



Professor David Cameron-Smith

Biochemist

Liggins Institute and University of Auckland
Auckland

FULLY BOOKED

(Room 12)

Friday, June 9, 2017

14:00 - 14:55 WS #43: Nutrition - Irritabilities, Intolerances, and Gut Function

15:05 - 16:00 WS #55: Nutrition - Irritabilities, Intolerances, and Gut Function
(Repeated)

erances and

h-Smith

Professor David Cameron-Smith
University of Auckland

Conflicts of Interest

Present

- A2Milk Company
- Dairy Goat Cooperative
- Fonterra
- Nestle
- Yashili Dairy
- AgResearch, MBIE, National Science Challenge (High-Value Nutrition), MPI, HRC.

Past

- Murray Goulburn Cooperative (Australia)
- Dairy Australia
- Meat & Livestock Australia
- Palm Oil Board of Malaysia
- NHMRC, ARC



GLUTEN Free

MENU

1. Intolerances or what?
2. Digestion, peptides and allergens
3. Irritabilities
4. Lets get personal.

Guacamole - Avocado, Pico de Gallo, onion, lime, small 2.99 Large 5.99

Chili con Queso - our legendary Mexican-style cheese dip, small 2.99 Medium 5.99 Large 8.99

Quesadillas - two flour tortillas, cheese, small 2.99 Medium 5.99 Large 8.99

Fajitas - two flour tortillas, chicken, beef, or steak, small 2.99 Medium 5.99 Large 8.99

Enchiladas - two flour tortillas, chicken, beef, or steak, small 2.99 Medium 5.99 Large 8.99

Tacos - two flour tortillas, chicken, beef, or steak, small 2.99 Medium 5.99 Large 8.99

Burrito - large flour tortilla, chicken, beef, or steak, small 2.99 Medium 5.99 Large 8.99

Salad - fresh greens, chicken, beef, or steak, small 2.99 Medium 5.99 Large 8.99

Soup - chicken, beef, or steak, small 2.99 Medium 5.99 Large 8.99

Smoothie - fruit, yogurt, small 2.99 Medium 5.99 Large 8.99

Dessert - chocolate cake, small 2.99 Medium 5.99 Large 8.99

Ice Cream - vanilla, chocolate, small 2.99 Medium 5.99 Large 8.99

Smoothie - fruit, yogurt, small 2.99 Medium 5.99 Large 8.99

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Dessert - chocolate cake, small 2.99 Medium 5.99 Large 8.99

Ice Cream - vanilla, chocolate, small 2.99 Medium 5.99 Large 8.99



GLUTEN Free

Fajitas

Served with Soft Corn Tortillas.

Prairie Fire Fajitas - served sizzling with Fajita Veggies, cheese, Pico de Gallo. Grilled Chicken 13.99 Steak 24.99 Combo 14.99

Margarita Chicken Fajitas - Grilled Fajita Chicken glazed with our legendary Margarita Sauce. Served sizzling with Fajita Veggies. 14.99

Shrimp Fajitas - broiled Chipotle-basted Shrimp served with Southwest Slaw & sizzling Fajita Veggies. 14.59

New Fajita Trio - Three distinct flavors. Grilled Chicken, Grilled Steak & Chipotle-basted Shrimp. Served with Fajita Veggies. 15.49

Specialty

Soft Corn Tortillas. Served with two sides.

Prairie Fire Steak & Enchiladas - 8 oz. Top Sirloin, with two Ground Beef Enchiladas in red enchilada sauce. 14.99

Prairie Fire Chicken & Enchiladas - Grilled Chicken Breast, two Cheese & Onion Enchiladas covered with Red Sauce. 13.99

Seafood Enchiladas - two corn tortillas, grilled Tilapia & Shrimp, Monterey Jack, sautéed peppers & onions, topped with Queso. 11.99

Sancho Enchilada - Ground Beef, lettuce, tomatoes, covered in Chili con Queso. 10.99

Tacos

Two Soft Corn Tortillas. Served with two sides.

El Guapo's Brisket Tacos - crowned with oven-baked cheese, Beef Brisket, diced Poblano & Hatch Green Chilies & Queso. 10.59

Grilled Fish Tacos - lemon-butter Tilapia, Crema Fresca, Pico de Gallo. 10.59

Lolo's Chicken Tacos - Pulled Chicken, cheddar, cilantro, diced red onions, made in-house Fiesta Ranch Dressing. 9.99. Add Grilled Fajita Chicken. 9.99

Barbecue Chicken Tacos - Grilled Chicken Breast, barbecue sauce, bacon, onions, Monterey Jack. Mildly spicy. 10.29

Combo #1

A seasoned Ground Beef Enchilada, a Cheese & Onion Enchilada, and a Ground Beef Taco. 10.79

Classic Enchilada Dinners

Classic Enchiladas made with corn tortillas and your choice of filling. Topped with your choice of a sauce and sour cream & chives.

Two Enchiladas 10.29

Add a third Enchilada for only 1.79

Choose your fillings

Pulled Chicken
Seasoned Ground Beef
Mexican Beef Brisket .99
Grilled Fajita Chicken .99
Grilled Steak .99
Cheese & Onion

Choose your sauces

Red Enchilada
Spicy Fuego
Chili con Queso
Fuego con Queso

Sides

• Refried Beans
• Black Beans
• Southwest Corn
• Traditional Mexican Rice
• Fajita Veggies .99
• Side Salad (no croutons) 1.49

Appetizers

Fresh Guacamole - Avocado, Pico de Gallo. Made fresh daily. **Vegan.** Small 2.99 Large 5.99

Veggie Fundita - Monterey Jack, diced blend of sautéed Hatch Chilies & onions. Served with Flour Tortillas. 7.59

Cheese Quesadillas - two flour tortillas, two cheeses, Hatch Chilies, red bell peppers, garlic & onion. 8.29

Salads

Fiesta Salad - fresh greens, sizzling Fajita Veggies, avocado, black beans, topped with Green Chile Ranch. 8.99

Fajita Salad - fresh greens, Fajita Veggies, topped with Green Chile Ranch. 9.99

Sides

Black Beans
Southwest Corn
Fajita Veggies .99
Side Salad 1.49

Our Black Beans ARE MADE FROM SCRATCH



Traditional Mex

Served with two sides

Veggie El Guapo's Tacos - two flour tortillas crowned with oven-baked cheese, Fajita Veggies, diced Hatch Chilies & Poblano cream sauce. 9.29

Veggie Fajita Quesadillas - two flour tortillas, Fajita Veggies, two cheeses, Hatch Chilies, red bell peppers, garlic & onion. 8.99

Black Bean Quesadillas - two flour tortillas, Black Beans, two cheeses, Hatch Chilies, red bell Peppers, garlic & onion. 8.99

Black Bean Burrito - Large flour tortilla, Black Beans, Jack Cheese, Fajita Veggies. Topped with Chili con Queso. 10.29

Black Bean Sancho - flour tortillas, Black Beans, lettuce, tomatoes, covered in red enchilada sauce. 9.59

Black Bean Enchiladas - two flour enchiladas filled with Black Beans. Choice of Red Enchilada, Fuego, Butter Garlic or Diablo Sauce. 10.29

Spinach & Mushroom Enchiladas - two flour tortillas, blend of spinach and sautéed mushrooms & onions, creamy butter garlic sauce & Monterey Jack. 10.59

Cheese & Onion Enchiladas - two corn enchiladas with choice of Red Enchilada, Fuego, Butter Garlic or Diablo Sauce. 10.29

Veggie Pico Enchiladas - flour tortillas, fat-free cream cheese, Fajita Veggies, spinach, mushrooms, onions, chives, & Pico de Gallo.

• **Two Enchilada Dinner** (520 calories; 4 fat grams) 9.79

• **One Enchilada Dinner** (350 calories; 2 fat grams) 6.99



Is it something I eat
or
missing from my diet

- the cause of my digestive and
health (life) problems?

A woman with long, wavy blonde hair is shown from the chest up. She has her eyes closed and her right hand is pressed against her forehead, with her fingers spread. She appears to be in a state of distress or discomfort. The background is a plain, light-colored wall.

8 Warning Signs You're Suffering from a Food Intolerance

<http://thehealthflash.com/8-warning-signs-youre-suffering-from-a-food-intolerance/>

8 Warning Signs You're Suffering from a Food Intolerance

1. Inflammation
2. Other, more serious conditions, such as an autoimmune condition
3. Fatigue / General Lack of Energy
4. Issues with Digestion
5. Nutrient Deficiencies
6. Hard time Focusing
7. Bad Moods and/or Depression
8. Poor Sleep

Miley Cyrus: Gluten-Free Diet Is Responsible For Weight Loss

Posted: 04/10/2012 11:01 am Updated: 05/23/2012 9:10 am [thehuffingtonpost](#)



97

51

7

42

65



Share



Tweet



Pin it



Email



Comment

GET HEALTHY LIVING NEWSLETTERS:

Enter email

SUBSCRIBE

REACT:

Amazing

Inspiring

Funny

Scary

Hot

Crazy

Important

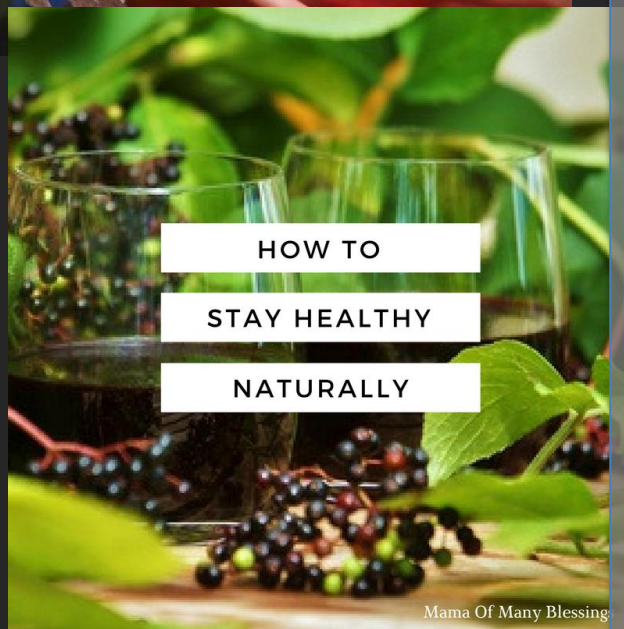
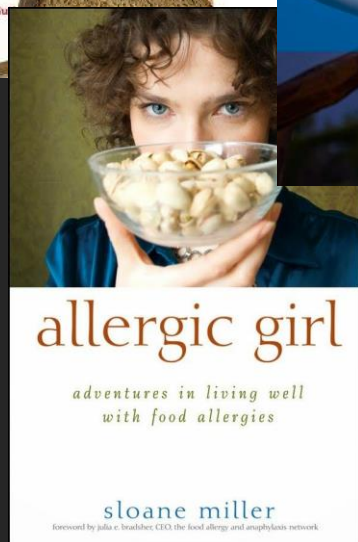
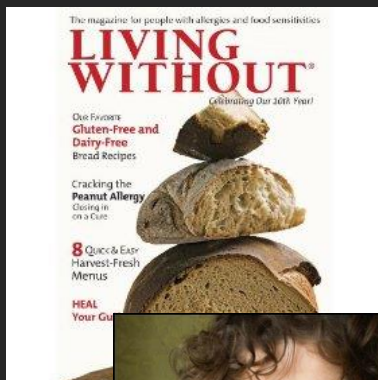
Weird



Miley Cyrus took to Twitter yesterday to refute claims that she's suffering from an eating disorder. Instead, she says, her weight loss is due to a shift toward gluten-free and lactose-free eating for health reasons.

