www.indianfertilitysociety.org indianfertilitysocietydelhi@gmail.com

INDIAN FERTILITY SOCIETY

September 2025

6th Green ART News Bulletin

Dr. Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr. (Prof) Shweta Mittal Gupta
Secretary General, IFS

Dr. Sonia Malik
Project Mentor

Dr. Meenu Vashisht Ahuja
Program Coordinator

GREEN ART

Team 6
Team Leader

Dr. Sarabpreet Singh

IFS SECRETARIAT

Flat No. 302, 3rd Floor, Kailash Building
26, Kasturba Gandhi Marg, C.P. New Delhi – 110001
+91 9899308083 (Ms. Faraha Khan)
+91 11 40018184

Become An IFS Member

Scan QR Code

From the
President's Desk...

Advancing Sustainability in Reproductive Medicine

Dr. Prof.(Col) Pankaj Talwar VSM
President, IFS

When we heal the Earth, we heal ourselves
Enhance fertility with Green initiatives!

In the realm of reproductive health, in vitro fertilization (IVF) has emerged as a beacon of hope for couples facing infertility. However, as the demand for fertility treatments escalates, so also the need to address the environmental impact of these practices. This initiative explores the concept of Green IVF—an innovative approach that prioritizes sustainability without compromising the quality of patient care.

By examining the environmental challenges associated with traditional IVF and presenting actionable solutions, this project aims to inspire a shift toward more eco-friendly reproductive technologies. Traditional IVF practice is largely resource-intensive, that results in a considerable carbon footprint and contributes to environmental degradation. To recognize these grey areas and bring about a paradigm shift in how we introduce green changes in our IVF setup, is of paramount importance.

Green IVF represents a significant evolution in the landscape of reproductive medicine. As we continue to innovate and refine the IVF techniques, the dual goals of enhancing patient outcomes and reducing environmental impact can be achieved; at the same time contributing to lower operational costs, making fertility services more accessible in the long run.

Thus, the Green IVF Initiative aims to catalyze dialogue among healthcare professionals, researchers, and patients, inspiring collaborative efforts to embrace sustainability in IVF practices. By initiating the Green IVF Project in India, Indian Fertility Society (IFS) strives to pave the way for a more responsible, compassionate approach to reproductive health that honors the well-being of future generations.

Green IVF- Sustainable IVF program:

A Novel initiative by Indian Fertility Society

Dr. Prof. Shweta Mittal Gupta
Secretary General, IFS

The Future can be green and fertile, or not at all...
The Choice is OUR'S!

Our environment is the foundation which plays a pivotal role in ensuring our health, economy and well-being. Climate change, resource depletion, and pollution affect every facet of life. There is an urgent need to shift toward sustainable practices which is felt by everyone, including industries like healthcare and assisted reproductive technologies (ART). In a world where IVF and other ART procedures are becoming more common, especially as people turn to these treatments to build families, it is vital that we consider the environmental implications of these technologies. The green world is not just an abstract concept, it's about ensuring a healthy future for all of us, both in terms of the planet's ecosystem and the next generation. There is an urgent need to tie this idea of a "green world" directly to ART and inculcate the habit of sustainable living.

By integrating green technologies and sustainability into ART, we intend not only to minimize harm but also to pave the way for future innovations that will benefit everyone. Countries like India, with growing IVF markets, can pioneer "Made in India" green IVF technologies that can reduce the global carbon footprint. Afterall, green world matters to us all, and by making the IVF process greener, more efficient, and more eco-friendly, we're contributing to a 'healthy' future where both people and the planet can thrive

This innovative step taken by Indian Fertility Society aims at sensitizing ART clinicians, embryologists and stake holders who will collectively work towards the goal of green, sustainable IVF and put India on the global green map.

Pearls of Wisdom

Dr. Sonia Malik
Mentor, Green IVF Initiative
Chief Clinical Mentor, Nova IVF & Fertility, INDIA

Green Revolution by White Coat, Leading from despair to Hope!

In the 1960's, a global clarion call of 'Green Revolution' was given to increase the agricultural yield in order to meet the increasing food demands of a rapidly rising population. This new mantra indeed proved successful worldwide and also drove India towards becoming a more powerful self-sufficient and economically strong nation. Recently, a new term has started coming up in the field of reproduction – Green IVF! Interestingly, both terms pertain to reproduction: one in the field of plants and the other in animals / humans… dealing with the seed and soil!

