Gender Cardiology

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Universitäres Herzzentrum, Kardiologie
Universitätsspital Basel & Cardiovascular Research Institute Basel

19. Kardiologie-Symposium, 19.11.26

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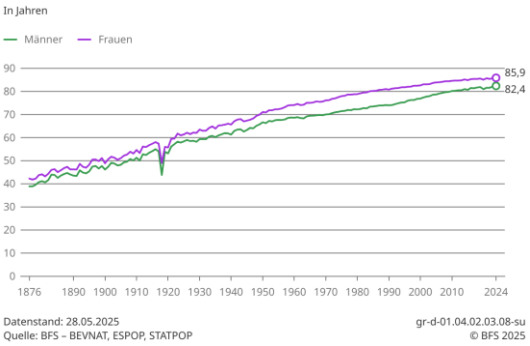
Interessenskonflikte

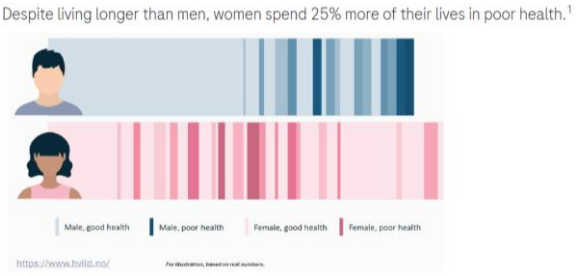
Keine.

Forschungsförderung: Schweizerische Herzstiftung, Bangerter-Rhyner-Stiftung, Mach-Gaennsslen Stiftung, ProPatient Stiftung, Freiwillige Akademische Gesellschaft Basel, Novartis Foundation

2

Life expectancy of women and men



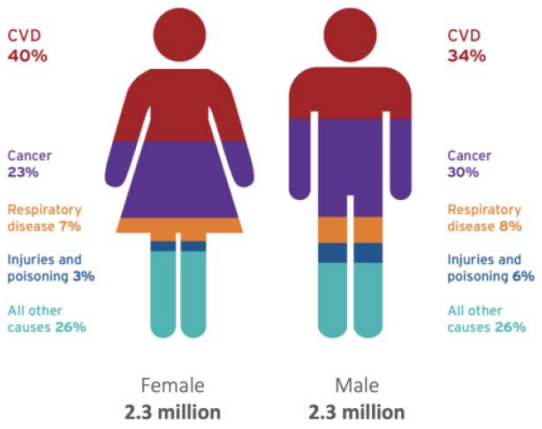


McKinsey Health Institute, World Economic Forum 2024

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Women and cardiovascular disease

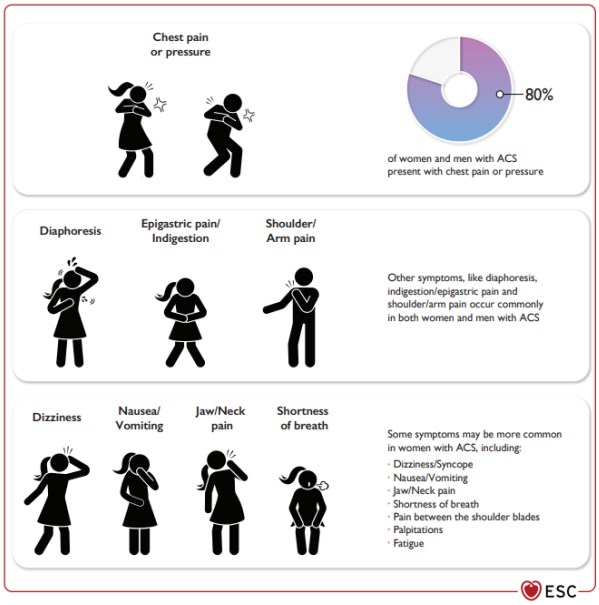
- More **CVD deaths in women** than all cancers combined
- **40% of all deaths** in women are CVD
- Mortality following heart attack is **20% greater in women** vs men



