“Cardiovascular disease has the same meaning for health care today as the epidemics of centuries had for medicine in earlier times: 50% of the population in developed countries die of cardiovascular disease” (Pál Kertai)

Someone has a heart attack every two minutes (British Heart Foundation)

Parts of Cardiovascular Epidemiology

- **1., Descriptive epidemiology:**
  = Describing distribution of cardiovascular disease by means of certain characteristics such as PERSON (i.e., age, gender, ethnicity) TIME and PLACE

- **2., Analytic epidemiology**
  = Analyzing relationships between CVD and risk factors (which elevate the probability of a disease at population level), risk model and multicausal developments

- **3., Experimental epidemiology/Interventions**
  = Strategies of cardiovascular prevention (primordial, primary, secondary, tertiary; individual and community levels)
In the world: CVD deaths account for one third of all deaths (25-50% depending on the level of economic development) among which 50%: coronary deaths

CVD made up 16.7 million of global deaths in 2002, among which 7 million due to coronary heart disease, 6 million due to stroke

Distribution of types of CVD in global deaths:
- Global cardiovascular deaths in 2002: 16.7 million
- among which: coronary heart disease 7.2 million > stroke 6.0 million > 0.9 million hypertensive heart disease > 0.4 million inflammatory heart disease > 0.3 million rheumatic heart disease > 1.9 million other CVD

Developed countries: decreasing tendencies (e.g., USA: 30% between 1988-98, Sweden: 42%)
- improvement of lifestyle factors, for example, a decrease of smoking and a higher level of health consciousness in many developed countries
- better diagnostic and therapeutic procedures (e.g., bypass surgeries, hypertension screening, pharmacological treatment of hypertension and hypercholesterinaemia, access to health care)

Developing countries: increasing tendencies
- increasing longevity, urbanization, and western type lifestyle
Descriptive Epidemiology II. AGE

- Question: What is the relative amount of CVD in death rates in different age groups?
- Early lesions of blood vessel, atherosclerotic plaques: around 20 years - adult lifestyle patterns usually start in childhood and youth (smoking, dietary habits, sporting behavior, etc.)
- Increase in CVD morbidity and mortality: in age-group of 30-44 years
- Premature death (<64 years of age, or 25-64 years): in the elderly population more difficult to interpret death rate due to multiple ill health causes

Descriptive Epidemiology III. SEX

- Question: What is the relative amount of CVD in death rates in women and men?
- Widespread idea: CVD is often thought to be a disease of middle-aged men.
- Cardiovascular mortality (fatal cases) are more common among men. However, CVD affect nearly as many women as men, albeit at an older age
- Women: special case (WHO, 2004)
  a. Higher risk in women than men (smoking, high triglyceride levels)
  b. Higher prevalence of certain risk factors in women (diabetes mellitus, depression)
  c. Gender-specific risk factors (risks for women only) (oral contraceptives, hormone replacement therapy, polycystic ovary syndrome)
Cardiovascular diseases claim more lives each year than all forms of cancer and Chronic Lower Respiratory Disease combined.
Cardiovascular disease in Women

Gamela NASR

Professor of Cardiology  Suez Canal University
Vice Predsident of Egyptian Society of Cardiology
and head of Preventive Cardiology Working group
National Council for women

WOMEN AND HEART DISEASE

• Worldwide, 8.6 million women die from heart disease each year, accounting for a third of all deaths in women. Three million women die from stroke each year. Stroke accounts for more deaths among women than men (11% vs 8.4%) with additional risk for CHD unique to women related to oral contraceptive use in combination with smoking.
• 42% of women who have heart attacks die within 1 year, compared to 24% of men.
• Under age 50, women’s heart attacks are twice as likely as men’s to be fatal.
WOMEN AND HEART DISEASE

• 71% of women experience early warning signs of heart attack with sudden onset of extreme weakness that feels like the flu - often with no chest pain at all. Medical professionals are challenged to respond to women’s milder symptoms, acting with insufficient guidelines.

• Nearly two-thirds of the deaths from heart attacks in women occur among those who have no history of chest pain.

Table 2. Pretest Probability for Coronary Artery Disease by Age, Sex, and Symptoms*

<table>
<thead>
<tr>
<th>Age, y</th>
<th>Sex</th>
<th>Typical/Definite Angina Pictorial</th>
<th>Atypical/Probable Angina Pictorial</th>
<th>Nonanginal Chest Pain</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>33-39</td>
<td>Men</td>
<td>Intermediate</td>
<td>Intermediate</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>Intermediate</td>
<td>Very low</td>
<td>Very low</td>
<td>Very low</td>
</tr>
<tr>
<td>40-49</td>
<td>Men</td>
<td>High</td>
<td>Intermediate</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>Intermediate</td>
<td>Low</td>
<td>Very low</td>
<td>Very low</td>
</tr>
<tr>
<td>50-59</td>
<td>Men</td>
<td>High</td>
<td>Intermediate</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>Intermediate</td>
<td>Low</td>
<td>Very low</td>
<td>Low</td>
</tr>
<tr>
<td>60-69</td>
<td>Men</td>
<td>High</td>
<td>Intermediate</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>High</td>
<td>Intermediate</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

*High indicates >60%, intermediate 10% to 60%, low <10%; very low <5%. Reused with permission from Gibbons et al. [1].

