



## New Escoco Medical Factory to rise in the Kaunas FEZ

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Escoco Medical continues to improve and innovate to give a better fertility solution to its customers worldwide. As part of this continuous development, Escoco Medical will construct a bigger and more sustainable factory to cater to the increasing demands for fertility equipment.

The two-story 7710 sq.m factory of Escoco Medical will be constructed in the Kaunas Free Economic Zone in Kaunas, Lithuania.

“We value not only the proximity of factories creating high added

value in the Kaunas FEZ but also the professionalism and knowledge of Lithuanian specialists. We hope that the new factory will produce not only medical equipment developed in Lithuania but also other Escoco Laboratories and Escoco Pharma products,” says Evaldas Peciuonas, a representative of Escoco Laboratories.

Elijas Civilis, General Director of “Invest in Lithuania,” claims that the growth of Escoco in Lithuania is remarkable evidence of the high degree of expertise in the biological sciences in the nation.

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## New Esco Medical Factory to rise in the Kaunas FEZ

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*“The company’s choice to establish the only production location in the European Union in Lithuania and to carry out development here proves that we have already reached high standards of talent and skills, which are particularly important for companies operating in the life sciences sector. We hope Lithuania’s partnership with Esco will continue to grow and strengthen,”* says E. Civilis.

### Pursuing Sustainability Standards

One of Esco’s corporate social responsibilities is the “Esco is Green” campaign that promotes environment-friendly products and workplaces through energy-efficient technologies.

“Be Live”, which is a construction consulting and management services company, will build the two-story A++ energy building with office and storage space.

*“Together with Esco Lifesciences, we aim to make the building one of the few new production buildings that are certified. We overcome this challenge by creating a structure from the very beginning of ideas, then designing, managing the construction process, and even anticipating its further life cycle,”* says Darius Kvedaras, director of complex construction.

# Fertility treatment for everyone: NHS in Bristol UK grants single women and transgenders to avail fertility treatments

The National Health Service (NHS) in Bristol UK has announced the inclusion for fertility treatments of single women and transgender people for the first time. Previously, only straight, or gay couples had access to infertility treatments resulting in “discrimination” of other groups that are part of the LGBT community. On Thursday, December 1, 2022, the Bristol, North Somerset, and South Gloucestershire (BNSSG) Integrated Care Board (ICB) approved of the inclusion in the new fertility policy.

The new fertility policy indicates lowering the maximum age limit for prospective female patients from 40 to 39 based on data that show lower effectiveness of treatments to women aged 40 and above. Men aged 54 and below are still eligible to the treatment under the new changes in the fertility policy. It will also reduce the number of intrauterine insemination (IUI) cycles from 10 to 6 that will be shouldered by the couple to demonstrate infertility. In addition, people undergoing cancer treatments whose NHS treatment will

have adverse effects on their capability to conceive will also be now included (ie. Patients having surgeries in ovaries, testes, or people in transition).

The new approved policy followed a previous review launched last March 2021. It involved various fertility clinics and public discussion on how to go about the funding for the treatment under the new fertility policy.

The new building is aiming for a very good BREEM sustainability standard rating. Innovations such as life cycle analysis and dynamic energy modeling are applied in the design and construction of the plant.

Additionally, ecologists are being consulted on multi-faceted sustainability measures, for example, by considering the act of helping to protect the birds from accidentally hitting the glass and to design the nesting sites and feeders. At the approaches to the building, arrangements to compost piles of wood and stones to provide back to the small mammals or amphibians are planned. In addition to that, other measures contributing to the local biodiversity will also be projected.

In the parking lot of the new factory, spaces are being designed to accommodate electric cars, and there will also be a dedicated place for the drop-off of centrally brought employees. Traffic on the plot is designed so that different flows cross as little as possible. The priority of movement is given to pedestrians, prominent crossings are formed, and the number of pedestrian, bicycle, and car traffic intersections is minimized.

