

Figure 1: IGF-1 SDS blotted over BMI with smoothed lines indicating mean values and 1<sup>st</sup> and 2<sup>nd</sup> SD. Left side: Total sample, upper panel: women, lower panel: men. Right side: Patients without diabetes, cancer, kidney or liver diseases, or HRT\*, upper panel: women, lower panel: men

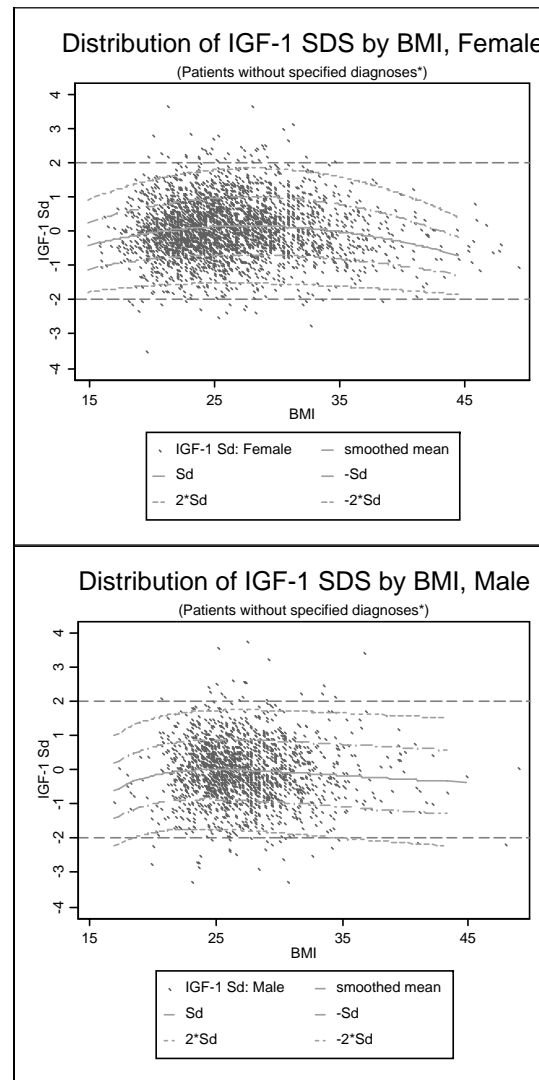
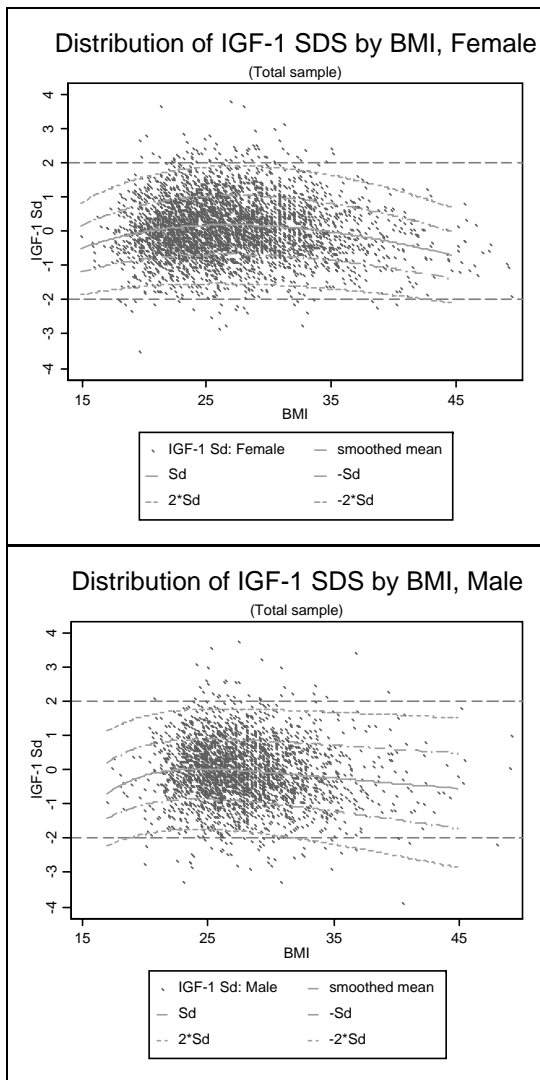


