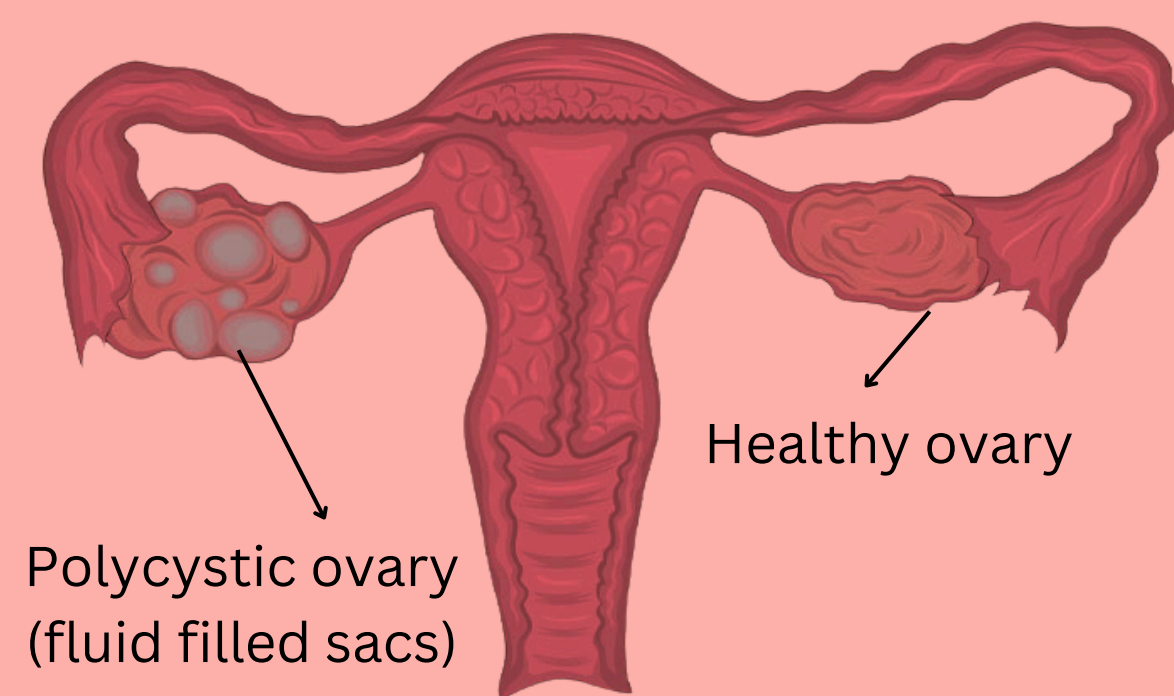




Exploring Complementary Therapies Beyond Convention - Mez Hakim, 4th Year Medical Student