The Green Revolution involved the introduction of high-yielding variety (HYV) seeds, advanced irrigation techniques, and chemical fertilizers to boost agricultural productivity Similarly, Green IVF utilizes innovative techniques such as natural cycle IVF, which minimizes hormonal medication and focuses on using advanced imaging and selection technologies for embryo quality assessment. Both movements aim to increase production efficiency. The Green Revolution aimed to alleviate hunger and improve food security whereas Green IVF addresses infertility issues, providing effective sustainable health solutions for couples struggling to conceive.

The biggest challenge with the green revolution has been the change in the genetics and epigenetics profile due to use of insecticides, pesticides and genetically engineered varieties of seeds. Fortunately, in contrast, Green IVF emphasizes a more holistic, innovative and sustainable approach by reducing medication use and environmental impact associated with traditional IVF methods.

I congratulate the present team of IFS led by Col.(Dr) Talwar and ably supported by Dr Shweta Mittal for taking up this very topical subject as the theme of this year. I am sure with the well thought of program, and committed team members, we shall see a change in ART practice in the country very soon.

I wish IFS a thumping success

The IFS Green Brigade

Dr. Sonia Malik
Mentor

Dr. Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr. (Prof) Shweta Mittal Gupta
Secretary General, IFS

Dr Meenu Vashisht Ahuja
Program Coordinator

Team 1
Team Leaders

Dr. Ritu Khanna

Dr. Vidhu Modgil

Team 2
Team Leaders

Dr. Manisha Vajpeyee

Dr. Yuvraj Jadeja

Team 3
Team Leaders

Dr. Shweta Mittal Gupta

Dr. Lavleen Sodhi

Team 4
Team Leaders

Dr. Bharati Dhorepatil

Dr. Neha Lad

Team 5
Team Leaders

Dr. Shalini Chawla Khanna

Dr. Rajvi Mehta

Team 6
Team Leaders

Dr. Sarabpreet Singh

Dr. Pooja Awasthi

Team 7
Team Leaders

Dr. Yogesh Kumar

Dr. Shilpa Doultani

Team 8
Team Leaders

Dr. Aanchal Agarwal

Dr. Sangita Sharma

Team 9
Team Leaders

Dr. Bindu Chimote

Dr. Meenu Agarwal

Green Teams

IFS Green Initiative proposes to touch every aspect of the IVF field so as to improve sustainability in routine ART practice. Accordingly, a task-force of 9 specialized 'Green Teams' has been formed to investigate and evaluate problem areas where green alternatives can be applied. Phase-wise implementation of novel ideas is envisaged, facilitating a dynamic shift to environmentally friendly techniques in the near future.

---

1. *Understanding green sustainable IVF*
2. *Designing sustainable ART clinics*
3. *Clinician perspective towards reducing carbon footprint*
4. *Low cost IVF to reduce environmental load*
5. *Bio medical waste disposal and recycling of products*
6. *Embryology initiatives to reduce environmental carbon load*
7. *Cryobiology and greenhouse emissions*
8. *Made in India initiative to reduce GHG emissions*
9. *Novel ideas and net zero by 2045*

Team 6 Bulletin

The Environmental Cost of Creating Life

Team Leaders

Dr. Sarabpreet Singh

Dr. Pooja Awasthi

Dr Aananthalakshmi

Dr Rohit Bansal

Dr Lipika Mohrana

Dr Sapna Tyagi

The Environmental Cost of Creating Life

As the demand for fertility treatment rises, a new concern is emerging within the world of assisted reproduction—its environmental footprint. In vitro fertilization (IVF), once regarded purely through the lens of scientific marvel and hope, is now under scrutiny for its growing ecological cost. The epicenter of this impact lies within the embryology laboratory.

In the wake of rising global temperatures, increasing plastic pollution, and calls for sustainable healthcare, the IVF industry faces critical questions:

1. **What is the cost of creating life on the planet that sustains it?**
2. And how sustainable is the science of assisted reproduction?
3. Are we guilty of creating enormous plastic waste?

