

# Probiotics and Prebiotics

Jonnell Masson

December 28, 2011

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- Please do ask questions

# **Webinar Etiquette**

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- In the News
- Definitions of Probiotics and Prebiotics
- Probiotics
- Prebiotics

# Overview

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## Probiotics Good for Oral Health, Study Finds

Published December 14, 2011 / FoxNews.com



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Probiotics are live micro-organisms, which are thought to be beneficial to the stomach. However, a new study out of [Spain](#) finds they are also good for your teeth.

# In the News

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## Do Probiotics Really Work?



By NEAL KARLINSKY (@NealKarlinsky)

Dec. 13, 2007

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Probiotics contain "friendly" bacteria, and are said to help with intestinal health. You can buy it as a pill, or get it in yogurt and other food products.

For Rita Condon, most days begin with her mixing up a healthy dose of bacteria to eat. She says the rest of us could use more in our diets, too.

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## Science News

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### Probiotics May Help Ward Off Obesity, Study In Pregnant Women Suggests

*ScienceDaily (May 7, 2009)* — Amsterdam, the Netherlands: One year after giving birth, women were less likely to have the most dangerous kind of obesity if they had been given probiotics from the first trimester of pregnancy, found new research that suggests manipulating the balance of bacteria in the gut may help fight obesity.

Probiotics are bacteria that help

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# In the News

# Dannon's Activia, DanActive health claims draw \$21M fine

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[Enlarge](#) Dannon

Jamie Lee Curtis in a commercial for Activia yogurt.

By [Bruce Horovitz](#), USA TODAY

The federal government appears poised to take a far more aggressive watchdog role under the Obama administration over deceptive ad practices.

Dannon — part of the world's biggest yogurt maker [Danone](#)— agreed to pay a \$21 million fine and stop making exaggerated health claims for two popular Dannon products under a settlement with the federal government and attorneys general from 39 states on Wednesday.

It follows Monday's \$2.1 million FTC settlement with kids-vitamin maker NBTY over unsupported health claims and because the products didn't have the amount of omega-3 claimed.

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## Probiotic health claims dismissed

General health claims for "probiotic" drinks and yogurts have been dismissed by a team of experts from the European Union.

Their opinions will now be voted on by an EU Committee which is drawing up a list of permitted health claims.

Scientists at the European Food Safety Agency (EFSA) looked at 180 health claims for the supplements.



Lactobacillus bulgaricus is one of the probiotics found in health drinks and yoghurts

# In the News

- According to the World Health Organization probiotics are “Live microorganisms which when administered in adequate amounts confer a health benefit on the host”
- Prebiotics are food ingredients that human enzymes cannot digest and that act to stimulate the growth or activity of **beneficial** bacterial in the colon
- Synbiotics is the term used when Probiotics and Prebiotics are given together

# Definitions

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- The scientific criteria used to consider a microbe to be a probiotic:
  - That it be a purified strain of the microbe
  - The strain needs to be identified using biochemical and genetic techniques
  - Has to have been shown to improve human health through human studies
  - Has been shown to be safe for the target consumers
- There is currently no legal definition for using the term probiotic

# Probiotic Criteria

- Treats diarrhea, especially following treatment with certain antibiotics
- Prevents and treats vaginal yeast infections
- Treats irritable bowel syndrome
- Speeds treatment of certain intestinal infections
- Prevents and treats eczema in children

# Health Claims for Probiotics

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- Improves immune response
- Improves lactose tolerability
- Alleviates allergies
- Alleviates Chronic Fatigue Syndrome

# **Health Claims for Probiotics**

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- Treatment of infectious diarrhea in children and adults
  - Probiotics found to be effective in studies:
    - Lactobacillus rhamnosus GG (LGG) for children and adults
    - Saccharomyces boulardii (S. boulardii) for adults
    - Lactobacillus reuteri for children
- Prevention of antibiotic associated diarrhea
  - Probiotics found to be effective in studies:
    - Saccharomyces boulardii, LGG

# Diarrhea

- Studies on treating Irritable Bowel Syndrome (IBS) show mixed results
- The probiotic bifidobacterium infantis 35624 shows the most promise with 2 large randomized controlled trials showing an improvement in symptoms

# Irritable Bowel Syndrome

Whorwell PJ, et al. Efficacy of an encapsulated probiotic bifidobacterium infantis 35624 in women with irritable bowel syndrome. *Am J Gastroenterol.* 2006;101:1581-1590.

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O'Mahoney L, et al. A randomized, placebo-controlled, double-blind comparison of the probiotic bacteria lactobacillus and bifidobacterium in irritable bowel syndrome (IB): Symptom responses and relationship to cytokine profiles, *Gastroenterology.* 2005; 128:541-551.

