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Pure-tone audiometry (Audiometer RION AA-73A)

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1) Visual system

1. Refraction

Autorefracton was obtained with the NIDEK-ARK700A.
Refractive errors, in spherical equivalent, were assessed.

Spherical Equivalent of Refractive Error in the Right Eye(Diopter)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	-1.33	1.43	291	-1.00	1.46	281	-0.21	1.18	279	-0.18	1.29	271	-0.69	1.43	1122
Female	-1.18	1.41	282	-0.67	1.33	279	-0.11	1.38	284	-0.06	1.35	275	-0.50	1.44	1120
Total	-1.25	1.42	573	-0.83	1.40	560	-0.16	1.29	563	-0.12	1.32	546	-0.60	1.44	2242

Spherical Equivalent of Refractive Error in the Left Eye(Diopter)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	-1.29	1.40	290	-0.91	1.43	279	-0.13	1.01	282	-0.11	1.25	273	-0.62	1.38	1124
Female	-1.26	1.46	282	-0.73	1.45	278	-0.07	1.27	282	0.02	1.22	272	-0.51	1.45	1114
Total	-1.28	1.43	572	-0.82	1.44	557	-0.10	1.15	564	-0.05	1.24	545	-0.57	1.42	2238

2. Visual acuity: near vision (33 cm), distant vision (5 m)

Distant visual acuity was measured for each eye with a Landolt broken ring at 5m.

Presenting visual acuity was measured with the participant's current distance correction; when distance correction was not used, the unaided distant visual acuity was measured.

Subsequently, best-corrected visual acuity for each eye was determined after objective autorefraction and subjective refinement.

Presenting near vision was measured with the participant's current near correction for each eye with a Landolt broken ring designed for use at 33 cm; when near correction was not used, the unaided near vision was measured.

Log VA in the Right Eye with own Habitual Glasses

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	–0.04	0.24	291	–0.05	0.26	282	–0.13	0.27	282	–0.21	0.28	282	–0.11	0.27	1137
Female	–0.07	0.30	282	–0.10	0.26	279	–0.20	0.33	285	–0.28	0.35	278	–0.16	0.33	1124
Total	–0.05	0.27	573	–0.08	0.27	561	–0.17	0.31	567	–0.24	0.32	560	–0.13	0.30	2261

Log VA in the Left Eye with own Habitual Glasses

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	–0.02	0.21	290	–0.05	0.27	282	–0.09	0.21	283	–0.22	0.31	282	–0.10	0.27	1137
Female	–0.09	0.30	281	–0.12	0.29	279	–0.17	0.29	284	–0.29	0.37	281	–0.17	0.32	1125
Total	–0.05	0.26	571	–0.08	0.28	561	–0.13	0.26	567	–0.26	0.34	563	–0.13	0.30	2262

Log Best-corrected VA in the Right Eye

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	0.06	0.13	291	0.04	0.15	281	–0.03	0.19	282	–0.11	0.22	282	–0.01	0.19	1136
Female	0.05	0.19	282	0.04	0.11	279	–0.06	0.22	285	–0.16	0.27	278	–0.03	0.22	1124
Total	0.06	0.16	573	0.04	0.13	560	–0.04	0.21	567	–0.13	0.25	560	–0.02	0.21	2260

Log Best-corrected VA in the Left Eye

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	0.07	0.10	290	0.03	0.18	281	–0.01	0.17	283	–0.12	0.26	282	–0.01	0.20	1136
Female	0.05	0.16	282	0.02	0.18	279	–0.06	0.24	285	–0.16	0.28	280	–0.04	0.24	1126
Total	0.06	0.14	572	0.03	0.18	560	–0.04	0.21	568	–0.14	0.27	562	–0.02	0.22	2262

Log Near Vision in the Right Eye with own Habitual Glasses

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
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	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	-0.13	0.20	289	-0.25	0.25	280	-0.27	0.24	282	-0.34	0.25	280	-0.25	0.25	1131
Female	-0.16	0.21	280	-0.25	0.22	279	-0.33	0.28	281	-0.35	0.29	275	-0.27	0.26	1115
Total	-0.14	0.21	569	-0.25	0.23	559	-0.30	0.26	563	-0.35	0.27	555	-0.26	0.26	2246

Log Near Vision in the Left Eye with own Habitual Glasses

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	-0.11	0.18	288	-0.24	0.28	280	-0.25	0.24	283	-0.33	0.28	281	-0.23	0.26	1132
Female	-0.15	0.26	282	-0.23	0.23	279	-0.30	0.23	280	-0.34	0.30	280	-0.25	0.27	1121
Total	-0.13	0.22	570	-0.23	0.25	559	-0.28	0.24	563	-0.33	0.29	561	-0.24	0.26	2253

Log Best-corrected Near Vision in the Right Eye

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	-0.06	0.10	254	-0.09	0.11	248	-0.13	0.16	228	-0.18	0.18	239	-0.11	0.15	969
Female	-0.06	0.08	240	-0.08	0.09	232	-0.13	0.16	233	-0.18	0.18	230	-0.11	0.14	935
Total	-0.06	0.09	494	-0.08	0.10	480	-0.13	0.16	461	-0.18	0.18	469	-0.11	0.14	1904

Log Best-corrected Near Vision in the Left Eye

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	-0.05	0.08	253	-0.09	0.17	248	-0.11	0.12	229	-0.17	0.18	241	-0.10	0.15	971
Female	-0.06	0.13	241	-0.08	0.13	232	-0.11	0.16	232	-0.20	0.26	232	-0.11	0.19	937
Total	-0.05	0.11	494	-0.08	0.15	480	-0.11	0.14	461	-0.18	0.22	473	-0.11	0.17	1908

Visual Acuity with own Habitual Glasses
Right Eye

		40-49yr		50-59yr		60-69yr		70-79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	-	-	-	-	-	-	1	0.4	1	0.1
	Female	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	1	0.2	1	0.0
0.3 or less	Male	12	4.1	10	3.5	15	5.3	17	6.0	54	4.7
	Female	15	5.3	14	5.0	21	7.4	43	15.2	93	8.2
	Total	27	4.7	24	4.3	36	6.3	60	10.6	147	6.5
0.3-0.6	Male	37	12.7	44	15.6	67	23.7	104	36.7	252	22.1
	Female	44	15.6	56	20.1	91	31.9	97	34.4	288	25.5
	Total	81	14.1	100	17.8	158	27.8	201	35.6	540	23.8
0.7 or more	Male	242	83.2	228	80.9	201	71.0	161	56.9	832	73.0

Female	223	79.1	209	74.9	173	60.7	142	50.4	747	66.2
Total	465	81.2	437	77.9	374	65.8	303	53.6	1579	69.7

