



# What's Food Got to Do With It?

LDA of Georgia and Kids Enabled  
Recipient of LDA Healthy Children Mini-Grant 2009 & 2010

Presented by

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**Thank You LDA Healthy Children Project  
Awarded 2009 & 2010 Mini-Grant to LDA of Georgia  
and Kids Enabled**

In keeping with our mission to serve families of children with learning differences, Kids Enabled teamed with the Learning Disabilities Association of Georgia to inform families of the significant personal risk to children from environmental toxins in our everyday lives. In 2009 a two-part article was published in the Kids Enabled magazine to provide information to help parents identify and prevent and/or reduce toxins that impact learning in their children's lives. In 2010 Kids Enable will continue this mission through publication of another article (online) and through workshop presentations to schools and community groups.



## Objectives

- **Make the connection between neurotoxins, brain function, cognition, and behavior**
- **Describe how neurotoxins impact or impair learning and behavior**
- **List the most common neurotoxins in your food, water, and home**
- **Recognize ways to reduce exposure to neurotoxins in your diet, water, and home**
- **Understand the risks associated with ingestion of neurotoxins in foods**
- **Recognize the foods highest and lowest in pesticide residue**
- **Name at least 3 types of fish/seafood that are considered “safe-to-eat”**
- **Identify at least one change that your family can make immediately!**



## **Honey, our diet is killing the kids...!**

- Obesity**
- Heart Disease**
- Cancer**
- Stroke**
- Diabetes**
- Liver Diseases**





**THE NEW  
"I'M NOT RESPONSIBLE FOR MY OWN HEALTH"  
PYRAMID.**





## **Making the Connection: Environment - Genetics - Cognition- Behavior**

“We all have hundreds of chemicals in our bodies today that didn’t exist a few decades ago. And we are seeing increases in learning and development disabilities as well as many other chronic diseases”

*-Elise Miller, Executive Director of the Nonprofit Institute for Children’s Environmental Health*

# Babies are coming into this world pre-polluted with toxic chemicals.



When the Environmental Working Group tested the umbilical cord blood of 10 minority American newborns nearly 300 chemicals, including BPA, perchlorate, fire retardants, lead, mercury, and PCBs were found

Ken Cook, President Environmental Working Group and  
EWG Action Fund

[www.ewg.org](http://www.ewg.org)

# How the Brain Works



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**Learning disability (LD):** a neurological disorder that affects the brain's ability to receive, process, store and respond to information.

The term learning disability is used to describe the seeming unexplained difficulty a person of at least average intelligence has in acquiring basic academic skills. These skills are essential for success at school and work, and for coping with life in general.

LD is *not a single disorder*. It is a term that refers to a group of disorders.



# **Nutrition Therapy for Children with Learning Differences, Sensory Integration Disorder, or Picky Eaters and Problem Feeders**

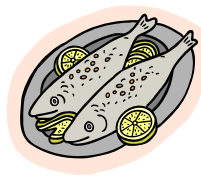
- **Assess/address nutritional status and related conditions:**
  - **Food Allergies or Intolerances**
  - **Eczema**
  - **Gastro-Intestinal Disturbances**
  - **Restricted/Self-Limiting Food Intake**
  - **Sensory Dysfunction: Food and Texture Aversions**
  - **Cravings: Food and Pica**
- **Enhance and support brain structure and function**
- **Maximize cognitive ability**
- **Treat sub-clinical nutritional deficiencies**
- **Enhance the immune system**
- **Promote the healing of the gastrointestinal tract**
- **Encourage intake of a balanced, varied diet**



# Most Common Food Allergens

## The Top Eight:

- Wheat
- Peanuts
- Tree Nuts
- Milk, cheese, dairy foods
- Gluten-containing grains: wheat, rye, barley, spelt, \*oats
  - \*Most contain gluten secondary to cross-contamination
- Eggs
- Soy
- Fish and Shellfish



## Other:

- Corn and corn syrup
- Chocolate

# The Role of the Registered Dietitian

- Provide Practical & Evidence-Based Diet and Nutrition Education
- Develop an Appropriate & Individualized Nutrition Care Plan
- Assist in Dietary Supplement Selection & Use
- Encourage Parent and Provide Resources
- Empower Parents:
  - Guide Parents through dietary changes
  - Assist with meal planning and snack choices
  - Suggest cost-effective ways to adapt to the diet
- Develop a nutrition program that works for the entire family