Weidinger F et al, Improving CV Health in Europe. ESC 2025

4

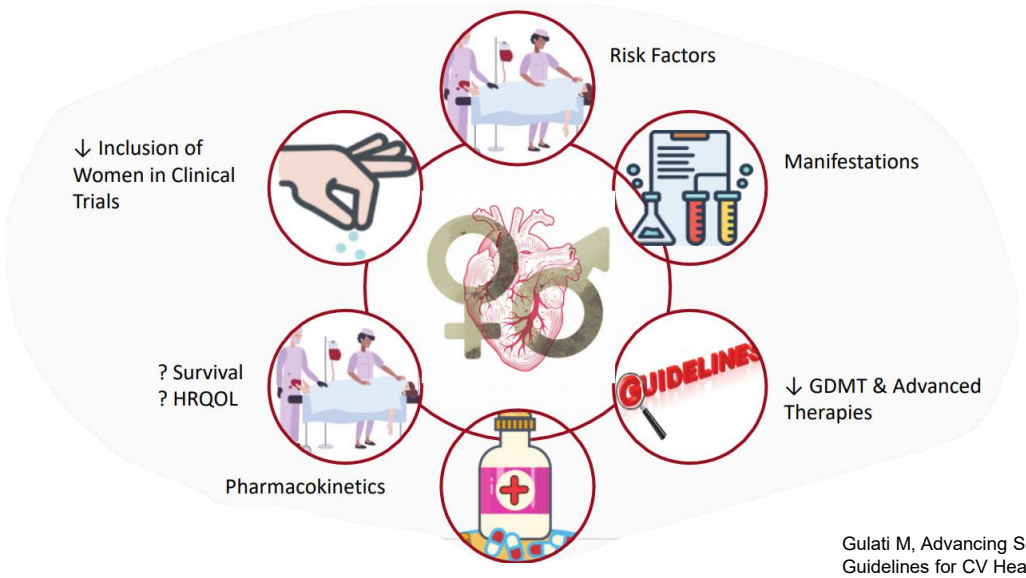
Symptoms of men and women with ACS



Delayed/missed ACS diagnoses in women!

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Why does Sex & Gender matter in Cardiology?

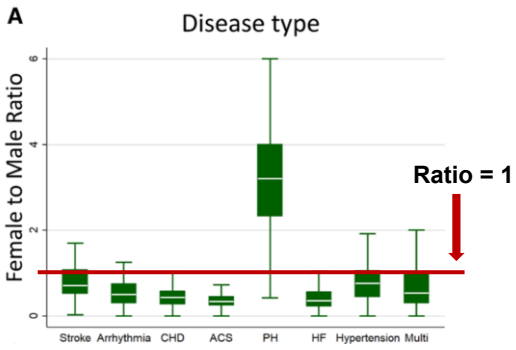


Gulati M, Advancing Sex Specific Guidelines for CV Health, ESC 2025

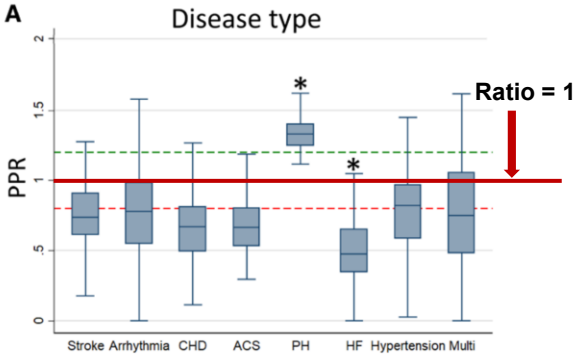
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Women participation in CV trials: overall 38%

740 Clinical Trials, 2010 to 2017



PPR = participation prevalence ratio

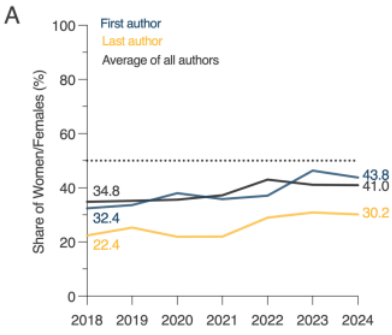


Xi J et al., Circulation 2020

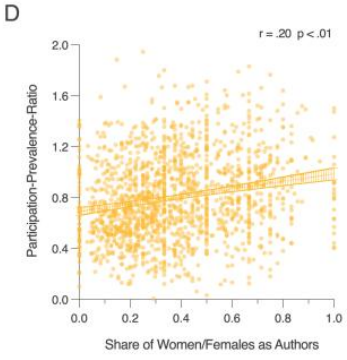
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Women are underrepresented in research

Women are underrepresented in life science research…



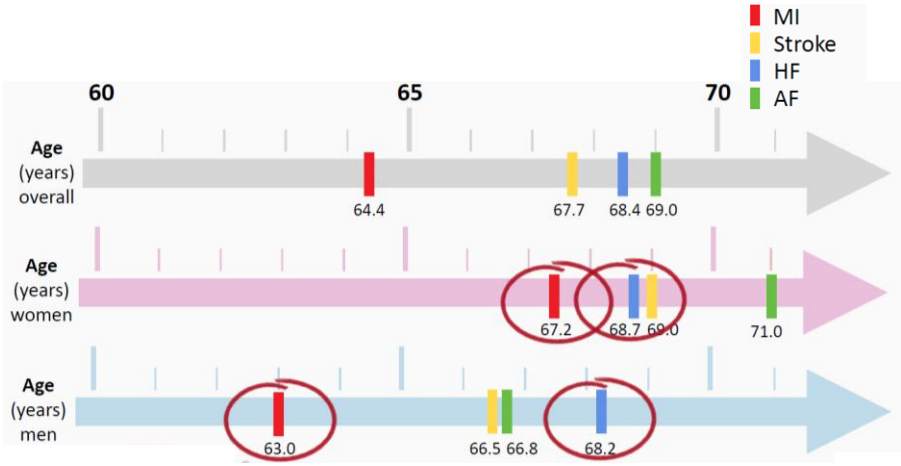
…to the disadvantage of women`s health



Bley et al, Clin Res Cardiol 2025

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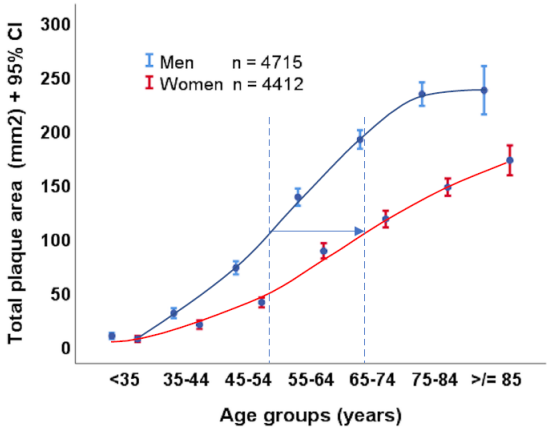
Median age at CVD diagnosis by sex



