

ARM YOURSELF WITH BAOBAB

By Gabriele Fernsebner and Martin Späth

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The new Corona virus reminds us of one important fact that we have been neglecting in our high-tech civilization: Humans are a part of nature and live in a dynamic co-evolution with the earth's biome. Viruses and bacteria colonise our bodies both on the inside and on the outside. While some of them bring illnesses, others are vital for our survival.

Since the beginning of mankind, the confrontation with germs has been a highly efficient means for evolving, training and refining the human immune system. Those of our ancestors who survived infections or even did not fall ill, handed down and "anchored" the capabilities of

their immune system within the human genome. Thus, those individuals who showed higher bodily resilience survived. In that sense, evolution also means survival of the fittest immune systems.

Research has demonstrated that nutrition may play a crucial role in the prevention of diseases and more and more disorders can be related to dietary factors. Regarding the immune system, many studies have pointed out that not only pre- and probiotics, but also single micro-nutrients incorporated into functional foods may enhance immunocompetency. In fact, one health claim points out the immunomodulatory properties of functional foods (Saxena N., Saxena H.M., 2020; López-Varela S. et al., 2002).

Whether food and food supplements will be helpful in the prevention, mitigation or even cure of Covid-19 is yet unknown, but ample evidence exists in support of the claim that a healthy diet promotes good health:

1. Daily and balanced supply of essential amino acids, fatty acids, vitamins and minerals.

Amino acids are the building blocks of proteins. Nine amino acids are considered essential, i.e., the human organism cannot compose them, and thus they must be provided through diet: Histidine: responsible for oxygen transport and pH buffering. Isoleucine: important component for protein biosynthesis and energy metabolism. Leucine: important for building and maintaining of the muscular tissue. Lysine: responsible for muscular and connective tissue. Methionine and cysteine: important for protein biosynthesis.

Phenylalanine and tyrosine: precursors for hormones and neurotransmitters. Threonine: important for connective tissue and the formation of antibodies, helps to strengthen the immune system. Tryptophane: converted into the happiness hormone serotonin and thus modulating our mood.



Valin: necessary for nerve and muscular tissue.

Among the fatty acids, linoleic and alpha-linolenic acid are of particular importance. Both are components of cell membranes and crucial for transport processes. In addition, they are precursors of prostaglandins, which regulate inflammatory processes in the body. Both fatty acids must be supplied to the body.

A daily intake of minerals (e.g. calcium, potassium, magnesium, phosphorus, sulfur, sodium, chloride) and trace elements (iron, zinc, selenium and others) is just as vital as the intake of water-soluble (especially C and B vitamins) and fat-soluble vitamins (e.g. E, D, K, A) (Biesalski and Grimm 2015).

2. Daily intake of antioxidants.

Foods with high ORAC (Oxygen Radical Absorbance Capacity) values are particularly suitable to increase the body's resistance against pathogens. Antioxidants, including vitamin C and the B vitamins, flavonoids as well as polyphenols, particularly in their natural matrix are able to strengthen the immune system. Antioxidant ingredients may also stabilise the blood glucose level.

3. Intestinal health.

Both soluble and insoluble fibre plays an important role for a healthy digestion and a balanced intestinal flora. They are fundamental constituents of a healthy and balanced diet.

According to intervention trials in China involving a multi-faceted intervention strategy that included dietary supplements, pre- and probiotics are recommended for the prophylaxis of Covid-19. The authors argued that even if an infection with the new Corona virus cannot be prevented supplementation with pre- and probiotics favoured a mild course of disease (Xu K. et al., 2020).

In combination with a diet rich in vegetables, cereals, and fruits, frequent consumption of dietary fibre has been associated with a reduced risk of cancer of the digestive tract, and in particular, the rectal colon tract (World Cancer Research Fund, 2007). Furthermore, polysaccharides have a potential as prebiotics, as they enhance the growth of probiotic bacteria in the large intestine. Moreover, they prevent pathogenic bacteria from binding to the intestinal wall. Regular consumption of fibre-rich foods may also aid in

preventing constipation and in maintaining a healthy body-weight: as insoluble fibres are not absorbed by the intestine, they induce satiety, increase the faecal mass and stimulate peristalsis. Their saturating properties may also be useful in hypo-caloric diets (Bischof, 2009).

