

That Gut Feeling.

...an introduction to the gut-brain connection.

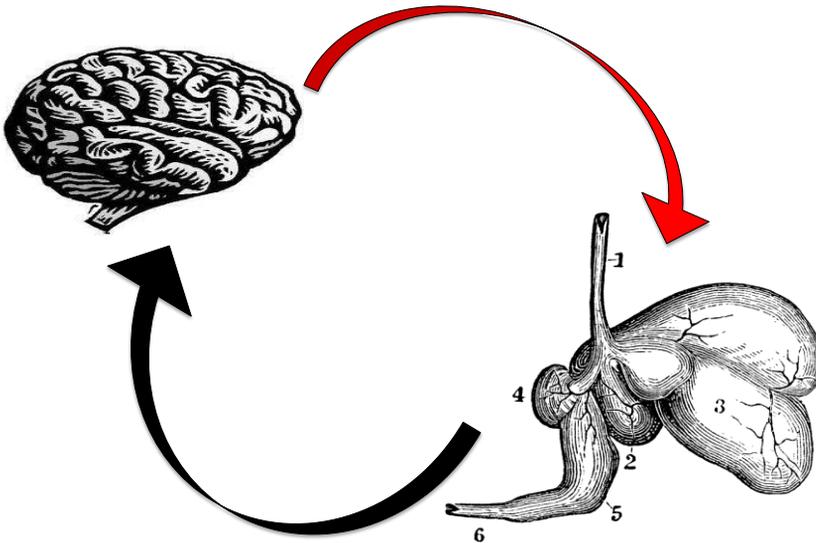
1. From Brain to Gut

2. From Gut to Brain

1. Gut, Brain and Food

Lydia Bartholow, PMHNP

1. From Brain to Gut...





Initial signs and symptoms of the stress response:
(aka fight, flight or freeze or HPA axis)



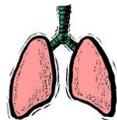
Blurred vision

nausea

Increased heart rate

Sweaty palms

Muscle tension



Increased blood pressure

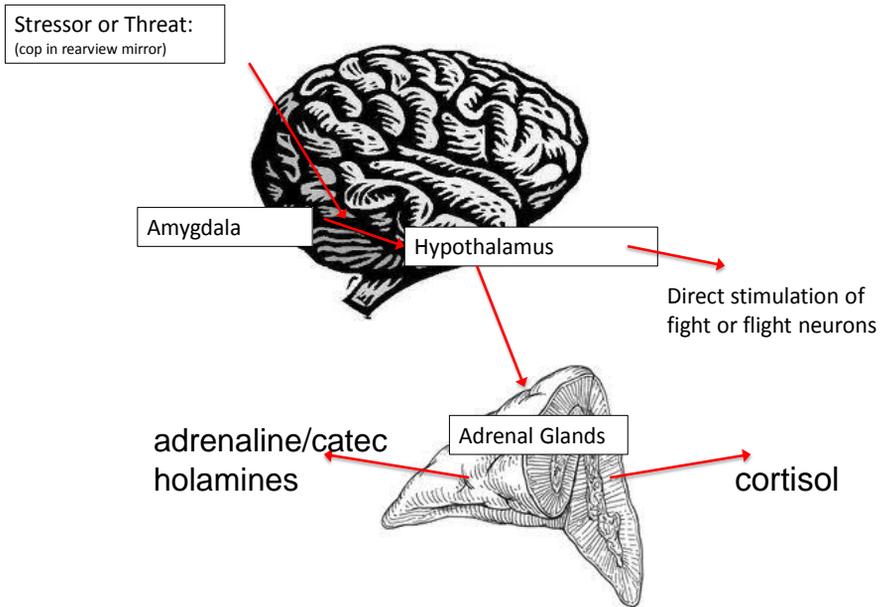
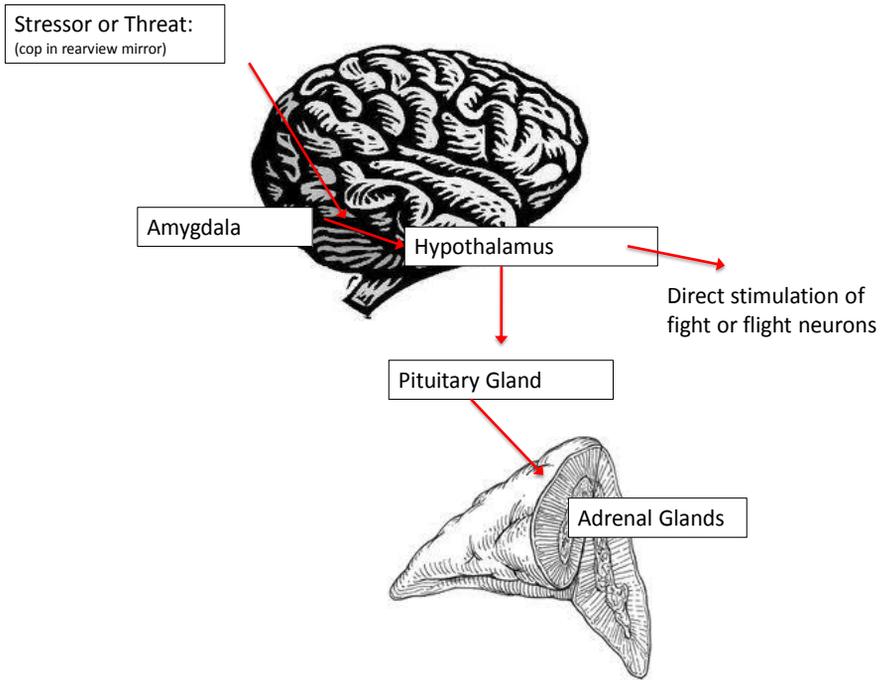
shaky