Table 1: Patients characteristics

	<b>Female (N=4,438)</b>	<b>Male (N=3,081)</b>
	<b>%</b>	<b>%</b>
sex	59.0	41.0
age (mean/SD)	57.0 / 14.9	58.7 / 13.5
BMI (mean/SD)	26.7 / 5.3	27.7 / 4.2
diabetes type 2 <sup>a</sup>	17.3	27.4
kidney diseases	2.9	5.9
liver diseases	5.7	6.7
cancer	3.2	3.6
CHD <sup>b</sup>	9.7	20.6
hypertension <sup>c</sup>	55.9	67.0
dyslipidemia <sup>d</sup>	57.8	71.9
fibrate intake	1.1	2.7
HRT <sup>e</sup>	12.8	-

<sup>a</sup> clinical diagnosis of type 2 diabetes

<sup>b</sup> clinical diagnosis of CHD

<sup>c</sup> systolic blood pressure (SBP)  $\geq$  140 mmHg or diastolic blood pressure (DBP)  $\geq$  90 mmHg or intake of antihypertensive medication (NHANES criteria)

<sup>d</sup> levels above total cholesterol > 240 mg/dl, LDL-cholesterol > 160 mg /dl or HDL cholesterol < 40 mg/dl

<sup>e</sup> hormone replacement therapy for women

Table 2: IGF-1 SDS in BMI, WTR, and WC groups

	total group <sup>a</sup>						subjects with diabetes, cancer, kidney, liver diseases or HRT excluded					
	Female (N=3,723)			Male (N=2,559)			Female (N=2,377)			Male (N=1,606)		
	N	Mean	Sd	N	Mean	Sd	N	Mean	Sd	N	Mean	Sd
BMI<=17.5	17	-0.33*	0.49	3	-0.18	0.65	16	-0.36*	0.5	2	-0.43	0.69
17.5<BMI<=20	195	-0.07*	0.86	15	-0.67*	0.76	162	-0.09*	0.82	13	-0.70*	0.82
20<BMI<=22.5	593	0.06*	0.82	136	-0.14*	0.88	458	0.04*	0.82	104	-0.13	0.89
22.5<BMI<=25	780	0.15	0.84	<b>531</b>	<b>0.08</b>	<b>0.93</b>	536	0.09	0.8	<b>382</b>	<b>0.05</b>	<b>0.85</b>
25<BMI<=27.5	707	0.18	0.91	719	-0.01	0.89	438	0.14	0.87	488	0.02	0.87
27.5<BMI<=30	<b>551</b>	<b>0.21</b>	<b>0.92</b>	539	-0.07*	0.89	<b>321</b>	<b>0.19</b>	<b>0.79</b>	316	-0.07	0.86
30<BMI<=32.5	390	0.13	0.86	317	-0.13*	0.88	189	0.11	0.82	170	-0.08	0.83
32.5<BMI<=35	234	0.02*	0.81	164	-0.2*	0.99	124	-0.04*	0.82	72	-0.18	1.07
35<BMI<=37.5	125	-0.06*	0.90	69	-0.34*	1.05	71	-0.16*	0.69	29	0.08	1.07
37.5<BMI<=40	59	-0.24*	0.81	30	-0.05	0.89	27	-0.17*	0.73	15	0.07	0.66
BMI>40	72	-0.5*	0.77	36	-0.53*	1.17	35	-0.41*	0.69	15	-0.76*	0.84
WTR<=0.25	1	1.88	-	-	-	-	-	-	-	-	-	-
