



How Nutrition affects the Brain

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The Mental Health Problem

- ◆ 13 percent of kids ages 3-17 have at least one mental health disorder₁
- ◆ 8 percent of kids ages 3-17 have been diagnosed ADD/ADHD - that's 5 million kids as of 2008₂
- ◆ 4.3 percent of teenagers ages 12-17 have been diagnosed with depression₃
- ◆ 4 percent of kids ages 3-17 have been diagnosed with Autism₄
- ◆ Between 3 and 5 percent of all infants born each year are or will be affected by neurodevelopmental disorders₅

Why is Nutrition Important?

- Behavior Development
- Decreased aggression and violence
- Early exposure to drugs/alcohol and early trauma results in significant changes to insulin receptor sites.
 - Translation: major mood swings and meltdowns when blood sugars drop.

Is There a Food/Behavior Link?

American Academy of Pediatrics published a research study on May 18, 2010 linking ADHD to pesticides (organophosphates) found on most common fruits and vegetables.

Is There a Food/Behavior Link?

- ◆ In 2001, **73** million pounds of organophosphates were used in both agricultural and residential settings.
- ◆ The US Pesticide Residue Program Report in 2008 found detectable concentrations of organophosphates in
 - ◆ 28% of frozen blueberries
 - ◆ 25% of strawberries
 - ◆ 19% of celery



Is there a Food/Behavior Link

- ◆ Chlorine and Fluoride are found in our water supply
- ◆ The EPA stated fluoride is a contaminant
- ◆ The fluoride used in water fluoridation programs is an industrial waste product.
- ◆ “More than 90% of the fluoridated US municipal water supplies use hydrofluorosilicic acid or its sodium salt as a fluoridating agent. These chemicals are highly toxic by-products of phosphate fertilizer production.”

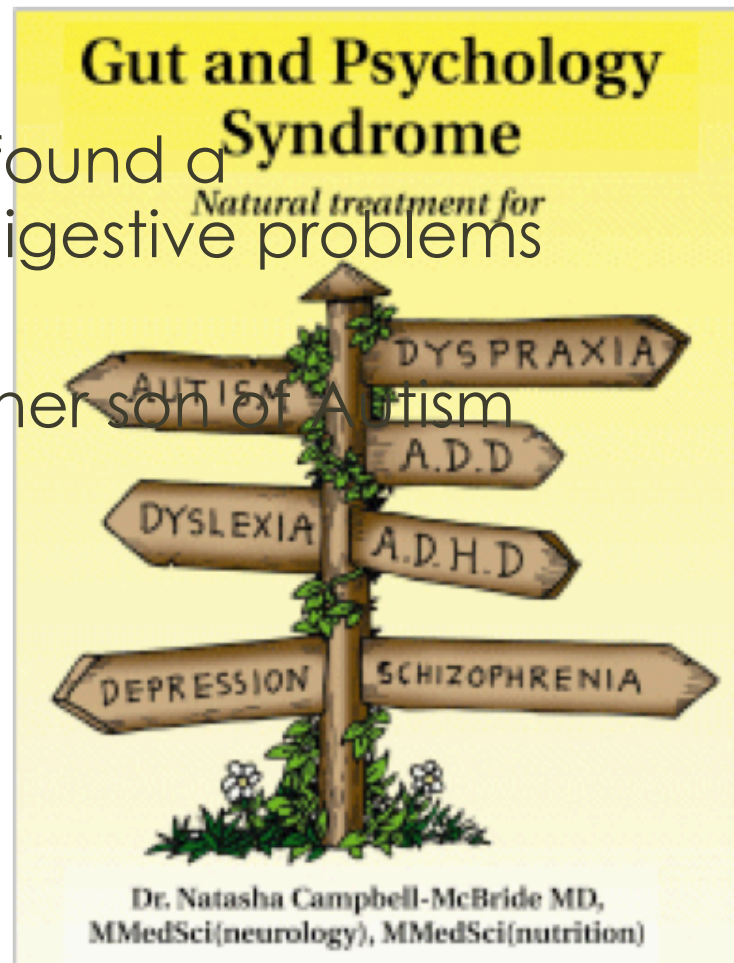
Is there a Food/Behavior Link

Adverse health affects from fluoride exposure

- ◆ Hyperactivity
- ◆ Learning disabilities
- ◆ Cancer
- ◆ Hypothyroidism
- ◆ Dental fluorosis (permanent discoloration of teeth) in children
- ◆ Arthritis
- ◆ Kidney disease
- ◆ Gastrointestinal disorders
- ◆ Birth defects
- ◆ Lowered immunity

