

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

	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	12.0	8.4	273	16.4	13.6	294	18.4	13.5	291	25.4	16.0	275	29.1	16.0	17	18.2	14.1	1150
Female	12.9	10.3	261	15.0	10.3	284	19.6	12.2	270	26.4	15.7	268	32.3	21.0	22	18.7	13.6	1105
Total	12.4	9.4	534	15.7	12.1	578	19.0	12.9	561	25.9	15.8	543	30.9	18.8	39	18.5	13.9	2255

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

	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	10.8	8.5	273	15.4	14.2	294	18.9	14.7	291	27.9	19.0	275	39.1	16.4	17	18.5	16.0	1150
Female	9.4	11.2	261	11.0	11.4	284	17.1	14.1	270	24.8	16.7	268	31.8	20.5	22	15.9	15.1	1105
Total	10.1	9.9	534	13.3	13.1	578	18.0	14.4	561	26.4	17.9	543	35.0	19.0	39	17.2	15.6	2255

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

	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	14.7	10.5	273	20.7	14.6	294	28.1	17.9	291	39.3	19.1	275	49.7	22.0	17	26.0	18.6	1150
Female	13.2	11.4	261	17.0	12.5	284	24.3	14.9	270	32.7	17.6	268	42.0	20.9	22	22.2	16.4	1105
Total	14.0	11.0	534	18.9	13.7	578	26.3	16.6	561	36.0	18.6	543	45.4	21.5	39	24.2	17.6	2255

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

	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	17.3	14.0	273	29.2	19.1	294	37.7	19.4	291	52.9	17.1	275	60.6	17.1	17	34.7	21.9	1150
Female	11.4	11.8	261	16.6	13.6	284	25.3	17.2	270	37.6	20.0	268	48.9	22.7	22	23.2	19.2	1105
Total	14.4	13.3	534	23.0	17.8	578	31.7	19.4	561	45.3	20.1	543	54.0	21.1	39	29.1	21.4	2255

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

	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	20.8	14.9	273	34.0	21.6	294	47.6	21.3	291	66.0	18.2	275	70.3	17.9	17	42.5	25.5	1150
Female	15.9	13.0	261	26.9	18.3	284	39.3	19.9	270	58.8	20.4	268	70.0	23.8	22	35.9	24.5	1105
Total	18.4	14.2	534	30.5	20.4	578	43.6	21.0	561	62.4	19.6	543	70.1	21.2	39	39.3	25.2	2255

Bone conduction threshold of left ear at 250Hz (dBHL)

	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	16.6	6.1	222	19.0	7.3	230	20.4	8.6	216	26.2	11.1	203	30.8	11.8	12	20.5	9.2	883
Female	16.2	6.8	212	18.9	7.0	213	21.8	8.7	196	26.8	10.5	212	32.8	15.7	16	21.1	9.5	849
Total	16.4	6.4	434	18.9	7.2	443	21.1	8.7	412	26.5	10.8	415	32.0	14.0	28	20.8	9.4	1732

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

	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	12.3	6.3	222	15.6	7.6	230	17.5	9.6	216	25.1	12.7	203	31.3	13.3	12	17.6	10.5	883
Female	13.5	7.8	212	15.0	7.3	213	19.5	8.7	196	24.9	11.8	213	33.1	16.2	16	18.5	10.4	850
Total	12.9	7.1	434	15.3	7.5	443	18.4	9.2	412	25.0	12.2	416	32.3	14.8	28	18.0	10.5	1733

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

	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	9.9	6.9	222	13.0	8.8	230	17.1	11.4	216	26.1	15.5	203	37.9	16.6	12	16.6	12.8	883
Female	9.9	8.0	212	11.2	9.1	213	16.7	9.6	196	23.8	13.4	213	33.4	16.5	16	15.7	12.0	850
Total	9.9	7.4	434	12.1	9.0	443	16.9	10.5	412	24.9	14.5	416	35.4	16.4	28	16.2	12.4	1733

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

	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	15.7	9.4	222	19.5	10.7	230	26.5	14.0	216	38.3	16.4	203	47.9	23.1	12	25.0	15.7	883
Female	13.8	8.3	212	17.9	10.8	213	24.3	11.1	196	31.8	14.7	213	43.1	17.2	16	22.3	13.7	850
Total	14.8	8.9	434	18.7	10.8	443	25.4	12.7	412	35.0	15.9	416	45.2	19.7	28	23.7	14.8	1733

