Diabetes during Pregnancy
«Caring for Mother and Child!»
What is Diabetes in Pregnancy?

Diabetes in pregnancy or gestational diabetes is identifiable by an enhanced level of blood sugar (glucose) that is first detected during pregnancy. This diabetes during pregnancy probably occurs in 10 – 15% of all pregnant women and is hence one of the most frequent pregnancy complications.

Directly after childbirth, the diabetes manifested during pregnancy then fades in almost all women, although in 25 – 50% Type 2 diabetes develops at a later stage.

Diabetes occurs when the body is unable to produce an adequate amount of insulin. Insulin is a hormone, which is formed in the pancreas and regulates the body’s sugar balance. The blood sugar serves as energy for the body.

The ongoing hormonal changes during pregnancy trigger a greater need for insulin in the pregnant mother. So that if the pancreas fails to produce an adequate amount of insulin, the blood sugar level rises and diabetes during pregnancy is the outcome.

With an enhanced level of blood sugar in the body, the sugar passes through the placenta into the foetus. This responds with its own heightened production of insulin. However, unlike the sugar, this insulin is unable to pass the so-called placental barrier. For this reason, the higher insulin level stimulates the baby’s growth and the storage of fat. This means that the babies are larger and heavier.

Who is the group at risk?

There is a greater risk of diabetes during pregnancy in cases of:

- Overweight (body mass index in excess of 25)
- A history of diabetes in the family (parents or siblings)
- Diabetes during an earlier pregnancy
- Women of African, Asian or Latin American descent
- Pregnant women over 30 years of age
- A history of miscarriages
- Previous childbirth, when the baby weighed more than 4000 gram

These women are at risk and should be tested at their first pregnancy check-up. If the results of the glucose tolerance test (oGTT) described in the
following are normal, the test should be repeated between the 24th and 28th weeks of pregnancy.

Nevertheless 30 to 50% of all pregnant women present none of the above risk factors. In the interests of simplicity, therefore, it is recommended that all women should be tested between the 24th and the 28th week of pregnancy.

Symptoms and Diagnosis of Diabetes during Pregnancy

In most cases the mothers have no discomfort at all, i.e. the typical signs of diabetes (such as pronounced thirst, frequent urination) are not manifest.

Often only unspecific symptoms point to diabetes, as for example an enhanced susceptibility to urinary infections, elevated blood pressure, excessive amniotic fluid or an enhanced excretion of sugar in the urine.

The failure to treat diabetes during pregnancy might have the following effects for the child:

▪ More pronounced growth and weight at birth (in excess of 4000 gram)
▪ Disorders with the maturation of organs (the lungs are particularly affected in this respect)
▪ Childbirth complications
▪ Infant sugar deficiency after the umbilical cord has been cut
▪ Elevated levels of bilirubin in the blood (infant jaundice)

The proper treatment of diabetes during pregnancy will banish any anxiety that the baby might not be healthy!

The risks for the mother are:

▪ Intoxication during pregnancy (EPH gestosis) with higher blood pressure, oedema, renal failure
▪ Childbirth complications (including more frequent caesar-
How is diabetes during pregnancy treated?

In 85% of the cases of diabetes during pregnancy, a change of diet is very effective. Several small meals in place of fewer, large meals and in cases of overweight (BMI in excess of 25), a slight reduction in calories are the initial steps to take.

If an adjusted diet and regular exercise fail to produce the right effect, insulin will have to be injected.

An optimal management of diabetes means checking your blood sugar level at home.

As a rule, oral anti-diabetics (blood sugar tablets) are not allowed.

Normally, diabetes during pregnancy disappears shortly after the placenta has been ejected. With some women, however, this metabolic disorder persists even after the child has been born. 25 – 50% of all mothers develop Type 2 diabetes mellitus inside a period of five to ten years after childbirth.

For this reason, professionals recommend that the blood sugar level is checked approximately 6 weeks after childbirth and then once a year.
Self-monitoring your blood sugar during pregnancy

Target values of blood sugar with gestational diabetes:

<table>
<thead>
<tr>
<th>Before the main meals:</th>
<th>≤ 5.3 mmol/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 hour after main meals:</td>
<td>≤ 8.0 mmol/l</td>
</tr>
<tr>
<td>2 hours after main meals:</td>
<td>≤ 7.0 mmol/l</td>
</tr>
</tbody>
</table>

Self-monitoring your blood sugar level during dietetic therapy:

4 x daily
- in fasting state before breakfast
- exactly 1 or 2 hours after breakfast is finished
- exactly 1 or 2 hours after lunch is finished
- exactly 1 or 2 hours after evening supper is finished

Self-monitoring your blood sugar level during insulin therapy:

6 x daily
- in fasting state before breakfast
- exactly 1 or 2 hours after breakfast is finished
- before lunch and exactly 1 or 2 hours after lunch is finished
- before evening supper and exactly 1 or 2 hours after supper is finished

Please note:
If the target values are topped more than once, i.e. if at least 2 blood sugar readings a day on at least 2 days in 1 week are more than they should be, consult your attending physician or contact the diabetes advisory service.
Who can also give you advice?

