

The latest scientific research in infant nutrition

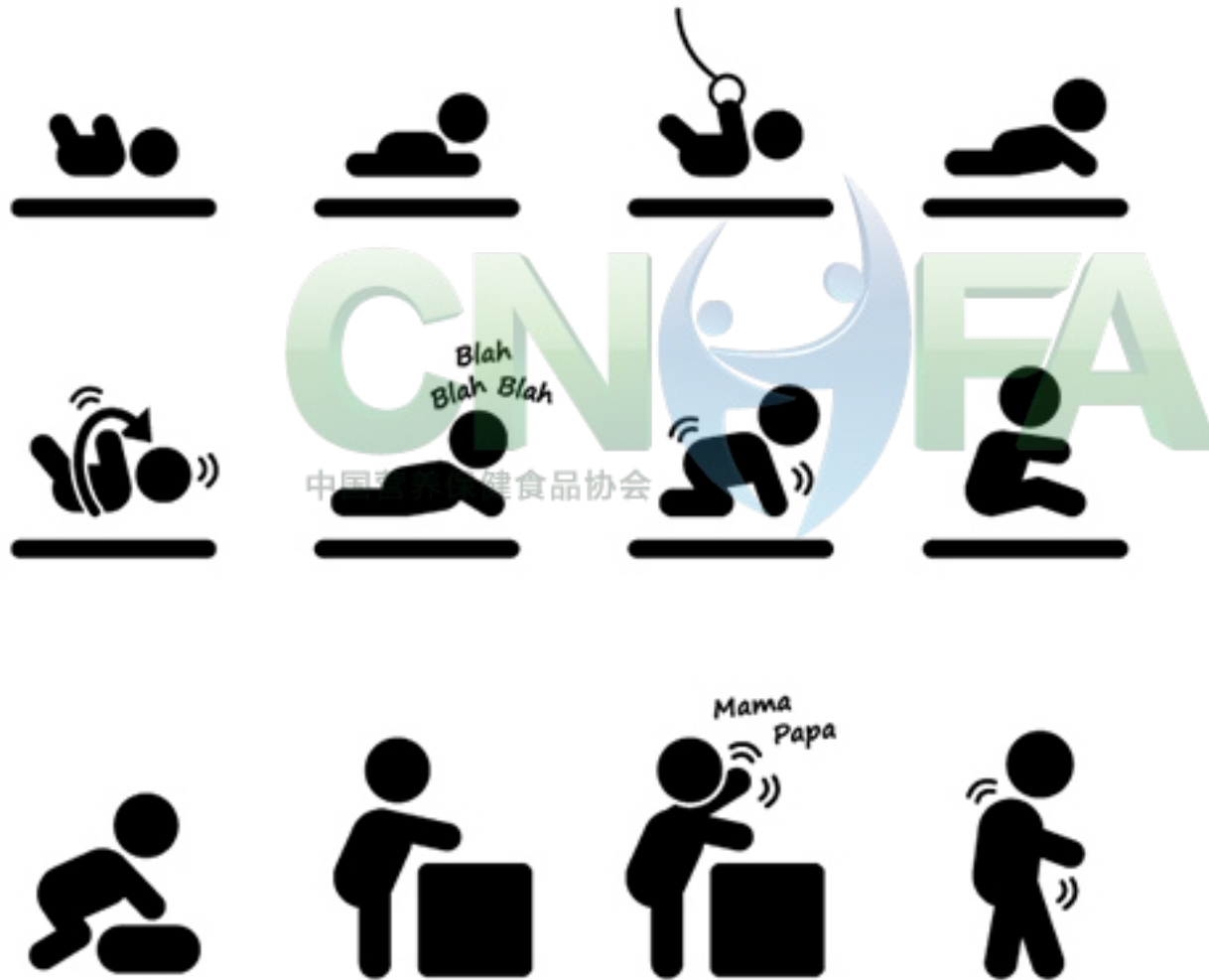
Professor David Cameron-Smith
Chair in Nutrition



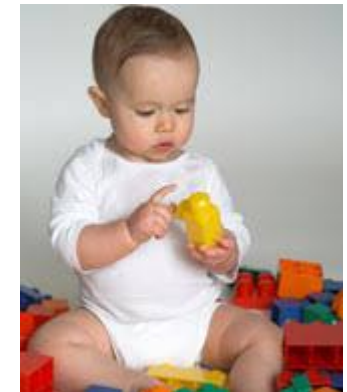
The **Liggins** Institute is a world-leading centre for research into fetal and child health, nutrition, development, epigenetics and implementation science.



