

*What dietary guidelines
should persons with
Alpha-1-Antitrypsin
Deficiency observe?*



*Living with
Alpha-1-Antitrypsin
Deficiency*

About this booklet

The right dietary habits play an important role in maintaining healthy lung function. A healthy diet keeps the body strong, providing it with all the nutrients needed for our organs to function well, including the lungs.

The right diet should also go hand in hand with the right body weight.

Please note that no booklet can replace a medical consultation, so please contact your doctor if you have any questions.

Your "ideal" weight

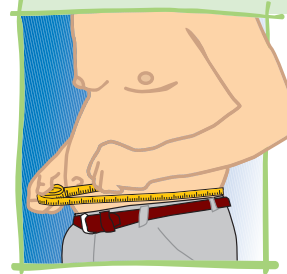
To maintain healthy lung function it is important and sensible to keep to your ideal body weight.

A good way to determine your ideal weight is to calculate your BMI (body mass index). You can read more about the BMI on pages 4 and 5.

If you do need to lose weight, this should be done slowly and carefully (around 1 to 2 kilograms per month). On no account should you go on a starvation diet. In order to ensure the right intake of protein, dieting is best undertaken under supervision by your doctor.

A healthy diet that also contains sufficient calories will help maintain your body's energy and power reserves.

Your waist girth



In recent years it has become increasingly clear that body fat deposited around the waist is an independent risk factor for the development of metabolic diseases (e.g. diabetes) and cardiovascular diseases (e.g. heart attack and stroke). To put it simply, the bigger your waist, the greater the risk. This also applies to people who are otherwise slim. The following risk categories have been determined in studies:

Waist girth and risk of metabolic and cardiovascular diseases¹

	Waist girth in men	Waist girth in women
Increased risk	94 cm or more	80 cm or more
Markedly increased risk	102 cm or more	88 cm or more

¹ from Lean M. E. J. et al. Waist circumference as a measure for indicating need for weight management. Br Med J 311 (1995) 621–628

Persons with Alpha-1-Antitrypsin Deficiency should therefore be aware of their waist girth.

Your body mass index (BMI)

The body mass index indicates how heavy you are in relation to your height. You can calculate your BMI from the following table:

BMI

Height in meters

Weight	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00
30 kg	13.3	12.5	11.7	11.0	10.4	9.8	9.3	8.8	8.3	7.9	7.5
35 kg	15.6	14.6	13.7	12.9	12.1	11.4	10.8	10.2	9.7	9.2	8.8
40 kg	17.8	16.6	15.6	14.7	13.8	13.1	12.3	11.7	11.1	10.5	10.0
45 kg	20.0	18.7	17.6	16.5	15.6	14.7	13.9	13.1	12.5	11.8	11.3
50 kg	22.2	20.8	19.5	18.4	17.3	16.3	15.4	14.6	13.9	13.1	12.5
55 kg	24.4	22.9	21.5	20.2	19.0	18.0	17.0	16.1	15.2	14.5	13.8
60 kg	26.7	25.0	23.4	22.0	20.8	19.6	18.5	17.5	16.6	15.8	15.0
65 kg	28.9	27.1	25.4	23.9	22.5	21.2	20.1	19.0	18.0	17.1	16.3
70 kg	31.1	29.1	27.3	25.7	24.2	22.9	21.6	20.5	19.4	18.4	17.5
75 kg	33.3	31.2	29.3	27.5	26.0	24.5	23.1	21.9	20.8	19.7	18.8
80 kg	35.6	33.3	31.3	29.4	27.7	26.1	24.7	23.4	22.2	21.0	20.0
85 kg	37.8	35.4	33.2	31.2	29.4	27.8	26.2	24.8	23.5	22.4	21.3
90 kg	40.0	37.5	35.2	33.1	31.1	29.4	27.8	26.3	24.9	23.7	22.5
95 kg	42.2	39.5	37.1	34.9	32.9	31.0	29.3	27.8	26.3	25.0	23.8
100 kg	44.4	41.6	39.1	36.7	34.6	32.7	30.9	29.2	27.7	26.3	25.0
105 kg	46.7	43.7	41.0	38.6	36.3	34.3	32.4	30.7	29.1	27.6	26.3
110 kg	48.9	45.8	43.0	40.4	38.1	35.9	34.0	32.1	30.5	28.9	27.5
115 kg	51.1	47.9	44.9	42.2	39.8	37.6	35.5	33.6	31.9	30.2	28.8
120 kg	53.3	49.9	46.9	44.1	41.5	39.2	37.0	35.1	33.2	31.6	30.0

If you like to calculate your BMI exactly, you can do so by using the following formula:

BMI formula

Your body weight (in kg)
divided by your height (in meters)²

$$\text{Example: } \frac{86 \text{ kg}}{1.86 \times 1.86 \text{ m}} = \text{BMI } 24.9$$

Studies have shown a clear correlation between a high BMI and the risk of comorbidities. The World Health Organization (WHO) has published the following classification table:

Weight classification for adults based on their BMI²

Category	BMI	Risk of comorbidities
Underweight	18.5 or less	Low
Normal weight	18.5 – 24.9	Average
Overweight	> 25	Slightly raised Raised High Very high
Pre-obese	25 – 29.9	
Obese class I	30 – 34.9	
Obese class II	35 – 39.9	
Obese class III	> 40	

Obese = abnormally overweight
² from WHO, 2000 EK IV

Problems associated with an elevated BMI

The body fat deposited around your midriff can restrict the mobility of your diaphragm, which can create problems and make breathing more difficult. An elevated BMI puts a strain on the entire cardiovascular system and the lungs, because your body is carrying an increased “load” and consumes more oxygen.



