

Pioneering Sustainable Fertility Solutions

April 2025

Green ART
News Bulletin





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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

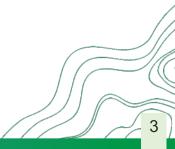


Our environment is the foundation which plays a pivotal role in ensuring our health, economy and well-being. Climate change, resource depletion, and pollution affect every facet of life. There is an urgent need to shift toward sustainable practices which is felt by everyone, including industries like 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

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



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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 2 Bulletin Pioneering Sustainable Fertility Solutions

Team Leaders



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As the demand for assisted reproductive technologies (ART) continues to rise in India, the need for sustainable and environmentally conscious healthcare infrastructure has become more critical than ever.¹

What is Green IVF Designing?

Green IVF Designing is an innovative approach that integrates eco-friendly principles into the architecture, operations, and protocols of IVF clinics.² This bulletin explores the concept of Green IVF Designing and its transformative potential for the fertility industry.

Green building certificate is a rating system that recognises buildings on the basis Of their environmental performance and sustainability. Ivf labs can incorporate the principles highlighted in the various systems to add credibility to the building design.

Key Green Building Certification Systems:

- LEED (Leadership in Energy and Environmental Design): A globally recognized green building rating system, which provides a framework for healthy, efficient, and cost-saving green buildings.
 - To achieve LEED certification, a project earns points (platinum, gold, silver) by adhering to prerequisites and credits that address carbon, energy, water, waste, transportation, materials, health and indoor environmental quality.
- IGBC (Indian Green Building Council): IGBC is India's premier certification body, promoting green building practices and offering certification for sustainable buildings.
- Other Notable Certifications: BREEAM, Green Globes, Living Building Challenge,
 National Green Building Standard, GreenGuard, and WELL Building Standard.



The common features to all green buildings are listed below-

- 1. Minimised land use without interfering much with local flora and fauna.
- 2. Sustainable Architecture and use of ecofriendly building material³:
- -Selection of materials used in hospital construction and furnishings with emphasis on ecofriendly, long-lasting, non-toxic, local and indigenous materials to reduce fuel and energy wastage due to transportation.

Avoiding the use of asbestos coatings, Cadmium and lead paints, bio-accumulative toxic materials like PVC, halogenated flame retardants, etc.

Material Type	Examples	Benefits
Recycled Steel	Reused from old buildings/scrap	Reduces mining, durable
Bamboo	Fast-growing, renewable	Stronger than wood, biodegradable
Cross-Laminated Timber (CLT)	Engineered wood	Carbon-sequestering alternative to concrete
Recycled Concrete	Crushed old concrete	Reduces landfill waste
Low-VOC Paints & Adhesives	Water-based, non- toxic	Improves indoor air quality
Insulation (Wool, Recycled A	Natural fibers	Non-toxic, energy-efficient
Green Roofing	Vegetation-covered roofs	Reduces heat island effect, improves insulation
uPVC(Unplasticized Polyvinyl Chloride) and modern glass technology, like Low E coatings and multiple panes of glass- double or triple glazing	French doors and windows	Maximize natural light through large windows, better thermal and acoustic insulation



- Building designs and facades in such a manner that there is more reliance on natural lighting and ventilation to reduce energy consumption.
- -Biophilic design-Incorporating plants and greens, vertical gardens not only provide a pleasing and tranquil atmosphere but also leads to clean indoor air quality.
- Ultra-low outgassing steel and phenolic modular laboratory furniture enables quick changes while maintaining a clean laboratory environment.⁴

3. Energy -Efficient Equipment:

-Use of renewable energy sources like solar panels and wind energy.

Solar power is becoming increasingly popular as a clean and renewable source of energy as they lower the carbon footprint and save energy expenses. Ivf centers can install solar panels on the roof. On-grid and off-grid solar power systems are the two primary categories.

On-grid solutions add electricity to what one gets from the utility solar company by connecting to the grid. Off-grid solutions, on the other hand, depend on battery storage and are completely autonomous.

-Solar Panel Installation Setup for IVF Labs 5

- A. Rooftop Solar Arrays
- Most common setup, uses **unused roof space**.
- Requires **structural assessment** to ensure the roof can support panels.
- B. Solar Carports & Canopies**
- Provides **shaded parking + energy generation**.
- Ideal for clinics with **large parking areas**.
- C. Ground-Mounted Solar Farms**
- Suitable if the clinic has **extra land**.
- Higher efficiency (better airflow than rooftop).
- D. Building-Integrated PV (BIPV)**
- Solar panels **embedded in windows, facades, or skylights**.
- Enhances aesthetics while generating power.
- -Installation of energy-efficient lab equipment, HVAC systems⁶, and lighting that there is more reliance on natural lighting and ventilation.