*No data exists for patients <26 or >69 y but it can be assumed that prevalence of coronary artery disease increases with age. In a few cases, patients with ages at the extremes of the decades listed may have probabilities slightly outside the high or low range.
WOMEN AND HEART DISEASE

• Smoking, diabetes and dyslipidemias erase a woman’s estrogen protection.
• Women who smoke risk having a heart attack 19 years earlier than non-smoking women.
• Women with hypertension experience a risk of developing CHD 3.5 times that of females with normal blood pressure. High blood pressure is more common in women taking oral contraceptives, especially in obese women.

WOMEN AND HEART DISEASE

• Women with diabetes have more than double the risk of heart attack than non-diabetic women. Diabetes doubles the risk of a second heart attack in women but not in men. Diabetes affects many more women than men after the age of 45.
• Marital stress worsens the prognosis in women with heart disease.
Compared to Men:

- Men's plaque distributes in clumps whereas women's distributes more evenly throughout artery walls. This results in women's angiographic studies being misinterpreted as “normal”.
- Women wait longer than men to go to an emergency room when having a heart attack and physicians are slower to recognize the presence of heart attacks in women because “characteristic” patterns of chest pain and ECG changes are less frequently present.

Compared to Men:

- After heart attack, women are less likely than men to receive beta blockers, ACE inhibitors and aspirin - therapies known to improve survival. This contributes to a higher rate of complications after heart attacks in women, even after adjusting for age.
- 38% of women and 25% of men will die within one year of a first recognized heart attack.
- Women are twice as likely as men to die within the first few weeks after suffering a heart attack.
- 46% of women and 22% of men heart attack survivors will be disabled with heart failure within six years.
Compared to Men:

• Women are two to three times as likely to die following heart bypass surgery. Younger aged women between the ages of 40-59 are up to 4 times more likely to die from heart bypass surgery than men the same age.
• Since 1984, more women than men have died each year from heart disease and the gap between men and women’s survival continues to widen.

Compared to Men:

• Women receive fewer heart disease procedures than men, however, more is not necessarily better in this setting and the best course of treatment for a woman with heart disease has yet to be established.
• Women’s hearts respond better than men’s to healthy lifestyle changes.
• Women comprise of only 24% of participants in all heart-related studies.
Cardiovascular disease (CVD) remains the leading cause of death in women

For the past 3 decades, dramatic declines in heart disease mortality for both men and women have been observed, especially in the >65 years age group. However, recent data suggest stagnation in the improvements in incidence and mortality of coronary heart disease, specifically among younger women (<55 years).

What to do …….

• It is imperative that we understand the mechanisms that contribute to worsening risk factor profiles in young women to reduce future atherosclerotic cardiovascular disease (ASCVD) morbidity and mortality.

• Increased recognition of the prevalence of traditional ASCVD risk factors, and their differential impact in women, as well as emerging, nontraditional risk factors unique to or more common in women, contribute to new understanding of mechanisms leading to these worsening outcomes for women.
Diagnosis of acute coronary syndromes (ACS) is often challenging in women, especially young women, and it is important to recognize differences in the signs and symptoms at presentation to improve patient management and outcomes.
Women and prevention

- Women are less likely to receive preventive treatment or guidance, such as lipid-lowering therapy, aspirin (ASA), and therapeutic lifestyle changes, than are men at similar ASCVD risk

