

# Pioneering Sustainable Fertility Solutions

**May 2025** 

Green ART News Bulletin

Team 3
Team Leader



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GREEN







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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 ecofriendly 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



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**





# 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.

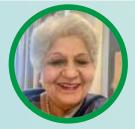
The biggest challenge with the green revolution has been the change in the genetics and epigenetics profile due to use of insecticides, pesticides and genetically engineered varieties of seeds. Fortunately, in contrast, Green IVF emphasizes a more holistic, innovative and sustainable approach by reducing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



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## **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 3 Bulletin Pioneering Sustainable Fertility Solutions

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Dr. Lavleen Kaur Sodhi



**Dr Bhawani** 



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**Dr Suhani** 



**Dr Saumya Prasad** 



The healthcare industry, a beacon of healing and hope, is paradoxically a significant contributor to global greenhouse gas emissions. Within this sector, Assisted Reproductive Technology (ART) has its own heavy carbon footprint - one that we can no longer ignore.

**Green IVF or Sustainable IVF** refers to a more environment friendly approach to IVF focusing on reducing use of resources and waste production without compromising effectiveness of treatment. Sustainability is no longer an option – it is a necessity.

The clinicians are in a unique position to bring in this change. They can interact with and educate hospital staff including fellow doctors, nurses, embryologists, lab technicians and OT technicians, cleaners, pharmacists, administrative staff, CEOs, etc and steer a 'bottom - up' as well as 'top-down' approach. Their reach extends even further - to vendors, pharmaceutical companies, and most importantly, to patients and their families, and they can steer them all into a greener system.

#### **Building the Movement**

#### **Step 1: Form the Green Team**

Bring together passionate individuals who believe in a sustainable future. Every movement begins with a team.

#### Step 2: Educate and Empower AR

Equip your team with knowledge. Foster awareness about climate impacts and the opportunities to reduce our collective footprint within the IVF clinic and beyond.

**Step 3: Engage stake holders-**patients, families, vendors, pharmaceutical reps, etc. When people understand why we want to do this, they will become allies in the journey.

#### **Step 4: Assess and Reflect**

Conduct a baseline audit of current practices. Celebrate what's already working and identify gaps where meaningful change can occur.

#### Step 5: Take action together

Devise a bold, practical action plan and revisit it often. Sustainability is not a one-time fix but a dynamic, evolving commitment.

#### Step 6: Recognize, Reward, Inspire

Sustainable change thrives on motivation. Celebrate the change-makers, and let their stories inspire a cultural transformation.





#### **Energy consumption**

- a) Reduce consumption by replacing incandescent bulbs with LED lights, switching off equipment such as computers and monitors when not in use, reducing A/C and heating use in office, etc.
- b) Choose energy star-certified equipment with smart features such as automatic shut-off or low-power modes that help conserve electricity.
- c) Maintain equipment for optimal efficiency.
- d) Harness solar or wind energy where possible.



## REEN ART

#### Water consumption

- a) Harvest rain water (Retrofitting rain water harvesting systems into existing buildings is also possible though it may require some modifications).
- b) Reuse AC & RO filter discharge.
- c) Install Sensors for controlled water flow at scrub stations.
- d) Fix leaky taps and dripping faucets promptly.
- e) Reuse treated waste water for cleaning, irrigation, etc.



#### Save paper, save trees



- (i) Reduce consumption of paper.
- a) Embrace digital records and prescriptions.
- b) Prescriptions can be written on the same paper multiple times.
- c) Do not insist on print-outs of lab reports, other investigation reports, etc.
- d) Reduce number of clinic visits, increase the use of telemedicine where possible.
- e) Avoid using single use crockery or cutlery made of paper.
- (ii) Use greener alternatives for e.g., recycled paper for printing and record keeping, bamboo toilet rolls, bamboo wipes and washable microfiber cleaning cloth for cleaning.

Recycled paper: The purpose of recycling paper is to maintain the sustainability of woodland areas but the downside of recycled paper is that chemicals and a lot of water must be used to bleach and purify the paper and some of these chemicals can be harmful to the environment. Therefore unbleached recycled paper should be used where possible. The quality of recycled paper may degrade with repeated recycling. The texture of recycled paper is not smooth and glossy and therefore it is not suitable for marketing purposes. Long term durability may be compromised, making it less suitable for long term record keeping. It is also a little more expensive than regular paper but the benefit to the environment outweighs this increase in cost.