- -Smart HVAC & Climate Control:Adaptive temperature, 30% energy savings.
- -Use of advanced technologies to minimize power usage without compromising patient care like movement sensor lights, IoT-Based Energy Monitoring which tracks real-time usage, prevents overuse.
- -Buying green-sourced electricity from wind, solar and hydroelectric power suppliers is a short-term option for existing laboratories where retrofitting is too costly or not feasible.

4. Water Conservation:

- -Use of water-saving fixtures and rainwater harvesting systems.
- -Reduce, Reuse, Recycle: Implement a comprehensive waste management program that focuses on reducing, reusing, and recycling waste
- -Water-Efficient Fixtures: Install water-efficient fixtures, such as low-flow toilets and faucets, to conserve water.
- -Green Cleaning Products: Use environmentally friendly cleaning products and procedures.
- -Composting: Consider composting organic waste to reduce landfill waste.

5. Patient-Centric Spaces:

-Calming Atmosphere:

Create a calming and relaxing atmosphere for patients, using soothing colors, natural light, and biophilic design elements.

-Privacy & Comfort:

Ensure adequate privacy and comfort for patients in waiting areas, consultation rooms, and procedure rooms.

-Accessibility:

Design the unit to be accessible to all patients, regardless of their abilities.

-Clear Way-finding:

Implement clear way-finding to help patients navigate the unit easily.



Why Green IVF Designing Matters

1. Environmental Impact:

Reduces the carbon footprint of these clinics, contributing to global efforts to combat climate change.

2. Cost Efficiency:

While the initial investment in green infrastructure may be higher, the long-term savings from reduced energy and water consumption make it a cost-effective solution.

3. Improved Patient Experience:

Eco-friendly clinics with natural lighting, green spaces, and sustainable designs create a soothing environment for patients, reducing stress and improving treatment outcomes.

4. Ethical Responsibility:

As healthcare providers, IVF clinics have a moral obligation to minimize their environmental impact and promote sustainable practices.

5. Global Leadership:

By adopting Green IVF Designing, India can position itself as a global leader in sustainable fertility solutions, setting an example for other countries to follow.

• The Way Forward-

To make Green IVF Designing a reality, collaboration is essential among:

- **Architects and Designers:** To create innovative, sustainable clinic designs.
- **Healthcare Providers:** To adopt and promote eco-friendly practices.
- **Government Agencies:** To provide incentives and regulations for green healthcare infrastructure.
- **Patients:** To support and choose clinics that prioritize sustainability.



Conclusion

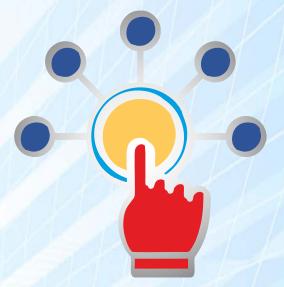
Green IVF Designing is not just a trend but a necessity in today's world. By integrating sustainability into the core of fertility treatments, we can ensure that the journey to parenthood is not only successful but also environmentally responsible. Let us embrace this transformative approach and pave the way for a greener, healthier future.

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(IEP) Intelligence Empowerment Program



NEP) Nurses Empowerment Program



(PEP) Patient Empowerment Program



(SEP) Self Empowerment Program



(YEP) Young Empowerment Program



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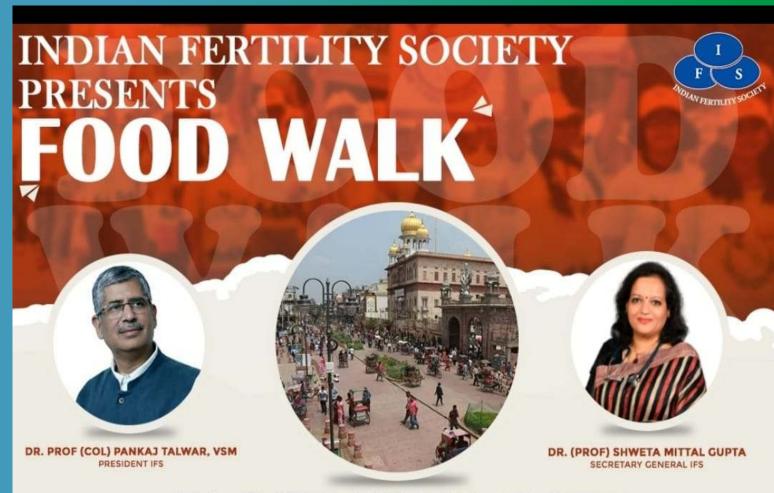
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