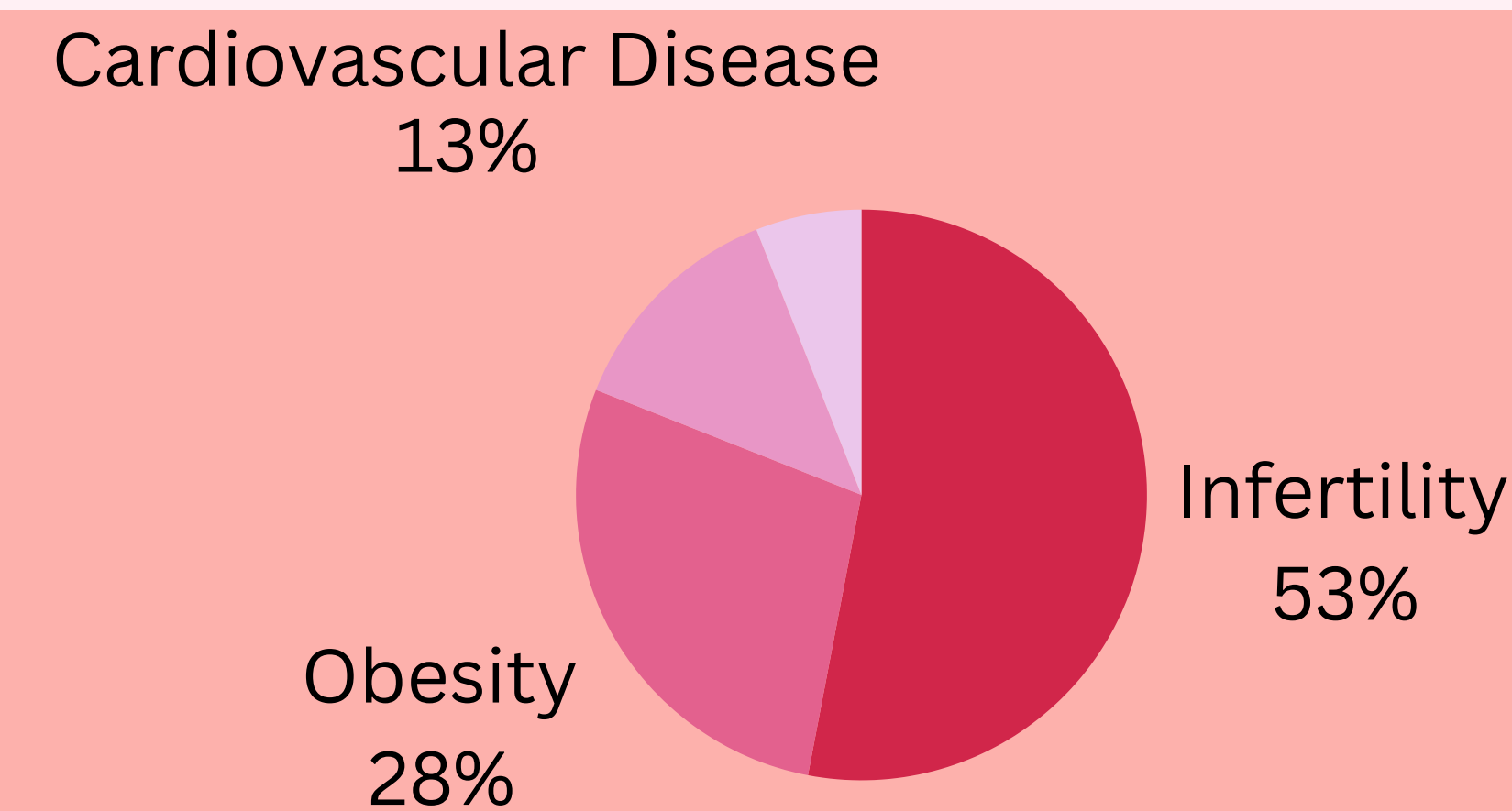
Figure 1: Drawing depicting differences between ovaries with and without PCOS [1]



