

# **The Million Dollar Question: What formula should I use?**

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# Disclosures

- None

OHHSU

# One Singular Objective

- Understand infant and pediatric formulas and their appropriate uses

OHSU

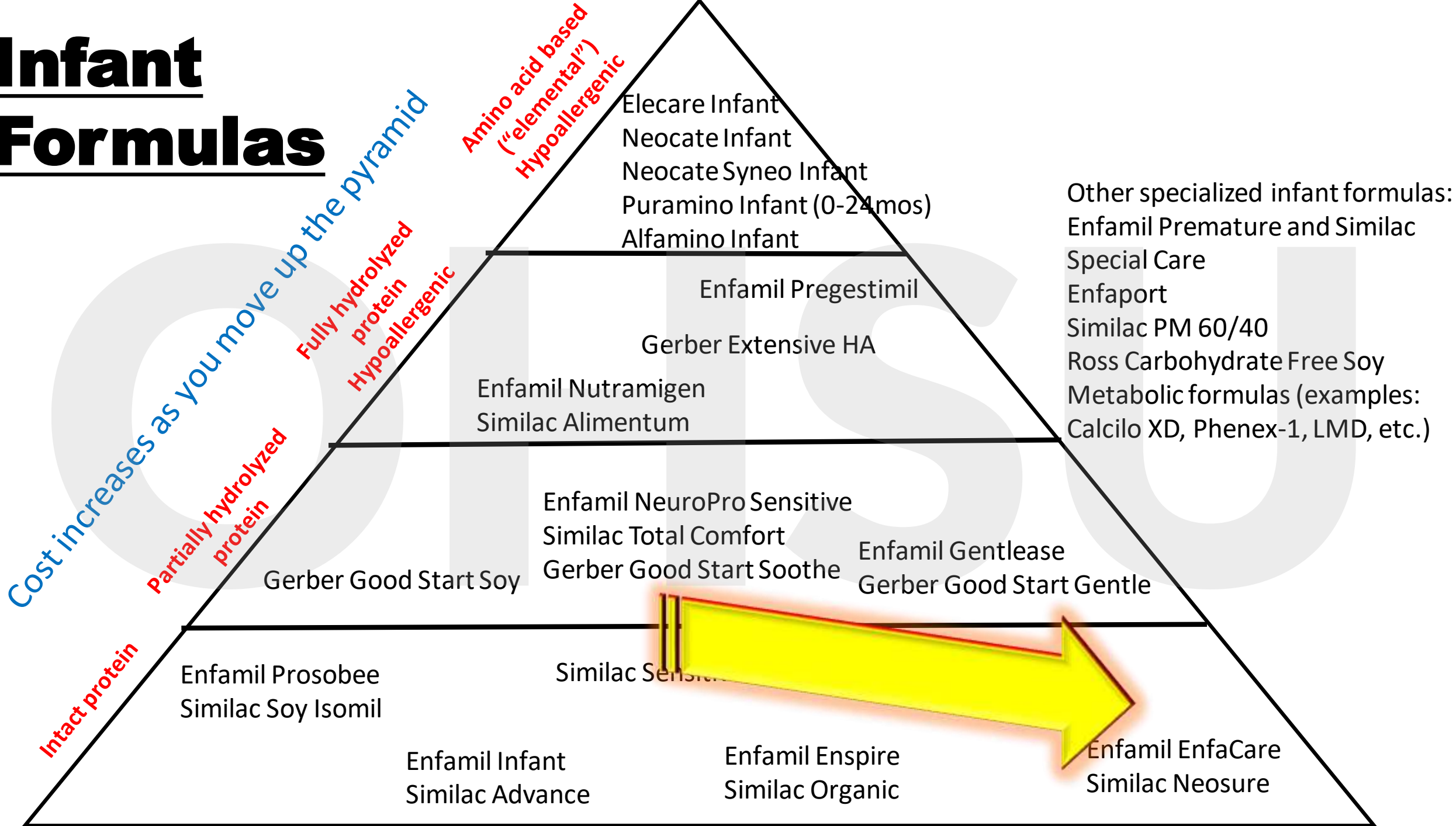
# Infant Formulas

- Breastmilk is best! But sometimes not available or appropriate
- FDA regulated
- Standard concentration is 20 calories per ounce for majority of formulas
  - Premature discharge formulas are 22 calories per ounce standard mixing
- Main formula companies: Enfamil, Similac, and Gerber
- Differences in carbohydrate source, protein composition, and fat source

# Infant Formula Ingredients

- Carbohydrate sources: lactose, corn syrup solids, modified corn starch, rice starch
- Fat sources: vegetable oil (including palm, coconut, soy), high oleic sunflower oil, medium chain triglycerides, corn oil, safflower oil, canola oil
- Protein sources: whey and/or casein protein, partially hydrolyzed milk protein, casein hydrolysate (from milk), amino acids
- Vitamins and minerals