Paper derived from bamboo: Bamboo grows quickly (3-5 years to maturity) and regenerates without replanting, making it highly renewable. Growing bamboo requires less water and use of pesticides. Also, bamboo absorbs more CO2 and releases more oxygen than trees, contributing to carbon sequestration. Paper production from bamboo requires fewer chemicals and less water compared to traditional wood pulp paper. Bamboo fibres create strong, smooth paper that is versatile for various types of use. It decomposes naturally, reducing environmental impact. The downside is that it is more expensive than wood pulp paper due to production and processing costs and availability is limited as compared to wood pulp paper. However, the price difference is minimal when considering its environmental benefits. The paper breakdown over time is easier with less problem of clogged pipes. It is also hypo-allergenic.



#### Plastic & Polystyrene



Plastic and polystyrene have no place in a green future.

Use of plastic should be prevented as far as possible. Replace plastic files & folders with cardboard ones, plastic water bottles with filtered water served in glass tumblers and disposable plastic or polystyrene plates and cutlery with steel or ceramic.

Use instruments such as speculums made of steel rather than disposable plastic ones.

Recyclable coolers are a great alternative to polystyrene ones but are not yet universally available. The next best option is a plastic cooler for transportation of medicines and media in cold chain conditions and these can be reused innumerable times. Insist that pharmaceutical vendors not supply material in polystyrene coolers.



#### **Reducing Scope 3 emissions**

Encourage patients to inject gonadotrophins themselves instead of visiting a clinic or hospital for the same.

Prescribe oral medications instead of injectable where feasible (for e.g. use of oral GnRH antagonists or Progesterone for pituitary down-regulation instead of injectable).

Reduce clinic visits and use of tele-medicine where possible.

Avoid unnecessary monitoring of hormone levels or identify good laboratories close to the patient's home.

Streamline inventory management - over ordering supplies leads to excess stock that either expires or must be discarded.

#### Reuse

Replace disposable gowns, caps, shoe covers, etc. with cloth ones which can be reused after washing and autoclaving.

Reusable pens for s/c injection of gonadotrophins create less waste than use of a new syringe and needle for every injection.



#### Recycle

While recycling is important, it should be used after options to prevent, reduce and reuse/repurpose have been explored or exhausted.

Proper waste segregation is the primary requirement for a good recycling process. Recyclable waste has to be separated properly as also the hazardous and non-hazardous waste to avoid unnecessary incineration activity. Having a central sorting station would also help to reduce the number of bins and waste disposal bags used.

Clinics must demand accountability from their suppliers, diving deep into their ESG (Environmental, Social and Governance) reports. They can create and circulate standard questionnaires to assess the sustainability efforts of consumable and pharmaceutical manufacturers. This information could then be considered by clinics when selecting suppliers.

Environmental actions by supply and service companies should include

- improving product design
- reducing hazardous chemicals
- implementing environment friendly solutions for the packaging and shipping of products
- water and energy conservation
- transitioning to renewable energy sources and
- implementing effective waste management practices. recycle

Where possible, ART clinics should pursue Green Certification (such as ISO 14001) - a tangible testament to their commitment to environmental stewardship. Let this be a mark of pride and inspiration, setting a standard for others to follow.

Creating a sustainable future for reproductive medicine is not just about systems —it's about people.

It's about shifting mindsets, cultivating empathy for the environment, and recognizing that the health of the patient begins with the health of the planet.

Let us lead with vision.

Let us act with purpose.

Let us heal not just individuals—but generations, and the world they will inherit.



#### **Conclusion**

Going green is not a one-time activity, it is a way of life, whether personal or professional. It is an ongoing commitment which will keep evolving. Key areas have to be identified in IVF centres – those which can deliver the highest environmental impact with the most immediate results:

- Energy expenditure-
- Water conservation-
- Purchasing & Resource management.
- Community education
- Waste reduction & Recycling (esp. plastics).
- Saving paper (& other products derived from wood) to save trees

Concrete plans have to be shaped to promote a continuous improvement of sustainability with regular monitoring and auditing and the clinician is at the centre stage for these changes. Green certification of IVF clinics is the need of the hour.



Nursing Empowerment Program (NEP)

Review of Work (ROW)

Quarter- II, III & IV, 2024



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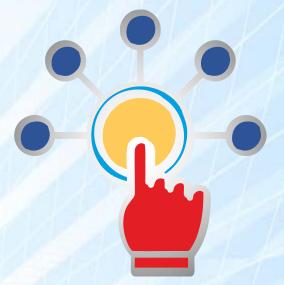
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(IEP) Intelligence Empowerment Program



NEP) Nurses Empowerment Program



(PEP) Patient Empowerment Program



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Quarter- II, III & IV, 2024



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