

## APPENDIX:

**Table 1A: Descriptive characteristics of study subjects aged 40-79 years -by glycaemic status. German Health Interview and Examination Survey for Adults 2008-2011 (DEGS1)**

	Diagnosed diabetes (n=518)			Undiagnosed diabetes (n=135)			Normoglycemia (n=4451)					
	%*	95% CI*	n	%*	95% CI*	n	%*	95% CI*	n			
<b>Sex</b>												
Men	53.6	47.9	59.3	298	70.6	61.6	78.2	90	48.2	46.2	50.3	2053
Women	46.4	40.7	52.1	220	29.4	21.8	38.4	45	51.8	49.7	53.8	2398
<b>Age group, years</b>												
40-49	7.5	4.8	11.6	29	25.3	16.2	37.3	21	35.1	33.6	36.6	1215
50-59	16.0	12.6	20.2	76	20.1	14.2	27.5	26	28.9	27.4	30.4	1273
60-69	31.2	26.2	36.7	183	21.6	15.1	30.0	42	20.1	18.8	21.3	1146
70-79	45.2	39.5	51.0	230	33.0	23.7	43.8	46	16.0	14.9	17.2	817
Mean±SD	65.8	64.8	66.9	518	60.9	58.2	63.5	135	56.0	55.6	56.3	4451
<b>Community</b>												
Rural area/small city	44.6	35.4	54.1	238	51.7	35.4	67.6	61	41.1	33.5	49.1	1879
Middle /large city	55.4	45.9	64.6	280	48.3	32.4	64.6	74	58.9	50.9	66.5	2572
<b>Region</b>												
Western Germany	74.3	66.1	81.1	309	88.0	75.0	94.7	109	78.5	72.1	83.8	3016
Eastern Germany	25.7	18.9	33.9	209	12.0	5.3	25.0	26	21.5	16.2	27.9	1435
<b>Education</b>												
Low	62.6	56.6	68.3	277	61.0	50.0	70.9	70	43.2	40.5	46.0	1606
Middle /High	37.4	31.7	43.4	237	39.0	29.1	50.0	63	56.8	54.0	59.5	2818
Missing				4				2				27
<b>Living alone</b>												
Yes	22.0	17.4	27.5	100	24.5	17.3	33.6	28	15.5	14.0	17.0	670
No	78.0	72.5	82.6	407	75.5	66.4	82.7	103	84.5	83.0	86.0	3710
Missing				11				4				71
<b>Obesity</b>												
Yes (BMI>=30 kg/m <sup>2</sup> )	54.9	49.1	60.6	283	58.0	47.6	67.7	69	24.5	22.7	26.4	1060
No (BMI<30 kg/m <sup>2</sup> )	45.1	39.4	50.9	232	42.0	32.3	52.4	65	75.5	73.6	77.3	3359
Missing				3				1				32
<b>Currently smoking</b>												
Yes	18.6	14.6	23.3	86	24.6	15.3	37.0	29	24.5	22.6	26.6	970
No	81.4	76.7	85.4	427	75.4	63.0	84.7	105	75.5	73.4	77.4	3457
Missing				5				1				24
<b>Sports activity</b>												
No sports	48.3	42.5	54.1	231	44.8	34.7	55.4	53	34.8	32.8	36.8	1399
Any sports	51.7	45.9	57.5	255	55.2	44.6	65.3	75	65.2	63.2	67.2	2930
Missing				32				7				122
<b>Alcohol use</b>												
No alcohol use	19.7	14.6	26.2	87	11.3	6.2	19.6	13	13.4	11.9	14.9	518
Moderate drinking	67.8	61.1	73.7	355	78.2	68.8	85.4	94	68.5	66.7	70.3	3025
Risky drinking	12.5	9.2	16.9	65	10.4	6.5	16.4	25	18.1	16.7	19.5	847
Missing				11				3				61
<b>Parental history of diabetes</b>												
Yes	53.8	47.3	60.2	244	44.2	32.3	56.7	47	30.7	28.8	32.6	1276
No	46.2	39.8	52.7	188	55.8	43.3	67.7	72	69.3	67.4	71.2	2872
Missing				86				16				303
<b>Depressive symptoms (PHQ-9)</b>												
Yes (PHQ-9≥10)	11.0	7.6	15.6	47	7.1	3.1	15.3	8	6.6	5.7	7.8	258
No (PHQ-9 <10)	89.0	84.4	92.4	420	92.9	84.7	96.9	117	93.4	92.2	94.3	3945
Missing				51				10				248
<b>Hyperlipidemia</b>												

	Yes	46.5	40.6	52.6	250	41.8	32.1	52.2	61	34.4	32.4	36.6	1612
	No	53.5	47.4	59.4	265	58.2	47.8	67.9	74	65.6	63.4	67.6	2813
	Missing				3				0				26
<b>Hypertension</b>	Yes	77.1	71.2	82.1	405	64.7	55.1	73.3	94	40.7	38.8	42.7	1982
	No	22.9	17.9	28.8	112	35.3	26.7	44.9	41	59.3	57.3	61.2	2461
	missing				1				0				8
<b>Visiting a doctor within the past year</b>	Yes	96.2	92.1	98.2	501	81.9	71.6	89.0	112	90.4	89.2	91.5	4021
	No	3.8	1.8	7.9	14	18.1	11.0	28.4	21	9.6	8.5	10.8	380
	Missing				3				2				50

\* Weighted to the population of 31.12.2010.