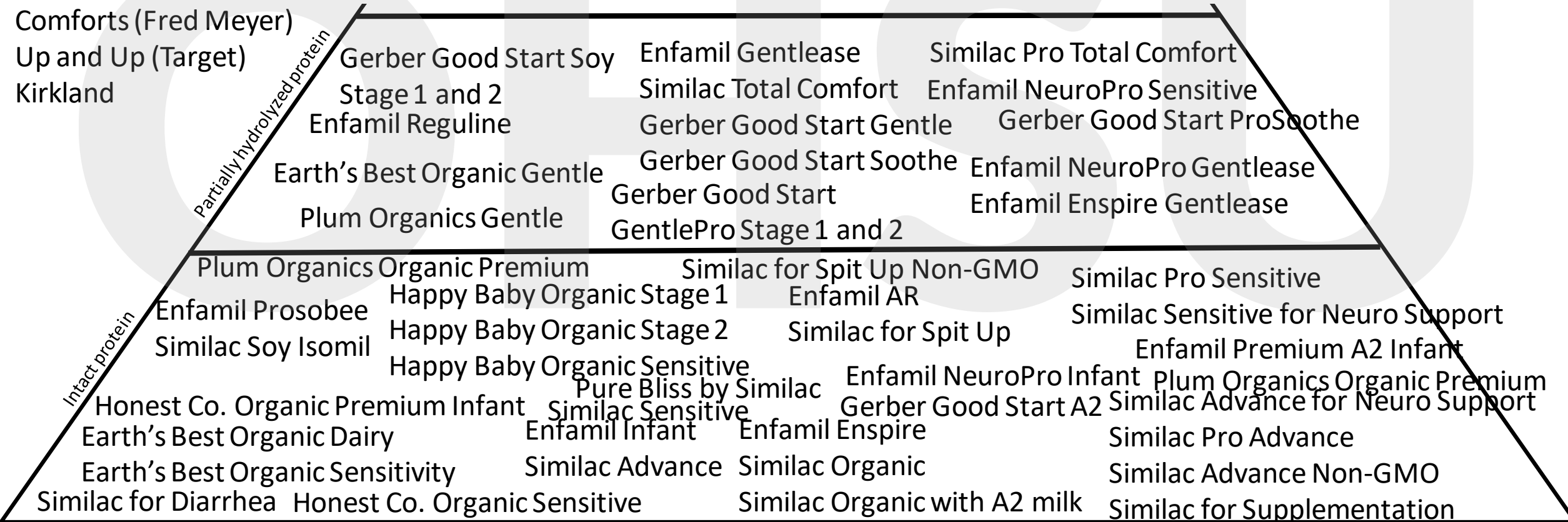
# Infant Formulas



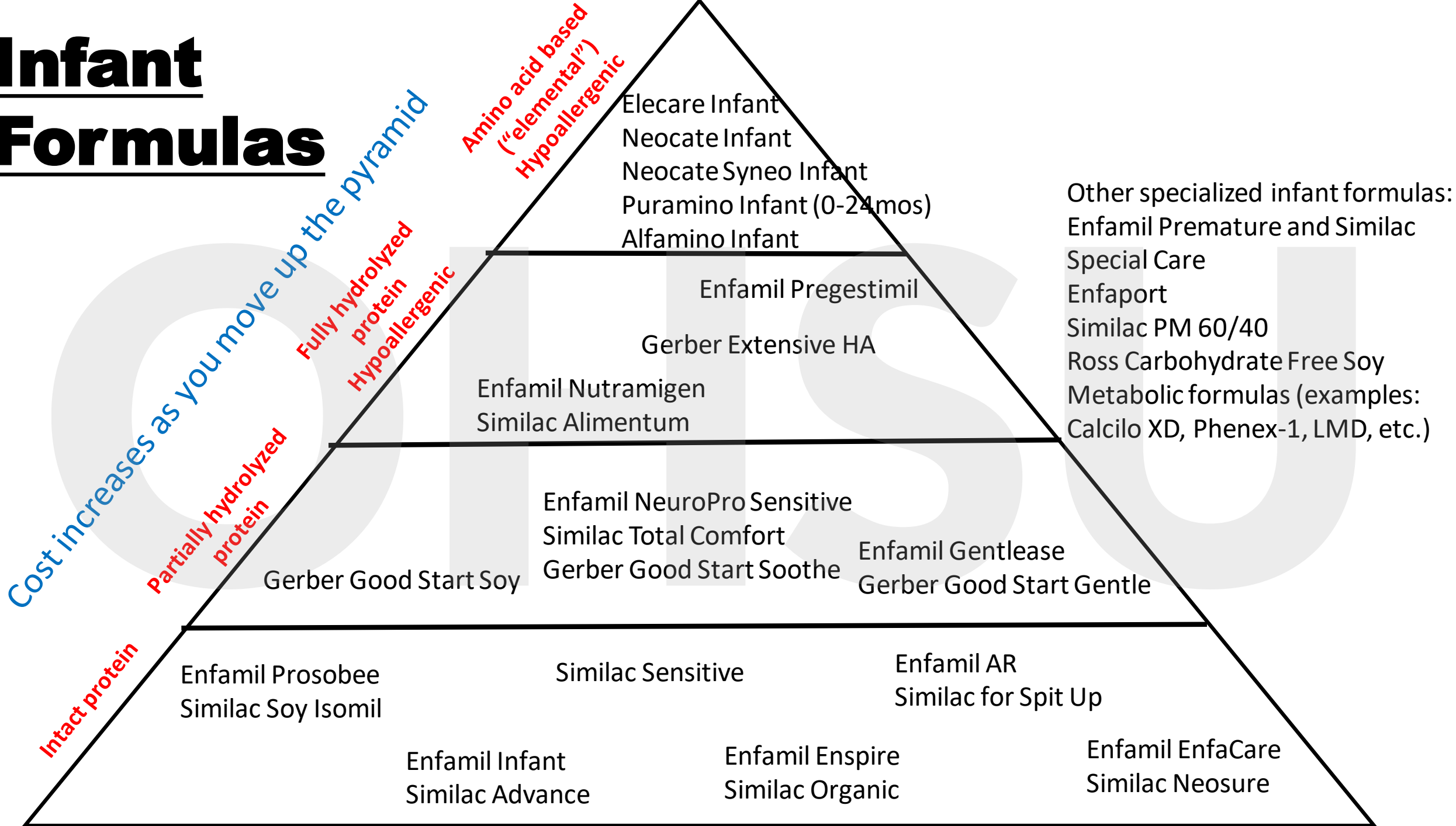
# The bottom half of the pyramid really looks like this...

