

CHAPTER 4

SEX- AND GENDER- UNIQUE DISPARITIES: CVD ACROSS THE LIFESPAN OF A WOMAN

CWHHA ATLAS ON THE EPIDEMIOLOGY,
DIAGNOSIS AND MANAGEMENT OF
CARDIOVASCULAR DISEASES IN WOMEN



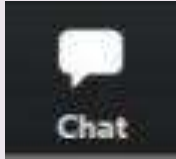
DONNA HART, BA, RSW
Milton, ON | @recycleyourself

KARA NERENBERG, MD, MSc
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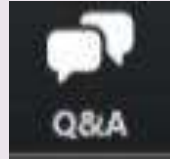
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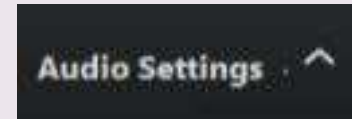
WELCOME & HOUSEKEEPING



To notify the presenters and moderators if you are having any technical difficulties



To ask questions through session



To check your audio settings by clicking "Test speaker and microphone"





DISCLOSURE STATEMENT

We do not have an affiliation (financial or otherwise) with a commercial organization that may have a direct or indirect connection to the content of this presentation.

Learning Objectives

At the end of this webinar, you will be able to:

- Be aware of how heart disease can be experienced by sharing in one woman's personal journey
- Understand unique cardiovascular risk factors in women, and how the usual ones can have more impact than in men
- Review how these risk factors are affected by the normal physiologic changes occurring over a woman's lifetime



Canadian Women's Heart Health Alliance (CWHHA)

LAUNCHED IN 2018
Over 100 members!



Mission: Disseminate education and best practices re: Women's cardiovascular (CV) health among **healthcare providers and women with lived experience.**



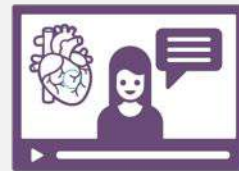
Goal: Eliminate knowledge gaps in specific CV issues and develop new practice considerations in care for women, thereby improving the health of Canadian women.



CWHHA WORKING GROUPS



Advocacy



Training and
Education



Knowledge Translation
and Mobilization



Health Systems
and Policy

Polling Question: Who is in the audience today?



- Patient / Former Patient
- Caregiver / Family Member
- Healthcare Provider
- Researcher
- Trainee
- Other

KNOWLEDGE TRANSLATION AND MOBILIZATION + HEALTH SYSTEMS AND POLICY WORKING GROUPS



GO RED FOR WOMEN SPOTLIGHT CONTEMPORARY REVIEW

State of the Science in Women's
Cardiovascular Disease:
A Canadian Perspective on the
Influence of Sex and Gender

JOURNAL OF THE AMERICAN HEART ASSOCIATION

Volume 9, Issue 4, 18 February 2020 | doi.org/10.1161/JAHA.119.015634

Sex and Gender Definitions

SEX



- Biology – chromosomes at birth (female/male)
- Encompasses hormones, genes, anatomy, physiology, etc.