Visual Acuity with own Habitual Glasses
Left Eye

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	1	0.3	–	–	–	–	1	0.4	2	0.2
	Female	–	–	–	–	–	–	–	–	–	–
	Total	1	0.2	–	–	–	–	1	0.2	2	0.1
0.3 or less	Male	7	2.4	10	3.5	8	2.8	23	8.1	48	4.2
	Female	21	7.4	20	7.2	13	4.6	39	13.8	93	8.2
	Total	28	4.9	30	5.3	21	3.7	62	11.0	141	6.2
0.3–0.6	Male	36	12.4	35	12.4	60	21.2	101	35.7	232	20.4
	Female	39	13.8	54	19.4	91	31.9	103	36.5	287	25.4
	Total	75	13.1	89	15.9	151	26.6	204	36.1	519	22.9
0.7 or more	Male	247	84.9	237	84.0	215	76.0	158	55.8	857	75.2
	Female	222	78.7	205	73.5	181	63.5	140	49.6	748	66.3
	Total	469	81.8	442	78.8	396	69.7	298	52.7	1605	70.8

Best-corrected Visual Acuity
Right Eye

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	–	–	1	0.4	–	–	1	0.4	2	0.2
	Female	–	–	–	–	–	–	1	0.4	1	0.1
	Total	–	–	1	0.2	–	–	2	0.4	3	0.1
0.3 or less	Male	1	0.3	4	1.4	3	1.1	6	2.1	14	1.2
	Female	2	0.7	–	–	5	1.8	18	6.4	25	2.2
	Total	3	0.5	4	0.7	8	1.4	24	4.2	39	1.7
0.3–0.6	Male	4	1.4	7	2.5	31	11.0	56	19.8	98	8.6
	Female	3	1.1	7	2.5	41	14.4	73	25.9	124	11.0
	Total	7	1.2	14	2.5	72	12.7	129	22.8	222	9.8
0.7 or more	Male	286	98.3	270	95.7	249	88.0	220	77.7	1025	90.0
	Female	277	98.2	272	97.5	239	83.9	190	67.4	978	86.7
	Total	563	98.3	542	96.6	488	85.9	410	72.6	2003	88.4

Best-corrected Visual Acuity
Left Eye

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%

not recorded	Male	1	0.3	1	0.4	–	–	1	0.4	3	0.3
	Female	–	–	–	–	–	–	1	0.4	1	0.1
	Total	1	0.2	1	0.2	–	–	2	0.4	4	0.2
0.3 or less	Male	–	–	2	0.7	3	1.1	10	3.5	15	1.3
	Female	3	1.1	3	1.1	5	1.8	15	5.3	26	2.3
	Total	3	0.5	5	0.9	8	1.4	25	4.4	41	1.8
0.3–0.6	Male	2	0.7	7	2.5	20	7.1	63	22.3	92	8.1
	Female	7	2.5	18	6.5	35	12.3	74	26.2	134	11.9
	Total	9	1.6	25	4.5	55	9.7	137	24.2	226	10.0
0.7 or more	Male	288	99.0	272	96.5	260	91.9	209	73.9	1029	90.3
	Female	272	96.5	258	92.5	245	86.0	192	68.1	967	85.7
	Total	560	97.7	530	94.5	505	88.9	401	71.0	1996	88.0

Near Vision with own Habitual Glasses
Right Eye

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	1	0.3	2	0.7	–	–	2	0.7	5	0.4
	Female	1	0.4	–	–	3	1.1	2	0.7	6	0.5
	Total	2	0.3	2	0.4	3	0.5	4	0.7	11	0.5
0.3 or less	Male	12	4.1	33	11.7	30	10.6	50	17.7	125	11.0
	Female	17	6.0	19	6.8	50	17.5	57	20.2	143	12.7
	Total	29	5.1	52	9.3	80	14.1	107	18.9	268	11.8
0.3–0.6	Male	53	18.2	99	35.1	113	39.9	134	47.3	399	35.0
	Female	68	24.1	126	45.2	131	46.0	115	40.8	440	39.0
	Total	121	21.1	225	40.1	244	43.0	249	44.1	839	37.0
0.7 or more	Male	225	77.3	148	52.5	140	49.5	97	34.3	610	53.6
	Female	196	69.5	134	48.0	101	35.4	108	38.3	539	47.8
	Total	421	73.5	282	50.3	241	42.4	205	36.3	1149	50.7

Near Vision with own Habitual Glasses
Left Eye

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	2	0.7	2	0.7	–	–	1	0.4	5	0.4
	Female	–	–	–	–	5	1.8	2	0.7	7	0.6
	Total	2	0.3	2	0.4	5	0.9	3	0.5	12	0.5
0.3 or less	Male	10	3.4	34	12.1	26	9.2	48	17.0	118	10.4
	Female	19	6.7	19	6.8	42	14.7	48	17.0	128	11.3
	Total	29	5.1	53	9.4	68	12.0	96	17.0	246	10.9
0.3–0.6	Male	50	17.2	89	31.6	109	38.5	128	45.2	376	33.0
	Female	56	19.9	116	41.6	127	44.6	126	44.7	425	37.7

	Total	106	18.5	205	36.5	236	41.5	254	45.0	801	35.3
0.7 or more	Male	229	78.7	157	55.7	148	52.3	106	37.5	640	56.2
	Female	207	73.4	144	51.6	111	38.9	106	37.6	568	50.4
	Total	436	76.1	301	53.7	259	45.6	212	37.5	1208	53.3

3. Kinetic Visual Acuity

Binocular kinetic visual acuity and binocular static visual acuity were assessed with KOWA AS-4C.

Kinetic visual acuity was measured five times, then the mean value of the measurements was used for analysis.

Log Static VA

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	–0.05	0.11	290	–0.09	0.12	281	–0.13	0.13	282	–0.21	0.18	282	–0.12	0.15	1135
Female	–0.07	0.10	280	–0.09	0.11	279	–0.15	0.13	281	–0.23	0.17	278	–0.13	0.15	1118
Total	–0.06	0.11	570	–0.09	0.12	560	–0.14	0.13	563	–0.22	0.18	560	–0.13	0.15	2253

Log Kinetic VA

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	–0.33	0.21	290	–0.39	0.22	281	–0.45	0.23	283	–0.61	0.24	283	–0.44	0.25	1137
Female	–0.32	0.19	281	–0.35	0.22	279	–0.52	0.25	282	–0.67	0.25	278	–0.47	0.27	1120
Total	–0.33	0.20	571	–0.37	0.22	560	–0.48	0.24	565	–0.64	0.25	561	–0.45	0.26	2257

