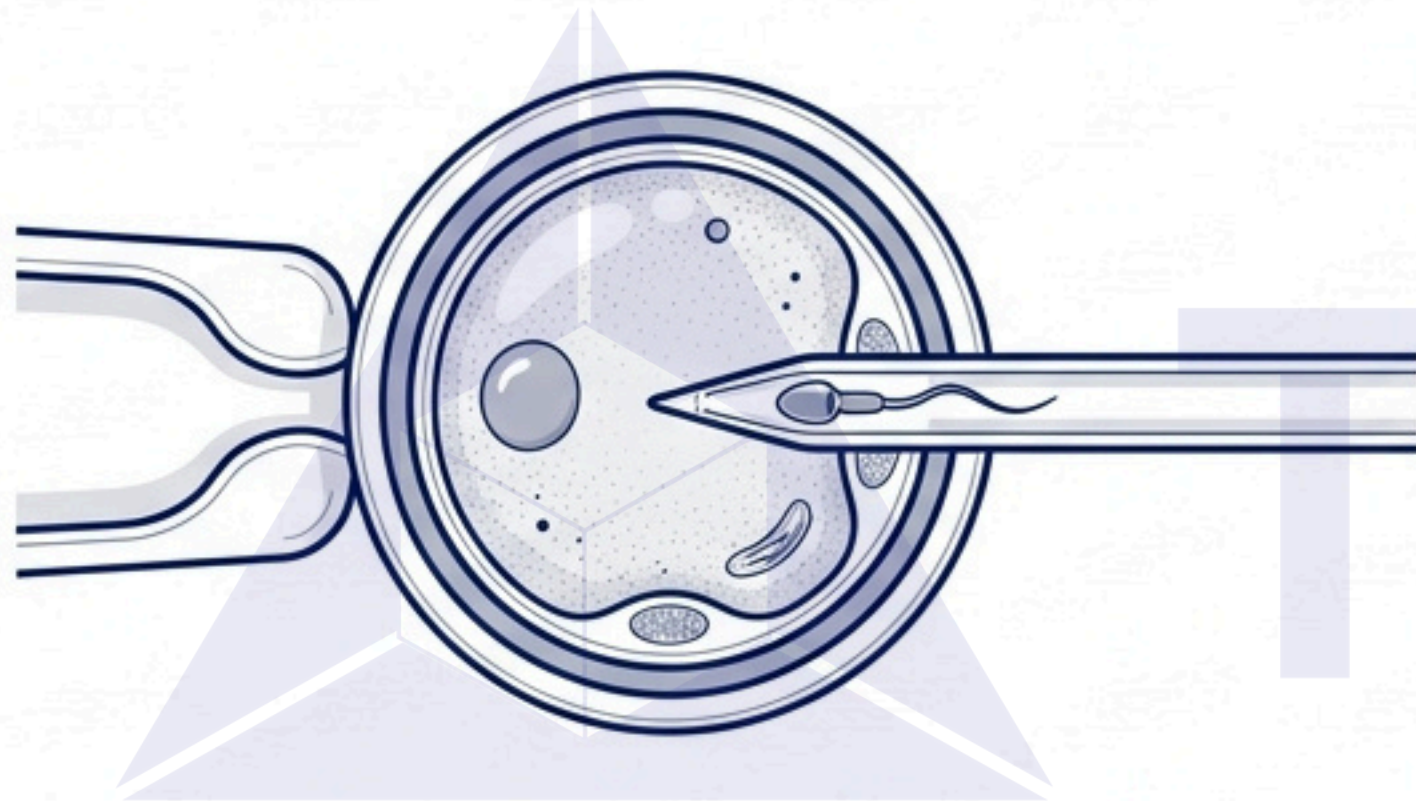


Limitations of Assisted Reproduction

NCERT Section 8.4: Why ART hasn't solved infertility for everyone.

Zero Margin for Error in the Lab



ART procedures require **extremely high precision** handling because they involve **microscopic gametes** and **delicate embryos** outside the human body.



Quick Tip

Because fertilisation occurs in vitro (outside the body), even minor fluctuations in the lab environment can destroy embryos, mandating **absolute precision**.

The Human Capital Bottleneck

Advanced technology requires advanced operators. ART cannot be performed by general practitioners; it strictly requires specialised professionals.