*\*Food Guide (noun): one that educates, encourages, energizes, and empowers another to make positive dietary changes for optimal wellness.*



# Role and Responsibility of Parents and Children

- **Assume Parental Responsibility:**
  - What to Eat
  - Where to Eat
  - When to Eat
- **Recognize Child's Responsibilities:**
  - How Much to Eat
  - Whether to Eat or NOT
  - Must Eat from the Foods Offered



- Reference: Slatter, Ellyn. "*Child of Mine, Feeding with Love and Good Sense*"



## Recommended Food Intake

Food	Age 2-3	Age 4-6	Age 7-12
Milk/ milk substitute Daily Servings	1/2 cup (4-5)	1/2 - 3/4 cup (3-4)	1/2 - 1 cup (3-4)
Meat, fish, poultry Daily Servings	1-2 oz (2)	1-2 oz (2)	2 oz (3-4)
Vegetables & fruits  Daily Servings	2-3 Tbsp cooked veg Few pieces raw veg 1/2 - 1 small fruit 2-4 Tbsp canned fruit 3-4 oz fruit juice (4-5)	1/2 cup cooked Few pieces 1 small 4-6 Tbsp 4 oz (4-5)	1/2 cup Several pieces 1 medium 1/2 cup 4 oz. (5-6)
Grain Products  Daily Servings	1/2 -1 slice bread 1/4 - 1/2 cup cooked cereal 1/2 - 1 cup dry cereal (3-4)	1 slice 1/2 cup 1 cup (4-5)	1 slice 1/2 - 1 cup 1 cup (5-6)



# Neurotoxins

- Chemicals that destroy, damage, or impair nerve tissue
- Interfere with brain development:
  - Neuron proliferation, migration, differentiation
  - Synaptic connections
  - Neurotransmitters or chemicals that transmit messages
- Even brief interruptions in brain development can have life long effects
- Brain continues to develop throughout adolescence

*Note: Timing can be as detrimental as the amount of the neurotoxin exposure*



**Alcohol, Lead, Mercury, Nicotine = Known Neurotoxins**



## **Most Common Neurotoxins in Food and Water**

- 1. Lead**
- 2. Pesticides**
- 3. Mercury**
- 4. Dioxins**
- 5. Artificial Food Additives**

# Lead

- Abundant and toxic mineral
- According to CDC lead poisoning is foremost environmental health threat to children
- One million children have blood lead levels high enough to reduce intelligence, attention span, cause LD, and cause permanent brain and nervous system damage
- Damages a child's CNS, kidneys, reproductive system
- At highest levels can cause coma, convulsions, death
- Major source:
  - Lead-based paint used in 80% of homes built before 1970
  - Lead in plumbing pipes



## Mercury

The American Academy of Pediatrics advocates that minimizing mercury exposure is essential for optimal child health (especially for pregnant women, women who become pregnant, nursing mothers and young children) because mercury adversely affects many aspects of development, in particular brain maturation.

## Warning! Methylmercury: Disrupts Brain Development

<http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/FoodbornePathogensContaminants/Methylmercury/ucm115662.htm>



# The Dish on Fish

## “Safe-to-Eat:”

- Shrimp  
(Caution: Avoid Asian shrimp)  
Canned Light Tuna
- Catfish
- Pollock
- Salmon

**\*Check local advisories regarding safety of locally caught fish**

## \*Do Not Eat:

- Shark
- Swordfish
- King Mackerel
- Tilefish

**\*Contain high levels of mercury**

## Limit:

- Albacore (white) Tuna (6oz/week)

**Note: For “Tuna Calculator”**

Go to [www.ewg.org](http://www.ewg.org)

# Dioxins

- Use banned in US in 1979, but still present
- Unintentional by-products of industry
- Released into the air and settle into lakes, rivers, ponds; thereby, entering our food chain
- Prenatal exposure can result in IQ deficits
- Foods to Watch:
  - Conventionally produced meat, fish, dairy foods, especially those high in fat



# Pesticides: Organophosphates (OPs)

- Most common class of pesticides
- **Corn, soy**, wheat, various fruits and vegetables
- More prevalent than once thought:
  - Study (2002) of children, aged 2 to 5, found those eating conventionally grown foods had 8.5 the OP residue as children that ate organic foods
  - Study (2006) published in *Pediatrics* linked the OP insecticide chlorpyrifos with delays in learning rates, reduced physical coordination, and behavioral problems in children, especially ADHD
- New studies suggesting OPs are linked to:
  - **ADHD, Obesity, Diabetes, and LD**