MORGAM Consortium, Ohlrogge ESC 2025

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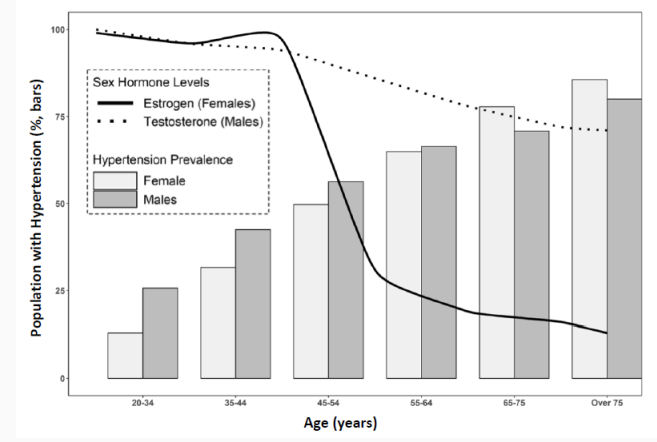
Sex differences in burden of atherosclerosis by age groups



Ahmed S et al, Biol Sex Differ 2021

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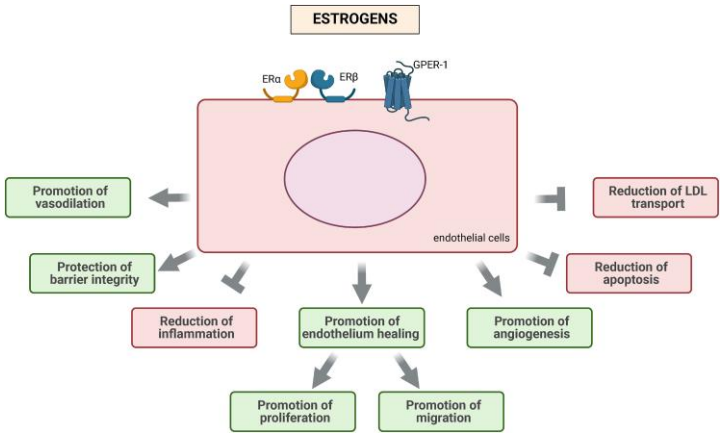
Sex hormone changes & CVRF



Connelly PJ et al, J Hum Hypertens 2022

11

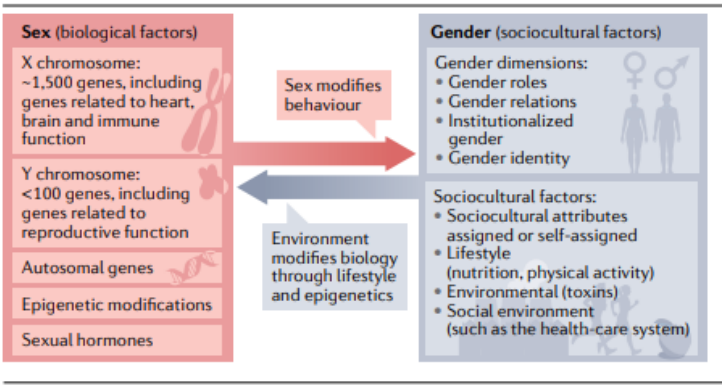
Loss of protective effect of estrogens



Robert J et al, Atheroscerosis 2023

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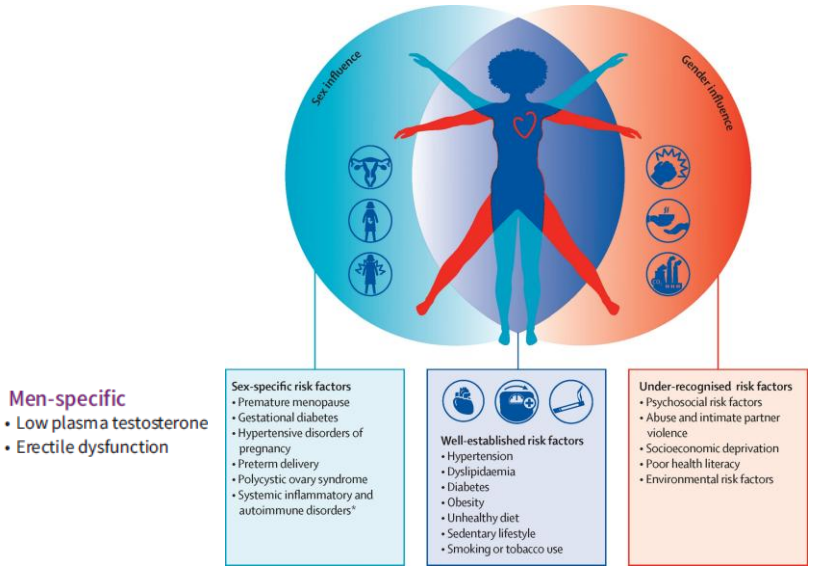
Sex and gender interact