- Findings from the longitudinal, observational Nurses’ Health Study highlighted the critical importance of lifestyle modifications in CAD prevention, demonstrating that women can reduce their risk of coronary events by >80% by not smoking, maintaining healthy body weight (body mass index <25 kg/m²), consuming a healthy diet, participating in moderate to vigorous exercise for 30 minutes a day,
The Effect of Potentially Modifiable Risk Factors Associated With Myocardial Infarction in 52 Countries (INTERHEART) study was a large case–control study that screened all patients admitted to the coronary care unit or equivalent cardiology ward for a first MI at 262 participating centers in 52 countries. INTERHEART identified 9 easily measured risk factors (smoking, lipids, hypertension, DM, obesity, diet, physical activity, alcohol consumption, and psychosocial factors) that account for over 90% of the risk for acute MI.
<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Sex-Based Differences</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>DM: women with DM have a 3-fold excess risk of fatal CAD compared with non-diabetic</td>
<td></td>
</tr>
<tr>
<td>mellitus</td>
<td>men.</td>
<td>Both women and men with DM should have aggressive</td>
</tr>
<tr>
<td></td>
<td>MI: earlier occurrence and higher mortality in diabetic women compared with diabetic</td>
<td>management of their CVD risk factors. Observational</td>
</tr>
<tr>
<td></td>
<td>men. Lower revascularization rates in diabetic women compared with diabetic men.</td>
<td>studies suggest that women may require greater</td>
</tr>
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<td></td>
<td>HF: diabetic women have a higher risk of developing HF compared with diabetic men.</td>
<td>frequency/intensity of physical activity than men to</td>
</tr>
<tr>
<td></td>
<td>Stroke: DM is a stronger risk factor for stroke in women compared with men.</td>
<td>reduce CVD events.</td>
</tr>
<tr>
<td>PAD: DM is a</td>
<td>PAD: DM is a stronger risk factor for the development of claudication in women</td>
<td></td>
</tr>
<tr>
<td>stronger risk</td>
<td>compared with men. Decreased long-term survival in women undergoing</td>
<td></td>
</tr>
<tr>
<td>factor for</td>
<td>revascularization and increased postsurgical mortality are seen in diabetic</td>
<td></td>
</tr>
<tr>
<td>stroke in men.</td>
<td>women with PAD compared with diabetic men with PAD.</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>Higher prevalence of HTN in women over age 60 than in men.</td>
<td>Encourage optimal BP through diet, exercise, and</td>
</tr>
<tr>
<td></td>
<td>Less well controlled in women than men.</td>
<td>avoidance of excess alcohol and sodium.</td>
</tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td>Among women, dyslipidemia has the highest PAR at 47.1%, compared with all other</td>
<td>Statins are equally effective for secondary CVD</td>
</tr>
<tr>
<td></td>
<td>known risk factors for CVD.</td>
<td>prevention in both men and women; however, statins</td>
</tr>
<tr>
<td></td>
<td>Atherosoma regression and LDL lowering may be even greater among women on</td>
<td>may contribute to a greater likelihood of developing</td>
</tr>
<tr>
<td></td>
<td>statins than in men.</td>
<td>DM and myocardial ischemia in women.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Statins are recommended for primary prevention in</td>
</tr>
<tr>
<td></td>
<td>The impact of obesity on the development of CAD appears to be greater in</td>
<td>women; however, randomized trial evidence in women</td>
</tr>
<tr>
<td>Obesity</td>
<td>women than in men. In the Framingham Heart Study, obesity increased the risk of</td>
<td>is limited.</td>
</tr>
<tr>
<td></td>
<td>CAD by 84% in women compared with 46% in men.</td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>The prevalence of inactivity and sedentary behaviors is higher among women than</td>
<td>Overwhelming evidence indicates that regular</td>
</tr>
<tr>
<td>activity</td>
<td>men.</td>
<td>physical activity is one of the most powerful health-</td>
</tr>
<tr>
<td>Smoking</td>
<td></td>
<td>promoting practices that clinicians can recommend</td>
</tr>
<tr>
<td></td>
<td>In a recent meta-analysis by Hussey et al, it was reported that in all age groups</td>
<td>for patients.</td>
</tr>
<tr>
<td></td>
<td>with the exception of the youngest (30-44 y), women had a significant 25%</td>
<td>Women should be advised to accumulate at least 150 min/</td>
</tr>
<tr>
<td></td>
<td>increased risk for CAD conferred by cigarette smoking compared with men.</td>
<td>wk of moderate exercise, 75 min/wk of vigorous</td>
</tr>
<tr>
<td></td>
<td></td>
<td>exercise, or an equivalent combination.</td>
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<tr>
<td></td>
<td>Smoking is associated with a decade of lost life, and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cessation reduces that loss by about 90%.</td>
<td></td>
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<tr>
<td></td>
<td>Women should be advised not to smoke and to avoid environmental tobacco smoke.</td>
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<td></td>
<td>Provide counseling at each encounter, nicotine replacement, and other</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>pharmacotherapy/biologic therapy as indicated.</td>
</tr>
</tbody>
</table>
علن القاهرة لصحة المرأة العربية
مارس 2017

مجلس المرأة العربي

إعلان القاهرة حول صحة المرأة العربية لعام 2017

إن وزراء الصحة العرب المشتركون في أعمال الدورة العادية (47) لمجلس وزراء الصحة العرب، المنعقد في القاهرة، خلال الفترة 8-14 مارس 2017،

تعرب عن الشكر والاحترام للجامعة العربية - دائرة الصحة والمساعدين الإسلامية - اللجنة التنفيذية لمجلس وزراء الصحة العرب، والمجلس العربي، وصورته، الذين مثوا الاستعداد لمجلس وزراء الصحة العربية، ووزراء الصحة والمصالح العربية، لمجلس وزراء الصحة العربي، والمجتمع العربي، والممثل المستقبليين، على الجهود المبذولة في لجأ هذا الإعلان.