Static Visual Acuity

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	1	0.3	1	0.4	1	0.4	1	0.4	4	0.4
	Female	2	0.7	–	–	4	1.4	4	1.4	10	0.9
	Total	3	0.5	1	0.2	5	0.9	5	0.9	14	0.6
0.3 or less	Male	–	–	1	0.4	–	–	9	3.2	10	0.9
	Female	–	–	–	–	2	0.7	10	3.5	12	1.1
	Total	–	–	1	0.2	2	0.4	19	3.4	22	1.0
0.3–0.6	Male	35	12.0	40	14.2	88	31.1	122	43.1	285	25.0
	Female	31	11.0	49	17.6	85	29.8	151	53.5	316	28.0
	Total	66	11.5	89	15.9	173	30.5	273	48.3	601	26.5
0.7 or more	Male	255	87.6	240	85.1	194	68.6	151	53.4	840	73.7
	Female	249	88.3	230	82.4	194	68.1	117	41.5	790	70.0
	Total	504	88.0	470	83.8	388	68.3	268	47.4	1630	71.9

Kinetic Visual Acuity

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	1	0.3	1	0.4	–	–	–	–	2	0.2
	Female	1	0.4	–	–	3	1.1	4	1.4	8	0.7
	Total	2	0.3	1	0.2	3	0.5	4	0.7	10	0.4
0.3 or less	Male	50	17.2	66	23.4	87	30.7	163	57.6	366	32.1
	Female	37	13.1	54	19.4	122	42.8	189	67.0	402	35.6
	Total	87	15.2	120	21.4	209	36.8	352	62.3	768	33.9
0.3–0.6	Male	172	59.1	183	64.9	172	60.8	116	41.0	643	56.5
	Female	184	65.2	174	62.4	148	51.9	85	30.1	591	52.4
	Total	356	62.1	357	63.6	320	56.3	201	35.6	1234	54.4
0.7 or more	Male	68	23.4	32	11.3	24	8.5	4	1.4	128	11.2
	Female	60	21.3	51	18.3	12	4.2	4	1.4	127	11.3
	Total	128	22.3	83	14.8	36	6.3	8	1.4	255	11.2

4. Stereoscopic vision

Stereo acuity was assessed with the Titmus stereotest and TNO stereotest.

Stereo Acuity
Titmus Stereo Test

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	1	0.3	2	0.7	1	0.4	3	1.1	7	0.6
	Female	1	0.4	1	0.4	4	1.4	4	1.4	10	0.9
	Total	2	0.3	3	0.5	5	0.9	7	1.2	17	0.7
poor (200sec. or less)	Male	12	4.1	14	5.0	25	8.8	61	21.6	112	9.8
	Female	11	3.9	13	4.7	26	9.1	61	21.6	111	9.8
	Total	23	4.0	27	4.8	51	9.0	122	21.6	223	9.8
moderate (80 – 140sec.)	Male	8	2.7	31	11.0	65	23.0	72	25.4	176	15.5
	Female	12	4.3	23	8.2	48	16.8	76	27.0	159	14.1
	Total	20	3.5	54	9.6	113	19.9	148	26.2	335	14.8
good (60sec. or more)	Male	270	92.8	235	83.3	192	67.8	147	51.9	844	74.1
	Female	258	91.5	242	86.7	207	72.6	141	50.0	848	75.2
	Total	528	92.1	477	85.0	399	70.2	288	51.0	1692	74.6

Stereo Acuity
TNO Stereo Test

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%

not recorded	Male	6	2.1	4	1.4	7	2.5	16	5.7	33	2.9
	Female	10	3.5	6	2.2	10	3.5	6	2.1	32	2.8
	Total	16	2.8	10	1.8	17	3.0	22	3.9	65	2.9
good (120sec. or more)	Male	253	86.9	207	73.4	143	50.5	105	37.1	708	62.2
	Female	230	81.6	233	83.5	163	57.2	115	40.8	741	65.7
	Total	483	84.3	440	78.4	306	53.9	220	38.9	1449	63.9
positive (240sec. or less)	Male	21	7.2	53	18.8	97	34.3	91	32.2	262	23.0
	Female	31	11.0	24	8.6	85	29.8	92	32.6	232	20.6
	Total	52	9.1	77	13.7	182	32.0	183	32.4	494	21.8
negative	Male	11	3.8	18	6.4	36	12.7	71	25.1	136	11.9
	Female	11	3.9	16	5.7	27	9.5	69	24.5	123	10.9
	Total	22	3.8	34	6.1	63	11.1	140	24.8	259	11.4

5. Color perception

Red-Green color discrimination acuity and Blue-Yellow color discrimination acuity were assessed with Standard Pseudo-isochromatic Plates (SPP) part 2.

Correct Answer in Blue-Yellow Discrimination Test(%)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	98.0	5.3	290	95.5	9.5	281	91.9	11.6	281	83.3	19.8	279	92.2	13.8	1131
Female	98.1	4.8	281	96.1	7.4	279	92.9	11.1	281	81.4	19.7	277	92.2	13.7	1118
Total	98.1	5.1	571	95.8	8.5	560	92.4	11.4	562	82.3	19.8	556	92.2	13.8	2249

Correct Answer in Red-Green Discrimination Test(%)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	95.8	15.1	289	94.1	17.6	281	90.8	21.5	281	87.5	22.9	280	92.1	19.7	1131
Female	98.4	5.4	280	96.6	9.7	279	94.9	11.1	281	86.5	18.8	276	94.1	13.0	1116
Total	97.1	11.5	569	95.3	14.3	560	92.9	17.3	562	87.0	21.0	556	93.1	16.8	2247

6. Contrast sensitivity

Contrast sensitivity was measured at 1.5, 3, 6, 12, 18 cycles per degree with Vistech VCTS-6500.

Contrast Sensitivity at 1.5 cycles/degree – Mean of Right Eye and Left Eye

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	43.2	17.6	288	39.0	16.3	279	36.1	15.4	280	29.1	12.3	275	36.9	16.4	1122

Female	39.7	19.4	280	36.6	13.7	279	30.9	12.6	281	27.6	11.4	274	33.7	15.4	1114
Total	41.5	18.6	568	37.8	15.1	558	33.5	14.3	561	28.3	11.9	549	35.3	15.9	2236

Contrast Sensitivity 3(C/D)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	84.2	31.6	288	75.1	28.2	279	72.5	31.9	280	56.9	28.3	275	72.3	31.6	1122
Female	79.0	31.0	280	74.0	28.3	279	63.8	28.5	281	53.5	24.8	274	67.7	29.8	1114
Total	81.7	31.4	568	74.6	28.2	558	68.2	30.5	561	55.2	26.6	549	70.0	30.8	2236

Contrast Sensitivity 6(C/D)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	89.7	42.0	288	84.2	41.1	279	72.3	40.9	280	47.8	30.0	275	73.7	42.0	1122
Female	87.7	40.9	280	82.0	38.8	279	61.8	39.7	281	41.0	25.9	274	68.3	41.2	1114
Total	88.7	41.4	568	83.1	40.0	558	67.0	40.6	561	44.4	28.2	549	71.0	41.7	2236

Contrast Sensitivity 12(C/D)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	51.5	31.0	288	48.1	29.8	279	37.6	26.8	280	21.0	21.1	275	39.7	29.9	1122
Female	50.8	30.2	280	49.3	31.0	279	30.2	25.3	281	16.4	15.6	274	36.8	29.9	1114
Total	51.2	30.6	568	48.7	30.4	558	33.9	26.3	561	18.7	18.7	549	38.2	29.9	2236

Contrast Sensitivity 18(C/D)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	16.3	10.9	288	15.5	9.8	279	11.5	9.3	280	6.4	7.3	275	12.5	10.2	1122
Female	17.0	11.9	280	16.2	10.9	279	10.3	9.4	281	5.2	6.0	274	12.2	10.9	1114
Total	16.6	11.4	568	15.9	10.4	558	10.9	9.4	561	5.8	6.7	549	12.3	10.6	2236

7. Visual field

Visual field examination was performed with the Dynamic strategies of OCTOPUS 1–2–3 perimeter.