IVF and the Overlooked Environmental Burden

The embryology lab is the heart of the IVF process, responsible for handling gametes, fertilizing eggs, culturing embryos, and managing cryopreservation. Despite being highly controlled and meticulously sterile environments, these labs consume vast resources and generate significant waste. Yet, their environmental impact remains largely undocumented in mainstream discussions on sustainability in healthcare.

As fertility treatments become more accessible, and as IVF cycles rise globally, the pressure on natural resources intensifies quietly in the background.

Single-Use Plastics: A Dependency That Comes at a Cost

One of the most critical concerns is the **heavy dependence on single-use plastics**. From culture dishes and pipettes to embryo transfer catheters and cryo-vials, the embryology lab relies extensively on disposable tools to maintain sterility and precision.

The safety and success of IVF demand these materials be used once and discarded. However, this results in an enormous volume of biomedical plastic waste that contributes directly to landfill accumulation and environmental degradation. The sheer number of disposables used per cycle, multiplied across thousands of clinics and millions of cycles globally, represents a silent but significant environmental challenge.

Furthermore, the industry has long relied on imported disposables, creating a parallel problem—long-distance transportation and packaging waste that compound the overall carbon burden.

High Energy Demand of Lab Infrastructure

Beyond disposables, IVF labs are **highly energy-intensive spaces**. The fundamental requirement for precise control of temperature, humidity, and air quality calls for powerful heating, ventilation, and air conditioning (HVAC) systems that operate around the clock. These systems maintain the lab's sterility and prevent contamination but come at a steep energy cost.

Incubators—vital for embryo development—must sustain exact gas compositions and temperatures continuously. Microscopes, centrifuges, and laminar hoods remain powered throughout operational hours, while even non-operational hours often require machines to remain on standby to avoid temperature or environmental fluctuations.

The consistent operation of such equipment leads to sustained electricity usage, which, in regions dependent on non-renewable energy sources, directly increases greenhouse gas emissions.

Cryopreservation and the Liquid Nitrogen Dilemma

Cryopreservation is one of the cornerstones of modern IVF, allowing for long-term storage of embryos, eggs, and sperm. However, it is also one of the **most environmentally taxing aspects** of embryology.

Cryo-tanks require **constant replenishment with liquid nitrogen** to maintain sub-zero temperatures. The logistics of storing, transporting, and maintaining these tanks demand both energy and infrastructure, while nitrogen usage in itself raises concerns over emissions and resource extraction.

Frequent use of cryo-gases and regular maintenance to prevent evaporation further exacerbate energy consumption. Yet, as more patients opt for egg or embryo freezing for medical or elective reasons, the strain continues to grow.

Specialized Gases: Invisible Contributors to Emissions

Maintaining optimal conditions for embryo culture requires a **constant supply of medical-grade gases** such as CO_2 and nitrogen. These gases are not only energy-intensive to produce but also **require transportation** in pressurized cylinders, which involves fuel use and emissions.

Moreover, the use of these gases often goes unmonitored in labs, leading to inefficiencies and potential overuse. The absence of gas conservation protocols contributes to a significant, yet often invisible, environmental cost.

Packaging and Procurement: A Carbon Trail That Begins Before the Lab

The sustainability problem starts long before equipment enters the lab. The IVF industry depends heavily on global supply chains that involve **international shipping, plastic-intensive packaging, and long-distance freight**. Transporting sensitive lab consumables requires cooling materials like polystyrene, which are rarely recyclable.

This reliance on global sourcing means IVF labs not only produce local waste but also participate in a **global carbon economy** of medical manufacturing. *The cumulative emissions from shipping, warehousing, and packaging are rarely accounted for in the clinic's footprint, yet they are substantial contributors to its environmental impact.*

Outdated Equipment and Power Inefficiencies

Many IVF labs continue to operate using **older-generation devices** that consume more power than necessary. Incubators, refrigerators, centrifuges, and other core equipment may lack modern energy-saving features such as standby modes or optimized motors.

Despite technological advancements, the high cost of newer equipment, combined with limited awareness of energy efficiency ratings, has left many labs operating sub-optimally. As these devices remain powered continuously, the cumulative energy consumption escalates year over year.