4. The influence of food on the psyche.

Psycho-neuroimmunological research has proven intimate connections between the nervous system, the brain and the hormonal and immune systems, respectively. Nerve and immune cells are directly and reciprocally connected to each other via messenger substances. Therefore, synergistic relations are highly likely between psychological health and bodily functions. In other words, a healthy and balanced diet ensures greater resilience, i.e., it lets us better deal with stress and elevates our mood (Schubert, 2016).

Why should we add Baobab to our diet, particularly in these special times?

The majority of fruits possess a high nutritional density and are valuable for one's health (Wanjek, 2020). In their →

own natural matrix, at best wild growing and therefore genetically unchanged since primeval times, fruits provide nutrients at a high rate of bioavailability.

Baobab is the "fruit of the future", because it may compensate the deficiencies of modern nutrition due to its unique composition.

Re 1: Baobab fruit powder contains all essential amino acids. Although linoleic acid and alpha-linolenic acid are present in rather small amounts, they increase the bioavailability of other fat-soluble ingredients. Macro- and micro-nutrients like vitamins, thiamine, riboflavin, niacin, calcium, iron, magnesium, potassium, zinc, phosphorus and others are available at a well-balanced ratio.

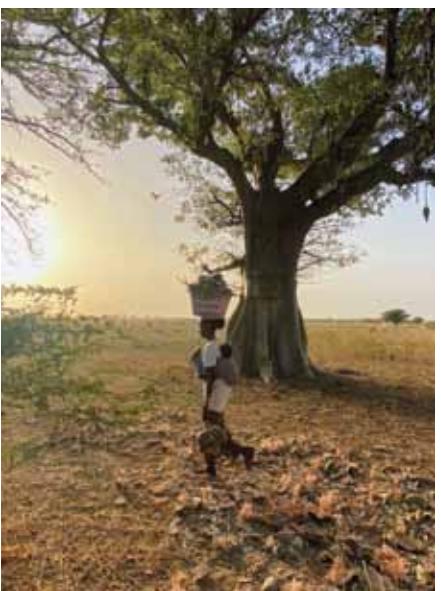
Re 2: Owing to the high content of vitamin C (300 mg/100 g) as well as polyphenols like procyanidins (Russo et al. 2019), the ORAC value of the pulp (200 µmolTE/g) and of the red funicles (750 µmolTE/g) is extremely high compared to berries and other fruits (Manfredini, 2007).

Re 3: Baobab fruit powder consists of about 50% dietary fibre, half of which is insoluble. Well documented by Wickens and Lowe (2008), Kamatou et al. (2011) and others, Baobab powder has prebiotic and digestive properties. It may be used both against constipation and diarrhoea.

The antiviral (influenza virus) activity of Baobab fruit powder and leaves has been demonstrated in recent studies (Vimalanathan S.V. et al., 2009). Moreover, various investigations have shown antibacterial, antibiotic, analgesic, liver-protecting, antipyretic and anti-inflammatory properties of Baobab. In addition, it may help to balance blood glucose concentration.

Re 4: Finally, the pleasant organoleptic properties of Baobab fruit powder should not be underestimated. From West to South Africa, in remote villages both children and adults traditionally chew on fruit pieces like jelly beans thus contributing to general health in areas where medical infrastructure is scarce.

The peculiar and sour flavour of the Baobab fruit can enhance the taste of



a variety of drinks and food. Especially when mixed with infusions such as hibiscus or ginger, perhaps enjoyed on a beach facing the ocean, Baobab is a real delight. According to proposition no 4, it may thus enhance psychological and physical health.