Gynecologist



**Clinical
Embryologist**

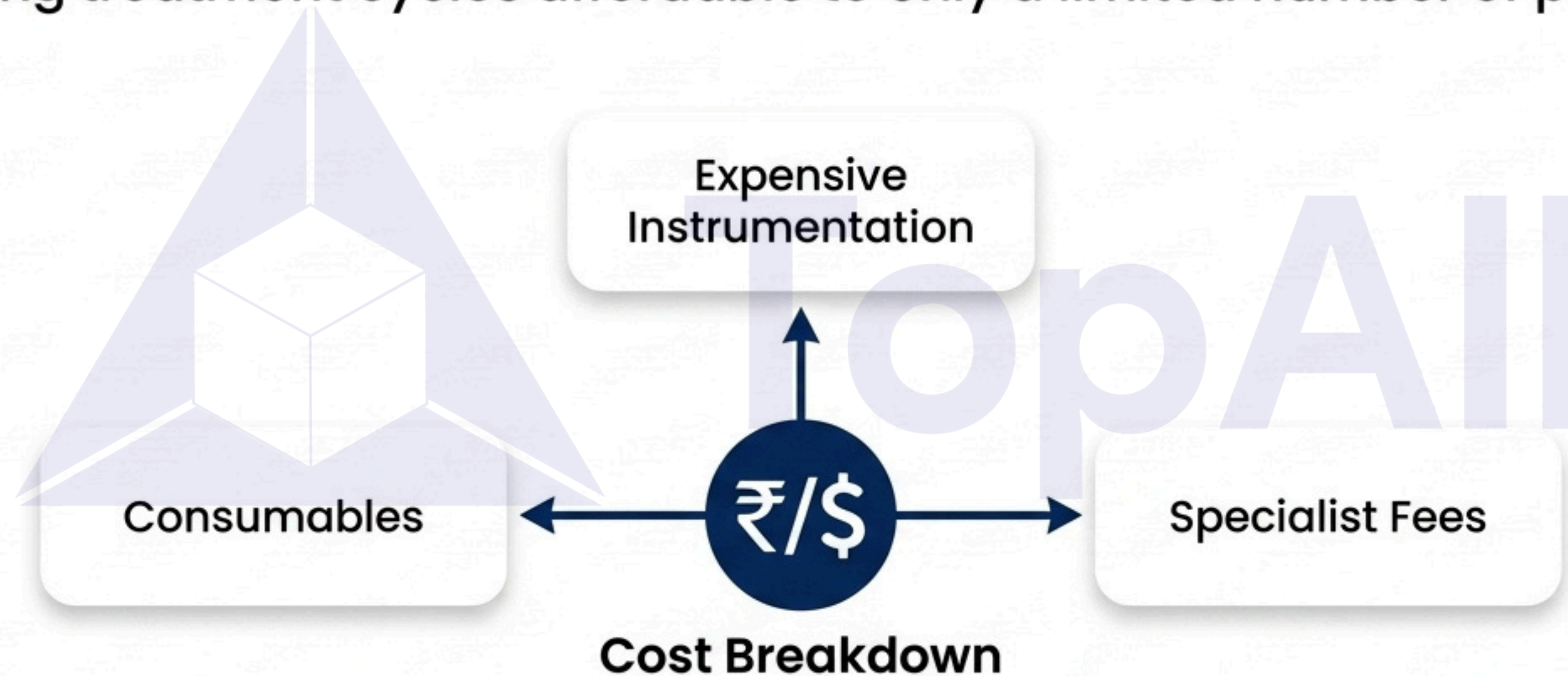


Andrologist

The Financial and Infrastructure Barrier



Setting up an ART clinic requires imported, highly sensitive equipment, making the resulting treatment cycles affordable to only a limited number of people.

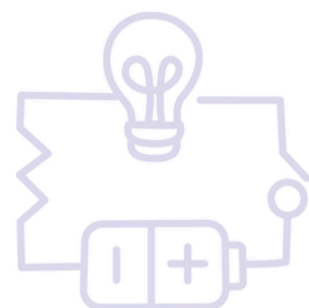
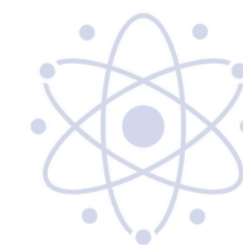


Common Mistake: Don't assume ART is universally accessible. Despite medical advancements, it remains a massive financial burden that excludes the majority of the population.