The Esco Medical factory in Kaunas will also be equipped with sports and exhibition spaces, and for the convenience of employees, a wellness room will also be installed.





# Effects of Wi-Fi Exposure on Sperm Motility and Viability

Effects of Wi-Fi exposure on sperm motility and viability

A new study has found that mobile phone usage and data, through Wi-Fi, are having deleterious effects on sperm motility and viability.

A study carried out by researchers at the University of Miami Miller School of Medicine has shown that while semen was affected by exposure to a mobile phone carrying out a voice call over Wi-Fi, it was not affected by exposure using a 4G or 5G connection. The researchers hypothesized that the increase in temperature could be due to the heat emitted from a mobile phone, and not just through radiofrequency electromagnetic radiation (RF-EMR).

*“The data shows that sperm exposure to Wi-Fi reduces sperm motility and viability. I have no problem with this conclusion based on the information presented in this abstract, but we need to be cautious about how this is interpreted in a real-world setting,”* said Allan Pacey professor of andrology at the University of Sheffield and Progress Educational Trust trustee who was not involved in the research.

He also added: *“It is important to note that sperm in the male body before ejaculation do not swim. Therefore, it is a leap of faith to assume that the damaging effects of Wi-Fi signals might affect unactivated sperm in men’s bodies in the same way as the authors of this study have shown for ejaculated sperm in the laboratory.”*

The abstract of the scientific paper was presented at the American Society for Reproductive Medicine’s 2022 scientific congress and published in the journal Fertility and Sterility.

Researchers have studied the impact of radiofrequency-electromagnetic radiation (EMR) on sperm motility and viability from fertile, normozoospermic men by exposing their ejaculated semen in an in vitro study over a 6-hour duration. A smartphone in talk mode using Whatsapp voice call was utilized as the RF-EMR source. The call was made either through the 4G, 5G, or Wi-Fi wireless spectrums.

The team found a significant association between a 13 % decrease in sperm viability and a 13 percent reduction in sperm motility for semen samples with

Wi-Fi exposure which is not observed on samples that were exposed to 4G or 5G RF-EMR.

The team also observed that the phones became warmer when carrying out the voice call over Wi-Fi than over 4G or 5G networks. Thus, researchers postulated that the effect observed on sperm was due to heat emitted by the phone. To check this conclusion, the researchers incubated the semen samples in an incubator at 37°C and got the same result in the motility of the sperm.

Authors also found the use of a phone case or increasing the distance of the semen from the smartphone, reduced the effect of Wi-Fi on sperm.

In conclusion, the researchers noted the need for continued study of these findings due to the different behavior of the phone models in the market.

Source: <https://asrm.informz.net/ASRM/data/images/2022%20Abstracts/EFFECT%20OF%20ELECTROMAGNETIC%20RADIATION%20EMITTED.pdf>





# Mimic the environment: How IVF incubators copy the environment of a women`s womb

The merging of the male's sperm cell with the woman's egg cell is known as fertilization, of which later the fertilized egg will become the embryo and eventually the fetus of the future baby. Fertilization of the egg by the sperm occurs in the fallopian tube and after the zygote is formed and developed it will travel to the uterus to implant itself on the endometrial lining of the woman's womb. The implantation stage would happen when the zygote has become a blastocyst wherein the trophoctoderm will be the placenta and the inner cell mass will be the fetus.

In-Vitro Fertilization (IVF) is known as the fertilization procedure of a mature egg retrieved from the ovaries with a sperm done inside a laboratory. Following fertilization, the embryo culture will be put first into an incubator before being transferred back to the woman's uterus during implantation. IVF is offered to couples who are having fertility issues and who are not able to conceive in a natural way. Usually, the embryo culture is placed in an incubator for about 2-5 days until the embryo is in the right stage to be implanted into the woman's endometrial lining (uterus).