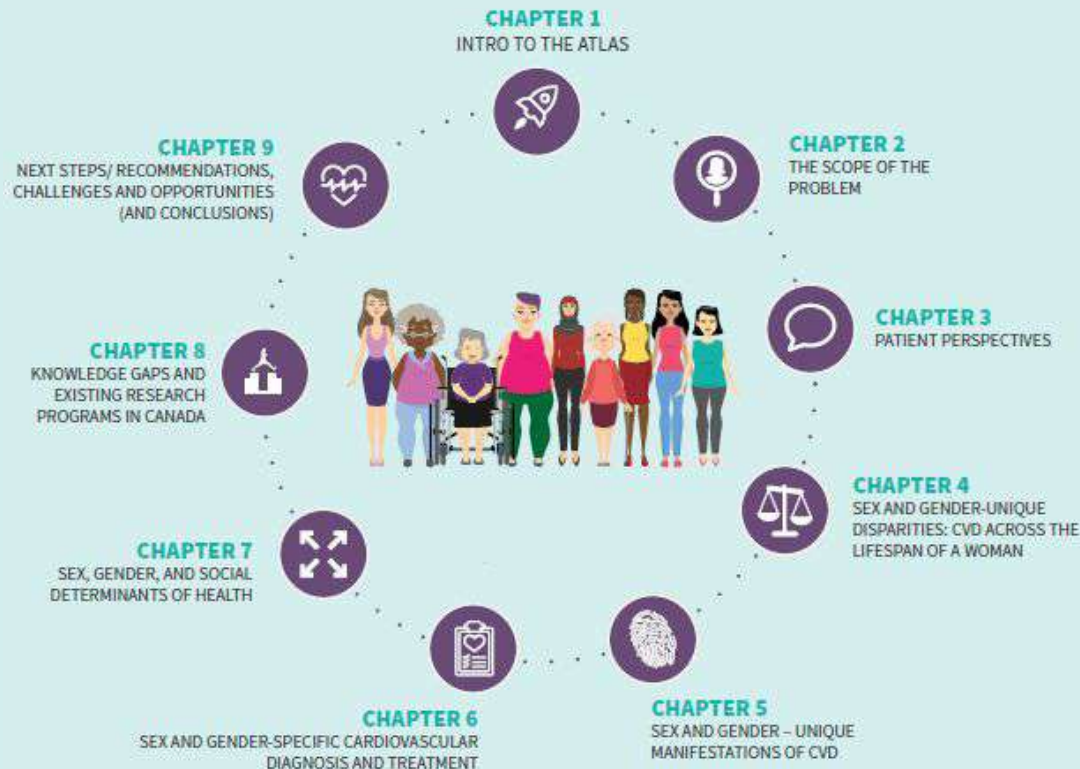
GENDER



- Socially influenced determination (man/woman)
- Is culturally specific and temporal

CANADIAN WOMEN'S HEART HEALTH ALLIANCE **ATLAS**



Epidemiology, Diagnosis, and Management of Cardiovascular Diseases in Women



- 9 unique “chapters”
- CJC Open
- Editor: Dr. M. Graham
- 1st: published April 2020
- 2nd, 3rd: in press
- All within 1 year
- Annual chapter updates
- “Living document”

Norris CM Mulvagh SL. CJC Open 2020

The Canadian Women's Heart Health Alliance ATLAS on the Epidemiology, Diagnosis, and Management of Cardiovascular Disease in Women-Chapter 4: Sex- and Gender-Unique Disparities: CVD Across the Lifespan of a Woman

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Open Access • Published: September 24, 2021 • DOI: <https://doi.org/10.1016/j.cjco.2021.09.013>

DONNA'S STORY



DONNA HART, BA, RSW

CAN-RESTORE Standard Steering Committee
World Transplant Games Athletic Advisory Committee
– Swimming

Patient Partner, Canadian National Transplant
Research Program (CNTRP)

Gender Outcomes International Group: to Further
Well-being Development (GOING-FWD)

Woman with Lived Experience
Milton, ON

Top of Lake Louise
August 2014



Haida Gwaii
Backcountry Kayaking
2017



Halton Epic Tour
September 2014



Stepdown Unit Cardiac ICU



Transplant Inpatient May 2015



Canadian Transplant Games 2018



World Transplant Games 2019

- 2 Silver
- Bronze medal



What can we do better?



- Educating the gatekeepers - emergency room health care providers and primary care providers
- Busting the myth that women do not get heart disease, and educate women of gender specific cardiac symptoms.
- Women, regardless of their lifestyle should be made aware of the importance of their family history.



New Chest Pain Guidelines from ACC – Nov 2021

CHEST PAIN

EARLY CARE SAVES LIVES

Chest pain can be a symptom of a **HEART ATTACK**. You also can feel heart attacks in other ways. Learn the warning signs.

CHEST PAIN CAN FEEL LIKE

- Chest pressure, tightness, squeezing, or burning
- Discomfort in your chest, shoulders, arms, back, neck or jaw
- Pain that travels down one or both arms
- Shortness of breath
- Heartburn-like feeling

OTHER SYMPTOMS OF HEART ATTACK INCLUDE

- Nausea or vomiting
- Unusual tiredness
- Cold sweat
- Dizziness or weakness
- Anxiety

Women have **CHEST PAIN** as often as men when having a heart attack. But women are more likely to have **3 or more other symptoms** as well.

