

# IX. Physiological Examinations

## 1) Cardiovascular system

### 1. Blood pressure and pulse rate

#### 2. Electrocardiography

#### 3. Ultrasonic cardiography

#### 4. Intima-media thickness of carotid artery

## 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	119.5	14.0	286	121.8	16.2	295	122.2	16.8	300	126.7	19.8	255	125.5	18.3	53	122.6	17.0	1189
Female	108.9	15.0	294	114.6	18.2	283	120.2	18.1	273	123.4	19.4	285	123.8	21.7	59	117.0	18.8	1194
Total	114.1	15.4	580	118.3	17.6	578	121.3	17.5	573	125.0	19.6	540	124.6	20.1	112	119.8	18.1	2383

#### 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	9.6	286	77.4	10.4	295	76.6	10.4	300	75.9	10.7	255	73.0	9.9	53	76.2	10.3	1189
Female	67.2	9.3	294	71.4	10.9	283	73.3	10.4	273	72.9	11.0	285	70.7	11.6	59	71.1	10.7	1194
Total	71.2	10.3	580	74.4	11.1	578	75.0	10.5	573	74.4	10.9	540	71.8	10.8	112	73.6	10.8	2383

#### 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	66.2	9.6	286	67.9	9.3	295	67.8	10.1	300	70.2	11.6	255	72.5	10.5	53	68.1	10.3	1189
Female	71.3	10.4	294	71.3	9.4	283	71.3	10.3	273	73.7	10.0	285	73.2	9.2	59	71.9	10.0	1194
Total	68.8	10.3	580	69.6	9.5	578	69.4	10.3	573	72.1	10.9	540	72.8	9.8	112	70.1	10.3	2383

### 2. 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	61.3	9.3	284	63.0	9.6	295	62.3	9.5	300	65.3	12.8	255	66.1	11.4	53	63.1	10.5	1187
Female	64.7	9.4	294	64.1	8.2	282	64.0	9.7	273	67.0	10.7	285	65.9	8.5	58	65.0	9.5	1192
Total	63.0	9.5	578	63.6	9.0	577	63.1	9.6	573	66.2	11.7	540	66.0	9.9	111	64.0	10.1	2379

## 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	154.1	22.4	283	161.0	21.7	291	166.0	23.3	296	166.2	23.3	242	175.7	31.0	48	162.3	23.7	1160
Female	144.4	18.1	294	155.0	20.4	280	157.6	21.0	272	158.4	22.8	280	162.6	25.3	58	154.1	21.6	1184
Total	149.1	20.9	577	158.0	21.3	571	162.0	22.6	568	162.0	23.3	522	168.5	28.7	106	158.2	23.0	2344

## 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	92.0	9.9	284	91.9	10.6	295	93.7	14.2	300	94.5	15.8	255	96.7	18.5	53	93.2	13.1	1187
Female	82.5	10.6	294	84.6	10.1	282	85.7	11.6	273	85.7	12.2	285	86.1	15.4	58	84.7	11.4	1192
Total	87.2	11.3	578	88.3	11.0	577	89.9	13.6	573	89.9	14.7	540	91.1	17.7	111	88.9	13.0	2379

## 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	397.1	27.3	284	397.4	25.7	295	401.2	27.7	299	401.4	31.0	255	401.1	26.3	53	399.3	27.8	1186
Female	399.1	27.3	294	402.4	24.3	282	406.1	29.8	273	403.9	30.6	285	405.0	37.8	58	402.9	28.7	1192
Total	398.1	27.3	578	399.8	25.1	577	403.6	28.8	572	402.7	30.8	540	403.1	32.7	111	401.1	28.3	2378

## 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	398.3	19.9	284	404.3	21.3	295	405.5	21.6	299	414.2	24.1	255	417.4	26.0	53	405.9	22.7	1186
Female	411.3	19.6	294	413.5	19.0	282	416.2	23.2	273	423.1	22.6	285	421.1	25.8	58	416.2	21.8	1192
Total	404.9	20.8	578	408.8	20.7	577	410.6	23.0	572	418.9	23.7	540	419.3	25.8	111	411.1	22.8	2378