**Generally, there are two types of incubators that can be used for IVF.**

- Benchtop incubator
- Box-type incubator

The main function of an IVF incubator is to provide an optimum environment for the embryo culture to develop. To achieve this goal, the IVF incubator should be capable of regulating environmental variables such as gas concentration, temperature, and

humidity. The gas monitoring ability of an IVF incubator is a crucial aspect, considering that regulation of CO<sub>2</sub> concentration can directly affect the development of the embryo culture by influencing the pH of the medium culture. On the other hand, low O<sub>2</sub> level has been repeatedly found to be useful during the development of embryo culture. This results in the importance of having an IVF incubator that is capable of monitoring and regulating the level of CO<sub>2</sub> and O<sub>2</sub>.

Temperature regulation is another important factor in the IVF incubator since the temperature will directly affect embryo development. The temperature in the IVF incubator should be properly maintained to reduce the risk of environmental stress that may be applied to the culture. Therefore, an IVF incubator should have excellent ability in terms of temperature recovery.

IVF incubator should also be capable of regulating the cleanliness of the air that goes into the system. Air quality is a crucial factor to be considered in IVF since it would directly impact the embryo culture through the presence of volatile organic compounds (VOCs). The filtration system integrated into the IVF incubator should filter out the VOCs in the air that goes in.

The MIRI® TL6 and MIRI® TL12 are multiroom IVF incubators that are designed with a built-in camera and microscope to provide real-time monitoring of embryo culture development without having to take out the embryo outside the

incubator, reducing the amount of culture exposure to environmental stress. The MIRI® TL6 and MIRI® TL12 regulates the temperature by using a PID controller located underneath the culture chamber and the lids. The filtration system utilizes HEPA/VOC system with UV-C light to clean the air circulated within the system. CO<sub>2</sub> and O<sub>2</sub> regulation in the MIRI® TL6 and MIRI® TL12 are maintained by using sensors and can provide a gas recovery time of less than 3 minutes. The MIRI® TL6 and MIRI® TL12 are multiroom IVF incubators that employs a dry culture system, which means that a humidity system is not required and instead the embryo culture would be overlaid with either mineral oil or Paraffin oil to protect the embryo.



**MIRI® TL6 and MIRI® TL12**

The box incubator, CelCulture® CO<sub>2</sub> incubator, manufactured by Esco can also provide an optimum condition for the embryo culture to grow. The CelCulture® CO<sub>2</sub> incubator is featured with an inner door kit which helps in the recovery parameters and prevents cross-contamination to protect the embryo culture.

The MIRI® multiroom and MIRI® II-12

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## Mimic the environment: How IVF incubators copy the environment of a women`s womb

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multiroom IVF incubators come with 6 and 12 independent chambers, respectively, which allows the user to access one culture in one chamber without affecting the rest of the chambers. Recovery of the gas and temperature parameters is achieved within < 3 and < 1 minutes, respectively. The Mini MIRI® Dry and Humidity incubators are designed for customers who prioritize smaller footprints. Even with its compact design, the Mini MIRI® Dry and Mini MIRI® Humidity incubators are still capable of achieving quick regulation of gas and temperature.



CelCulture® CO<sub>2</sub> Incubator



MIRI® Multiroom Incubator



MIRI® II-12 Multiroom Incubator



Mini MIRI® Dry and Humidity  
Incubators

# 4th Quarter Esco Medical Events and Webinars

## EVENTS



American Society for  
Reproductive Medicine  
(ASRM) Scientific  
Congress and Expo  
California, USA  
October 22-26, 2022



26th Thai Society for  
Reproductive Medicine  
(TSRM) Workshop and  
Conference  
Bangkok, Thailand  
Nov 16-18, 2022





**Workshop and Training:  
Assisted Reproductive  
Technology (ART) for  
Conservation of Sumatran  
Rhino**  
Indonesia  
November 25-26, 2022