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

	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	16.4	13.6	222	26.3	15.5	230	34.7	16.5	216	48.2	14.0	203	52.9	15.7	12	31.3	19.0	883
Female	11.4	8.6	212	16.7	11.9	213	23.5	13.3	196	34.7	15.9	213	46.9	19.1	16	22.0	15.9	850
Total	13.9	11.7	434	21.7	14.7	443	29.4	16.0	412	41.3	16.4	416	49.5	17.7	28	26.7	18.1	1733

2. Impedance Audiometry

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

	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	2.8	25.6	114	0.0	21.2	130	-5.2	36.4	140	-4.8	35.4	133	2.5	18.1	8	-2.0	30.6	525
Female	0.7	17.3	117	1.9	30.5	123	-8.6	41.9	117	-4.4	33.3	109	3.2	8.4	11	-2.4	31.8	477
Total	1.8	21.8	231	0.9	26.1	253	-6.8	38.9	257	-4.6	34.4	242	2.9	12.9	19	-2.2	31.1	1002

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

	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	0.93	0.79	114	1.09	0.99	130	1.06	1.05	140	0.94	1.19	133	1.28	1.27	8	1.01	1.03	525
Female	0.66	0.40	117	0.81	0.82	123	0.69	0.54	117	0.58	0.46	109	0.81	0.73	11	0.69	0.59	477
Total	0.79	0.64	231	0.95	0.92	253	0.89	0.88	257	0.78	0.95	242	1.01	0.99	19	0.86	0.86	1002

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

	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	2.4	17.1	158	0.6	22.1	162	-2.3	29.3	146	-6.6	39.3	132	-33.1	85.1	8	-1.7	29.2	606
Female	3.2	14.6	142	0.5	22.7	158	1.0	21.8	146	-6.7	34.1	151	-22.8	61.5	9	-0.9	25.6	606
Total	2.8	16.0	300	0.5	22.3	320	-0.7	25.9	292	-6.6	36.6	283	-27.6	71.4	17	-1.3	27.5	1212

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

	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	0.82	0.65	158	0.91	0.81	162	0.97	0.85	146	0.94	0.79	132	0.49	0.19	8	0.90	0.77	606
Female	0.60	0.37	142	0.68	0.55	158	0.68	0.61	146	0.59	0.51	151	0.71	0.63	9	0.64	0.52	606
Total	0.72	0.55	300	0.80	0.70	320	0.83	0.75	292	0.75	0.68	283	0.61	0.48	17	0.77	0.67	1212

Middle ear resonance frequency for right ear (Hz)

	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	854.9	201.0	112	810.7	224.3	126	808.9	238.1	135	795.6	235.8	124	818.8	272.5	8	816.4	227.0	505
Female	846.2	247.3	117	859.8	212.5	117	873.2	260.2	112	912.6	230.5	99	1016.7	185.4	9	874.2	238.5	454
Total	850.4	225.4	229	834.4	219.6	243	838.1	249.9	247	847.5	240.1	223	923.5	245.0	17	843.8	234.2	959

Middle ear resonance frequency for left ear (Hz)

	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	801.0	187.2	157	827.8	213.3	158	817.8	230.6	146	825.6	239.2	117	737.5	303.3	8	816.5	217.7	586
Female	855.8	211.6	137	837.7	251.0	154	872.0	235.8	143	868.7	242.3	139	857.1	222.5	7	858.1	235.6	580
Total	826.5	200.5	294	832.7	232.4	312	844.6	234.4	289	849.0	241.4	256	793.3	266.5	15	837.2	227.6	1166

3. Distortion product otoacoustic emission (Otoacoustic Distortion Product Analyser, ILO92 (F) Otodynamics)

2f1-f2 DPOAEs were measured by ILO 92 with the following parameters for the DP-gram: ratio of primary tones f2 / f1 =1.22 ; stimulus intensity of primary tones F1 =70dB SPL and F2 =70dB SPL. DP-gram were recorded in 8 points/octave over a frequency range of the f2 which extended from 1001 to 6165 Hz. In this manner, 22 points in total were measured.

DP amplitudes above the noise floor at seven f2 frequencies (f2 =1001, 1416, 2002, 3088, 4004, 5652 and 6165) were analyzed by age groups.

