



Diabetes –
Am I at risk ?

Reducing excess body weight



>> Overweight continues to impact society!

The number of overweight people is increasing at such a rate that experts are defining the problem as an epidemic.

Worldwide, 1.9 billion adults are **overweight**, and at least 650 million of them are suffer from **obesity**¹.

<< Type 2 diabetes is a silent disease that can go undetected >>

<< Avoiding a buildup of excess body weight and managing it from the beginning will contribute to a better quality of life! >>



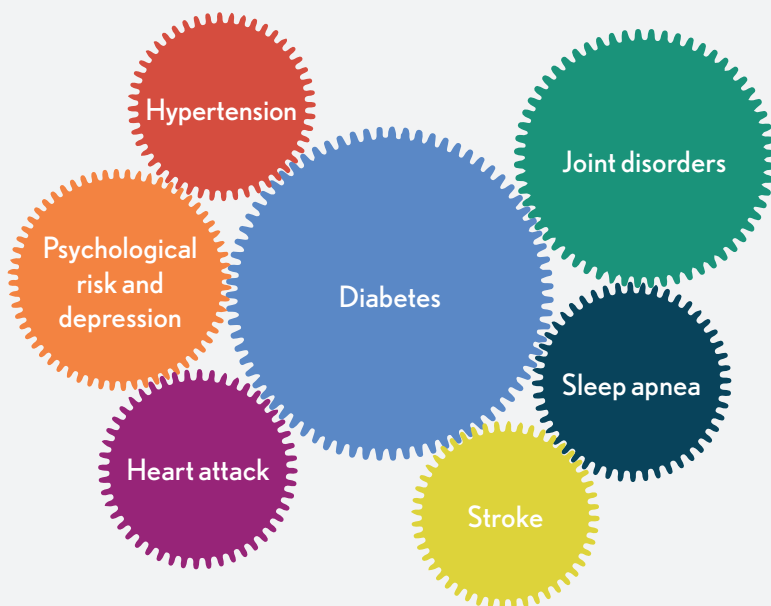
In parallel, **type 2 diabetes** (life-style-related diabetes) is on the rise. Worldwide, more than 540 million people are living with diabetes and 90% of them with type 2 diabetes. This figure is conservative to say the least, since it is estimated that by 2045, 1 in 8 adults will have diabetes (783 million people)².

¹ World Health Organisation - <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>. - accessed 23/11/2023

² International Diabetes Federation - <https://idf.org/about-diabetes/diabetes-facts-figures/> - accessed 23/11/2023

The influence of excess body weight on health

Excess body weight can induce multiple major risk factors for our health:



>>Can you live with diabetes without knowing?

Type 2 diabetes can go unnoticed over several years before health **complications** present themselves. Whereas in the past only adults could develop **type 2 diabetes**, the disease is now increasingly affecting **children**.

<<In Luxembourg more than 35 000 people have diabetes³.

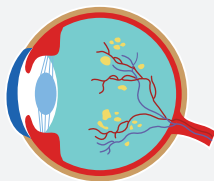
If you are over 45 years old you can speak to your family doctor about getting tested.>>

³ Physical activity prescription schemes: which model would work best for the Grand-Duchy of Luxembourg? Lion A. et al. - Bull Soc Sci Med Grand Duche Luxemb. 2020;(2):63-69

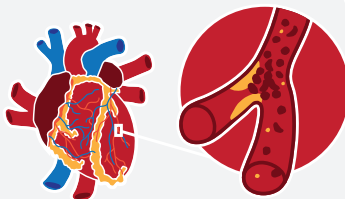
Diabetes: why should we act quickly?

All too often, it is a health complication that leads to the detection of diabetes. **Excess sugar** (glucose) in the blood damages small blood vessels and nerves. Left untreated, diabetes can lead to **complications throughout the body**:

1. Eyes: Diabetic retinopathy (damage to the vessels of the retina) does not cause immediate problems with vision and can therefore go unnoticed without regular monitoring. If left untreated however, it can lead to loss of vision.