Is there a Food/Behavior Link

- ◆ Dr. Campbell-McBride found a connection between digestive problems and the brain.
- ◆ She successfully cured her son of Autism



GAPS - Gut and Psychology Syndrome - Dr. Campbell-McBride

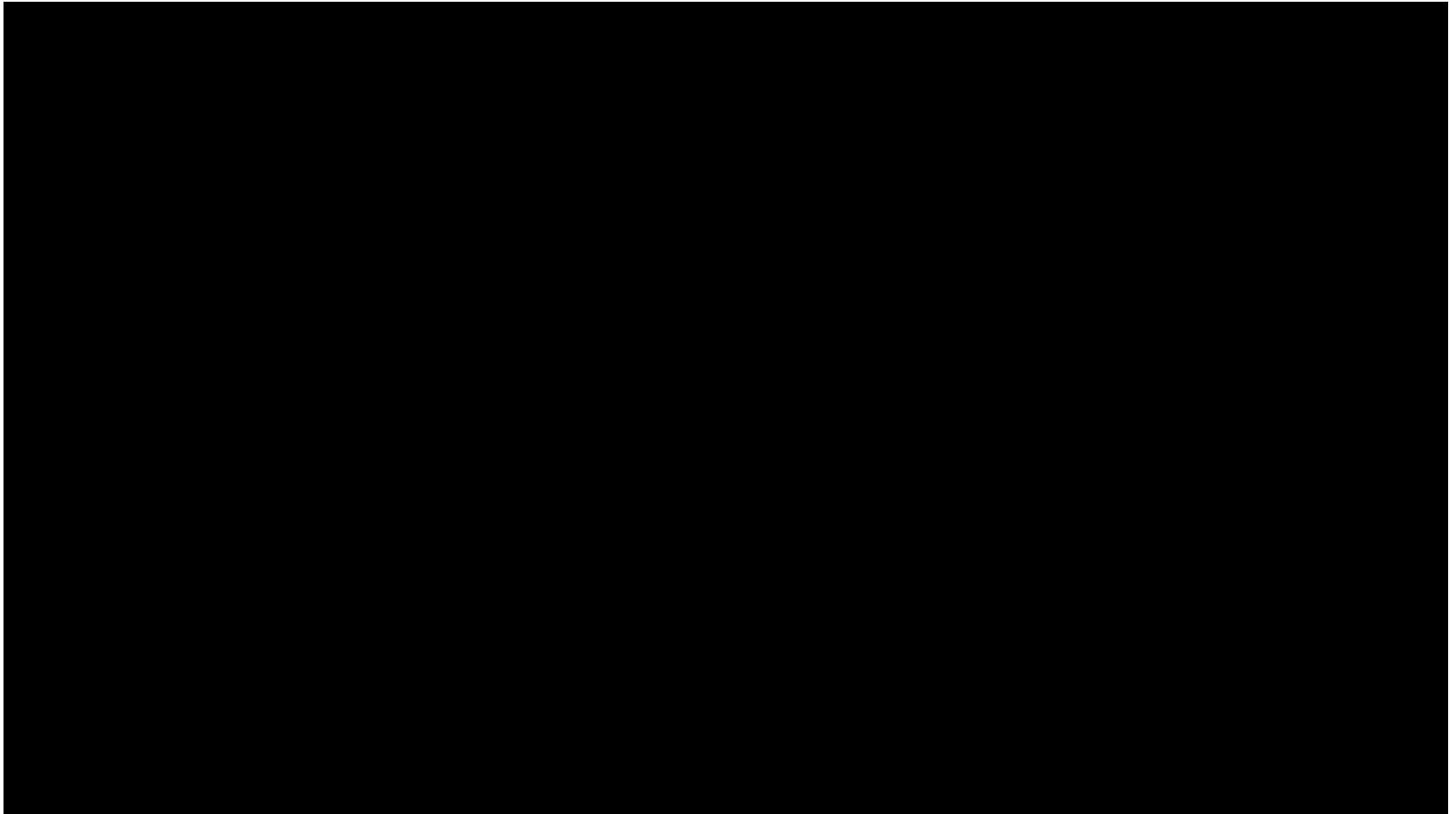
- ◆ Most people with a mental health diagnosis have unhealthy inner ecosystems where there is an overgrowth of bad bacteria, yeast and fungus.
- ◆ These people cannot digest food properly.
- ◆ This means a large number of neurotoxins move from their intestines to the brain. These neurotoxins can cause depression and other mental health disorders.
- ◆ Sources of neurotoxins come from processed foods like sugar, flour and milk products.
- ◆ Many people who suffer from depression, ADD, ADHD and other mental health disorders also have an overgrowth of yeast called *Candida albicans*. *Candida* feeds on glucose from sugar.
- ◆ So for many people with digestive problems, consuming sugar is like consuming alcohol.
- ◆ People with mental health disorders also can't properly digest casein and gluten. "Their bodies turn these proteins into substances similar to opiates like morphine and heroin."