If you think you are having a heart attack, DON'T DELAY. Call 911 right away.

Visit [CardioSmart.org/ChestPain](https://www.CardioSmart.org/ChestPain) to learn more.

@CardioSmart

Information provided for educational purposes only. Please ask your healthcare professional about your specific health needs. For more about our disclaimer, visit www.CardioSmart.org/Disclaimer.

CHEST PAIN IN WOMEN

- Chest pain = pressure, tightness, squeezing, burning
- Can be in chest, shoulders, arms, back, neck or jaw
- Can travel down one or both arms
- Women have chest pain as often as men when having a heart attack

BUT...

Women are more likely to have 3 or more other symptoms as well:

- Nausea or vomiting
- Unusual tiredness
- Cold Sweat
- Dizziness or weakness
- Anxiety



CANADIAN WOMEN'S
HEART HEALTH CENTRE

NATIONAL
ALLIANCE

CWHHA.CA |



@CWHHAlliance

The Canadian Women's Heart Health Alliance ATLAS on the Epidemiology, Diagnosis, and Management of Cardiovascular Disease in Women-Chapter 4: Sex- and Gender-Unique Disparities: CVD Across the Lifespan of a Woman

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Open Access • Published: September 24, 2021 • DOI: <https://doi.org/10.1016/j.cjco.2021.09.013>



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CHAPTER 4 | SEX- AND GENDER-UNIQUE DISPARITIES: CVD ACROSS THE LIFESPAN OF A WOMAN

MENARCHE, MENSTRUATION, CONTRACEPTION

Assessments of women's risks of CVD may need to consider experiences of menstruation, menarche, and contraception use.

POLYCYSTIC OVARY SYNDROME (PCOS)

Affects women of reproductive age, resulting in increased risk of obesity, insulin resistance and other metabolic risk factors (increased blood sugars, dyslipidemia, and hypertension). These complications increase the risk for CVD and stroke and should be assessed in women with PCOS.

PREGNANCY-RELATED RISKS

Cardiac disease is a leading cause of maternal morbidity and mortality both during pregnancy and in the postpartum period. Several common adverse pregnancy outcomes (eg: hypertensive disorders of pregnancy, gestational diabetes, preterm birth) are associated with increased lifetime CVD risk.

MENOPAUSE

Menopause is a risk factor for CVD, particularly premature spontaneous or surgical menopause. Endogenous estrogen is cardioprotective; the effects of exogenous estrogens (and progesterone) are complex and less clear. Time and type of menopause should be considered when assessing CV risk and when recommending menopausal hormone therapies.



DEPRESSION

Depression is more prevalent in women than men, both before and following cardiac diagnosis. Younger women are particularly vulnerable to depression following cardiac diagnosis. Depressed individuals should be monitored for CVD in primary care. Upon CVD diagnosis, all individuals should be screened and treated early for depression.

SEX-BASED PHARMACOLOGY OF CV DRUGS

Sex differences in pharmacokinetics underly adverse drug reactions.

CHRONIC KIDNEY DISEASE (CKD)

Sex- and gender-related differences in kidney disease presentation, diagnosis, treatment, and prognosis impact CKD-associated CVD risk in women.

DISPROPORTIONATE IMPACT OF TRADITIONAL RISK FACTORS

Traditional CVD risk factors and gendered psychosocial stressors contribute to increased risk of CVD in women.

AUTOIMMUNE RHEUMATIC DISORDERS (ARDs)

ARDs are more prevalent in women. Cardiac symptoms can be misinterpreted as being related to an ARD or even be clinically silent; therefore, careful cardiac and ARD assessment, reporting and attention to traditional CV risk factors with early specialist referral is essential.