0.25<WTR<=0.35	3	0.37	0.22	1	-0.74	-	3	0.37*	0.22	1	-0.74	-
0.35<WTR<=0.45	523	-0.13*	0.73	<b>82</b>	<b>0.00</b>	<b>0.76</b>	438	-0.13*	0.74	<b>69</b>	<b>0.01</b>	<b>0.78</b>
0.45<WTR<=0.55	1,404	0.15	0.90	842	-0.02	0.88	961	0.10	0.84	649	-0.03	0.85
0.55<WTR<=0.65	<b>1,246</b>	<b>0.18</b>	<b>0.87</b>	1250	-0.04	0.91	<b>709</b>	<b>0.15</b>	<b>0.83</b>	729	-0.03	0.88
0.65<WTR<=0.75	460	0.06*	0.89	330	-0.20	1.02	226	0.08	0.83	137	-0.07	1.00
0.75<WTR<=0.85	73	-0.21*	0.78	46	-0.11	1.05	34	-0.30	0.69*	19	-0.06	1.02
0.85<WTR<=0.95	13	-0.40*	0.69	6	-0.41*	1.57	6	-0.39	0.56*	1	-1.67	-
WTR>0.95	-	-	-	2	-1.33	0.64	-	-	-	1	-0.88	-
WC<=50	1	1.88	-	-	-	-	-	-	-	-	-	-
50<WC<=60	17	-0.04	0.65	1	-0.74	-	14	-0.04	0.71	1	-0.74	-
60<WC<=70	263	-0.16*	0.74	18	-0.54*	1.03	223	-0.15*	0.75	13	-0.72*	1.14
70<WC<=80	762	0.06*	0.82	72	0.01	0.78	560	0.01*	0.79	<b>61</b>	<b>0.06</b>	<b>0.8</b>
80<WC<=90	<b>994</b>	<b>0.19</b>	<b>0.89</b>	319	-0.04	0.83	<b>666</b>	<b>0.17</b>	<b>0.83</b>	252	-0.05	0.83
90<WC<=100	832	0.16	0.88	<b>890</b>	<b>0.03</b>	<b>0.92</b>	480	0.12	0.83	618	-0.01	0.88
100<WC<=110	549	0.14	0.9	719	-0.07*	0.88	280	0.08	0.86	418	-0.01	0.82
110<WC<=120	201	0.02*	0.88	358	-0.18*	0.97	109	0.00*	0.81	171	-0.11	1
120<WC<=130	76	-0.28*	0.79	125	-0.11	1.03	32	-0.22*	0.6	52	0.00	0.99
130<WC<=140	22	-0.38*	0.8	38	-0.41*	1.19	10	-0.33*	0.69	12	-0.24	0.79
WC>140	6	-0.54*	0.77	19	-0.23	1.34	3	-0.96*	0.87	8	-0.22	1.29

<sup>a</sup> N=6,282 valid observations with measured igf-1 and anthropometric parameters

\* significant different (P-Value<0.05) from group with highest IGF-1 SDS mean (reference group marked in bold), tested by multiple t-test

Table 3: IGF-1 SDS: additional explained variance of nutritional parameters (model 2) to explained variance by the following conditions: diabetes, liver diseases, kidney diseases, CAD, cancer, hypertension, dyslipidemia, fibrate intake, HRT, and age (model 1). R<sup>2</sup>: explained variance. Beta SD: standardized regression coefficient. Increase of nutritional parameter for one SD leads to the indicated change of IGF-1 SDS.