Regitz-Zagrosek V et al. Nature Rev Cardiology 2023

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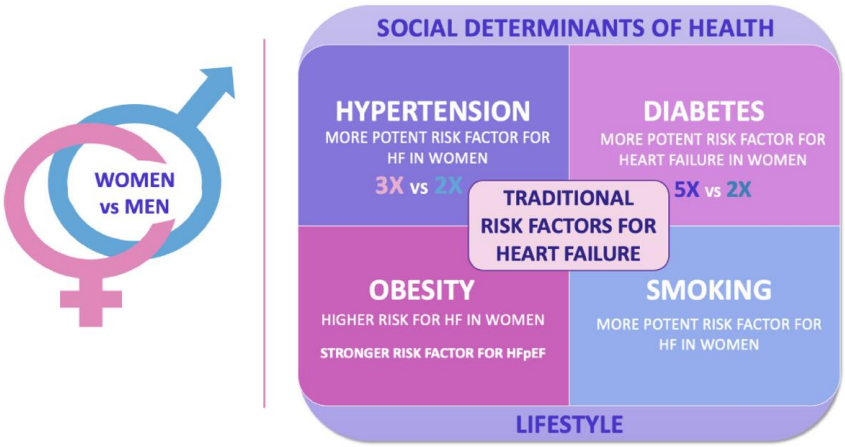
Risk factors for CVD in women



Vogel B et al, Lancet 2021

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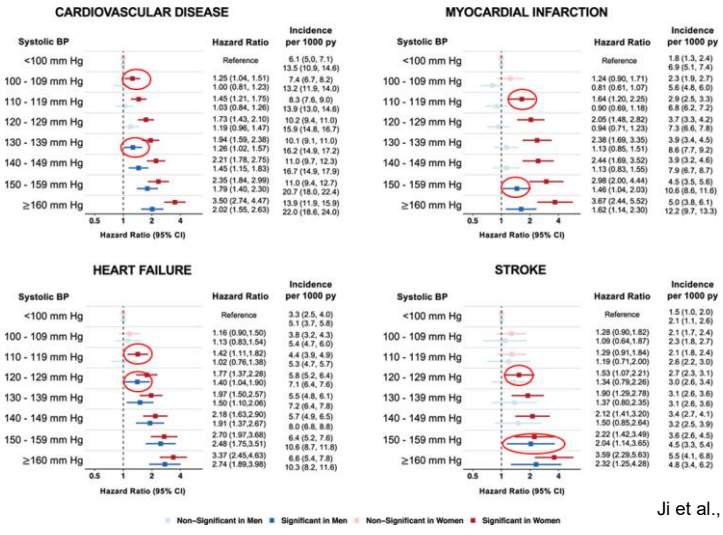
Impact of traditional CVRF in women



Lala J Cardiac Fail 2022;28:477498

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Association between syst BP and risk of CVD

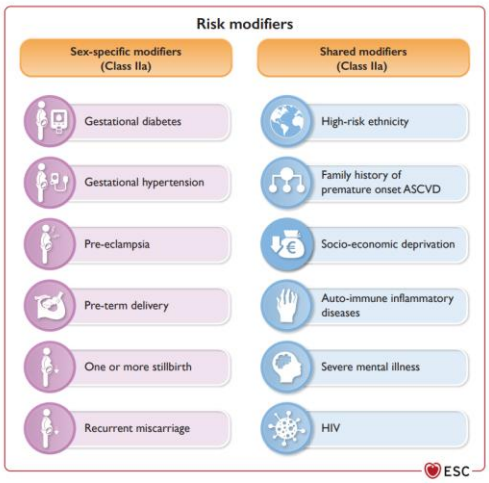


27 542 participants (54% women): 4 community-based cohort studies

Ji et al., Circulation 2021;143(7):761-3

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Guideline hypertension: Sex-specific risk modifiers