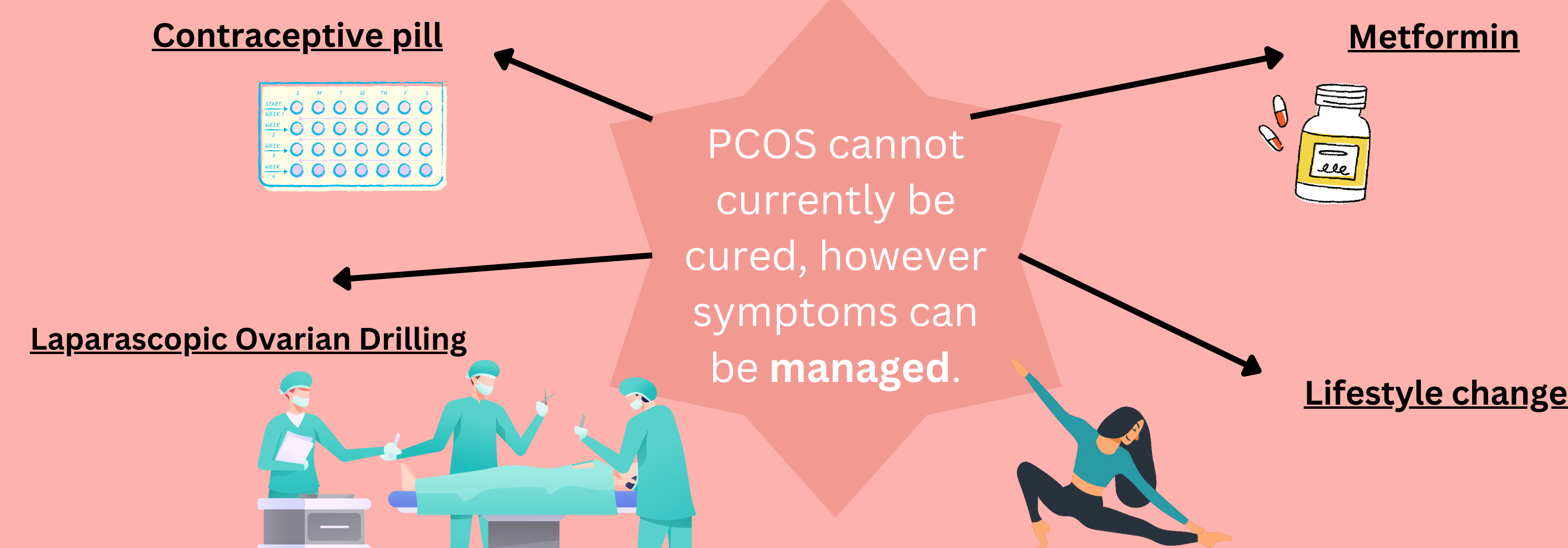
What is PCOS?

PCOS or polycystic ovary syndrome is a **common condition** affecting how a woman's ovaries work. Small cysts develop, preventing regular egg release (ovulation).

Associated Risks



Current Treatment



Metformin - Madness or Mayhem



Figure 4: Overview of indirect, systemic extra-pancreatic effects of metformin.

