

NATIONAL ACADEMIES OF SCIENCE

# Preventing Cardiovascular Disease (CVD) in Pregnancy

Shruthi Mahalingaiah, MD, MS

*American Society for Reproductive Medicine (ASRM) Representative*

Associate Professor of Environmental, Reproductive, and Women's Health  
Department of Environmental Health | Harvard T.H. Chan School of Public Health

Attending Physician | Director of Clinical Research, REI MGH Department of OB/GYN

Massachusetts General Hospital | Harvard Medical School

# Disclosures

I have no conflicts of interests to disclose.

**I, Shruthi Mahalingaiah, and my research unit are currently or have been funded by:**

National Institute of Health (NIH)/National Institute of Environmental Health Sciences (NIEHS)

The Connors Center

Integrated Health Sciences Facility of the Harvard NIEHS Center for Environmental Health (IHSFC)

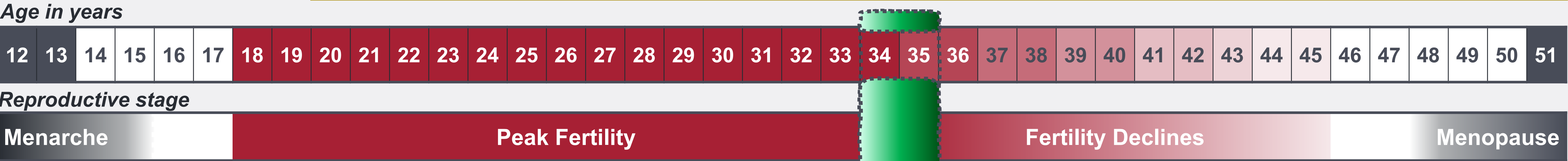
Centers for Disease Control and Prevention (CDC) via Charles River Analytics, Inc.

National Science Foundation

Department of Health & Human Services (HHS)/Office on Women's Health

# REPRODUCTIVE HEALTH TIMELINE

Weight gain progressively through middle age, accumulation can lead to obesity and risk for CVD<sup>1</sup>

