

## NUTRITIONAL SUPPLEMENTS THE SELECTION PROCESS

### The real basic question to be addressed

How do I decide which supplements I need or my family needs from the thousands that are available?

## THE DIFFICULTY IN SELECTION



What to buy? What do I need?



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

- Its 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 does my family really need?
- **We can't need all of them---SO TRUE**

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

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

## 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 SHOULDN'T NEED SUPPLEMENTS

- This may be somewhat true in a perfect world
- Not true in real life
- Plus, Cooking destroys vitamins and other nutrient types
- Baking boiling and grilling destroy vitamins A, B vitamins, C, D, good flora
- Special needs Kids' diets (chicken and fries)

## SELECTING THE PRODUCT TYPES FOR MY FAMILY

- Sounds straightforward but will take some homework, thought, and reading
1. Many studies you have access to are done by the marketing company on their own product
  2. Nearly none are published in medical journals
  3. Few are repeated
  4. Many are not reproducible
  5. FDA only accepts a few claims---folic acid, fiber, calcium ---Can't rely on these

## 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**

### SELECTING NEEDED PRODUCT TYPES

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

### RECAP OF CRITERIA FOR SELECTION

- Your health and family health
- History/ hereditary
- Eating habits
- Special dietary needs/special needs condition
- Physician recommendations
- **Don't rely on 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. General health |
| 3. Level of Stress   | 7. Special Needs? |
| 4. Pregnant?         | (autism, ADD)     |

### EVALUATE CONTENTS AND FORMULATIONS BASED ON NEED

1. There are no one product magic bullets
2. Can't fit all needed nutrients in one tablet or capsule.

### LOOK FOR SIGNS OF POOR QUALITY

Supplement Facts	
	Amount Per Serving
Vitamin D3	1000 IU
Vitamin E	100 IU
Vitamin C	1000 mg
Vitamin B12	1000 mcg
Vitamin B6	100 mg
Vitamin B3	100 mg
Vitamin B2	100 mg
Vitamin B1	100 mg
Vitamin A	10000 IU
Vitamin K	100 mcg
Vitamin P	100 mg
Vitamin M	100 mg
Vitamin N	100 mg
Vitamin O	100 mg
Vitamin Q	100 mg
Vitamin R	100 mg
Vitamin S	100 mg
Vitamin T	100 mg
Vitamin U	100 mg
Vitamin V	100 mg
Vitamin W	100 mg
Vitamin X	100 mg
Vitamin Y	100 mg
Vitamin Z	100 mg
Vitamin AA	100 mg
Vitamin BB	100 mg
Vitamin CC	100 mg
Vitamin DD	100 mg
Vitamin EE	100 mg
Vitamin FF	100 mg
Vitamin GG	100 mg
Vitamin HH	100 mg
Vitamin II	100 mg
Vitamin JJ	100 mg
Vitamin KK	100 mg
Vitamin LL	100 mg
Vitamin MM	100 mg
Vitamin NN	100 mg
Vitamin OO	100 mg
Vitamin PP	100 mg
Vitamin QQ	100 mg
Vitamin RR	100 mg
Vitamin SS	100 mg
Vitamin TT	100 mg
Vitamin UU	100 mg
Vitamin VV	100 mg
Vitamin WW	100 mg
Vitamin XX	100 mg
Vitamin YY	100 mg
Vitamin ZZ	100 mg
Vitamin AA	100 mg
Vitamin BB	100 mg
Vitamin CC	100 mg
Vitamin DD	100 mg
Vitamin EE	100 mg
Vitamin FF	100 mg
Vitamin GG	100 mg
Vitamin HH	100 mg
Vitamin II	100 mg
Vitamin JJ	100 mg
Vitamin KK	100 mg
Vitamin LL	100 mg
Vitamin MM	100 mg
Vitamin NN	100 mg
Vitamin OO	100 mg
Vitamin PP	100 mg
Vitamin QQ	100 mg
Vitamin RR	100 mg
Vitamin SS	100 mg
Vitamin TT	100 mg
Vitamin UU	100 mg
Vitamin VV	100 mg
Vitamin WW	100 mg
Vitamin XX	100 mg
Vitamin YY	100 mg
Vitamin ZZ	100 mg

### BEWARE OF ALL INCLUSIVE CLAIMS



### EXAMPLE



### IMMUNE SUPPORTING SUPPLEMENTS

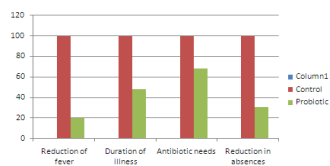
1. Extra Zinc
2. Extra Vitamin C
3. Extra Selenium
4. Extra A, D, and E
5. Herbals such as Astragalus, Elderberry, Olive Leaf, Turmeric, Quercetin
6. Beta Glucan, Colostrum
7. What works for you or given individual
8. Probiotics (also gastrointestinal)

### RECENT PROBIOTIC STUDIES

#### PROBIOTICS AND IMMUNITY

- Recent double blind placebo controlled study by DANISCO in conjunction with School of Public Health U. of Texas and Tongi Univ. Shanghai, China showed remarkable results
- 326 Children 3-5 years of age for six months