GAPS

What other foods/products can damage the gut?

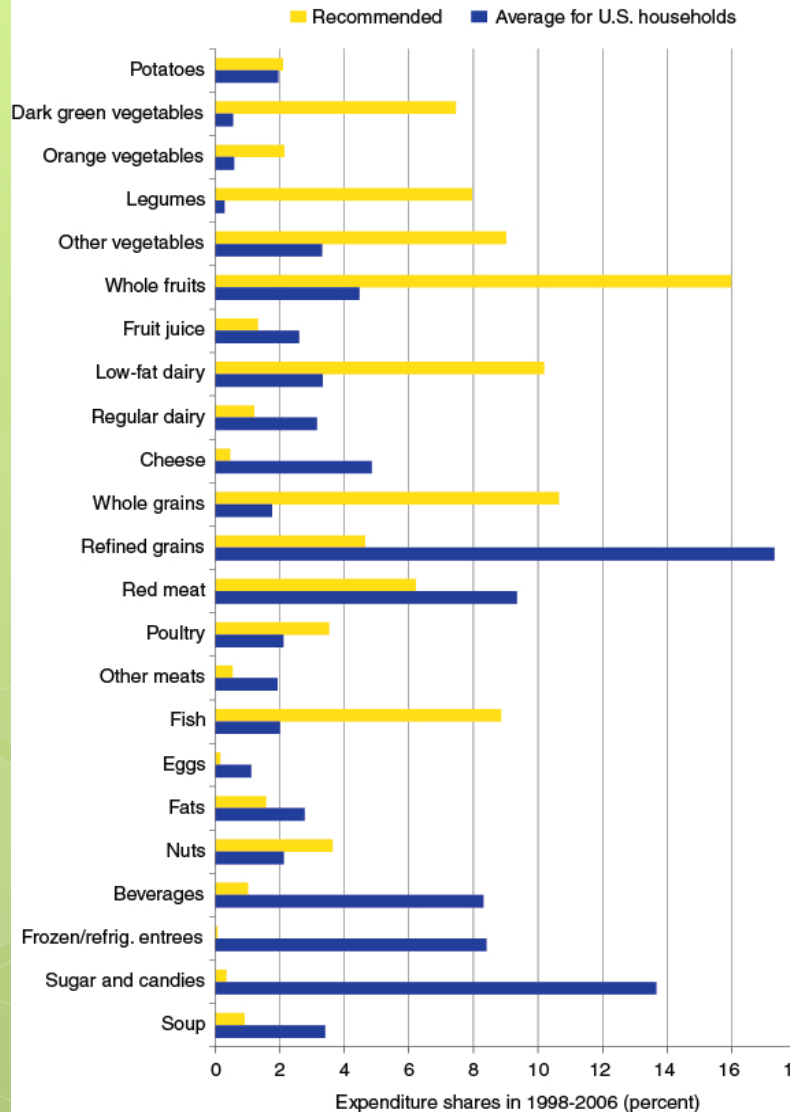
- ◆ Antibiotics
- ◆ Over-the-counter pain killers
- ◆ Steroids
- ◆ Birth control pills
- ◆ Diets full of sugar and proce
- ◆ Stress







At-home spending patterns of U.S. households are not in sync with USDA food plan recommendations



Source: USDA, Economic Research Service calculations using Nielsen Homescan data and USDA, Center for Nutrition Policy and Promotion's Liberal food plan.

Common Nutritional Deficiencies for USA kids

- **Calcium** – bones and teeth
- **Iron** – slow cognitive and social development; decreased immunity
- **Vit C** – low immunity
- **Zinc** – delayed growth and low immunity

Foods High in Calcium

- White beans
- Canned Salmon
- Dried Figs
- Kale
- Black-eyed Peas
- Sesame Seeds
- Almonds
- Oranges
- Turnip Greens
- Milk/Cheese

Foods High in Iron

- Red Meat
- Pork
- Poultry
- Seafood
- Beans
- Dark leafy vegetables (spinach, kale, collard greens, etc.)
- Dried fruit such as raisins

Foods High in Vitamin C -

In the last 25 years the level of Vitamin C deficiency has gone from 3% to 5% to 20%.

