

SUPPLEMENTARY DATA

Bamberg et al., "Subclinical Disease Burden as Assessed by Whole-Body MRI in Subjects With Prediabetes, Subjects With Diabetes, and Normal Control Subjects From the General Population: The KORA-MRI Study"

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Supplementary Table 1. MRI Sequences used for analysis. TOF: Time of flight, SWI: Susceptibility weighted imaging, FLAIR: Fluid attenuated inversion recovery, T2: T2 weighted, SPACE: Sampling perfection with application optimized contrasts using different flip angle evolution, T1w: T1 weighted, T1w fs: T1 weighted fat saturated, SAX: short axis, LAX: long axis, SSFP: Steady state with free precession, LGE: Late gadolinium enhancement, FLASH: fast low-angle shot, VIBE: volume interpolated breathhold examination, STEAM: Stimulated echo acquisition method, HASTE: Half fourier acquisition single shot turbo spin echo.

MR-Sequence	Weighting / Sequence Type	ST (mm)	Voxel size, In-plane (mm2)	FOV (mm)	Matrix	TR (ms)	TE (ms)	TI (ms)	Flip angle (°)
Brain									
TOF	TOF	1	0.6 x 0.6	181 x 200	320 x 275	20	3.43	N/A	18
SWI	SWI	2.5	0.9 x 0.9	208 x 230	256 x 223	27	20	N/A	15
FLAIR	T2, SPACE	0.9	0.5 x 0.5	245 x 245	256 x 256	5000	389	1800	120
Plaque									
T1w carotid plaque	T1w fs	3	0.3 x 0.3	165 x 220	320 x 240	800	13	N/A	180
Cardiac Function / Myocardium									
Cine SAX	SSFP	8	1.5 x 1.5	297 x 360	240 x 160	29.97	1.46, 10sl	N/A	62
Cine LAX	SSFP	8	1.5 x 1.5	297 x 360	240 x 160	29.97	1.46	N/A	63
LGE	FLASH	8	1.4 x 1.4	300 x 360	256 x 140	700 - 1000	1.55	280 - 345	20 - 55
Hepatic Adipose Content									
Multi-echo Dixon	VIBE	4	1.8 x 1.8	393 x 450	256 x 179	8.90	1.23; 2.46; 3.69; 4.92; 6.15; 7.38	N/A	4
Spectroscopy	STEAM	N/A	30 x 30 x 30*	N/A	N/A	3000	12.00; 24.00; 36.00; 48.00; 72.00	N/A	N/A
Body Adipose Content / Anatomy									
Dual-echo Dixon	VIBE	1.7	1.7 x 1.7	488 x 716	256 x 256	4.06	1.26; 2.49	N/A	9
HASTE	T2	5	1.2 x 1.2	296 x 380	320 x 200	1000	91	N/A	131

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Supplementary Table 2. Adjusted least-square means of MRI outcomes. The adjusted mean is calculated by inserting the mean value of the whole population for each covariate into the linear regression model. Significant values are shown in bold. ARWMC: Age related white matter changes LCA: Left carotid artery; RCA: Right carotid artery; LGE: Late gadolinium enhancement; PDFF: Proton Density Fat Fraction

	Controls		Prediabetics		Diabetics	
	Predicted Mean	95%-CI	Predicted Mean	95%-CI	Predicted Mean	95%-CI
Cerebrum						
Total ARWMC Score	1.23	[1.08, 1.38]	1.44	[1.21, 1.66]	1.44	[1.11, 1.76]
Plaque						
Wall thickness, LCA (mm)	0.74	[0.73, 0.76]	0.75	[0.72, 0.78]	0.76	[0.73, 0.80]
Wall thickness, RCA (mm)	0.76	[0.74, 0.77]	0.76	[0.73, 0.78]	0.75	[0.72, 0.78]
Cardiac Function						
Early filling rate (ml/s)	240	[226, 255]	201	[180, 223]	183	[152, 216]
Late filling rate (ml/s)	237	[222, 252]	210	[188, 232]	169	[135, 203]
End-diastolic volume (ml/m ²)	69	[67, 71]	62	[59, 65]	59	[55, 64]
End-systolic volume (ml/m ²)	22	[21, 23]	18	[16, 19]	19	[16, 21]
Stroke volume (ml/m ²)	47	[46, 48]	44	[42, 46]	41	[38, 43]
Ejection Fraction (%)	69	[67, 70]	72	[70, 74]	69	[67, 72]
Peak ejection rate (ml/s)	369	[351, 387]	335	[309, 361]	275	[236, 314]
Myocardium						
Myocardial mass, (g/m ²)	72.3	[70.5, 74.0]	73.2	[70.6, 75.8]	72.2	[68.4, 76.1]
Hepatic Adipose Content						
PDFF (%)	4.3	[3.9, 4.8]	6.7	[5.8, 7.8]	7.9	[6.36, 9.6]
Body Adipose Content						
Total adipose tissue (l)	12.2	[11.8, 12.5]	13.0	[12.5, 13.5]	13.5	[12.8, 14.2]
Subcutaneous adipose tissue (l)	8.1	[7.9, 8.3]	8.4	[8.1, 8.7]	8.5	[8.0, 9.0]
Visceral adipose tissue (l)	4.1	[3.9, 4.3]	4.6	[4.3, 4.9]	5.0	[4.6, 5.5]

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Supplementary Figure S1. Comparison of automatic segmentation of the left ventricle (a,c,e,g) and manual corrections (b,d,f,h). Especially on the slice showing the left ventricular outflow tract (a,b), the contours had to be corrected manually. Green = epicardial contour. Red and orange = endocardial contour. Pink = contours of papillary muscles, which were included into the left ventricular lumen. LV = left ventricle; RV = right ventricle.