POTENTIAL CARDIOVASCULAR RISK FACTORS IN WOMEN

TRADITIONAL (smoking, hypertension, diabetes, obesity, hyperlipidemia, dietary patterns, sedentary behaviour, psychosocial factors)

EARLY MENARCHE

MENSTRUAL CYCLE IRREGULARITY

POLY-CYSTIC OVARIAN SYNDROME (PCOS)

DEPRESSION

LATE MENARCHE

CONTRACEPTIVE-USE

AUTOIMMUNE RHEUMATIC DISEASES

PREGNANCY-RELATED (hypertensive disorders of pregnancy, gestational diabetes, preterm birth, abruption, infertility)

CHRONIC KIDNEY DISEASE

BREAST CANCER THERAPIES

PREMATURE MENOPAUSE

EARLY MENOPAUSE

MENOPAUSE

POST-MENOPAUSE

BIRTH

10

20

30

40

50

60

70

80

90

100

AGE

Menarche, Menstruation, Contraception

AGE AT MENARCHE

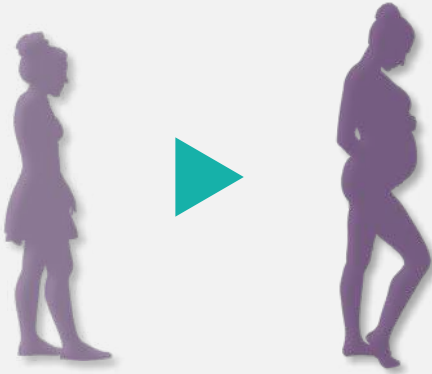
- Early
- Late

MENSTRUAL CYCLE VARIABILITY

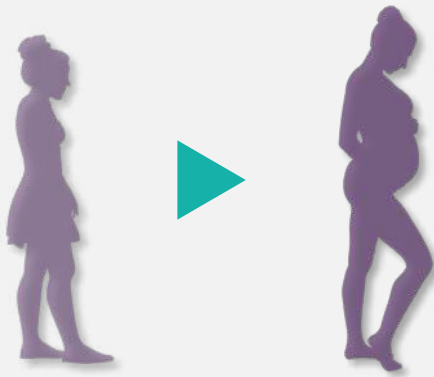
- Impact on CV risk markers
- Predisposition to arrhythmias

CONTRACEPTIVE USE

- Formulations
- Interaction with traditional risk factors:
 - Smoking
 - Hypertension
 - Hyperlipidemia



Polycystic Ovary Syndrome (PCOS)



AFFECTS WOMEN OF REPRODUCTIVE AGE, RESULTING IN:

- Increased risk of obesity
- Insulin resistance
- Other metabolic risk factors (increase blood sugars, dyslipidemia, hypertension)

These complications increase the risk for CVD and stroke and **should be assessed in women with PCOS**

Pregnancy-Related Risks



Cardiac disease is a **leading cause of maternal morbidity and mortality** both during pregnancy and in the postpartum period.

SEVERAL COMMON ADVERSE PREGNANCY OUTCOMES ARE ASSOCIATED WITH INCREASED LIFETIME CVD RISK:

- Hypertensive disorders of pregnancy
- Gestational diabetes
- Preterm birth

“Cardio-Obstetric History”

- should be obtained in ALL women

Menopause

Ages:

Average: 51 yo

Premature (<40 yo)

Early (40 - 45 yo)

Spontaneous vs Surgical

- Endogenous estrogen is cardioprotective
- Exogenous estrogens (and progesterone):
 - effects are complex, less clear

Time and type of menopause should be considered when assessing CV risk and when recommending menopausal hormone therapies



Depression



- More prevalent in women than men, both before and following cardiac diagnosis.
- Younger women are particularly vulnerable to depression following cardiac diagnosis.
- Depressed individuals should be monitored for CVD in primary care
- A CVD diagnosis should trigger screening and, if indicated, treatment for depression