Hyperlipidemia: defined as total cholesterol  $\geq 6.2$  mmol/l or currently using lipids-lowering drugs for the treatment of physician-diagnosed hyperlipidemia

Hypertension: defined as systolic blood pressure  $\geq 140$  mmHg (18.7 kPa) or diastolic blood pressure  $\geq 90$  mmHg (12.0 kPa) or currently using anti-hypertensive drugs for the treatment of physician-diagnosed hypertension

BMI: body mass index

PHQ-9: 9-item depression module of the Patient Health Questionnaire

**Table 2A: Multinomial logistic regression of factors associated with undiagnosed and diagnosed type 2 diabetes (T2D) – by complete case method. German Health Interview and Examination Survey for Adults 2008-2011 (DEGS1)**

		Undiagnosed T2D vs. Normoglycemia			Diagnosed T2D vs. Normoglycemia				
		RRR	95% CI	p	RRR	95% CI	p		
<b>Sex</b>									
	<i>Men vs. women</i>	<b>3.21</b>	<b>2.00</b>	<b>5.13</b>	<b>0.000</b>	<b>1.76</b>	<b>1.27</b>	<b>2.43</b>	<b>0.001</b>
<b>Age, per year</b>		<b>1.03</b>	<b>1.00</b>	<b>1.06</b>	<b>0.032</b>	<b>1.07</b>	<b>1.06</b>	<b>1.09</b>	<b>0.000</b>
<b>Education</b>									
	<i>Low vs. middle/high</i>	1.34	0.83	2.17	0.229	1.15	0.83	1.59	0.401
<b>Community size</b>									
	<i>Rural/small cities vs. middle/large cities</i>	1.71	0.91	3.22	0.098	0.96	0.71	1.30	0.805
<b>Region</b>									
	<i>Western vs. Eastern Germany</i>	<b>2.93</b>	<b>1.31</b>	<b>6.59</b>	<b>0.009</b>	1.00	0.73	1.36	0.987
<b>Living alone</b>									
	<i>Yes vs. No</i>	<b>2.21</b>	<b>1.29</b>	<b>3.80</b>	<b>0.004</b>	1.13	0.77	1.66	0.531
Currently smoking									
	<i>Yes vs. No</i>	1.34	0.70	2.54	0.374	<b>1.49</b>	<b>1.00</b>	<b>2.20</b>	<b>0.049</b>
<b>Obesity (BMI&gt;=30 kg/m<sup>2</sup>)</b>									
	<i>Yes vs. No</i>	<b>4.65</b>	<b>2.60</b>	<b>8.34</b>	<b>0.000</b>	<b>2.65</b>	<b>1.95</b>	<b>3.60</b>	<b>0.000</b>
<b>Alcohol use</b>									
	<i>Moderate drinking vs. no use</i>	1.45	0.58	3.60	0.425	0.76	0.47	1.21	0.241
	<i>Risky drinking vs. no use</i>	0.59	0.22	1.59	0.297	<b>0.53</b>	<b>0.30</b>	<b>0.94</b>	<b>0.031</b>
<b>Sports activity</b>									
	<i>no sports vs. any sports</i>	1.30	0.78	2.17	0.309	1.25	0.92	1.71	0.151
<b>Parental history of diabetes</b>									
	<i>Yes vs. No</i>	<b>1.93</b>	<b>1.12</b>	<b>3.35</b>	<b>0.019</b>	<b>3.03</b>	<b>2.17</b>	<b>4.22</b>	<b>0.000</b>
<b>Hyperlipidemia</b>									
	<i>Yes vs. No</i>	1.19	0.69	2.05	0.533	1.10	0.79	1.52	0.568
<b>Hypertension</b>									
	<i>Yes vs. No</i>	<b>1.80</b>	<b>1.12</b>	<b>2.87</b>	<b>0.014</b>	<b>2.20</b>	<b>1.45</b>	<b>3.33</b>	<b>0.000</b>
<b>PHQ-9 (depressive symptoms)</b>									
	<i>Yes vs. No</i>	1.15	0.44	3.00	0.781	1.47	0.90	2.39	0.120
<b>Visiting a doctor within the past year</b>									
	<i>No vs. Yes</i>	<b>2.25</b>	<b>1.05</b>	<b>4.84</b>	<b>0.038</b>	<b>0.27</b>	<b>0.08</b>	<b>0.95</b>	<b>0.041</b>

Relative risk ratio (RRR) and 95 confidence intervals (95% CI) were derived from multinomial logistic regression models with diabetes status (diagnosed T2D, undiagnosed T2D and normoglycemia) as dependent variables. Bold values denote statistical significance at the  $p < 0.05$  level. Results were weighted to population of 31.12.2010.

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