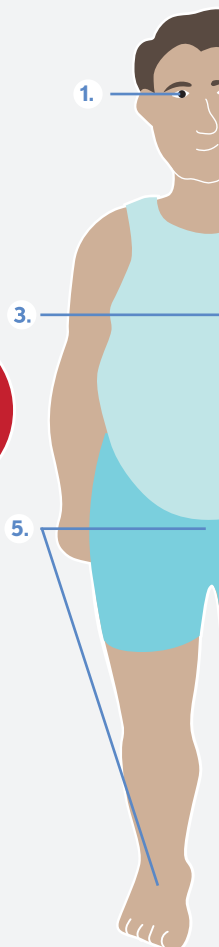


3. Heart: High blood pressure, high cholesterol, smoking and high blood sugar levels can damage the vessels in the heart, leading to heart attacks or heart failure.



5. Nerves: Nerves are susceptible to sensitivity loss. This is particularly true of the feet, but other organs can also be affected. Sexual dysfunction may also occur.

Nerve damage linked to poor blood circulation can lead to sores, especially on the feet. These can even require amputation if the condition worsens.



<< Early detection is important to prevent health complications! >>



2.



2. Brain: Diabetes can cause lesions in the large blood vessels, particularly those supplying the brain, leading to an increased risk of stroke.

4.



4. Kidneys: Damage to the kidney vessels can lead to kidney failure and the need for dialysis.

6.



6. The whole body: Inadequately treated diabetes can lead to complicated infections of the skin and gums. Influenza, COVID-19 and pneumonia can pose a serious health risk very quickly when living with diabetes, which is why vaccination against these diseases, when possible, is highly recommended.

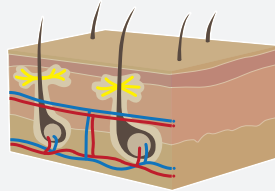
Symptoms of Diabetes

In many cases, the symptoms of type 2 diabetes may go unnoticed for several years.

<< Type 2 diabetes is a problematic disease because a person can remain symptom-free for an extended period of time, delaying diagnosis. >>



Unexplained weightloss



Slow healing of wounds



Feeling very thirsty



Frequent urination



Blurred vision



Tingling sensation in feet
or fingers



Feeling very tired or
drowsy

Test your risk of diabetes!

FINDRISK questionnaire (Finnish Diabetes Risk Score*)

>>1. How old are you?

- ☐ 18-34 years
- ☐ 35-44 years
- ☐ 45-54 years
- ☐ 55-64 years
- ☐ 65 years or older

0 points
1 point
2 points
3 points
4 points

>>2. Have any members of your immediate family or other relatives been diagnosed with diabetes (type 1 or type 2)? This question applies to blood relatives only.

- ☐ No
- ☐ Yes, grandparent, aunt, uncle or first cousin (but not own parent, brother, sister, or child)
- ☐ Yes, parent, brother, sister, or own child

0 points
3 points
5 points

>>3. What is your waist circumference? Waist circumference is measured below the ribs (usually at the level of the navel).

- | | | | |
|--|-----|---------------------------------------|-------|
| <input type="radio"/> less than 94cm | Men | <input type="radio"/> less than 80 cm | Women |
| <input type="radio"/> 94 – 102cm | | <input type="radio"/> 80 – 88 cm | |
| <input type="radio"/> more than 102 cm | | <input type="radio"/> more than 88 cm | |

0 points
3 points
4 points

>>4. Are you physically active for more than 30 minutes every day? This includes physical activity during work, leisure, or your regular daily routine.

- ☐ Yes
- ☐ No

0 points
2 points

>>5. How often do you eat vegetables and fruits?

- ☐ Every day
- ☐ Not every day

0 points
1 point

>>6. Have you ever taken medications for high blood pressure on a regular basis?

- ☐ No
- ☐ Yes

0 points
2 points

* for adults 18 years and older (Canadian Task Force on Preventive Health Care: <https://canadiantaskforce.ca/tools-resources/type-2-diabetes-2/type-2-diabetes-patient-findrisk/>)

>>7. Have you ever been found to have high blood glucose (e.g. in a health examination, during an illness, during pregnancy)?