## S(V1)-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	-0.915	0.429	284	-0.830	0.422	293	-0.822	0.459	293	-0.801	0.438	246	-0.710	0.413	49	-0.838	0.439	1165
Female	-0.909	0.376	293	-0.819	0.382	281	-0.784	0.395	269	-0.762	0.441	274	-0.797	0.549	58	-0.819	0.411	1175
Total	-0.912	0.403	577	-0.825	0.403	574	-0.804	0.430	562	-0.780	0.440	520	-0.757	0.491	107	-0.828	0.425	2340

## 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	1.604	0.498	284	1.712	0.551	295	1.777	0.636	300	1.823	0.689	255	1.830	0.750	53	1.732	0.608	1187
Female	1.243	0.421	294	1.437	0.512	282	1.536	0.446	273	1.651	0.625	285	1.583	0.590	58	1.470	0.532	1192
Total	1.421	0.494	578	1.578	0.549	577	1.662	0.566	573	1.732	0.661	540	1.701	0.680	111	1.601	0.586	2379

## 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	51.9	28.2	283	41.8	29.8	295	39.2	35.1	299	34.2	33.3	253	36.8	39.7	52	41.7	32.7	1182
Female	57.3	27.0	294	49.1	27.8	280	37.4	29.4	272	29.3	28.9	285	21.8	31.3	58	42.4	30.6	1189

Total 54.7 27.7 577 45.4 29.0 575 38.3 32.5 571 31.6 31.1 538 28.9 36.2 110 42.1 31.7 2371

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	47.5	27.8	276	49.1	28.8	289	52.2	29.3	293	55.1	28.6	236	62.6	25.4	47	51.3	28.7	1141
Female	48.8	27.2	290	52.5	23.3	278	47.8	29.6	269	48.1	27.5	273	51.3	32.1	55	49.4	27.3	1165
Total	48.2	27.5	566	50.8	26.3	567	50.1	29.5	562	51.3	28.2	509	56.5	29.6	102	50.3	28.0	2306

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	40.0	22.8	283	39.3	30.8	294	40.5	32.4	298	42.4	32.7	248	47.6	35.3	51	40.8	30.2	1174
Female	36.4	24.2	293	38.5	25.0	274	38.7	28.0	268	34.9	32.4	280	48.7	28.5	57	37.6	27.7	1172
Total	38.2	23.6	576	38.9	28.2	568	39.6	30.4	566	38.4	32.7	528	48.2	31.8	108	39.2	29.0	2346

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	1.1	219	2.8	1.2	233	2.6	1.0	225	2.3	1.0	176	2.3	1.4	31	2.8	1.2	884
Female	3.4	1.2	241	2.8	1.0	231	2.5	1.0	227	2.5	1.2	221	2.7	1.3	41	2.8	1.2	961
Total	3.4	1.1	460	2.8	1.1	464	2.5	1.0	452	2.4	1.1	397	2.5	1.4	72	2.8	1.2	1845

Minnesota Code

		40 - 49yr		50 - 59yr		60 - 69yr		70 - 79yr		80yr -		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Minnesota Code 1-0-0	Male	66	23.1	73	24.7	49	16.3	25	9.8	6	11.3	219	18.4
	Female	65	22.1	62	21.9	41	15.0	29	10.2	4	6.8	201	16.8
	Total	131	22.6	135	23.4	90	15.7	54	10.0	10	8.9	420	17.6
Minnesota Code 1-1-1	Male	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	1	0.1
	Female	0	0.0	0	0.0	0	0.0	0	0.0	1	1.7	1	0.1
	Total	0	0.0	0	0.0	0	0.0	1	0.2	1	0.9	2	0.1
Minnesota Code 1-1-2	Male	1	0.3	1	0.3	2	0.7	0	0.0	1	1.9	5	0.4
	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	1	0.2	1	0.2	2	0.3	0	0.0	1	0.9	5	0.2
Minnesota Code 1-1-3	Male	0	0.0	0	0.0	1	0.3	0	0.0	1	1.9	2	0.2
	Female	0	0.0	0	0.0	1	0.4	0	0.0	0	0.0	1	0.1
	Total	0	0.0	0	0.0	2	0.3	0	0.0	1	0.9	3	0.1
Minnesota Code 1-1-4	Male	0	0.0	2	0.7	0	0.0	2	0.8	0	0.0	4	0.3
	Female	0	0.0	0	0.0	0	0.0	3	1.1	0	0.0	3	0.3
	Total	0	0.0	2	0.3	0	0.0	5	0.9	0	0.0	7	0.3
Minnesota Code 1-1-5	Male	0	0.0	0	0.0	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	0	0.0	0	0.0
	Total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Minnesota Code 1-1-6	Male	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	1	0.1
	Female	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	1	0.1
	Total	0	0.0	0	0.0	1	0.2	1	0.2	0	0.0	2	0.1
Minnesota Code 1-1-7	Male	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	1	0.1
	Female	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	1	0.1
	Total	0	0.0	0	0.0	0	0.0	2	0.4	0	0.0	2	0.1