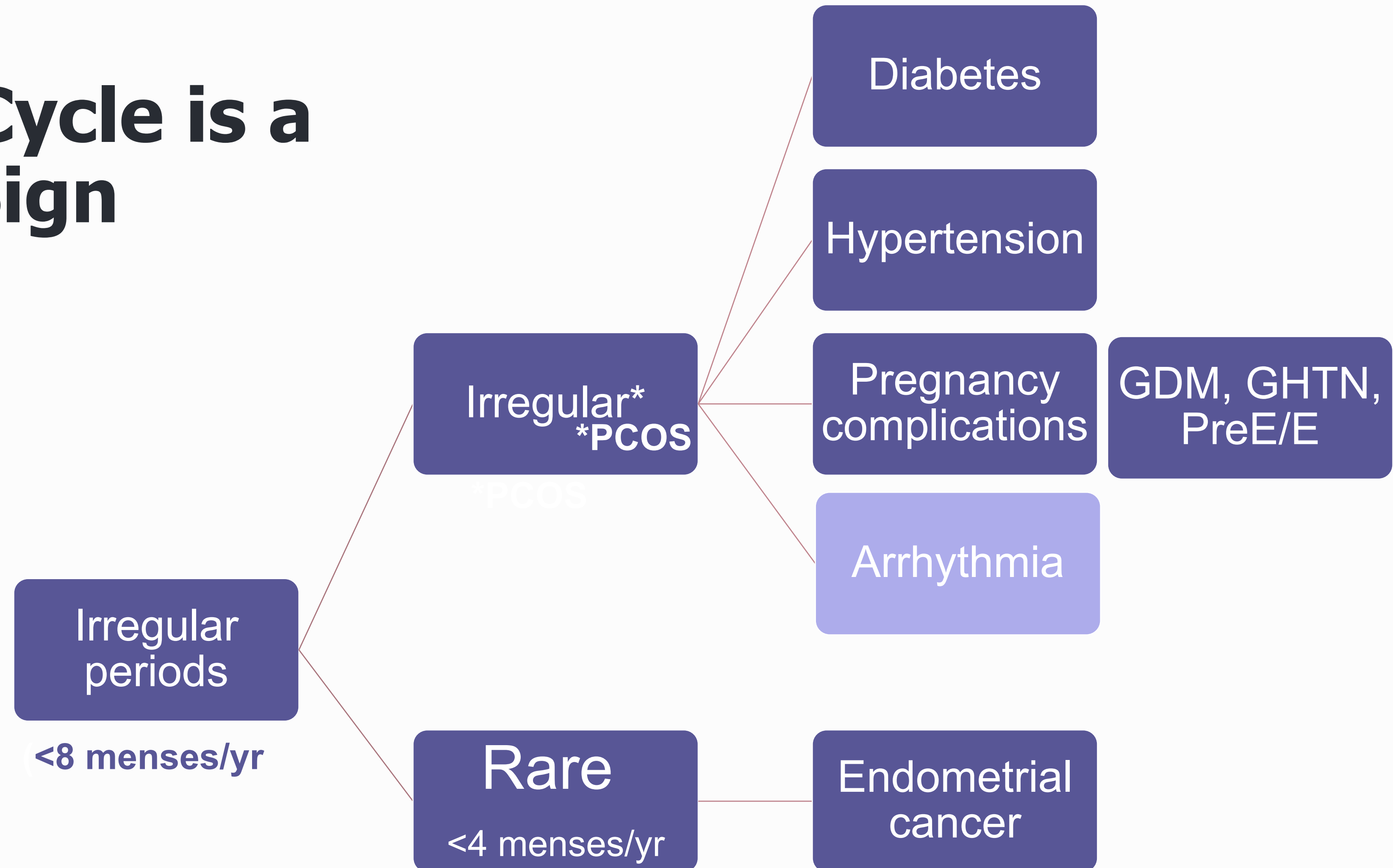


ASSISTED REPRODUCTIVE TECHNOLOGY (ART)  
Average duration of comprehensive treatment: 18 months

STAGE	Diagnostic Evaluation	TREATMENT	POST-TREATMENT
Average time	1.5 - 3 months	6 months – several years	Transfer to OB Care or PCP care
Intervention	<ul style="list-style-type: none"><li>Initial visit and work up</li><li>Diagnosis evaluation</li><li>Potential treatment</li><li>Counselling on lifestyle</li></ul>	<ul style="list-style-type: none"><li>Provide treatment</li><li>Average 1-6 cycles, up to 2 years</li></ul>	<ul style="list-style-type: none"><li>Pregnancy support</li><li>Weight gain<sup>2</sup></li><li>Post partum support</li></ul>

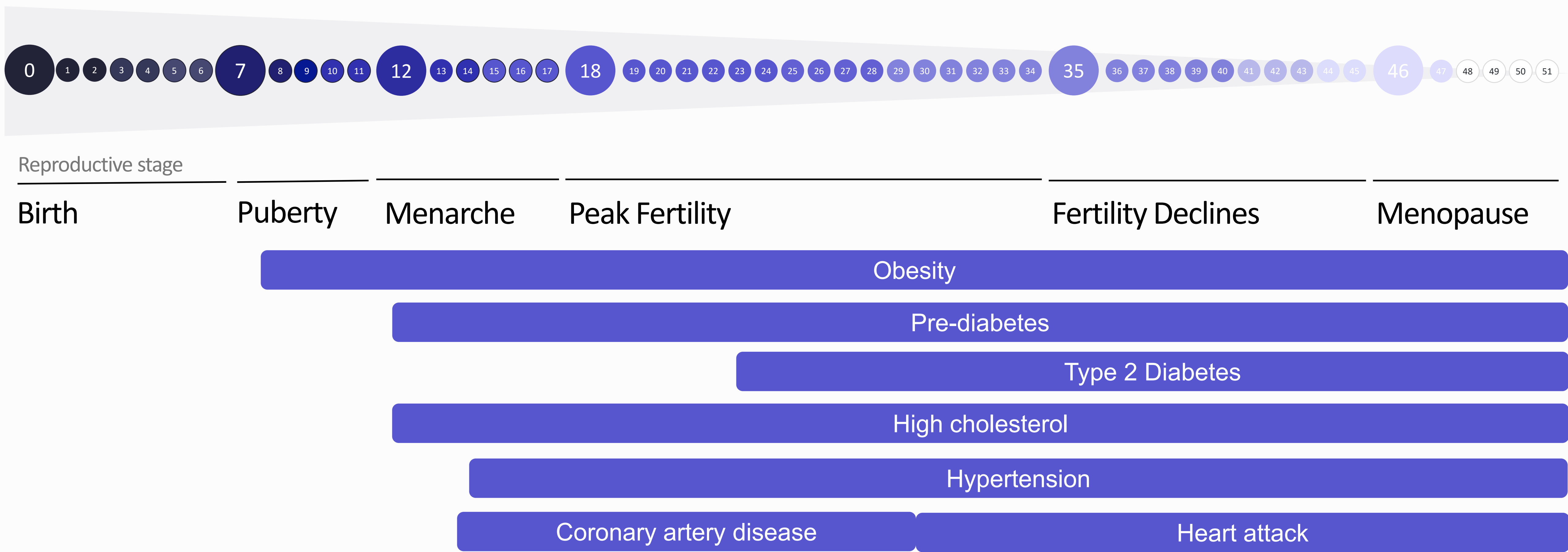
1. Hutfless et al. 2013. Strategies to Prevent Weight Gain Among Adults. Agency for Healthcare Research and Quality (US), Rockville (MD); 2013. PMID: 23638485.  
2. ACOG, 2013. Committee on Obstetric Practice. Weight Gain During Pregnancy. Committee Opinion, Number 548.

