



Male	82.0	7.7	279	83.6	7.9	289	82.7	8.2	274	83.2	8.4	284	81.0	9.1	74	82.8	8.1	1200
Female	71.2	9.0	295	73.6	9.2	277	75.5	8.9	281	76.9	8.4	278	75.4	9.4	88	74.3	9.2	1219
Total	76.5	10.0	574	78.7	9.9	566	79.1	9.3	555	80.1	9.0	562	77.9	9.6	162	78.5	9.6	2419

Waist circumference at umbilicus (cm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	84.1	7.4	279	85.7	7.5	289	84.7	8.0	274	85.2	8.0	284	83.6	8.5	74	84.9	7.8	1200
Female	78.1	9.5	295	81.4	9.8	277	83.5	9.0	281	85.0	8.5	278	84.3	9.5	88	82.1	9.6	1219
Total	81.0	9.0	574	83.6	8.9	566	84.1	8.5	555	85.1	8.2	562	84.0	9.0	162	83.5	8.8	2419

Hip circumference (cm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	94.8	4.8	279	93.7	4.8	289	91.5	4.8	274	90.2	4.6	284	88.9	4.8	74	92.3	5.1	1200
Female	91.8	6.1	295	91.3	5.9	277	90.2	5.2	281	88.8	4.8	278	87.6	5.7	88	90.3	5.7	1219
Total	93.2	5.7	574	92.5	5.5	566	90.9	5.0	555	89.5	4.7	562	88.2	5.3	162	91.3	5.5	2419

Thigh circumference at midway (cm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	50.0	3.5	279	49.1	3.4	289	47.2	3.6	274	45.7	3.5	284	44.5	4.0	74	47.8	4.0	1200
Female	48.1	4.3	295	47.4	4.2	277	46.5	3.9	281	44.8	3.8	278	42.9	4.0	87	46.4	4.4	1218
Total	49.0	4.1	574	48.3	3.9	566	46.9	3.8	555	45.2	3.7	562	43.6	4.1	161	47.1	4.2	2418

Calf circumference (cm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	36.9	2.6	279	36.5	2.5	289	35.3	2.6	274	34.1	2.4	284	33.5	2.6	74	35.6	2.8	1200
Female	34.5	3.0	295	34.2	2.6	277	33.8	2.6	281	32.5	2.2	278	31.8	2.4	88	33.6	2.8	1219
Total	35.7	3.0	574	35.4	2.8	566	34.5	2.7	555	33.4	2.5	562	32.6	2.6	162	34.6	2.9	2419

Upper-arm circumference (cm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	29.0	2.4	279	28.9	2.2	289	28.1	2.2	274	26.9	2.2	284	25.9	2.4	74	28.1	2.5	1200
Female	26.4	3.1	295	26.7	2.8	277	27.0	2.5	281	26.4	2.7	278	25.2	2.7	88	26.5	2.8	1219
Total	27.7	3.1	574	27.8	2.8	566	27.5	2.4	555	26.7	2.4	562	25.6	2.6	162	27.3	2.8	2419

2) Thickness of subcutaneous fat and of muscle

(Ultrasound scanner, ECHOPAL; Hitachi Medical Corp.)

Thickness of subcutaneous fat at right of umbilicus (mm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	17.2	6.4	279	16.2	5.2	289	14.4	5.1	274	14.2	5.1	284	13.1	5.4	74	15.4	5.6	1200

Female	18.7	8.8	295	20.9	8.5	277	21.6	7.6	281	20.8	7.5	278	16.9	7.4	87	20.2	8.2	1218
Total	18.0	7.8	574	18.5	7.4	566	18.1	7.4	555	17.5	7.2	562	15.2	6.8	161	17.8	7.4	2418

Thickness of musculus rectus abdominis at right of umbilicus (mm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	11.1	1.9	279	10.5	1.9	289	9.8	2.0	274	9.1	1.7	284	8.3	2.0	74	10.0	2.1	1200
Female	8.5	1.8	295	7.8	1.6	277	7.6	1.6	281	7.3	2.3	278	6.7	1.9	87	7.7	1.9	1218
Total	9.7	2.2	574	9.2	2.2	566	8.7	2.1	555	8.2	2.2	562	7.4	2.1	161	8.9	2.3	2418

