The success of any ART laboratory depends on its IVF laboratory. The primary function of an ART laboratory is to provide an optimal environment for gametes and embryos. To set up an ART laboratory, the three key areas to focus on would be the place or location of the laboratory, the embryologists, and the protocols or quality control. Lab design, ART layout, Equipment’s and consumables used in ivf laboratory form an important part in setting up IVF laboratory for any fertility clinic.

**ART Technology and ART Laboratory set up - Fertility Lab for Fertility Clinic - Setting up new ART Laboratory for IVF Clinic - Location, Embryologist and Quality Control in ART Laboratory - Role of Embryologist in setting new Fertility Lab - IVF Lab set up specialists – Shivani Scientific Industries - NO.1 IVF Equipments and Consumables supplier in India - IVF Lab setup and Design by Shivani IVF in India and worldwide - IVF Embryology laboratory Projects**

Fertility is an emotional but an important economic family decision, and like all economic decisions has long been considered an appropriate and important subject of analysis by economists. Infertility is recognized and classified as a disease and is on rise over the last few years. More and more couples are approaching fertility clinics with the problem of infertility. Infertility in male and female is on the rise and with the help of Assisted Reproductive Technology, the couples are able to attain parenthood and fulfil their family building dreams.

ART providers argue that with infertility "rampant and rising steadily" today, use of the Assisted Reproductive Technology (ART) has become the "need of the hour". Over the past two decades, the use of assisted reproductive technology (ART) has increased dramatically worldwide and has made pregnancy possible for many infertile couples. This results in close association between infertile couples, infertility clinics and specialists and Art or Ivf laboratories.
A critical component in the treatment of infertility is the IVF lab. The IVF lab handles the patient’s eggs and sperm, creates embryos, in some cases facilitates genetic testing and prepares the embryos for transfer. While the role of the fertility expert is to take care of you, it is the role of fertility lab to create, grow, test and prepare the best possible embryos for transfer.

The integral part of any fertility clinic is its IVF laboratory. Assisted Reproductive Technologies (ART) followed by fertility and infertility experts requires thorough knowledge and expertise in the field of ART. The clinic of the fertility specialist should be well equipped with all latest ART equipments, ART laboratory and the specialist himself and his team of lab technicians and embryologist should have proper training and know how to operate the various equipments. Further, the successful practice of ART requires considerable technical expertise and expensive infrastructure.

Setting up an ART Laboratory

The primary function of an ART laboratory is to provide an optimal environment for gametes and embryos. To set up an ART laboratory, that is efficient and safe, the three key areas to focus on would be the place or location of the laboratory, the embryologists, and the protocols or quality control.

Read in detail about setting up fully compliant ART Centre and IVF Turnkey project services at http://www.shivaniivf.com/ivf-turnkey-projects/ivf-turnkey-projects.php?val=1#rgt

1. Location of the IVF laboratory:

First and foremost choosing the location is very crucial when setting up a laboratory with high standards. The IVF laboratory should provide a safe, non toxic, stable, and a pathogen free environment. Therefore, careful consideration should be given when choosing the location. Laboratory conditions are of paramount importance in maintaining consistent success rates. Ideally the laboratory should be away from polluted areas such as industries or areas where there is high volume of traffic. Locations adjacent to parking lots, gasoline service stations and construction areas should also be avoided to limit the adverse impacts of pollutants to cell tissue culture.
2. Clinical Embryologist:

An embryologist using his or her personality, knowledge and skills must be capable of taking initiatives and improving the laboratory. When setting up a quality IVF laboratory, the most important asset to consider would be the embryologist. The laboratory should be directed by a qualified, experienced, and responsible person with expertise in the field of embryology. The embryologists should have a good background in reproductive biology or biological sciences. They should have good aseptic technique. An embryologist should be able to counsel patients and maintain close links with the medical staff. The most important is hands-on experience in all facets of clinical embryology which is an absolute requirement when starting a new setup. It is the responsibility of the embryologists to ensure that environment and processes in the laboratory are stable, non toxic and pathogen free. There should be maintenance of optimum parameters for gametes and embryos. Besides being able to perform all IVF procedures, an embryologist is responsible for routine checks on equipment, consumables and environmental conditions.