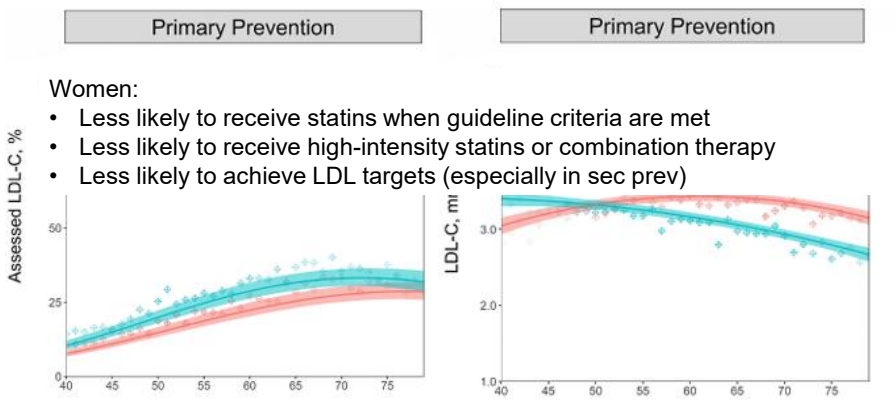


These RF up-classify pts from 5-10% 10-year CVD risk

McEvoy et al, Eur Heart J 2024;45:3912-4018

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Worse LDL control in women



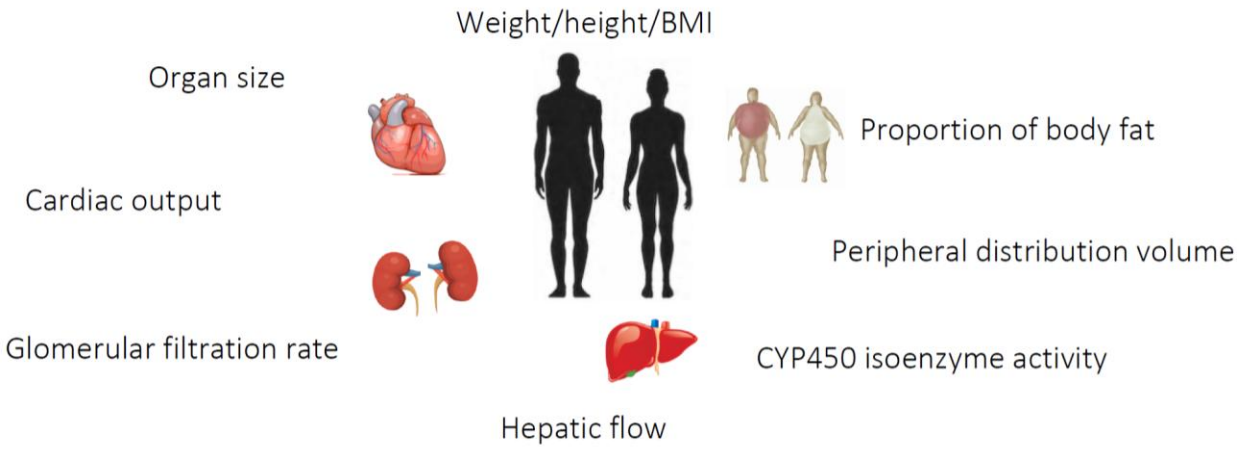
Women:

- Less likely to receive statins when guideline criteria are met
- Less likely to receive high-intensity statins or combination therapy
- Less likely to achieve LDL targets (especially in sec prev)

Rachamin et al, Atherosclerosis 324 (20221) 141-147

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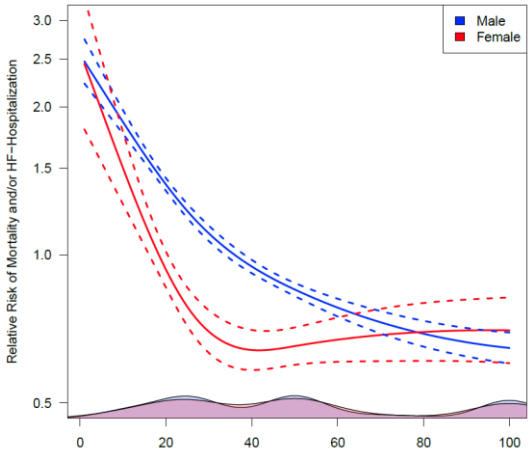
Sex differences in pharmacotherapy



Lam CSP et al., EHJ (2019) 40, 3859–3868

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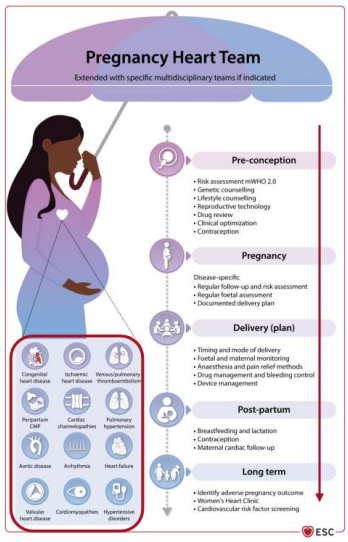
Same dose, different response?



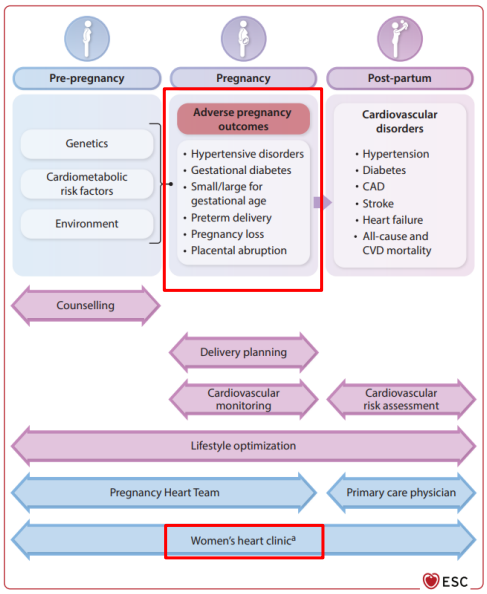
Santema BT et al. Lancet. 2019

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Adverse pregnancy outcomes (APO)