Culture Media Waste and Resource Mismanagement

The handling of **culture media** in embryology labs also raises sustainability concerns. Media solutions are vital for embryo development, but protocols often require pre-loading dishes and preparing for scenarios that may not occur—leading to excess usage and wastage.

In many cases, dishes are discarded unused due to timing mismatches or batch processing issues. Similarly, the *overuse of oil overlays*, *unnecessary follicular flushing*, and *extra layering of dishes* not only increase media consumption but also drive the need for additional disposables, further contributing to waste.

Water Use and Chemical Discharge

Water is another overlooked resource in IVF labs. Autoclaves, air conditioners, and RO systems generate discharge water, much of which is wasted. Labs also use copious amounts of water for cleaning, sterilization, and general maintenance.

The use of **non-biodegradable cleaning agents** and disinfectants introduces another concern: chemical waste that, if not disposed of properly, risks environmental contamination. Many

IVF labs, while maintaining high standards of cleanliness, lack formalized protocols for sustainable water use and chemical management.

Digital Deficiency: Paper Records and Administrative Waste

Despite advancements in digital healthcare, many IVF centers still rely on **paper-based systems for patient records, lab logs, and procedural documentation**. This results in high paper consumption, unnecessary printing, and file storage—contributing indirectly to deforestation and waste generation.

Physical reports, printouts, and *charting systems* often involve duplicate copies, *outdated filing protocols*, and *non-recyclable documentation*, creating an **administrative layer of waste** that is rarely addressed in sustainability conversations.

Behavioral and Systemic Barriers

A critical, overarching issue lies in the **lack of awareness, training, and incentives for sustainability** among embryology teams and clinic administrators. *Green practices are often seen as optional rather than essential, and many embryologists are not trained to consider environmental efficiency in their workflow.*

In the absence of clear sustainability guidelines, green auditing systems, or reward structures, labs default to standard procedures that may be unnecessarily wasteful. Time pressures, SOP rigidity, and resource insecurity often override any effort to innovate or conserve.

Waste Segregation and End-of-Life Handling

Even after lab consumables are used, the waste they generate remains problematic. IVF centers produce a blend of **biohazardous, recyclable, and general waste**, but many lack the infrastructure to **segregate and dispose of this waste responsibly**.

Poor segregation leads to recyclable plastics being incinerated and hazardous waste being mishandled. This failure not only poses environmental risks but can also breach regulatory standards. The disposal phase, though occurring after patient care is complete, remains a blind spot in many fertility clinics.

A Crisis Waiting to Be Confronted

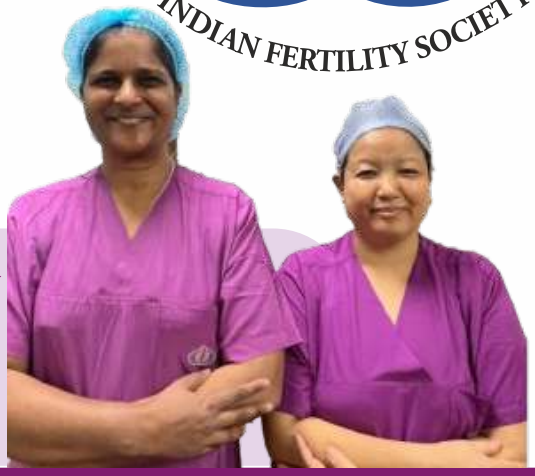
In the drive to help families conceive, the environmental toll of IVF has remained largely unspoken. But as global conversations around sustainability gain urgency, assisted reproduction cannot remain an exception. The **embryology lab, once viewed purely as a site of hope and innovation, must now confront its role as a high-consumption, high-impact medical environment**.

The challenges are significant: an overreliance on plastics, high energy dependency, inefficient water use, outdated technology, unsustainable procurement, and insufficient waste management. Together, these issues paint a picture of an industry in need of urgent introspection.

IVF has transformed lives, given hope to millions, and expanded the frontiers of medical science. But as we look ahead, the path forward must also include **a reckoning with the environmental costs of creating life**—and a call for change, responsibility, and resilience.