DP amplitudes above the noise floor at f2=1001 Hz

	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	6.9	7.2	266	4.1	7.3	282	2.2	7.1	273	-0.5	7.4	252	-2.3	5.7	15	3.1	7.7	1088
Female	7.3	7.0	249	5.1	8.0	272	2.3	7.1	261	-0.7	7.1	254	-2.9	7.3	19	3.4	7.9	1055
Total	7.1	7.1	515	4.6	7.6	554	2.3	7.1	534	-0.6	7.2	506	-2.6	6.5	34	3.3	7.8	2143

DP amplitudes above the noise floor at f2=1416 Hz

	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	12.0	7.3	266	9.3	7.6	282	7.4	8.4	273	4.0	8.9	252	2.0	11.1	15	8.2	8.6	1088
Female	12.2	6.8	249	10.5	7.9	272	8.1	7.4	261	4.8	7.6	254	-1.2	9.8	19	8.7	8.1	1055
Total	12.1	7.1	515	9.9	7.8	554	7.8	7.9	534	4.4	8.3	506	0.2	10.4	34	8.4	8.4	2143

DP amplitudes above the noise floor at f2=2002 Hz

	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	10.7	7.5	266	9.1	8.1	282	6.7	9.5	273	3.0	10.4	252	-0.9	14.7	15	7.4	9.5	1088
Female	13.3	7.2	249	10.2	8.5	272	8.3	8.4	261	6.2	8.7	254	-0.4	7.0	19	9.3	8.7	1055
Total	12.0	7.5	515	9.6	8.3	554	7.5	9.0	534	4.6	9.7	506	-0.6	10.9	34	8.3	9.2	2143

DP amplitudes above the noise floor at f2=3088 Hz

	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	10.2	8.4	266	7.1	8.9	282	4.3	8.9	273	-0.4	8.7	252	-2.0	9.0	15	5.3	9.5	1088
Female	12.2	8.1	249	8.5	8.2	272	6.8	8.5	261	2.8	8.8	254	-1.7	5.4	19	7.4	9.1	1055
Total	11.1	8.3	515	7.8	8.6	554	5.5	8.8	534	1.2	8.9	506	-1.8	7.1	34	6.3	9.4	2143

DP amplitudes above the noise floor at f2=4004 Hz

	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	13.0	8.4	266	7.9	10.0	282	4.3	10.2	273	-2.1	9.0	252	-2.4	8.5	15	5.8	10.9	1088
Female	15.6	7.4	249	11.0	8.8	272	7.8	9.4	261	2.7	9.4	254	-1.4	7.0	19	9.1	10.0	1055
Total	14.3	8.0	515	9.5	9.5	554	6.0	9.9	534	0.3	9.5	506	-1.9	7.6	34	7.4	10.6	2143

DP amplitudes above the noise floor at f2=5652 Hz

	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	13.1	10.3	266	6.6	10.3	282	2.6	9.3	273	-3.6	8.1	252	-6.0	6.4	15	4.6	11.3	1088
Female	18.1	8.3	249	13.2	10.1	272	8.3	10.9	261	1.6	10.6	254	-2.4	7.2	19	10.1	11.8	1055
Total	15.5	9.7	515	9.8	10.7	554	5.4	10.5	534	-1.0	9.8	506	-4.0	7.0	34	7.3	11.8	2143

DP amplitudes above the noise floor at f2=6165 Hz

	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	12.0	10.0	266	5.9	9.7	282	1.3	9.8	273	-5.3	26.2	252	-5.7	5.4	15	3.5	16.5	1088
Female	15.8	9.5	249	11.0	9.6	272	6.3	10.2	261	0.1	9.7	254	-3.1	4.4	19	8.1	11.3	1055
Total	13.8	9.9	515	8.4	10.0	554	3.7	10.3	534	-2.6	19.9	506	-4.2	5.0	34	5.8	14.4	2143

IX. Physiological Examinations

IX. Physiological Examinations

1) Cardiovascular system

- 1. Blood pressure and pulse rate**
- 2. Pulse wave**
- 3. Electrocardiography**
- 4. Ultrasonic cardiography**
- 5. Intima-media thickness of carotid artery**

2) Respiratory system

- 1. Pulmonary functions**
- 2. Blood oxygen saturation**

1) Cardiovascular system

1. Blood pressure and pulse rate

(Automatic blood pressure analyzer, BP-204RV, Colin, Inc.,)

Systolic Blood Pressure (mmHg)

	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	118.9	15.2	273	121.3	16.2	295	125.4	19.8	290	127.1	19.4	273	125.0	14.0	17	123.2	18.0	1148
Female	111.4	16.1	258	117.7	18.2	283	123.5	20.2	271	130.1	19.3	266	131.3	22.7	22	120.9	19.8	1100
Total	115.2	16.1	531	119.6	17.3	578	124.5	20.0	561	128.6	19.4	539	128.6	19.4	39	122.1	18.9	2248

Diastolic Blood Pressure (mmHg)

	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	75.3	10.3	273	77.0	10.3	295	77.2	11.5	290	75.8	11.1	273	72.2	7.8	17	76.3	10.8	1148
Female	69.1	10.0	258	72.7	11.0	283	74.6	11.7	271	75.5	11.4	266	73.7	12.2	22	73.0	11.3	1100
Total	72.3	10.6	531	74.9	10.8	578	75.9	11.7	561	75.6	11.3	539	73.1	10.4	39	74.7	11.2	2248