## Do You Know What You Are Eating?

- <http://www.youtube.com/watch?v=yh8c9OUti4c&feature=related>
- **Family Farms to Corporate Farms**
- **Cross-Breeding to Genetic Engineering**
- **Crop Rotation to Mass Production**
- **Nature-Driven to Man-Manipulated**
- **Whole Foods to Processed Products**

**What will the future hold?**



# All About Organics

- Organic is a philosophy
  - optimize the health and productivity of interdependent communities of soil life, plants, animals, and people
  - provide conditions that meet the health needs and natural behavior of the animal. Organic livestock must be given access to the outdoors, fresh air, water, sunshine, grass and pasture, and are fed 100 percent organic feed
- USDA defines "organic" as produce is grown without the use of most conventional pesticides, fertilizers made with synthetic ingredients or sewage sludge, bioengineering, or ionizing radiation
- Organic farmers emphasize the use of renewable resources and value the conservation of soil and water

# FAQ about Organics

- How do you know if a food is organic?

- 100% Organic

- Organic = 95%



- \*"Made with organic ingredients" = 70%

- \*Can NOT carry the USDA Organic Label

- Is "natural" the same as organic?

- Is "free-range" or "hormone-free" the same as organic?

- Are organic foods safer, healthier, and more nutritious?





# Prioritize Your Produce

## The Dirtiest Dozen

### Fruits:

- Apples
- Cherries
- Grapes (Imported)
- Nectarines
- Pears
- Peaches
- Strawberries

### Vegetables:

- Celery
- Lettuce
- Potatoes
- Spinach
- Sweet Bell Peppers

## The “Not-So-Dirty Dozen

### Fruits:

- Banana
- Kiwi
- Mango
- Papaya
- Pineapple

### Vegetables:

- Asparagus
- Avocados
- Broccoli
- Cabbage
- Onions
- Sweet Corn
- Sweet Peas



## Food Additives

**Over 3,000 chemicals are added to our food**

- **Categories:**

- **Flavor Enhancers**

- **Colors and Dyes**

- **Sweeteners**

- **Preservatives**

- <http://www.youtube.com/watch?v=4lGtDPG4UfI>



## Concept of “Excitotoxins”

- What is an excitotoxin?
  - **Substances, usually acidic amino acids, that react with specialized receptors in the brain in such a way as to lead to destruction of certain types of neurons**
- Examples: Aspartame, MSG, Glutamate
- FDA considers “excitotoxins” safe
- Some children and adults are sensitive

# The Feingold Diet

## Avoid:

- Synthetic Colors: Artificial color, certified color, synthetic color, color added. FD & C No., or by name, such as tartrazine.
- Synthetic Flavors:
- Preservatives - BHA, BHT & TBHQ
  - BHA : Butylated Hydroxyanisole
  - BHT: Butylated Hydroxytoluene, Vit A Palmitate lowfat, skim milk, shortening, lard, bee & chicken fat, oil, gum base
  - TBHQ -Tertiary Butylhydroquinone
- Artificial Sweeteners: Aspartame

Temporarily removes salicylate foods as these may be problematic

# Foods with Salicylates

- Almonds
- Apples
- Apricots
- Berries
- Cherries
- Cloves
- Coffee
- Currants
- \*Aspirin
- Grapes/Raisins
- Nectarines
- Oranges
- Oil of Wintergreen
- Peaches
- Peppers: Bell or Chili
- Tangerines
- Tea
- Tomatoes



# Do Elimination Diets Work?

- Yes, in some children....adults, too!
- Discuss with your Pediatrician or Registered Dietitian





## What You Can Do

### 1. Begin with Clean Water:

- Have your home water tested for lead
- Discuss lead testing with your pediatrician
- Filter drinking water
- Filter shower water
- Do not dump hazardous household products down the sink





## What You Can Do

### 2. Clean up the beverages you and your family drink:

- Look for beverages that are not artificially colored, or that use natural sources of color (beet juice).
- Dilute “regular” drinks rather than opt for low-calorie artificially sweetened drinks