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



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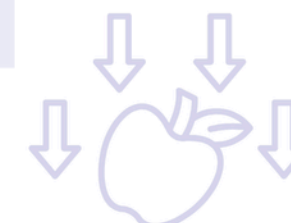
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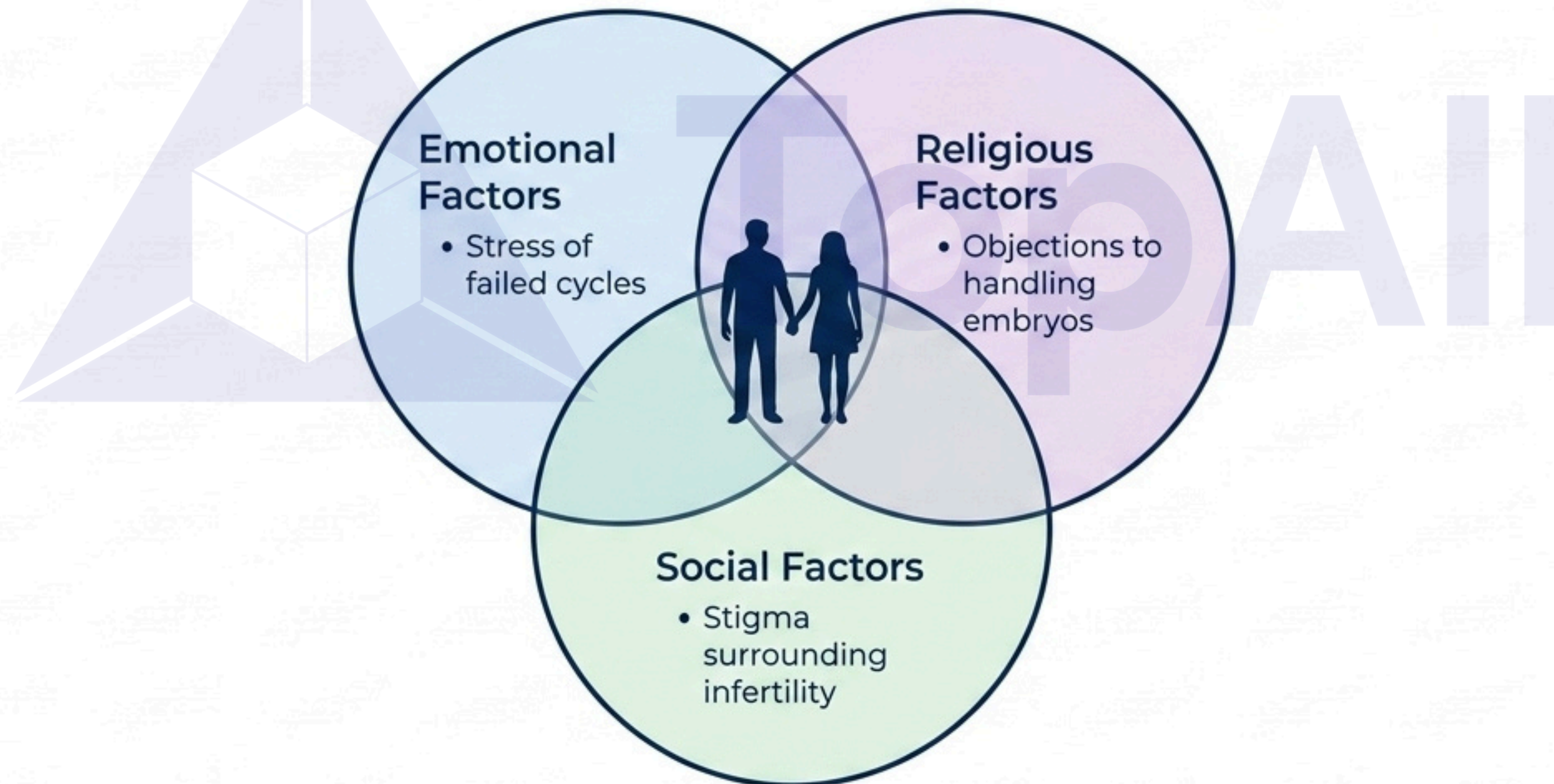
Severe Geographic Concentration

Because of the absolute need for specialized teams and expensive infrastructure, ART centers are incredibly scarce and available in only very few centres in the country.



The Invisible Societal Deterrents

Beyond clinical and financial hurdles, **powerful psychological and cultural factors heavily deter the adoption of ART.**



The Recommended Alternative: Legal Adoption



India has many orphaned and destitute children who would otherwise not survive to maturity. When ART is not viable, adoption is the ethical and practical alternative.



“One of the best methods for couples looking for parenthood.”

– NCERT

Synthesis: The ART Limitations Framework

Categorising the bottlenecks of Assisted Reproductive Technology for rapid recall.

Technical & Clinical Barriers	Socio-Economic Barriers
✓ Precision Handling (Zero margin for error) ✓ Specialised Professionals (Embryologists, Andrologists) ✓ Expensive Instrumentation (Imported incubators & microscopes)	✓ High Cost (Limited affordability for most) ✓ Geographic Scarcity (Available in very few centres) ✓ Social Stigma (Emotional & religious deterrents)

NEET Recall: Test Your Knowledge

According to NCERT, which of the following is cited as a major limitation of ART, alongside the requirement for specialised professionals?

A) It guarantees multiple pregnancies

B) It requires expensive instrumentation

C) It is completely banned in rural areas

D) It works only for female infertility

Correct Answer: B

NCERT explicitly lists extremely high precision handling, specialised professionals, expensive instrumentation, and limited affordability/availability as the primary limitations.



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