Pulse Rate (/min)

	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	66.3	8.9	273	67.0	9.4	295	68.0	10.3	289	69.9	11.0	273	68.2	11.8	17	67.8	10.1	1147
Female	70.0	9.9	258	70.3	9.6	283	71.1	10.4	271	74.1	10.3	265	74.7	9.1	22	71.4	10.2	1099
Total	68.1	9.6	531	68.6	9.7	578	69.5	10.5	560	72.0	10.9	538	71.8	10.8	39	69.6	10.3	2246

2. Pulse wave

(Digital plethysmography, Omniace RT3300, NEC Corp.,)

S X (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	6.3	0.9	256	6.5	0.8	268	6.6	0.9	275	6.5	1.0	266	6.6	0.8	17	6.5	0.9	1082
Female	6.4	0.8	252	6.5	0.8	267	6.5	0.8	262	6.6	0.9	258	6.4	0.8	22	6.5	0.8	1061
Total	6.4	0.9	508	6.5	0.8	535	6.6	0.9	537	6.6	0.9	524	6.5	0.8	39	6.5	0.9	2143

S S (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	24.1	3.6	256	24.1	3.6	268	23.8	3.9	275	23.2	4.1	266	23.2	4.6	17	23.8	3.8	1082
Female	23.4	3.3	252	23.5	3.4	267	23.2	3.5	262	22.3	3.5	258	21.2	3.2	22	23.1	3.4	1061
Total	23.8	3.5	508	23.8	3.5	535	23.5	3.7	537	22.8	3.8	524	22.1	3.9	39	23.4	3.7	2143

Corrected Up-stroke Time (sec)

	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	0.258	0.029	256	0.266	0.025	268	0.270	0.027	275	0.272	0.029	266	0.277	0.023	17	0.267	0.028	1082
Female	0.266	0.023	252	0.270	0.022	267	0.272	0.024	262	0.279	0.024	258	0.276	0.023	22	0.272	0.024	1061
Total	0.262	0.027	508	0.268	0.024	535	0.271	0.026	537	0.275	0.027	524	0.277	0.023	39	0.269	0.026	2143

3. Electrocardiography

(Automatic EKG analyzer, Kartizer5500, NEC Corp.)

Heart Rate (/min)

	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	62.5	8.8	273	63.0	9.2	295	64.3	11.6	291	66.2	12.5	275	66.3	13.4	17	64.0	10.8	1151
Female	64.7	9.6	261	64.7	9.7	283	66.0	10.7	269	68.9	10.9	268	71.0	11.1	21	66.2	10.4	1102
Total	63.6	9.3	534	63.8	9.5	578	65.1	11.2	560	67.6	11.8	543	68.9	12.2	38	65.1	10.6	2253

PR-interval (msec)

	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	155.6	21.4	273	162.6	25.6	294	161.3	21.7	286	167.5	24.0	264	167.8	24.4	16	161.8	23.6	1133
Female	149.6	20.4	260	155.0	20.3	282	156.3	20.5	266	158.1	24.8	265	157.7	21.3	21	154.8	21.7	1094
Total	152.7	21.1	533	158.9	23.4	576	158.9	21.2	552	162.7	24.9	529	162.1	22.9	37	158.4	23.0	2227

QRS-width (msec)

	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	90.7	9.8	273	91.2	12.1	295	91.3	13.4	291	93.7	16.3	275	88.5	11.6	17	91.7	13.1	1151
Female	81.4	9.1	261	83.3	10.1	283	85.4	12.1	269	84.4	12.1	268	85.5	14.7	21	83.7	11.1	1102
Total	86.2	10.5	534	87.4	11.8	578	88.5	13.1	560	89.1	15.1	543	86.8	13.3	38	87.8	12.8	2253

QT-interval (msec)

	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	393.0	26.9	273	395.2	27.6	295	397.5	30.6	291	398.0	31.5	275	403.5	33.5	17	396.1	29.3	1151
Female	399.2	27.7	261	402.4	29.9	283	405.2	31.6	268	397.4	31.2	268	396.8	31.7	21	401.0	30.3	1101
Total	396.0	27.5	534	398.7	28.9	578	401.2	31.3	559	397.7	31.3	543	399.8	32.3	38	398.5	29.9	2252

QTc-interval (msec)