وكا نبه على فقد المبادئ والأهداف التي نشرت إستراتيجية التصور بصورة عملية خاصة، والمبادرات لحقوق الإنسان، وحقوق المرأة، على مدى أفضل التصور، ضد المرأة، وتضامنها، والتعاون على مبادئه المثلى، في جميع هذه، والمجتمع العربي، والمصالح العربية، والمجتمع العربي.

ونستن المجهود العربي المثلى لهذه الاستعدادات المثلى، بالتمثيل للمرأة في جميع_movies، وإعلان الأمد المثلى، والملخص للجهود، والجهود العربية، والمثلى قيمًا، على مبادئه المثلى، في جميع هذه، والمثلى قيمًا.
- أهداف التنمية المستدامة 2030 الصادرة عن الجمعية العامة للأمم المتحدة في سبتمبر 2015. لاسيما الهدف الثالث وهو الوجهة الصحية والرفاهية، والأهداف المتعلقة بالمساواة بين الجنسين وتحقيق العدالة، والسعي من أوجه عدم المساواة، والاطراف الاجتماعية والاقتصادية والسياسية، وكذلك ما تتضمنه هذه الأهداف من غيابات صحيه بناءً على تخسيس المعايير الصحية للأطفال وضمان حقوق المرأة في ذلك منها:
  - خفض نسبة الأطفال الذين يعانون من الخصوصية إلى أقل من 70 حالة وفاة لكل 100,000 مولود حي بحلول عام 2030.
  - وضع نهاية لوفيات الأطفال والأطفال دون سن الخامسة التي يمكن تقاطعها بحلول عام 2030. يسعى جميع البلدان إلى أن يكون هدف وفيات الأطفال على الأقل إلى 12 حالة وفاة لكل 1000 مولود حي. وخفض وفيات الأطفال دون سن الخامسة على الأقل إلى 25 حالة وفاة لكل 1000 مولود حي.
  - وضع نهاية لأولى الجينات المزمنة والأمراض المزمنة والالتهابات المزمنة، وكذلك الأمراض المزمنة الأخرى بحلول عام 2030.
  - تعزيز الصحة والعائلة العائلات بحلول عام 2030.
  - تعزيز الوقاية من إساءة استخدام المواد، بما في ذلك تعاطي المخدرات وشرب الكحول على نحو يعمر بالصحة، وعلاج تلك.
  - خفض عدد الوفيات والإنسانيات المتعلقة بحوادث المرور إلى النصف بحلول عام 2020.
  - ضمان حصول جميع على خدمات رعاية الصحة الإنجابية، بما في ذلك خدمات معلومة تنظيم الأسرة والتنوعية الخاصة بها، وإسهام الصحة الإنجابية في الاستراتيجيات والبرامج الوطنية بحلول عام 2030.

تفحص التغطية الصحية الشاملة. بما في ذلك المحاسبة من المخاطر المرئية، وتحقيق الابتسامة، و 마련 المراقبة على خدمات الرعاية الصحية الأساسية، وحصول جميع على الخدمات الصحية وفقًا للمعايير السليمة.

- حدد سريرية كبيرة من عدد الوفيات والأمراض الناجمة عن التعرض لمواد الكيميائية الخطرة وشبيهة
- ونتوء الجزء الماء واللحمة بحلول عام 2030.
- توزع الكفالة الإهلالي من جهة الصحة العالمية للتفاعلية لتبني في جميع البلدان، حسب الاقتضاء.
- توزيع الكفالة الإهلالي من جهة الصحة العالمية للتفاعلية لتبني في جميع البلدان، حسب الاقتضاء.
- تقوم بتقديم الاتفاقية الإهلالي لمنظمة الصحة العالمية للتفاعلية لتبني في جميع البلدان، حسب الاقتضاء.
- تقوم بتقديم الاتفاقية الإهلالي لمنظمة الصحة العالمية للتفاعلية لتبني في جميع البلدان، حسب الاقتضاء.
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Conclusion

More well designed research focusing on women is needed
Maslow's Hierarchy of Needs

- **Self-actualization**
  personal growth and fulfillment

- **Esteem needs**
  achievement, status, responsibility, reputation

- **Belongingness and Love needs**
  family, affection, relationships, work group, etc.

- **Safety needs**
  protection, security, order, law, limits, stability, etc.

- **Biological and Physiological needs**
  basic life needs - air, food, drink, shelter, warmth, sex, sleep, etc.