Thickness of subcutaneous fat at thigh (mm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	6.8	2.0	279	6.1	2.0	289	5.6	1.7	274	5.6	1.9	284	5.8	2.1	74	6.0	2.0	1200
Female	10.8	2.8	295	10.3	2.7	276	9.5	2.8	281	8.6	3.1	278	7.2	2.8	87	9.6	3.0	1217
Total	8.9	3.2	574	8.1	3.2	565	7.6	3.0	555	7.1	3.0	562	6.5	2.6	161	7.8	3.2	2417

Thickness of musculus rectus femoris at thigh (mm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	33.2	6.7	279	32.3	6.7	289	28.6	7.4	274	25.4	6.7	284	22.4	5.4	74	29.4	7.6	1200
Female	28.9	6.6	295	26.6	6.2	276	24.9	5.9	281	21.9	5.6	278	19.6	5.0	87	25.2	6.7	1217
Total	31.0	6.9	574	29.5	7.1	565	26.7	6.9	555	23.7	6.4	562	20.9	5.3	161	27.3	7.5	2417

Thickness of subcutaneous fat at anterior calf (mm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2.5	0.8	279	2.3	0.8	289	2.1	0.7	274	2.2	0.7	284	2.5	1.0	74	2.3	0.8	1200
Female	3.9	1.5	295	3.4	1.3	277	3.2	1.5	281	3.2	1.4	278	3.1	1.6	87	3.4	1.5	1218
Total	3.2	1.4	574	2.8	1.2	566	2.7	1.3	555	2.7	1.2	562	2.8	1.3	161	2.8	1.3	2418

Thickness of musculus tibialis anterior (mm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	25.7	3.4	279	25.4	3.2	289	24.6	3.2	274	23.0	3.2	284	21.9	3.3	74	24.5	3.4	1200
Female	22.3	3.0	295	21.5	3.0	277	21.5	2.8	281	20.5	2.6	278	19.2	3.1	87	21.3	3.0	1218
Total	23.9	3.6	574	23.5	3.6	566	23.0	3.3	555	21.8	3.2	562	20.4	3.4	161	22.9	3.6	2418

Thickness of subcutaneous fat at upper-arm (mm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	6.5	1.9	279	5.9	1.8	289	5.5	1.7	274	5.5	1.6	284	5.0	1.6	74	5.8	1.8	1200
Female	10.2	2.7	295	10.1	2.7	277	10.0	2.4	281	9.5	2.6	278	8.2	2.6	87	9.8	2.7	1218
Total	8.4	3.0	574	8.0	3.1	566	7.8	3.1	555	7.5	2.9	562	6.7	2.7	161	7.8	3.0	2418

Thickness of musculus triceps brachi (mm)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
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Male	87.1	8.0	277	88.7	8.0	286	87.2	8.2	274	87.4	8.6	283	85.3	9.0	74	87.5	8.3	1194
Female	82.6	10.4	292	85.8	10.1	277	88.1	9.3	280	89.2	8.9	276	86.7	9.2	86	86.4	9.9	1211
Total	84.8	9.5	569	87.3	9.2	563	87.7	8.8	554	88.3	8.8	559	86.1	9.1	160	86.9	9.2	2405

#### 4) Body composition by DXA

(Dual energy x-ray absorptiometry, QDR4500A; Hologic) 縹?