Minnesota Code 1-2-1	Male	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	1	0.1
	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	1	0.0
Minnesota Code 1-2-2	Male	0	0.0	0	0.0	2	0.7	0	0.0	0	0.0	2	0.2
	Female	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	1	0.1
	Total	0	0.0	0	0.0	2	0.3	1	0.2	0	0.0	3	0.1
Minnesota Code 1-2-3	Male	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	1	0.1
	Female	1	0.3	1	0.4	0	0.0	0	0.0	0	0.0	2	0.2
	Total	1	0.2	2	0.3	0	0.0	0	0.0	0	0.0	3	0.1
Minnesota Code 1-2-4	Male	1	0.3	4	1.4	2	0.7	2	0.8	0	0.0	9	0.8
	Female	0	0.0	2	0.7	4	1.5	3	1.1	2	3.4	11	0.9
	Total	1	0.2	6	1.0	6	1.0	5	0.9	2	1.8	20	0.8
Minnesota Code 1-2-5	Male	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	1	0.1
	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	0	0.0	0	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	0	0.0	0	0.0
	Female	0	0.0	0	0.0	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	0	0.0	0	0.0
Minnesota Code 1-2-7	Male	0	0.0	0	0.0	2	0.7	1	0.4	0	0.0	3	0.3
	Female	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	1	0.1
	Total	0	0.0	0	0.0	2	0.3	2	0.4	0	0.0	4	0.2
Minnesota Code 1-2-8	Male	1	0.3	1	0.3	1	0.3	1	0.4	0	0.0	4	0.3
	Female	1	0.3	3	1.1	2	0.7	0	0.0	0	0.0	6	0.5
	Total	2	0.3	4	0.7	3	0.5	1	0.2	0	0.0	10	0.4
Minnesota Code 1-3-1	Male	0	0.0	0	0.0	1	0.3	0	0.0	1	1.9	2	0.2
	Female	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	1	0.1
	Total	0	0.0	0	0.0	1	0.2	1	0.2	1	0.9	3	0.1
Minnesota Code 1-3-2	Male	1	0.3	2	0.7	0	0.0	4	1.6	0	0.0	7	0.6
	Female	3	1.0	2	0.7	4	1.5	2	0.7	0	0.0	11	0.9
	Total	4	0.7	4	0.7	4	0.7	6	1.1	0	0.0	18	0.8
Minnesota Code 1-3-3	Male	0	0.0	2	0.7	1	0.3	1	0.4	1	1.9	5	0.4
	Female	0	0.0	0	0.0	2	0.7	3	1.1	2	3.4	7	0.6
	Total	0	0.0	2	0.3	3	0.5	4	0.7	3	2.7	12	0.5
Minnesota Code 1-3-4	Male	2	0.7	2	0.7	2	0.7	0	0.0	1	1.9	7	0.6
	Female	3	1.0	2	0.7	5	1.8	2	0.7	1	1.7	13	1.1
	Total	5	0.9	4	0.7	7	1.2	2	0.4	2	1.8	20	0.8
Minnesota Code 1-3-5	Male	0	0.0	0	0.0	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	0	0.0	0	0.0
	Total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Minnesota Code 1-3-6	Male	0	0.0	2	0.7	10	3.3	6	2.4	1	1.9	19	1.6
	Female	3	1.0	5	1.8	6	2.2	12	4.2	4	6.8	30	2.5
	Total	3	0.5	7	1.2	16	2.8	18	3.3	5	4.5	49	2.1
Minnesota Code 2-1	Male	2	0.7	6	2.0	17	5.7	7	2.7	2	3.8	34	2.9
	Female	2	0.7	2	0.7	4	1.5	2	0.7	1	1.7	11	0.9
	Total	4	0.7	8	1.4	21	3.7	9	1.7	3	2.7	45	1.9
Minnesota Code 2-2	Male	0	0.0	0	0.0	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	0	0.0	0	0.0
	Total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Minnesota Code 2-3	Male	13	4.5	1	0.3	5	1.7	2	0.8	2	3.8	23	1.9
	Female	12	4.1	8	2.8	1	0.4	0	0.0	0	0.0	21	1.8
	Total	25	4.3	9	1.6	6	1.0	2	0.4	2	1.8	44	1.8
Minnesota Code 2-4	Male	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Female	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1