- Bell peppers
- Dark leafy greens
(are you seeing a pattern here)
- Kiwis
- Broccoli
- Berries
- Citrus fruits
- Tomatoes
- Peas
- Papayas

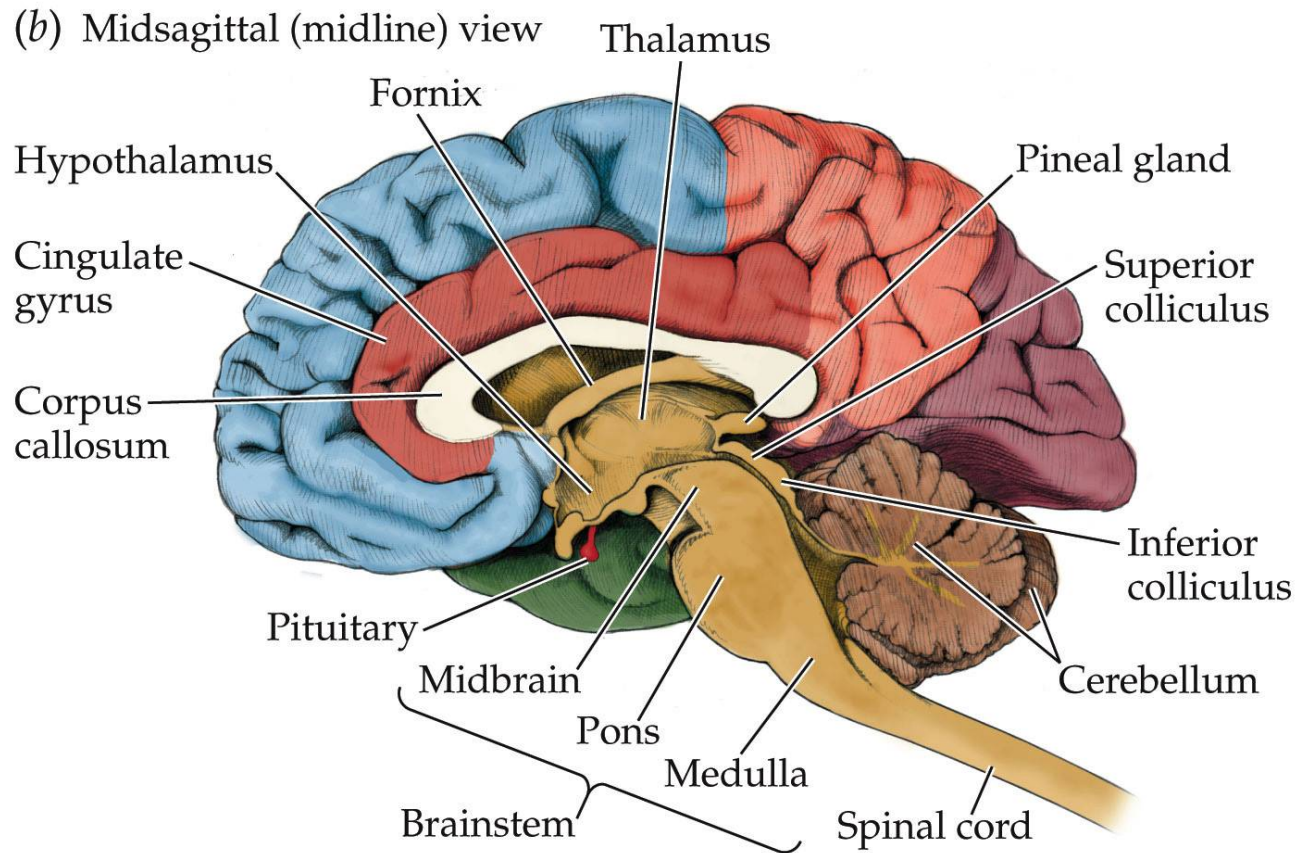
Foods High in Zinc

- Seafood (oysters)
- Beef and Lamb
- Spinach
- Pumpkin Seeds
- Mushrooms
- Nuts (particularly cashews)
- Cacao and cocoa
- Pork and Chicken
- Beans

Top Foods to Increase Immunity by Dr. Fuhrman

- Greens, onions, mushrooms, berries, beans, seeds
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GOMBBS



Biological Psychology 6e, Figure 2.12 (Part 2)

Pituitary Gland

- Needs manganese, magnesium and vitamin E
- Pituitary disease means can't regulate carb metabolism and can't break down proteins and fats = inadequate production of cortisol
- Chronically Low cortisol =
 - Carb intolerance
 - Water retention
 - Fatty tissue accumulation
 - Weight gain
 - Increased risk of Type 2 diabetes

Foods High in Magnesium, Manganese and Vitamin E



Food Allergies

- ◆ Food allergy is estimated to affect 11 million Americans, approximately 5 million are children.
- ◆ Common foods people are allergic to:
 - ◆ Eggs
 - ◆ Milk
 - ◆ Nuts
 - ◆ Seafood
 - ◆ Wheat

Food Allergy Side Affects

- ◆ Skin rashes
- ◆ Intestinal diseases
- ◆ Sudden allergic reactions with hives or breathing problems
- ◆ Headaches
- ◆ Temper tantrums

What Can You do?