Pathophysiology

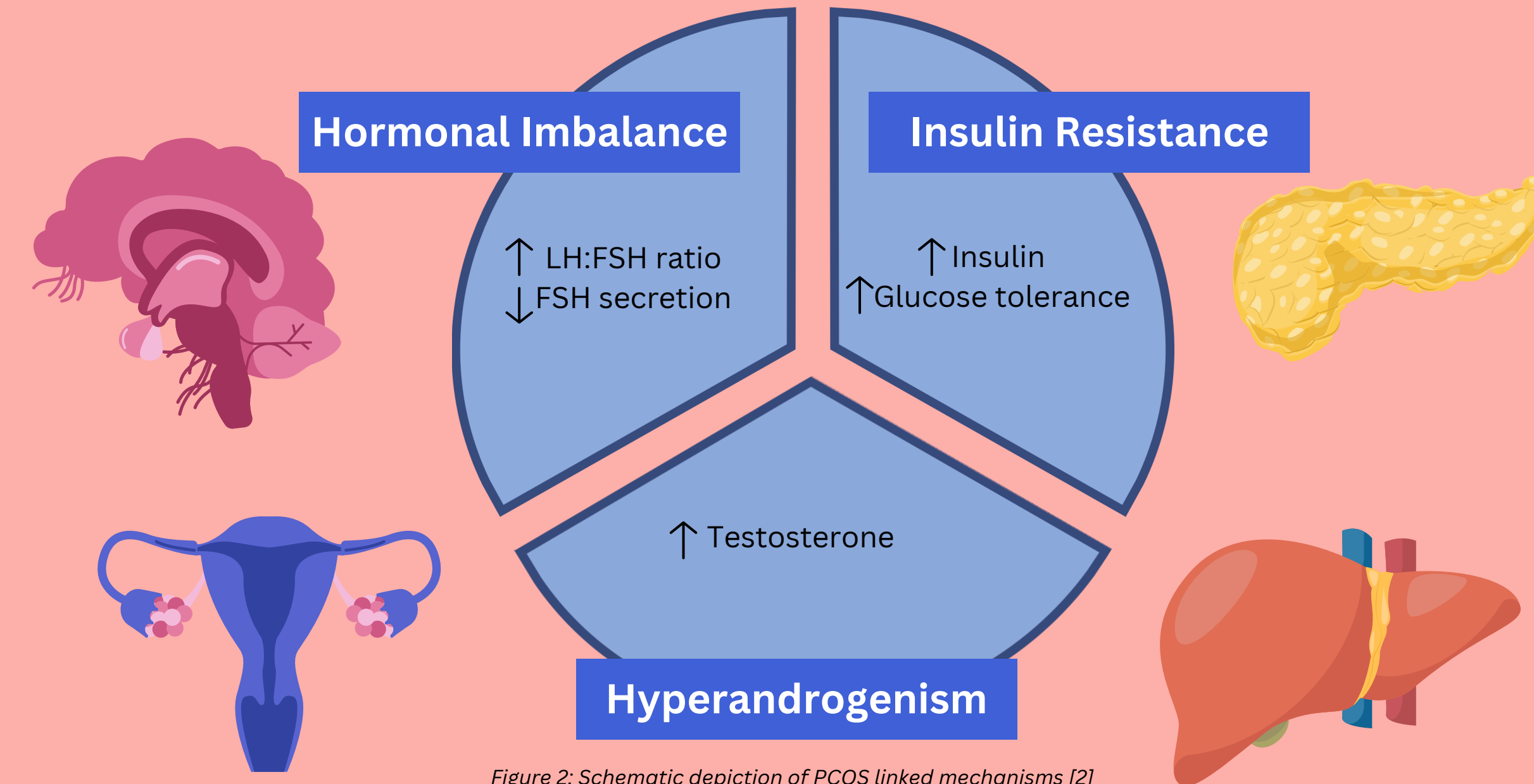


Figure 2: Schematic depiction of PCOS linked mechanisms [2]

