



FACT SHEET

HEALTH BENEFITS OF ZESPRI KIWIFRUIT

Kiwifruit is a fruit that is not only delicious but also contains a number of attributes and health benefits. From digestive health, to vitality and metabolic health, to everyday good health, the benefits of green and gold kiwifruit are numerous.

1. Kiwifruit and Digestive Health

- **Digestive disorders are common world-wide and can negatively affect quality of life.**

Good to know:

Constipation affects around 15 percent of adults in Western countries¹.

- **Partly, these disorders result from lifestyle factors such as diet, hydration and exercise, from chronic illnesses (e.g. diabetes) and from aging.**

Good to know:

A large percentage of chronic diseases can be easily **prevented through diet and lifestyle changes**²:

- colon cancer (70%)
- stroke (70%)
- coronary heart disease (80%)
- type 2 diabetes (90 %)

¹ Wald, A.; Scarpignato, C.; Kamm, M. A.; Mueller-Lissner, S.; Helfrich, I.; Schuijt, C.; Bubeck, J.; Limoni, C.; Petrini, O., The burden of constipation on quality of life: results of a multinational survey. *Alimentary Pharmacology & Therapeutics* **2007**, 26 (2), 227-236.

² Willet WC, Science 296, 695-698 (2002).



- **Green kiwifruit has been found to improve digestive health functions at both the gastric (stomach) and intestinal levels.**

Good to know:

- Green kiwifruit is **high in fibre** with both insoluble and soluble types at a ratio of 4:1. The fibre in green kiwifruit has a **high capacity for retaining water** and thus creating **larger and softer stools, facilitating intestinal transit** through your digestive system³.
 - The natural digestive enzyme **actinidin**, occurs only in kiwifruit and **improves digestive comfort** by **increasing the breakdown of proteins** and **facilitating gastric digestion** (emptying of the stomach).⁴
 - There is growing evidence that **green kiwifruit modulates colonic microbiota** which can result in **increased intestinal health** and **overall well-being**⁵.
 - Kiwifruit is **low FODMAP**⁶.
- **More research on the digestive health benefits of kiwifruit is underway to demonstrate the laxative effects of green kiwifruit.**

The primary objective of the **clinical trial “The effect of Zespri Green Kiwifruit on digestive and gut health functions”** - which is on-going in New Zealand, Japan and Italy- is to **determine the efficacy of kiwifruit as a treatment for the relief of constipation and for reduction in gastrointestinal discomfort**. In each participating country, 20 healthy people, 20 people with IBS with constipation (IBS-C) and 20 people with functional constipation (FC) will be recruited. The aim is to obtain a health claim approved by the European Food Safety Authority (EFSA). The NZ results of this clinical multi-country intervention study are expected in the course of 2016.

³ Sims IM, Monro JA Fiber: Composition, structures, and functional properties. Adv Food Nutr Res 2013 ;68:81-99.

⁴ Kaur L, Rutherford SM, Moughan PJ, Drummond L, Boland MJ :Actinidin enhances protein digestion in the small intestine as assessed using an in vitro digestion model. J Agric Food Chem.2010;58:5068-73.

⁵ Han KS, Balan P, Molist Gasa F, Boland M: Green kiwifruit modulates the colonic microbiota in growing pigs. Lett Appl Microbiol 2011;52:379-85.

⁶ FODMAPs (Fermentable Oligo- Di- Mono-saccharides And Polyols) are fermentable carbohydrates found in food that can cause digestive discomfort, especially for people with IBS. FODMAPs, which are poorly absorbed in the small intestine, pass through to the colon where they are fermented by bacteria, contributing to the production of gas. Common high FODMAP foods include milk, apples, broccoli, wheat breads, cereals, pasta, avocados, pears, stone fruits, and mushrooms, among many more. The Monash University Department of Gastroenterology has developed a ‘Low FODMAP’ certification programme in order for people with medically diagnosed IBS to identify and select low FODMAP food choices. Certified low FODMAP products, one of which is kiwifruit, are listed in the Monash University low FODMAP diet booklet and app.