"For everyone calling me anorexic I have a gluten and lactose allergy," she wrote. "It's not about weight it's about health. Gluten

is crapppp anyway!"



FOOD
INTOLERANCE
S

Idealised
lifestyle

Aspirational

Self -
consciousness

THE INVESTOR'S GUIDE TO THE NEW ZEALAND FOOD & BEVERAGE INDUSTRY

FINAL; November 2015

www.foodandbeverage.govt.nz

CORIOLIS
research • consulting • strategy



MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT
HĪKINA WHAKAHATUTĒHI



NEW ZEALAND
TRADE & ENTERPRISE

Ministry for Primary Industries
Manatū Ahu Matua

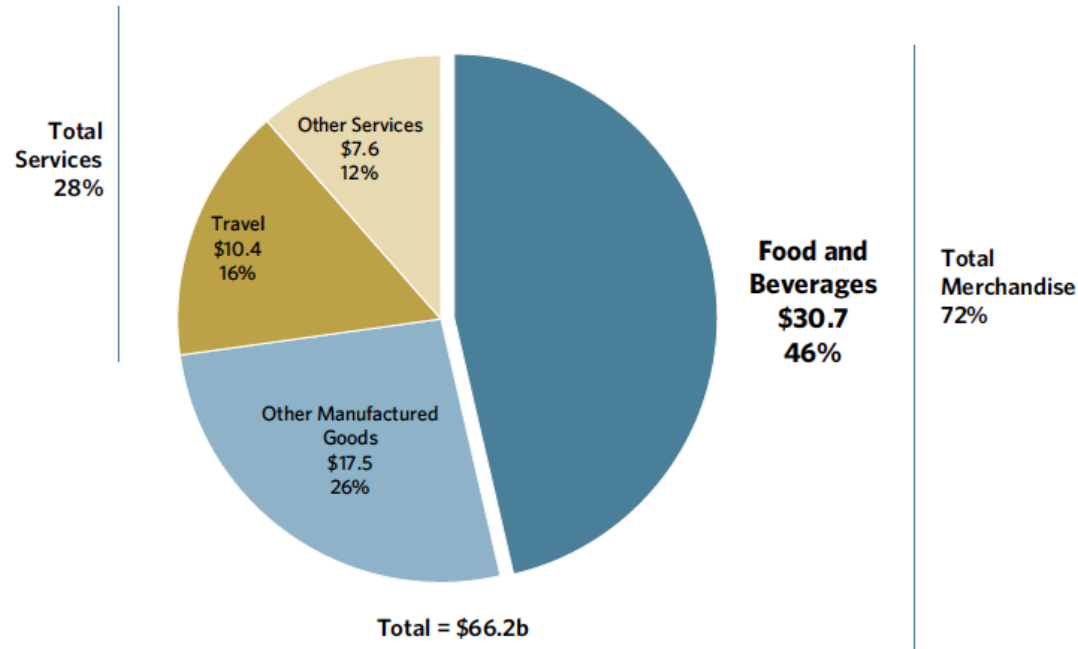


iFAB 2015

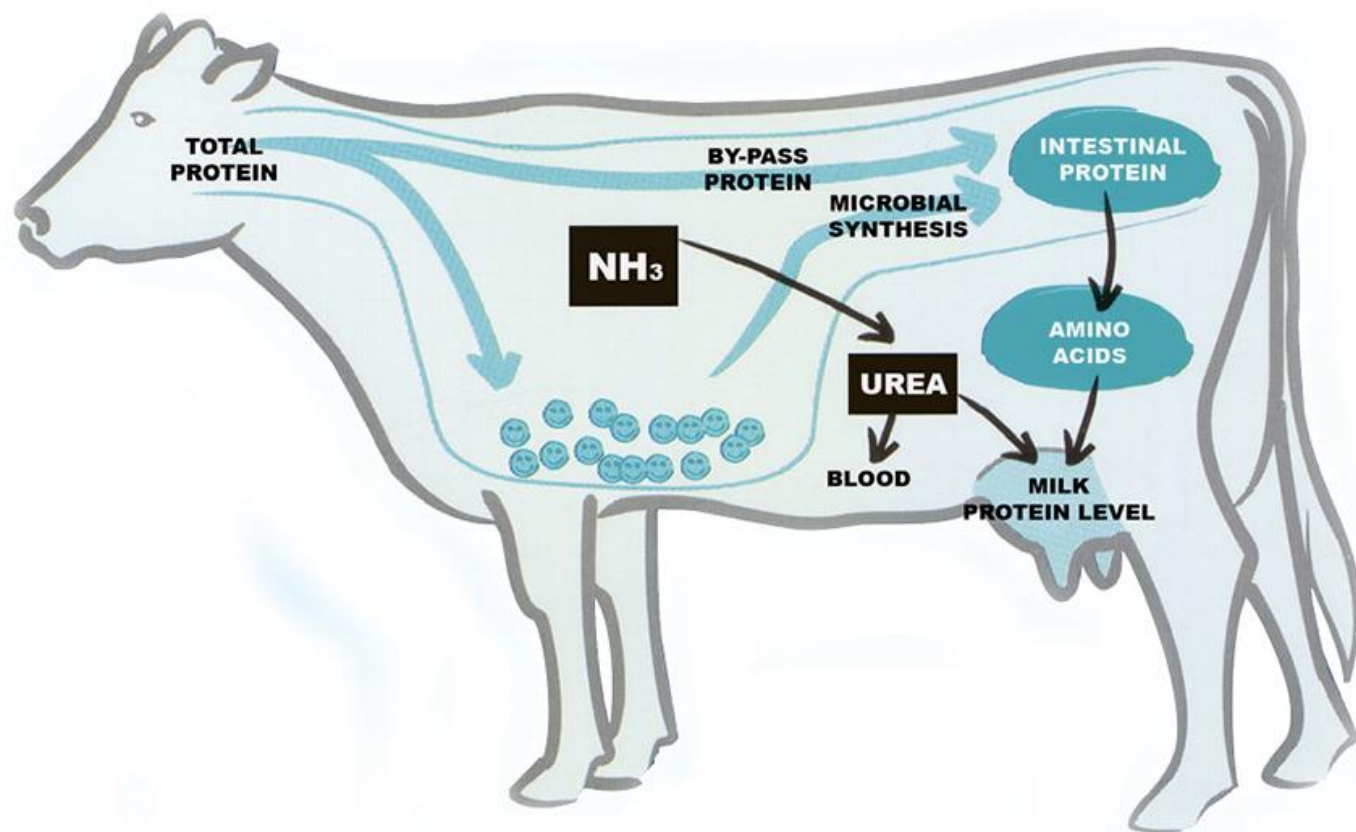
Food and Beverages contributed \$30.7 billion in exports in 2014; almost half New Zealand's total exports of \$66.2b

TOTAL NEW ZEALAND EXPORTS OF GOODS AND SERVICES BY CATEGORY

NZ\$b; % of total exports; 2014/2015¹









PROTEIN

VS



PROTEIN





THE IMPOSSIBLE BURGER



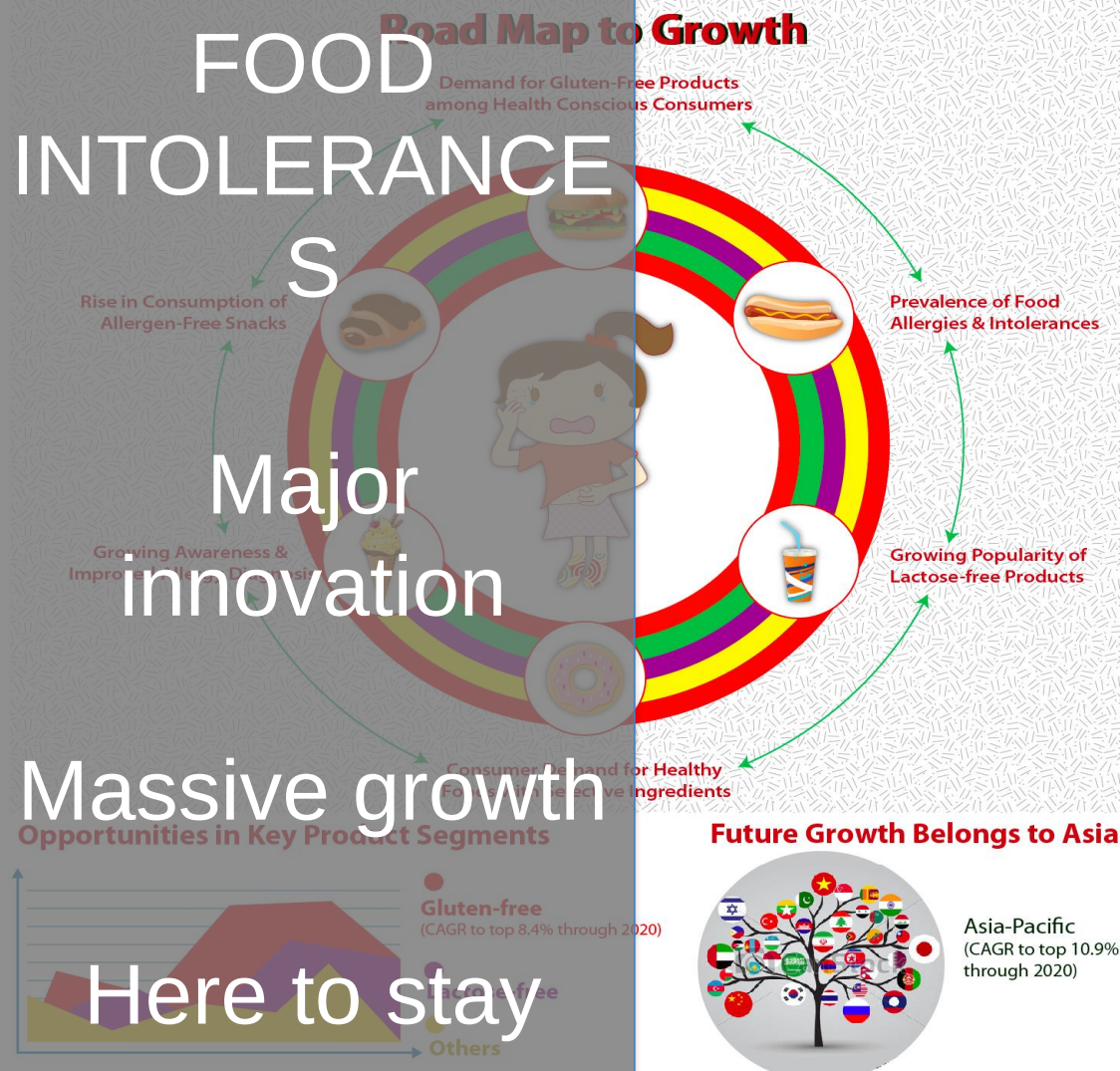
IMPOSSIBLE™



Milk.