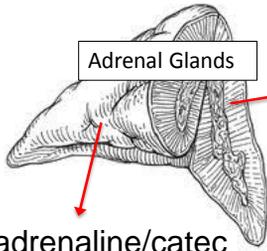
Thoughts of impending doom



Inability to focus/
think straight





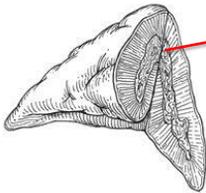


Adrenal Glands

cortisol

**adrenaline/catec
holamines**

- immune system suppression
 - downregulation of metabolism (thyroid)
 - water retention
 - hyperglycemia
 - muscle breakdown
 - fat redistribution
 - removal of calcium from bones
 - decreased serotonin
 - increased intestinal permeability
 - increased gastric acid
- pupil dilation
 - sweat
 - muscle contractility
 - increased HR
 - increased BP
 - blow flow away from stomach
 - blow flow away from brain
 - blood flow to vital organs
 - increased blood sugar



Affects of long term cortisol...

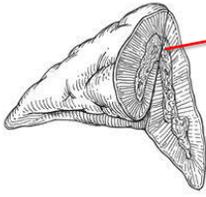
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- muscle breakdown =
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- decreased serotonin =
- decreased depamine =
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- increased gastric acid =



Got privilege and oppression?

Privilege	Oppression
White folks	Folks of Color
Higher SES	Lower SES
Straight Folks	LGBTQI Folks

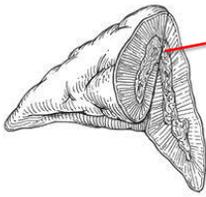
Who's more likely to have higher levels of cortisol?



Affects of long term cortisol...

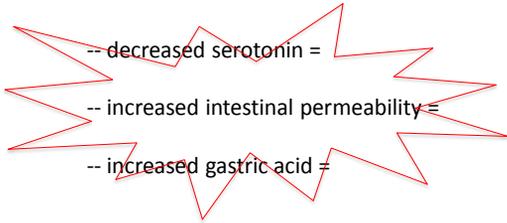
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Herbs to Boost Stomach Juices:

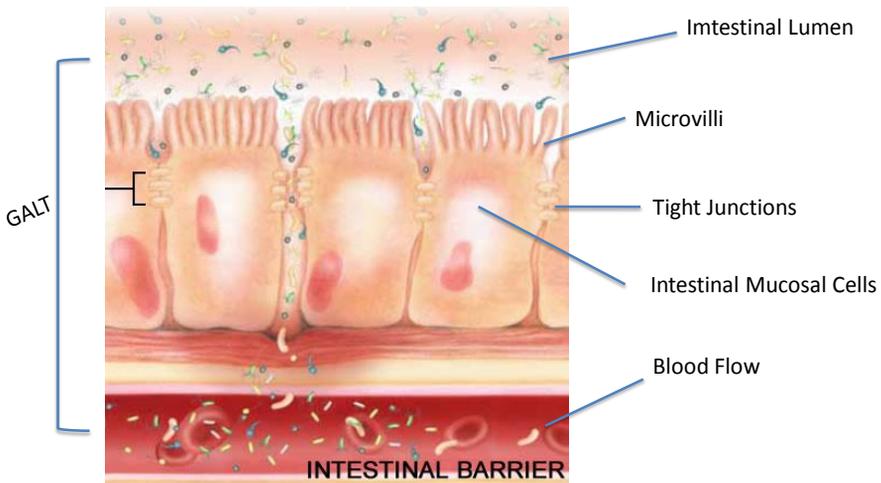


Affects of long term cortisol...

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- increased gastric acid =



Gastric Permeability?



Gastric Permeability?

Leaky gut → Systemic Inflammation

1. Large proteins enter blood stream
2. Liver called upon to remove toxins
3. Immune system engages
4. Systemic Inflammation
- (5. Activated immune system encourages more cortisol)

Gastric Permeability?

A. Leaky gut?

B. Systemic Inflammation

Gastric Permeability?

A. Leaky gut?

1. Licorice?
2. Marshmallow?
3. Slippery Elm

B. Systemic Inflammation

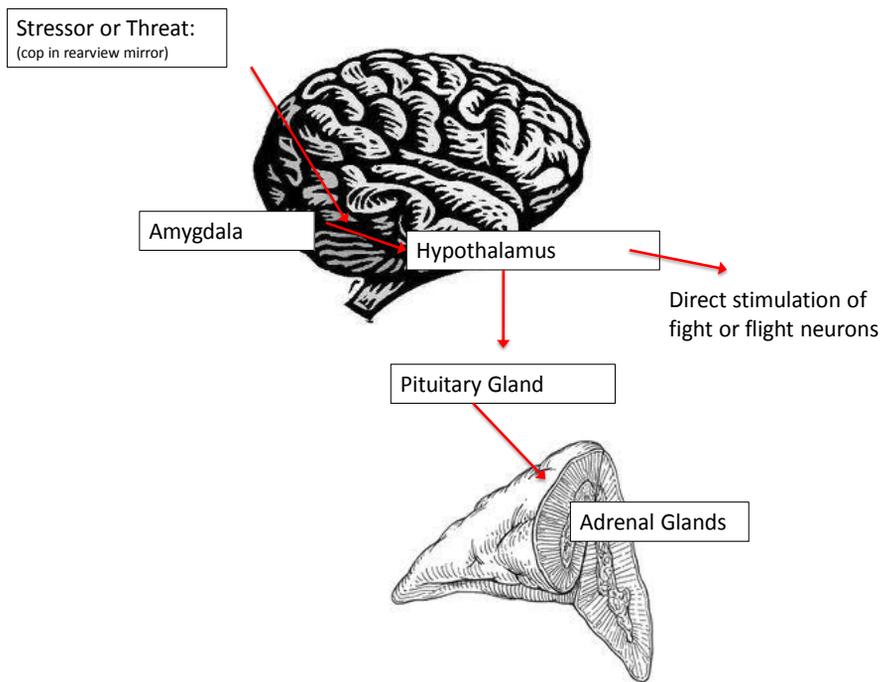
1. Turmeric?
2. Licorice?
3. Chamomile?

And let's not forget....

Nervines

1. Catnip
2. Skullcap
3. Chamomile
4. Oats

And more and more!