INDIAN FERTILITY SOCIETY

Nursing Empowerment Program (NEP)



Review of Work (ROW)

Quarter- II, III & IV, 2024

Dr. Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr. (Prof) Shweta Mittal Gupta
Secretary General, IFS

Dr. Roya Rozati
Mentor

Dr. Priya Bhave Chittawar
Coordinator

Dr. Deepika Verma
Co-coordinator

WATCH US ON YouTube

Scan **QR**

IFS SECRETARIAT

Flat No. 302, 3rd Floor, Kailash Building
26, Kasturba Gandhi Marg, C.P. New Delhi – 110001

+91 9899308083 (Ms Farha Khan) **+91 11 40018184**

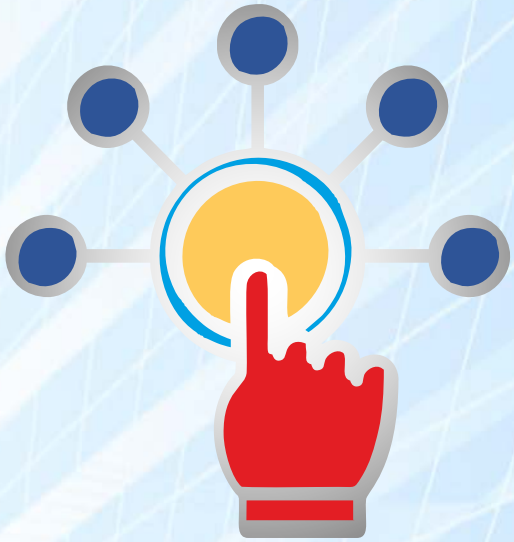
www.indianfertilitysociety.org indianfertilitysocietydelhi@gmail.com

Become an IFS Member

Scan QR Code

Digital IFS

INDIAN FERTILITY SOCIETY



Unlock Fertility Wisdom in Every Upload

Dr. Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr. (Prof) Shweta Mittal Gupta
Secretary General, IFS

Dr. Rashmi Sharma
Web Editor

Dr. Shalini Khanna
Joint Web Editor

Scan QR Codes

(CEP) Counsellor Empowerment Program

(IEP) Intelligence Empowerment Program

NEP) Nurses Empowerment Program

(PEP) Patient Empowerment Program

(SEP) Self Empowerment Program

(YEP) Young Empowerment Program

Green IVF

IFS Genius Junction

SIG

Become an IFS Member

Scan QR Code

IFS SECRETARIAT

Flat No. 302, 3rd Floor, Kailash Building
26, Kasturba Gandhi Marg, C.P. New Delhi – 110001
+91 9899308083 (Ms Farha Khan)
+91 11 40018184

www.indianfertilitysociety.org
indianfertilitysocietydelhi@gmail.com
indianfertilitysociety

INDIAN FERTILITY SOCIETY

Young Turks Journal Club (YEP)

Review of Work (ROW)

Quarter- II, III & IV, 2024

Dr. Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr. (Prof) Shweta Mittal Gupta
Secretary General, IFS

Dr. Neeru Thakral
National Coordinator

Dr. Nisha Bhatnagar
Coordinator & Expert

WATCH US ON YouTube

Scan QR

IFS SECRETARIAT

Flat No. 302, 3rd Floor, Kailash Building
26, Kasturba Gandhi Marg, C.P. New Delhi – 110001

+91 9899308083 (Ms Farha Khan) +91 11 40018184

www.indianfertilitysociety.org indianfertilitysocietydelhi@gmail.com

Become an IFS Member

Scan QR Code

INDIAN FERTILITY SOCIETY

Self Empowerment Program (SEP)

Review of Work (ROW)

Quarter- II, III & IV, 2024

Dr Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr (Prof) Shweta Mittal Gupta
General Secretary, IFS

Dr. Bharti Dhore Patil
National Cordinator

Dr. Rajvi Mehta
Iyengar Yoga Teacher

Dr. Leena Wadhwa
Treasurer, IFS
Yoga Teacher

WATCH US ON YouTube

Scan QR

IFS SECRETARIAT

Flat No. 302, 3rd Floor, Kailash Building
26, Kasturba Gandhi Marg, C.P. New Delhi – 110001

+91 9899308083 (Ms Farha Khan) ☎ +91 11 40018184

@ www.indianfertilitysociety.org indianfertilitysocietydelhi@gmail.com

Become an IFS Member

Scan QR Code

INDIAN FERTILITY SOCIETY

Counsellor Empowerment Program (CEP)