It doesn't have to come from a cow.

VeganStreet.com



Global Market Insights

How Big will the Global Market be by 2020?

US\$24.9 Billion

The U.S. Retains Big Lead in the World Market

Key Players

General Mills, Inc.

Amy's Kitchen, Inc.

Alpro UK Ltd.

Dr. Schar

Last-Minute Gifts
That Don't Look It
P. 32

Store Brands
Worth the Trip
P. 26

How to Boost
Your Credit Score
P. 12

Cars That
Owners Love
P. 48

Stop Shoveling,
Start Blowing
P. 16

ConsumerReports®

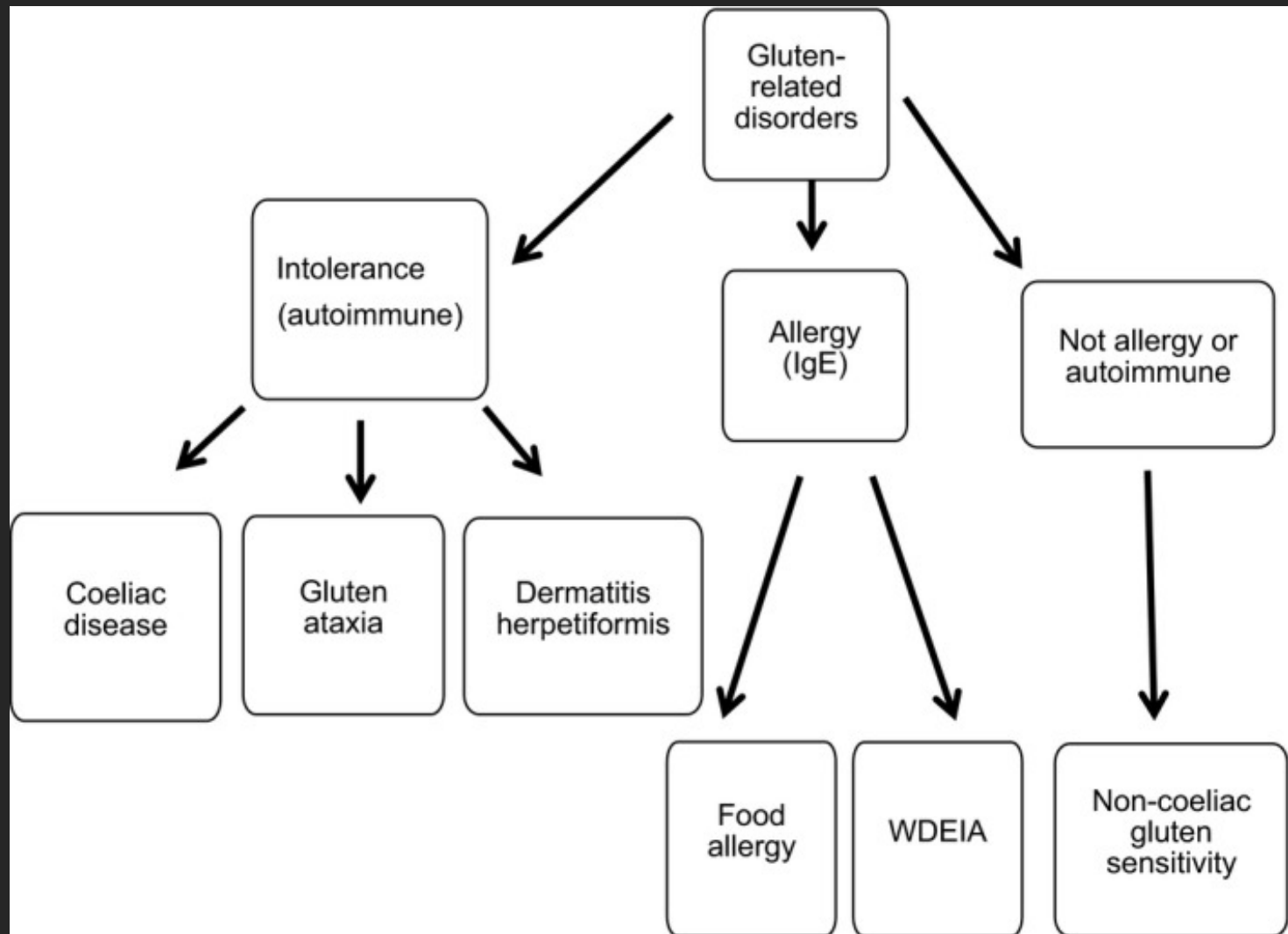
THE TRUTH ABOUT GLUTEN

We sort through the science and analyze the data—
to help you decide what's best for your health



Forms of Gluten Sensitivity

Oslo Definitions	
Gluten Sensitivity Due to Celiac Disease (CD)	A chronic small intestinal immune-mediated enteropathy precipitated by exposure to dietary gluten in genetically predisposed individuals
Non-Celiac Gluten Sensitivity (NCGS)	One or more immunological, morphological and/or symptomatic alterations triggered by gluten ingestion in individuals in whom celiac disease has been excluded

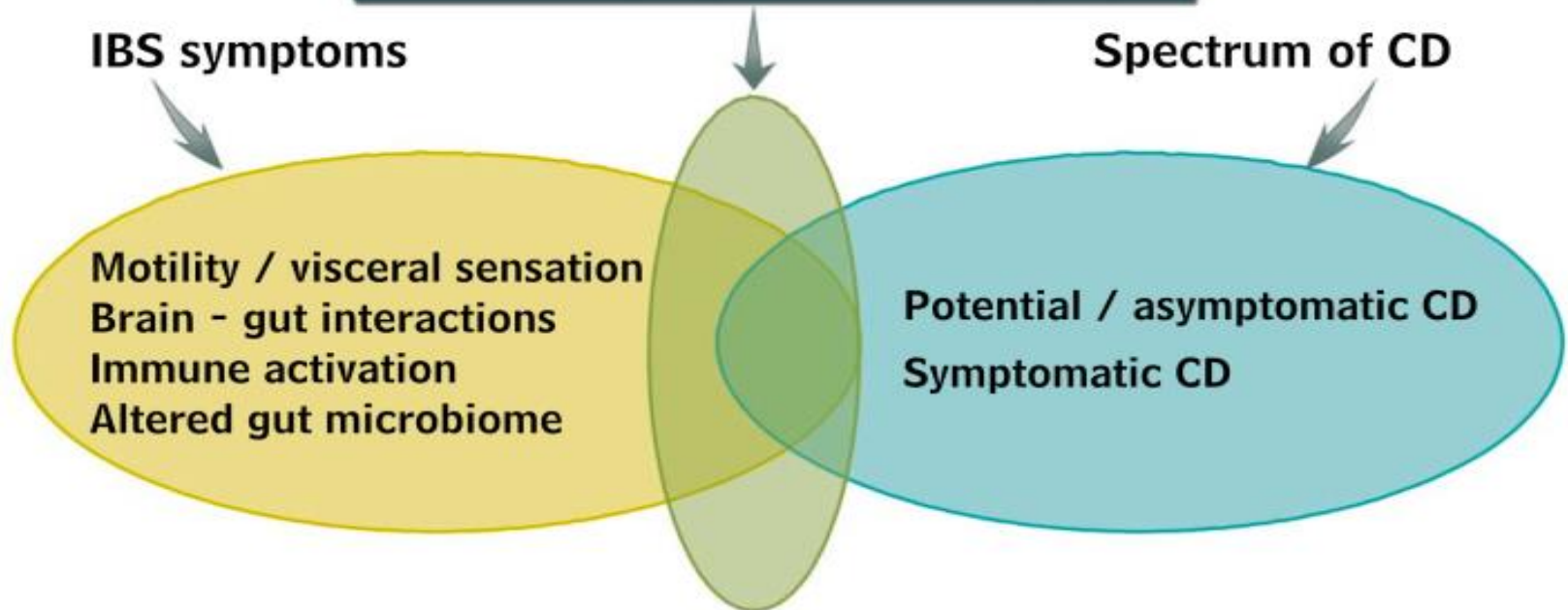


Is it IBS, Celiac Disease or Something in Between?

Non-celiac Gluten Sensitivity

IBS symptoms

Spectrum of CD



Adapted from Verdu EF, et al. Am J Gastroenterol 2009; 1587:94

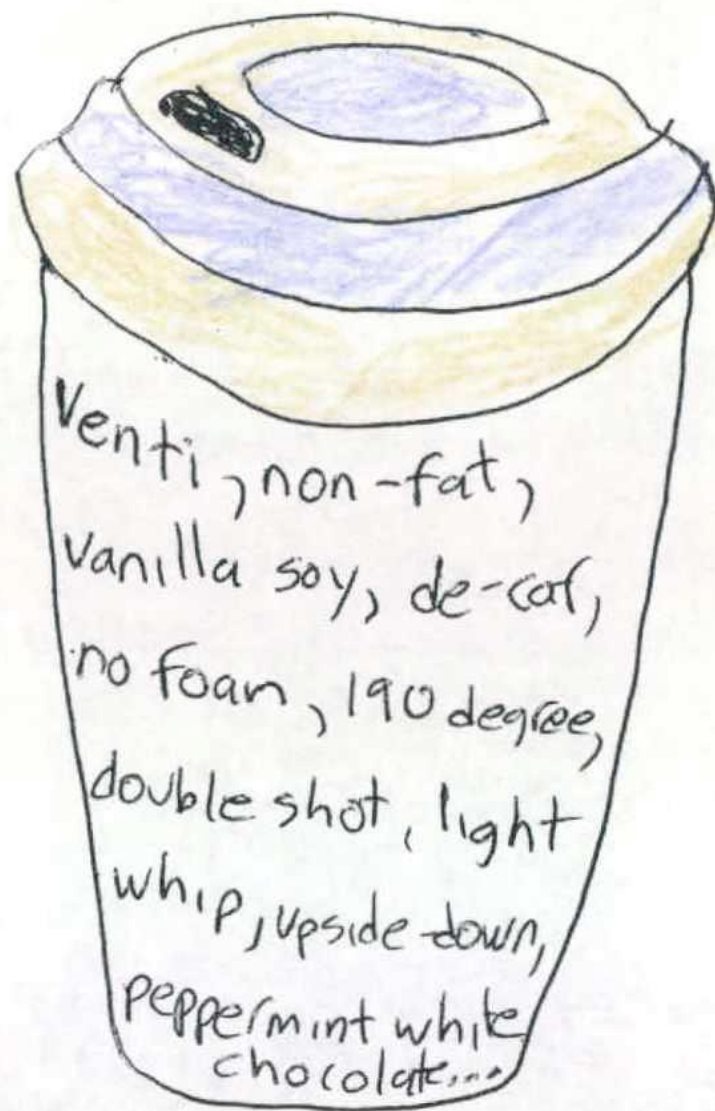
Dietary Response to a Gluten Free Diet: Is this Diagnostic?

