THE PATH TO GREATER VITALITY AND HEALTH

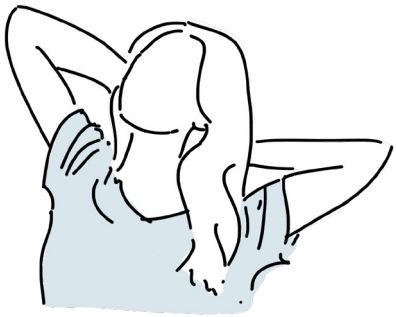
DIETARY FIBRES

Dietary fibre has many health-promoting properties and can be used preventively or to support ongoing therapy [1]. The areas of application include:

- **Constipation and diarrhoea**
- **Elevated inflammatory parameters**
- **Increased number of pathogenic bacteria, viruses, fungi**
- **Reduced diversity of the gut microbiome**
- **Obesity**
- **Diabetes mellitus type 2**
- **Hypercholesterolaemia**

A sufficient intake can reduce the risk of cardiovascular diseases and type 2 diabetes mellitus!

The daily intake for adults should be around 30 g [1].



THE EFFECTS OF DIETARY FIBRES IN THE BODY:

normalize bowel movements

long-lasting saturation

shortened passage duration

slower rise in blood sugar after eating

through

increased stool volume

increased volume of the chyme

increased intestinal motility

slowed absorption of carbohydrates

Dietary fibres are **components of plant-based foods** that cannot be digested by the human organism. A distinction is made between water-soluble and water-insoluble dietary fibres. Prebiotics also belong to the soluble dietary fibres. They serve as a source of energy for intestinal bacteria and thus promote bacterial reproduction and diversity.

biovis Diagnostik MVZ GmbH
Brüsseler Str. 18 | 65552 Limburg-Eschhofen
Tel.: +49 6431 21248 0 | Fax: +49 6431 21248 66
info@biovis.de | **biovis.de**

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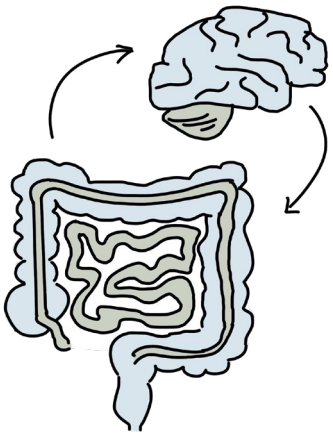
Nutritional information

PREBIOTICS:

Short-chain fatty acids (SCFA) are produced when the prebiotics are degraded by the intestinal bacteria. They lower the pH value of the intestine, thereby promoting the growth of good bacteria while inhibiting that of bad bacteria. They also promote the growth of intestinal cells [2].

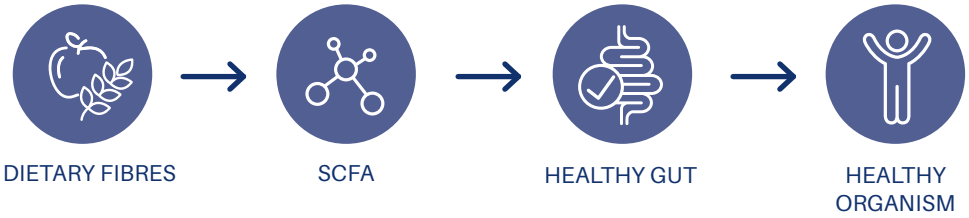
This results in many health-promoting properties of the SCFA:

- **Promotion of an intact intestinal barrier**
- **Improved immune function**
- **Anti-inflammatory effects**



With the help of SCFA and other substances produced by the intestinal bacteria, the intestine can also communicate with the central nervous system.

Thus, the intestine is not only responsible for digestion, but can also influence the immune system and our brain. Therefore, it impacts the entire organism, highlighting the significance of a healthy gut [3].



WHAT IS RESISTANT STARCH?

Our body is capable of digesting the starch contained in food. However, when cooked food is cooled, the starch changes its chemical structure and becomes almost indigestible. The resulting resistant starch is classified as dietary fibre as it has the same positive effects. Reheating the food does not change the structure and the resistant starch remains [4].