Plus there are store brands:  
 Simple Truth Organics (Kroger)  
 Parent's Choice (Walmart)  
 Comforts (Fred Meyer)  
 Up and Up (Target)  
 Kirkland

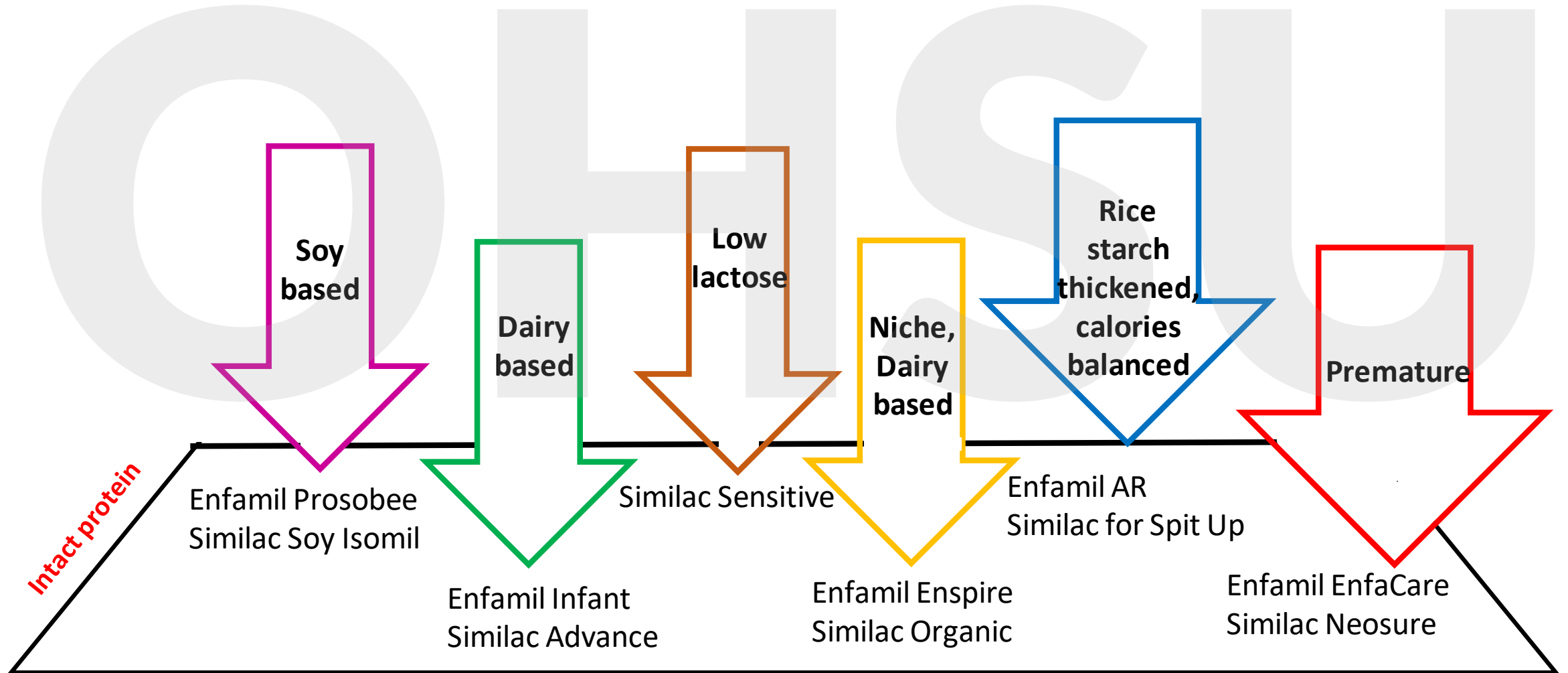
\*Not included: Non-US formulas (such as HiPP, Holle, etc.)