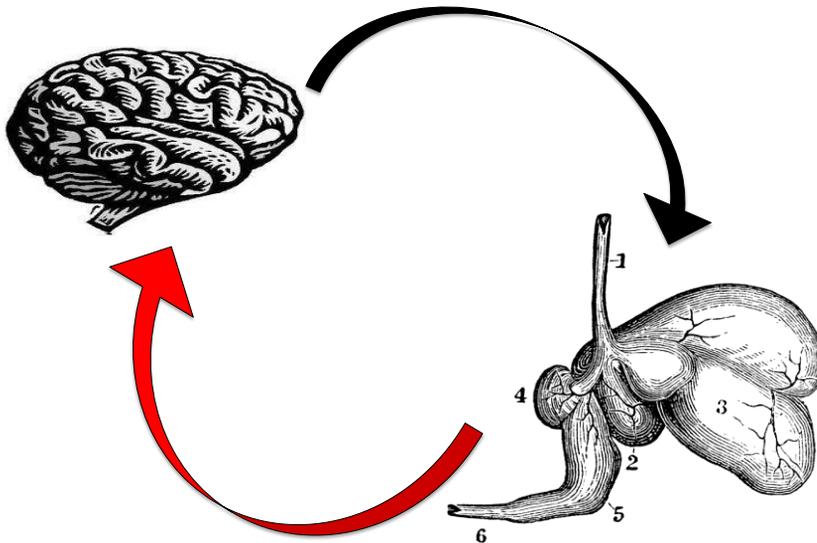
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2. From Gut to Brain...



Gut facts: Serotonin

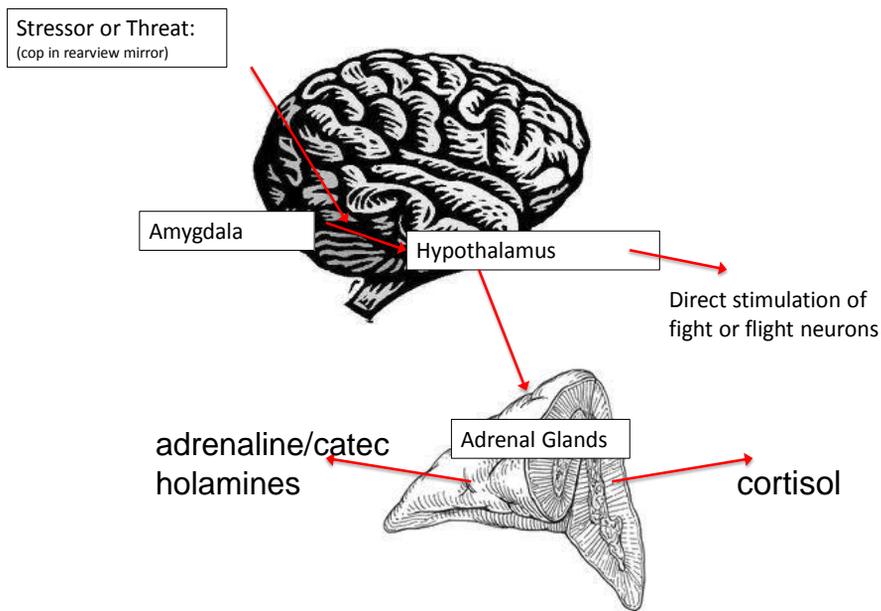
- 95% of serotonin is made in stomach
- Precursors are produced by good gut flora
- Liver repackages precursors and sends to CNS for use
- Independent nervous system, an intricate network of 100 million neurons embedded in the gut wall – serotonin is the primary neurotransmitter

Gut facts: Good Gut Flora

- Good gut flora mediates/dampens HPA axis
 - Bad gut flora increases HPA
- Aids in production of Serotonin
- Aids in production of B Vitamins
- Modulates immune response, decrease in inflammatory mediators and increase in foreign body recognition

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Gut facts: Bad Gut Flora

- Bad gut flora increases HPA axis reactivity
- Increases global inflammatory response
- “Craves” more bad bacteria!
 - Bad Bacteria comes from low nondigestible fibre carbs.
 - Bacteria wants to self-feed/promote its own fitness, not feed you.

