Facts, Figures & Tips on Fibers & Gut Microbiota

DIET, FIBERS & GUT MICROBIOTA: EVOLUTION THROUGH CHILDHOOD

FOCUS

DANONE NUTRICIA RESEARCH

BABY BIRTH

FROM THE MOMENT OF BIRTH...
The development and maturation of the gut microbiota are highly dynamic. They start at birth and are influenced by the environment:

- MODE OF DELIVERY
- GEOGRAPHY
- ANTIBIOTIC USE
- & TYPE OF FEEDING **(BREAST MILK OR FORMULA)**

HUMAN MILK OLIGOSACCHARIDES (HMOS) have been shown to feed infants' beneficial gut microbiota, notably the genus *Bifidobacterium* (the most abundant in infants).

HMOs: carbohydrates that exist in human milk

Stewart et al., 2018; Yatsunenko et al., 2012
Backhed et al., 2015; Koenig et al., 2011

INFANTS

DIET DIVERSIFICATION promotes **INCREASING MICORBIAL DIVERSITY** and dominance of species that are able to degrade complex carbohydrates.

Bifidobacterium, are able to adapt and shift between carbohydrates derived from human milk to those derived from plant foods.

At 1 year the gut microbiota is already well developed!

Backhed et al., 2015; Laursen et al., 2016
Yatsunenko et al., 2012; Stewart et al., 2018

CHILDREN

AND BEYOND
At 3 years old, it has become much more:

- DIVERSE (INCREASED PRESENCE OF BACTEROIDETES AND FIRMICUTES)
- FUNCTIONALLY COMPLEX
- STABLE

And it will still evolve in composition and functions!

Eating habits continue to mold children's gut microbiota and **FIBER-RICH FOODS** especially seem to promote microbial **STABILITY AND DIVERSITY** over time.

Dietary fibers: carbohydrates coming from plant foods

Derrien et al., 2019; Yatsunenko et al., 2018

DIET INTERVENTION AND GUT MICROBIOTA ESTABLISHMENT

Results from dietary interventions suggest that children's gut microbiota may be MORE MALLEABLE THROUGH ENVIRONMENT.

There is an interindividual variability in the evolution of gut microbiota during childhood providing OPPORTUNITIES FOR MICROBIOTA-BASED DIET INTERVENTIONS.

A WELL BALANCED AND DIVERSIFIED FIBER-RICH DIET MAY BE A START!

Derrien et al., 2019