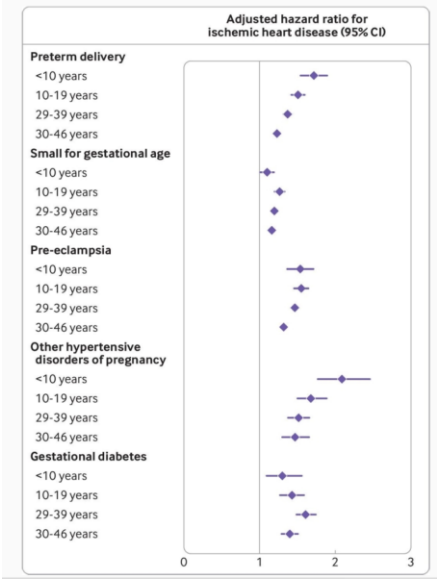


De Backer et al, Eur Heart J 2025



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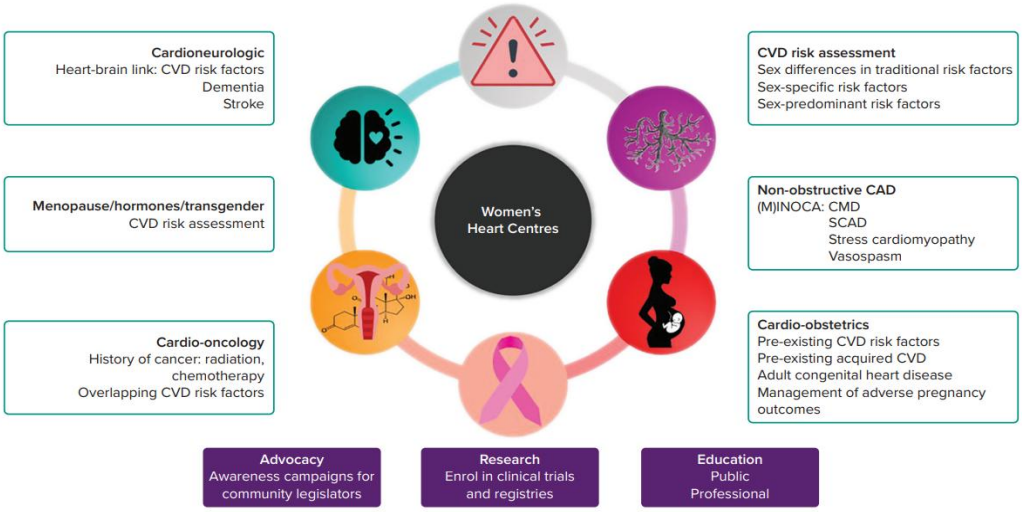
APO: long-term risk for CAD



Crump C et al, BMJ 2023

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Women's Heart Health Basel– A Multidisciplinary Model



Gulati M et al., Eur Rev Cardiol 2021

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Switzerland

Swiss National Alliance for Women's Heart Health

Frauenherzsprechstunde (Women's Heart Health)

Frauenherzzentrum Bern Women's Heart Sprechstunde

HUG Launch a Women's Cardiovascular Health Center

University Hospital Basel

Prof. Christine Meyer-Zürn
Dr. Eliza Kaplan, PhD

INSELSPITAL
UNIVERSITÄTSSPITAL BERN
HÔPITAL UNIVERSITAIRE DE BERNE
Universitätsklinik für Kardiologie

Prof. Catherine Gebhard
Dr. Dr. Moritz Hundertmark, PhD

USZ Universitäts Spital Zürich

Prof. Carolin Lerchenmüller
Prof. Corinna Brunckhorst

HUG Hôpitaux Universitaires Genève

PD Dr. Elena Tessitore

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Take Home Messages :

- Herz-Kreislauf-Erkrankungen sind Haupttodesursachen bei Frauen
- Frauenspezifische Symptome beim ACS
- Frauen in CV Studien unterrepräsentiert
- Frauen sind älter, wenn sie CV erkranken
- Hormonelle Faktoren spielen eine Rolle
- Geschlechtsspezifische und soziale Risikofaktoren beachten!
- Prognose von Frauen wird unterschätzt!

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Thank you!