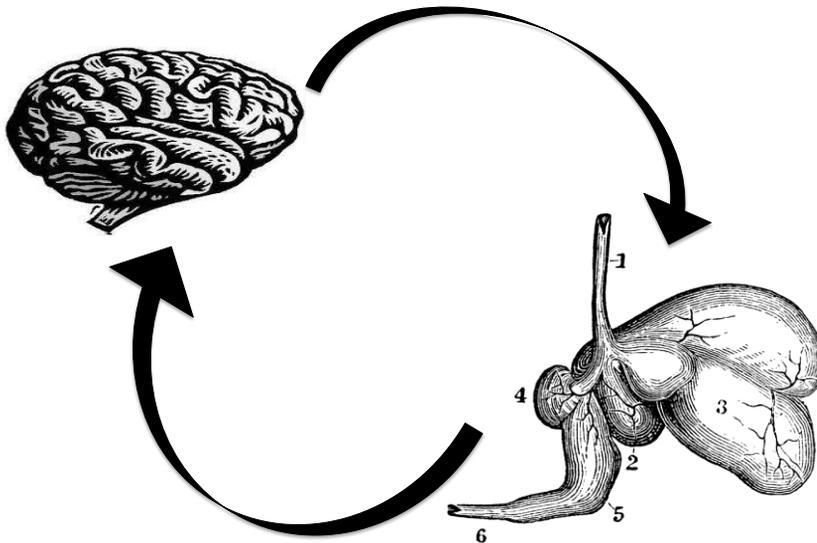
Prebiotics

- Non-digestible food/herb parts that stimulate the growth and/or activity of bacteria in the digestive system
- Herbs:

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- Non-digestible food/herb parts that stimulate the growth and/or activity of bacteria in the digestive system
- Herbs:
 1. Chicory
 2. Garlic
 3. Dandelion (greens)
 4. Slippery Elm

3. Gut, brain and food



What are comfort foods?



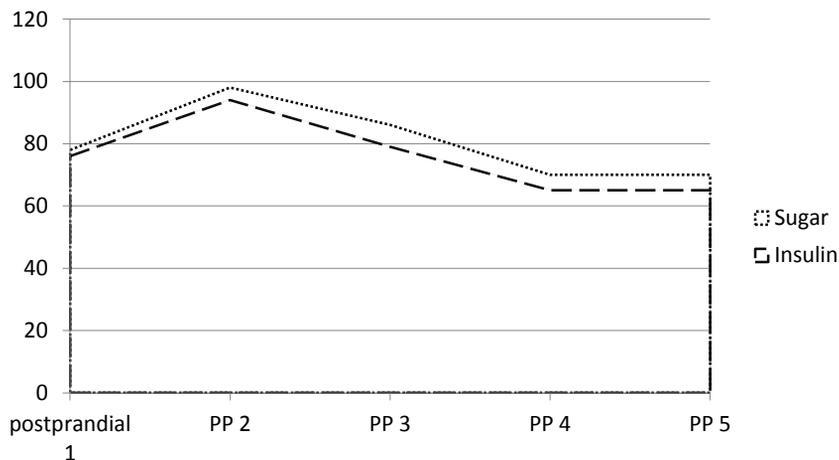
= increase serotonin

What are comfort foods?