Central Threshold in Visual Field in the Right Eye(dB)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N

Male	32.0	2.4	274	31.8	2.3	265	30.9	3.7	256	28.3	5.2	260	30.8	3.9	1055
Female	31.5	2.6	264	31.3	2.4	264	30.0	4.2	257	28.2	4.6	250	30.3	3.8	1035
Total	31.7	2.5	538	31.5	2.4	529	30.4	4.0	513	28.3	4.9	510	30.5	3.8	2090

Central Threshold in Visual Field in the Left Eye (dB)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	31.7	2.2	275	31.6	2.6	264	31.0	2.8	256	28.7	4.0	259	30.7	3.2	1054
Female	31.3	2.6	265	31.1	2.7	264	30.0	3.4	260	28.3	4.7	251	30.2	3.6	1040
Total	31.5	2.4	540	31.3	2.7	528	30.5	3.2	516	28.5	4.3	510	30.5	3.4	2094

Mean sensitivity in Visual Field in the Right Eye(dB)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	27.3	1.8	274	27.0	1.9	265	26.1	2.2	256	23.3	4.3	260	26.0	3.2	1055
Female	27.1	1.7	264	26.8	1.8	264	25.1	2.6	257	22.9	3.5	251	25.5	3.0	1036
Total	27.2	1.8	538	26.9	1.8	529	25.6	2.5	513	23.1	3.9	511	25.7	3.1	2091

Mean Sensitivity in Visual Field in the Left Eye(dB)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	27.1	1.5	275	26.8	1.7	264	25.8	2.4	256	23.4	4.2	261	25.8	3.0	1056
Female	26.9	1.6	265	26.6	1.6	264	25.0	2.5	260	22.8	3.4	251	25.3	2.9	1040
Total	27.0	1.5	540	26.7	1.7	528	25.4	2.5	516	23.1	3.8	512	25.6	3.0	2096

Visual Field in the Right Eye

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	–	–	–	–	1	0.4	2	0.7	3	0.3
	Female	–	–	–	–	–	–	2	0.7	2	0.2
	Total	–	–	–	–	1	0.2	4	0.7	5	0.2
nothing	Male	262	90.0	226	80.1	190	67.1	123	43.5	801	70.3
	Female	246	87.2	220	78.9	161	56.5	94	33.3	721	63.9
	Total	508	88.7	446	79.5	351	61.8	217	38.4	1522	67.1
glaucoma suspected	Male	5	1.7	10	3.5	18	6.4	22	7.8	55	4.8
	Female	7	2.5	13	4.7	12	4.2	18	6.4	50	4.4
	Total	12	2.1	23	4.1	30	5.3	40	7.1	105	4.6
typical glaucoma change	Male	–	–	1	0.4	–	–	4	1.4	5	0.4

	Female	–	–	1	0.4	2	0.7	6	2.1	9	0.8
	Total	–	–	2	0.4	2	0.4	10	1.8	14	0.6
contraction	Male	1	0.3	–	–	4	1.4	3	1.1	8	0.7
	Female	–	–	1	0.4	2	0.7	4	1.4	7	0.6
	Total	1	0.2	1	0.2	6	1.1	7	1.2	15	0.7
central scotoma	Male	–	–	2	0.7	3	1.1	3	1.1	8	0.7
	Female	–	–	–	–	3	1.1	3	1.1	6	0.5
	Total	–	–	2	0.4	6	1.1	6	1.1	14	0.6
atypical changes	Male	22	7.6	39	13.8	65	23.0	120	42.4	246	21.6
	Female	26	9.2	44	15.8	96	33.7	139	49.3	305	27.0
	Total	48	8.4	83	14.8	161	28.3	259	45.8	551	24.3
depression	Male	–	–	–	–	–	–	3	1.1	3	0.3
	Female	–	–	–	–	1	0.4	6	2.1	7	0.6
	Total	–	–	–	–	1	0.2	9	1.6	10	0.4
not examined	Male	1	0.3	4	1.4	2	0.7	3	1.1	10	0.9
	Female	3	1.1	–	–	8	2.8	10	3.5	21	1.9
	Total	4	0.7	4	0.7	10	1.8	13	2.3	31	1.4

Visual Field in the Left Eye

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	1	0.3	–	–	–	–	2	0.7	3	0.3
	Female	–	–	–	–	1	0.4	3	1.1	4	0.4
	Total	1	0.2	–	–	1	0.2	5	0.9	7	0.3
normal	Male	263	90.4	221	78.4	206	72.8	136	48.1	826	72.5
	Female	243	86.2	226	81.0	171	60.0	103	36.5	743	65.9
	Total	506	88.3	447	79.7	377	66.4	239	42.3	1569	69.2
glaucoma suspected	Male	5	1.7	6	2.1	11	3.9	15	5.3	37	3.2
	Female	6	2.1	8	2.9	11	3.9	12	4.3	37	3.3
	Total	11	1.9	14	2.5	22	3.9	27	4.8	74	3.3
typical glaucoma change	Male	–	–	2	0.7	–	–	2	0.7	4	0.4
	Female	–	–	1	0.4	2	0.7	7	2.5	10	0.9
	Total	–	–	3	0.5	2	0.4	9	1.6	14	0.6
contraction	Male	2	0.7	–	–	5	1.8	3	1.1	10	0.9
	Female	–	–	1	0.4	3	1.1	6	2.1	10	0.9
	Total	2	0.3	1	0.2	8	1.4	9	1.6	20	0.9
central scotoma	Male	–	–	1	0.4	1	0.4	1	0.4	3	0.3
	Female	2	0.7	–	–	2	0.7	1	0.4	5	0.4
	Total	2	0.3	1	0.2	3	0.5	2	0.4	8	0.4
atypical changes	Male	20	6.9	47	16.7	57	20.1	117	41.3	241	21.2
	Female	29	10.3	41	14.7	91	31.9	139	49.3	300	26.6
	Total	49	8.6	88	15.7	148	26.1	256	45.3	541	23.9

depression	Male	-	-	-	-	-	-	2	0.7	2	0.2
	Female	-	-	-	-	-	-	3	1.1	3	0.3
	Total	-	-	-	-	-	-	5	0.9	5	0.2
not examined	Male	-	-	5	1.8	3	1.1	5	1.8	13	1.1
	Female	2	0.7	2	0.7	4	1.4	8	2.8	16	1.4
	Total	2	0.3	7	1.2	7	1.2	13	2.3	29	1.3

8. Intraocular pressure

Intraocular pressure was measured three times for each eye with a noncontact tomometer (NIDEK NT-3000) between 9 and 12 AM. The mean value of the three measurements was used for analysis.