Symptoms

Infertility



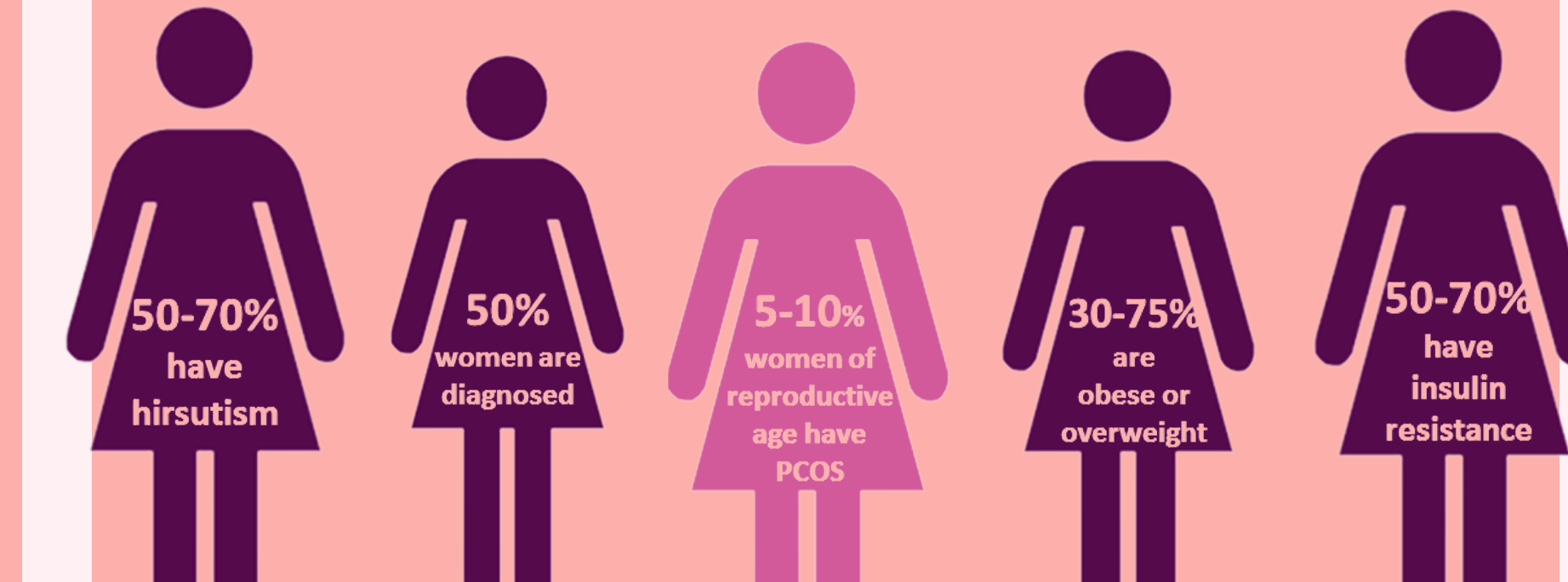
Hirsutism



Weight Gain



Figure 3: Infographic displaying statistics related to PCOS & its effects [5]