- ☐ No
☐ Yes

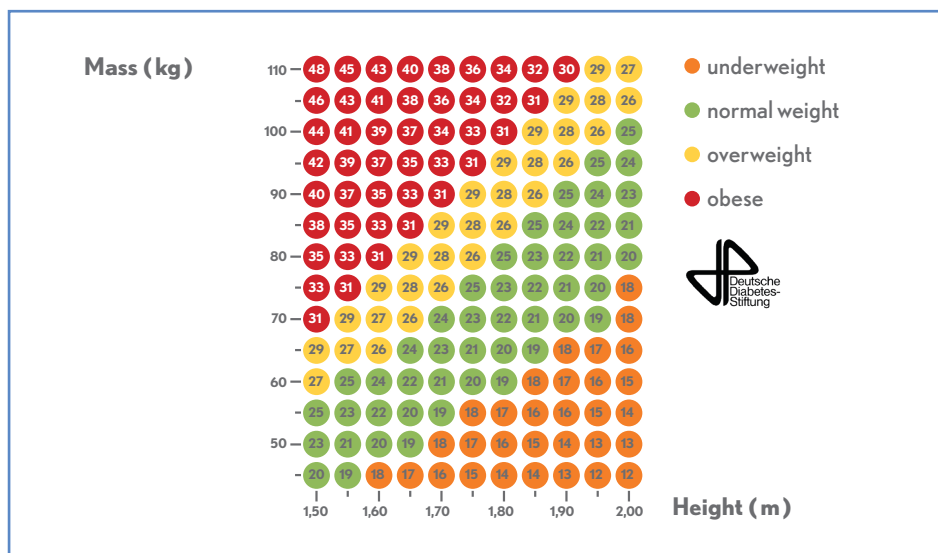
0 points
5 points

>>8. What is your Body Mass Index (BMI)? BMI is calculated as follows: body mass (in kg) divided by your height (in metres) squared. You can also read it off from the table below.

In adults:

- ☐ Normal: < 25kg/m²
☐ Overweight: 25-30kg/m²
☐ Obese: >30kg/m²

0 points
1 point
3 points



Calculate the sum of all the points for each question and write the total in the box below.

<<Determine your FINDRISK score on www.sante.lu>>

Total:

What can I do for my health?

>> From 0 to 14 points, your risk is low to moderate

Your risk of developing diabetes in the next 10 years is 1 to 17%. The following pages will help you to maintain or further reduce this risk and stay healthy. **Continue to take care of your health!**

<< If you are at risk, you can still act >>

>> Between 15 and 20 points, your risk is high

Your risk of developing diabetes in the next 10 years is 33%. **Increasing your physical activity and modifying your diet can help. Discuss this with your doctor.**

>> More than 20 points, your risk is very high

Your risk of developing diabetes in the next 10 years can be as high as 50%. **Your doctor can review the situation with you, ask him for advice. The following pages will give you tips on what you can do to reduce your risk.**

Understanding the risk factors and taking action



<< Find out if any of your close relatives are living with diabetes >>

>>1. Age

Even though more and more young people are developing type 2 diabetes, age remains one of the main risk factors for diabetes. As we age, reduced organ function, such as the pancreas no longer producing insulin in sufficient quantities, or the cells no longer using it properly, leads to an increased risk of diabetes.



>>2. Genetics

If you have close relatives with diabetes, this increases your risk. Genetic factors play an important role in type 2 diabetes. For example, if one parent has diabetes, children could have up to a 40% risk of developing type 2 diabetes.*

<< Be aware that with age, especially from 45 years onwards, the risk of developing diabetes increases >>

*Ali O. Genetics of type 2 diabetes. World J Diabetes 2013; 4(4):114-123 Available from: URL: <http://www.wjgnet.com/1948-9358/full/v4/i4/114.htm> DOI: <http://dx.doi.org/10.4239/wjd.v4.i4.114>



<<Reducing your waist circumference could help to reduce your risk of developing diabetes>>

>>3. Waist circumference

////////////////////

Abdominal fat plays an important role in the development of type 2 diabetes.

Measuring your waist circumference will allow you to monitor and manage an excess of visceral fat around the abdomen.

>>How to measure your waist circumference?

Place a tape measure between your naval and lowest rib and measure the shortest perimeter around your waist.



Your waist circumference:

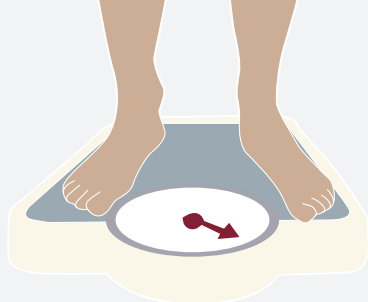
_____ cm

For Adults:

Risk of developing type 2 diabetes, coronary heart disease and hypertension

- Weak
- High
- Very high

Men (cm)	Women (cm)	
< 94	< 80	< : less than
> 94	> 80	> : more than
> 102	> 88	



>>4. Body Mass Index (BMI)

As BMI increases, so does your risk of developing health complications. In adults, the internationally recognised definition of being overweight is having a BMI of 25kg/m² or higher, and 30kg/m² or higher for obesity.