Intraocular Pressure in the Right Eye (mmHg)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	14.55	2.69	291	14.04	2.86	281	13.45	2.59	282	13.28	2.92	281	13.83	2.81	1135
Female	13.57	2.87	282	13.48	2.52	279	13.72	2.57	285	12.87	2.59	279	13.41	2.66	1125
Total	14.07	2.82	573	13.76	2.71	560	13.58	2.58	567	13.08	2.77	560	13.62	2.74	2260

Intraocular Pressure in the Left Eye (mmHg)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	14.40	2.68	290	13.86	2.95	280	13.36	2.53	283	13.24	3.10	280	13.72	2.85	1133
Female	13.42	2.82	282	13.42	2.61	279	13.57	2.70	284	13.06	2.77	281	13.37	2.73	1126
Total	13.92	2.79	572	13.64	2.79	559	13.46	2.62	567	13.15	2.94	561	13.54	2.80	2259

9. Quantitative test of lens opacity

Scheimpflug images were recorded and analyzed with an anterior eye segment analysis system (NIDEK EAS-1000) version 3.05.

The integrated intensity of the scattering light was calculated using an integrated area program.

Anterior Subcapsular Opacification in the Right Eye (scattering intensity)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2369.3	565.1	281	3178.6	711.3	264	3954.0	878.8	258	4875.0	1109	236	3537.6	1239	1039
Female	2333.1	537.1	268	3106.1	722.7	266	4086.6	1014	260	5093.3	1251	234	3604.9	1369	1028
Total	2351.6	551.4	549	3142.2	717.3	530	4020.6	950.3	518	4983.7	1186	470	3571.1	1306	2067

Anterior Subcapsular Opacification in the Left Eye (scattering intensity)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2362.0	635.7	278	3204.7	761.8	263	4080.3	973.4	254	4791.9	1051	239	3560.1	1256	1034
Female	2332.1	537.1	267	3137.0	757.4	266	4141.8	1074	256	5186.6	1213	232	3644.2	1402	1021
Total	2347.3	589.1	545	3170.6	759.6	529	4111.2	1025	510	4986.3	1150	471	3601.9	1331	2055

Nuclear Opacification in the Right Eye (scattering intensity)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2038.1	514.8	260	2645.5	616.1	216	3338.2	975.1	187	4372.2	1462	127	2887.1	1189	790
Female	2182.9	514.3	249	2743.9	603.8	229	3519.2	1123	188	4508.0	1464	142	3061.4	1239	808
Total	2108.9	519.1	509	2696.1	611.1	445	3429.0	1055	375	4443.9	1462	269	2975.3	1217	1598

Nuclear Opacification in the Left Eye (scattering intensity)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2069.3	541.2	237	2673.7	677.9	191	3422.1	921.1	159	4339.3	1213	100	2880.8	1120	687
Female	2215.1	555.3	224	2790.6	614.5	204	3537.9	874.6	146	4396.2	1458	106	3011.8	1135	680
Total	2140.1	552.3	461	2734.1	647.8	395	3477.5	899.6	305	4368.6	1342	206	2946.0	1129	1367

10. Retinal fundus camera

Fundus photographs were taken with Topcon fundus camera (TRC–NW5S) at 20 and 45 degree angles for each eye without pupil dilatation.

Diabetic retinopathy, Arteriosclerosis, and macular degeneration were assessed on the photograph at 45 degree angles.

Vertical cup to disc ratio was measured on the photograph at 20 degree angles.

Cup–Disc Ratio of Optic Disc in the Right Eye

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	0.41	0.10	287	0.41	0.12	277	0.42	0.12	280	0.43	0.13	265	0.42	0.12	1109
Female	0.40	0.11	280	0.41	0.12	276	0.41	0.12	278	0.42	0.13	260	0.41	0.12	1094
Total	0.41	0.11	567	0.41	0.12	553	0.42	0.12	558	0.42	0.13	525	0.41	0.12	2203

Cup–Disc Ratio of Optic Disc in the Left Eye

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	0.42	0.11	286	0.42	0.13	276	0.41	0.12	278	0.43	0.13	265	0.42	0.12	1105
Female	0.40	0.11	282	0.41	0.12	275	0.41	0.12	274	0.42	0.13	260	0.41	0.12	1091

Total	0.41	0.11	568	0.42	0.12	551	0.41	0.12	552	0.42	0.13	525	0.42	0.12	2196
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		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	2	0.7	2	0.7	2	0.7	5	1.8	11	1.0
	Female	–	–	–	–	1	0.4	5	1.8	6	0.5
	Total	2	0.3	2	0.4	3	0.5	10	1.8	17	0.7
nothing	Male	287	98.6	275	97.5	271	95.8	262	92.6	1095	96.1
	Female	282	100.0	276	98.9	270	94.7	255	90.4	1083	96.0
	Total	569	99.3	551	98.2	541	95.2	517	91.5	2178	96.1
simple	Male	1	0.3	2	0.7	–	–	2	0.7	5	0.4
	Female	–	–	–	–	1	0.4	1	0.4	2	0.2
	Total	1	0.2	2	0.4	1	0.2	3	0.5	7	0.3
preproliferative	Male	–	–	–	–	4	1.4	–	–	4	0.4
	Female	–	–	–	–	–	–	1	0.4	1	0.1
	Total	–	–	–	–	4	0.7	1	0.2	5	0.2
invisible	Male	1	0.3	3	1.1	6	2.1	14	4.9	24	2.1
	Female	–	–	3	1.1	13	4.6	20	7.1	36	3.2
	Total	1	0.2	6	1.1	19	3.3	34	6.0	60	2.6

[illegible]

invisible	Female	–	–	1	0.4	1	0.4	1	0.4	3	0.3
	Total	–	–	1	0.2	1	0.2	1	0.2	3	0.1
	Male	1	0.3	5	1.8	9	3.2	19	6.7	34	3.0
	Female	1	0.4	2	0.7	13	4.6	23	8.2	39	3.5
	Total	2	0.3	7	1.2	22	3.9	42	7.4	73	3.2

