DONOR EGG IVF
...WITH OREGON REPRODUCTIVE MEDICINE

The application period for Oregon Reproductive Medicine's Fertility Journey – a donor egg IVF cycle working with an ORM egg donor – has now closed and the team is evaluating all the applications received. While this is ongoing we share details of genetic screening and testing that ORM is a leader in making available for patients.

Founded in 1989 with the goal of building the best fertility programme possible, ORM is recognised globally for its consistently high live birth success rates, individualised care, and innovation leadership. ORM's innovation lead it in 1999 to utilise the expertise of Intel clean room facility engineers, to develop its pioneering embryology laboratory clean room, one of the first in the world. More recently, this same drive to utilise the latest technologies to help patients achieve the best outcomes has been behind ORM's commitment to making industry-leading genetic screening and testing available to its patients.

ADVANCED GENETICS AT ORM

The understanding of genetics and the variety of tests available are both expanding rapidly. We believe that our patients should feel empowered to make informed decisions based on the latest technology and with accurate, up-to-date, and easy to understand information. Uniquely among most clinics, ORM has an in-house state-of-the-art genomics programme. We have a team of highly-experienced, full-time, in-house genetics counsellors that work with patients and are involved in the screening of every egg donor in ORM's in-house programme. ORM is also one of the only IVF clinics in the USA that has an in-house genetics laboratory.

When it comes to genetic screening and testing it is important for patients to understand their options and the differences between pre-embryo creation and post-embryo creation screening and testing.

PRE-EMBRYO CREATION

Pre-embryo creation it is possible to gather genetic-history focussed data and conduct recessive carrier gene screening on each individual that is contributing egg and sperm for the creation of embryos.

By collecting and analysing family genetic history, ORM's genetics counsellors help identify areas that may warrant further investigation and/or testing.

Through a saliva or blood sample it is possible to screen whether individuals contributing egg and sperm for the creation of embryos are a carrier for a recessive genetic disease.

The person being tested may not suffer from the disease being tested, but still be a carrier.

About 35% of people that we test at ORM are carriers for recessive genetic diseases. If both people contributing egg and sperm are carriers for the same disease then there is an increased risk that a baby would develop that genetic disease.

To minimise this risk for patients, at ORM we automatically test everyone that is contributing egg and sperm for 100 recessive carrier genetic diseases. This is significantly more comprehensive than standard practice among many clinics.

The results of this pre-embryo creation genetic screening is available to patients before they commence their cycle and/or select a donor if that is part of their treatment and helps them make informed choices.

POST-EMBRYO CREATION

Pre-implantation genetic screening (PGS) and pre-implantation genetic diagnosis (PGD) are the two forms of post-embryo creation genetic screening that patients should understand.

PGS involves the testing of embryos to determine whether they carry the correct number of chromosomes to develop into a healthy pregnancy and baby. Embryos with the incorrect number of chromosomes will typically not develop, resulting in a failed IVF cycle or miscarriage, or a baby with one of several conditions – most of which are incompatible with life but which also includes Down Syndrome. The most advanced form of PGS involves testing ALL of the chromosomes by a technique known as Comprehensive Chromosome Screening (CCS). At ORM we utilise the most powerful, newest version of this technique called Next-generation Sequencing (NGS).

The formation of abnormal embryos (not possessing the correct number of chromosomes) is a natural phenomenon – around 25% of embryos from a young woman's eggs will be naturally abnormal and this rate increases with the age of a woman's eggs. These embryos will not make healthy babies and in most cases miscarry or do not implant at all. Because of this, CCS is a form of standardised genetic screening that is appropriate for every patient to consider as part of their IVF treatment and as a means to optimise the chances for success.

Pre-Embryo Creation	Genetic History Evaluation	Recessive Carrier Gene Screening
Post-Embryo Creation	Pre-implantation Genetic Screening (PGS)	Pre-implantation Genetic Diagnosis (PGS)

PGD involves the testing of embryos to determine whether a patient-specific genetic or chromosomal disorder is present. PDG testing is therefore customised and is only appropriate in certain circumstances with select patients.

