Is gender meaningful for research ? Testimony..

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Prototype of normalcy

- Historical blindness
- Hiatus in biomedical research
- Need to study homogenous samples filled medical libraries of datas on white men

Sex bias in research on mammals

- Despite well-established sex differences in pharmacokinetics and pharmacodynamics, and attempts to draw attention to sex-dependent drug effects:
- ☞ majority of rodent researchers continue to use males exclusively in their drug studies
- ☞ female rats are neglected in biomedical research
- *Review*: male bias was evident in 8 disciplines (prominent in neuroscience), with single-sex studies of male animals outnumbering those of females 6 to 1.

Cardiovascular Research 2017 113:711;
Neurosci Biobehav Rev. 2011, 35(3): 565

The « gender gap » in human research

- Women remain under-represented in biomedical research
  - ❖ Inhomogenous group
  - ❖ Real and perceived challenges of “controlling” for cyclic hormonal effects
  - ❖ Paternalistic centuries-old concept of protecting women and children from harm, expanded to a virtual ban on all women in clinical trials
- Medical research in women had a focus similar to that of popular women’s magazines : breasts and sex
- The datas observed in male subjects are extrapolated in females.
- No specific recommandations for women until recently
- ☞Asymetry of knowledge in pathophysiology and negatively impacts the health of women

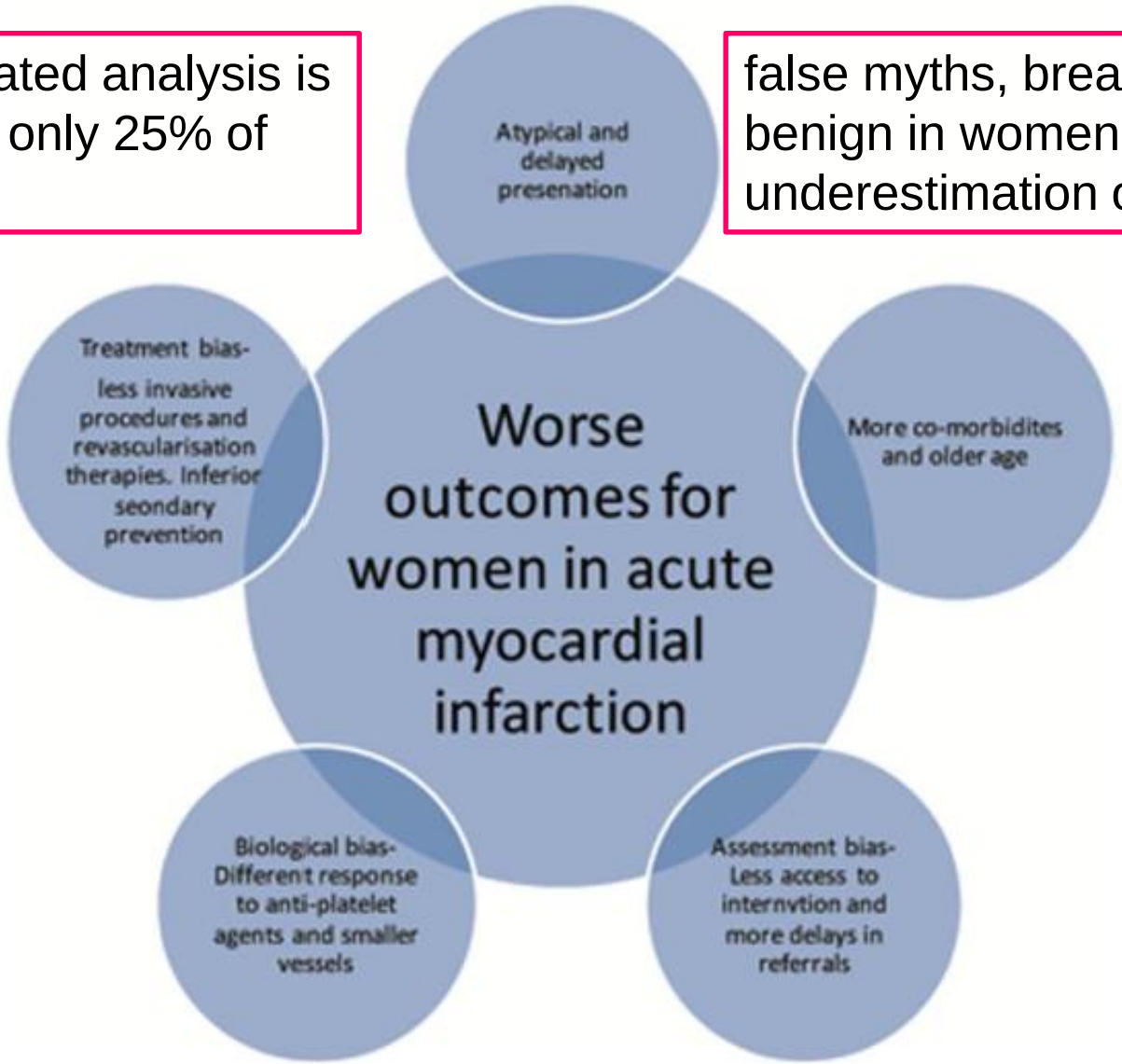
Mayo Clin Proc. 2007;82(2):166-170.
New Engl J Med **2000**:343:8 ***et*** 343:475