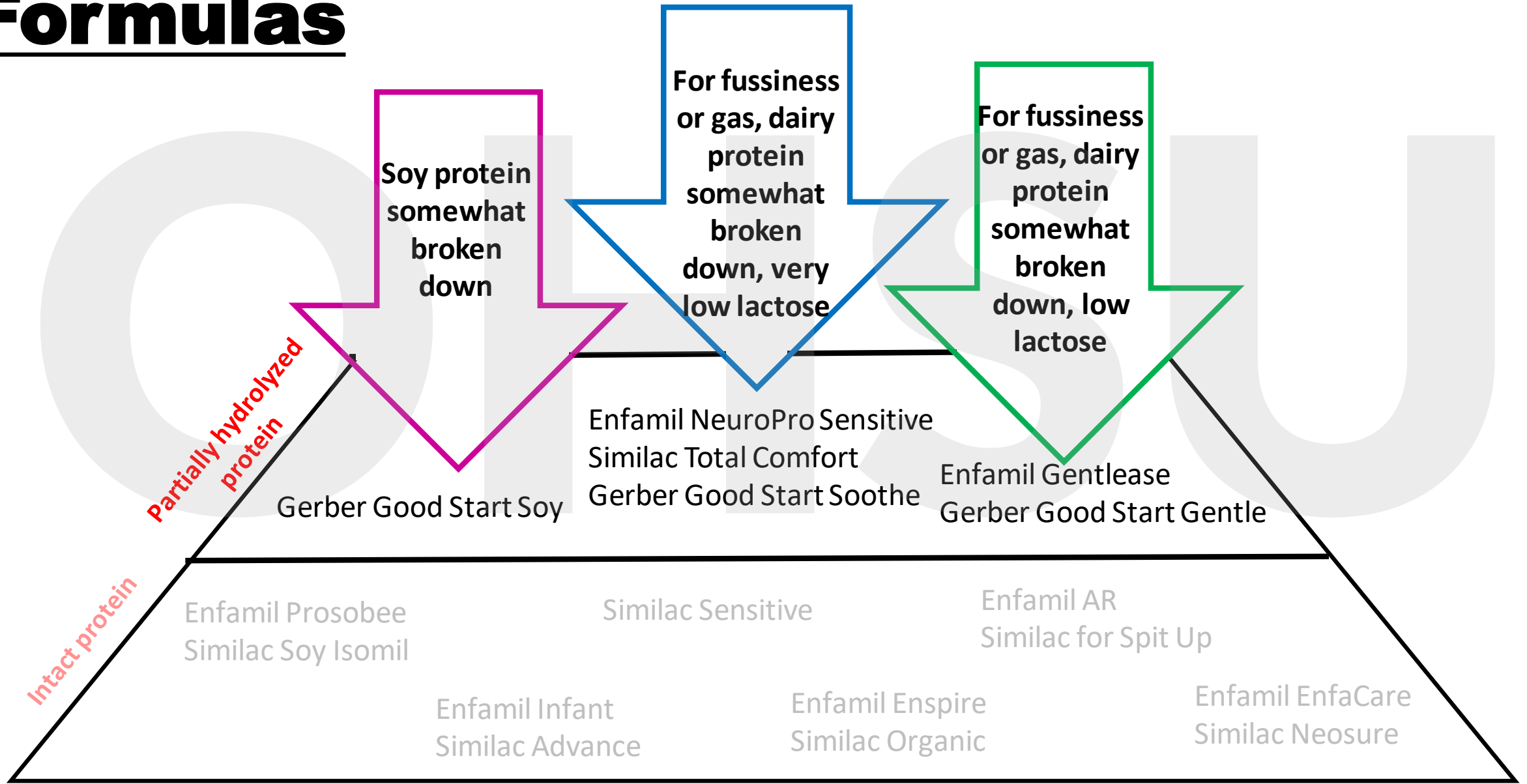
# Infant Formulas



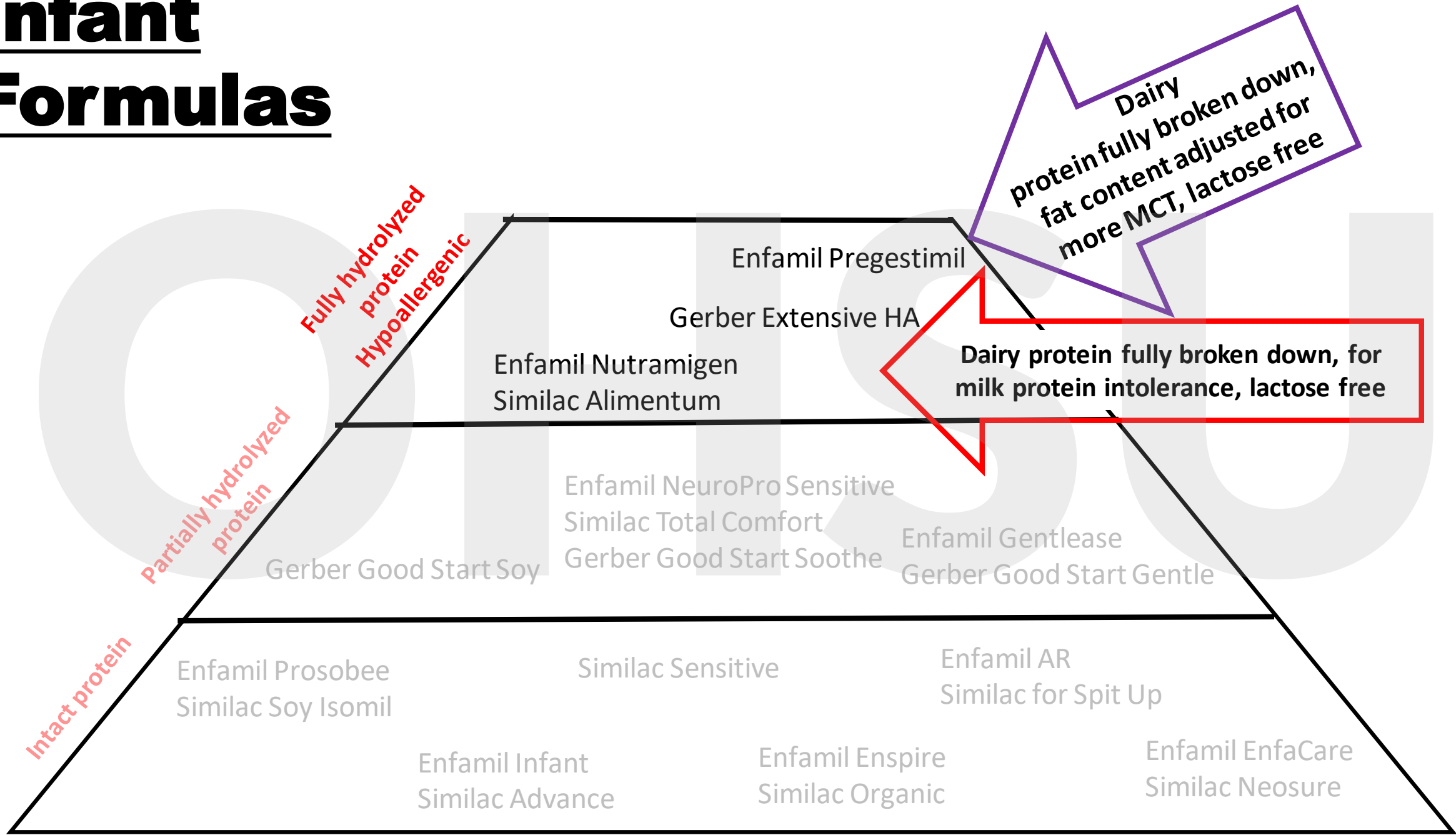
# Infant Formulas



# Infant Formulas



# Infant Formulas



# Infant Formulas

*Amino acid based  
("elemental")  
Hypoallergenic*

Elecare Infant  
Neocate Infant  
Neocate Syneo Infant  
Puramino Infant (0-24mos)  
Alfamino Infant

**Protein never built,  
completely hypoallergenic,  
very specialized**

*Fully hydrolyzed  
protein  
Hypoallergenic*

Enfamil Pregestimil  
Enfamil Nutramigen  
Similac Alimentum  
Gerber Extensive HA

*Partially hydrolyzed  
protein*

Enfamil NeuroPro Sensitive  
Similac Total Comfort  
Gerber Good Start Soy  
Gerber Good Start Soothe  
Enfamil Gentlease  
Gerber Good Start Gentle