	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	398.2	19.5	273	401.9	20.4	295	407.5	20.9	291	413.7	23.7	275	419.4	26.9	17	405.5	22.0	1151
Female	411.3	20.5	261	414.6	20.4	283	421.0	22.9	268	422.3	22.5	268	427.7	19.1	21	417.5	22.0	1101
Total	404.7	21.0	534	408.1	21.4	578	414.0	22.8	559	417.9	23.5	543	424.0	23.0	38	411.4	22.8	2252

S (VI) -height (mV)

	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	-0.876	0.396	273	-0.853	0.421	292	-0.852	0.498	285	-0.805	0.432	258	-0.768	0.334	17	-0.846	0.438	1125
Female	-0.841	0.356	261	-0.790	0.339	281	-0.739	0.423	261	-0.721	0.465	260	-0.799	0.391	20	-0.774	0.400	1083
Total	-0.859	0.377	534	-0.822	0.384	573	-0.798	0.467	546	-0.762	0.451	518	-0.784	0.361	37	-0.810	0.421	2208

R (V5) -height (mV)

	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	1.628	0.502	273	1.703	0.600	295	1.744	0.607	291	1.687	0.653	275	1.762	0.722	17	1.693	0.596	1151
Female	1.287	0.430	261	1.427	0.466	283	1.565	0.521	269	1.605	0.584	268	1.761	0.626	21	1.477	0.521	1102
Total	1.461	0.498	534	1.568	0.556	578	1.658	0.574	560	1.646	0.621	543	1.762	0.661	38	1.587	0.571	2253

QRS-axis (degree)

	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	51.3	27.8	272	41.1	29.9	295	39.4	34.4	289	36.6	37.1	274	25.4	38.7	17	41.8	33.0	1147
Female	54.4	28.0	259	49.0	27.6	282	34.7	29.1	268	29.0	31.1	268	31.3	36.8	21	41.6	30.9	1098
Total	52.8	27.9	531	44.9	29.0	577	37.1	32.0	557	32.9	34.4	542	28.7	37.3	38	41.7	32.0	2245

P-axis (degree)

	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	48.5	28.3	267	48.0	27.4	292	53.8	26.3	284	56.0	27.5	257	53.8	27.1	16	51.5	27.5	1116
Female	50.0	27.3	257	49.7	28.1	279	50.5	24.7	264	48.7	28.5	263	34.3	50.2	21	49.4	27.8	1084
Total	49.3	27.8	524	48.8	27.7	571	52.2	25.5	548	52.3	28.3	520	42.7	42.4	37	50.5	27.7	2200

T-axis (degree)

	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	39.8	25.3	272	39.9	26.4	292	43.2	31.4	288	47.9	32.5	270	54.1	29.3	17	42.8	29.2	1139
Female	38.5	22.1	259	34.8	30.4	280	36.2	30.3	266	40.2	32.8	263	35.3	29.8	19	37.3	29.2	1087
Total	39.2	23.8	531	37.4	28.5	572	39.8	31.0	554	44.1	32.8	533	44.2	30.7	36	40.1	29.3	2226

CV of R-R

	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	3.4	1.3	234	2.9	1.0	242	2.6	1.1	220	2.5	1.1	182	2.7	1.1	11	2.9	1.2	889
Female	3.3	1.2	229	2.8	1.0	249	2.7	1.2	231	2.4	1.0	204	2.4	1.2	17	2.8	1.1	930
Total	3.4	1.2	463	2.9	1.0	491	2.6	1.1	451	2.4	1.1	386	2.5	1.2	28	2.9	1.2	1819

Minnesota Code

		40 - 49yr		50 - 59yr		60 - 69yr		70 - 79yr		80yr -		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Minnesota Code 1-0-0	Male	59	21.6	52	17.6	38	13.1	29	10.5	2	11.8	180	15.6
	Female	61	23.4	46	16.2	23	8.5	28	10.4	2	9.1	160	14.5
	Total	120	22.5	98	16.9	61	10.9	57	10.5	4	10.3	340	15.1
Minnesota Code 1-1-1	Male	0	0	0	0	0	0	7	2.5	0	0	7	0.6
	Female	0	0	3	1.1	1	0.4	0	0	0	0	4	0.4
	Total	0	0	3	0.5	1	0.2	7	1.3	0	0	11	0.5
Minnesota Code 1-1-2	Male	1	0.4	0	0	0	0	0	0	0	0	1	0.1
	Female	0	0	1	0.4	0	0	1	0.4	0	0	2	0.2
	Total	1	0.2	1	0.2	0	0	1	0.2	0	0	3	0.1
Minnesota Code 1-1-3	Male	1	0.4	2	0.7	1	0.3	2	0.7	0	0	6	0.5
	Female	0	0	1	0.4	2	0.7	0	0	1	4.5	4	0.4
	Total	1	0.2	3	0.5	3	0.5	2	0.4	1	2.6	10	0.4
Minnesota Code 1-1-4	Male	3	1.1	0	0	2	0.7	2	0.7	0	0	7	0.6
	Female	0	0	0	0	1	0.4	3	1.1	0	0	4	0.4
	Total	3	0.6	0	0	3	0.5	5	0.9	0	0	11	0.5
Minnesota Code 1-1-5	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 1-1-6	Male	0	0	1	0.3	1	0.3	0	0	0	0	2	0.2
	Female	0	0	0	0	1	0.4	0	0	0	0	1	0.1
	Total	0	0	1	0.2	2	0.4	0	0	0	0	3	0.1
Minnesota Code 1-1-7	Male	0	0	0	0	0	0	1	0.4	0	0	1	0.1
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	1	0.2	0	0	1	0.0
Minnesota Code 1-2-1	Male	0	0	0	0	0	0	0	0	0	0	0	0