- Placebo response in IBS up to 70%.
- Gluten (increased prolamines) is hard to digest, increases stool volume.
- Gluten free diet often eliminates other dietary factors.
- Potentially other mechanisms explain benefit

Campanella et al, Scand J Gastroenterol, 43:1311, 2008

Suggestions to Approach Gluten Sensitivity

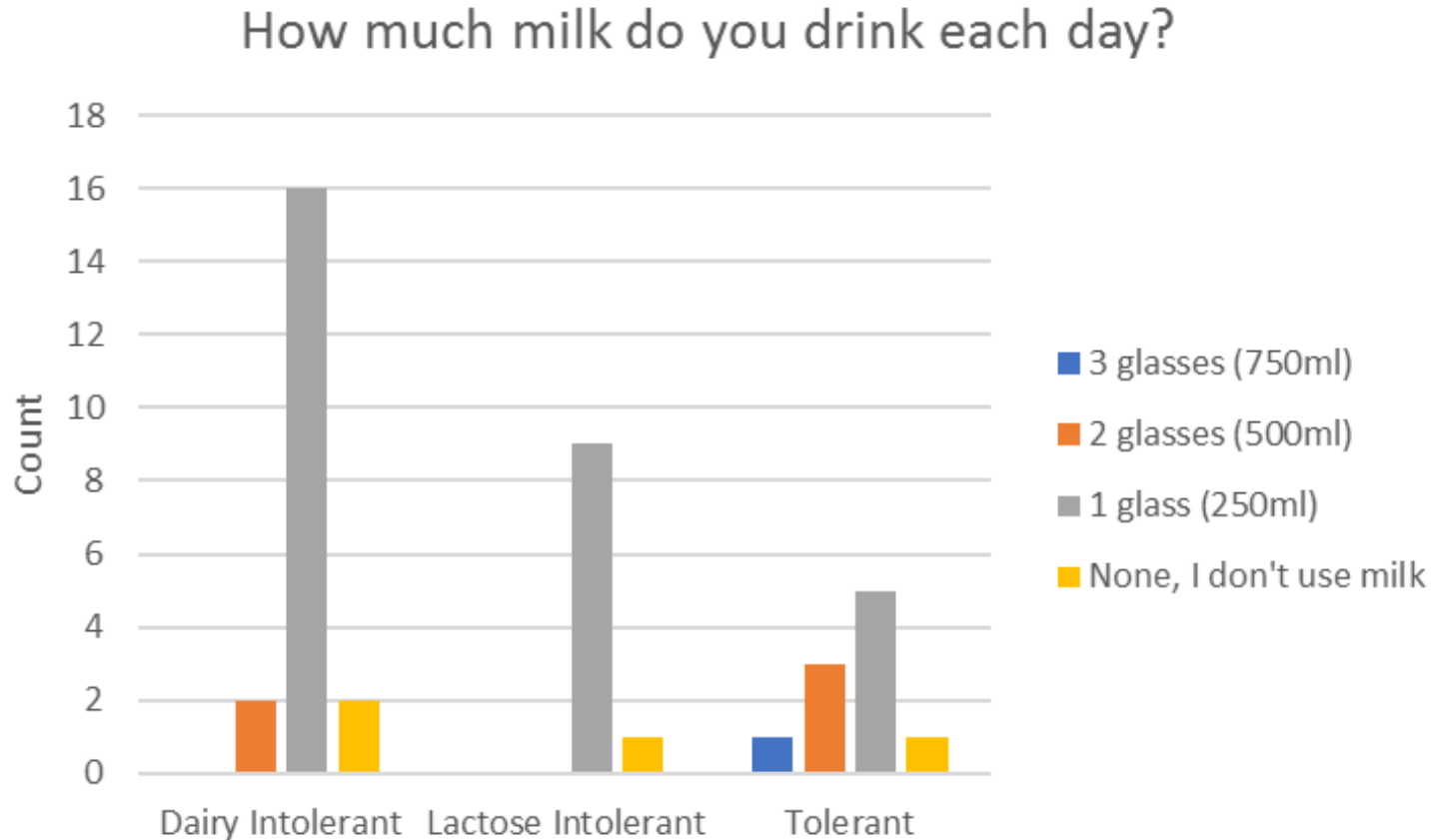
- Harm minimisation – if not gluten – then what?
- But - Is the problem gluten, other components of grains (wheat starch), or unrelated to grains?
- Determine what type of reactions experienced after eating gluten – GI, cognitive, other.
- Do other foods cause similar symptoms?
- Associated autoimmune or allergic disorders
- Family history of autoimmune diseases
- Are they eating gluten-free and for how long?



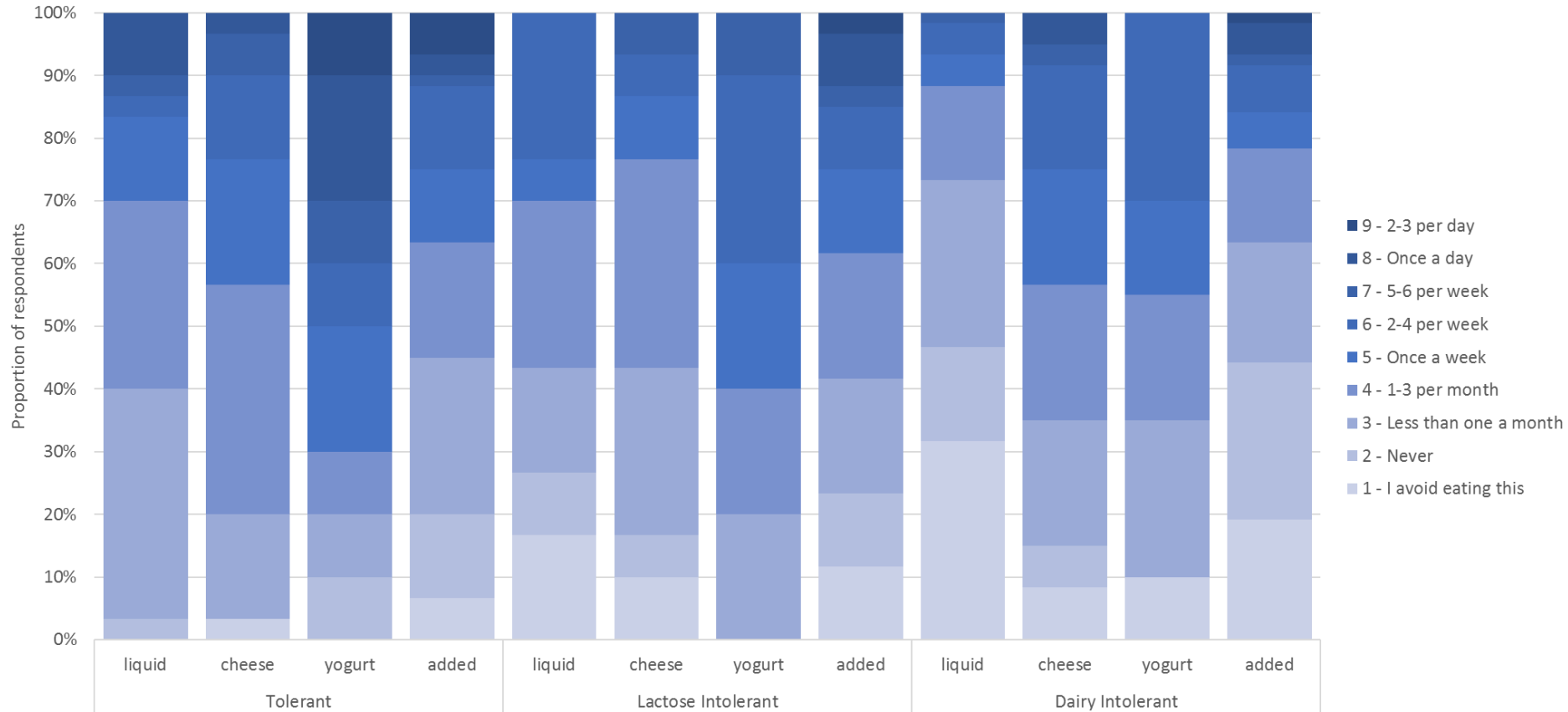
Lactose Challenge: Defining Lactose Intolerance

Method	Criteria	LI	DI	T
Lactose Tolerance Test	<i>Blood glucose increase >1.11mmol/L</i>	✓	✗	✗
Hydrogen Breath Test	<i>Δ25ppm</i>	✓	✗	✗
Symptom Scores	<i>VAS SUM >7/50 (Diarrhoea, abdominal cramping, vomiting, audible bowel sounds, flatulence)</i>	✓	✗	✗
Lactase SNP	<i>LCT -13910, LCT-22018</i>			
Urinary Galactose	<i>Ratio creatinine/galactose <0.1 mg/mg</i>			

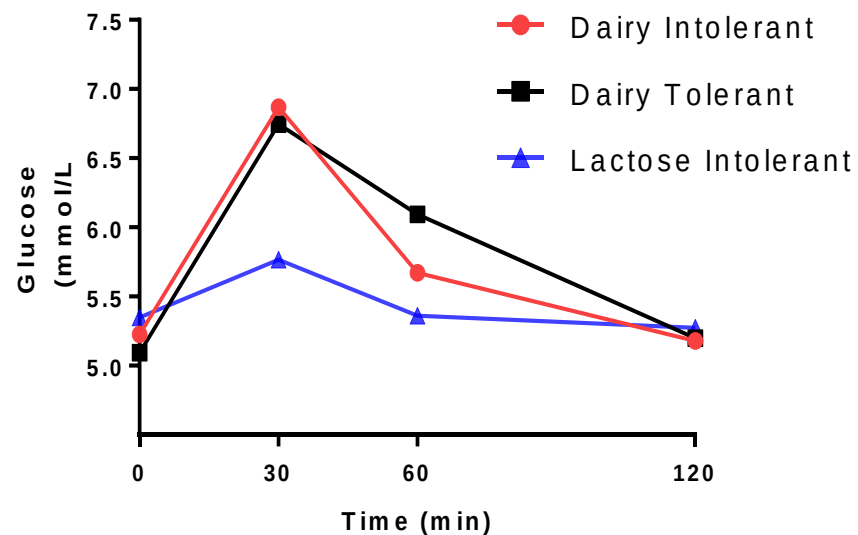
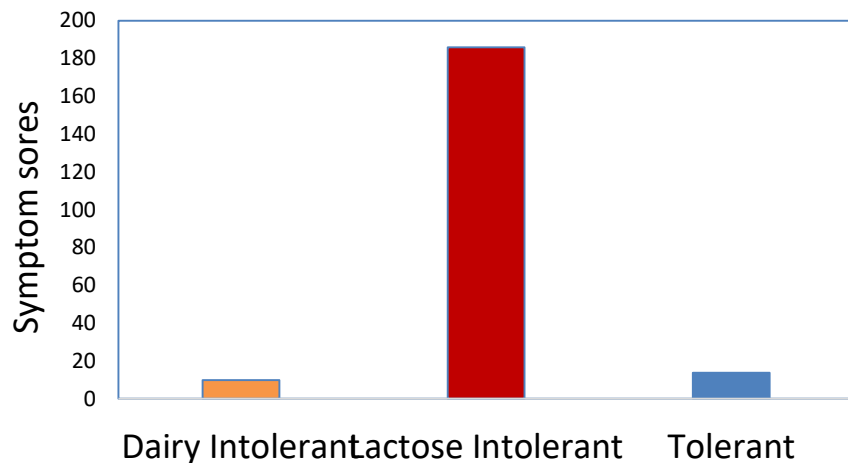
Dairy consumption patterns