	Female	0	0.0	0	0.0	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	0	0.0	0	0.0
Minnesota Code 8-3-1	Male	0	0.0	3	1.0	3	1.0	12	4.7	5	9.4	23	1.9
	Female	0	0.0	2	0.7	1	0.4	5	1.8	0	0.0	8	0.7
	Total	0	0.0	5	0.9	4	0.7	17	3.1	5	4.5	31	1.3
Minnesota Code 8-3-2	Male	0	0.0	0	0.0	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	0	0.0	0	0.0
	Total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Minnesota Code 8-4-1	Male	1	0.3	2	0.7	2	0.7	2	0.8	0	0.0	7	0.6
	Female	0	0.0	0	0.0	1	0.4	1	0.4	0	0.0	2	0.2
	Total	1	0.2	2	0.3	3	0.5	3	0.6	0	0.0	9	0.4
Minnesota Code 8-4-2	Male	0	0.0	0	0.0	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	0	0.0	0	0.0
	Total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Minnesota Code 8-5-2	Male	0	0.0	0	0.0	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	0	0.0	0	0.0
	Total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Minnesota Code 8-7	Male	0	0.0	1	0.3	0	0.0	3	1.2	0	0.0	4	0.3
	Female	0	0.0	0	0.0	2	0.7	3	1.1	0	0.0	5	0.4
	Total	0	0.0	1	0.2	2	0.3	6	1.1	0	0.0	9	0.4
Minnesota Code 8-8	Male	26	9.1	7	2.4	22	7.3	20	7.8	4	7.5	79	6.6
	Female	11	3.7	5	1.8	14	5.1	9	3.2	3	5.1	42	3.5
	Total	37	6.4	12	2.1	36	6.3	29	5.4	7	6.3	121	5.1
Minnesota Code 8-9	Male	8	2.8	8	2.7	17	5.7	31	12.2	9	17.0	73	6.1
	Female	11	3.7	3	1.1	18	6.6	17	6.0	10	16.9	59	4.9
	Total	19	3.3	11	1.9	35	6.1	48	8.9	19	17.0	132	5.5
Minnesota Code 9-1	Male	3	1.0	2	0.7	14	4.7	14	5.5	5	9.4	38	3.2
	Female	12	4.1	12	4.2	3	1.1	12	4.2	4	6.8	43	3.6
	Total	15	2.6	14	2.4	17	3.0	26	4.8	9	8.0	81	3.4
Minnesota Code 9-2	Male	29	10.1	20	6.8	17	5.7	7	2.7	2	3.8	75	6.3
	Female	2	0.7	4	1.4	2	0.7	2	0.7	0	0.0	10	0.8
	Total	31	5.3	24	4.2	19	3.3	9	1.7	2	1.8	85	3.6
Minnesota Code 9-3-1	Male	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	1	0.1
	Female	0	0.0	1	0.4	0	0.0	0	0.0	0	0.0	1	0.1
	Total	0	0.0	1	0.2	0	0.0	1	0.2	0	0.0	2	0.1
Minnesota Code 9-3-2	Male	0	0.0	0	0.0	1	0.3	1	0.4	0	0.0	2	0.2
	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	0	0.0	0	0.0	1	0.2	1	0.2	0	0.0	2	0.1
Minnesota Code 9-4-1	Male	138	48.3	149	50.5	144	48.0	114	44.7	28	52.8	573	48.2
	Female	170	57.8	155	54.8	161	59.0	177	62.1	31	52.5	694	58.1
	Total	308	53.1	304	52.6	305	53.2	291	53.9	59	52.7	1267	53.2
Minnesota Code 9-4-2	Male	15	5.2	11	3.7	23	7.7	24	9.4	4	7.5	77	6.5
	Female	9	3.1	17	6.0	12	4.4	12	4.2	2	3.4	52	4.4
	Total	24	4.1	28	4.8	35	6.1	36	6.7	6	5.4	129	5.4
Minnesota Code 9-5	Male	26	9.1	20	6.8	14	4.7	11	4.3	0	0.0	71	6.0
	Female	0	0.0	1	0.4	0	0.0	3	1.1	0	0.0	4	0.3
	Total	26	4.5	21	3.6	14	2.4	14	2.6	0	0.0	75	3.1
Minnesota Code 9-8-1	Male	0	0.0	0	0.0	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	0	0.0	0	0.0
	Total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	Male	286	100.0	295	100.0	300	100.0	255	100.0	53	100.0	1189	100.0
	Female	294	100.0	283	100.0	273	100.0	285	100.0	59	100.0	1194	100.0
	Total	580	100.0	578	100.0	573	100.0	540	100.0	112	100.0	2383	100.0

