



Women &
Heart Disease



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
National Heart, Lung, and Blood Institute



Cardiovascular Disease in Women Module III: Risk Assessment Tool

heart DISEASE IS THE #1 KILLER OF WOMEN



Risk Stratification:

- **High Risk**
 - Diabetes mellitus
 - Documented atherosclerotic disease
 - Established coronary heart disease
 - Peripheral arterial disease
 - Cerebrovascular disease
 - Abdominal aortic aneurysm
 - Includes many patients with chronic kidney disease, especially ESRD
 - 10-year Framingham global risk > 20%, or high risk based on another population-adapted global risk assessment tool



Risk Stratification:

- **At Risk:**
 - ≥ 1 major risk factors for CVD, including:
 - Cigarette smoking
 - Hypertension
 - Dyslipidemia
 - Family history of premature CVD (CVD at < 55 years in a male relative, or < 65 years in a female relative)
 - Obesity, especially central obesity
 - Physical inactivity
 - Poor diet
 - Metabolic syndrome
 - Evidence of subclinical coronary artery disease (eg coronary calcification), or poor exercise capacity on treadmill test or abnormal heart rate recovery after stopping exercise



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Definition of Metabolic Syndrome in Women

- Abdominal obesity - waist circumference \geq 35 in.
- High triglycerides \geq 150mg/dL
- Low HDL cholesterol $<$ 50mg/dL
- Elevated BP \geq 130/85mm Hg
- Fasting glucose \geq 100mg/dL



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Risk Stratification:

- **Optimal risk:**
 - No risk factors
 - Healthy lifestyle
 - Framingham global risk < 10%



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Risk Stratification

- Calculate 10 year risk for all patients with two or more risk factors that do not already meet criteria for CHD equivalent
- Use electronic calculator for most precise estimate:
www.nhlbi.nih.gov/guidelines/cholesterol/index.htm



Step 1

Age	
Years	Points
30-34	-9
35-39	-4
40-44	0
45-49	3
50-54	8
55-59	7
60-64	8
65-69	8
70-74	8

Step 2

Total Cholesterol		
(mg/dl)	(mmol/L)	Points
<160	≤4.14	-2
160-199	4.15-5.17	0
200-239	5.18-6.21	1
240-279	6.22-7.24	1
≥280	≥7.25	3

Step 3

HDL - Cholesterol		
(mg/dl)	(mmol/L)	Points
<35	<0.90	5
35-44	0.91-1.16	2
45-49	1.17-1.29	1
50-59	1.30-1.55	0
≥60	>1.56	-2

Key

Color	Risk
green	Very low
white	Low
yellow	Moderate
rose	High
red	Very high

Step 4

Blood Pressure					
Systolic (mmHg)	Diastolic (mmHg)				
	<80	80-84	85-89	90-99	>100
<120	-3 pts	0 pts	0 pts	2 pts	3 pts
120-129	0 pts	0 pts	0 pts	2 pts	3 pts
130-139	0 pts	0 pts	0 pts	2 pts	3 pts
140-159	0 pts	0 pts	0 pts	2 pts	3 pts
≥160	0 pts	0 pts	0 pts	2 pts	3 pts

Note: When systolic and diastolic pressures provide different estimates for point scores, use the higher number

Step 5

Diabetes	
	Points
No	0
Yes	4

Step 6

Smoker	
	Points
No	0
Yes	2



Step 7 (sum from steps 1-6)

Adding up the points

Age	_____
Total Cholesterol	_____
HDL Cholesterol	_____
Blood Pressure	_____
Diabetes	_____
Smoker	_____
Point Total	_____

Step 8 (determine CHD risk from point total)

CHD Risk	
Point Total	10 Yr CHD Risk
≤-2	1%
-1	2%
0	2%
1	2%
2	3%
3	3%
4	4%
5	5%
6	6%
7	7%
8	8%
9	9%
10	11%
11	13%
12	15%
13	17%
14	20%
15	24%
16	27%
≥17	≥32%

Step 9 (compare to women of the same age)

Comparative Risk		
Age (years)	Average 10 Yr CHD Risk	Low* 10 Yr CHD Risk
30-34	<1%	<1%
35-39	1%	<1%
40-44	2%	2%
45-49	5%	3%
50-54	8%	5%
55-59	12%	7%
60-64	12%	8%
65-69	13%	8%
70-74	14%	8%



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Downloadable Scoring Sheet for 10-year CHD event risk

- The scoring sheet is available at:
www.nhlbi.nih.gov/about/framingham/riskabs.htm