Review of Work (ROW)

Quarter- II, III & IV, 2024

Dr Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr (Prof) Shweta Mittal Gupta
General Secretary, IFS

Dr (Prof) Pikee Saxena
National Coordinator, CEP

Dr Geeta Khanna
Mentor, CEP

Dr Poonam Nayar
Mentor, CEP

WATCH US ON YouTube

Scan QR

IFS SECRETARIAT

Flat No. 302, 3rd Floor, Kailash Building
26, Kasturba Gandhi Marg, C.P. New Delhi – 110001

+91 9899308083 (Ms Farha Khan) +91 11 40018184

www.indianfertilitysociety.org indianfertilitysocietydelhi@gmail.com

Become an IFS Member

Scan QR Code

INDIAN FERTILITY SOCIETY

iNTELLIGENCE EMPOWERMENT PRORAM (i-EP)

Review of Work (ROW)

Quarter- II, III & IV, 2024

Dr. Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr. (Prof) Shweta Mittal Gupta
Secretary General, IFS

Ms. Doel Bose Pande
Coordinator

Dr. Pranay Ghosh
Coordinator

WATCH US ON YouTube

Scan **QR**

Become an IFS Member

Scan QR Code

IFS SECRETARIAT

Flat No. 302, 3rd Floor, Kailash Building
26, Kasturba Gandhi Marg, C.P. New Delhi – 110001

+91 9899308083 (Ms Farha Khan) ☎ +91 11 40018184

@ www.indianfertilitysociety.org indianfertilitysocietydelhi@gmail.com

INDIAN FERTILITY SOCIETY

Launches

Digital IFS

76th Republic Day "Swarnim Bharat"

Unlock Fertility Wisdom in Every Upload

Dr. Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr. (Prof) Shweta Mittal Gupta
Secretary General, IFS

Dr. Rashmi Sharma
Web Editor

Dr. Shalini Khanna
Joint Web Editor

1 Video uploaded on YouTube Every 30 hrs ! (In Quarter II, III, IV)

Scan QR Codes

IFS SECRETARIAT

Flat No. 302, 3rd Floor, Kailash Building
26, Kasturba Gandhi Marg, C.P. New Delhi – 110001
+91 9899308083 (Ms Farha Khan)
+91 11 40018184

www.indianfertilitysociety.org
indianfertilitysocietydelhi@gmail.com
indianfertilitysociety

Become an IFS Member

Scan QR Code

INDIAN FERTILITY SOCIETY

How to Become an IFS Member

Dr. Prof (Col) Pankaj Talwar, VSM
President, IFS

Dr. (Prof) Shweta Mittal Gupta
Secretary General, IFS

01 Scan QR Code

02 REGISTRATION *2 Min*

03 UPI / Online Payments are made in Jiffy *3 Min*

04 *E-Mail Notification* *4 Min*

05 *Download E Certificate & Membership Number* *7 Min*

For any Information, Contact

+91 9899308083

indianfertilitysocietydelhi@gmail.com

21st Annual National Conference of the Indian Fertility Society

FERTIVISION

INDIAN FERTILITY SOCIETY

2025 | 12th to 14th DECEMBER

The Leela Ambience Hotel & Residences, Gurugram, Delhi NCR

Theme: Green ART - Global Sustainability Initiative

Key Note Address & ASRM Session

"Sperm DNA Fragmentation: A Contemporary Approach to Management."

Robert E. Brannigan, MD

"Endometrial stripe thickness: does it matter?"

Elizabeth S. Ginsburg, MD

Scan QR Code To Register Online

Scan QR Code For More Information

REGISTER NOW

www.fertivision2025.com

Dr Prof (Col) Pankaj Talwar, VSM
President IFS
Organizing Chair

Dr (Prof) Shweta Mittal Gupta
Secretary General IFS
Organizing Secretary

Dr (Prof) Neena Malhotra
President Elect, IFS
Scientific Committee Chair

For More Information

Mr. Vikas Sharma (9560493999)

For Any Query, Contact

Ms Faraha Khan (98993 08083) | Mr. Santosh Kumar (84478 17022)

FOLLOW US: indianfertilitysociety | indianfertilitysociety | indianfertilitysociety