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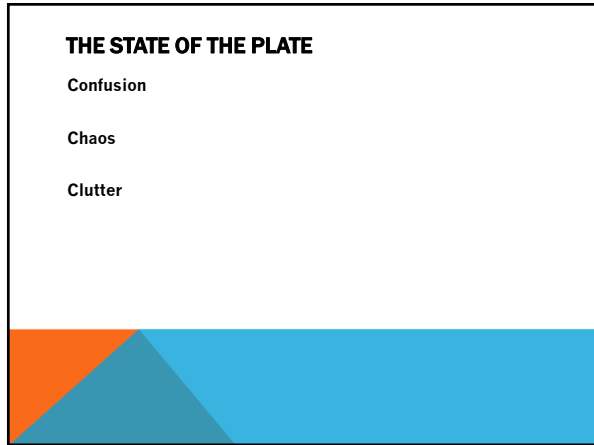
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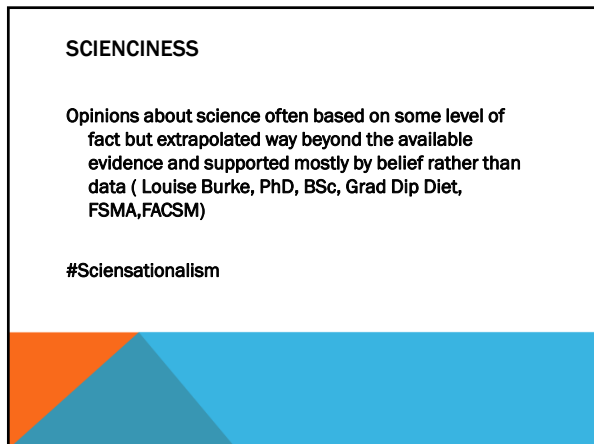
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### CONCERNS

- Food evangelism
- Eating clean
- Food shaming
- Feudies over foodies
- Elimination
- Food waste-too much thrown away, too many in need
- Food fear

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### CLEAN EATING

What does this mean  
Who is driving this? Marketing or science?  
What does clean mean to consumers?

- Uncontaminated
- Transparent

What are the problems with this term?

- Unknown
- Pretentious/food avoidant
- Gimmicky

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### CLEAN LABEL

The flowchart illustrates the 'CLEAN LABEL' trend. It starts with 'Increasing consumers' interest in receiving more information: food sourcing and ingredients', which leads to 'Growing markets for environmental friendly production methods, natural and healthy food'. This is linked to 'Consumers' interest in food components', specifically '>unhealthy, "unfamiliar" and artificial additives/ingredients (i.e. e-numbers)' and '>agfood production methods perceived as "unnatural" (i.e. intensive agriculture)'. The central theme is the 'CLEAN LABEL' TREND, where the industry communicates whether a certain ingredient or additive is present, if the ingredients list is simple (e.g., "free from...", "pure", "short", etc.), if the product is organic, natural, etc. This trend is supported by 'GOALS' (Lack of common definition of 'CLEAN LABEL' foods, Lack of clear picture of factors affecting consumers' preferences for "clean label" food products) and 'AIMS' (Propose a definition of "clean label" foods, Identify the factors that drive consumers' choices for three categories of "clean label" food products: organic, natural and "free from artificial additives/ingredients", Discuss implications for food industry and policy makers, Discuss future research avenues). The source is cited as ASIOLI ET AL. FOOD RES INT 2017 99(P1): 68-71.

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**TRENDS**

- Paleo
- Keto
- Vegan
- Macros
- Food halos
- Whole 30
- Food heros (super foods)
- Getting nutrition info from those that don't know



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**THE LANDSCAPE**

- Unintended consequences of food fear/elimination
- Scapegoating of foods
- Nightshades
- Lectins



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**REALITY CHECK**

- Nutrition is an imperfect science
- Personal research is NOT Science!
- As health professionals, we MUST leave our bias outside the door
- Feelings must be part of the food conversation
- Food is not universally available, accessible and affordable



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**PROCESSED**

A process- not just the food: boiling, freezing, cooking  
Processing decreases the risks of foodborne illnesses  
More benzoate in cranberries than food!