The first 12 months of life



- 300% increase in weight
- 33% in length

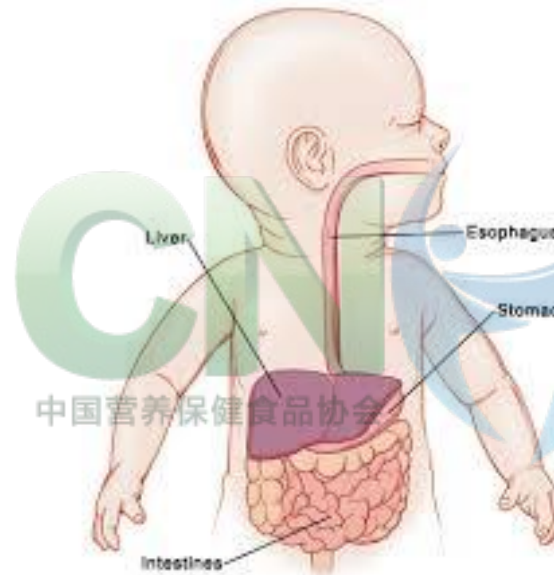


Immature Digestive System at Birth



Breast Milk

- Macronutrients
 - Protein
 - Lipids
 - Carbohydrates (oligosaccharides)
- Micronutrients
 - Minerals & Vitamins
- Bioactive peptides
- Genetic material
- Hormones
- Bacteria



Stomach

- Small capacity
- High pH (3.2-6.5)
- Immature pepsin

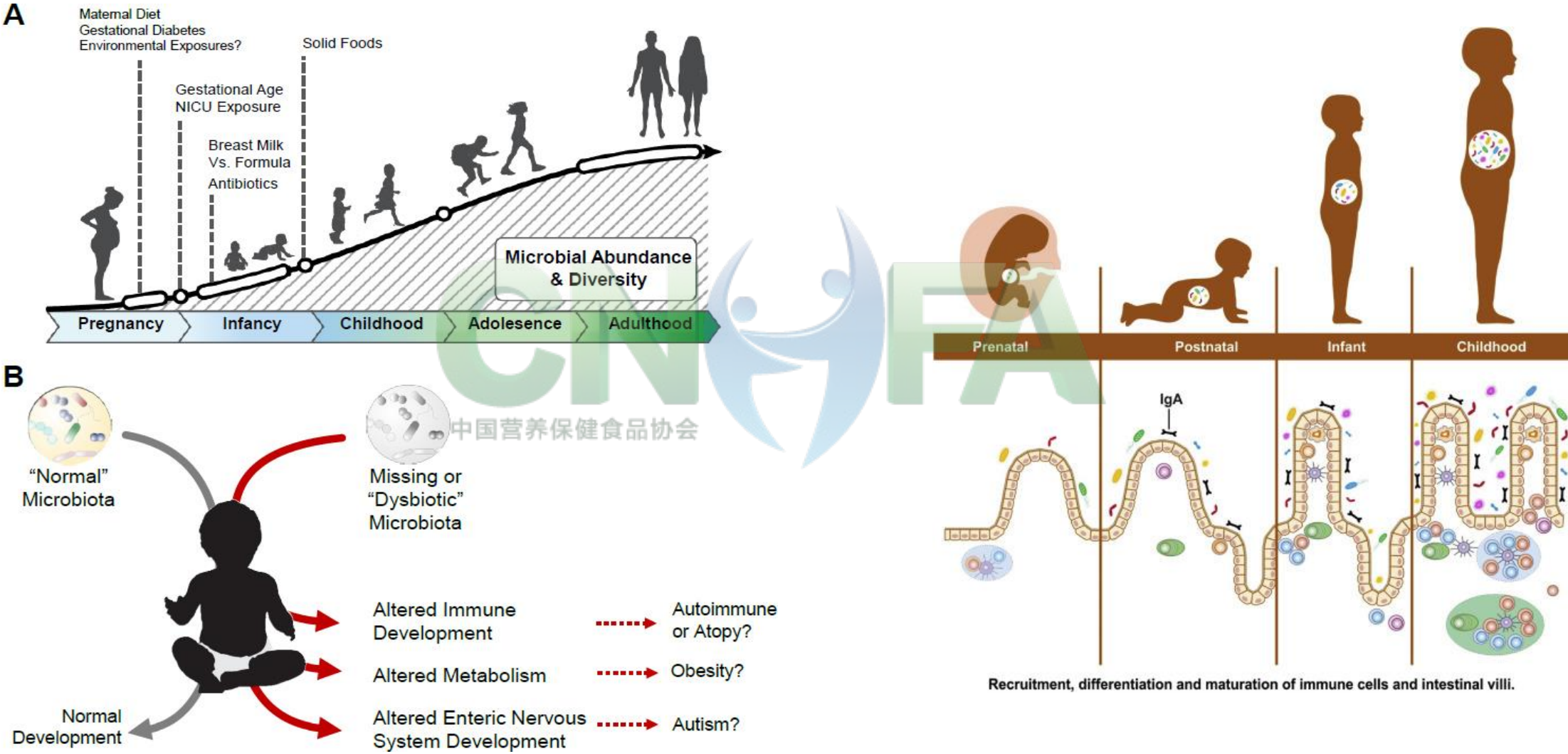
Small Intestine

- Immature chymotrypsin & carboxypeptidase B
- Limited gall bladder secretion
- Immature pancreatic triglyceride lipase