*Intact protein*

Enfamil Prosobee  
Similac Soy Isomil

Similac Sensitive

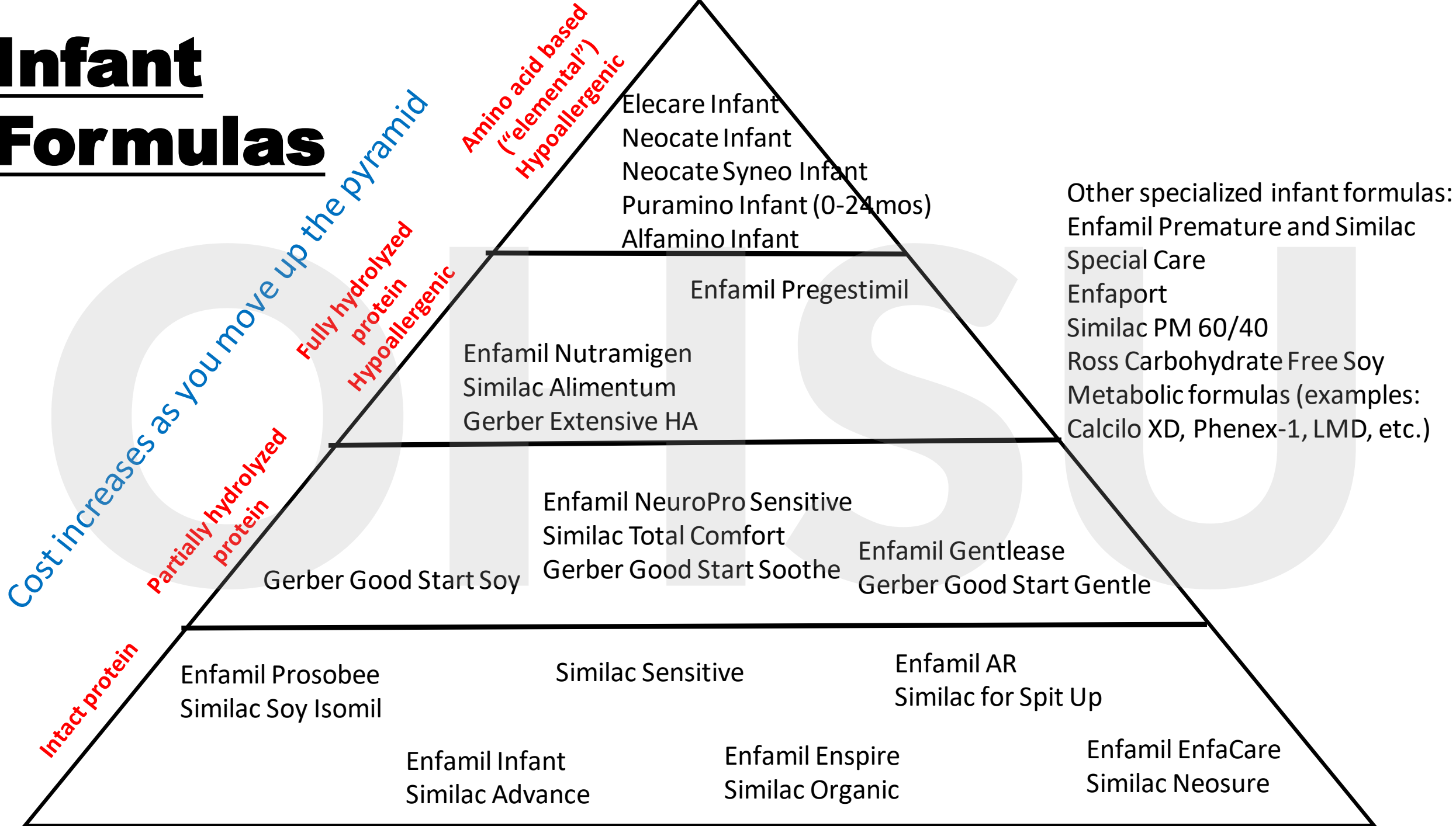
Enfamil AR  
Similac for Spit Up

Enfamil Infant  
Similac Advance

Enfamil Enspire  
Similac Organic

Enfamil EnfaCare  
Similac Neosure

# Infant Formulas



# Inappropriate Infant Milks

- Friend's breastmilk or Craigslist breastmilk
- Goat milk
- Homemade "infant formulas"
- Milk alternatives



# Oh Dr. Google...



Google

ideos : More Settings Tools

best when it  
the best choice

MATERNITYLEAGUE.COM  
THE BEST BREAST MILK ALTERNATIVE  
THE UNIVERSAL BREAST MILK ALTERNATIVE FOR HOME AND GAIT  
www.maternitylea...

Best Milk Alternatives for Babies -  
[www.faithful-to-nature.co.za](http://www.faithful-to-nature.co.za) > blog > the-b

Also ask

- a good substitute for breastmilk?
- milk is most like breast milk?
- milk closest to breastmilk?
- the most natural baby formula?

# About goat milk...

- Goat milk is most similar in composition to cow's milk
- Goat milk is **NOT** like breastmilk
- Goat milk is not safe for any baby, but especially not for cow's milk protein intolerant/sensitive babies
- Homemade formulas using goat milk are NOT safe or nutritionally complete
- Raw goat milk can contain dangerous bacteria, including E. Coli, Salmonella, Listeria, Campylobacter
- If an infant is on goat milk, counsel about the dangers and send referral to Registered Dietitian

# Nutrition Content Comparison

Per 100 calories	Breastmilk	Standard Infant Formula	Goat Milk
Calories per ounce	20	20	21
Protein	1.47g	2g	5.16g ↑
Calcium	46mg	78mg	194mg ↑
Folate	7μg	16μg	1μg ↓
Magnesium	4mg	8mg	20mg ↑
Potassium	73mg	108mg	296mg ↑
Sodium	24mg	27mg	72mg ↑

# Nutrition Content Comparison

- Recommend Intake for Age: 1.6-2.2g/kg/day protein, 200-260mg/day of calcium, 65-80µg/day of folate, 30-75mg/day of magnesium, 400-700mg/day of potassium, and 120-370mg of sodium
- If baby drinks 800calories per day:

	Breastmilk	Standard Infant Formula	Goat Milk
<b>Protein</b>	12g	16g	41g ~3x more
<b>Calcium</b>	368mg	624mg	1,552mg ~4x more
<b>Folate</b>	56µg	128µg	8µg Only 12% of need
<b>Magnesium</b>	32mg	64mg	160mg ~5x more
<b>Potassium</b>	584mg	864mg	2,368mg ~4x more
<b>Sodium</b>	192mg	216mg	576mg ~3x more

# International Formulas

- HiPP, Holle, etc are popular
- Unable to recommended at this time
- Per article: “The potential dangers are numerous. Children can fall ill or become malnourished if parents inadvertently use an incorrect formula-to-water ratio; unofficial formula vendors may not store the powdered formula properly, raising the possibility of bacterial contamination, product deterioration or loss in nutrient density; there is no system in place to notify consumers in the United States if any of these formulas are recalled; and while many European formulas contain the nutrients required in the United States, some do not. In addition, parents in the United States may not realize that European formulas labeled hypoallergenic aren’t meant for children with cow’s milk allergies.”