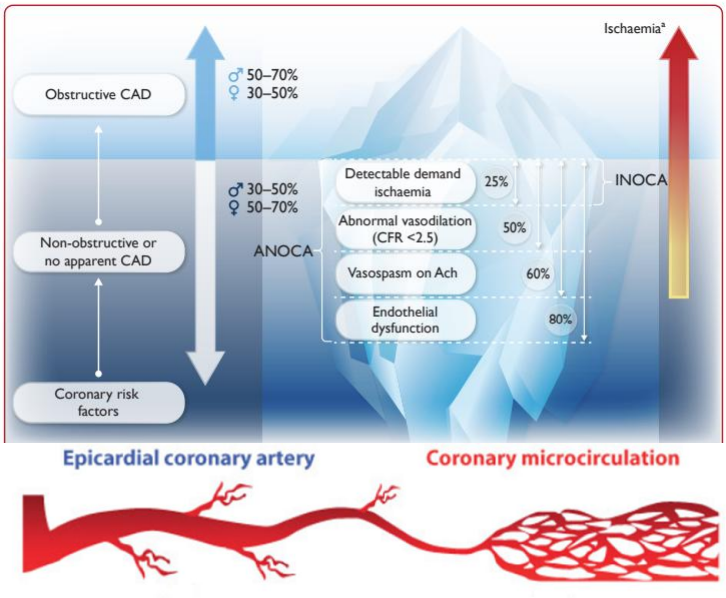
Women's Heart Health Basel
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University Hospital Basel

CRIB
Cardiovascular Research Institute Basel

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Women: more often non-obstructive coronary artery disease



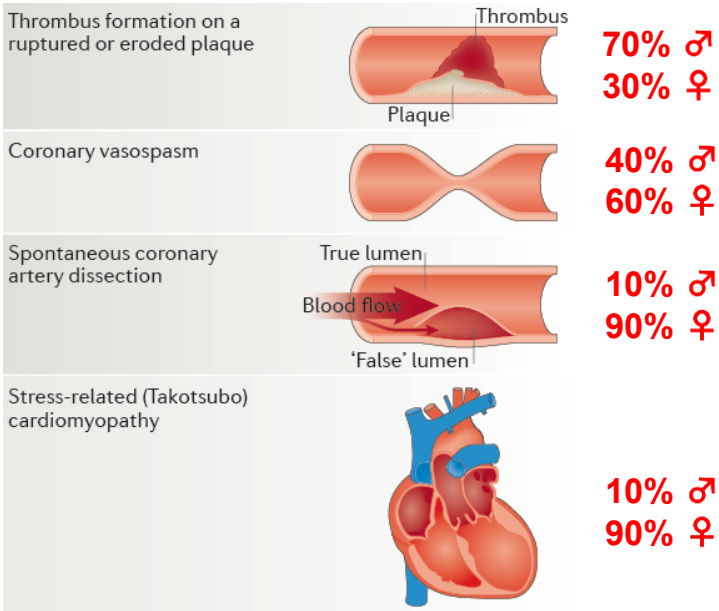
MINOCA (Myocardial Infarction with Non-Obstructive Coronary Arteries)

- 5-15% of all MI
- 3x more frequent in women

- I(NOCA)= Ischaemia
- A(NOCA)= Angina

Reeh J et al. Eur Heart J 2019;40:1426–1435.

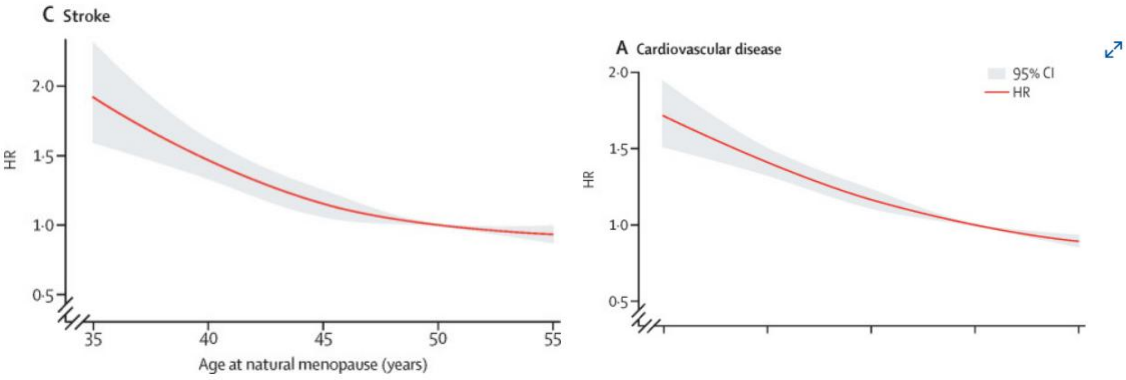
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Zusammenhang zwischen Menopausenalter und kardiovaskulären Ereignis

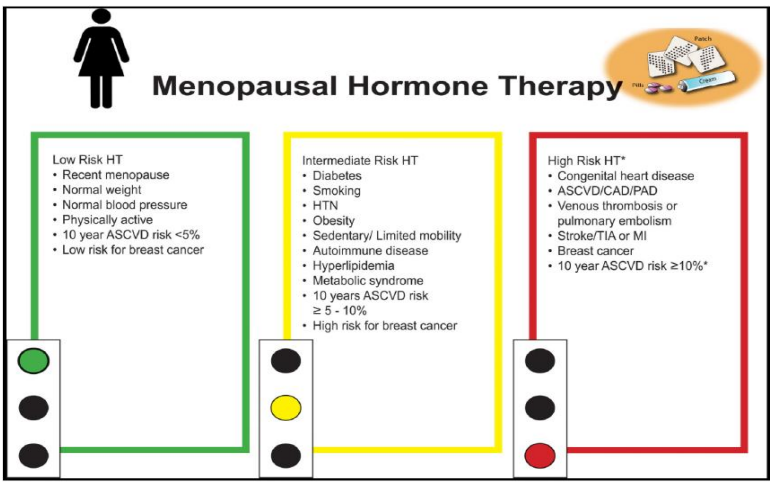


Schwere menopausale Symptome → mit erhöhtem kardiovaskulärem Risiko assoziiert

Zhu et al. The Lancet public health. 2019

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MHT: für welche postmenopausalen Patientinnen?