Holes in Swiss cheese made from propionic acid!

“Bad” connotation: foods in a box, can or jar

Acceptable: Protein shakes, bars, Paleo frozen meals



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**GLUTEN**

GF ONLY for those with celiac disease or gluten sensitivity  
Gluten containing foods provide protein, fiber,  
vitamins/minerals- many GF foods ≠nutritionally  
GF ≠ a diet for weight loss  
In some cases, gluten-less rather than gluten free may be a  
better  
GF foods can be pricey and not always tasty



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**WHAT THE SCIENCE SAYS**

Long term reduction in gluten may result in decreased intake of whole grains- which  
are associated with lower cardiovascular risk ( Lebowitz et al, BMJ  
2017;357:j1892)

Whole grains can have a beneficial impact on the microbiome

A gluten free diet can change the gut microbiome composition and alter the activity of  
microbial pathways (Bonder et al, Genome Medicine, 2016; 8:45)



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**DAIRY OR DAIRY FREE**

- Protein
- Mineral content
- Lactose or casein
- Equivalent or expensive swap?



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**BENEFITS OF DAIRY FOODS**

- Protein
- Probiotics
- Vitamins: A, D, Riboflavin, B12
- Potassium
- Convenience- ready to use
- No waste



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**FULL FAT DAIRY**

- Inverse association with cardiovascular disease risk (deOliveira Otto et al AJCN 2012)
- Can help to lower blood pressure (Chie et al AJCN, 2016)
- No increase in LDL cholesterol ( Raziani et al AJCN 2016)
- Dairy fat may reduce the risk of Type 2 diabetes (Ericson et al AJCN 2015)



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### THE TYPE OF FOOD MATTERS

The latest meta-analysis on meat intake and CVD mortality found that:

- The highest category of processed meat consumption had a 18% higher risk of mortality from CVD
- The highest category of processed meat consumption had a 16% higher risk of mortality from CVD
- There was no association between total meat intake or white meat intake and CVD mortality

Abete et al., Br J Nutr. 2014;112(5):762-775




**Dairy and CVD**

The latest meta-analysis on dairy and CVD found:

- An inverse association between dairy intake and CVD and stroke
- No association between dairy intake and CHD

Qin et al., Asia Pac J Clin Nutr. 2015;24(1):96-100




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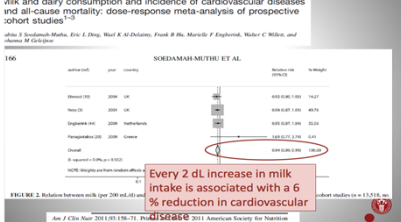
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### DAIRY AND CVD RISK

Milk and dairy consumption and incidence of cardiovascular diseases and all-cause mortality: dose-response meta-analysis of prospective cohort studies

Suredhamahuthu ET AL.



**Every 2 dL increase in milk intake is associated with a 6 % reduction in cardiovascular disease**

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### MILK COMPARISON PER 8 OUNCE GLASS

Milk/*milk*	Calories	Fat(g)	Protein(g)	Calcium(mg)	cost
skim	80	0	8	300	\$0.26
soy	60-110	1.4-4.5	8	450	\$0.50
pea	75	4.5	8	450	\$0.49
hemp	70-140	5	3	300-500	\$0.86
almond	30-90	2.5	1	450	\$0.50
cashew	60	2.5	<1	450	\$0.72
macadamia	50	5	1	450	\$0.99
Hazelnut	110	3.5	2	300	\$0.69
coconut	45-80	4.5	0	450	\$0.57
oat	130	2.5	4	350	\$0.64
rice	120	2.5	1	300	\$0.66
quinoa	70	4.5	2	300	\$0.86

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**PLANT BASED BEVERAGES-CONCERNS**

Protein  
Vitamin D  
Calcium  
Fat

May be an issue for babies, toddlers and young children as well as adolescents



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**SUGAR**

Are we talking fruit, dairy, grains?  
What about honey, agave, raw sugar?  
What are the concerns?  
Added sugar?  
What is realistic?