(CONTINUED)

Minnesota Code

		40 - 49yr		50 - 59yr		60 - 69yr		70 - 79yr		80yr -		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Minnesota Code 1-2-1	Female	0	0	0	0	0	0	1	0.4	0	0	1	0.1
	Total	0	0	0	0	0	0	1	0.2	0	0	1	0.0
Minnesota Code 1-2-2	Male	0	0	0	0	0	0	1	0.4	0	0	1	0.1
	Female	0	0	0	0	1	0.4	0	0	0	0	1	0.1
	Total	0	0	0	0	1	0.2	1	0.2	0	0	2	0.1
Minnesota Code 1-2-3	Male	0	0	0	0	0	0	2	0.7	0	0	2	0.2
	Female	0	0	1	0.4	0	0	1	0.4	0	0	2	0.2
	Total	0	0	1	0.2	0	0	3	0.6	0	0	4	0.2
Minnesota Code 1-2-4	Male	2	0.7	1	0.3	1	0.3	2	0.7	0	0	6	0.5
	Female	1	0.4	1	0.4	1	0.4	5	1.9	0	0	8	0.7
	Total	3	0.6	2	0.3	2	0.4	7	1.3	0	0	14	0.6
Minnesota Code 1-2-5	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	1	0.4	0	0	0	0	0	0	1	0.1
	Total	0	0	1	0.2	0	0	0	0	0	0	1	0.0
Minnesota Code 1-2-6	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 1-2-7	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 1-2-8	Male	0	0	0	0	1	0.3	0	0	0	0	1	0.1
	Female	1	0.4	2	0.7	0	0	0	0	0	0	3	0.3
	Total	1	0.2	2	0.3	1	0.2	0	0	0	0	4	0.2
Minnesota Code 1-3-1	Male	0	0	0	0	1	0.3	0	0	0	0	1	0.1
	Female	0	0	1	0.4	0	0	0	0	0	0	1	0.1

(CONTINUED)

Minnesota Code

		40 - 49yr		50 - 59yr		60 - 69yr		70 - 79yr		80yr -		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Minnesota Code 1-3-1	Total	0	0	1	0.2	1	0.2	0	0	0	0	2	0.1
Minnesota Code 1-3-2	Male	0	0	0	0	2	0.7	8	2.9	0	0	10	0.9
	Female	2	0.8	1	0.4	2	0.7	2	0.7	0	0	7	0.6
	Total	2	0.4	1	0.2	4	0.7	10	1.8	0	0	17	0.8
Minnesota Code 1-3-3	Male	3	1.1	1	0.3	3	1.0	2	0.7	1	5.9	10	0.9
	Female	0	0	0	0	1	0.4	5	1.9	0	0	6	0.5
	Total	3	0.6	1	0.2	4	0.7	7	1.3	1	2.6	16	0.7
Minnesota Code 1-3-4	Male	0	0	3	1.0	3	1.0	2	0.7	0	0	8	0.7
	Female	2	0.8	5	1.8	3	1.1	0	0	0	0	10	0.9
	Total	2	0.4	8	1.4	6	1.1	2	0.4	0	0	18	0.8
Minnesota Code 1-3-5	Male	0	0	0	0	1	0.3	0	0	0	0	1	0.1
	Female	1	0.4	0	0	1	0.4	0	0	0	0	2	0.2
	Total	1	0.2	0	0	2	0.4	0	0	0	0	3	0.1
Minnesota Code 1-3-6	Male	1	0.4	5	1.7	8	2.7	9	3.3	1	5.9	24	2.1
	Female	6	2.3	4	1.4	7	2.6	10	3.7	1	4.5	28	2.5
	Total	7	1.3	9	1.6	15	2.7	19	3.5	2	5.1	52	2.3
Minnesota Code 2-1	Male	2	0.7	1	0.3	6	2.1	7	2.5	1	5.9	17	1.5
	Female	2	0.8	2	0.7	5	1.8	9	3.3	0	0	18	1.6
	Total	4	0.7	3	0.5	11	2.0	16	2.9	1	2.6	35	1.5
Minnesota Code 2-2	Male	0	0	0	0	1	0.3	0	0	0	0	1	0.1
	Female	1	0.4	1	0.4	0	0	0	0	0	0	2	0.2
	Total	1	0.2	1	0.2	1	0.2	0	0	0	0	3	0.1
Minnesota Code 2-3	Male	8	2.9	4	1.4	4	1.4	3	1.1	1	5.9	20	1.7
	Female	8	3.1	10	3.5	1	0.4	2	0.7	0	0	21	1.9
	Total	16	3.0	14	2.4	5	0.9	5	0.9	1	2.6	41	1.8

