

NUTRITION

INTRODUCTION :

When it comes to nutrition, little people are often uninformed. Should they follow standard food guides? Can they rely on standard curves to determine what is a healthy weight? It's hard to know where you stand when you're about 100 cm (3'3") in height. However, if an adult with short stature decides to rely on children's food guides, it is a mistake because their growth is complete. As a result, their metabolism slows down in the same manner as that of an adult of average height.

In this context, it can be difficult to know how to balance your diet and to define (and maintain) your healthy weight. Fortunately, the recent creation of a food guide for people with achondroplasia makes it a little clearer. In addition, there are growth curves specific to several conditions (see the appendices section of this document for further information).

NUTRITIONAL NEEDS :

Most little people require between 800 and 1200 calories per day to meet their needs. For individuals with achondroplasia, the average varies between 1000 and 1800 calories. For comparison, an average sized sedentary adult woman is estimated to need 1,800 calories per day. On the other hand, a sedentary adult man of average height consumes 2400 calories per day.

That being said, it should be understood that these figures are averages. Thus, a very athletic little person will consume more calories. Likewise, small children have a basal metabolic rate that is twice as high as adults for their body weight. When in doubt, know that it is best to serve portions that are more appropriate for your child's weight than their age.

A BALANCED DIET :

Also, the number of calories a person needs depends on their age, height, weight, gender, growth and activities.

Adult Little people should consume fewer calories than adults of average height. This is why, when following Canada's food guide, they should favor foods lower in sugar and fat, and choose more foods that contain fiber. In addition, it is advisable to cook your own food to avoid processed products which are often loaded with salt, sugar and fat. Finally, it is necessary to learn to read the Nutrition Facts on labels and to detect the calorie traps. For example, a muffin purchased from a vending machine, cafe, or fast-food chain can provide up to 25% of daily caloric intake!



For children, it is recommended to limit the intake of refined sugar (especially found in cookies, soft drinks, candies, pastries, chocolates, etc.). It is also recommended to increase the intake of protein. These tips are applicable to all children and are intended to promote the healthy growth of bones and body systems. Children also need more calcium, which is found in greater amounts in dairy products.

Nutritional guide for people with achondroplasia - according Kathryn E. Lamb (2012) -			
Energy Level (kcal)	Food group	Number of Exchange Serv-ings	Estimated Total Serving Size
1000	Grains	4	4 oz. (113 g)
	Vegetables	2	Cooked: 1 cup Fresh: 2 cups
	Fruits	3	1.5 cups
	Dairy	1	1 cup
	Protein	4	4 oz. (113 g)
1400	Grains	6	6 oz. (170 g)
	Vegetables	2	Cooked: 1 cup Fresh: 2 cups
	Fruits	3	1,5 cups
	Dairy	2	2 cups
	Protein	5	5 oz. (142 g)
1800	Grains	7	7 oz. (198 g)
	Vegetables	4	Cooked: 2 cups Fresh: 4 cups
	Fruits	4	2 cups
	Dairy	3	3 cups
	Protein	6	6 oz. (170 g)

EXCESS WEIGHT :

Weight problems are more common in little people than in the general population. People with achondroplasia are particularly affected; it is estimated that between 13% and 43% of adults are obese. The causes of this predisposition are uncertain, but several avenues are possible, namely:

- A metabolic defect linked to the various diagnoses that cause dwarfism;
- Reducing body surface area for greater body mass;



- The relative difference between the weight of the organs;
- Excessive calorie intake combined (or not) with a lack of physical activity.

Because of this predisposition, it is important to encourage with your child healthy eating habits from an early age. It is also important to ensure sufficient exercise, despite the limitations related to the condition causing dwarfism. Generally, people with fragile bones should not participate in contact sports such as football, hockey or rugby. Activities that require lifting weights should also be avoided. Likewise, dives and trampoline jumps are prohibited when there are back-lumbar and/or cervical irregularities. On the other hand, activities like cycling, swimming, aqua-fitness, warm water hydrotherapy, etc., are recommended. In addition, it is suggested to perform muscle strengthening exercises regularly.

Weight gain puts extra strain on bones and joints, making it harder to walk and increasing joint wear and tear. For example, problems like osteoarthritis of the spine, knees and hips (a diagnosis affecting the joints and nearby bones) may be worsened by being overweight. Additionally, excess body weight can worsen pre-existing health issues such as sleep apnea.

Finally, being overweight increases the risk of high blood pressure, heart disease, stroke, diabetes and cancer.

As a result, overweight people have a reduced life expectancy compared to the general population.

DIAGNOSTIC :

There are growth charts for several conditions that cause dwarfism. In addition, there is a table showing the healthy weight for people with achondroplasia, which may also be useful for people with other forms of disproportionate dwarfism. In the absence of or in addition to reference curves, the safest method to diagnose being overweight is to measure the level of body fat. This examination can be carried out by your family doctor; contact them if you have any doubts about your weight.

You should know that an average percentage of body fat in men of average height varies from 13% to 21%, and from 23% to 31% in women. When body fat exceeds 22% in men and 32% in women, health problems can develop.