Large Intestine

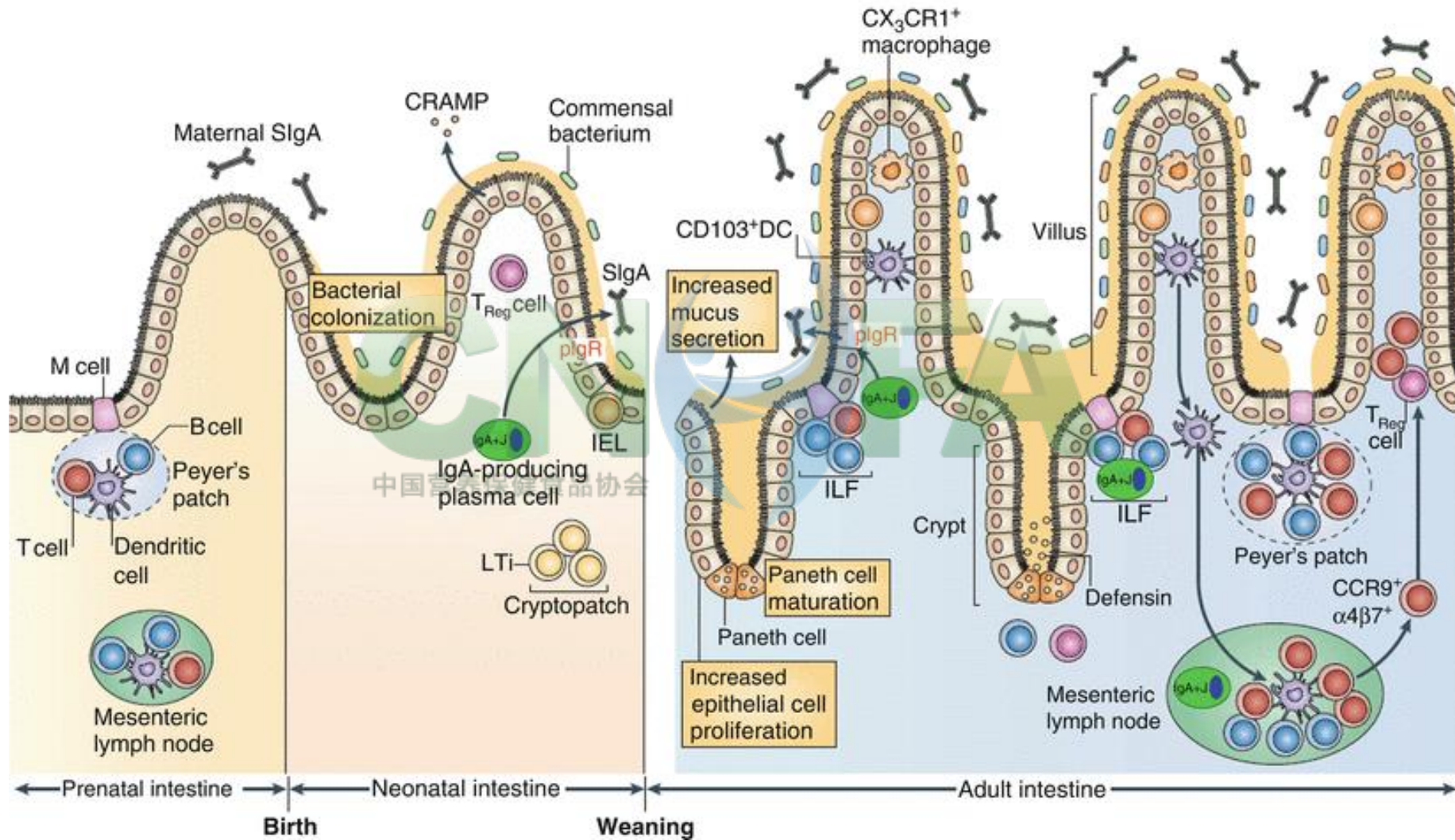
- Progressive colonization by a resident microbiota
- Large change in abundance, diversity and composition