### 3. Ultrasonic cardiography

(Ultrasonic tomography, EUB-655, Hitachi Medical Corp.)

#### Aortic Dimension (AOD) (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	29.18	3.30	286	30.15	3.34	293	30.43	3.55	297	30.24	3.30	255	30.96	3.89	53	30.04	3.43	1184
Female	25.15	2.88	290	26.54	3.19	279	27.41	2.94	271	27.71	3.18	281	27.19	3.32	59	26.71	3.21	1180
Total	27.15	3.70	576	28.39	3.73	572	28.99	3.60	568	28.91	3.47	536	28.97	4.05	112	28.38	3.72	2364

#### Left Atrium Dimension (LAD) (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	33.41	4.19	286	35.11	4.33	293	35.59	5.10	297	36.37	6.15	255	37.26	6.11	53	35.19	5.14	1184
Female	30.47	4.42	290	32.13	4.64	279	34.06	4.26	271	35.56	5.47	281	35.67	6.50	59	33.16	5.21	1180
Total	31.93	4.55	576	33.66	4.72	572	34.86	4.78	568	35.95	5.81	536	36.42	6.34	112	34.18	5.27	2364

#### LAD/AOD Ratio

	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	1.15	0.17	286	1.17	0.16	293	1.17	0.18	297	1.21	0.20	255	1.22	0.26	53	1.18	0.18	1184
Female	1.21	0.17	290	1.22	0.19	279	1.25	0.18	271	1.29	0.22	281	1.32	0.25	59	1.25	0.20	1180
Total	1.18	0.17	576	1.19	0.18	572	1.21	0.18	568	1.25	0.22	536	1.27	0.26	112	1.21	0.19	2364

#### E-wave Amplitude (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	21.30	3.33	286	19.45	3.21	295	18.62	3.38	298	17.33	3.44	246	16.84	3.33	50	19.14	3.64	1175
Female	19.85	3.17	293	18.54	2.99	281	17.47	3.17	269	16.48	3.19	273	15.65	3.52	53	18.01	3.42	1169
Total	20.57	3.33	579	19.00	3.14	576	18.08	3.33	567	16.89	3.34	519	16.23	3.46	103	18.57	3.57	2344

#### A-wave Amplitude (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	17.24	2.92	286	16.30	2.97	295	16.16	3.19	298	15.23	3.14	246	15.03	3.11	50	16.21	3.14	1175
Female	15.14	2.97	293	15.04	2.76	281	14.92	2.88	269	14.39	2.80	273	13.90	2.81	53	14.83	2.87	1169
Total	16.18	3.12	579	15.69	2.93	576	15.57	3.11	567	14.79	2.99	519	14.45	3.00	103	15.53	3.08	2344

#### Diastolic Descent Rate (DDR) (mm/s)

	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	95.5	25.5	286	80.2	23.7	295	69.4	24.3	298	55.9	22.1	246	55.0	25.0	50	75.0	28.0	1175
Female	90.8	21.6	293	75.5	22.7	281	62.6	20.3	268	52.5	20.8	273	48.9	17.7	53	69.8	25.9	1168
Total	93.1	23.7	579	77.9	23.3	576	66.2	22.7	566	54.2	21.5	519	51.9	21.7	103	72.4	27.1	2343