Your physician or a Diabetes Society near your home:

<table>
<thead>
<tr>
<th>Diabetes Society</th>
<th>Address 1</th>
<th>Address 2</th>
<th>Zip Code</th>
<th>City</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aargauer Diabetes-Gesellschaft</td>
<td>Kantonsspital/Haus 16</td>
<td>5000 Aarau</td>
<td></td>
<td></td>
<td>062 824 72 01</td>
</tr>
<tr>
<td>Diabetes-Gesellschaft Region Basel</td>
<td>Mittlere Strasse 35</td>
<td>4056 Basel</td>
<td></td>
<td></td>
<td>061 261 03 87</td>
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<tr>
<td>Berner Diabetes Gesellschaft</td>
<td>Falkenplatz 1</td>
<td>3012 Bern</td>
<td></td>
<td></td>
<td>031 302 45 46</td>
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<tr>
<td>Diabetes-Gesellschaft GL-GR-FL</td>
<td>Steinbockstrasse 2</td>
<td>7001 Chur</td>
<td></td>
<td></td>
<td>081 253 50 40</td>
</tr>
<tr>
<td>Diabetes-Gesellschaft Oberwallis</td>
<td>Bachhalterweg 9</td>
<td>3900 Brig</td>
<td></td>
<td></td>
<td>027 924 36 78</td>
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<tr>
<td>Ostschweizerische Diabetes-Gesellschaft</td>
<td>Neugasse 55</td>
<td>9000 St. Gallen</td>
<td></td>
<td></td>
<td>071 223 67 67</td>
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<tr>
<td>Diabetes-Gesellschaft des Kt. Schaffhausen</td>
<td>Vordergasse 32/34</td>
<td>8200 Schaffhausen</td>
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<td>Solothurner Diabetes-Gesellschaft</td>
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<td>4601 Olten</td>
<td></td>
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<tr>
<td>Zentralschweizerische Diabetes-Gesellschaft</td>
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<td>6004 Luzern</td>
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<tr>
<td>Zürcher Diabetes-Gesellschaft</td>
<td>Hegasstrasse 18</td>
<td>8032 Zürich</td>
<td></td>
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<td>044 383 00 60</td>
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<tr>
<td>Association Fribourgeoise du Diabète</td>
<td>Route des Daillettes 1</td>
<td>1709 Fribourg</td>
<td></td>
<td></td>
<td>026 426 02 80</td>
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<tr>
<td>Association Genevoise des Diabétiques</td>
<td>Rue de la Synagogue 41</td>
<td>1204 Genève</td>
<td></td>
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<td>022 329 17 77</td>
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<td>Association Jurassienne des Diabétiques</td>
<td>Case postale 6</td>
<td>2854 Bassecourt</td>
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<tr>
<td>Association des Diabétiques du Jura bernois</td>
<td>Rue Neuve 52</td>
<td>2613 Villeret</td>
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<td>Association Neuchâteloise des Diabétiques</td>
<td>Rue de la Paix 75</td>
<td>2301 La Chaux-de-Fonds</td>
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<td>Association Valaisanne du Diabète</td>
<td>Rue des Condémines 16</td>
<td>1950 Sion</td>
<td></td>
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<td>027 322 99 72</td>
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<tr>
<td>Association Vaudoise du Diabète</td>
<td>Chemin de Roveréaz 5</td>
<td>1012 Lausanne</td>
<td></td>
<td></td>
<td>021 657 19 20</td>
</tr>
<tr>
<td>Associazione Ticinese per i Diabetici</td>
<td>Via Motto di Mornera 4</td>
<td>6500 Bellinzona</td>
<td></td>
<td></td>
<td>091 826 26 78</td>
</tr>
</tbody>
</table>

Threshold value reference:
R. Lehmann, A. Troendle, M. Brändle
Recommendations of the Swiss Society for Endocrinology and Diabetology
Ther Umsch. 2009, 66: 695-706