

MAP® – Master Amino Acid Pattern®

Eight essential amino acids for a protein diet
Dietary nutrient

... a protein revolution

MAP® is a pure foodstuff and has a 100% pure, free crystalline amino acid content.

MAP® is developed from pulses (GM-free; non-gene-modified) and does not contain any additives or doping substances. It is not a drug and does not have any contraindications.

MAP® provides an optimal ratio of the eight essential amino acids L-Leucine, L-Valine, L-Isoleucine, L-Lysine, L-Phenylalanine, L-Threonine, L-Methionine and L-Tryptophan for the human dietary pattern.

MAP® achieves 99 % Net Nitrogen Utilization [NNU*].

As a consequence, MAP® forms just 1% nitrogen toxins (ammonia, urea).

MAP® is almost completely calorie free (just 0.4 kcal in 10 pellets). It introduces the same amount of actually anabolic utilisable amino acids to the body as 350g meat, fish or poultry.

MAP® is completely reabsorbed in the small intestine within 23 minutes. It is already split and does not require any proteolytic enzymes. The transition period of usual nutritional proteins into the body takes 5 to 13 times longer.

MAP® does not leave behind any digestive end products.

* NNU = Net Nitrogen Utilization = Protein nutritional value

Why should older people supplement their protein nutrition with MAP®?

Together with a balanced intake of vital substances, MAP® supports body protein synthesis, in particular the creation of lean cell mass. Lean mass means the entire vital cell mass consisting of muscles, organs, bone tissue, antibodies, enzymes, hormones, etc.. MAP® also helps us to strengthen our immune system and improve our hormonal situation. It boosts muscle strength, maintaining or building up muscle mass or improving the constitution. MAP® strengthens and consolidates body tissue (connective tissue, skin, muscles and cardiac musculature). MAP® helps minimise body fat tissue and also the fat of the inner organs. All these aspects ultimately improve our quality of life and fitness in old age. A sufficient protein supply is essential in order to maintain our physical fitness.

Is the aging process inevitably associated with illness?

No, not at all! Fitness and health until old age are possible, but you have to work on it. Until now, the assumption in medicine was that many diseases related to old age were the natural result of the aging process. But in reality many of these illnesses are due to poor nutrition and malnutrition. A change of thinking is only happening gradually and due to the revelation of examples of malnutrition in older people, for example due to poor food preparation in old people's homes. In particular, protein deficiency is a serious and underestimated problem. Thanks to MAP® older people can ensure their protein supply in a simple way without burdening the detoxifying organs, the digestive organs or the cardiovascular system.

Which diseases are particularly associated with poor nutrition and malnutrition in old age?

Such illnesses include **immune deficiency** and the resulting **vulnerability to infection**. These can also cause **metabolic disorders** and reinforce the existing situation of malnutrition. This can lead to a vicious circle and even chronic illnesses (diabetes, cardiovascular diseases, etc.). Furthermore, there are the different forms of **anaemia** due to insufficient erythropoiesis (build up and evolution of red blood cells), caused by a deficiency of iron, protein, vitamin B12, folic acid, vitamin C or copper. It is estimated that more than 35% of all older people suffer from such diet-related anaemia. A serious problem caused by protein deficiency or protein utilization malfunctions is the **reduction of lean body cell mass**, i.e. the vital cell mass from muscles, organs and bone tissue as well as antibodies and hormones. If lean cell mass suffers degradation, this is inevitably followed by restrictions in physical movement. This does not just affect deterioration which is easy to recognise when walking. It also has an effect on breathing restrictions and the bowel function which is connected to breathing. The link between **protein deficiency and osteoporosis** is often forgotten. Bone metabolism is not just dependent on sufficient exercise, calcium and vitamin D. Large numbers of osteoblasts formed from amino acids are required so that the incorporation of these nutrients in the bone tissue can take place. With MAP® and a balanced supply of vital substances older people can ensure their protein supply and prevent all of the illnesses which result from malnutrition.

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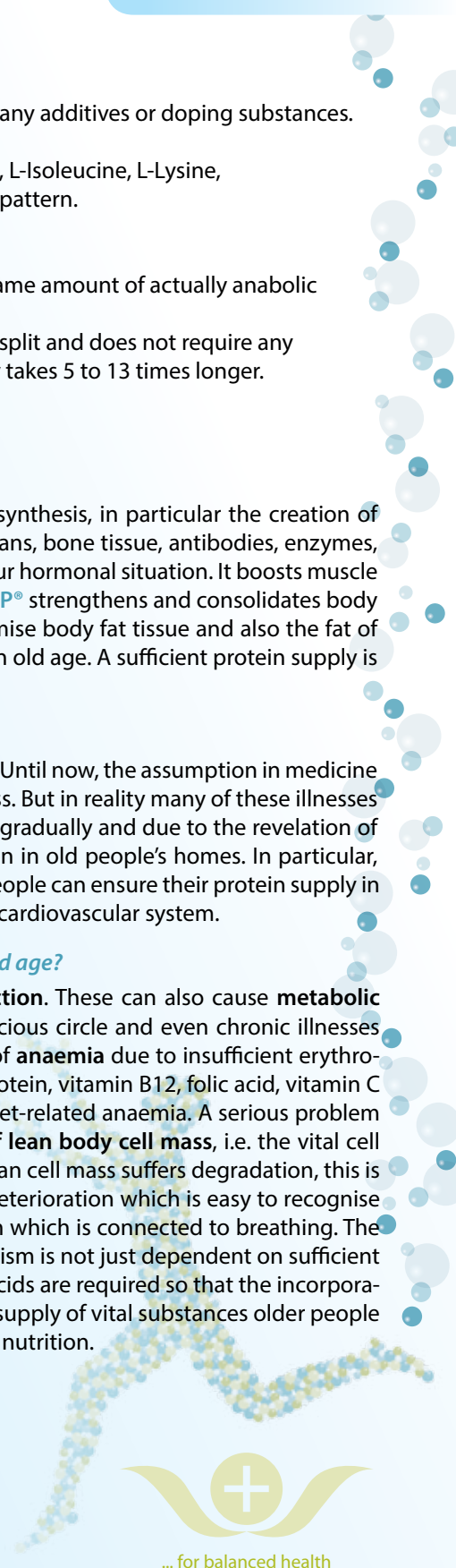
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... for balanced health