Gender biais in cardiovascular research

1st cause of death in women is cardiovascular disease 54% (23% cancer)

Gender related analysis is reported in only 25% of CV studies

false myths, breast angina is benign in women, underestimation of risk



European Heart Journal Cardiovascular Pharmacotherapy 2017,1. Heart 2016;102:1142

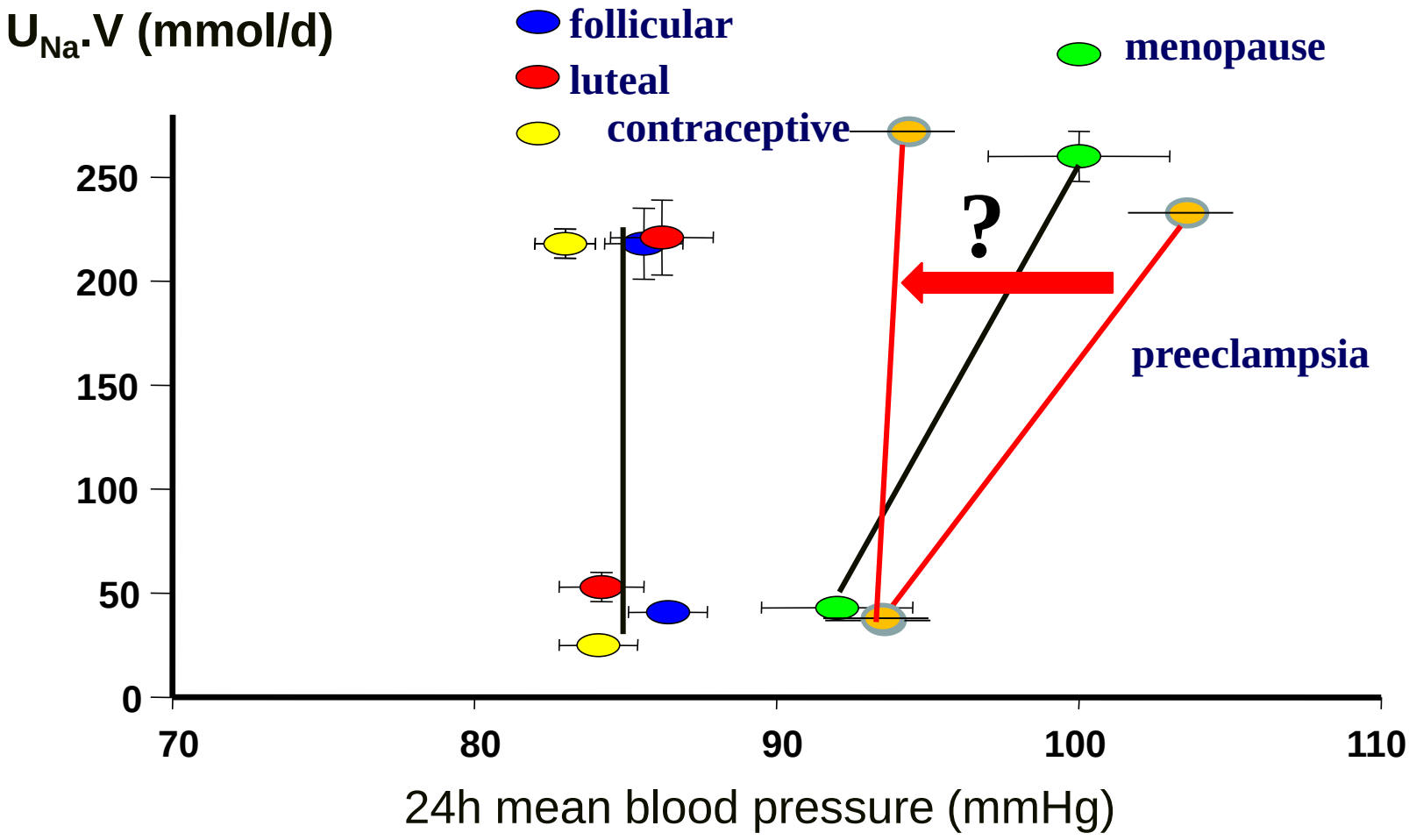
Starting my clinical research…interested in renal sodium handling and the female hormonal status..