### ILLNESS IMPROVEMENT WITH PROBIOTIC



### GASTROINTESTINAL AIDS and DIGESTIVE AIDS

1. Probiotics
2. OTC or Rx Drugs (Antacids, antifungals, antibacterials, Miralax)
3. Herbal antibacterials or antifungals, yeast killers
4. MCT Oil
5. Digestive Enzymes

### SIGNS OF POSSIBLE NEED FOR DIGESTIVE ENZYMES

- Poor food digestion
- Bloating
- Diarrhea or Constipation
- Gas
- Undigested food in stool
- Floating stools (fatty)
- Sensitivity to dairy and grains

### TYPES OF DIGESTIVE ENZYMES

- Animal (pig or cow) based Rx enzymes such as Creon or Viokase are very effective for aiding protein, starch and fat digestion-----but
- These animal bases enzymes destroyed by stomach acid and must be swallowed and also be enteric coated to survive the pH of stomach.
- Many individuals and physicians want a more natural alternative

### PLANT BASED ENZYMES

- The natural alternative
- Not nearly as pH sensitive
- Aid the digestion of all food groups
- Con—Most are derived from *Aspergillus*, a species of mold. Highly sensitive individuals can (though rarely) be sensitive even though highly purified.
- External sensitivities also common.
- Yeast die off type reactions from cellulases

### ESSENTIAL FATTY ACIDS OMEGA 3'S AND 6'S

- Probably beneficial to all
- Adults (cholesterol and heart health-High EPA)
- Special needs kids (learning and brain development-High DHA)
- Do you eat fish a few times per week?
- Flaxseed is an alternative to fish oils
- Are you OK with not seeing short term results?

### ANTIOXIDANTS

Examples:

#### ANTIOXIDANT SUPPLEMENTS

- Vitamin C
- Selenium
- Vitamin E
- Turmeric
- Pycnogenol
- Resveratrol
- Milk Thistle
- Elderberry
- Cranberry
- Acai
- Other select herbs

### FUNCTIONS OF ANTIOXIDANTS

- Quench free radical invaders in the body
- Support detoxification
- Enhance immune response
- Many different types and various body effects
- Can't possibly take all
- Read and select based on your health criteria

### CO ENZYME Q-10

- Deserves its own category—that important
- In special needs it is antioxidant and mitochondrial supporter
- In adults—heart health
- Body produces but diminishes with age.
- Statin drugs deplete CoQ-10 in the body.
- **With statins supplementation becomes a must**

### SPECIAL FORMS OF COQ-10

- Almost all the clinical trial work has been done on plain Coenzyme Q 10 (Ubiquinone). It is all very positive
- Now there are specialty forms getting a lot of advertising.
- Ubiquinol is called the active form because the body has to convert CoQ10 to ubiquinol in order to utilize.

### SPECIAL FORMS EXAMINED

- Literature suggests that as we age, conversion of ubiquinone to ubiquinol may decrease—may be advantageous but need more studies
- Q Sorb—a special lipid based delivery system claiming better absorption
  - Probably true on empty stomach
- Regular CoQ-10 taken with fatty foods probably about the same

### SPECIALTY PRODUCT FOR SPECIAL NEEDS/AUTISM/ADD/PDD

- Behavioral/Social Skills/Language/Mood
  - a) DMG or TMG
  - b) High B-6 or P5P
  - c) GABA
  - d) Carnosine
  - e) alpha Ketoglutaric acid
  - f) Activated charcoal
  - g) Inositol
  - H) b-vitamins

### SPECIALTY

- Biochemical/pathway issues
  - a) Magnesium Sulfate Cream
  - b) Folinic Acid/Folic acid/5 MTHF
  - c) Sleep issues (melatonin, taurine)

### AMINO ACIDS

- Individual or specific such as Tauine for calming and/or sleep
- Total profile amino acid blends for diets poor in protein content or failure to thrive situations
- Glutamine for gut inflammation

### TWO BASIC CONSIDERATIONS

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### PRICE DOES NOT NECESSARILY DETERMINE QUALITY

- Sales and marketing costs usually escalate price
- TV advertisements usually mean higher \$
- Quality testing is very expensive however especially now that all companies under new GMP's
- A lot of advertising is misleading

### PRODUCT QUALITY

- 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:
  - a) In a base of
  - b) Also containing:
  - c) Very small potencies when substantial doses needed (mcg vs. mg)
  - d) Probiotics which don't declare "colony forming units"
  - e) Elemental mineral values, NOT THE SALT
    - 10 mg. Zinc Picolinate
    - 10 mg. Zinc (Picolinate) or
    - 10 mg. Zinc (from Picolinate)

### PURITY

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

### THINK OF THE ORIGIN

- Materials come from all over the world
- Remember the lead paint on Mattel toys?
- Remember the Cadmium in the Jewelry?
- Remember the antimony in the Stevia?

### THINK OF WHERE MADE

- Materials in supplements can come from facilities that make other ingredients for other types of products
- What chemicals and solvents are used in these other types of products?
- Could the facility use pesticides and harmful chemicals?

### 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

#### RECALLS FOR BACTERIAL CONTAMINATION

1. Peanuts and products for Salmonella
2. Numerous beef and turkey products for E. Coli.
3. Walnuts for E. Coli
4. Slim Fast for misc. pathogenic bacteria

\*\*\*This can happen in nutritional supplements

#### 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