2. Kiwifruit and Vitamin C

- **Vitamin C is an essential vitamin that cannot be synthesised by the human body. People need to get vitamin C through their diet on a daily basis.**

Good to know:

Vitamin C is found in **every part of the body** (e.g. skin, bones, muscles, brain), but is found at higher levels in the **immune system**⁷.

- **Vitamin C has an important role for the proper development and function of the body.**

Some examples:

- Vitamin C contributes to the **reduction of tiredness and fatigue**⁸
 - Vitamin C plays an important role in the functioning of **the immune system**^{9 10}
 - Vitamin C contributes to **normal skin function through collagen formation**¹¹
- **The current recommended dietary allowance (RDA) for vitamin C is 60 mg a day (US) or 80 mg a day (Europe), but many experts say that the advisable dose should be 100 mg per day**¹².

Good to know:

- **Zespri kiwifruit is rich in vitamin C:** Zespri Green (85mg) and Zespri SunGold (161mg)
 - **Zespri SunGold Kiwifruit contains more than three times the amount of vitamin C found in oranges**¹³.
- **One kiwifruit a day provides the daily requirement of vitamin C in an easy and convenient way.**

Good to know:

⁷ Organization WH: Vitamin and mineral requirements in human nutrition: Report of a joint fao/who expert

⁸ Carr AC, Bozonet SM, Pullar JM, Vissers MC: Mood improvement in young adult males following supplementation of yellow kiwifruit, a high-vitamin C food. *Journal of nutritional science* 2013 ;2:e24

⁹ Bergsten P, Amitai G, Kehrl J, Dhariwal KR, Klein HG, Levine M: Millimolar concentrations of ascorbic acid in purified human mononuclear leukocytes. Depletion and reaccumulation. *The journal of biological chemistry* 1990;265:2584-2587.

¹⁰ Washko PW, Wang Y, Levine M: Ascorbic acid recycling in human neutrophils. *The Journal of biological chemistry* 1993; 268: 15531-15535

¹¹ Moores J: Vitamin C: A wound healing perspective. *British journal of community nursing* 2013; Suppl S6,S8-11

¹² EFSA Journal 2013;11(11):3418 [68 pp.].

¹³ Usda national nutrient database for standard reference (release 28) 2015.



It has been demonstrated that **eating kiwifruit daily** is very effective at **increasing blood levels of vitamin C** as well as levels in other parts of the body.



3. Kiwifruit and Metabolic Health

- **Poor blood sugar control is linked with chronic disease related to obesity such as diabetes and chronic cardiovascular disease (CVD)¹⁴.**

Good to know:

Better blood sugar control can also help with:

- Losing or maintaining **healthy weight**
- **Avoiding high sugar snacks between meals** (because you don't feel hungry)
- Maintaining **stable blood sugar levels** as part of a diabetes treatment plan

- **Kiwifruit can help with better glucose control.**

Good to know:

- The fibre in kiwifruit behaves differently to other commonly eaten fibres (e.g. in apples, oranges and wheat bran) as **kiwifruit has a very high capacity for holding water.**¹⁵
- When eaten, **kiwifruit fibre swells and also thickens in the stomach.**¹⁶
- As your breakfast is digested, it is broken down in smaller sugars and these move more slowly through the material made thicker by kiwifruit. This results in **sugar being taken up more slowly**¹⁷.

- **By exchanging kiwifruit for another carbohydrate food in your meal, you will reduce your glycemic response over time. This could protect you from chronic metabolic disease.**

Good to know:

A **new scientific study** has proven that **eating kiwifruit with your breakfast** will significantly **slow the update of sugars from your breakfast in your blood stream**¹⁸.

¹⁴ Dawson SI, Willis JA, Florkowski CM, Scott RS (2008). Cause-specific mortality in insulin-treated diabetic patients: a 20-year follow-up. *Diabetes Research and Clinical Practice* 80: 16-23.

¹⁵ Mishra S, Monro J: Kiwifruit remnants from digestion in vitro have functional attributes of potential importance to health. *Food Chem* 2012;135:2188-2194.

¹⁶ Ibid.

¹⁷ Monro J: Kiwifruit – a double agent for glycaemic control and nutrient enhancement: 1st International Symposium on Kiwifruit and Health. Tauranga, New Zealand 2016,

¹⁸ Ibid.