

[SmarterNaturally Explains]

# GRextra for LONGEVITY

Glucoraphanin is a natural molecule found in some plants - most notably broccoli. When these plants are eaten, glucoraphanin is converted into its active form - called sulforaphane - which is then absorbed by our gut. Sulforaphane then enters our cells and exerts several different metabolic effects, which together serve to boost our production of antioxidants, reduce inflammation, and improve our cell's ability to function, produce energy and repair damage.



*GRextra is our super-strain of broccoli, which is a powerful source of sulforaphane. For more details, including biological mechanisms of action, see our Guide to GRextra*

Due to the impact of sulforaphane in our cells, it has been extensively researched for its beneficial effects on human health across a range of different areas, and particularly with the challenges and progressive health conditions that become more common as we age.

Many age-related health conditions are linked to our metabolism - the chemical process that's constantly running inside every cell in our bodies to power our lives. It provides the energy we need to live, grow and thrive... but naturally becomes less efficient as we age. This internal ageing of our metabolism undermines our health and wellbeing at the most fundamental level, and has been linked to a wide range of health areas including:

- Weight loss & obesity
- Blood sugar & diabetes
- Cholesterol & heart health
- Brain health (e.g. dementia)
- Joint health (e.g. arthritis)
- Cancer

Excitingly, a huge and growing evidence base of independent research and clinical trials conducted over decades now indicates that adding a powerful source of sulforaphane to our diet could help to repair and reverse metabolic damage, slowing the internal process of ageing and restoring our metabolic health.

This in turn has a knock-on impact on our overall health and wellbeing, supporting improved longevity and better long-term health outcomes. In this new era of metabolic medicine, your age in years is less important than your age on the inside - and focusing on our metabolic health can give us a better chance of staying well for longer and living our later lives to the full, unhindered by the many diseases of age that try to hold us back.



For a full list of supporting references, visit our website [www.SmarterNaturally.com](http://www.SmarterNaturally.com)

## WEIGHT LOSS & OBESITY

As we age and our metabolic health deteriorates, it becomes easier for us to put on weight. This has a huge impact on our health, and our ability to stay active and continue to live life to the full.

Studies indicate that sulforaphane can help to support weight loss efforts, which has a huge knock-on impact on wider areas of our health and wellbeing. This is achieved in four key ways:

1. Stimulating the body to lay down less fat<sup>1,2,3,4,5,6,7,8</sup>, and instead encouraging the body to burn more fats for energy<sup>9,10</sup>
2. Reducing appetite and food intake (through increasing responsiveness to the appetite suppressant hormone leptin)<sup>11,12,13</sup>
3. Promoting mitochondrial production<sup>14</sup> and stimulating the conversion of inactive white fat to metabolically-active brown fat, which together lead to a higher base metabolic rate<sup>15,16,17</sup>
4. Supporting the gut microbiome to increase levels of good bacteria, which improves both fat and glucose metabolism,<sup>18,19</sup> further supporting weight loss.

**“Sulforaphane is a prime candidate (for) use against a preoccupying condition rampaging through mainly developed countries: obesity and its associated complications.”**

Review: Three in One: The Potential of Brassica By-Products against Economic Waste, Environmental Hazard, and Metabolic Disruption in Obesity (Castelão-Baptista et al, 2021)

In our citizen science programme, we've seen the positive effects of sulforaphane for supporting weight loss in validated by the experience of customers eating our super-broccoli regularly.

**“Over the last year, my weight has gone down significantly with no pain whatsoever. It's quite remarkable really.”**  
Alex  
SmarterNaturally subscriber

**“The weight definitely came off faster this time than it ever has before. It all just felt a little easier.”**  
Robert  
SmarterNaturally subscriber

## BLOOD SUGAR & DIABETES

High blood sugar becomes more and more common as we get older, and can lead to type-2 diabetes and a range of additional health complications, including sight loss, nerve problems, and a greater risk of heart attacks, stroke or kidney issues.

Studies indicate that sulforaphane can help to reduce blood sugar down to healthier levels, directly contributing to improved diabetic health and reducing the risk of developing the many health complications associated with high blood sugar. This is achieved in three key ways:

1. Improving the effectiveness of insulin, both via improving insulin sensitivity/reducing insulin resistance<sup>20,21,22,23,24,25,26,27,28,29,30,31,32</sup> (a major component of disease development in type 2 diabetes), and improving the health and function of the pancreas to drive increased insulin production<sup>5,33,34,35,36</sup>
2. Altering the behaviour of the liver to reduce its production and release of glucose into the bloodstream<sup>37,38,39</sup> and instead driving it to burn up glucose for energy<sup>16</sup>
3. Supporting weight loss, as outlined overleaf.

**“In conclusion, sulforaphane could be an exciting novel small molecule to use against Type-2 Diabetes.”**

Review: The improvement of sulforaphane in type 2 diabetes mellitus (T2DM) and related complications (Wang et al, 2022)

In our citizen science programme, we've seen the positive effects of sulforaphane for supporting blood sugar validated by the experience of customers eating our super-broccoli regularly.

**“While I'm sure it was a combination of things, I do think eating this soup has played a big role in bringing down my HbA1c and improving my diabetic health.”**  
Anthony  
SmarterNaturally subscriber

**“I was kind of aware of the magical powers of brassicas, but this has been more effective than I was expecting! It's been a real game-changer for me.”**  
Glory  
SmarterNaturally subscriber

## CHOLESTEROL & HEART HEALTH

Heart disease is one of the biggest modern killers, with heart attacks and stroke often the first things that take us off our feet as we get older. High cholesterol levels and high blood pressure, both of which put us at a greater risk of a heart attack or stroke, are also incredibly common and can be tough to tackle.

Studies indicate that sulforaphane can help to support improved heart health, reducing the risk of major heart health events. This is achieved in 4 key ways:

1. Lowering high cholesterol (LDL-C) back to healthier levels<sup>40,41,42,43</sup>
2. Lowering high blood pressure down to healthier levels<sup>44,45,46,47</sup>
3. Soothing inflammation within arteries and the heart through activation of the antioxidant NRF2 pathway<sup>48,49</sup> and inhibition of pro-inflammatory pathways such as NFkB<sup>50,51,52</sup>
4. Supporting weight loss, as outlined overleaf.

**“Sulforaphane could contribute to the prevention of cardiovascular disease.”**

Sulforaphane Protects against Cardiovascular Disease via Nrf2 Activation (Bai et al, 2015)

In our citizen science programme, we've seen the positive effects of sulforaphane for supporting heart health validated by the experience of customers eating our super-broccoli regularly.

**“My cholesterol level has dropped from 5.7 to 4 mmol/L, and the overall balance is much healthier too. So clearly this soup is doing me some good!”**  
Caroline  
SmarterNaturally subscriber

**“My blood pressure has come down quite significantly over the last six months since I started eating this soup - it's now back in a really good range, which is brilliant.”**  
Patrick  
SmarterNaturally subscriber