In summary, we suggest that Baobab could make a significant contribution to strengthening the entire immune system. ●

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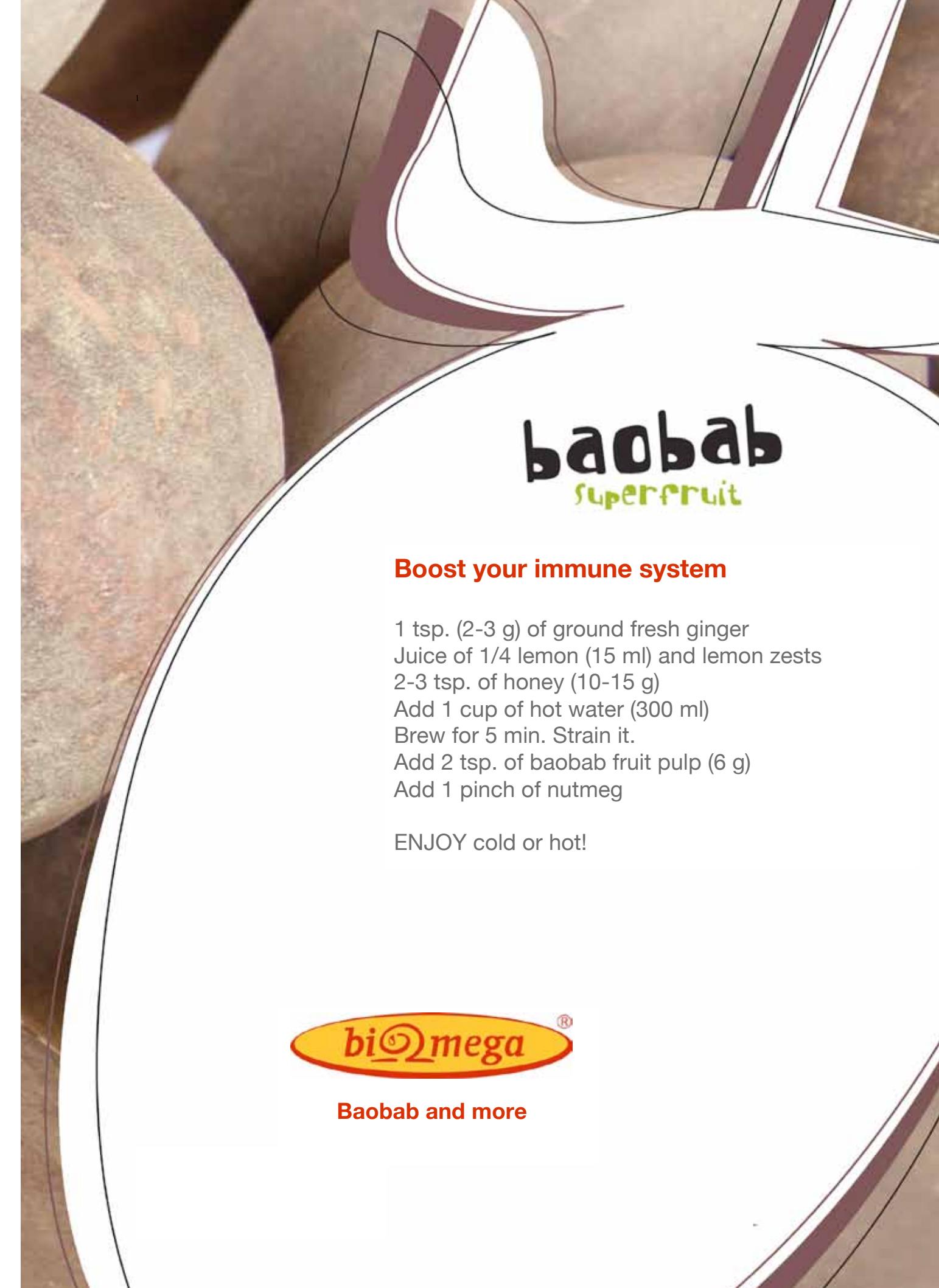
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baobab
superfruit

Boost your immune system

1 tsp. (2-3 g) of ground fresh ginger
Juice of 1/4 lemon (15 ml) and lemon zests
2-3 tsp. of honey (10-15 g)
Add 1 cup of hot water (300 ml)
Brew for 5 min. Strain it.
Add 2 tsp. of baobab fruit pulp (6 g)
Add 1 pinch of nutmeg

ENJOY cold or hot!

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