BACKGROUND AND AIMS
Diabetes and prediabetes have become major public health problems in recent decades, and are increasing in prevalence around the world. The aim of the present study was to evaluate the predictive value of different risk factors and their changes with time on the progression from prediabetes to type 2 diabetes.

MATERIAL AND METHODS
A total of 383 subjects (213 females and 170 males), at mean age 51.93±13.47 years and mean BMI 29.11±5.3 kg/m² were included in the study. According to glucose tolerance they were divided in three groups:

- **147** (84 females and 63 males) with normal glucose tolerance (NGT), of mean age 50.06±14.8 years, mean BMI 28.46±6.0 kg/m²
- **122** (69 females and 53 males) with impaired fasting glucose (IFG), of mean age 52.48±12.9 years, mean BMI 29.39±5.1 kg/m²
- **114** (60 females and 54 males) with impaired glucose tolerance (IGT), of mean age 53.75±13.1 years, mean BMI 29.64±5.5 kg/m² and were followed-up about a year (13.4±2.2 months) later.

Laboratory methods

- **Glucose tolerance** was studied during standard OGTT with 75g glucose applying 2006 WHO criteria.
- **Plasma glucose** was measured by a hexokinase method.
- **Serum lipids** – total cholesterol, HDL-cholesterol, triglycerides, were assessed by enzyme-colorimetric tests.
- hSCRP was measured turbidimetrically.
- HBAlc was measured in whole blood immuno-turbidimetrically.
- **Serum insulin concentrations** were determined using immuno-radioassay (IRMA).
- **Serum proinsulin levels** were measured by enzyme-linked immunosorbent assay (ELISA).

Anthropometric measurements

- **Weight and height** were measured and BMI was calculated.
- **Waist circumference** was measured with a plastic tape in the horizontal plane midway between the lowest rib and the iliac crest.
- **Body fat mass and visceral fat area** were measured by bioimpedance analysis (InBody 720).
- Blood pressure was measured twice in seated position after 5 minutes rest with a manual sphygmomanometer.

Statistical methods

Statistical analysis - SPSS 17.0 for Windows (SPSS, Chicago, USA).

RESULTS

**FOLLOW-UP OF GLUCOSE TOLERANCE IN THE GROUPS WITH IFG AND IGT AFTER ONE YEAR**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>NGT at baseline</th>
<th>IGT at baseline</th>
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<tbody>
<tr>
<td>BMI (kg/m²)</td>
<td>27.03 ± 3.41</td>
<td>30.57 ± 4.74</td>
</tr>
<tr>
<td>Waist circumference (cm)</td>
<td>88.4 ± 12.3</td>
<td>104.3 ± 17.5</td>
</tr>
<tr>
<td>Triglycerides (mmol/l)</td>
<td>0.85 ± 0.50</td>
<td>1.62 ± 1.13</td>
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<tr>
<td>HDL cholesterol (mmol/l)</td>
<td>1.29 ± 0.30</td>
<td>1.04 ± 0.21</td>
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<tr>
<td>Fasting blood glucose (mmol/l)</td>
<td>5.2 ± 1.0</td>
<td>7.6 ± 1.9</td>
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<tr>
<td>2h blood glucose (mmol/l)</td>
<td>4.9 ± 1.3</td>
<td>11.9 ± 3.8</td>
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**CONCLUSIONS**

- Individuals with IFG and IGT identified through high-risk strategies in a Bulgarian population, have a rather high risk of developing diabetes within 1 year – progression rates from IFG and IGT to diabetes (Baseline determinant model). Rate ratios (RR) with 95% CI are presented.
- The changes in glucose measures, body weight, waist circumference, body fat mass, total cholesterol and triglycerides, systolic and diastolic blood pressure are significant determinants of progression to diabetes.
- Adequate measures for the control of risk factors is necessary for the prevention of the disease.