<< Calculate your BMI at
www.sante.lu >>

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height x Height (m}^2\text{)}}$$

Your BMI:

For adults:

Classification

- Normal weight
- Overweight
- Obese
- Severely obese
- Morbidly obese

BMI

18,5 - 24,9
25,0 - 29,9
30,0 - 34,9
35,0 - 39,9
40 or higher

Illness risk

Low
Moderate
High
Very high
Extremely high



>>5. Lack of physical activity

////////////////////
We are currently witnessing an alarming decrease in physical activity and increase in sedentary behaviour (increased screen time, prolonged sitting etc.) in industrialised countries. We move less than we did 50 years ago. Studies have shown that 30 minutes of daily physical activity reduces the risk of developing diabetes.

Any kind of activity counts, cycling, walking, going up and down stairs, whether in the workplace or at home (housework, gardening etc.).

Regardless of my blood sugar levels, taking action will always benefit my health

Take your time:

Even 10 minutes of physical activity per day is a good start. Bit by bit, you can increase your frequency and intensity and build up to the recommended minimum of 30 minutes per day.

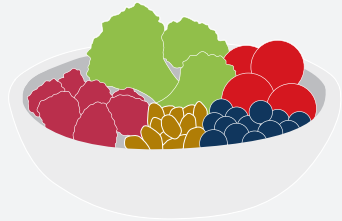
Set realistic objectives:

Increase your chances for success, as setting goals difficult to achieve can be demotivating in the long term.

**<<Dancing, walking, running...
any movement counts! >>**

<<Find joy in being active, monitor your progress and be proud of every achievement! >>



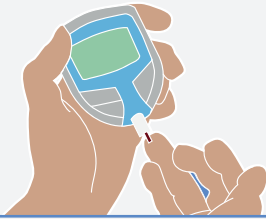


>>6. Diet

Our diet provides energy for our bodies. Fats, carbohydrates and sugars are the main suppliers of that energy. Often we eat too much. Eating fruit and vegetables helps reduce calorie intake and, at the same time, provides our body with vitamins and minerals.



<< Reap the rewards of a balanced diet! >>



>> 7. Blood sugar level

Normal blood sugar levels are generally below 100 mg/dl. Values higher than this should be checked by your doctor. Blood glucose measurements from a finger prick are only an indication and do not determine the presence of diabetes.

If blood sugar level is between 100 and 125 mg/dl, this can be characterised as pre-diabetes*, meaning the risk of developing diabetes is very high and making lifestyle changes is strongly recommended to reduce this risk.

Make healthy food choices and be sufficiently active!

If blood sugar levels are above 125 mg/dl for two consecutive measurements, diabetes has been detected and you should consult your doctor*.

<< Measure your blood sugar and your blood pressure regularly >>



>> 8. Blood pressure

Diabetes is very often associated with high blood pressure (hypertension of the arteries). If left untreated, hypertension increases the risk of a heart attack or stroke.

You are not alone!

To take charge of your excess body weight or diabetes, you can ask for help!

Consult your doctor or a medical specialist, they will help you evaluate your risk of diabetes.

You can also make an appointment to see a dietician and/or a psychotherapist in relation to diabetes risk or excess body weight. These sessions are covered by your social security (www.cns.lu) as long as they are prescribed by your doctor.

Useful contacts:

• **Association Nationale
des Diététiciens
du Luxembourg (ANDL)**
143 rue de Mühlenbach
L-2168 Luxembourg
comite@andl.lu
www.andl.lu

• **Service Nutrition de Mondorf
Domaine Thermal**
Avenue des Bains - B.P. 52
L-5601 Mondorf-les-Bains
+352 23 666 - 823
www.mondorf.lu

• **GesondheetsZentrum FHRS**
44, rue d'Anvers
L-1130 Luxembourg
+352 2888 - 6363
www.gesondheetszentrum.lu