(CONTINUED)

Minnesota Code

		40 - 49yr		50 - 59yr		60 - 69yr		70 - 79yr		80yr -		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Minnesota Code 2-4	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 2-5	Male	0	0	0	0	0	0	1	0.4	0	0	1	0.1
	Female	1	0.4	0	0	1	0.4	0	0	0	0	2	0.2
	Total	1	0.2	0	0	1	0.2	1	0.2	0	0	3	0.1
Minnesota Code 3-1	Male	18	6.6	22	7.4	26	8.9	27	9.8	2	11.8	95	8.2
	Female	1	0.4	8	2.8	13	4.8	12	4.5	2	9.1	36	3.3
	Total	19	3.6	30	5.2	39	6.9	39	7.2	4	10.3	131	5.8
Minnesota Code 3-2	Male	1	0.4	1	0.3	0	0	2	0.7	0	0	4	0.3
	Female	0	0	2	0.7	2	0.7	2	0.7	0	0	6	0.5
	Total	1	0.2	3	0.5	2	0.4	4	0.7	0	0	10	0.4
Minnesota Code 3-3-1	Male	1	0.4	3	1.0	6	2.1	3	1.1	0	0	13	1.1
	Female	1	0.4	0	0	5	1.8	2	0.7	0	0	8	0.7
	Total	2	0.4	3	0.5	11	2.0	5	0.9	0	0	21	0.9
Minnesota Code 3-3-2	Male	11	4.0	14	4.7	22	7.6	7	2.5	0	0	54	4.7
	Female	6	2.3	4	1.4	10	3.7	8	3.0	0	0	28	2.5
	Total	17	3.2	18	3.1	32	5.7	15	2.8	0	0	82	3.6
Minnesota Code 3-4	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	1	4.5	1	0.1
	Total	0	0	0	0	0	0	0	0	1	2.6	1	0.0
Minnesota Code 4-1-1	Male	1	0.4	1	0.3	2	0.7	3	1.1	0	0	7	0.6
	Female	2	0.8	1	0.4	5	1.8	4	1.5	0	0	12	1.1
	Total	3	0.6	2	0.3	7	1.2	7	1.3	0	0	19	0.8
Minnesota Code 4-1-2	Male	4	1.5	4	1.4	7	2.4	14	5.1	2	11.8	31	2.7

(CONTINUED)

