Physician recommendations
- References and scientific information
- **Don't rely on food company or dietary supplement company advertisements---do your homework!**

## VITAMIN/MINERAL DAILY SUPPLEMENT

- Everyone needs this
- Low potency? Medium? High? Base selection on:
 

1. Diet	5. Immune system
2. Level of Activity	6. Gut health
3. Level of Stress (B's)	7. Special Needs?
4. Pregnant?	(autism, ADD)

## IMMUNE SUPPORTING SUPPLEMENTS

- 1. Extra Zinc
- 2. Extra Vitamin C
- 3. Extra Selenium
- 4. Extra A, D, and E
- 5. Herbals such as Astragalus, Elderberry, Olive Leaf, Turmeric, Quercitin
- 6. Beta Glucan, Colostrum
- 7. What works for you or given individual
- 8. Probiotics (also gastrointestinal)

## SPECIALTY PRODUCTS FOR ASD (Usually physician driven)

- B-6
- P-5-P
- ACTIVATED CHARCOAL
- DMG/TMG
- INOSITOL
- FOLINIC ACID
- SLEEP AIDS (TAURINE, MELATONIN)

### EVALUATE CONTENTS AND FORMULATIONS BASED ON NEEDS

1. There is no one size fits all product.
2. You can't fit all your supplementation needs into one "Complete" product.
3. Listen to your physician

### EXAMPLE



### ISSUES WITH THE EXAMPLE

- 1. Amino Acid Complex lists 17 constituents but doesn't tell how much of each
- 2. Super fruit complex lists nine but no quantities of each
- 3. Herbal Complex lists 60 mg. total but contains 20 different herbs---Not beneficial in those small concentrations

### GOOD REFERENCES TO HELP YOU

- Physicians Desk Reference for Nutritional Supplements (PDR) 2nd edition
- Physicians Desk Reference for Herbal Medicine PDR 4th edition
- These publications analyze all the references available on a subject and give, truthful, unbiased opinions. About \$55 each

### REMEMBER OUR GOALS

- SELECT PRODUCT TYPES OR CATEGORIES FOR BOTH FOOD AND SUPPLEMENTS
- MONITOR THE QUALITY OF PRODUCTS WE DETERMINE ARE NEEDED

### DEFINING THE QUALITY WE NEED

- Science is helping define the quality we need
- In the case of autism causation; 15 years ago it was all about genetics
- Then vaccines entered into the picture
- Then the mercury in the vaccines
- Then immune issues, and gut issues
- But no definitive, conclusive results

## NEW SCIENCE

- New work by Dr. Martha Herbert of Harvard has indicated that some genetics as well as environmental insults are likely involved in autism causation with vaccines and heavy metals(mercury) nicely fitting into that theory.
- She also cites ADHD, dyslexia, learning and behavioral disorders in her writing.

## STANFORD TWIN STUDY

- Recent study published July 4, 2011 at Stanford school of medicine, studied 192 sets of twins to evaluate the risk of autism posed by genetic factors and environmental factors.
- Surprisingly, this study indicated that environmental factors played a larger role than genetics (about 60% to 40%)

## THE ENVIRONMENTAL FACTORS

- Air impurities
- Water impurities
- Impurities in food, supplements, or drugs
- Impurities in consumer goods such as toys, appliances, etc
- Chemicals used in our environment such as pesticides, disinfectants, etc.

## SCIENCE SUPPORTING ENVIRONMENTAL INSULT THEORY

- Studies from 3 different research institutions  
 (Mt. Sinai School of Medicine in NY)  
 (U. of California—Berkeley School of Public Health)  
 (Columbia U. )

These institutions report that children born to mothers with higher pesticide levels during pregnancy go on to experience lower IQ scores in elementary schools than mothers with lower levels. (7 points in one study, 5.5 in another)

## PESTICIDES IN FOOD STUDY

- Phil Landrigan, MD, pediatrician and public health expert at Mt. Sinai School of Medicine in New York, reports on a study done in Canada on 1145 children.
- **FINDING THAT HIGH PESTICIDE BY-PRODUCTS FOUND IN URINE SIGNIFICANTLY INCREASED THE RISK OF THE CHILD BEING DIAGNOSED WITH ADHD-- TWICE AS LIKELY COMPARED TO THOSE WITH LOWER LEVELS.**

## EFFECT OF ORGANIC FOOD

Dr. Landrigan also reports that individuals who switch to an organic diet reduce the levels of pesticide by-products in their urine by 85 to 90%.