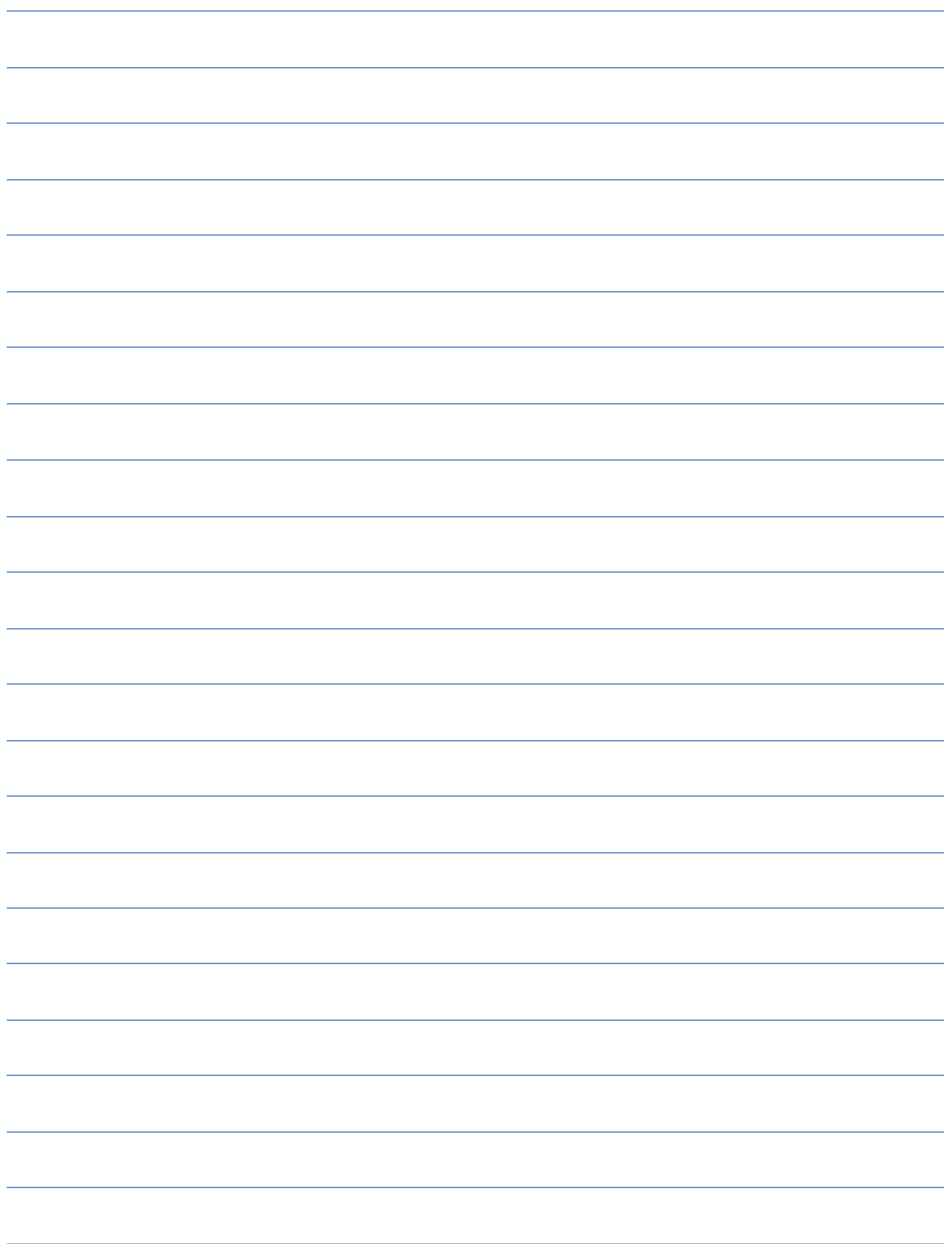
<< Your doctor is a great
source of information, speak
with him! >>



Notes



A series of horizontal lines for writing notes, consisting of 20 evenly spaced lines.



This guide was developed in partnership by :

• **la Maison du Diabète**

Information and education service of the Luxembourg Diabetes Association (ADL)

143, rue de Mühlenbach
L-2168 Luxembourg-Eich
+352 48 53 61
info@ald.lu

• **la Société Luxembourgeoise de Diabétologie SLD**

An association of medical professionals working in the area of diabetes:

143, rue de Mühlenbach
L-2168 Luxembourg-Eich
+352 48 53 61
info@diabete.lu

• **la Division de la Médecine Préventive**

Preventive medicine department of the Directorate of Health, responsible for all questions regarding the promotion of health and the prevention of diseases and infirmities

+352 247-85564
medecine-preventive@ms.etat.lu

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