Microbiome Development

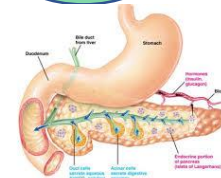
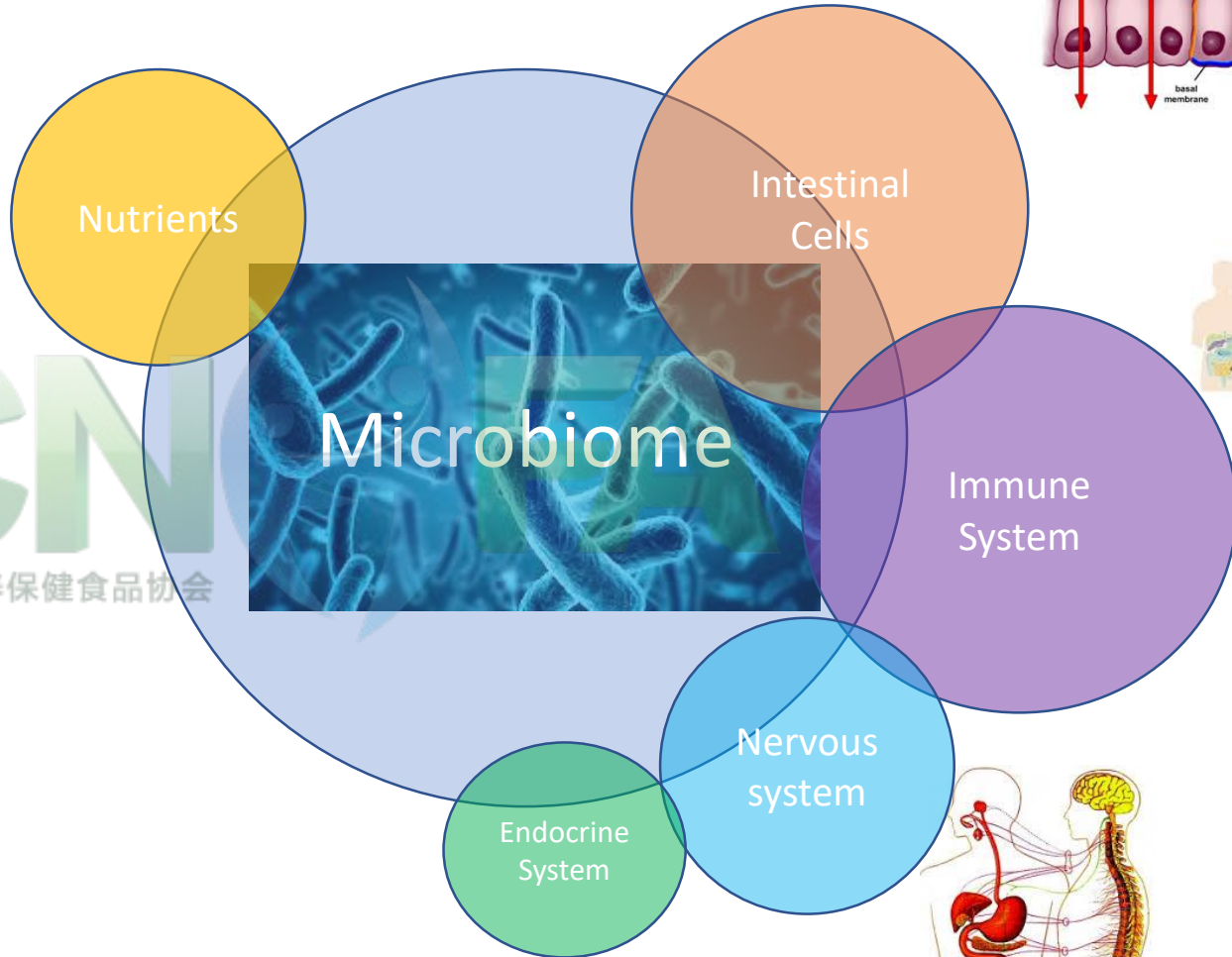
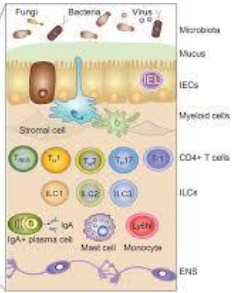
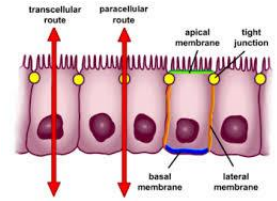