Minnesota Code

		40 - 49yr		50 - 59yr		60 - 69yr		70 - 79yr		80yr -		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Minnesota Code 4-1-2	Female	3	1.1	3	1.1	6	2.2	14	5.2	1	4.5	27	2.4
	Total	7	1.3	7	1.2	13	2.3	28	5.1	3	7.7	58	2.6
Minnesota Code 4-2	Male	7	2.6	12	4.1	15	5.2	22	8.0	1	5.9	57	4.9
	Female	6	2.3	14	4.9	18	6.6	23	8.6	2	9.1	63	5.7
	Total	13	2.4	26	4.5	33	5.9	45	8.3	3	7.7	120	5.3
Minnesota Code 4-3	Male	17	6.2	23	7.8	33	11.3	47	17.1	4	23.5	124	10.8
	Female	29	11.1	25	8.8	50	18.5	64	23.8	4	18.2	172	15.5
	Total	46	8.6	48	8.3	83	14.8	111	20.4	8	20.5	296	13.1
Minnesota Code 4-4	Male	1	0.4	3	1.0	6	2.1	5	1.8	0	0	15	1.3
	Female	2	0.8	1	0.4	1	0.4	7	2.6	1	4.5	12	1.1
	Total	3	0.6	4	0.7	7	1.2	12	2.2	1	2.6	27	1.2
Minnesota Code 5-1	Male	0	0	3	1.0	4	1.4	4	1.5	0	0	11	1.0
	Female	1	0.4	1	0.4	2	0.7	0	0	0	0	4	0.4
	Total	1	0.2	4	0.7	6	1.1	4	0.7	0	0	15	0.7
Minnesota Code 5-2	Male	7	2.6	7	2.4	16	5.5	21	7.6	2	11.8	53	4.6
	Female	12	4.6	14	4.9	17	6.3	26	9.7	1	4.5	70	6.3
	Total	19	3.6	21	3.6	33	5.9	47	8.6	3	7.7	123	5.4
Minnesota Code 5-3	Male	7	2.6	9	3.0	16	5.5	22	8.0	0	0	54	4.7
	Female	7	2.7	13	4.6	17	6.3	21	7.8	2	9.1	60	5.4
	Total	14	2.6	22	3.8	33	5.9	43	7.9	2	5.1	114	5.0
Minnesota Code 5-4	Male	7	2.6	10	3.4	17	5.8	8	2.9	2	11.8	44	3.8
	Female	3	1.1	17	6.0	21	7.7	22	8.2	2	9.1	65	5.9
	Total	10	1.9	27	4.7	38	6.8	30	5.5	4	10.3	109	4.8
Minnesota Code 5-5	Male	13	4.8	22	7.4	27	9.3	27	9.8	2	11.8	91	7.9
	Female	13	5.0	39	13.7	43	15.9	48	17.8	6	27.3	149	13.5

(CONTINUED)

Minnesota Code

		40 - 49yr		50 - 59yr		60 - 69yr		70 - 79yr		80yr -		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Minnesota Code 5-5	Total	26	4.9	61	10.5	70	12.5	75	13.8	8	20.5	240	10.6
Minnesota Code 6-1	Male	0	0	0	0	1	0.3	0	0	0	0	1	0.1
	Female	0	0	0	0	1	0.4	0	0	0	0	1	0.1
	Total	0	0	0	0	2	0.4	0	0	0	0	2	0.1
Minnesota Code 6-2-1	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 6-2-3	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 6-3	Male	0	0	6	2.0	3	1.0	9	3.3	0	0	18	1.6
	Female	1	0.4	0	0	0	0	7	2.6	0	0	8	0.7
	Total	1	0.2	6	1.0	3	0.5	16	2.9	0	0	26	1.2
Minnesota Code 6-4-1	Male	1	0.4	1	0.3	0	0	0	0	0	0	2	0.2
	Female	1	0.4	0	0	1	0.4	0	0	0	0	2	0.2
	Total	2	0.4	1	0.2	1	0.2	0	0	0	0	4	0.2
Minnesota Code 6-5	Male	8	2.9	1	0.3	3	1.0	3	1.1	1	5.9	16	1.4
	Female	11	4.2	9	3.2	8	3.0	9	3.3	0	0	37	3.3
	Total	19	3.6	10	1.7	11	2.0	12	2.2	1	2.6	53	2.3
Minnesota Code 6-8	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 7-1-1	Male	1	0.4	2	0.7	1	0.3	2	0.7	0	0	6	0.5
	Female	0	0	1	0.4	0	0	1	0.4	0	0	2	0.2
	Total	1	0.2	3	0.5	1	0.2	3	0.6	0	0	8	0.4

(CONTINUED)

Minnesota Code

		40 - 49yr		50 - 59yr		60 - 69yr		70 - 79yr		80yr -		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Minnesota Code 7-2-1	Male	1	0.4	4	1.4	11	3.8	20	7.3	0	0	36	3.1
	Female	0	0	2	0.7	5	1.8	7	2.6	1	4.5	15	1.4
	Total	1	0.2	6	1.0	16	2.8	27	5.0	1	2.6	51	2.3
Minnesota Code 7-3	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 7-4	Male	0	0	1	0.3	2	0.7	1	0.4	0	0	4	0.3
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	1	0.2	2	0.4	1	0.2	0	0	4	0.2
Minnesota Code 7-5	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 7-6	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 7-7	Male	1	0.4	0	0	0	0	1	0.4	0	0	2	0.2
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1	0.2	0	0	0	0	1	0.2	0	0	2	0.1
Minnesota Code 7-8	Male	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota Code 8-1-1	Male	0	0	0	0	0	0	1	0.4	0	0	1	0.1
	Female	0	0	0	0	1	0.4	1	0.4	0	0	2	0.2
	Total	0	0	0	0	1	0.2	2	0.4	0	0	3	0.1
Minnesota Code 8-1-2	Male	3	1.1	1	0.3	2	0.7	7	2.5	1	5.9	14	1.2

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