Societal Impact

- infertility rates
- no current cure

Individual Impact

- fear and stigma: exclusion from norms
- lack of clarity in finding information

Inositols

Mechanism of Action

- MI - Myo-Inositol
- DCI - D-chiroinositol

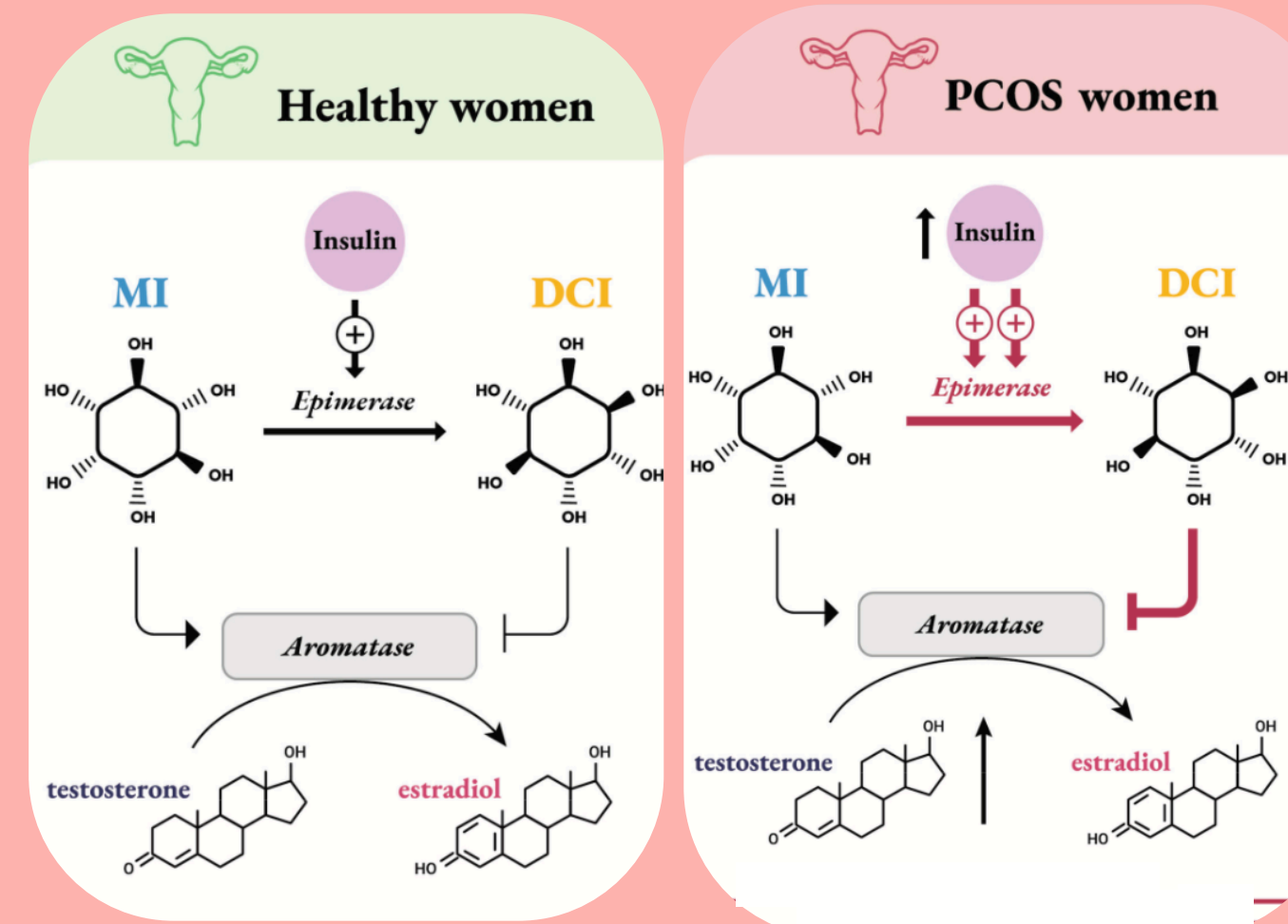


Figure 5: Diagram displaying biochemical properties of inositol [10]

Evidence

1) Meta Analysis - Unfer et al. 2017

247 total cases confirmed significant reductions in fasting insulin.

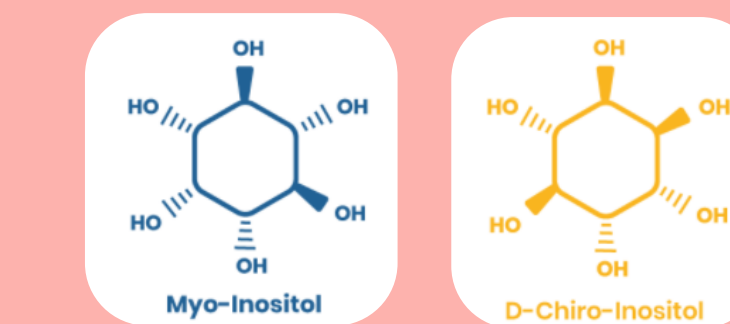
2) Agrawal et al. 2019

Combining metformin and inositols showed a greater reduction in insulin resistance at three months vs just metformin alone

Key Findings

Implications

MI & DCI in optimal 40:1 ratio is optimal in improving aspects of PCOS.