The image is a screenshot of a web article from the 'Parenting' section of the New York Times. The page features a navigation bar with 'Parenting' in the center, and links for 'Stages', 'Life as a Parent', 'All Topics', 'Guides', and 'Milestones'. Below the navigation, the article is categorized under 'FEEDING & NUTRITION'. The main headline reads: 'European Baby Formula That Is Illegally Sold in the United States Carries Risks, Pediatricians Warn'. The sub-headline states: 'HiPP, Holle and other brands are not registered with the F.D.A., but that hasn't stopped parents from buying them from third-party vendors.' The authors are listed as 'By Christina Caron and Jessica Grose' and the date is 'June 11, 2019'.

Source: <https://parenting.nytimes.com/feeding/european-baby-formula>

# Pediatric Formulas

- Oral supplements or tube feeds
- Complete nutrition source
  - In general, 1L for 1-8yo meets 100% of DRI nutrient needs, 1.5L for 9-13yo meets 100% of DRI nutrient needs
- Most formulas are 30 calorie per ounce or 45 calorie per ounce
- Main formula companies: Abbott and Nestle
- Blended tube feeding products are gaining in popularity

# Pediatric Formulas

*Amino acid based*

Elecare Jr  
Neocate Jr  
Neocate Splash  
Puramino Jr  
Alfamino Jr

*Fully hydrolyzed protein*

Peptamen Jr (1.0 and 1.5)  
Pediasure Peptide (1.0 and 1.5)

Compleat Pediatric Peptide 1.5  
Kate Farms Pediatric Peptide  
(1.0 and 1.5)

*Intact protein*

Soy Bright Beginnings

Nutren Jr  
Pediasure

Boost Kid Essentials 1.5  
Pediasure 1.5

Plant Based or Blended products:  
Compleat Pediatric Organic Blends  
Nourish  
Kate Farms  
Compleat Pediatric  
Pediasure Harvest  
Real Food Blends\*

Thankfully  
only expands  
a little more...

Not included: "toddler beverages"  
or metabolic formulas

*Amino acid based*

Elecare Jr  
Neocate Jr  
Neocate Splash  
Puramino Jr  
Alfamino Jr

*Fully hydrolyzed protein*

Peptamen Jr (1.0 and 1.5)  
Pediasure Peptide (1.0 and 1.5)

1.0 comes in unflavored,  
vanilla, strawberry  
1.5 comes in vanilla

Compleat Pediatric Peptide 1.5  
Kate Farms Pediatric Peptide  
(1.0 and 1.5)

*Intact protein*

Pediasure powder  
Pediasure with Fiber  
Pediasure Sidekicks  
Pediasure Enteral  
Pediasure Enteral with Fiber  
Nutren Jr  
Pediasure