Fundus Photography in the Right Eye
Macular Degeneration

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	2	0.7	2	0.7	1	0.4	4	1.4	9	0.8
	Female	–	–	–	–	2	0.7	5	1.8	7	0.6
	Total	2	0.3	2	0.4	3	0.5	9	1.6	16	0.7
nothing	Male	278	95.5	254	90.1	252	89.0	237	83.7	1021	89.6
	Female	276	97.9	269	96.4	245	86.0	221	78.4	1011	89.6
	Total	554	96.7	523	93.2	497	87.5	458	81.1	2032	89.6
drusen	Male	3	1.0	12	4.3	12	4.2	9	3.2	36	3.2
	Female	4	1.4	5	1.8	6	2.1	15	5.3	30	2.7
	Total	7	1.2	17	3.0	18	3.2	24	4.2	66	2.9
atrophic change	Male	2	0.7	3	1.1	–	–	2	0.7	7	0.6
	Female	–	–	–	–	2	0.7	4	1.4	6	0.5
	Total	2	0.3	3	0.5	2	0.4	6	1.1	13	0.6
exudative change	Male	–	–	1	0.4	2	0.7	1	0.4	4	0.4
	Female	–	–	–	–	1	0.4	2	0.7	3	0.3
	Total	–	–	1	0.2	3	0.5	3	0.5	7	0.3
epiretinal membrane	Male	1	0.3	1	0.4	–	–	3	1.1	5	0.4
	Female	–	–	–	–	5	1.8	3	1.1	8	0.7
	Total	1	0.2	1	0.2	5	0.9	6	1.1	13	0.6
others	Male	–	–	1	0.4	3	1.1	1	0.4	5	0.4
	Female	–	–	–	–	1	0.4	3	1.1	4	0.4
	Total	–	–	1	0.2	4	0.7	4	0.7	9	0.4
invisible	Male	5	1.7	8	2.8	13	4.6	26	9.2	52	4.6
	Female	2	0.7	5	1.8	23	8.1	29	10.3	59	5.2
	Total	7	1.2	13	2.3	36	6.3	55	9.7	111	4.9

Fundus Photography in the Left Eye
Diabetic Retinopathy

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	3	1.0	2	0.7	–	–	3	1.1	8	0.7
	Female	–	–	–	–	1	0.4	5	1.8	6	0.5

	Total	3	0.5	2	0.4	1	0.2	8	1.4	14	0.6
nothing	Male	285	97.9	275	97.5	272	96.1	258	91.2	1090	95.7
	Female	281	99.6	276	98.9	272	95.4	254	90.1	1083	96.0
	Total	566	98.8	551	98.2	544	95.8	512	90.6	2173	95.9
simple	Male	–	–	1	0.4	–	–	2	0.7	3	0.3
	Female	1	0.4	–	–	1	0.4	1	0.4	3	0.3
	Total	1	0.2	1	0.2	1	0.2	3	0.5	6	0.3
preproliferative	Male	–	–	–	–	4	1.4	–	–	4	0.4
	Female	–	–	–	–	–	–	1	0.4	1	0.1
	Total	–	–	–	–	4	0.7	1	0.2	5	0.2
invisible	Male	3	1.0	4	1.4	7	2.5	20	7.1	34	3.0
	Female	–	–	3	1.1	11	3.9	21	7.4	35	3.1
	Total	3	0.5	7	1.2	18	3.2	41	7.3	69	3.0

Fundus Photography in the Left Eye
Arteriosclerosis (Keith-Wagener)

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	3	1.0	2	0.7	–	–	3	1.1	8	0.7
	Female	–	–	–	–	1	0.4	4	1.4	5	0.4
	Total	3	0.5	2	0.4	1	0.2	7	1.2	13	0.6
nothing	Male	204	70.1	139	49.3	109	38.5	38	13.4	490	43.0
	Female	206	73.0	165	59.1	91	31.9	48	17.0	510	45.2
	Total	410	71.6	304	54.2	200	35.2	86	15.2	1000	44.1
K–W I	Male	74	25.4	123	43.6	140	49.5	177	62.5	514	45.1
	Female	71	25.2	101	36.2	166	58.2	162	57.4	500	44.3
	Total	145	25.3	224	39.9	306	53.9	339	60.0	1014	44.7
K–W IIa	Male	6	2.1	15	5.3	24	8.5	39	13.8	84	7.4
	Female	5	1.8	9	3.2	16	5.6	39	13.8	69	6.1
	Total	11	1.9	24	4.3	40	7.0	78	13.8	153	6.7
K–W IIb	Male	1	0.3	–	–	1	0.4	3	1.1	5	0.4
	Female	–	–	1	0.4	–	–	2	0.7	3	0.3
	Total	1	0.2	1	0.2	1	0.2	5	0.9	8	0.4
K–W III	Male	–	–	–	–	–	–	1	0.4	1	0.1
	Female	–	–	–	–	–	–	2	0.7	2	0.2
	Total	–	–	–	–	–	–	3	0.5	3	0.1
invisible	Male	3	1.0	3	1.1	9	3.2	22	7.8	37	3.2
	Female	–	–	3	1.1	11	3.9	25	8.9	39	3.5
	Total	3	0.5	6	1.1	20	3.5	47	8.3	76	3.4

Fundus Photography in the Left Eye
Macular Degeneration

		40–49yr		50–59yr		60–69yr		70–79yr		Total	
		N	%	N	%	N	%	N	%	N	%
not recorded	Male	3	1.0	2	0.7	–	–	3	1.1	8	0.7
	Female	–	–	–	–	1	0.4	4	1.4	5	0.4
	Total	3	0.5	2	0.4	1	0.2	7	1.2	13	0.6
nothing	Male	273	93.8	256	90.8	255	90.1	223	78.8	1007	88.4
	Female	275	97.5	264	94.6	257	90.2	221	78.4	1017	90.2
	Total	548	95.6	520	92.7	512	90.1	444	78.6	2024	89.3
drusen	Male	8	2.7	9	3.2	9	3.2	14	4.9	40	3.5
	Female	2	0.7	4	1.4	5	1.8	13	4.6	24	2.1
	Total	10	1.7	13	2.3	14	2.5	27	4.8	64	2.8
atrophic change	Male	1	0.3	2	0.7	–	–	3	1.1	6	0.5
	Female	2	0.7	1	0.4	1	0.4	3	1.1	7	0.6
	Total	3	0.5	3	0.5	1	0.2	6	1.1	13	0.6
exudative change	Male	–	–	–	–	–	–	2	0.7	2	0.2
	Female	–	–	–	–	–	–	1	0.4	1	0.1
	Total	–	–	–	–	–	–	3	0.5	3	0.1
epiretinal membrane	Male	–	–	1	0.4	1	0.4	3	1.1	5	0.4
	Female	–	–	–	–	2	0.7	1	0.4	3	0.3
	Total	–	–	1	0.2	3	0.5	4	0.7	8	0.4
others	Male	–	–	–	–	–	–	1	0.4	1	0.1
	Female	1	0.4	–	–	–	–	1	0.4	2	0.2
	Total	1	0.2	–	–	–	–	2	0.4	3	0.1
invisible	Male	6	2.1	12	4.3	18	6.4	34	12.0	70	6.1
	Female	2	0.7	10	3.6	19	6.7	38	13.5	69	6.1
	Total	8	1.4	22	3.9	37	6.5	72	12.7	139	6.1

11. Specular microscope

Corneal thickness and endothelial cell density were obtained with the Topcon SP-2000 specular microscope.