	Model 1 <sup>a</sup>	Model 2 <sup>b</sup>			WC			HC			WHR			WTR		
	R <sup>2</sup>	R <sup>2</sup>	Beta-SD	CI (95%)	R <sup>2</sup>	Beta-SD	CI (95%)	R <sup>2</sup>	Beta-SD	CI (95%)	R <sup>2</sup>	Beta-SD	CI (95%)	R <sup>2</sup>	Beta-SD	CI (95%)
<b>Total</b>																
Female	8.03	8.91	-0.07	-.098-.049	8.58	-0.07	-.093-.037	8.4	-0.05	-.072-.023	8.05	-0.01	-.042-.01	8.65	-0.07	-.092-.039
Female, 18-44 years	1.32	2.01	-0.06	-.112-.015	1.6	-0.05	-.102-.012	1.7	-0.05	-.093-.001	1.29	0.00	-.051-.052	1.68	-0.05	-.102-.006
Female, 45-65 years	4.63	5.2	-0.06	-.094-.021	5.09	-0.06	-.099-.016	4.92	-0.04	-.076-.004	4.67	-0.01	-.052-.023	5.19	-0.06	-.1-.02
Female, 65+ years	4.25	5.33	-0.08	-.132-.037	4.92	-0.07	-.127-.021	4.55	-0.05	-.094-.003	4.3	-0.03	-.077-.022	4.99	-0.07	-.12-.022
Male	3.26	3.95	-0.08	-.122-.041	3.68	-0.07	-.11-.022	3.41	-0.04	-.079-.007	3.57	-0.06	-.104-.017	3.86	-0.08	-.124-.037
Male, 18-44 years	4.41	4.43	-0.01	-.11-.082	5.13	-0.09	-.178-.006	4.52	0.00	-.083-.09	5.67	-0.09	-.15-.031	4.97	-0.08	-.175-.017
Male, 45-65 years	2.79	3.81	-0.10	-.149-.041	3.16	-0.06	-.123-.002	3.02	-0.05	-.112-.017	2.97	-0.05	-.122-.022	3.54	-0.09	-.149-.025
Male, 65+ years	3.63	4.08	-0.07	-.146-.004	3.75	-0.04	-.118-.042	3.72	-0.03	-.102-.043	3.66	-0.02	-.102-.064	3.85	-0.05	-.128-.028
<b>BMI&lt;=25</b>																
Female	9.43	9.61	0.03	-.003-.066	9.48	0.02	-.024-.064	9.59	0.03	-.007-.067	9.45	-0.01	-.045-.032	9.47	0.02	-.026-.056
Female, 18-44 years	1.21	1.3	0.02	-.037-.079	1.22	0.01	-.07-.089	1.19	0.00	-.064-.074	1.19	0.01	-.063-.075	1.21	0.00	-.074-.079
Female, 45-65 years	6.42	6.47	0.02	-.039-.071	6.47	0.02	-.047-.086	6.65	0.03	-.018-.087	6.43	-0.01	-.061-.046	6.43	0.01	-.054-.07
Female, 65+ years	9.19	10.62	0.09	-.019-.169	9.2	-0.01	-.099-.083	9.75	0.06	-.02-.142	9.71	-0.06	-.141-.028	9.2	0.01	-.074-.089
Male	3.66	4.54	0.10	-.024-.181	3.7	-0.02	-.102-.064	4	0.04	-.018-.107	4.17	-0.07	-.151-.005	3.9	-0.05	-.133-.031
Male, 18-44 years	6.57	10.01	0.21	-.048-.375	6.87	-0.06	-.211-.091	7.69	0.08	-.04-.195	8.37	-0.11	-.215-.002	7.44	-0.11	-.271-.057
Male, 45-65 years	4.22	4.38	0.04	-.072-.158	4.24	0.02	-.13-.165	4.41	0.04	-.084-.171	4.27	-0.03	-.185-.128	4.35	-0.04	-.177-.097
Male, 65+ years	10.31	11.16	0.10	-.041-.255	10.31	0.00	-.132-.141	10.55	0.04	-.05-.126	10.49	-0.05	-.182-.085	10.31	0.00	-.133-.132
<b>25&lt;BMI&lt;=30</b>																