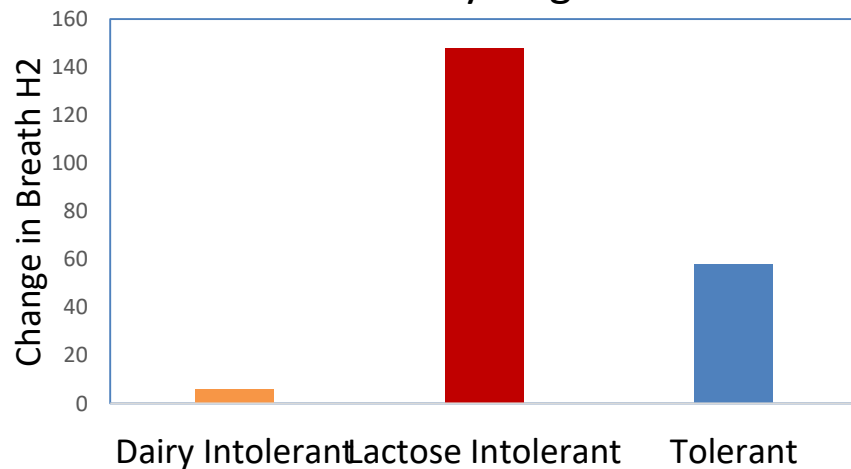
How frequently do you eat...



Symptoms at 3 hrs



Breath Hydrogen



A2_Milk

ID: A2_Milk_001_Pilot

* 22/11/1991

Study 1

12/12/2016

8:30:09 a.m.

24 IMA

HP

Centre for Advanced MRI

Skyra

HFS

RA

SL 4

TE 89

TR 1500

SP P9.2

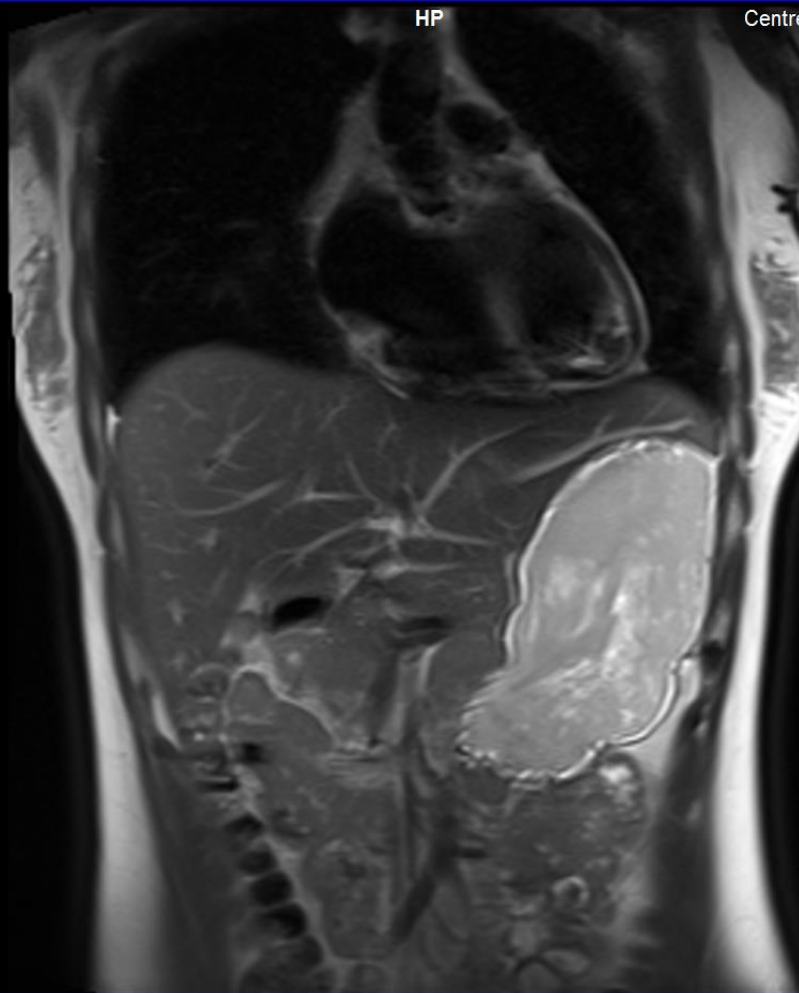
FoV 308*380

182p*320

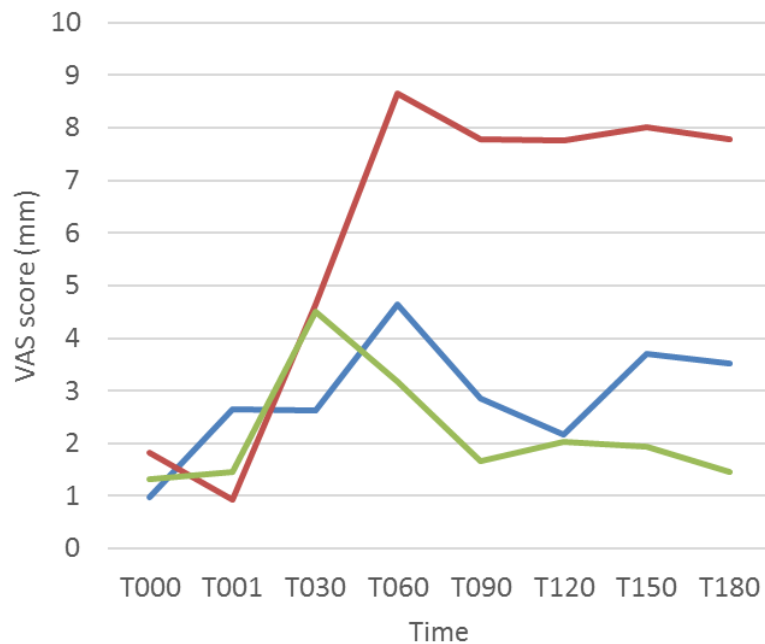
Cor>Tra(2.1)>Sag(0.1)