- Bifidobacterium lactis and LGG are both recommended for treatment and prevention of atopic eczema associated with cow's milk allergy

# Allergies

- The immune response has been shown by numerous studies to be positively affected by the probiotics *Lactobacillus acidophilus*, *L. plantarum*, *Bifidobacterium lactis*, *Lactobacillus johnsonii*, and LGG

# Immune System

- Some studies show that other conditions may be improved by probiotics such as Crohn's, Ulcerative Colitis, Chronic Fatigue Syndrome, lactose intolerance, vaginosis and vaginitis. However, not enough quality human research studies have been performed to support using probiotics to treat these conditions.

# Other Conditions

- Some probiotics are considered safe as numerous studies have been performed
  - Lactobacillus, Bifidobacterium, Streptococcus thermophilus and saccharomyces strains
- Other probiotics should be looked at on a case-by-case basis depending on the individual's health
  - Should be done in conjunction with the individual's health care provider

# Probiotic Safety

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- The Live and Active Cultures seal indicates that at the time of manufacture the yogurt contained at least 100 million cultures per gram or the frozen yogurt contained at least 10 million per gram
- There is currently no requirement to list the exact strain or number of cultures of probiotic found in a product, although some products do give this information

# Probiotic Labeling

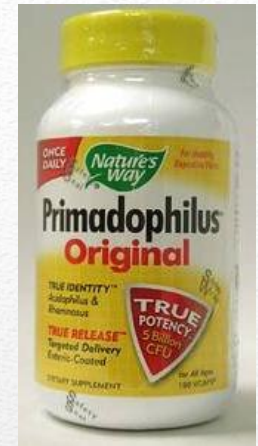
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- Most yogurt including many non-traditional types of yogurt contain active cultures
  - Silk Live! Soy Yogurt
  - Whole Soy & Co Yogurt
  - Amande Cultured Almond Milk
  - Bellwether Farms Sheep Milk Yogurt
- Lifeway Kefir
- Glen Oaks Drinkable Yogurt
- Häagen-Dazs Frozen Yogurt
- Yogurt Creamies



# Probiotic products

- Good Belly Probiotic Drinks
- GT'S Kombucha
- Yakult Probiotic Drink
- Mojomilk
- American Health Probiotic Acidophilus
- Nutrition Now PB8
- Harmons Double Strength Probiotic Complex
- Nature's Way Primadophilus
- Align Probiotic Supplement



# Probiotic products

- Many probiotics have not had sufficient research to determine safety or efficacy and should not be recommended at this time
- Some probiotics that have had sufficient research to be considered safe for generally healthy people include lactobacillus, bifidobacterium, streptococcus thermophilus, and saccharomyces strains and can be recommended
- Probiotics should **not** be recommended in place of medical treatment

# Probiotic Recommendations

- Research is performed using specific strains and doses of probiotics
- If using a probiotic for a specific purpose it is important to choose a product that lists the strain (e.g. B infantis 35624 in the product Align) of the probiotic as well as how many cultures the product contains

# Probiotic Recommendations

- The U.S. had sales of probiotics of over \$500 million in 2009
- This number is expected to increase by an additional 277 million by the year 2014

# Probiotic Market

- The most common prebiotics used in the U.S. are the fructans
  - These include oligosaccharides and fructooligosaccharides found in small quantities in wheat, onions, artichokes, garlic and bananas
  - These are also extracted from chicory or manufactured from sucrose to be used as food additives

# Prebiotics

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- In the U.S. fructooligosaccharides have been approved as a Generally Regarded as Safe (GRAS) ingredient
- The Committee on Nutrition of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition state that there is insufficient data to recommend routinely adding prebiotics or probiotics to infant formula

# Prebiotics

- Stimulates the growth of beneficial bacteria (usually bifidobacteria and lactobacillus)
- Possible increase in calcium absorption
- Research is being conducted in the areas of cancer prevention, serum cholesterol reduction, glycemic control

# Health Benefits of Prebiotics

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- Yerba Prima Colon Care
- Bragg Raw Apple Cider Vinegar
- Fiber Choice Prebiotic Powder
- FiberOne Bars



- Jerusalem Artichokes
- Whole Grains
- Flax
- Legumes
- Onions
- Garlic
- Leeks
- Bananas



# Prebiotic Products

- Enfamil formula
- Gerber formula
- Similac formula
- Pediasure

# **Prebiotic Infant & Toddler Products**

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- More research should be conducted before prebiotics should be routinely recommended
- For healthy adult customers wanting to improve their fiber intake, FiberOne bars or Fiber Choice Prebiotic Powder could be recommended as options that include prebiotics
- Increasing whole grains, fruit and vegetable intake could also increase fiber intake along with prebiotic intake and should be recommended

# Prebiotic Recommendations

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- Prebiotic sales are approximately 110 million and expected to double within the next 5 years
- 35% of the market is for inulin, 25% for mannan oligosaccharides and 10% for fructan oligosaccharides

# Prebiotic Market

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# Questions?

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