## WEBINARS & WORKSHOPS

**ESCO**  
MEDICAL  
2022年学术会议第三季 第3期

**胚胎培养箱在IVF实验室的使用策略和优化**



**夏兰** 上海交通大学医学院附属瑞金医院  
生殖医学中心胚胎实验室负责人

上海市中西医结合学会生殖医学专委会实验室学组委员, 上海市中西医结合学会性医学专委会青年委员, 从事人类辅助生殖技术15余年, 熟练掌握胚胎室各项技术。主持市级课题1项, 参与国家级课题5项, 第一作者发表SCI论文数篇。

**胚胎培养箱是胚胎实验室最重要的设备, 其性能的完好及使用的优化以达到最佳培养效果, 一直是我们胚胎学家追求的目标。本次会议将从胚胎培养箱的正常使用及如何优化使用策略方面展开讨论, 并有本中心培养箱质控经验分享, 欢迎老师们参与。**

**直播时间: 10月14日 16:00-17:00**

扫码进入直播  
参与提问互动有礼




**培养箱在IVF实验室的使用策略和优化**  
上海交通大学医学院附属瑞金医院  
夏兰

**建立培养箱质控体系**




定期分析结果, 调整培养箱使用方案

**Strategy and  
Optimization of the  
Usage of Incubators  
in IVF labs**  
October 14, 2022  
Speaker: Lan Xia

**ESCO**  
MEDICAL  
2022年学术会议第四季 第1期

**新中心实验室启用  
和质量控制**




**马文敏** 肇庆西江医院院长、生殖中心主任  
原佛山妇幼保健院主任

原佛山市妇幼保健院党委委员、学科带头人, 于1997年率先从事生殖医学的临床和科研工作, 系佛山市试管婴儿技术的奠基人, 第一届国家辅助生殖技术管理专家库专家, 广东省辅助生殖技术评审专家, 广东省辅助生殖技术质量管理中心专家。

**IVF实验室是辅助生殖技术能否顺利实施的关键, 胚胎实验室实行严格的质量控制和质量保证体系, 有利于构建稳定的培养环境。本次会议, 马院长将回顾建立佛山妇幼生殖中心的过程, 从环境质量、仪器设备、试剂耗材等方面, 与大家分享新中心实验室启用和质控的相关经验, 欢迎老师们参与。**

**直播时间: 11月17日 16:00-17:00**

扫码进入直播  
参与提问互动有礼




**新中心实验室启用  
和质量控制**

马文敏  
2022.11

**干式培养箱与湿式培养箱**



■ 矿物油覆盖的培养液蒸发速度较慢, 不足以影响培养液的渗透压; 培养系统通常在48-72小时内更换培养基, 也可以保证胚胎液的渗透压不发生改变。

**Construction and  
Planning of New IVF  
Center**  
November 17, 2022  
Speaker: Wenmin Ma

# 4th Quarter Installations

## ALGERIA



**Clinic Avicenne Constantine**  
Constantine, Algeria  
Devices Installed: MIRI® Multiroom Incubator,  
MIRI® Time-lapse Incubator, and MAW

## BAHRAIN



**Bahrain Defense Force Hospital**  
Riffa, Bahrain  
Device Installed: MIRI® Multiroom Incubator

## INDIA



**Asia Pacific Institute of Embryology (ASPIER)**  
India  
Device Installed: MIRI® Time-lapse Incubator

## INDONESIA



**Bali Fertility Centre - Kasih Ibu Hospital**  
Denpasar Bali, Indonesia  
Devices Installed: MIRI® Multiroom Incubator, MAW Workstation  
6 feet, CelCulture® CO<sub>2</sub> Incubator, AVT-1, Laminar Flow Cabinet for  
Andrology

## TUNISIA



**Clinique Elalya**  
SFAX, Tunisia  
Devices Installed: MIRI® Multiroom Incubator and  
MIRI® Time-lapse Incubator

**Manufacturer:**  
**Esco Medical Technologies, Ltd.**  
Draugystes g. 19, 51230 Kaunas, Lithuania

**Service address:** Please contact your local distributor for details.  
Users of Esco Medical products should not hesitate to contact us if there are any unclear points or ambiguities in this newsletter.

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