# Menstrual Cycle is a Vital Sign



# PCOS, irregular cycles, and cardiometabolic health

## Reproductive Health Timeline





# PCOS

## CONSENSUS ON WOMEN'S HEALTH ASPECTS OF POLYCYSTIC OVARY SYNDROME (PCOS): THE AMSTERDAM ESHRE/ ASRM-SPONSORED 3RD PCOS CONSENSUS WORKSHOP GROUP

Increased risk of:

Gestational Diabetes

Gestational Hypertension

Pre-eclampsia/Eclampsia

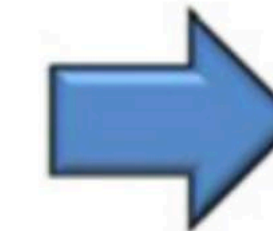
### PCOS: changing women's health paradigm



(young age)

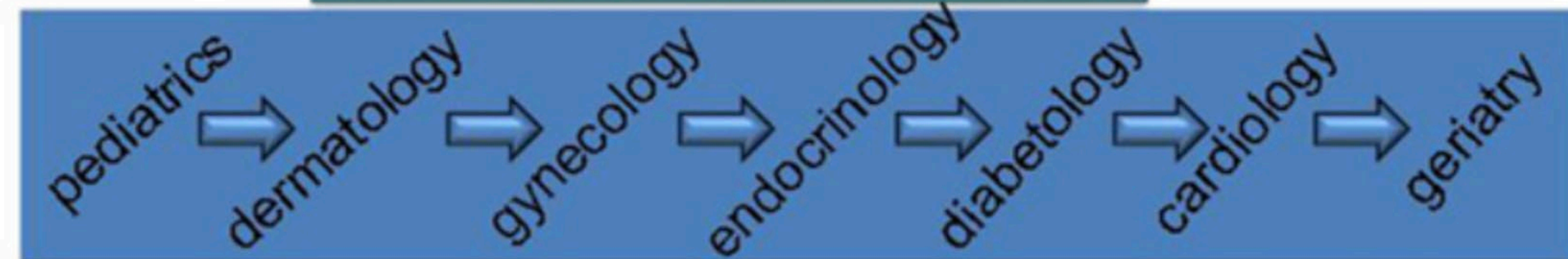
(older age)

- menstrual disorders
- hirsutism
- contraception
- sexual health
- infertility



- pregnancy complications
- quality of life
- type 2 diabetes
- cardiovascular disease
- cancer risk?

#### Multi-disciplinary approaches



Schematic representation of the change in emphasis from early age reproductive disorders to long-term metabolic and cardiovascular health.

# REPRODUCTIVE HEALTH TIMELINE

Weight gain progressively through middle age, accumulation can lead to obesity and risk for CVD<sup>1</sup>

Age in years



Reproductive stage



ASSISTED REPRODUCTIVE TECHNOLOGY (ART) <i>Average duration of comprehensive treatment: 18 months</i>			
STAGE	Diagnostic Evaluation	TREATMENT	POST-TREATMENT
<i>Average time</i>	1.5 - 3 months	6 months – several years	Transfer to OB Care or PCP care
<i>Intervention</i>	<ul style="list-style-type: none"><li>Initial visit and work up</li><li>Diagnosis evaluation</li><li>Potential treatment</li><li>Counselling on lifestyle</li></ul>	<ul style="list-style-type: none"><li>Provide treatment</li><li>Average 1-6 cycles, up to 2 years</li></ul>	<ul style="list-style-type: none"><li>Pregnancy support</li><li>Weight gain<sup>2</sup></li><li>Post partum support</li></ul>

1. Hutfless et al. 2013. Strategies to Prevent Weight Gain Among Adults. Agency for Healthcare Research and Quality (US), Rockville (MD); 2013. PMID: 23638485.  
2. ACOG, 2013. Committee on Obstetric Practice. Weight Gain During Pregnancy. Committee Opinion, Number 548.