3. Guiding Towards Quality:

Quality management in the IVF laboratory underpins a successful clinic. Managing the quality of laboratory processes leads to improved results and a greater confidence for clinicians and patients. As a result of this global expansion boosted with cutting edge technologies, quality management and risk management is becoming increasingly important for running IVF clinics, and consequently it is fast becoming "prime debatable topic". IVF Lab should operate according to ICMR guidelines and should reflect modern awareness of our professional and commercial environment, and should embrace spermfuge. To maintain ambient quality there are certain vital parameters like particle count, filter integrity test, air velocity, temperature, humidity and CO2 for incubators which need to be kept under a constant check as they can harm the gametes and embryos ultimately which compromises the result.

Designing the IVF lab:

When starting a new facility for IVF, the design of the laboratory should be logically planned according to the projected workload anticipated. It should be adjacent to the procedure room or operating theatre. The design of the lab is extremely crucial with regards to the structural design and the environmental design. It has been shown that both laboratory structure and air handling systems may affect air composition. Environmental design is to ensure that the quality of ambient air is optimum for all procedures. Structural design refers to the layout of the laboratory and
specifications with regards to the bench height, flooring, wall paint, and lighting etc. This planning should be done with the help of clean room experts to try and eliminate volatile organic compounds (VOC’s) and chemical air contaminants (CAC) in the laboratory.

Know in detail about building ivf laboratory from initial stage to the finish stage at https://ivfworld.wordpress.com

**ART Lab Layout:**

The layout of the laboratory must be sensibly planned and logically designed to allow smooth running of routine procedures. The main laboratory consists of designated areas for oocyte and embryo culture and for ART sperm preparation. Each workstation should be self contained with a laminar flow hood, incubator, and microscope to prevent unnecessary movement of staff in the laboratory during procedures. There should also be allocation of separate space for micromanipulation procedures, cryopreservation, data or record keeping and storage area for storage of consumables.

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**Basic Essential Equipments used in Laboratory:**

Function wise equipments used for following procedures must be there in all fertility clinics.

- IUI
- IVF
- ICSI
- Freezing
Vitrification

Assisted Hatching

IMSI

Polarisation

Purchasing of equipment in the new setup is very crucial. Proven or established models that have been used successfully in other successful centres should be bought. Equipment of the highest quality and reliability should be purchased. Equipment should be safe to use and electrical leakage tests should be performed by biomedical engineers before commissioning the equipment. Regular servicing and maintenance of equipment is mandatory. For this reason, equipment that has maintenance support and reliable breakdown service should be used. All IVF equipment should be on urgent power supply. Crucial equipment like incubators, micromanipulator systems, medical refrigerator, freezing machines etc should be on uninterrupted power supply with a trigger alarm or call back service.

Consumables used in the IVF Lab:

Consumables used in ART should be established brands that have been used in successful centres and are proven to be safe for culture of human gametes and embryos. Plastic ware such as test tubes, petri dishes, graduated pipettes, four-well culture dishes, embryo transfer catheters, glassware such as injection needles and holders for ICSI, embryo transfer catheters and oocyte aspiration needles should be disposable and for single use only. Only powder free gloves should be used. Sperm survival test can be used to test out new consumables or products to check their suitability for use in the ART laboratory.

Fertility Specialist is always busy with hectic schedules from patient’s appointment, several fertility procedures to be done at clinic, maintaining and administering the clinic and many more. If anyone is providing them with ready IVF and IUI laboratory project along with hands on training for embryologist and lab technicians, it will be highly accepted by them. Shivani Scientific Industries (P) Ltd. is a company which is dedicated in giving its services to the fertility clinic in designing and building IVF Laboratory in India and around the globe. Several processes & equipments must be integrated into a cost effective & performing solution. For many years, our team of expert is providing successful support to achieve fully compliant ART Centre. Our dedicated trained staff at Shivani has extensive experience in setting up and designing IVF Laboratory, its Equipment’s and infertility laboratory supplies. We are Specialist in IVF IUI Laboratory setup and offer all equipment’s required for a state of the art IVF Laboratory. We have recently started a new Division for IVF
consumables which brings world class products such as Wallace range of medical devices and LifeGlobal range of Culture Media.

You are welcome to the world of Shivani Scientific to set up your new IVF IUI Laboratory with user friendly IVF lab design, turnkey project services, latest IVF equipments and consumables by contacting us at [http://www.shivaniivf.com](http://www.shivaniivf.com) or by calling any of our field experts at 91 22 2896 1768.