COMPREHENSIVE CHROMOSOME SCREENING (CCS)

In every IVF cycle embryos are first examined under the microscope in order to select the best-looking ones. In addition to this visual inspection of the embryos, it is possible to count the number of chromosomes in each embryo. Chromosomes are packages of genes, or DNA, which are present in every cell of a person. Normally, there are 46 chromosomes (23 pairs) in each cell. Embryos with the correct number of chromosomes have the best potential for implanting and resulting in a successful pregnancy.

Abnormalities in chromosome number (extra or missing chromosomes) are the most common cause of failed implantation in IVF cycles and miscarriages, and are the only type of problem that becomes more common as women get older.

CCS is the term for this type testing. This process involves the precise laser removal from an embryo of about 5 cells that would otherwise develop into the placenta at the blastocyst (day 5-6) stage. The biopsied cells are laboratory tested using advanced technology to determine the number of chromosomes that are present. The embryos are generally frozen for future transfer while the testing is being performed, but in select circumstances (based on the development of the embryos and availability of an in-house genetics testing laboratory as is the case at ORM) it is possible to complete the testing and transfer the selected embryo(s) prior to freezing.

Transferring only embryos with the correct number of chromosomes can often improve the chances of a successful pregnancy and also decrease the chance of suffering through a miscarriage or having a baby born with a disorder linked to a chromosome abnormality.

CCS can be especially helpful for patients that are:

- Women 35 years of age or older using her own eggs
- Couples who have a history of repeated pregnancy losses
- Couples who have had a pregnancy or baby with a chromosome abnormality
- Couples who have had multiple failed IVF cycles

However, embryos with an incorrect number of chromosomes are very common, can occur at any age, and are not related to one's family history so CCS is an option for all patients undergoing IVF. New research shows that CCS can improve the implantation rates of embryos from egg donors who are in their twenties. Currently, at ORM over 80% of IVF patients now choose CCS as part of their cycle.

CCS USING NEXT-GENERATION SEQUENCING (NGS)

CCS using NGS technology is the most advanced form of this screening. Compared to conventional technology, NGS involves the attachment of several hundred thousand genetic probes to each biopsied cell. NGS technology delivers the greatest accuracy and speed for CCS procedures. ORM's in-house genetics laboratory employs NGS technology.

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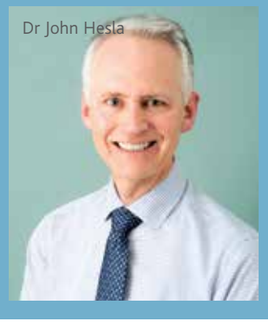
OREGON REPRODUCTIVE MEDICINE

ORM's global practice is lead by Dr. John Hesla and Dr. Brandon Bankowski, who have helped patients from over 40 countries create their families. Both completed their training at the Johns Hopkins Hospital – ranked as the number 1 in the USA for over 20 years in a row– and are recognised internationally for their professional excellence and commitment to improving their patients' reproductive care.

Dr. Hesla joined ORM in 1999 when he co-founded its IVF programme and was instrumental in building ORM's pioneering embryology laboratory clean room, one of the first in the world. Dr. Bankowski joined ORM in 2005 and he co-founded its industry-leading in-house genomics programme. Both strive to help patients achieve the best success while caring for the genetic health of their family.


Dr Brandon Bankowski


Dr John Hesla

ORM moved into its new state-of-the-art Fertility Center located in vibrant downtown Portland in Autumn 2015. It is home to our 100 strong ORM family of doctors, nurses, embryologists, genetic counselors, psychologists, patient coordinators, donor coordinators, and financial counselors among others. This world-class facility comprises 25,000 square feet and four floors of patient care facilities. ORM's Fertility Center houses its embryology and genetics laboratories, and increased space for ORM's fertility services and treatments, including IVF, egg donation, surrogacy, advanced genetic screening, as well as comprehensive fertility counseling, acupuncture, community education and proactive fertility care.

ORM's new Fertility Center builds on our commitment to achieve the highest success rates while providing a customised, compassionate patient experience.

We look forward to welcoming you to ORM in Portland and to help you build your family!


The ORM team