SOURCE; <https://www.nap.edu/read/24960/chapter/4>

Immunity Development

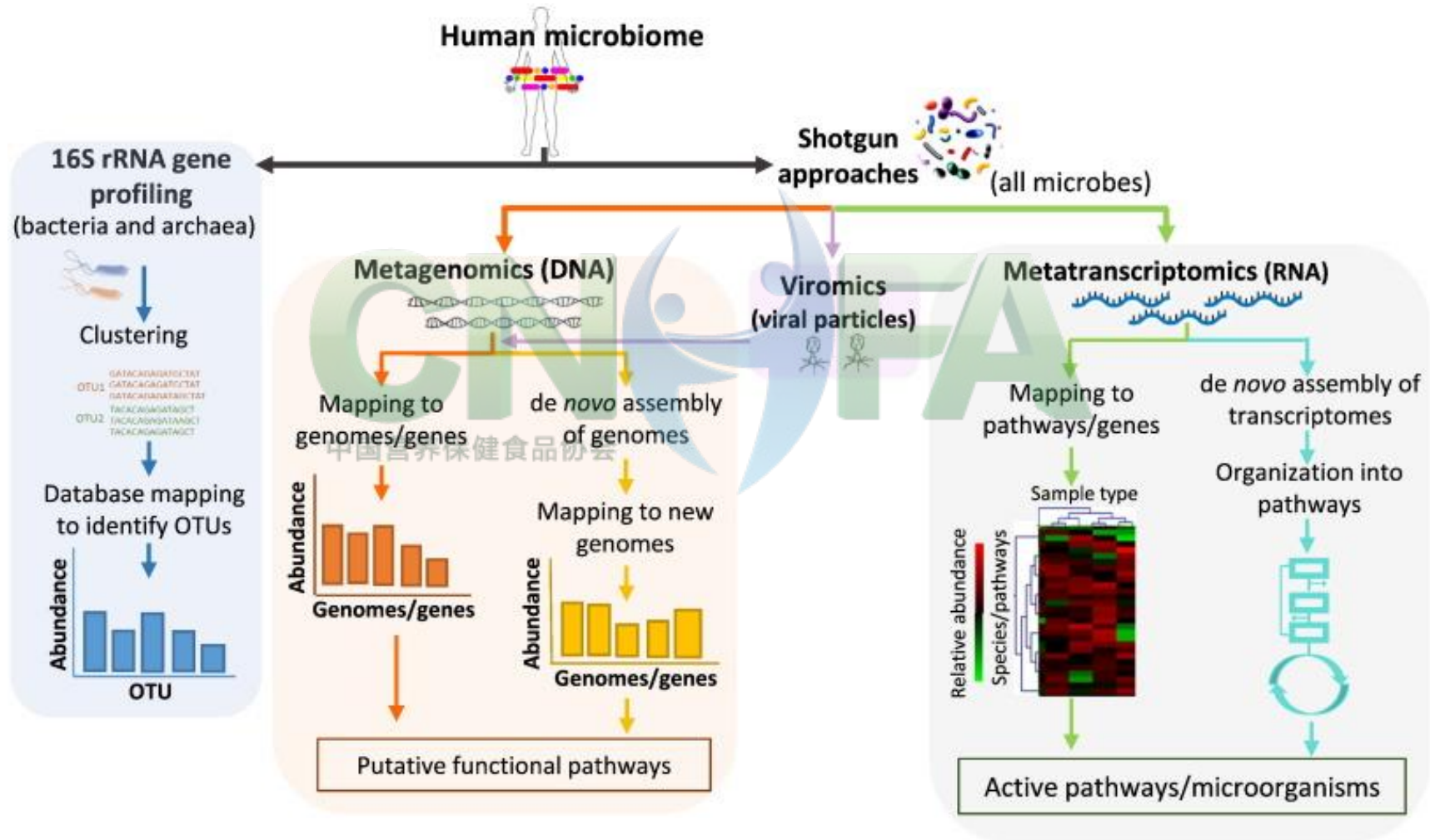


Large Intestine

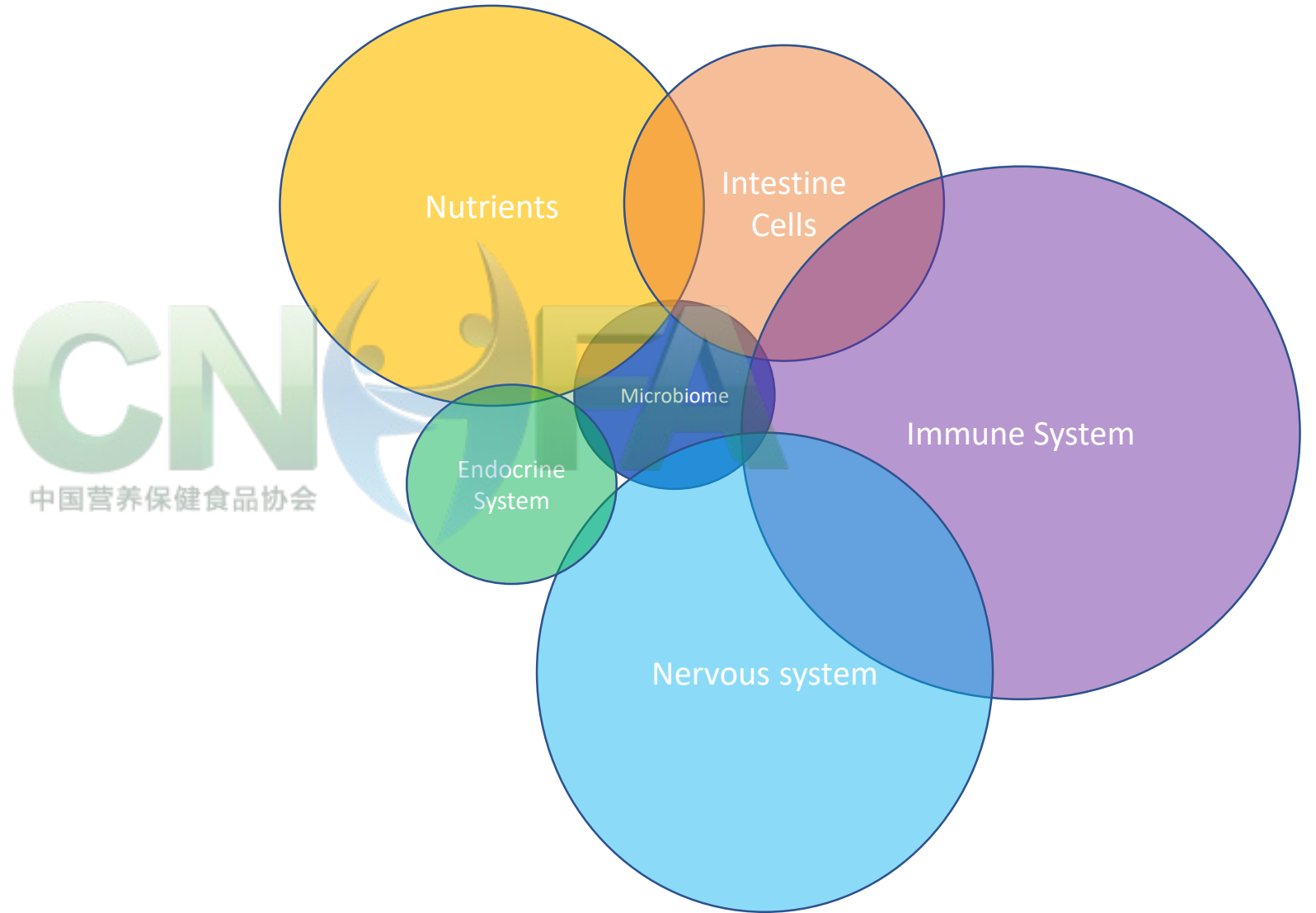


CN
中国营养保健食品协会

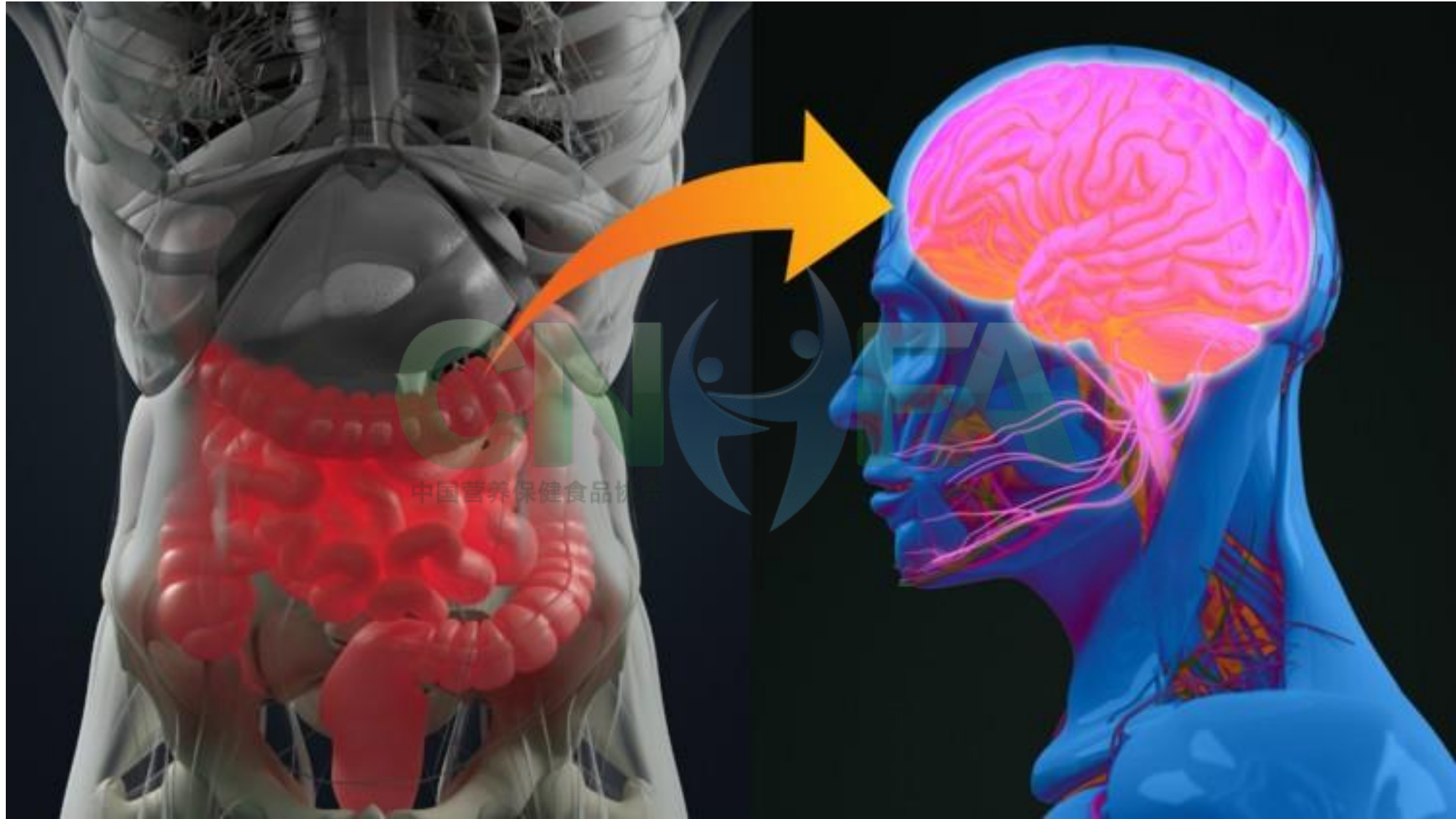
Only the beginnings for the microbiome



Small Intestine



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<https://www.nutraingredients-asia.com/Article/2018/10/16/Danone-study-outlines-possible-mechanisms-behind-gut-brain-axis-in-infants>