W: 1635

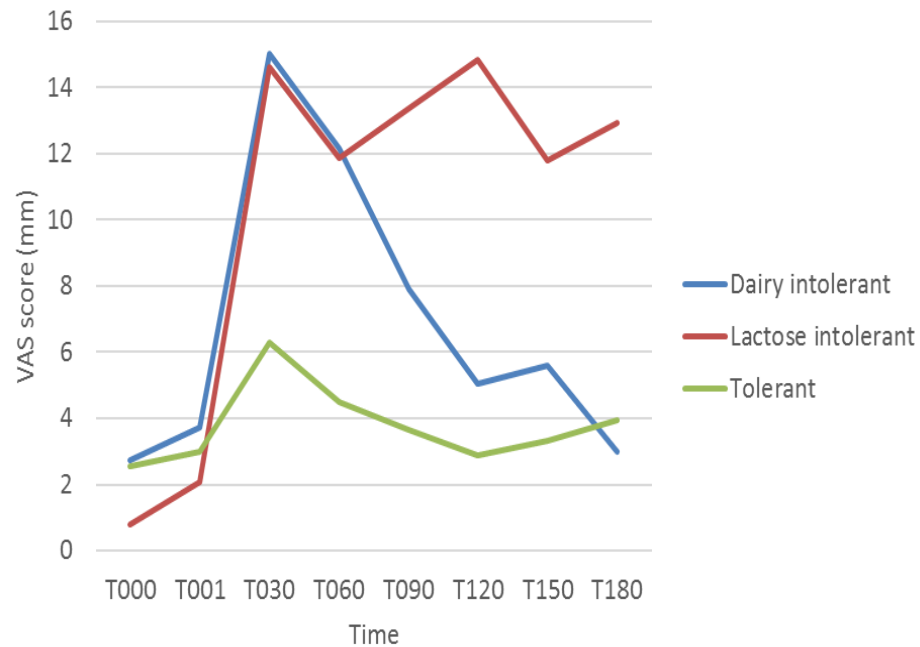
C: 803



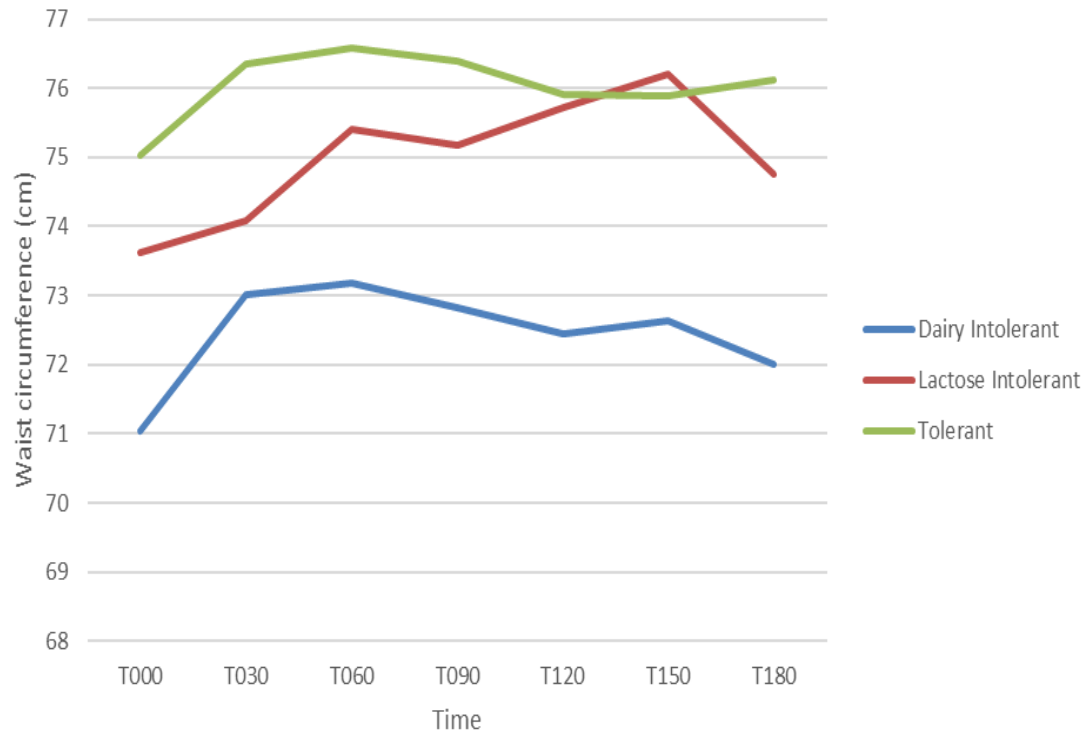
Gastric Reflux



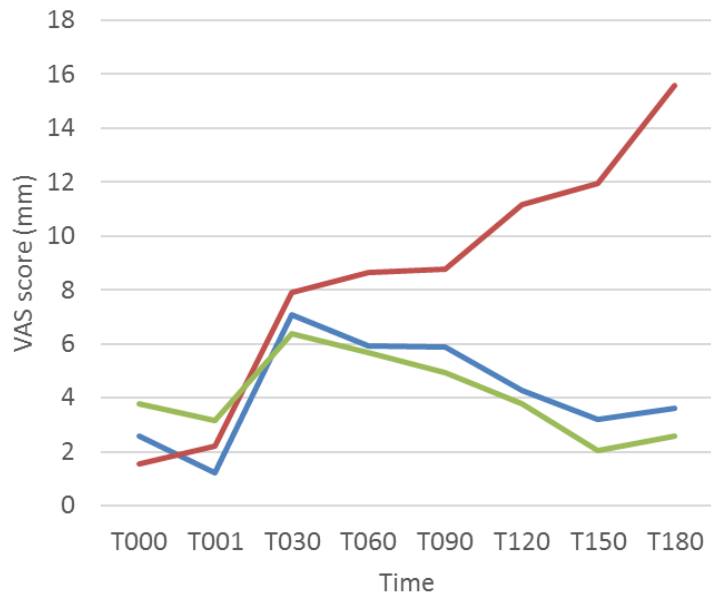
Abdominal Distension



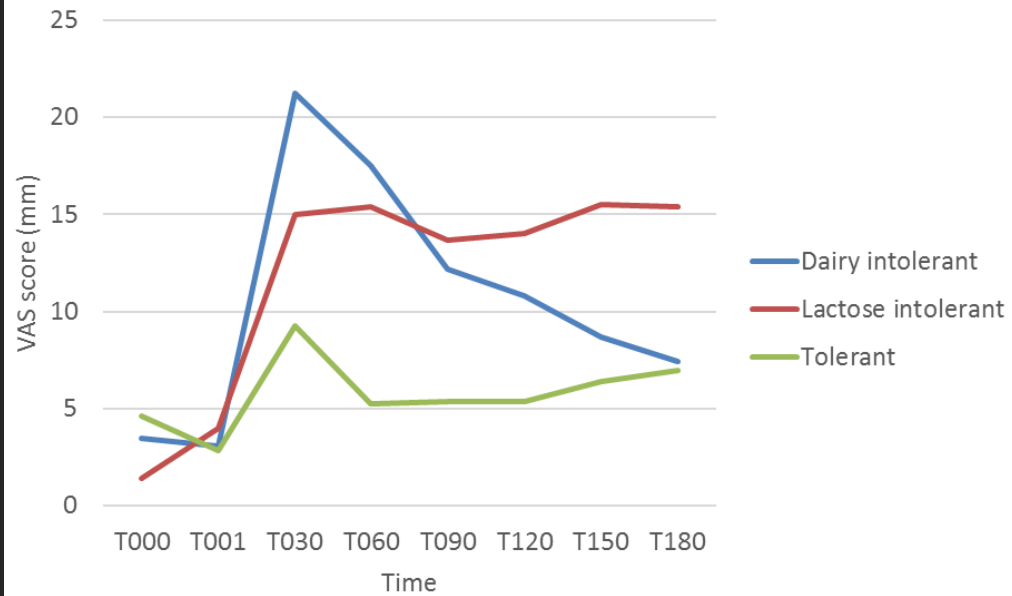
Waist Circumference

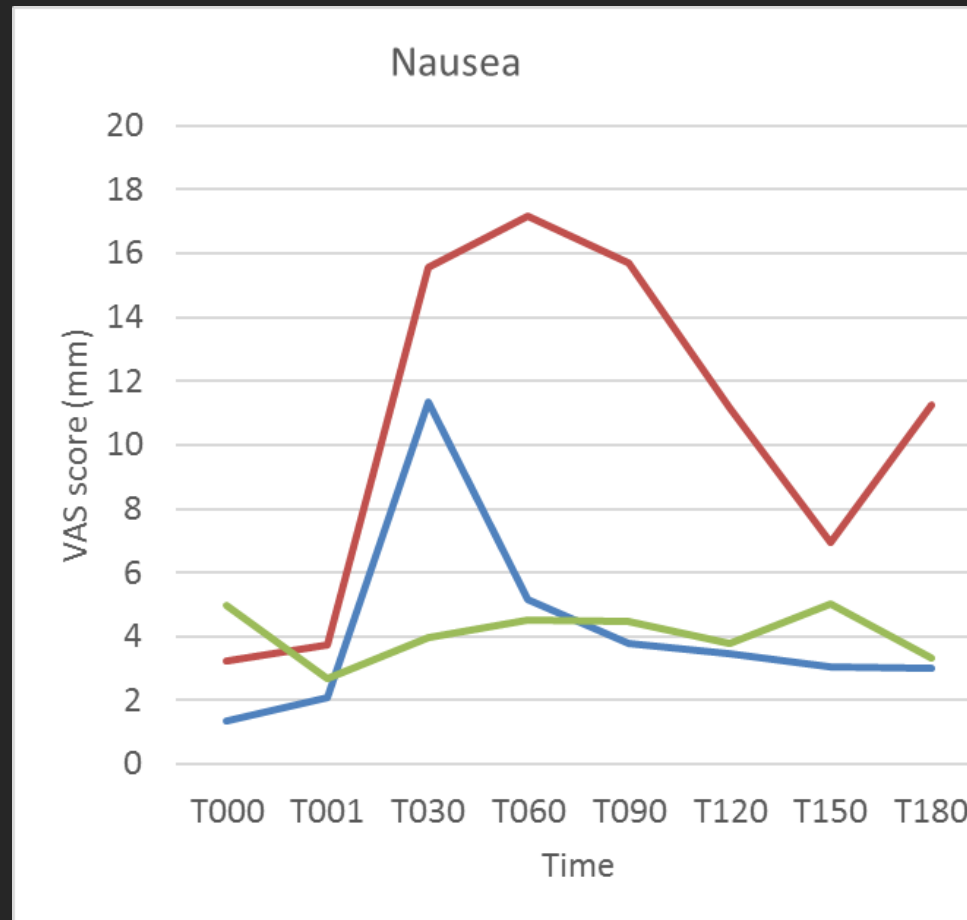


Abdominal Cramps

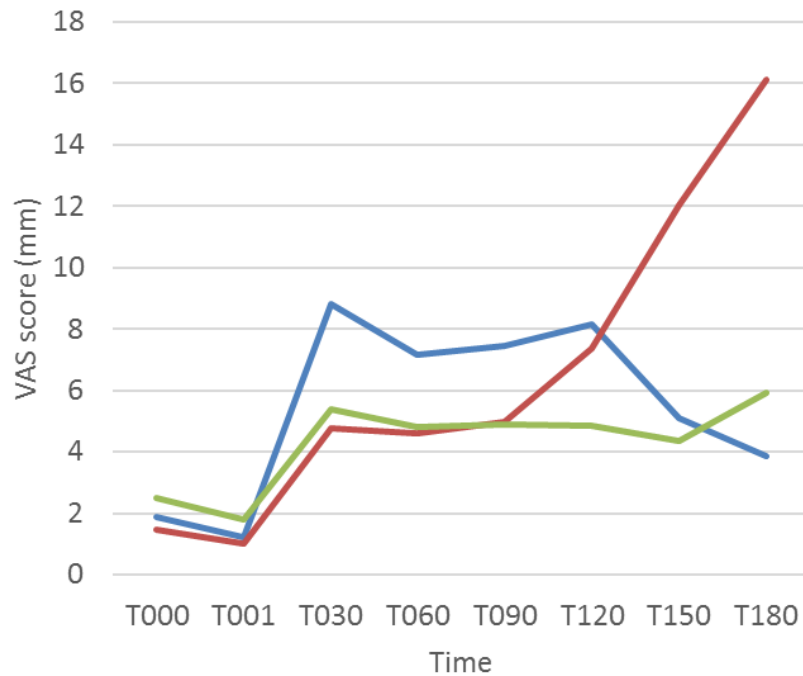


Bloating

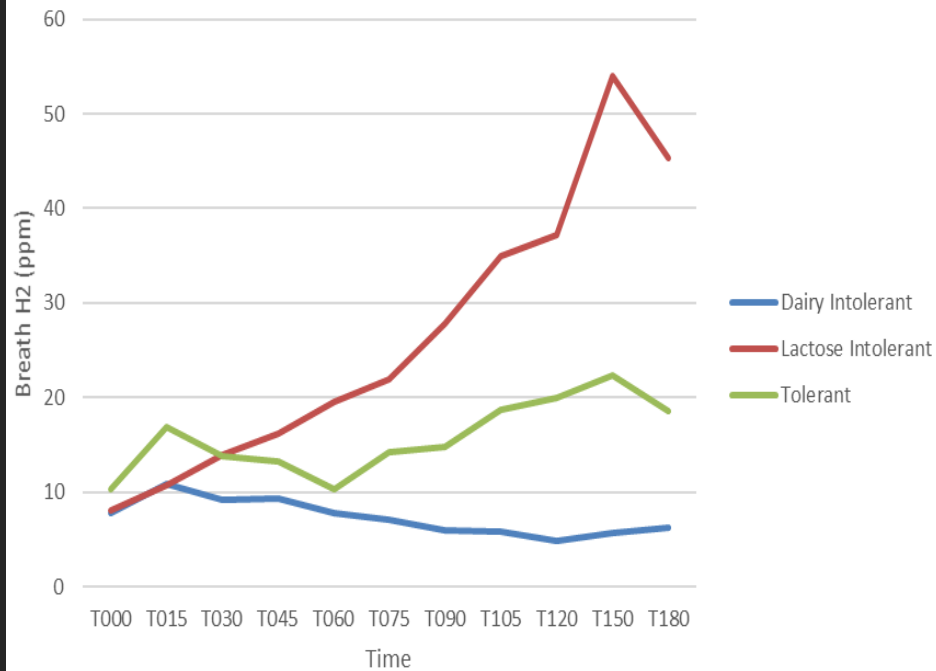




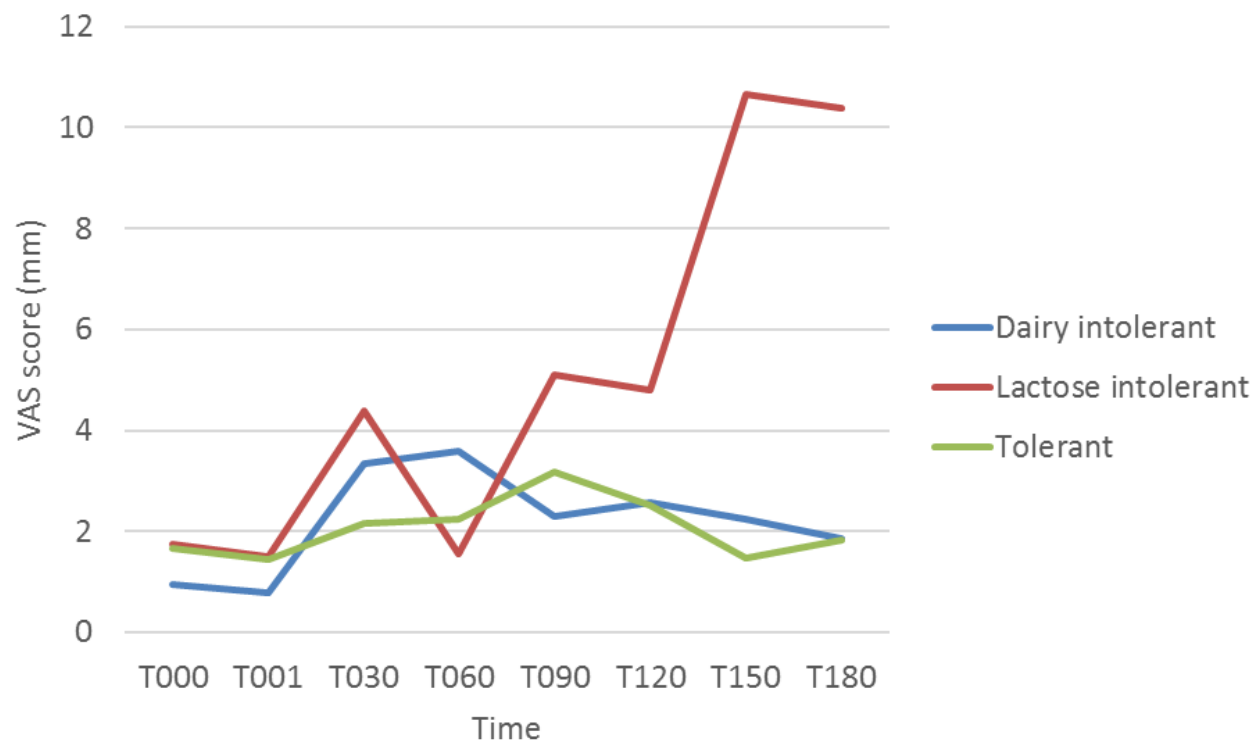
Flatulence



Breath Hydrogen



Fecal Urgency



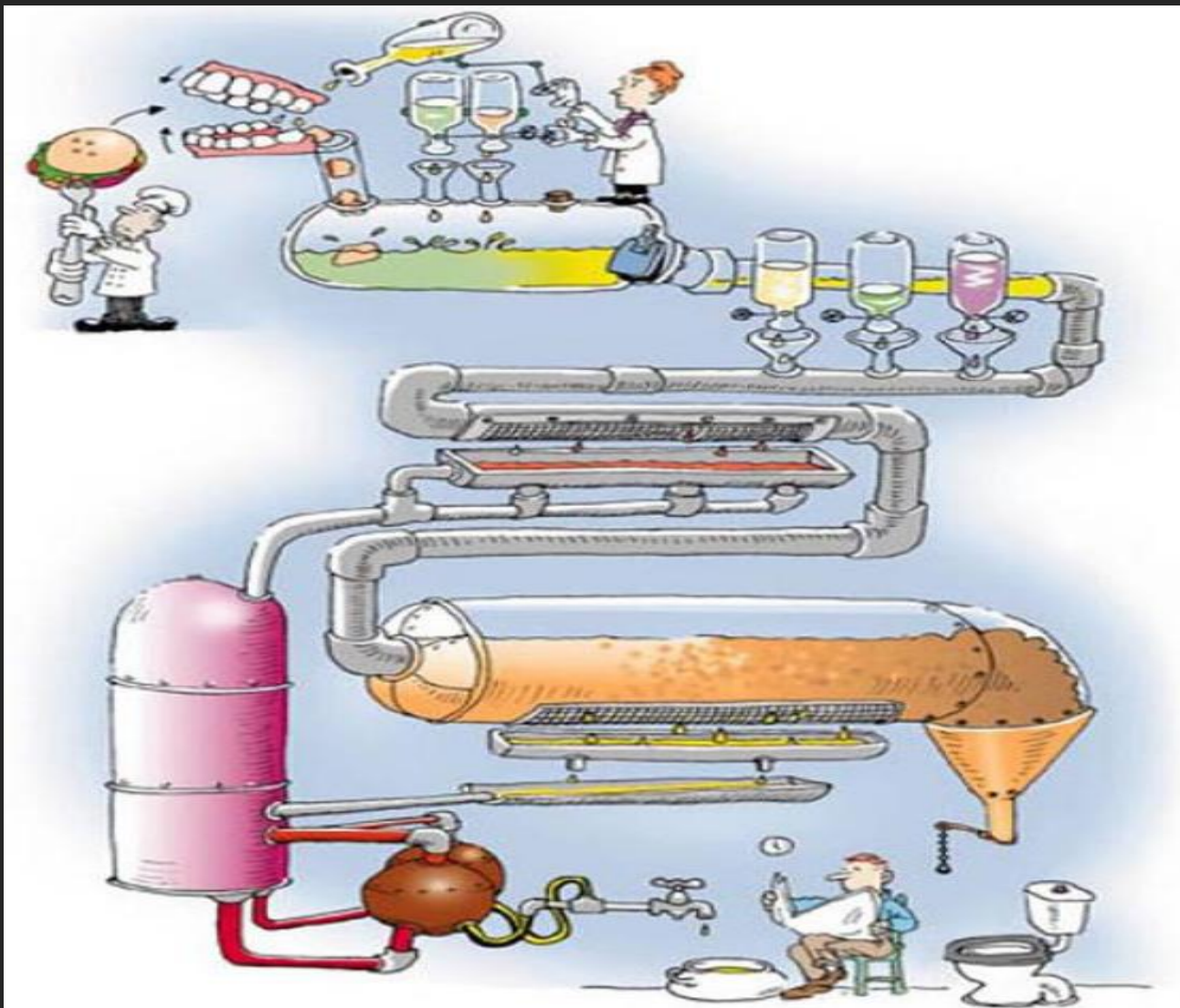
i hate you