Can MAP® help in case of malfunctions in fat distribution and excess weight related to old age?

In cases of reduced mobility the lean cell mass (muscles/organ cells) also degenerates and the body converts this lean cell mass into fat tissue. Excess weight due to poor nutrition and malnutrition is one of the great social evils. Germany is now in second place worldwide behind the USA. Fat cell mass can climb by up to 100% during the aging process. However, something which is often overlooked is that seemingly thin and lean people often have a very poor ratio of lean cell mass to fat tissue and water in the body. The rise in the amount of fat mass and increased water retention can have a serious impact on health. The result can be **heart disease and circulatory diseases, high blood pressure, arteriosclerosis, shortness of breath, tiredness and orthopaedic problems**. MAP® can help to prevent these processes as it improves cell renewal and cell build up through its exceptionally high protein nutritional value (99% NNU).

Are there other reasons for protein deficiency in older people?

Yes! There is also a **reduction in the sense of touch and taste or dental problems**, which restrict proper food intake. There are also **infections** which cause an increase in protein metabolism through the production of immunoglobulins. In this way the protein requirement can sometimes quickly reach that of a high performance athlete. Existing **chronic illnesses or disorders of the gastro-intestinal tract** contribute to an increased protein requirement. Furthermore, neuropsychological factors such as **depression, anorexia** or socio-economic factors such as **loneliness** should not be ignored. All of which can lead to protein malnutrition and reinforce existing symptoms. In this case the simple and safe intake of MAP® can have a preventative effect.

Which advantages does MAP® offer in protein nutrition for older people?

Poor nutrition and malnutrition are not just the result of a poor supply. Until now, achieving adequate nutrition during the aging process has been seen as a dilemma. The reason for this is that digestive and detoxifying powers, and therefore the protein utilization, diminish substantially with age. The average renal function of a 70 year old person is just 30% of the renal function during their youth. Under these circumstances even the normally required protein intake represents a problem. This is because it can result in a dangerous burden with nitrogen waste. It is a similar situation with acidic gastric digestion: peptic digestion can be reduced by up to 60%. The detoxifying performance of the liver also diminishes (decomposition of ammonia). If levels of blood ammonia and blood urea are too high it can have fatal consequences. Older people often limit their protein consumption, as they can no longer tolerate it due to the burden of nitrogen toxins. This creates a vicious circle of lower protein utilization and reduced protein intake. The lack protein supply leads to a reduction or conversion of the lean cell mass into fat tissue. Protein deficiency itself promotes greater water retention in the tissue. This affects the external visible and tangible skin and subcutaneous tissue as well as the soft connective tissue and other organ tissue. Our immune and hormone status are also affected, which results in a general reduction in capability.

MAP® helps us to solve this dilemma and can provide help in a healthy manner. In particular it provides the **worldwide highest utilizable protein nutritional value** (99% NNU) compared to all other nutritional protein. This means that 99% of the contained amino acids are made available to the body for cell organisation and cell renewal. In comparison: 16% NNU for whey, casein, soya and 36% NNU for meat, fish, poultry. Ten pellets of MAP® supply us with the same amount of protein as 350 g fish, meat or poultry, without causing digestive end products. This is not just an advantage in cases of constipation or diarrhoea. Due to this outstanding utilization MAP® supplies the **lowest amount of nitrogen toxins** (ammonia, urea) compared to every other food protein worldwide (1%). Grain, soya, milk products produce up to 84% nitrogen waste. MAP® provides the highest protein nutritional value with the lowest amount of nitrogen toxins (see the comparison graph in the basic information leaflet).

Furthermore, MAP® provides the **lowest amount of calories** in comparison with every other food protein - worldwide. All of these factors contribute to the **organism being optimally supplied with protein** and simultaneously providing **massively relief of the detoxifying organs such as the liver and kidneys**. MAP® does not create **any digestive end products** and is fully absorbed in the small intestine within 23 minutes without the aid of peptidases (proteolytic enzymes). Therefore, it also **relieves the digestive tract** (stomach, pancreas, gall bladder, small intestine, large intestine). This leads indirectly to **relief of the cardiovascular system**.

Recommendation

The recommended intake of MAP® for older people from 60 years and without further indications is 3–5 pellets per day. In case of particular problems, seek the advice of a doctor, health practitioner or nutrition consultant, who is familiar with the characteristics of this amino acid formula. For restrictions of the locomotor system (zimmer frame, stick, sluggish gait when climbing stairs) and reduced function of the breathing apparatus we have a separate information sheet with two specific exercises in connection with the intake of MAP® for older people (exercise leaflet for the rehabilitation of the locomotor apparatus in connection with MAP®).

Further interesting details about the most important nutritional component can be found in the information leaflet **“Basic knowledge protein”**. You can find more information about the uses of MAP® at www.map-protein.com – under “Downloads”