Corneal Thickness in the Right Eye(mm)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	0.522	0.034	136	0.518	0.029	130	0.516	0.032	148	0.512	0.034	140	0.517	0.032	554
Female	0.515	0.037	134	0.508	0.035	139	0.511	0.034	146	0.508	0.034	144	0.510	0.035	563
Total	0.519	0.035	270	0.513	0.033	269	0.513	0.033	294	0.510	0.034	284	0.514	0.034	1117

Corneal Thickness in the Left Eye (mm)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N

Male	0.525	0.032	135	0.522	0.029	128	0.522	0.034	149	0.518	0.035	141	0.522	0.033	553
Female	0.518	0.035	136	0.512	0.034	140	0.518	0.033	146	0.512	0.034	143	0.515	0.034	565
Total	0.521	0.034	271	0.517	0.032	268	0.520	0.033	295	0.515	0.035	284	0.518	0.034	1118

Endothelial cell density of Cornea in the Right Eye (cells/mm²)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2585.7	334.2	131	2568.7	313.0	129	2486.5	375.1	143	2545.7	374.9	139	2545.2	352.5	542
Female	2498.5	371.0	129	2515.1	387.9	130	2456.7	375.3	142	2322.4	430.4	137	2446.6	398.3	538
Total	2542.4	355.0	260	2541.8	352.9	259	2471.6	374.9	285	2434.8	417.9	276	2496.1	379.0	1080

Endothelial cell density of Cornea in the Left Eye (cells/mm²)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2575.8	332.3	130	2529.2	364.4	130	2458.9	408.5	146	2532.2	402.7	139	2522.3	380.9	545
Female	2544.8	374.1	133	2452.1	359.3	134	2450.6	352.7	142	2392.2	390.1	141	2458.8	372.3	550
Total	2560.1	353.7	263	2490.1	363.2	264	2454.8	381.4	288	2461.7	401.8	280	2490.4	377.8	1095

2) Auditory system

1. Pure-tone audiometry (Audiometer RION AA-73A)

If no response occurs at the maximum output level of this audiometer, the threshold is treated as following.

Air conduction			Bone conduction		
Maximum output level		Inputed level	Maximum output level		Inputed level
500Hz	100	105	65	70	70
1000Hz	100	105	70	75	75
2000Hz	100	105	70	75	75
4000Hz	100	105	60	65	65
8000Hz	95	100			

Air conduction threshold of the right ear at 500Hz (dBHL)

	40–49yr			50–59yr			60–69yr			70–79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	11.5	8.6	282	15.1	12.6	279	18.8	12.6	284	24.6	15.5	282	17.5	13.4	1127
Male	11.5	8.2	291	14.8	12.2	281	17.6	12.4	283	23.8	15.8	282	16.9	13.2	1137
Total	11.5	8.4	573	15.0	12.4	560	18.2	12.5	567	24.2	15.7	564	17.2	13.3	2264

Air conduction threshold of the right ear at 1000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	8.2	8.5	282	11.9	11.6	279	16.9	13.0	284	24.1	15.9	282	15.3	13.9	1127
Male	9.8	8.9	291	14.2	13.4	281	18.3	13.8	283	26.4	17.4	282	17.1	15.0	1137
Total	9.0	8.7	573	13.1	12.6	560	17.6	13.4	567	25.2	16.7	564	16.2	14.5	2264

Air conduction threshold of the right ear at 2000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	11.6	7.8	282	15.6	12.6	279	22.3	13.5	284	30.5	16.8	282	20.0	14.9	1127
Male	12.6	10.7	291	18.0	13.6	281	25.5	15.7	283	36.2	18.8	282	23.0	17.4	1137
Total	12.1	9.4	573	16.8	13.1	560	23.9	14.7	567	33.4	18.0	564	21.5	16.3	2264

Air conduction threshold of the right ear at 4000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	10.4	9.2	282	16.2	14.6	279	25.1	17.4	284	36.9	19.7	282	22.2	18.6	1127
Male	18.0	16.2	291	29.1	19.5	281	38.4	20.4	283	51.1	19.9	282	34.0	22.6	1137
Total	14.3	13.7	573	22.6	18.4	560	31.8	20.1	567	44.0	21.0	564	28.1	21.5	2264

Air conduction threshold of the right ear at 8000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	18.1	12.9	282	28.2	17.2	279	40.3	20.6	284	59.8	21.0	282	36.6	23.9	1127
Male	23.1	15.9	291	34.3	19.1	281	48.0	21.2	283	65.2	18.4	282	42.5	24.5	1137
Total	20.6	14.7	573	31.3	18.4	560	44.1	21.3	567	62.5	19.9	564	39.6	24.4	2264

Bone conduction threshold of the right ear at 500Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	26.8	11.3	17	35.5	13.6	20	31.5	12.7	40	38.0	10.4	81	34.8	12.0	158
Male	34.2	16.3	6	30.6	13.2	24	31.8	13.2	44	37.0	14.4	85	34.5	14.1	159
Total	28.7	12.8	23	32.8	13.4	44	31.7	12.9	84	37.5	12.6	166	34.7	13.1	317

Bone conduction threshold of the right ear at 1000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	29.5	14.6	10	34.0	10.8	20	35.8	12.0	36	39.5	10.1	92	37.3	11.2	158
Male	34.2	26.2	6	36.2	14.9	25	34.5	16.3	52	40.0	14.6	105	37.8	15.6	188
Total	31.3	19.0	16	35.2	13.1	45	35.1	14.6	88	39.7	12.6	197	37.6	13.8	346

Bone conduction threshold of the right ear at 2000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	31.5	10.1	13	35.2	13.3	32	37.0	9.4	72	42.0	11.7	135	39.1	11.6	252
Male	43.2	16.5	11	38.6	11.9	39	39.6	12.6	97	45.5	13.8	169	42.8	13.6	316
Total	36.9	14.4	24	37.0	12.6	71	38.5	11.4	169	43.9	13.0	304	41.2	12.9	568

Bone conduction threshold of the right ear at 4000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	38.9	11.9	9	34.6	12.8	40	38.1	10.6	96	42.5	12.4	173	40.1	12.2	318
Male	41.7	12.1	47	42.0	11.1	111	44.6	11.6	180	49.1	11.2	234	45.7	11.7	572
Total	41.3	12.0	56	40.1	12.0	151	42.3	11.6	276	46.3	12.1	407	43.7	12.2	890