Cho L et al Circ 2023

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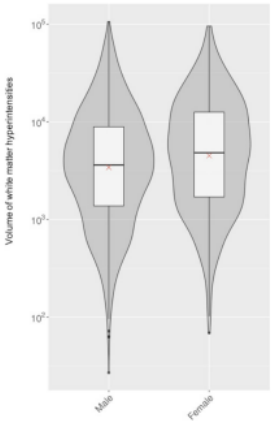
Higher white matter disease burden in Swiss-AF females

Table 2 Prevalence and volume of brain lesions stratified by sex

Variable	Women (n=478)	Men (n=1265)
White matter hyperintensities		
Prevalence, Fazekas scale ≥2, n (%)	282 (59.0)	653 (51.7)
Volume total (mm^3), median (IQR)	4779 (1707, 12546)	3609 (1368, 8859)

Table 4 Association between female sex and the log-transformed volume of brain lesions

	Univariable	Age adjusted model	Multivariable adjusted model
Volume	Multiplicative effect (95% CI)	Multiplicative effect (95% CI)	Multiplicative effect (95% CI)
White matter hyperintensities, total	1.32 (1.15 to 1.53) p<0.001	1.14 (1.01 to 1.30) p=0.04	1.17 (1.01 to 1.35), p=0.04

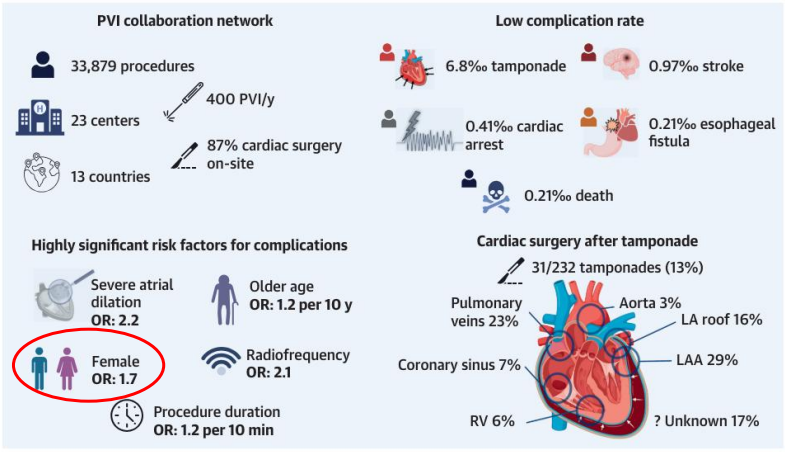


swissaf Swiss Atrial Fibrillation Cohort

Ceylan S et al., Open Heart 2022

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Complications with Catheter Ablation in women



swissaf Swiss Atrial Fibrillation Cohort

Du Fay de Lavallaz J et al., JACC EP 2024

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Outcomes with PVI in women: AF recurrence

N=151,370

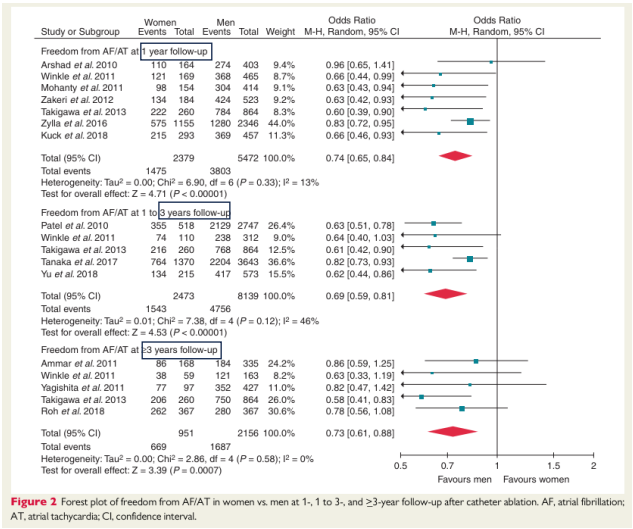
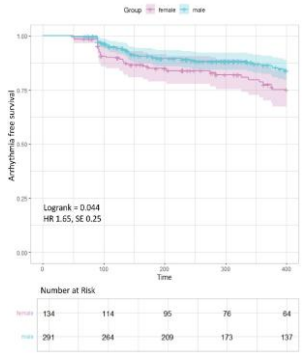


Figure 2 Forest plot of freedom from AF/AT in women vs. men at 1-, 1 to 3-, and ≥3-year follow-up after catheter ablation. AF, atrial fibrillation; AT, atrial tachycardia; CI, confidence interval.

Higher A Fib Recurrence after PFA in Women



Cheng X et al., Europace 2019, Jordan...Zuern et al., Heart Rhythm O2 2025

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