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**NATURALLY OCCURRING SUGARS**

Fructose- fruits and vegetables

Lactose- milk, cheese

Maltose- grains



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### NUTRITIVE SWEETENERS


Raw sugar, date sugar, coconut sugar

Honey

Molasses

Agave

Maple, barley, brown rice syrups




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### NEW LABEL

Nutrition Facts		Nutrition Facts	
Serving size 2/3 cup (55g) Servings Per Container About 8		8 servings per container Serving size 2/3 cup (55g)	
Amount Per Serving		Amount per serving	
Calories 230	Calories from Fat 72	<b>Calories 230</b>	
% Daily Value*		% Daily Value*	
<b>Total Fat</b> 8g	12%	<b>Total Fat</b> 8g	10%
Saturated Fat 1g	5%	Saturated Fat 1g	5%
Trans Fat 0g		Trans Fat 0g	
<b>Cholesterol</b> 0mg	0%	<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 160mg	7%	<b>Sodium</b> 160mg	7%
<b>Total Carbohydrate</b> 37g	12%	<b>Total Carbohydrate</b> 37g	13%
Dietary Fiber 4g	16%	Dietary Fiber 4g	14%
Sugars 1g		Total Sugars 13g	
<b>Protein</b> 3g		Includes 10g Added Sugars	20%
Vitamin A	10%		
Vitamin C	8%		

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### NON NUTRITIVE SWEETENERS

- Aspartame- Equal/Nutrasweet- 220x sweeter than sugar
- Sucralose- Splenda- 600 x sweeter than sugar
- Saccharin- Sweet n' Lo-300 x sweeter than sugar
- Acesulfame-K (Sweet one, Sunette)-200 x sweeter than sugar
- Luo han guo- Monkfruit (Nectresse)150-200 x sweeter than sugar
- Stevia ( Truvia)-200-300x sweeter than sugar
- Neotame-7000-13000 x sweeter than sugar

Sugar alcohols-

- sorbitol, mannitol, xylitol, maltitol, erythritol, isomalt- less sweet or about the same sweetness as sugar

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### CARBOHYDRATES

Why such a bad rap?  
#Dontdreadthebread  
Let's talk phytos  
Source of fiber  
Affordability  
Versatility  
Effect of carbohydrate intake on the microbiome



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### FOOD INTOLERANCE AND AVOIDANCE

Food intolerances may exacerbate certain conditions such as IBS


Food avoidance may precipitate GI symptoms

Food elimination without justification may have unwanted consequences

Low FOD-MAP Diet may be of benefit for patients with digestive distress

Nutrition counseling by a RDN with expertise in digestive disorders is a MUST!

BARRETT JS, GIBSON PR. THER ADV GASTROENTEROL 2012;5(4):261-268



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### FODMAPS

F	ermentable
O	ligosaccharides (fructans and galacto-oligosaccharides-GOS)
D	isaccharides (lactose, milk sugar)
M	onosaccharide (excess fructose)
A	nd
P	olyols (sugar alcohols such as mannitol and sorbitol)



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# “From Lunacy to Legitimacy – Health Claims vs. Hype”

Leslie J. Bonci, MPH, RD

## HIGH FODMAP FOODS

Sample of high FODMAP food sources:

LACTOSE	EXCESS FRUCTOSE	FRUCTANS	GOS	POLYOLS
MILK	APPLES	DRIED FRUIT	LEGUMES	APPLES
CUSTARD	BOYSBERRY	NECTARINE	PISTACHIOS	APRICOTS
ICE CREAM	PEAS	PEACHES	CASHIWS	BLACKBERRIES
YOGURT	MANGO	WATERMELON		NECTARINE
MILK POWDER	PEARS	ARTICHOKE		PEACH
RICOTTA CHEESE	WATERMELON	GARLIC		PEARS
COTTAGE CHEESE	ASPARAGUS	ONION		CAULIFLOWER
	ARTICHOKE	WHEAT, BARLEY, RYE		MUSHROOMS
	SUGAR SNAP PEAS	CHOCOLY ROOT EXTRACT		
	HIGH FRUCTOSE CORN SYRUP	INULIN ADDITIVES		SUGAR ALCOHOL ADDITIVES: SORBITOL, MANNITOL, SORBITOL, MALTITOL
	AGAVE			