#### A/E Ratio



	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	0.809	0.109	286	0.836	0.098	295	0.868	0.113	298	0.881	0.147	246	0.904	0.174	50	0.850	0.123	1175
Female	0.759	0.095	293	0.808	0.100	281	0.854	0.101	269	0.876	0.117	273	0.896	0.117	53	0.826	0.114	1169
Total	0.784	0.105	579	0.823	0.100	576	0.861	0.108	567	0.879	0.132	519	0.900	0.146	103	0.838	0.119	2344

Left Ventricular End-diastolic Dimension (LVEdD) (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	48.11	4.30	284	47.77	4.19	292	46.68	4.14	284	46.38	4.77	224	45.55	4.38	42	47.22	4.40	1126
Female	43.99	3.65	290	43.90	3.89	283	44.16	4.63	260	43.99	4.79	249	44.38	5.08	45	44.02	4.27	1127
Total	46.03	4.48	574	45.87	4.48	575	45.48	4.56	544	45.12	4.92	473	44.94	4.77	87	45.62	4.62	2253

Left Ventricular End-systolic Dimension (LVEsD) (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	30.12	4.15	284	29.69	4.38	292	28.74	4.24	284	28.63	5.00	224	28.14	4.66	42	29.29	4.47	1126
Female	26.27	3.47	290	25.88	3.71	283	26.09	5.06	260	26.49	4.96	249	26.24	5.39	45	26.18	4.36	1127
Total	28.17	4.27	574	27.81	4.49	575	27.47	4.83	544	27.50	5.09	473	27.15	5.11	87	27.73	4.68	2253

Left Ventricular Posterior Wall Thickness at end-diastole (LVPWd) (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	9.80	2.00	284	10.45	1.98	292	10.53	2.15	284	10.48	2.39	224	11.00	2.16	42	10.33	2.14	1126
Female	8.81	1.64	290	9.42	1.81	283	9.67	1.99	260	9.88	2.20	249	10.25	2.18	45	9.45	1.96	1127
Total	9.30	1.89	574	9.94	1.96	575	10.12	2.12	544	10.17	2.31	473	10.61	2.19	87	9.89	2.10	2253

Left Ventricular Posterior Wall Thickness at end-systole (LVPWs) (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	17.03	2.67	284	18.06	2.87	292	18.32	3.06	284	18.07	3.27	224	18.41	2.83	42	17.88	2.99	1126
Female	15.55	2.34	290	16.65	2.68	283	17.17	2.98	260	17.21	3.02	249	17.53	3.43	45	16.65	2.86	1127
Total	16.29	2.61	574	17.37	2.87	575	17.77	3.07	544	17.62	3.17	473	17.95	3.17	87	17.26	2.99	2253

Interventricular Septum Diastolic Thickness (IVSd) (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	11.43	2.34	284	12.05	2.47	292	12.29	2.47	284	12.70	2.62	224	12.76	2.68	42	12.11	2.52	1126
Female	9.61	1.96	290	10.44	2.12	283	11.32	2.38	260	11.84	2.37	249	12.00	2.83	45	10.80	2.39	1127
Total	10.51	2.34	574	11.26	2.44	575	11.83	2.47	544	12.25	2.53	473	12.36	2.77	87	11.46	2.54	2253

Interventricular Septum Systolic Thickness (IVSs) (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	15.19	2.25	284	15.68	2.55	292	16.02	2.53	284	16.48	2.72	224	16.45	2.48	42	15.83	2.55	1126
Female	12.87	2.06	290	14.00	2.33	283	14.83	2.53	260	15.38	2.15	249	15.74	2.78	45	14.28	2.49	1127
Total	14.02	2.45	574	14.86	2.59	575	15.45	2.60	544	15.90	2.50	473	16.09	2.65	87	15.05	2.63	2253



Male	60.7	9.1	286	61.7	9.9	295	60.9	9.3	300	62.9	11.7	255	63.5	12.0	53	61.6	10.1	1189
Female	64.5	10.1	294	62.8	8.2	283	62.0	9.3	273	65.2	10.9	285	63.4	9.9	58	63.6	9.8	1193
Total	62.6	9.8	580	62.2	9.1	578	61.4	9.3	573	64.1	11.3	540	63.5	10.9	111	62.6	10.0	2382

#### 4. Intima-media thickness of common carotid artery

(Ultrasonic tomography, EUB-655, Hitachi Medical Corp..)

