

What is the difference between a Prebiotic, Dietary Fibre and Resistant Starch

1 Prebiotics

Definition:

A **prebiotic** is any substance that feeds beneficial microbes in your gut and produces a health benefit. Most prebiotics are fibres, but not all fibres are prebiotics.

Common Prebiotic Examples:

- Inulin, Fructooligosaccharides (FOS), Galactooligosaccharides (GOS), Resistant starch

Common Food Sources:

Garlic, onions, leeks, asparagus, Jerusalem artichokes, chicory root, oats, barley, bananas (especially green), turnips, apples, flaxseeds, beans and lentils, green/yellow beans.

Prebiotics are selectively fermented by beneficial bacteria like:

- *Bifidobacteria*, certain butyrate producers

They stimulate short-chain fatty acid (SCFA) production like butyrate which is the primary fuel source for colon cells; it also controls inflammation and improves metabolic health.

2 Fibre (General Dietary Fibre)

Definition:

Fibre is a broad category of carbohydrates that humans can't digest.

There are two major types:

Soluble Fibre

- Dissolves in water
- Often fermentable
- Can act as prebiotic

Examples:

- Oats (beta-glucan), Psyllium Beans, Inulin

Insoluble Fibre

- Adds bulk
- Speeds transit
- Less fermentable

Examples:

- Wheat bran, Vegetable skins

Note: Not all fibre is prebiotic.

Some fibre feeds bacteria selectively (prebiotic). Some just adds bulk.

Resistant Starch

Definition:

Resistant starch is starch that resists digestion in the small intestine and reaches the colon intact where the gut bacteria ferment it.

So resistant starch is:

- A type of carbohydrate
- Functions like a fermentable fibre but is not technically classified as one.
- Qualifies as a prebiotic

Types of Resistant Starch

- RS1 – physically trapped (**whole grains, seeds**)
- RS2 – naturally resistant (**raw potatoes, green bananas**)
- RS3 – retrograded (**cooked then cooled rice, potatoes**)
- RS4 – chemically modified

Resistant starch strongly feeds:

- Butyrate-producing bacteria