(MILK)

DAIRY
AVOIDER

Lactose
intolerance minor
element

Maybe upper GI
sensitivity

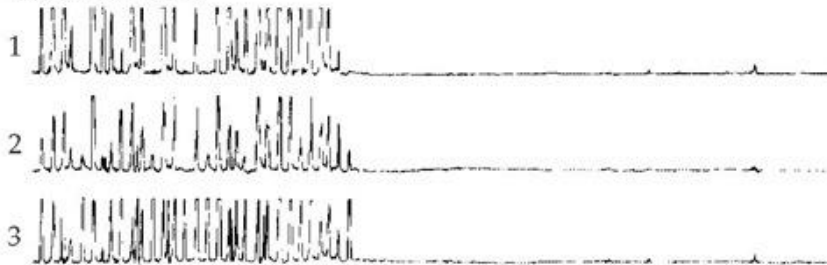
Dietary impact
unknown



Upper GI Pressure & Motility

a Fasting

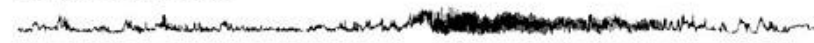
Antroduodenal



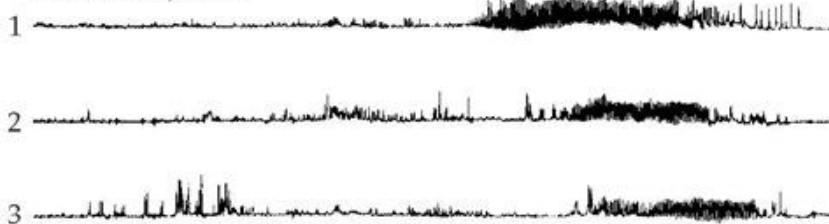
Descending Duodenum



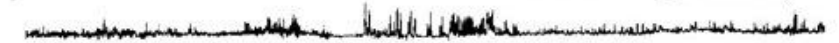
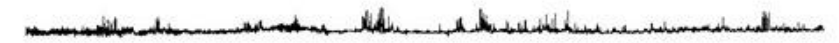
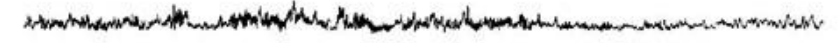
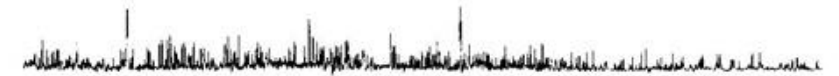
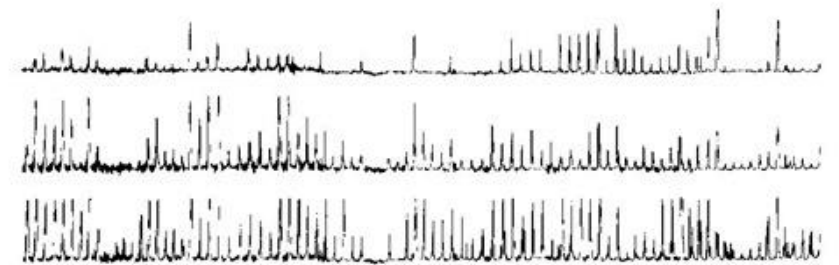
Distal Duodenum