Does Your Child Have a Food Allergy?

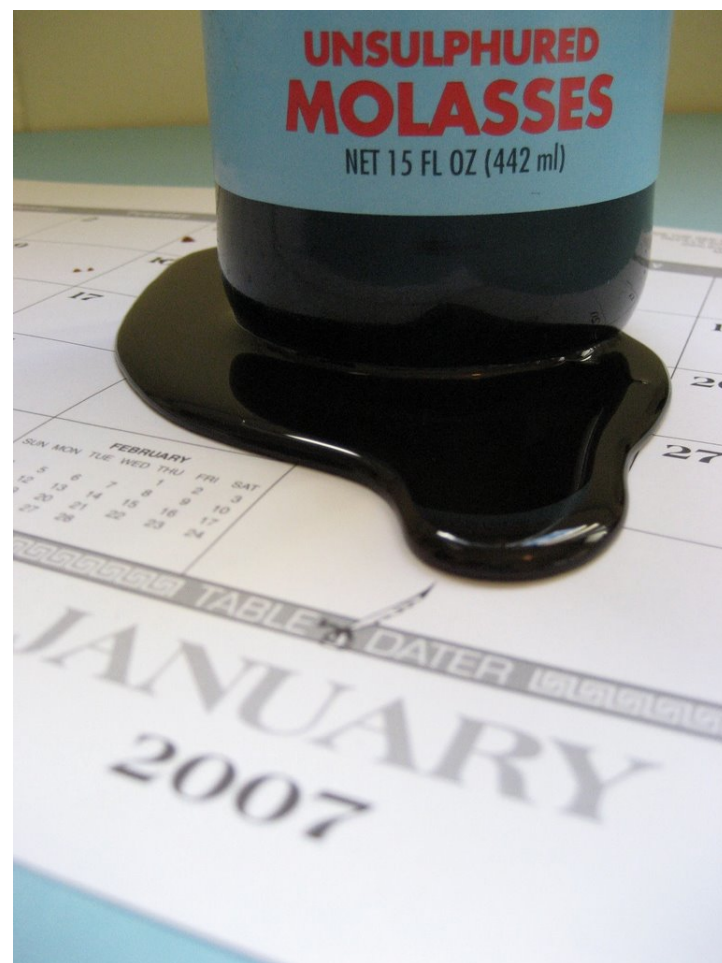
- ◆ You may have noticed your child's behavior worsens after eating chocolate, red dye or other foods.
- ◆ Best way to determine if your child has a sensitive or allergy to a food is the common foods elimination diet.
- ◆ Foods to avoid on the diet are: chocolate, cocoa and cola; cane and beet sugar; artificial colorings; milk; corn; wheat and rye; eggs; citrus fruits; and legumes.

What Can You do?

Common Foods Elimination Diet

The following ingredients are derivatives of cane and beet sugar

- ◆ Sucrose
- ◆ Brown Sugar
- ◆ Natural sweetener
- ◆ Molasses
- ◆ Confectioners' sugar
- ◆ Raw sugar
- ◆ Turbinado Sugar
- ◆ Cane



What Can You do?

Common Foods Elimination Diet

These ingredients are derivatives from milk

- ◆ Nonfat dried milk solids
- ◆ Evaporated milk
- ◆ Condensed milk
- ◆ Lactose
- ◆ Whey
- ◆ Cream
- ◆ Cheese
- ◆ Butter
- ◆ Margarine
- ◆ Casein
- ◆ Calcium caseinate
- ◆ Sodium caseinate
- ◆ Lactalbumin
- ◆ Curds
- ◆ Yogurt
- ◆ Lactate

What Can You do?

Common Foods Elimination Diet

These ingredients are derivatives of Corn

- ◆ Syrup
- ◆ Dextrose
- ◆ Cornstarch
- ◆ Dextrine
- ◆ Starch
- ◆ Glucose
- ◆ Hominy
- ◆ Fructose
- ◆ Grits
- ◆ Shortening
- ◆ Sugar
- ◆ Vegetable Oil
- ◆ Corn sweeteners
- ◆ Maize
- ◆ Sweeteners
- ◆ Malt

What Can You do?