Air conduction threshold of the left ear at 500Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	11.6	9.6	282	13.6	9.3	279	18.6	13.3	284	24.0	15.0	282	17.0	13.0	1127
Male	11.9	9.7	291	13.8	12.5	281	17.3	14.4	283	23.6	15.7	281	16.6	14.0	1136
Total	11.8	9.7	573	13.7	11.0	560	18.0	13.9	567	23.8	15.4	563	16.8	13.5	2263

Air conduction threshold of the left ear at 1000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	6.6	10.0	282	8.9	8.4	279	14.8	13.3	284	21.6	16.6	282	13.0	13.7	1127
Male	9.7	10.0	291	12.9	13.1	281	17.5	16.1	283	26.2	17.8	281	16.5	15.8	1136
Total	8.1	10.1	573	10.9	11.1	560	16.1	14.8	567	23.9	17.3	563	14.8	14.9	2263

Air conduction threshold of the left ear at 2000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	10.0	9.6	282	13.6	9.8	279	20.4	14.3	284	27.9	17.1	282	18.0	14.8	1127

Male	12.5	11.2	291	18.3	15.3	281	25.2	17.4	283	35.8	19.4	281	22.9	18.3	1136
Total	11.3	10.6	573	16.0	13.0	560	22.8	16.1	567	31.8	18.7	563	20.4	16.8	2263

Air conduction threshold of the left ear at 4000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	9.1	9.9	282	15.5	12.3	279	24.6	16.6	284	37.7	34.8	282	21.8	23.4	1127
Male	18.3	15.3	291	28.2	18.4	281	39.3	20.3	283	51.2	18.9	281	34.1	22.1	1136
Total	13.8	13.7	573	21.9	16.9	560	31.9	19.9	567	44.5	28.8	563	28.0	23.6	2263

Air conduction threshold of the left ear at 8000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	18.6	14.2	282	28.2	17.4	279	42.0	19.8	284	59.0	20.5	282	37.0	23.7	1127
Male	22.6	15.8	291	34.5	20.4	281	50.1	21.8	283	66.1	18.2	281	43.2	25.2	1136
Total	20.7	15.2	573	31.4	19.2	560	46.0	21.2	567	62.6	19.7	563	40.1	24.6	2263

Bone conduction threshold of the left ear at 500Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	31.5	11.3	13	28.2	7.7	19	32.2	12.6	48	36.8	11.3	80	34.0	11.7	160
Male	20.5	29.7	10	27.7	15.9	22	31.3	14.8	35	38.6	15.2	88	34.2	17.2	155
Total	26.7	21.5	23	27.9	12.6	41	31.8	13.5	83	37.7	13.5	168	34.1	14.6	315

Bone conduction threshold of the left ear at 1000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	40.0	16.0	8	35.6	10.8	8	35.9	13.2	29	41.2	11.4	73	39.4	12.3	118
Male	30.6	12.1	8	29.2	15.5	25	36.2	16.6	45	39.0	14.4	117	36.7	15.3	195
Total	35.3	14.5	16	30.8	14.6	33	36.1	15.3	74	39.8	13.3	190	37.8	14.2	313

Bone conduction threshold of the left ear at 2000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	40.0	14.7	7	36.4	8.7	21	38.2	9.2	65	43.2	11.0	123	40.9	10.7	216
Male	36.7	16.3	15	37.8	13.3	47	41.8	12.2	90	45.9	14.9	166	43.1	14.4	318
Total	37.7	15.6	22	37.4	12.0	68	40.3	11.2	155	44.8	13.4	289	42.2	13.0	534

Bone conduction threshold of the left ear at 4000Hz (dBHL)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	32.7	13.5	11	35.6	11.5	35	39.5	11.5	89	44.2	10.5	164	41.4	11.5	299
Male	39.0	11.3	56	39.9	11.0	118	45.2	11.4	181	49.3	11.6	243	45.2	12.0	598
Total	38.0	11.8	67	38.9	11.2	153	43.3	11.7	270	47.2	11.4	407	43.9	12.0	897

2. Impedance Audiometry

Tympanometric peak pressure in the single frequency tympanogram at 226Hz for the right ear (daPa)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	1.3	14.0	263	-5.9	35.9	256	-14.5	46.9	257	-11.8	43.6	246	-7.6	37.6	1022
Male	-5.1	32.0	269	-7.6	37.2	263	-9.4	44.2	242	-13.9	46.0	250	-8.9	40.1	1024
Total	-1.9	25.0	532	-6.8	36.5	519	-12.1	45.6	499	-12.9	44.8	496	-8.3	38.9	2046

Static compliance in the single frequency tympanogram at 226Hz for the right ear (ml)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	0.67	0.52	263	0.70	0.63	256	0.66	0.62	257	0.62	0.59	246	0.66	0.59	1022
Male	0.83	0.68	269	0.92	0.88	263	0.87	0.85	242	0.82	0.74	250	0.86	0.79	1024
Total	0.75	0.61	532	0.82	0.78	519	0.76	0.75	499	0.72	0.67	496	0.76	0.71	2046

Tympanometric peak pressure in the single frequency tympanogram at 226Hz for the left ear (daPa).

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	1.2	19.0	256	-3.7	33.2	257	-9.8	39.3	255	-9.7	39.4	244	-5.5	34.0	1012
Male	-3.9	28.7	267	-5.8	30.8	260	-8.2	44.7	246	-13.8	51.6	247	-7.8	39.9	1020
Total	-1.4	24.6	523	-4.8	32.0	517	-9.0	42.0	501	-11.8	46.0	491	-6.6	37.1	2032

Static compliance in the single frequency tympanogram at 226Hz for the left ear (ml)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	0.64	0.65	256	0.67	0.59	257	1.05	5.95	255	0.58	0.49	244	0.74	3.03	1012
Male	0.81	0.71	267	0.84	0.79	260	0.91	0.83	246	0.82	0.83	247	0.84	0.79	1020
Total	0.73	0.69	523	0.75	0.70	517	0.98	4.28	501	0.70	0.69	491	0.79	2.21	2032

Middle ear resonance frequency for the right ear (Hz)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	900.8	252.4	259	865.1	240.9	244	906.1	265.6	246	906.7	257.1	231	894.6	254.3	980
Male	823.2	216.9	269	799.2	229.0	261	825.5	248.8	236	851.5	274.0	240	824.3	242.5	1006
Total	861.3	237.9	528	831.1	236.9	505	866.6	260.4	482	878.6	267.0	471	859.0	250.8	1986

Middle ear resonance frequency for the left ear (Hz)

	40-49yr			50-59yr			60-69yr			70-79yr			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Female	898.8	563.5	252	873.0	237.1	246	905.5	255.8	246	906.3	246.1	230	895.7	356.4	974
Male	841.7	242.4	266	810.3	229.6	257	834.2	229.1	228	799.4	237.8	232	821.8	235.2	983
Total	869.5	430.3	518	841.0	235.2	503	871.2	245.6	474	852.6	247.5	462	858.6	303.8	1957