##### Intima-media Thickness of Left Common Carotid Artery (the Thickest Point) (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	0.73	0.42	286	0.82	0.25	294	0.96	0.35	300	1.02	0.32	255	1.25	0.94	53	0.90	0.41	1188
Female	0.64	0.15	294	0.78	0.20	283	0.90	0.26	273	1.03	0.46	285	1.16	0.76	59	0.85	0.37	1194
Total	0.68	0.32	580	0.80	0.23	577	0.93	0.31	573	1.03	0.40	540	1.21	0.84	112	0.87	0.39	2382

##### Intima-media Thickness of Left Common Carotid Artery (the Thinnest Point) (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	0.53	0.30	286	0.57	0.13	294	0.62	0.14	300	0.67	0.18	255	0.77	0.33	53	0.61	0.21	1188
Female	0.48	0.11	294	0.56	0.13	283	0.62	0.16	273	0.67	0.18	285	0.70	0.17	59	0.59	0.16	1194
Total	0.51	0.22	580	0.57	0.13	577	0.62	0.15	573	0.67	0.18	540	0.73	0.26	112	0.60	0.19	2382

##### Intima-media Thickness of Left Carotid Sinus (the Thickest Point) (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	0.98	0.30	285	1.08	0.40	293	1.25	0.52	298	1.49	0.64	254	1.83	1.67	53	1.22	0.62	1183
Female	0.85	0.25	292	1.04	0.33	282	1.15	0.41	272	1.30	0.55	281	1.63	0.74	59	1.11	0.47	1186
Total	0.91	0.28	577	1.06	0.37	575	1.21	0.47	570	1.39	0.60	535	1.73	1.27	112	1.17	0.55	2369

##### Intima-media Thickness of Left Carotid Sinus (the Thinnest Point) (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	0.63	0.17	285	0.67	0.19	293	0.74	0.22	298	0.80	0.23	253	0.85	0.32	53	0.71	0.22	1182
Female	0.57	0.14	292	0.65	0.18	282	0.71	0.21	272	0.75	0.22	281	0.81	0.27	59	0.68	0.21	1186
Total	0.60	0.16	577	0.66	0.19	575	0.73	0.22	570	0.77	0.22	534	0.83	0.29	112	0.69	0.21	2368

##### Intima-media Thickness of Right Common Carotid Artery (the Thickest Point) (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	0.63	0.15	286	0.74	0.18	294	0.85	0.28	300	0.94	0.32	255	1.08	0.81	53	0.80	0.32	1188
Female	0.61	0.16	294	0.72	0.21	283	0.82	0.22	273	0.91	0.24	285	1.01	0.30	59	0.78	0.25	1194
Total	0.62	0.15	580	0.73	0.19	577	0.83	0.26	573	0.93	0.28	540	1.04	0.59	112	0.79	0.28	2382

##### Intima-media Thickness of Right Common Carotid Artery (the Thinnest Point) (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	0.48	0.11	286	0.53	0.12	294	0.59	0.15	300	0.63	0.16	255	0.73	0.40	53	0.56	0.17	1188
Female	0.46	0.11	294	0.52	0.11	283	0.57	0.14	273	0.61	0.13	285	0.67	0.16	59	0.55	0.14	1194
Total	0.47	0.11	580	0.53	0.12	577	0.58	0.15	573	0.62	0.15	540	0.70	0.30	112	0.55	0.16	2382

Intima-media Thickness of Right Carotid Sinus (the Thickest Point) (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	0.94	0.26	285	1.11	0.40	294	1.27	0.50	300	1.46	0.69	254	1.61	0.84	53	1.21	0.54	1186
Female	0.84	0.23	294	1.00	0.28	282	1.14	0.38	273	1.31	0.59	284	1.45	0.60	59	1.09	0.45	1192
Total	0.89	0.25	579	1.05	0.35	576	1.21	0.45	573	1.38	0.64	538	1.52	0.72	112	1.15	0.50	2378

Intima-media Thickness of Right Carotid Sinus (the Thinnest Point) (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	0.62	0.18	285	0.68	0.22	294	0.71	0.20	300	0.78	0.25	254	0.84	0.31	53	0.70	0.23	1186
Female	0.56	0.14	294	0.64	0.18	282	0.70	0.22	273	0.74	0.22	283	0.82	0.24	58	0.67	0.21	1190
Total	0.59	0.16	579	0.66	0.20	576	0.70	0.21	573	0.76	0.23	537	0.83	0.27	111	0.68	0.22	2376