He recommends organic diets six months prior to conception, throughout pregnancy and for the offspring.

### EPA LIST OF MOST DANGEROUS CHEMICALS TO CHILDREN

- Published in April 2011
- Neurotoxicants that damage the nervous system and are linked to the continuing rise in learning, behavior and other developmental problems
- List Benzene, Bisphenol A, BHA, BHT, Lindane, MSG, Phthalates, Trichlorethylene etc.

### TYPES OF IMPURITIES IN FOOD, SUPPLEMENTS AND OTHER ITEMS

- Bacterial
- Heavy Metals (Lead, Mercury, Cadmium, Arsenic, Aluminum, Barium, etc.)
- Pesticides, fungicides
- Processing chemicals
- Preservatives
- Common Allergens

### RECENT CONTAMINATION ISSUES

- Salmonella in peanuts
- E. Coli in turkey and eggs
- Arsenic in baby food, apple juice and grape juice
- Fungicide in orange juice
- Mercury in face cream
- Lead in Mattel Toys made in China
- Cadmium in Jewelry from China
- Antimony in Stevia sweetener

### WHAT CAN THE CONSUMER DO TO INSURE QUALITY?

- FOOD
  - Read labels (calories, fats, trans fat, preservatives)
  - Buy brands you can trust
  - Cook thoroughly at correct temperature
  - Call company's customer service to ask questions about testing being done
  - Buy organic foods

BUT, YOU STILL HAVE TO TRUST THE FDA TO DO ITS JOB WHICH THEY DON'T ALWAYS DO

### FDA LAX IN TESTING REQUIREMENTS

- Usually require only big 4 metal tests
- Imported materials not regularly tested
- Bacterial testing usually up to the company
- FDA is short staffed and not efficient
- Inspectors are not trained well

### ORGANIC FOOD GOOD INSURANCE

- Limits heavy metals and pesticides and fungicides
- If not organic, wash thoroughly with water, GSE, or produce wash
- Organic fed meats limits contamination from soil contamination or animal based food contamination (BSE)



### REAL LIFE EXAMPLE OF AN ORGANIC DIET IMPROVING HEALTH

- Daughter age 42 generally good health
- Early last year  
Cramping, internal muscle spasms, diarrhea, unusual bowel symptoms and weight loss

### Jeannine

- Medical tests were negative
- Tested for celiac also negative
- Parasites, bacterial infection, yeast all negative
- Several drugs, no relief

Talk then turned to checking for various forms of cancer

### Jeannine

- Internal spasms and pain got so bad, the doctor tried the drug Hyomax, an anti-spasmodic with a secondary use of decreasing the side effects of insecticides
- This medication helped tremendously in reducing symptoms

### Jeannine

- College professor
- Student with similar health issues for a long time
- Then the student was noticeably better
- Inquired as to what cured her

### THE CURE

- Student used Manuka Honey and an organic diet
- Manuka Honey is used for stomach ulcers, heartburn, reflux, burns, wounds and sores
- Jeannine ordered Manuka Honey and immediately changed to an organic diet.

## THE CURE

- Within two weeks, symptoms gone
- Honey now stopped
- Organic Diet continues
- Dr. Now diagnoses her problem as extreme sensitivity to pesticides

## QUALITY OF DIETARY SUPPLEMENTS

- What is the criteria
  1. Formulation
  2. Potency
  3. Purity (contaminants)
  4. Purity (allergens)
  5. Purity (bacteria, yeast, mold)
  6. Shelf life through best used or exp date