Female	9.16	9.16	-0.01	-.049-.038	9.17	-0.01	-.061-.041	9.08	0.00	-.043-.047	9.08	-0.01	-.052-.04	9.24	-0.02	-.069-.025
Female, 18-44 years	10.3	11.54	0.01	-.021-.214	11.55	0.11	-.035-.247	12.76	0.14	-.02-.251	10.36	-0.02	-.136-.098	11.23	0.083	-.044-.21
Female, 45-65 years	4.87	5.01	-0.02	-.094-.036	5.12	-0.04	-.125-.037	4.87	-0.00	-.063-.062	4.97	-0.02	-.089-.042	5.31	-0.05	-.127-.023
Female, 65+ years	5.58	5.58	-0.00	-.069-.063	5.58	0.00	-.068-.068	5.66	-0.02	-.098-.048	5.66	0.03	-.045-.103	5.65	-0.02	-.08-.045
Male	3.7	3.71	0.01	-.038-.055	3.72	0.01	-.043-.071	3.7	0.02	-.037-.069	3.67	-0.01	-.072-.053	3.7	-0.00	-.06-.057
Male, 18-44 years	3.09	3.34	0.04	-.064-.136	3.16	-0.02	-.122-.082	3.43	-0.04	-.139-.068	3.26	0.02	-.12-.152	3.21	-0.03	-.14-.087
Male, 45-65 years	1.06	1.07	-0.01	-.076-.061	1.12	0.02	-.066-.109	1.15	0.03	-.058-.11	1.08	-0.01	-.114-.087	1.07	0.00	-.088-.096
Male, 65+ years	5.74	5.74	0.01	-.077-.087	5.8	0.03	-.08-.133	5.83	0.03	-.061-.115	5.76	-0.02	-.118-.087	5.74	0.00	-.1-.102
<b>BMI&gt;30</b>																
Female	7.21	9.71	-0.13	-.179-.073	8.79	-0.11	-.159-.053	8.37	-0.08	-.131-.029	7.29	-0.02	-.072-.028	8.63	-0.09	-.14-.043
Female, 18-44 years	7.5	14.77	-0.18	-.284-.08	10.2	-0.12	-.247-.001	12.86	-0.14	-.236-.046	7.88	0.04	-.076-.152	9.7	-0.10	-.224-.02
Female, 45-65 years	5.47	7.16	-0.10	-.174-.02	6.84	-0.10	-.183-.018	7.12	-0.10	-.175-.023	5.47	0.00	-.079-.082	6.78	-0.09	-.165-.015
Female, 65+ years	6.8	8.67	-0.14	-.236-.034	7.55	-0.08	-.165-.011	6.81	0.01	-.074-.088	7.8	-0.09	-.164-.006	7.5	-0.07	-.147-.014
Male	6.75	7.19	-0.06	-.127-.016	6.82	-0.02	-.105-.056	6.77	-0.01	-.096-.076	6.9	-0.04	-.125-.045	6.85	-0.03	-.102-.046
Male, 18-44 years	19.83	19.86	0.02	-.174-.209	21.07	-0.11	-.315-.088	21.63	0.11	-.075-.29	26.02	-0.17	-.277-.065	19.83	-0.00	-.208-.204
Male, 45-65 years	8.99	9.29	-0.04	-.126-.044	8.99	0.00	-.096-.106	9.32	-0.01	-.13-.113	9.33	0.02	-.11-.14	9.09	-0.03	-.118-.067
Male, 65+ years	4.99	6.09	-0.11	-.266-.054	5.08	-0.03	-.203-.145	5.97	-0.01	-.261-.074	5.58	0.10	-.17-.364	5.05	-0.02	-.171-.128

<sup>a</sup> estimated association of IGF-1 SDS and diabetes, liver diseases, kidney diseases, CAD, cancer, hypertension, dyslipidemia, fibrate intake, HRT, and age

<sup>b</sup> estimated association of IGF-1 SDS and nutritional parameter, diabetes, liver diseases, kidney diseases, CAD, cancer, hypertension, dyslipidemia, fibrate intake, HRT, and age