Salt Desert in Bolivia (Salar de Ujuni)

I realized the gender gap and designed studies to assess the link between the sex female hormones on various hormonal states (2 phases of menstrual cycle, contraceptives, menopause, pregnancy), and the renal hemodynamics, the blood pressure regulation and the salt-sensitivity in women

Pechère-Bertschi *et al.* *J Am Soc Nephrol* 1999*;10:369;*
Pechère-Bertschi *et al.,* Kidney International, 2002, 61(2): 42
Pechère Bertschi *et al*, *Clinical Science* 2000; 98:697
Pechere-Bertschi A *et al.* Kidney International, 2003. 64(4):
Pechère-Bertschi *et al*. *Am J Hypertens*, 2004. 17(10): 994 P1374
Pechère-Bertschi A *et al*. Curr Opin Nephrol Hypertens 2007,16(1):16
Pechère-Bertschi A. *et al* , Current Therapeutic Research, 2008. 69(6):467

Endogenous and exogenous effect of sex female hormones on pressure-natriuresis curve in women



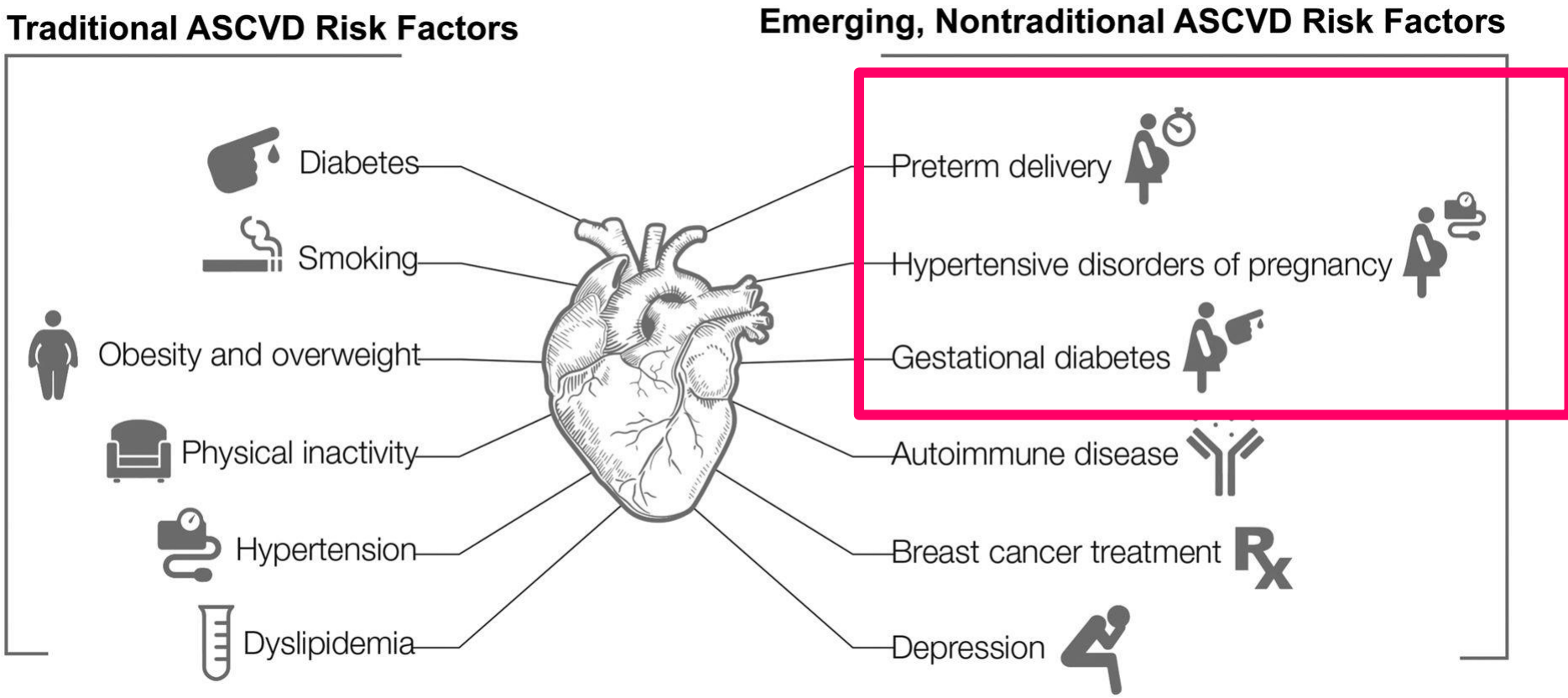
Martillotti, Pechère-Bertschi, Hypertension 2013; Ditisheim, Pechère, Hypertension 2017 submitted

Nocturnal renal escape of sodium in women with orthostatic hypotension

A negative « picture » of hypertension..

Pechère-Bertschi *et al*, *Kidney Int* 1998; 54:1276. Pechere-Bertschi *et al*. *Clin Science* 2007. 112(6):

Preeclampsia and hypertensive disorders of the pregnancy



In HUG: specific consultation on hypertensive troubles of pregnancy

Circ Res. 2016;118:1273-1293.


THANK YOU FOR YOUR ATTENTION
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