Common Foods Elimination Diet

Wheat and Rye - also known as these ingredients

- ◆ Flour
- ◆ Durum flour
- ◆ Wheat flour
- ◆ Semolina
- ◆ Whole wheat flour
- ◆ Gluten flour
- ◆ Wheat germ
- ◆ Graham flour
- ◆ Monosodium glutamate (MSG)
- ◆ Bran
- ◆ Spelt
- ◆ Enriched flour

What is Processed Food?

- ◆ “If it’s boxed, bagged, canned or jarred and has a list of ingredients on the label, it’s processed.”
- ◆ Foods have been altered from their natural state to processed for convenience.
- ◆ Americans spend about 90% of their food budget on processed foods.

Are Processed Foods Safe?

- ◆ “Companies are not legally required to list all of their ingredients due to trade secrecy laws.”
- ◆ Up to 99% of ingredients in any product can be withheld from a label if they categorize it as “inert” or “other.”
- ◆ A total of 2,500 substances are added to processed foods.

Are Processed Foods Safe?

- ◆ “Synthetic food additives have been linked to restlessness, irritability, aggressiveness, and excitability in young children.”

Are Processed Foods Safe?

- ❖ Artificial and Natural flavoring are both man-made chemicals added to food, to give it taste.
- ❖ Color additives are added to everything. At major fast food chains they are added to soft drinks, salad dressings, cookies, condiments, chicken dishes, and sandwich buns.
- ❖ Carmine is a food dye derived from ground-up red beetles. You'll find it in yogurt, juice drinks, candies and a long list of other products, even some "natural" products and cosmetics.
- ❖ FD&C Red Dye #40 is derived from coal.
- ❖ The American flavor industry has annual revenues of about \$1.4 billion.
- ❖ Approximately 10,000 new processed foods are introduced every year.

Reading Labels

Sample label for
Macaroni & Cheese

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

Calories 250 Calories from Fat 110

% Daily Value*

Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

* Percent Daily Values are based on a 2,000 calorie diet.
Your Daily Values may be higher or lower depending on
your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