##### Head fat weight (kg)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	1.041	0.090	278	1.037	0.087	287	1.016	0.094	274	0.985	0.087	282	0.956	0.087	73	1.016	0.093	1194
Female	0.882	0.083	293	0.890	0.083	275	0.891	0.075	281	0.872	0.079	276	0.844	0.081	81	0.881	0.081	1206
Total	0.959	0.117	571	0.965	0.113	562	0.953	0.105	555	0.929	0.100	558	0.897	0.101	154	0.948	0.110	2400

##### Head lean weight (kg)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	4.100	0.338	278	4.076	0.312	287	3.992	0.340	274	3.864	0.329	282	3.748	0.317	73	3.992	0.346	1194
Female	3.566	0.308	293	3.525	0.309	275	3.479	0.274	281	3.375	0.281	276	3.252	0.290	81	3.472	0.307	1206
Total	3.826	0.419	571	3.806	0.415	562	3.732	0.401	555	3.622	0.391	558	3.487	0.391	154	3.731	0.418	2400

##### Left arm fat weight (kg)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	0.837	0.277	278	0.810	0.266	287	0.770	0.252	274	0.786	0.261	282	0.749	0.240	73	0.798	0.264	1194
Female	0.996	0.439	293	1.068	0.403	275	1.100	0.361	281	1.076	0.354	276	0.896	0.348	81	1.048	0.392	1206
Total	0.918	0.377	571	0.936	0.364	562	0.937	0.353	555	0.930	0.343	558	0.827	0.309	154	0.923	0.357	2400

##### Left arm lean weight (kg)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	3.076	0.439	278	3.020	0.381	287	2.841	0.376	274	2.614	0.349	282	2.395	0.348	73	2.858	0.439	1194
Female	1.837	0.303	293	1.797	0.276	275	1.777	0.230	281	1.681	0.221	276	1.579	0.203	81	1.761	0.267	1206
Total	2.440	0.724	571	2.421	0.697	562	2.302	0.616	555	2.153	0.551	558	1.966	0.496	154	2.306	0.658	2400

##### Right arm fat weight (kg)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	0.813	0.278	278	0.787	0.287	287	0.741	0.251	274	0.765	0.254	282	0.716	0.242	73	0.773	0.268	1194
Female	0.980	0.453	293	1.049	0.414	275	1.088	0.387	281	1.062	0.364	276	0.908	0.380	81	1.035	0.407	1206
Total	0.899	0.387	571	0.915	0.378	562	0.917	0.370	555	0.912	0.347	558	0.817	0.335	154	0.905	0.369	2400

##### Right arm lean weight (kg)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	3.362	0.469	278	3.316	0.434	287	3.115	0.404	274	2.838	0.372	282	2.586	0.361	73	3.123	0.483	1194
Female	2.036	0.324	293	2.000	0.295	275	1.979	0.255	281	1.852	0.257	276	1.727	0.245	81	1.952	0.296	1206



Male	15.3	4.4	277	14.8	4.4	285	14.1	4.1	274	14.2	4.2	280	13.5	4.2	73	14.5	4.3	1189
Female	16.2	5.4	291	17.0	5.2	274	17.5	4.8	281	16.9	4.4	276	14.7	4.8	80	16.7	5.0	1202
Total	15.7	4.9	568	15.9	5.0	559	15.8	4.8	555	15.6	4.5	556	14.2	4.6	153	15.6	4.8	2391

Lean body weight (kg)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	53.7	6.0	277	52.8	5.8	285	50.0	5.5	274	46.7	5.1	279	43.8	5.0	72	50.4	6.4	1187
Female	38.4	5.1	291	37.4	4.6	274	36.5	4.0	281	34.2	3.5	276	32.6	3.6	80	36.4	4.7	1202
Total	45.9	9.4	568	45.3	9.3	559	43.2	8.3	555	40.5	7.6	555	37.9	7.1	152	43.3	9.0	2389

Percent body fat (%)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	21.9	4.1	277	21.6	4.0	285	21.7	4.3	274	23.0	4.7	279	23.2	5.2	72	22.1	4.4	1187
Female	29.1	5.1	291	30.6	5.1	274	31.9	4.9	281	32.7	5.2	276	30.5	5.8	80	31.0	5.3	1202
Total	25.5	5.9	568	26.0	6.4	559	26.8	6.9	555	27.8	6.9	555	27.0	6.6	152	26.6	6.6	2389