Healthy weight - Achondroplasia - without shoes and clothes according to Dr. Judith G Hall's data (1970) -		
Height	Weight (man)	Weight (woman)
36 in (91.4 cm)	63 - 81 lb (28.6 – 36.7 kg)	57 - 67 lb (25.8 - 30.4 kg)
38 in (96.5 cm)	68 - 84 lb (30.8 – 38.1 kg)	63 - 73 lb (28.6 – 33.1 kg)
40 in (101.6 cm)	72 - 85 lb (32.7 – 38.6 kg)	66 - 77 lb (29.9 – 34.9 kg)
42 in (106.7 cm)	75 - 91 lb (34.0 – 41.3 kg)	70 - 81 lb (31.7 – 36.7 kg)
44 in (111.8 cm)	80 - 95 lb (36.3 – 43.1 kg)	74 - 86 lb (33.6 – 39.0 kg)
46 in (116.8 cm)	83 - 98 lb (37.7 – 44.4 kg)	78 - 91 lb (35.4 – 41.3 kg)
48 in (121.9 cm)	87 - 103 lb (39.5 – 46.7 kg)	83 - 95 lb (37.6 – 43.1 kg)
50 in (127.0 cm)	91 - 107 lb (41.3 – 48.5 kg)	87 - 99 lb (39.5 – 44.9 kg)
52 in (132.1 cm)	95 - 110 lb (43.1 – 49.9 kg)	91 - 103 lb (41.3 – 46.7 kg)
54 in (137.2 cm)	99 - 113 lb (44.9 – 51.3 kg)	95 - 107 lb (43.1 – 48.5 kg)
56 in (142.2 cm)	103 - 117 lb (46.7 – 53.1 kg)	100 - 113 lb (45.4 – 51.3 kg)
58 in (147.3 cm)	107 - 121 lb (48.5 – 54.9 kg)	104 - 117 lb (47.2 – 53.1 kg)

DIET :

If you are overweight and want to get back to your healthy weight, you need to reduce your caloric intake and increase your level of physical activity. It is therefore recommended to reduce consumption by 200 to 400 calories as compared to what you would normally eat.

Before starting any diet, it is best to consult a nutritionist or dietitian who can help you to balance your diet and reduce your caloric intake while carefully considering your needs, tastes and budget. Seeking a professional nutritionist is especially important since increasing physical activity may be problematic for many people of short stature, including excessive wear and tear on the joints. It is therefore essential to focus on the diet primarily.

RESOURCES :

Association québécoise des personnes de petite taille
<https://www.aqppt.org/>



Little People of Ontario

<https://littlepeopleofontario.com/>

Little People of America - fiche Judith G. Hall, Nutrition and the Little People

<https://www.lpaonline.org/assets/documents/Nutrition%20and%20the%20Little%20Person.pdf>

Nathalie Boëls, *Le nanisme. Se faire une place au soleil dans un monde de grands*, Montréal, éditions du CHU Sainte-Justine, 2008

Association québécoise des personnes de petite taille, *Recherche médicale sur le nanisme*, AQPPT, 1993

Kathryn Elizabeth Lamb, *Development of Food Guide Pyramid for Individuals with Achondroplasia*, MA Thesis, Southern Illinois University Carbondale, 2012

APPENDICES

GROWTH CHARTS FOR VARIOUS CONDITIONS CAUSING DWARFISM :

- **Achondroplasia:**

Julie E. Hoover-Fong, Kerry J. Schulze, John McGready, Hillary Barnes, and Charles I. Scott, "Age-appropriate body mass index in children with achondroplasia: interpretation in relation to indexes of height", *The American Journal of Clinical Nutrition*, Vol. 88, 2008.

<https://www.lpaonline.org/assets/documents/Age-appropriate%20body%20mass%20index%20in%20children%20with%20achondroplasia.pdf>

Growth chart (weight and height) for women

<https://lpamrs.memberclicks.net/assets/documents/Achon.ht.wt.female%20chart.pdf>

Growth chart (weight and height) for men

<https://lpamrs.memberclicks.net/assets/documents/Achon.ht.wt.male.chart.pdf>

- **Osteogenesis imperfecta:**

Growth chart (weight) for women and men

<https://lpamrs.memberclicks.net/assets/documents/OI%20Weight.pdf>

Growth chart (height) for women and men

<https://lpamrs.memberclicks.net/assets/documents/OI%20Height.pdf>

- **Morquio syndrome:**



Morquio syndrome chart for Body Mass Index (BMI) FEMALE

<https://lpamrs.memberclicks.net/assets/documents/Morquio.BMI.females.doc>

Morquio syndrome chart for Body Mass Index (BMI) MALE

<https://lpamrs.memberclicks.net/assets/documents/Morquio.BMI.males.doc>

- **Pseudoachondroplasia:**

Growth chart (height) for women and men

<https://lpamrs.memberclicks.net/assets/documents/Pseudoachondroplasia%20growth%20chart.Horton%2082.pdf>

- **Diastrophic dysplasia:**

Growth chart (height) for women and men

https://lpamrs.memberclicks.net/assets/documents/Diastrophic_growth_chart_Horton.pdf

- **Spondyloepiphyseal dysplasia:**

Growth chart (height) for women and men

<https://lpamrs.memberclicks.net/assets/documents/SEDc%20growth%20chart.Horton%2082.pdf>



Please contact us for more information

Association québécoise des personnes de petite taille
6300, avenue du Parc, bureau 430, Montréal (Québec) H2V 4H8

Phone: 514 521-9671 • Fax: 514 521-3369

Website: www.aqppt.org • E-mail: info@aqppt.org

Avec la participation financière de

Office des personnes
handicapées

Québec 