## LOW FODMAPS FOODS

**low lactose**

- CHEESE: BIRE, CAMEMBERT, COUSCOURT, CHEESE, GOAT CHEESE, HEA, HAVARTI, MOZZARELLA, PARMESAN, PROVOLONE, SWISS, LACTOSE FREE COTTAGE, LACTOSE FREE CREAM CHEESE
- YOGURT: LACTOSE FREE COVY'S MILK (VANILLA, ICE, NO ICE), HEALP MILK, ALMOND MILK, RICE MILK
- OTHER: LACTOSE FREE ICE CREAM, SORBET FROM ACCESSIBLE

**no excess fructose**

- FRUIT: BANANA, DRIED BANANA CHIPS, BLUEBERRIES, CANTALOUPE, DURIAN MELON, CLEMENTINE, FRESH AND DRIED COCONUT, DRAGON FRUIT, GRAPES, RED, GREEN & BLACK, RPI, GUAVA, HONEYDEW, WATERMELON & CUSTARD
- VEGETABLES: KUMQUAT, LEMON, LIME, ORANGE, PINEAPPLE, PASSION FRUIT, PINEAPPLE, PEACH, PEAS, PEANUT, RASPBERRIES, RHUBARB, SOBA, FRUIT, STRAWBERRIES, TANGILO, TAMARIND
- SWEETENERS & BAKING: PURE MAPLE SYRUP, WHITE SUGAR, BROWN SUGAR, STEVIA, PALM SUGAR, SWAY SUGAR, RICE MAALT DEXTRIN, DARK CHOCOLATE, COCOA POWDER, VANILLA
- ALCOHOL: MOST WINE & BEER, CIDER, VODKA, WHISKY
- FRUIT & ONION/ONION ROOT: KABCCHA SQUASH, KALE, LETTUCE, PARSNIP, PATTY PAN SQUASH, 1/2 C. CARAMEL PARSNIP, POTSDO (SHRED), 1/2 C. SWEET POTSDO, KUDZU, BURNING, SCALLOPS & LEEKS (GREEN), SHIP DRAVE, SPINACH SQUASH, SPINACH (SWEET), SUMMER SQUASH, NORI SEAWEED, 1/2 C. SARD, TOMATOES (CANNED), CHEESE, FLORA (COCONUT BUTTER), TURNIP OIL INFUSED WITH GARLIC, ONION, WATER, CHICKEN, LUCIFERA, WINDCHILL, GREEN & BLACK OLIVES
- FRUIT: 1/2 SMALL POMEGRANATE, 1 TB DRIED CRANBERRIES OR RAISINS, 1/2 C. DRIED COCONUT (1/2 cup based on the no excess fructose and low polyol sections)
- GRAINS: GF BREAD, GF PASTA, MILLET, OATS, RICE, RICE CAKES, QUINOA, GINQUIN, FLAKES, SOY (FRESH OR SOBOGHI), WHEAT OR SPET BREAD, SOBA, NOODLES, POLSKA, CORN, TORILAS
- NUTS/SEEDS: BRAHONDS, SERRANO, NUTS, SO CHESTNUTS, SHADZENS, ZEMACAMMAS, ZEPHANOS, 1/2 PEANUTS, 1 TB PINE NUTS, (DRIANUS), 2 TB CHIA SEEDS, 2 TB PUFFY SEEDS, 2 TB PUMPKIN SEEDS, 1 TB SESAME SEEDS, 2 TSP SUNFLOWER SEEDS
- LEGUMES: 1/2 C. DRIANED & RINSED CANNED CHICKPEAS, 1 C. EDAMAME, 1/2 C. DRIANED AND RINSED CANNED

**VEGETABLES**

- 1/2 AVOCADO, 1/2 C. BUTTERFLY SQUASH, 1/2 STALK CELERY, 1/2 C. SWEET POTSDO

**SWEETENERS AND BAKING**

- PURE MAPLE SYRUP, WHITE SUGAR, BROWN SUGAR, STEVIA, PALM SUGAR, SWAY SUGAR, RICE MAALT DEXTRIN, DARK CHOCOLATE, COCOA POWDER, VANILLA