Soy Bright Beginnings

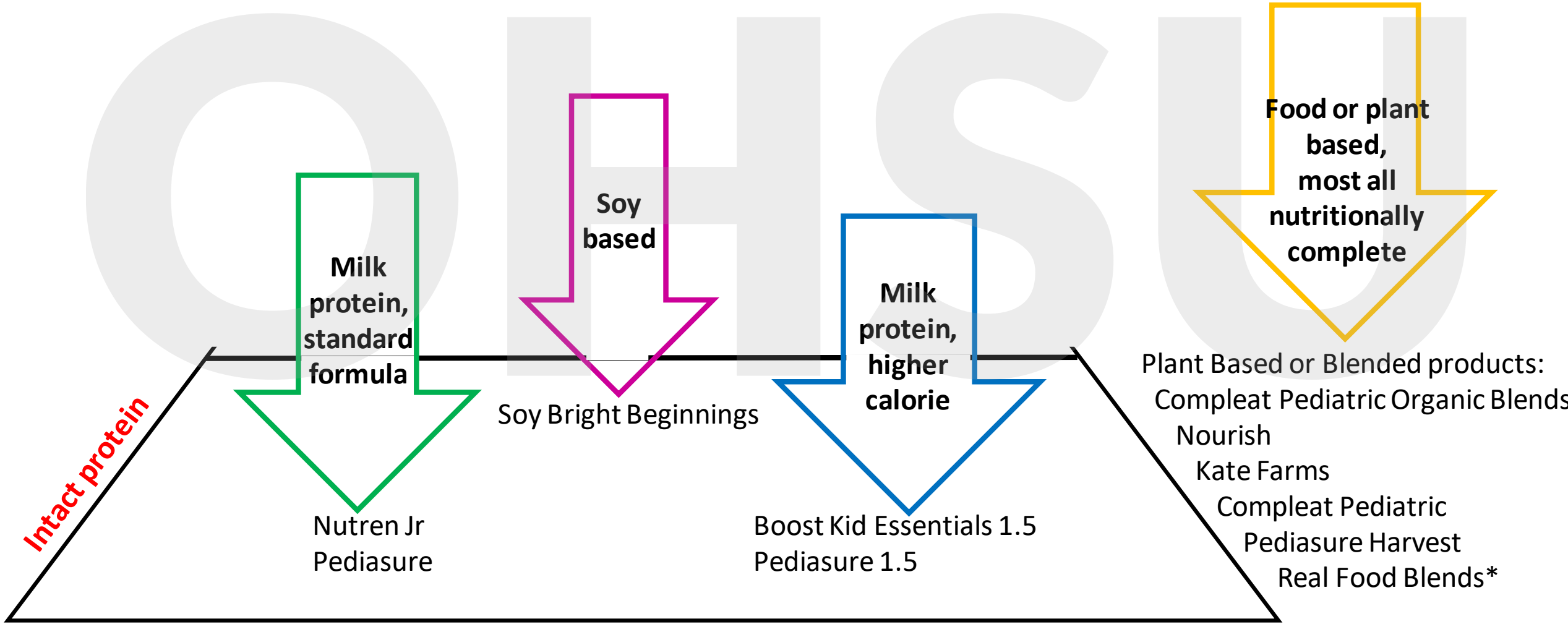
Pediasure 1.5 with Fiber

Boost Kid Essentials 1.5  
Pediasure 1.5

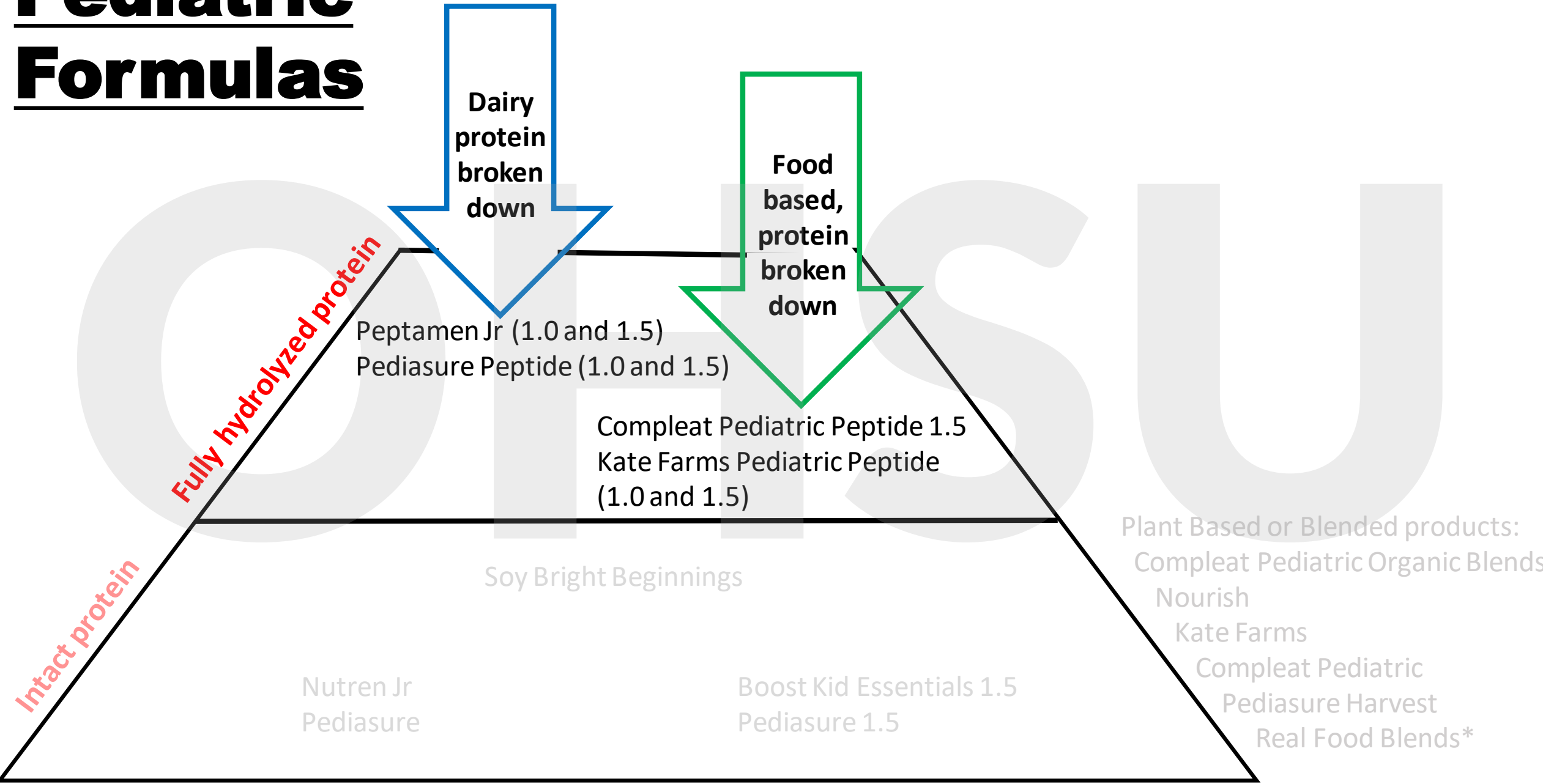
Other specialized formulas:  
Portagen  
KetoCal  
KetoVie  
RCF

Plant Based or Blended products:  
Compleat Pediatric Organic Blends  
Nourish  
Kate Farms  
Compleat Pediatric  
Pediasure Harvest  
Real Food Blends\*

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Neocate Jr  
Neocate Splash  
Puramino Jr  
Alfamino Jr

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hypoallergenic, very  
specialized

*Fully hydrolyzed protein*

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(1.0 and 1.5)

*Intact protein*

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Boost Kid Essentials 1.5  
Pediasure 1.5

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Questions?



Thank you!