GUT — BRAIN

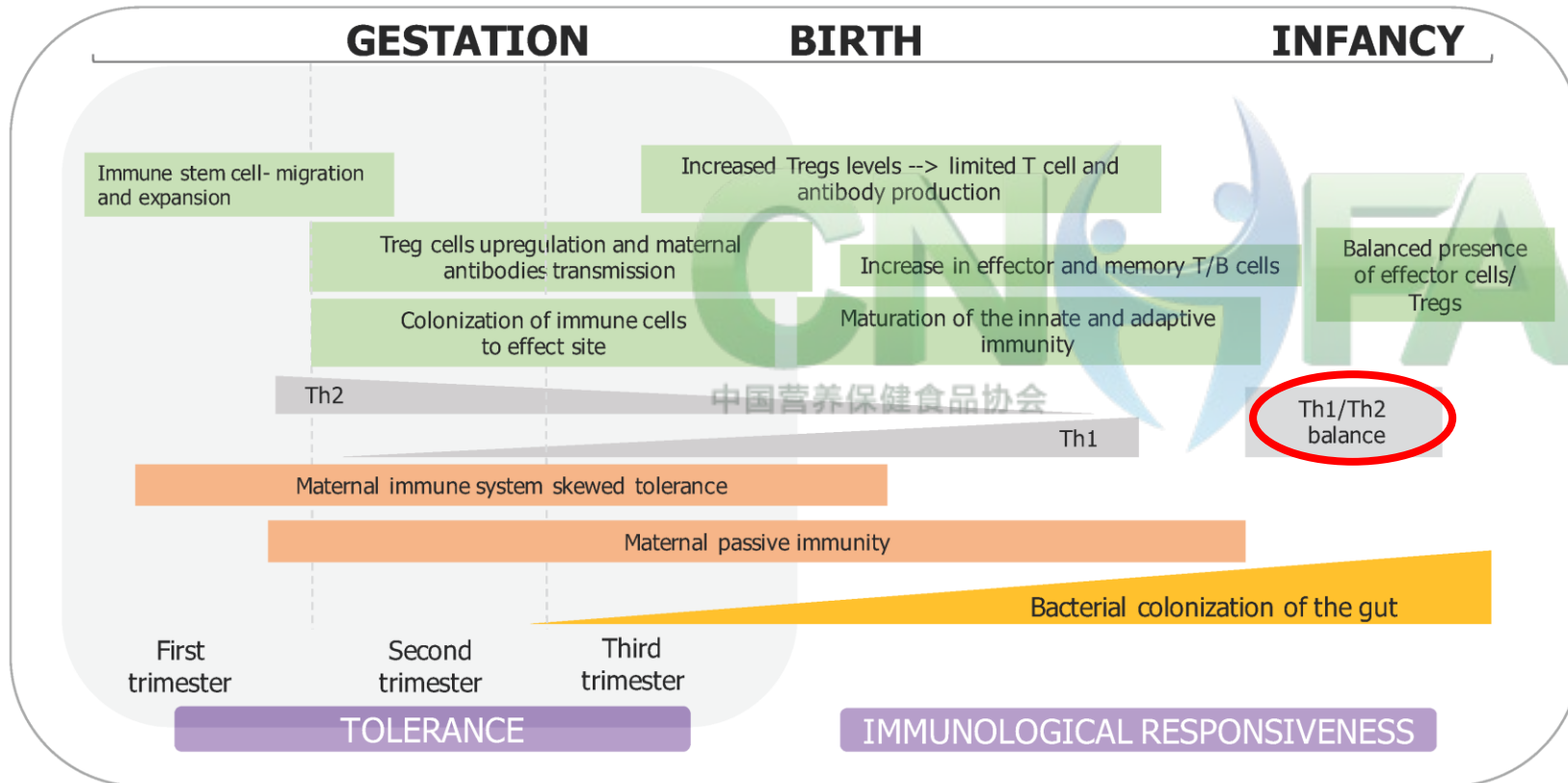
Connections

- Neural
- Hormonal
- Bacterial metabolites
- Nutrients
- Immune/Inflammation

Responses

- Motility, bowel function
- Stress/Anxiety
- Mood
- Behaviour
- Metabolic

Immune system and lifelong health

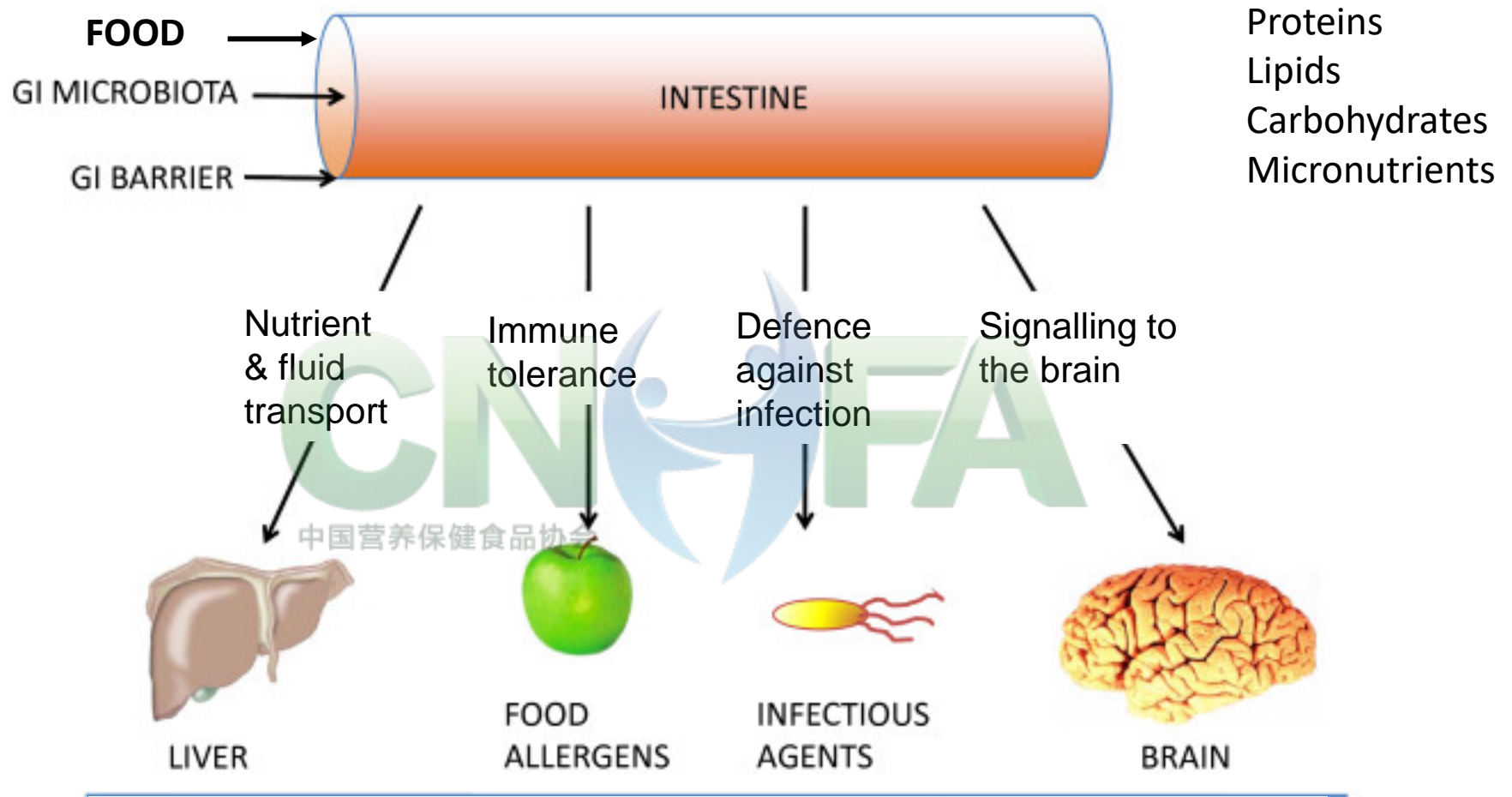


Th1 Dominant

- Multiple sclerosis
- Inflammatory bowel disease
- Type 1 Diabetes
- Psoriasis
- Rheumatoid arthritis

Th2 Dominant

- Allergic asthma
- Atopic dermatitis
- Chronic sinusitis
- Increased risk for viral/fungal infections





8 Warning Signs You're Suffering from a Food Intolerance

中国营养保健食品

The Wireless Baby

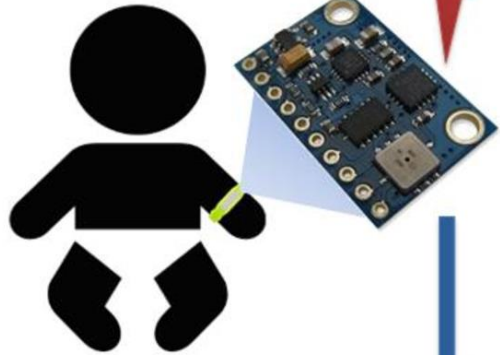


- Attitude Measuring
- Image Recognition

Emergency Notification
based on the Biometric Data



- Pressure Sensor
- Temperature Sensor
- 3Way Gyro Sensor
- 3Way Acceleration Sensor
- Pulse Check Sensor and Algorithms
- Etc.



monbaby
Baby monitor
in a button