Proximal Jejunum

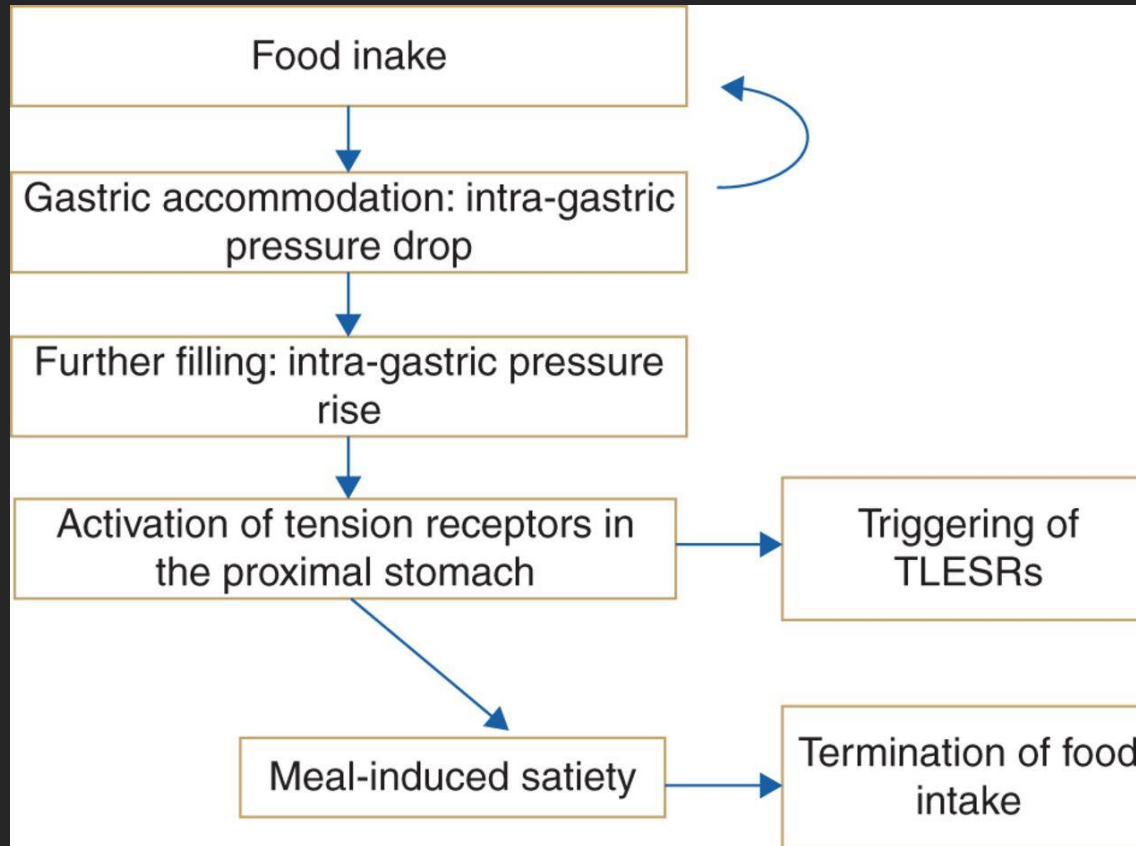


b End of Meal



1 min } 50 mm Hg

Gastric events & nutrient ingestion



UPPER GI DISCOMFORT

Sex dimorphism

Hyper-reactivity

Hyper-sensitivity

Profound impact
on QoL



**EVERYONE
SEEMS NORMAL
UNTIL YOU GET
TO KNOW THEM**



Physiological Food Reactions

- Large volume meals (overeating) may cause distension, pain and regurgitation.
- Fatty foods delay gastric emptying, alter motility
- Legumes, cruciferous vegetables, garlic, onions, etc, may lead to flatus (farts)
- Non-absorbable or poorly absorbed sugars and carbohydrates (FODMAPs) can cause diarrhea, bloating, flatulence, etc.
- Intestinal gas is NORMAL (up to 20 farts/day).

Eliminate foods containing fodmaps

excess fructose

fruit

apple, mango, nashi,
pear, tinned fruit
in natural juice,
watermelon

sweeteners

fructose, high fructose
corn syrup

large total fructose dose

concentrated fruit
sources, large serves
of fruit, dried fruit,
fruit juice

honey

corn syrup, fruisana



lactose

milk

milk from cows, goats
or sheep, custard,
ice cream, yoghurt

cheeses

soft unripened cheeses
eg. cottage, cream,
mascarpone, ricotta



fructans

vegetables

asparagus, beetroot,
broccoli, brussels
sprouts, cabbage,
eggplant, fennel, garlic,
leek, okra, onion (all),
shallots, spring onion

cereals

wheat and rye, in large
amounts eg. bread,
crackers, cookies,
couscous, pasta

fruit

custard apple,
persimmon,
watermelon

miscellaneous

chicory, dandelion,
inulin

galactans

legumes

baked beans,
chickpeas,
kidney beans,
lentils



polyols

fruit

apple, apricot, avocado,
blackberry, cherry,
lychee, nashi, nectarine,
peach, pear, plum,
prune, watermelon

vegetables

cauliflower, green
capsicum (bell pepper),
mushroom, sweet corn

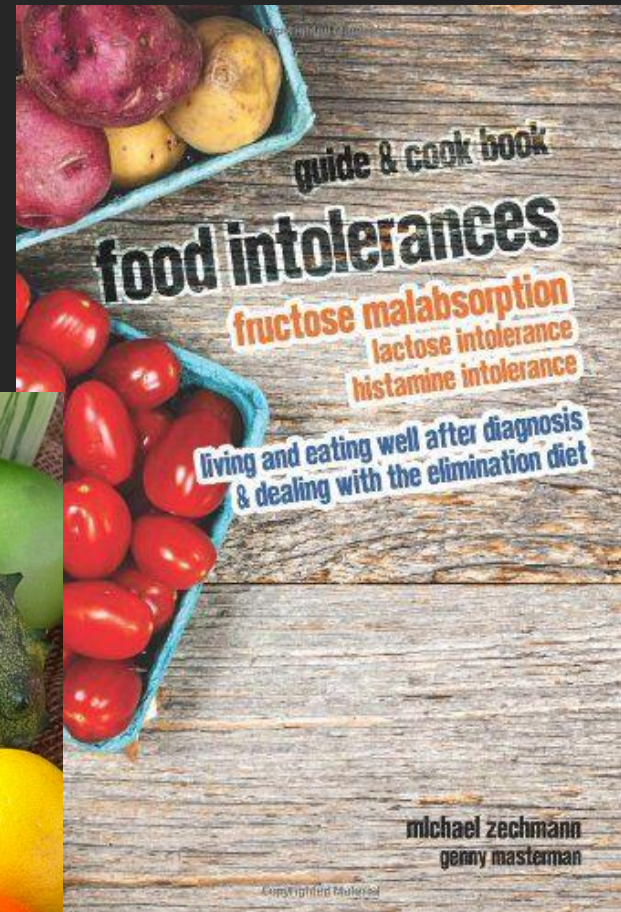
sweeteners

sorbitol (420)
mannitol (421)
isomalt (953)
maltitol (965)
xylitol (967)

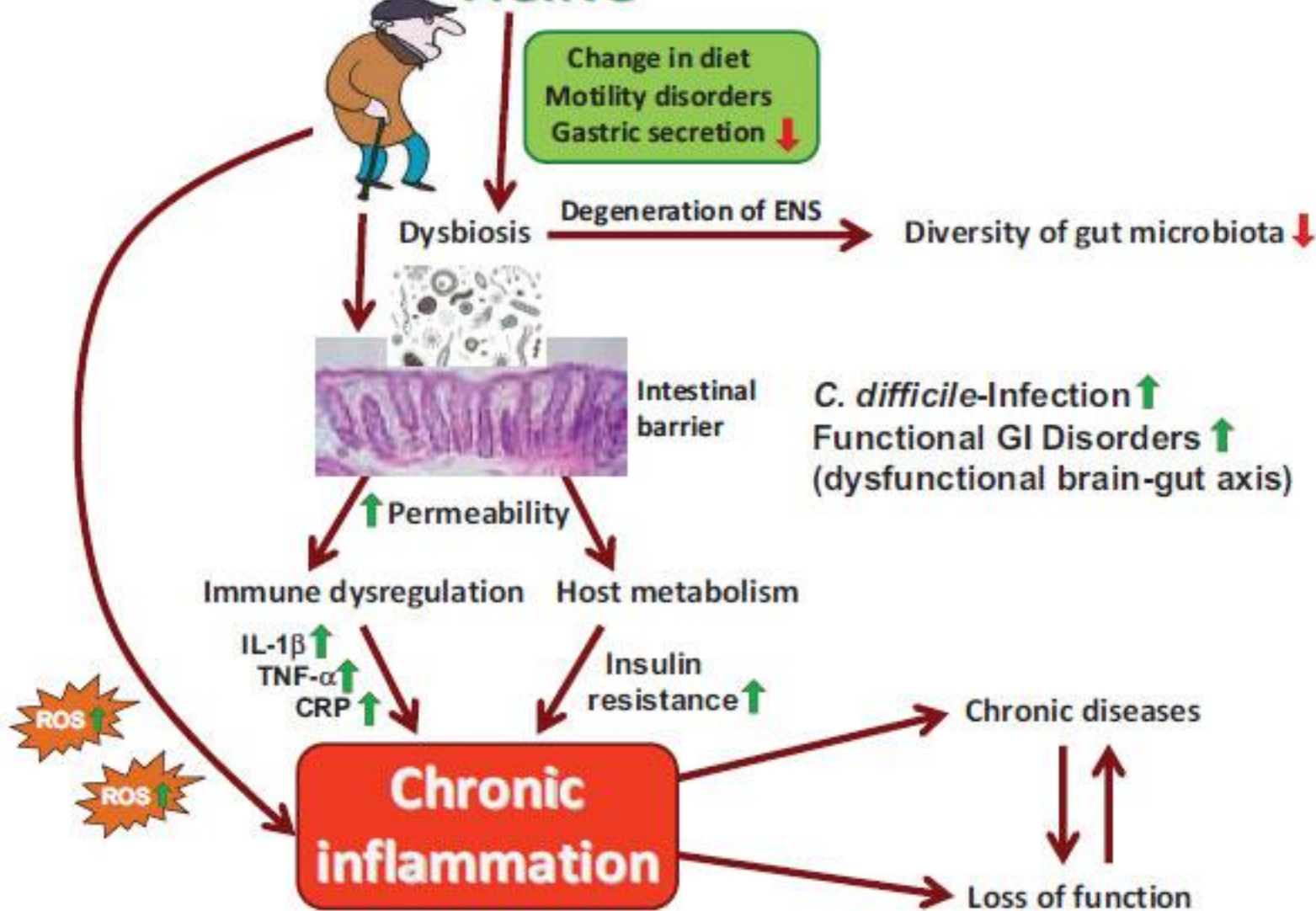




Could **Fructose Malabsorption** be the Cause of your **Irritable Bowel Syndrome**?



AGING





"Nigma's comprehensive approach pinpointed exactly
what my body needed to give me the optimal glow."

—Penelope Cruz

Younger Skin Starts in the GUT

4-Week Program to
Identify and Eliminate
Your Skin-Aging Triggers

—Gluten, Wine, Dairy
and Sugar

DR. NIGMA TALIB



Food Intolerance is not the same as Food Allergy



Milk



Egg



Shellfish



Fish



Tree Nuts



Wheat



Peanut



Soybean



Acknowledgements