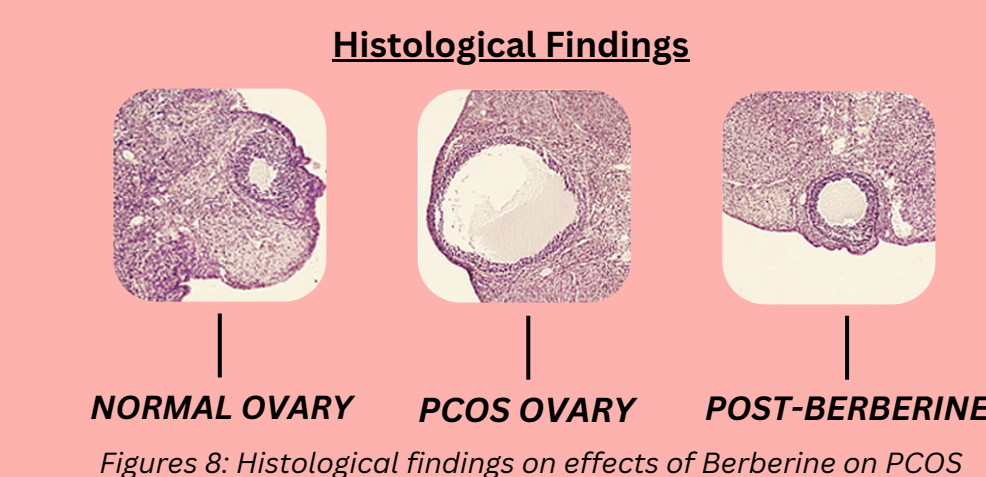


Challenges

Some studies showed non-significant changes

Variable menstrual regularity

Berberine



Targeted Effects

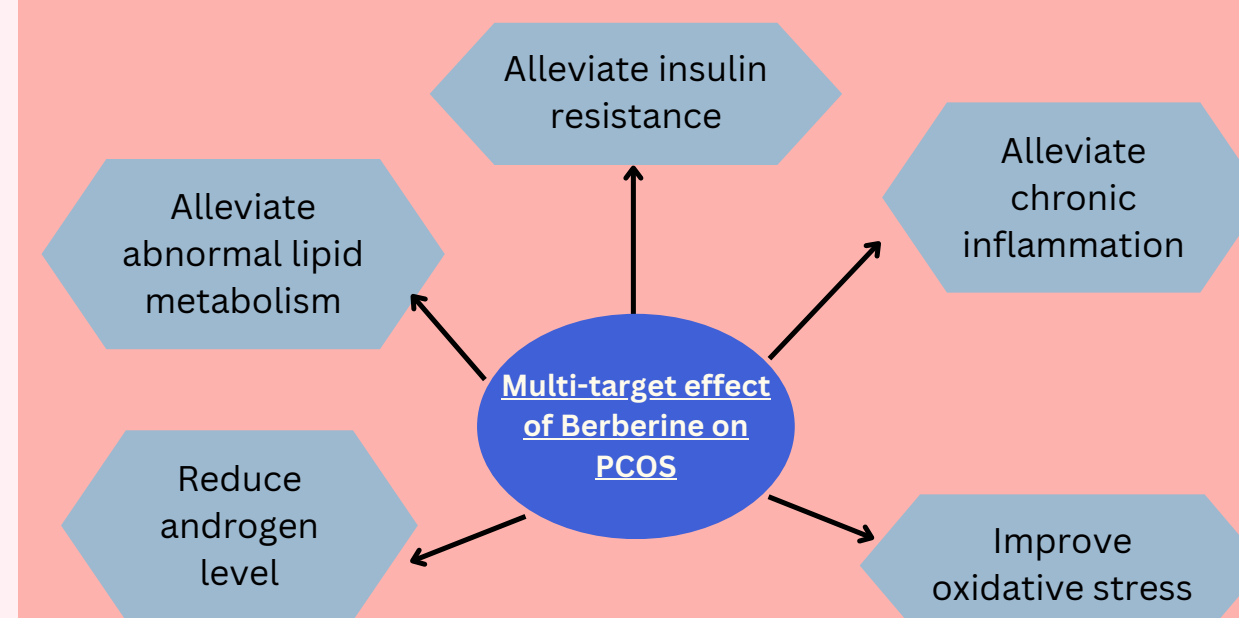


Figure 7: Schematic diagram displaying effects of Berberine

Evidence

1) Systematic Review - Li et al. 2018 [14]

Berberine is superior to metformin when reducing serum triglyceride levels.

Combined metformin and berberine led to greater reduction in testosterone.