## BIOTECHNOLOGY

**Genetic Engineering**

Buils on traditional plant cross breeding by allowing a more targeted way to identify and transfer selected genes from one plant to another to create a desired characteristic

**Citrus greening**

**Hawaiian papaya industry**

**Non browning apples- Arctic apples**

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**WHY DO WE NEED GENETIC ENGINEERING?**

- Enhanced micronutrient content
- Reduced allergenicity
- Remove anti-nutrients or natural toxins in foods ( acrylamide and solanine in potatoes)
- Increased nutrient availability
- Improved flavonoid antioxidants
- Improved food safety traits
- Improved postharvest traits to reduce food waste
- Drought tolerance
- More efficient crop uptake of fertilizer
- Approaches that facilitate adoption of agroecological farming techniques

NATIONAL ACADEMIES OF SCIENCES, ENGINEERING AND MEDICINE. 2019. GENETICALLY ENGINEERED CROPS: EXPERIENCES AND PROSPECTS. WASHINGTON, DC, THE NATIONAL ACADEMIES PRESS

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**ARE GE CROPS SAFE?**

No differences have been found that implicate a higher risk to human health safety from GE foods than from non-GE counterparts.

- 900 studies reviewed
- Data covering 20 years
- Over 50 scientists, researchers and agricultural and industry experts
- Over 2 years to review

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**WHICH US CROPS ARE GE?**

FOOD CROPS	ANIMAL FEED/NON FOOD
Sweet corn	Field corn
Summer squash	Alfalfa
Canola	Cotton
Rainbow papaya	
Sugar Beet	
Soybeans	
Potatoes	
Apples	

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**LABELING OF GE CROPS**

6/2016- National Bioengineered Food Disclosure Law signed

USDA Agricultural Marketing service charged to develop criteria defining which ingredients “count” as “genetically engineered” and how this will be communicated to consumers

Proposed rule to be completed in 2018



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**ANIMAL WELFARE**

Hormones

Antibiotics

Cage free

Those who sound the alarm have not spent much time on a farm



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**BIOTECHNOLOGY**

**Pesticides**

- Organic vs conventional crops
- Media and activist portrayal vs reality

**GMOS**

- We upgrade our devices but shun tech on the plate
- Effect on the farmer/crops/natural resources



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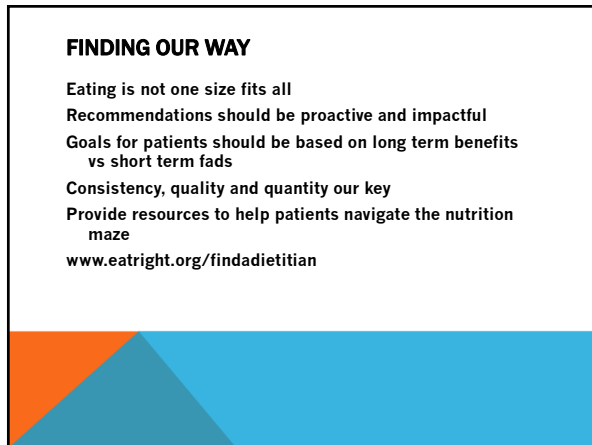
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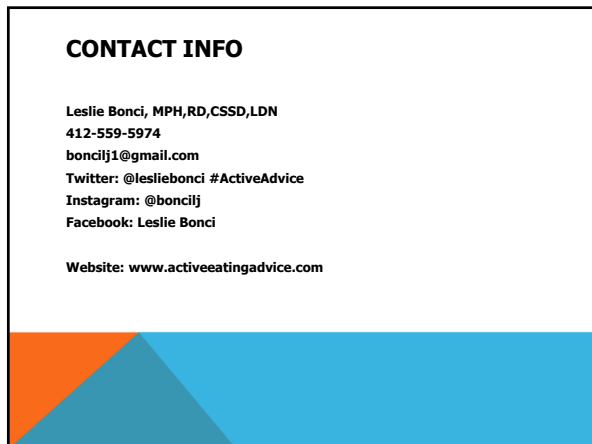
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