Problems associated with a low BMI

If you have a very low BMI, your body's defense mechanisms could be affected, since your immune cells also need energy from food. The result could be an increased risk of infection. Particularly patients with pulmonary diseases are more prone to frequent, rapidly deteriorating respiratory infections. Moreover, if you develop another illness or have to undergo an operation, you will have less energy in reserve to draw upon.

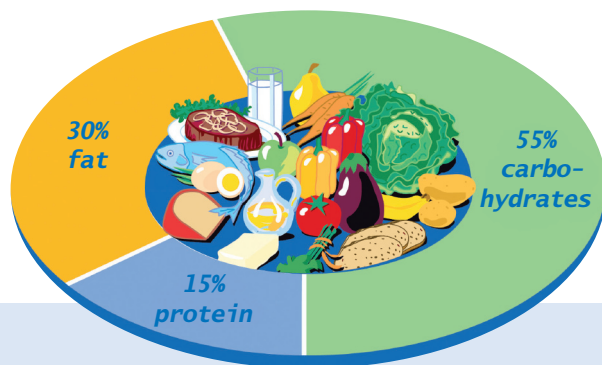


On pages 9 and 10 you will find an overview with suggested portions for a healthy and balanced diet.

The right diet

The second important point, apart from maintaining your ideal body weight, is a balanced diet. For most patients with Alpha-1-Antitrypsin Deficiency it is sufficient to eat a balanced vitamin-rich, high-fiber diet (i.e. plenty of fruits and vegetables but not too much fat and meat).

Your diet should consist of:



Fat

is the most important energy source. It is also needed for the body to absorb vitamins A, D, E and K from food.

Protein

is needed to build new cells, particularly heart and muscle cells. A lack of protein can lead to a weakened immune system and impaired mental and physical performance.

Carbohydrates

are another source of energy that is quickly available. Without carbohydrates the brain and nerve cells are unable to function.

Suggested portions

The following portions are a guideline for a balanced diet that provides sufficient calories. Please note Groups 4 and 5 in particular.

Group 1



Grains, grain products, potatoes

Per day

- 200–300 g of bread (4–6 slices)
or 150–250 g of bread (3–5 slices)
and 50–60 g of cereal
- 200–250 g of potatoes (cooked)
or 150–180 g of rice (cooked)

Preferably wholemeal products

Group 2



Vegetables, salad

- Per day
a total of 400 g of or more
300 g of cooked vegetables
and 100 g of raw vegetables/salad
or 200 g of cooked vegetables
and 200 g of raw vegetables/salad

Group 3



Fruit

- Per day
2–3 portions of fruit (250 g)
or more

Group 4



Milk, dairy products

Per day

- 200–250 g of milk/yoghurt
- 50–60 g of cheese

Preferably low-fat products

Group 5



Meat, sausage, fish, eggs

Per week

- 300–600 g of meat and sausage, preferably low-fat products
- Fisch: 80–150 g of low-fat saltwater fish and 70 g of oil-rich saltwater fish
- Eggs: up to 3 (including processed egg products)

Group 6



Fats

Per day

- 15–30 g of butter, margarine
- 10–15 g of oil (e.g. rapeseed, soya, walnut)

Group 7



Drinks

Per day

- A total of at least 1.5 liters
- Preferably low-calorie drinks

Tips

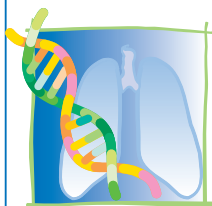
- Five small meals a day are better than three big ones. They put less stress on your system, and your performance is better maintained.
- Adults should drink 2–3 liters a day to meet their fluid requirements. Not drinking enough puts a strain on your circulation and kidneys and can lead to constipation.
- “Five a day” – Five portions of fruit and vegetables: 250 g of fruit, 400 g of vegetables (some of which should be eaten raw).

Summary

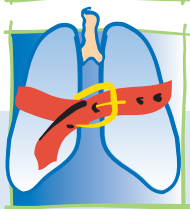
- *For people with Alpha-1-Antitrypsin Deficiency it is particularly important to achieve and maintain their „ideal“ weight.*
- *Consult your doctor if your BMI is too high or too low.*
- *A balanced diet is important for maintaining good lung function.*

Would you like to know more?

“Living with Alpha-1-Antitrypsin Deficiency“ is a patient information program. Its aim is to explain the causes, risks and treatment of the disease. The following booklets can be ordered free of charge on the internet at www.alpha-1-info.com



Breathless –
the Whys and Wherefores



What happens in
Alpha-1-Antitrypsin Deficiency?



What can individuals with
Alpha-1-Antitrypsin Deficiency
do for their health? (Other booklets
on protecting the lungs, exercise
and stress management)

Talecris
BIOTHERAPEUTICS

Talecris Biotherapeutics GmbH
Lyoner Strasse 15
D-60528 Frankfurt am Main, Germany
www.talecris.eu