① **Start Here** →

② **Check Calories**

③ **Limit these
Nutrients**

④ **Get Enough
of these
Nutrients**

⑤ **Footnote**

⑥

**Quick Guide
to % DV**

• 5% or less
is Low

• 20% or more
is High

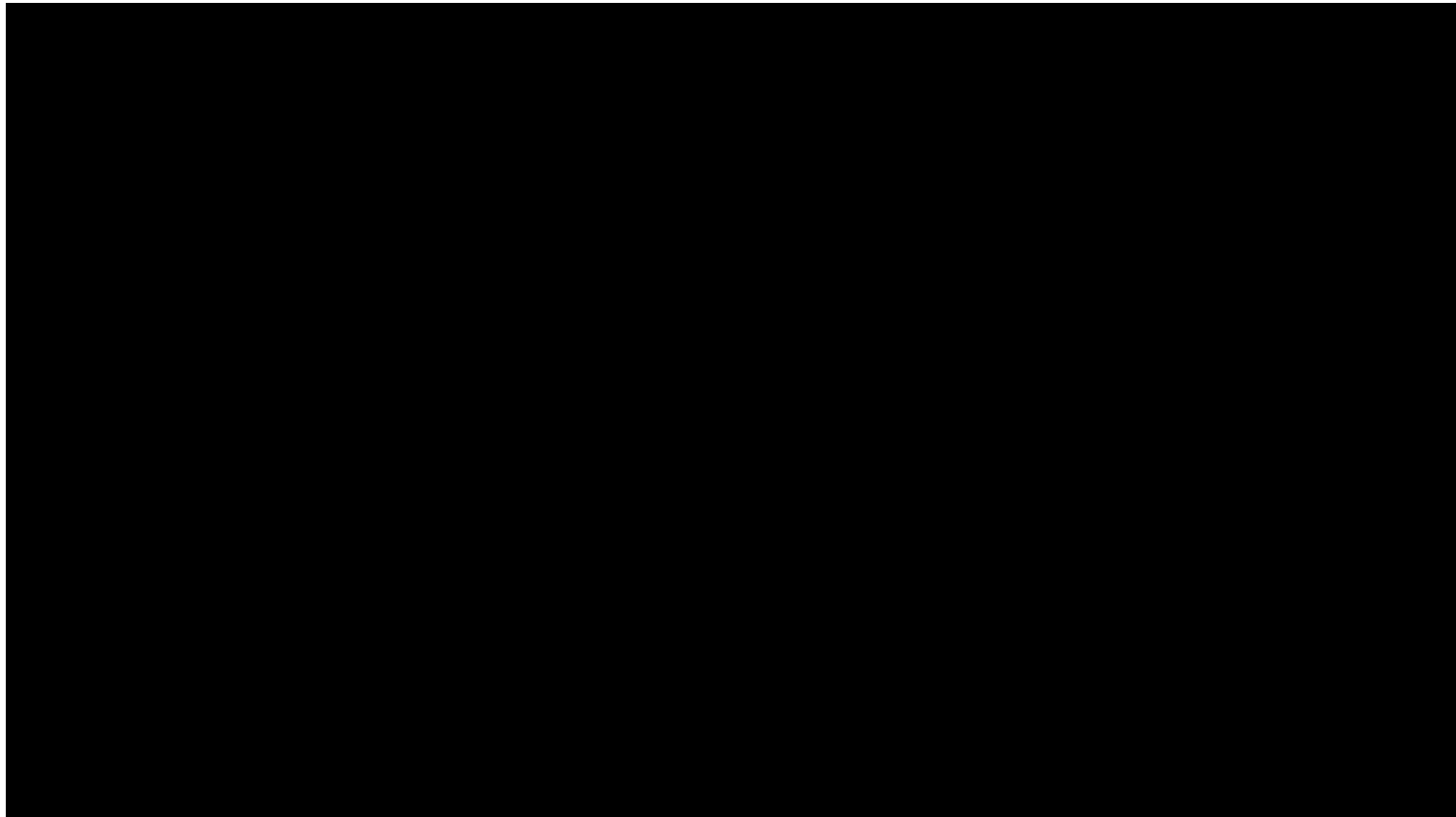
Grocery Shopping

- ◉ Shop around the edges
- ◉ Buy what's in season
- ◉ Find out when produce is delivered to the grocery store
- ◉ Shop at Farmer's Markets
 - ◉ www.dallasfarmersmarket.org
 - ◉ www.cowtownfarmersmarket.com
 - ◉ Downtown Arlington's Farmer's Market

So what do you do?

- Routine, routine, routine – same times for breakfast, lunch, dinner and snacks
- Include protein and carbs at each meal/snack
- Hydrate, hydrate, hydrate

What if the kids won't eat the good food?



Short-cuts to Getting Kids to Eat Good Food

- For most children it takes 10-15 times introducing the food before the child will eat it. For traumatized children – this could take longer.
- Sit down at the table with your children at meal time
- Use “taste plates” or “no-thank you plates”
- Increase your child’s appetite
 - Exercise before meals
 - Several smaller meals throughout the day
 - Offer drinks after the meal or toward the end if your child tends to fill up on fluids

Short-cuts to Fixing Healthier Meals - Breakfast

- ◆ Eggs with vegetables
- ◆ Greek or non-dairy yogurt with berries and nuts
- ◆ Whole grain bread with nut or seed butter, berries and cocoa
- ◆ Smoothie (kid approved recipe) – add blueberries if kids don't like the green color.
 - ◆ Banana
 - ◆ Carrot
 - ◆ Handful of Spinach
 - ◆ Strawberries
 - ◆ Protein powder (avoid Whey, use plant-based) or Hemp Seeds (for added protein)
 - ◆ Water/coconut water/milk/non-dairy milk to desired thickness
 - ◆ Nut or Seed butter

Short-cuts to Lunches

- Make the night before and with your child if possible
- Wrap lunch meat/hummus/bean dip with shredded carrots (can buy at the store) and shredded cabbage in whole wheat tortilla or romaine lettuce/blanched collard greens
- Buy peanut/almond/cashew butter ground from the nuts only – no added oils
- Spread pizza sauce on toasted bread/english muffin, add cheese or soy cheese, put under broiler for a few minutes and wrap in wax paper
- Always include fresh fruit and nuts/seeds

Short-cut to Lunches



- ◆ Use leftovers.
- ◆ Include almonds (known for their calming properties) and popcorn for a snack.
- ◆ Include plain unsweetened yogurt or dairy-free yogurt (also very calming) topped with flax seeds and a dash of stevia or honey.
- ◆ Include cut up carrots and celery with hummus.
- ◆ Put cold foods like unsweetened applesauce and cottage cheese in a thermos.
- ◆ Put refried beans in a tortilla with some cheese and wrap the lettuce separately.