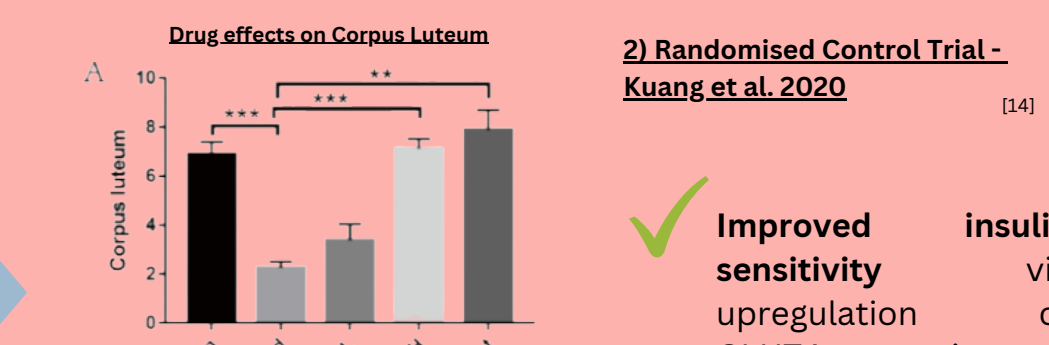


Figure 9: BH (high-dose Berberine) and Met (Metformin) increased levels of corpus luteum [14]

Key Findings

Implications

Berberine possess multiple pharmacological effects with recent trials showcasing potential favourable effects in PCOS & IVF treatment.

Challenges

Side effects

Animal testing

Ovarian Morphology

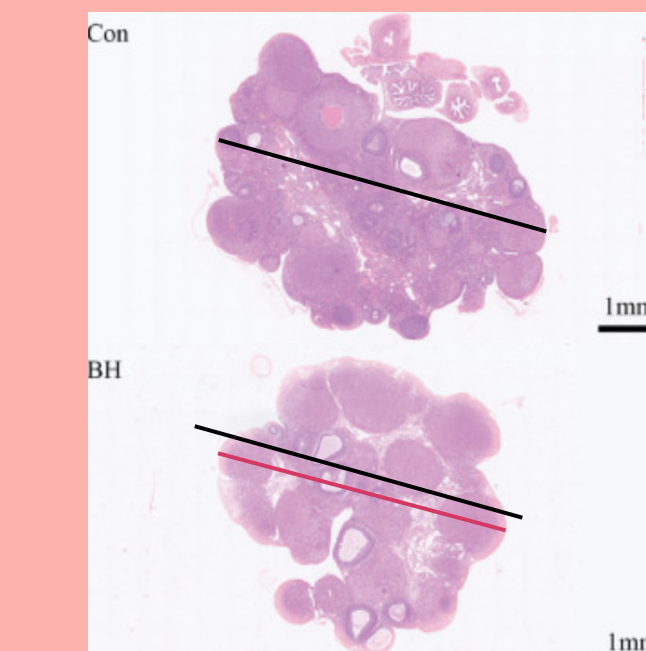
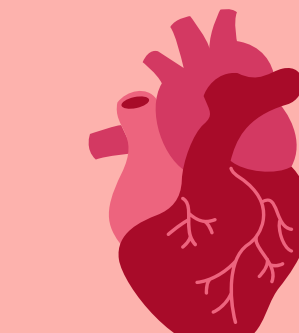


Figure 10: Con (Control) and BH (high-dose Berberine) comparing ovarian morphology of PCOS patients. [15]

Future Impacts

Cardiovascular Disease [16]



- Leading cause of morbidity & mortality in women
- PCOS poses 50% greater risk of myocardial infarction or fatal CHD

Metabolic Disorders [16]



- PCOS increases risk for metabolic syndrome (glucose intolerance, dyslipidemia, hypertension, obesity.)

Infertility [16]



- Important part of female identity
- Psychological effects, even pre-pubescent
- Mental Health

Social Media

- Spreading awareness
- Inclusivity
- Evidence-based