## FORMULATION AND POTENCY

- All potencies should be stated on label—Beware of:
  - In a base of
  - Also containing:
  - Very small potencies when substantial doses needed (mcg vs. mg)
  - Probiotics which don't declare "colony forming units"
  - Elemental mineral values, NOT THE SALT
    - 10 mg. Zinc Picolinate
    - 10 mg. Zinc (Picolinate) or
    - 10 mg. Zinc (from Picolinate)

## EXAMPLE



## ISSUES WITH THE EXAMPLE

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## PURITY

- Normally, supplements are not really thought of as a potential source of contaminants
- Think of origin, however
  - Materials come from all over the world
  - Come from facilities that make other ingredients or types of products
  - Many herb or plant based (sprayed with pesticides? or contaminated soil?)
  - Minerals dug out of the ground
  - Many prone to bacteriological growth
  - Processed with water (quality?)

### PLANT BASED AND SOIL GROWN

- Many herbs and plant based materials need soil to grow
- Is this soil contaminated? Plants organically pick up contaminants from the soil
- Have these plants been sprayed with pesticides, fungicides etc.

### MANY MINERALS ARE GROUND SOURCED

- Minerals can be dug out of the ground—then processed or purified
- What is in the ground?
- Chemicals? Pesticides? Heavy Metals?
- Bacteria?

### TYPES OF SOIL CONTAMINATION

**Garbage burial**



**Oil drums and waste**

Erosion to nearby areas



### Processed WITH WATER

- World's water supply is becoming increasingly contaminated and polluted
- Impurities? Bacteria? Heavy Metals?

### WHERE DID THE PROCESSING WATER COME FROM?



### POLLUTED STREAM



## POLLUTION IN OCEAN BAY



## SUPPLEMENT SOURCES THAT LIVE IN WATER

Materials derived from water plants

Chlorella, Spirulina etc.

Organisms that live in water

Shrimp, scallops, krill, fish

Example: Glucosamine from shrimp

## PURITY FROM HEAVY METAL CONTAMINANTS

- Heavy Metals

FDA only **suggests** the big four (Lead, Mercury, Arsenic and Cadmium) be monitored

How about the rest such as *barium, aluminum, antimony, palladium, platinum, xs copper, xs chromium, xs selenium?*

*Ask what is tested for in the supplements you buy*

## PURITY FROM PESTICIDES, FUNGICIDES ETC.

- Herbs, fruits, vegetables, need to be tested for sure

- Other non-plant based materials could have easily become contaminated with a pesticide chemical or processing chemical

*Are raw materials or finished products tested for these pesticide residues and processing chemicals?*

*Feel free to ask supplement companies this question*

## ASK FOR PROOF

- Ask for testing protocols, certificates of analysis, lab equipment used etc.
- If not required to supply proof, all the companies will indicate that their products are thoroughly tested.
- Words are cheap. Lab equipment and product testing is expensive.

## PURITY FROM ALLERGENS

- US Dept. of Agriculture requires that if a product contains any of the following, it must be declared on the label:

*— Milk-Egg-Fish-Shellfish-Tree Nuts-Peanuts-Wheat-Soybeans*

In the case of fish, shellfish and tree nuts, the type must also be listed, ie, flounder, shrimp or crab, almonds, walnuts pecans etc.

## HOW DOES A COMPANY KNOW

- 1. Accept their raw material suppliers word
- 2. Test for these allergens themselves, especially if materials are sourced from logical contaminated places
- 3. Maintain CF, GF, SF, EF- PF facilities and verify suppliers information
- Ask companies if they test or have facilities which don't allow for contamination

## ALLERGEN LIMITS

- Tests are only sensitive to detectable levels so companies may have different standards if they use different methodologies
- Methods are not defined by USDA or FDA
- Only FDA published limit is GLUTEN (20 ppm)

## MICROBIOLOGICAL CONTAMINATION

- 1. Bacteria (E. coli, Salmonella, Staph)
- 2. Yeast Contamination
- 3. Mold Contamination

Should be routinely tested for by all companies

## SUMMARY

- Select products based on your needs and physician recommendations
- Do your homework
- Select the quality attributes important to you as an individual and family
- Ask potential suppliers to make sure they meet your requirements for testing and purity
- Ask them for proof of testing