Getting Your Kids to Eat More Veggies

- ◆ Add a mixed vegetable medley to meatloaf
- ◆ Boil veggies with pasta and then cover with marinara sauce.
- ◆ Grate carrots into tuna or chicken and stuff in a pita pocket.
- ◆ Make homemade pizza with tortillas. Toss on sliced mushrooms, chopped broccoli, artichoke hearts and/or bell peppers before spreading on the cheese.

Getting Your Kids to Eat More Veggies

Make it fun to eat veggies



Getting Your Kids to Eat More Veggies

- ◆ Make vegetable lasagna. Add spinach, chopped cooked veggies such as zucchini, cauliflower, broccoli, carrots, mushrooms, green beans, etc.
- ◆ Add cooked peas, corn, and carrots to mashed potatoes.
- ◆ Serve vegetable soup with crackers.
- ◆ Puree cooked spinach and carrots and then add small amounts to your ground beef or ground turkey. Shape and grill.

Getting Your Kids to Eat More Veggies

- ◆ Top a baked potato with chopped broccoli and plain non-fat yogurt.
- ◆ Make low-fat zucchini and carrot muffins.
- ◆ Serve “make your own tacos” and have different stations set up with lean ground beef or turkey, sliced tomatoes, shredded lettuce and carrots.
- ◆ Make chicken-vegetable kabobs. Alternate chunks of grilled chicken, peppers, tomatoes, onions, zucchini, and mushrooms on metal skewers.
- ◆ Finely chop cooked broccoli and thoroughly mix into your rice.

Getting Your Kids to Eat More Veggies

- ◆ Turn your kids on to wok cooking and have them assist you with washing and cutting up the vegetables. Try chicken-vegetable stir-fry, beef-vegetable stir-fry, or seafood-vegetable stir-fry. Pour over rice or linguini and pass out the chopsticks.
- ◆ Make a spinach dip with low-fat plain yogurt, low-fat sour cream, and pureed spinach. Have them dip carrots, celery, peppers and zucchini slices. Even if they don't want to dip with vegetables, give them some crackers, at least they'll get the spinach from the dip.

Chocolate Pudding by Terry Walters – Serves 6

- 25 ounces extra firm or firm silken tofu
- 1 tsp vanilla
- Pinch of sea salt
- 2-3 ripe bananas
- 1 cup vegan dark chocolate chips

Wrap blocks of tofu in towels and press to remove excess liquid. In a food processor, blend tofu, vanilla and salt. Scrape sides of bowl and blend again until there are no lumps. Add bananas and blend until smooth.

In a small saucepan melt chocolate, immediately add to tofu mixture and process until combined. Pour mixture in a large serving bowl or individual glasses and refrigerate at least 1 hour to firm and chill.

Tofu Cream by Terry Walters – Serves 6

- 18 ounces extra firm silken tofu
- ¼ cup apple juice
- ¼ cup cashew butter
- 1/3 cup maple syrup
- 1 tsp vanilla
- Pinch of sea salt
- 2 tsp corn starch (non-GMO)
- 3 tbsp almond, coconut or rice milk

Wrap blocks of tofu in towels and press to remove excess liquid.

In a food processor blend tofu until smooth. Scrape sides of bowl and blend again until there are no lumps. Add apple juice, cashew butter, maple syrup, vanilla and sea salt and process until smooth.

Combine milk and corn starch in a small pot. Place over medium heat and whisk continuously until thick (3-4 minutes). Remove from heat, add to tofu and process.

Transfer tofu cream to bowl and refrigerate 1 hour or until cold. Serve with berries or other fruit.

Sesame Almond Balls by Terry Walters – Makes 12-15 balls

- ½ cup toasted sesame seeds
- ½ cup almond butter (or other nut/seed butter)
- ¼ cup toasted sunflower seeds (or other seeds)
- ¼ cup almonds (or other nuts or mixed nuts)
- 4-5 dates
- Optional – add a small amount cranberries, raisins, coconut flakes, etc.

Place ¼ cup sesame seeds in a small bowl and set aside.

In a food processor, combine remaining ingredients and process to form a stiff meal. Form into balls and roll in reserved sesame seeds to coat. Serve immediately or store in airtight container for up to 4 days.

Avocado Chocolate Pudding

by www.choosingraw.com

- 1 ripe avocado
- 8 dates (soaked if necessary) – medjool are great
- ½ tsp vanilla
- 4 tbsp cocoa or 2 tbsp carob powder
- ½ cup water

Place 1st four ingredients in a food processor and blend.

Drizzle water, stopping to scrape the sides if need be, until the mixture resembles a thick chocolate pudding. Continue to mix until creamy and smooth. You can sub dates for stevia or agave.

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