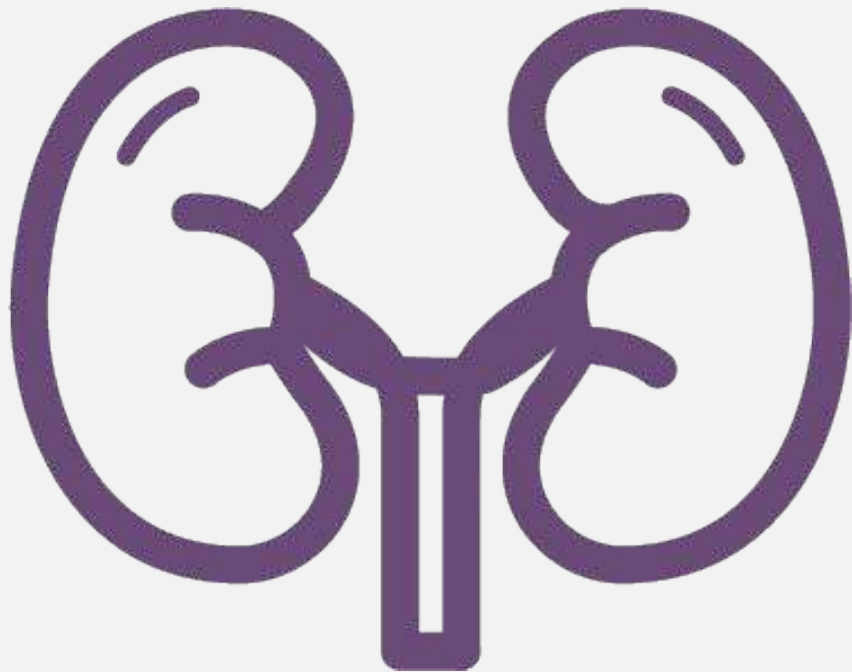


Autoimmune Rheumatic Disorders (ARDs)

- ARDs are more prevalent in women.
- Cardiac symptoms can be misinterpreted as being related to an ARD or even be clinically silent;
 - Therefore, careful cardiac and ARD assessment, reporting and attention to traditional CV risk factors with early specialist referral is essential.



Chronic Kidney Disease (CKD)



Sex- and gender-related differences in kidney disease presentation, diagnosis, treatment, and prognosis impact CKD-associated CVD risk in women.

Disproportionate Impact of Traditional Risk Factors

Traditional CVD risk factors

And

gendered psychosocial stressors **contribute to increased risk of CVD in women.**



Sex-Based Pharmacology of CV Drugs



Sex differences in pharmacokinetics underly adverse drug reactions.

Potential Risk Factors in Women

(Across her lifespan)



ADOLESCENT

Create good habits
in childhood.

- Healthy eating
- Physical activity
- Stress Management

YOUNG ADULT

Know your
Family History.

- Certain ovarian conditions can increase risk.

PREGNANCY

Complications
increase risk.

- Premature delivery
- High blood pressure
- Diabetes

POST-MENOPAUSE

Premature menopause
increases risk of heart
disease by 50%.

Cholesterol levels **worsen**
after menopause.

Canadian Women's Heart Health Centre. Infographic. Heart Disease Across Her Lifespan. 2018.



CANADIAN WOMEN'S
HEART HEALTH CENTRE

NATIONAL
ALLIANCE

HEART DISEASE IS ON THE **RISE**



IT'S THE **LEADING
CAUSE OF DEATH** FOR
WOMEN WORLDWIDE



Heart attack symptoms are **not recognized** in over 50% of women.



Causes of heart disease can be **different for women** than men.



Women can be at **greater risk** for heart disease than men.



There is a lot we can **all** do to help **reduce the risk**. Heart disease is largely **preventable**.



To take care of others, you need to first take care of yourself. **Start the conversation with the women in your life.**

Questions? Visit [WearRedCanada.ca](https://www.WearRedCanada.ca) or your healthcare provider.

Q&A



**WE WANT TO
HEAR FROM YOU.**

Questions, Comments...



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HEART HEALTH CENTRE

NATIONAL
ALLIANCE



HER
HEART
MATTERS

WEAR RED CANADA • FEB 13

JOIN US!

Wear Red Canada | February 13

HOW CAN YOU PARTICIPATE?

1. Wear Red



2. Share Key Messages



3. Get Involved



Join a Regional Planning Committee



Register for the virtual 5K Event



Join our Facebook Group:
facebook.com/groups/WearRedCanada



Attend an Event (*National Program
Schedule coming soon*)



Light the town Red



WearRedCanada.ca

#HerHeartMatters

@CWHHAlliance

THANK YOU!



EVALUATION

Please complete the
evaluation form after
the webinar.

For more information visit
CWHHA.CA



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