## What You Can Do

3. **Focus on whole plant foods:** whole grains, fruits, vegetables, beans, nuts and seeds
  - Eat “real” foods, not food products:
    - organic apple instead of apple juice
    - whole grain bread instead of white bread
  - Buy local produce
  - Beware of imported produce and foods, especially from Asia, and read the fine print



## What You Can Do

### 4. Employ Grocery Shopping Strategies:

- Shop the perimeter of the store
- Look high and look low
- Select foods with short ingredient lists
- Back to basics, not boxed mixes
- Choose real over artificial ingredients, especially artificial sweeteners, in snack foods

Possible Alternatives:

**Stevia**

**Honey**

**Agava**



## Favorite Kid's Crackers

MADE WITH WHOLE GRAIN WHEAT FLOUR, UNBLEACHED ENRICHED WHEAT FLOUR [FLOUR, NIACIN, REDUCED IRON, THIAMIN MONONITRATE (VITAMIN B1), RIBOFLAVIN (VITAMIN B2), FOLIC ACID], CHEDDAR CHEESE [(PASTEURIZED CULTURED MILK, SALT, ENZYMES), ANNATTO], VEGETABLE OILS (CANOLA, SUNFLOWER AND/OR SOYBEAN), CONTAINS 2 PERCENT OR LESS OF: SALT, YEAST, AUTOLYZED YEAST, SPICES, LEAVENING (BAKING SODA, MONOCALCIUM PHOSPHATE) AND ONION POWDER

Cheddar



ORGANIC WHEAT FLOUR, ORGANIC EXPELLER PRESSED VEGETABLE OIL (SAFFLOWER AND/OR SUNFLOWER), SALT, ORGANIC CHEDDAR CHEESE (PASTEURIZED MILK, CHEESE CULTURE, SALT, ENZYMES), YEAST EXTRACT, ORGANIC PAPRIKA, ORGANIC ANNATTO EXTRACT FOR NATURAL COLOR, ORGANIC GROUND CELERY SEED, ORGANIC ONION POWDER, YEAST.





## What You Can Do

### **4. Prioritize Organics:**

- Produce
- Dairy Foods
- Meats and Poultry

### **5. Choose low-fat meats and dairy foods**



## What You Can Do

### **6. Eat two servings of “safe” fish weekly**

- Salmon: excellent source of omega-3s (DHA and EPA)
- American Heart Association recommends eating fish rich in omega-3 fatty acids twice a week
- DHA is important for cognition
- EPA is associated with mood
- Check with Pediatrician or Registered Dietitian regarding Fish Oil Supplements
- For More Information:
  - <http://www.ific.org/publications/brochures/fishbroch.cfm>

**Avoid fish containing high-mercury levels**



**7. Eat up to 9 servings of vegetables and fruit daily;  
make whole grains a priority.**

**8. Get dirty:**

- Take up gardening as a family or
- Join a Community-Support Agriculture (CSA) group or
- Begin a community garden



## **In the Kitchen:**

- 8. Store food in glass, not plastic containers; purchase stainless steel water bottles rather than plastic.**
- 9. Remove and replace non-stick or Teflon cookware with glass or cast iron.**
- 10. Purchase “Green” cleaning products - begin with your kitchen cleaners - for Make-Your-Own Cleaners visit [www.thedailygreen.com](http://www.thedailygreen.com)**



## **Beyond Food and Water.... Common Neurotoxins in Your Home**

- **Air**
  - Radon
  - Carbon dioxide
  - Formaldehyde
- **Belongings: Furnishing, Clothing, Products**
  - BFRs
  - Arsenic
  - Plastics
  - Phthalates

# The Toxic 10

1. Formaldehyde
2. Radon
3. Lead
4. Carbon Monoxide
5. Arsenic
6. Brominated fire retardants (BFRs)
7. Plastics
8. Phenols
9. Phthalates (plasticizers)
10. Pesticides





## What You Can Do

You can makeover your family's diet  
one food at a time.....

You can improve your home environment and health  
through air and water testing and developing a plan  
to remove neurotoxins.....

Begin by exchanging one potentially toxic product  
for a non-toxic product at a time



## **For Our Kids**

- Encourage healthy eating habits
- Create and nurture a healthy home
- Take one positive step at a time!

**Our bodies feel strong. Our homes are cleaner.  
Most importantly, our kids will have a  
promise for a healthier future!**