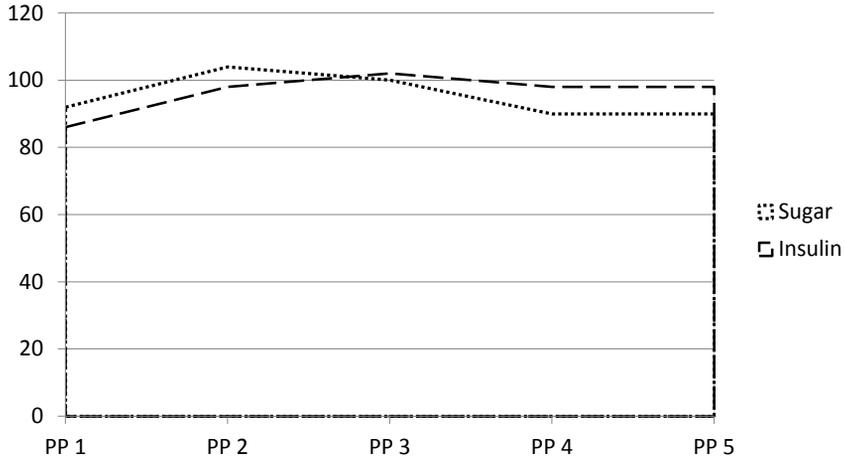


**= often, feeding “bad” gut bacteria
And GUT bacteria control what you crave!**

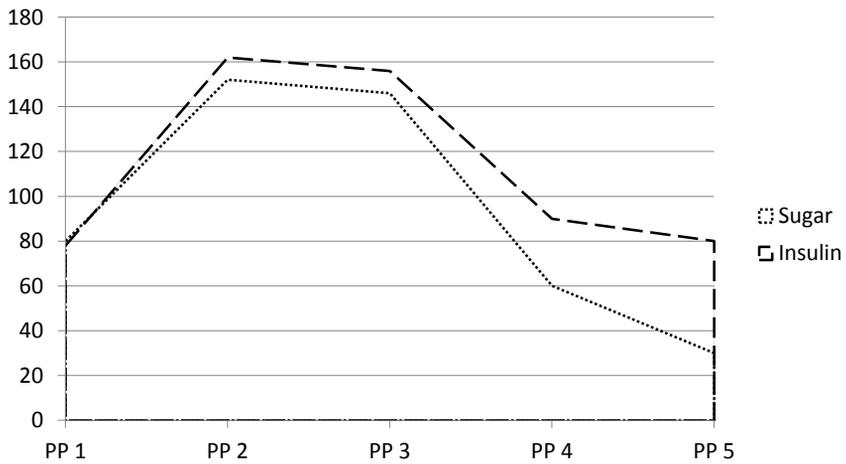
“Healthy” glucose-sugar response



Resistance!



High G.I. Response

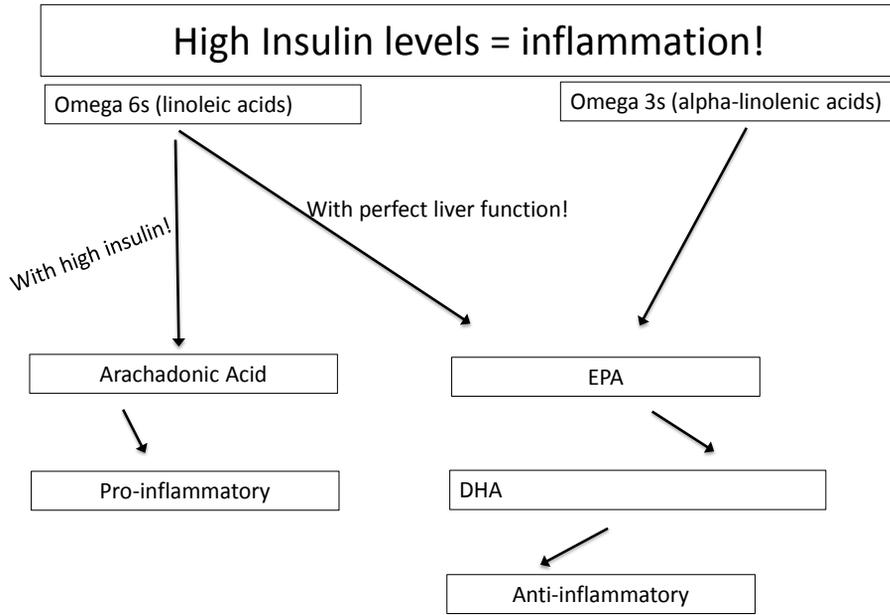


What's GI?

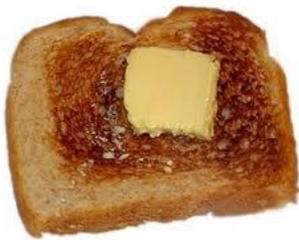
- The **glycemic index** provides a measure of how quickly blood sugar levels (i.e., levels of glucose in the blood) rise after eating a particular type of food. The glycemic index estimates how much each gram of available carbohydrate (total carbohydrate minus fiber) in a food raises a person's blood glucose level following consumption of the food, relative to consumption of pure glucose.^[1]

Useful, common GI #s

- Soy delicious, vegan ice cream = 112
- Straight up glucose = 100
- White bread = 92
- Angel hair Pasta = 50
- Spinach = 5
- Steak, oil, lard, cheese = 0
- Nopales cactus = -2



BanFatphobia



BanFatphobia



Thanks!

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