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HIGH-FIBRE DIET:

Fibre is only found in plant-based foods such as fruit, vegetables, cereals, and nuts. Animal products are therefore considered to be low in fibre [3].

How can I eat more fibre?

Swap low-fibre foods for high-fibre foods:

- **Normal pasta ⟶ Wholemeal pasta**
- **White bread ⟶ Wholemeal rye bread**
- **Cornflakes ⟶ Muesli made from oat flakes, nuts, and seeds**

Leave the peel on:

- **Most fibre is found in the skin of certain types of fruit and vegetables**
- **e.g. apple, pear, cucumber, potato**

Resistant starch is less digestible than starch and is classified as dietary fibre [4].

Here's how to increase the amount of resistant starch in foods:

- **Cook pasta, rice, or potatoes, leave to cool, and store in the fridge**
  ⟶ Use for salads or reheat the next day
- **Buy bread in advance, freeze, and defrost (e.g. rye, oat, or spelt bread)**
  ⟶ The crust contains most of the resistant starch

Try pulses

Eat nuts and berries as snacks

	HIGH IN FIBRE	LOW IN FIBRE
Vegetables	Jerusalem artichokes, black salsify, beetroot, potatoes (with skin), cabbages, carrots,	Cucumber/ tomato/ potato (peeled), courgette, iceberg and cabbage lettuce, onion, kohlrabi, Chinese cabbage, pumpkin, spinach
Fruits	Soft fruit (raspberries, blackberries, redcurrants), apple, pear, persimmon (with skin)	Apple/pear (peeled), banana, watermelon, honeydew melon, pineapple, mango, lemon, grapefruit
Cereals, cereal products	Wholemeal products (wholemeal bread, wholemeal pasta, brown rice), oats, bulgur	White flour products (white bread, wheat rolls, pretzels), cornflakes, couscous, polished rice, amaranth
Nuts, seeds	Almonds, walnuts, peanuts, hazelnuts, linseed, psyllium husks	
Pulses	Lentils, chickpeas, peas, beans	

The table only contains examples of foods and does not represent a complete list.

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LOW-FIBRE DIET:

As fibre is only found in plant-based foods, animal-based foods are considered to be particularly low in fibre. Oils also contain no fibre. Pulses are considered to be particularly high in fibre and should therefore be avoided [3].

How can I eat a diet lower in fibre?

Swap high-fibre foods for low-fibre foods:

- **Wholemeal pasta ⟶ Normal pasta**
- **Wholemeal rye bread ⟶ White bread**
- **Muesli with oat flakes ⟶ Cornflakes**

Peel your fruit and vegetables. The peel contains the most fibre.

Avoid pulses

	LOW IN FIBRE	HIGH IN FIBRE
Vegetables	Jerusalem artichokes, black salsify, beetroot, potatoes (with skin), cabbages, carrots,	Cucumber/ tomato/ potato (peeled), courgette, iceberg and cabbage lettuce, onion, kohlrabi, Chinese cabbage, pumpkin, spinach
Fruits	Applesauce, banana, apple, pear (peeled), watermelon, honeydew melon, pineapple, mango, lemon, grapefruit	Soft fruit, apple, pear, persimmon
Cereals, cereal products	White flour products (white bread, wheat rolls, pretzels), cornflakes, couscous, polished rice, amaranth	Wholemeal products (wholemeal bread, wholemeal pasta, brown rice), oats, bulgur
Nuts, seeds		Almonds, walnuts, peanuts, hazelnuts, linseed, psyllium husks
Pulses		Lentils, chickpeas, peas, beans

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Quellen:

[1] Ströhle et al (2018). Preventive Potential of Dietary Fibre - Nutritional Physiology and Epidemiology. Current Nutritional Medicine, 43, 179-200.

[2] Li, Y. O., & Komarek, A. R. (2017). Dietary fibre basics: Health, nutrition, analysis, and applications. Food quality and safety, 1(1), 47-59.

[3] Biesalski H. (2010). Ernährungsmedizin, 4th edition, Georg Thieme Verlag KG Stuttgart.

[4] Jaspers E. (November 2015). You are what you eat. German Food Review, 11.

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