

# life line



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## All You Need To Know About ART

**“Then one day, the stork came flying by and dropped off a baby at our doorstep...”**

**For some couples, the wish of having a baby is not easily fulfilled. In fact, as much as 15% of the world's population endure the difficulties of trying to make a baby.**

**The magic formula is not as simple as man-meets-woman. However, help is at hand with the advancement of modern science and technology.**

### **Assisted Reproductive Technology (ART)**

ART was developed as early as the 1960s and has since undergone tremendous advancement and progress. We have come a long way since the birth of the first test tube baby by assisted reproduction in the late 1970s. ART has helped many couples to conceive a child.

There are varied causes of infertility among men and women. As such, the appropriate treatment method varies from one couple to another. The various treatment methods and assisted reproductive techniques include:

- Monitoring the fertility of the woman
- Intra-uterine Insemination
- Fertility drugs
- In-vitro Fertilisation (IVF)
- Intracytoplasmic Sperm Injection (ICSI)

### **Monitoring The Fertility Of Woman**

The most common assisted reproductive technique is to monitor when the woman is most likely to be fertile using a series of ultrasound scans. In a natural cycle, medications will not be prescribed during the monitoring of an oocyte (egg) for ovulation.

For women who have difficulty producing eggs suitable for ovulation, medications can be given to stimulate the ovary to produce an egg of good quality for fertilisation. This is called a stimulated cycle.

Most of these medications are prescribed after the onset of the menstrual period and ultrasound scans will be scheduled after 10 to 12 days. When the egg is ready for ovulation, the couple is then advised on the best time to have intercourse to optimise their chances of having a successful conception.

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## **Intra-uterine Insemination**

Males with poor quality or low quantity of sperm may be advised to undergo this procedure. Around the expected time of ovulation, sperm is collected from the husband and subsequently prepared and concentrated to select the premium sample. The selected sample is then injected directly into the woman's womb to increase the chances of meeting and fertilising the egg. This procedure is non-surgical and can be performed in an outpatient setting.

## **Fertility Drugs**

There are numerous drugs available to enhance fertility. The use of fertility drugs is to aid women in producing eggs of improved quality as well as increased quantity of eggs. Men also benefit from medications targeted at improving sperm production and quality.

## **In-vitro Fertilisation (IVF)**

The most common procedure, IVF involves the fertilisation of the egg by the sperm outside the woman's body. A long and arduous journey, the IVF programme requires a lot of time, effort and commitment from both husband and wife.

### *The Start Of The IVF Journey*

The journey usually begins with a visit to the IVF specialist. After a thorough medical history and physical examination of the couple, the specialist will go through the initial investigations required before commencing the IVF programme.

The couple will be screened for any infection that may affect the outcome of the programme. The wife needs to undergo a baseline ultrasound scan to assess her womb and ovaries. Blood tests may also be performed to check her hormonal status. The husband is required to undergo a semen analysis to review the quality of his sperm as well.

### *The IVF Cycle*

The IVF cycle usually lasts two months. During the initial two to three weeks, medications will be given to the woman to prepare her body to produce more eggs for ovulation.

In a regular menstrual cycle, only one egg is released by the ovary for possible fertilisation. IVF enables the woman to produce more eggs of good quality during the stimulation phase to increase her chance of pregnancy. During this period, she may be required to undergo a series of ultrasound scans to monitor the number, size and growth of the eggs.

When the eggs are of a good size and ready for release from the ovaries, an injection is administered to aid in their final maturation and development. An appointment will then be made to retrieve the eggs for eventual fertilisation outside the woman's body.

## **Oocyte Retrieval**

The retrieval of the egg is usually done in an outpatient setting and hospitalisation is not required. It is a short procedure which may require light sedation or anaesthesia. With the aid of ultrasound imaging, the eggs will be retrieved by the specialist and sent to the laboratory for examination. Good quality eggs are then selected for fertilisation. Usually, one egg will be mixed with thousands of sperm, in hope of achieving a pregnancy.

## **The Final Stage**

After successful fertilisation, an embryo is developed. At the third to fifth day of fertilisation, this embryo is placed in the woman's womb. Embryo transfer is an outpatient procedure and does not require anaesthesia.

Medications will also be prescribed to support the early pregnancy. During this period, the woman is encouraged to relax and avoid any form of undue stress or strenuous activities.

If the IVF programme is successful, the couple is requested to return after 12 to 14 days for a confirmatory pregnancy test.

## **Intracytoplasmic Sperm Injection (ICSI)**

Males with abnormal quality or form of sperm or inadequate sperm count will benefit from this technique where a single sperm is used for fertilisation.

In an IVF-ICSI programme, one quality egg is fertilised with a single sperm (as opposed to thousands of sperm in the usual IVF programme). Frozen sperm which was previously collected can be used in this technique. The frozen sperm is thawed on the day of egg collection and is processed for fertilisation. Hence, fertilisation can still proceed in the husband's absence.

Although advances in modern medicine have given rise to significant developments in reproductive technology, there is no assurance that every IVF programme will be successful. The chance of a successful pregnancy is between 30% to 40%. However, ART is an option for couples who are unable to conceive naturally and wish to start their very own family.

Our fertility specialists have assisted many couples in their quest of having a baby. Since its inception, the Clinic for Human Reproduction has served both local and international couples, and has performed an average of 300 IVF cycles per year.

**The Clinic for Human Reproduction**  
**Level 4, Kent Ridge Wing 2**  
**Tel : 6774 5336 or 6779 5555 ext 1227.**

Some information related to conception that we would like to share with you:

### The Fundamental 3

- An egg
- A sperm
- An opportune meeting between the egg and sperm

Although it may sound simple, the process is actually quite complex. Only one egg is released in a month during ovulation. After the egg is released, it has to meet a good quality sperm in a short span of time or otherwise its chances of getting fertilised is nil. The probability of a fertile couple getting pregnant is only about 20% to 30% per menstrual cycle.

### Factors Affecting Natural Conception

The following are some factors that make conception more difficult for some couples:

- The woman may have difficulty producing quality eggs every month. She also may not know when she is most fertile.
- The presence of cervical mucus may be a barrier to the meeting of the sperm and the egg as it is toxic to the sperm in certain circumstances.
- The man may not be able to generate sperm of good quality which is needed for fertilisation.

### TO DR JIMMY SO (CONSULTANT, DEPARTMENT OF SURGERY)

"I would like to express my heartfelt appreciation to all the staff of National University Hospital, and especially to Dr Jimmy So. My father had a cancerous growth in his throat and Dr So made immediate arrangements for surgery to have it removed as it was still in the early stage. Dr So's patient and caring ways gave my family a lot of comfort. He also took time to update us on my father's progress. Our appreciation to all the staff in the ICU, HDU, Wards 43, 53 and Dr So." - Foong Siew Chong

(This compliment was featured in The Straits Times, Forum, on 3 November 2004.)

### TO DR NG KHENG SIANG (SENIOR CONSULTANT, DEPARTMENT OF CARDIAC)

"Dr Ng is very polite and patient. He is very caring towards the patient and provides excellent service to my parents. His professionalism and medical skills are important in providing the right diagnosis. It is really fortunate that NUH has such a good doctor." - Mr Koh T.T.

## postcards from our patients



### TO MASELA BTE ALI (STAFF NURSE, UROLOGY CENTRE)

"She is very caring and knowledgeable. She gives good advice and reassurance to patients who are about to go for surgery. A very helpful and good nurse." - Mr Titus R. R.

### TO LEE ANITA LOUISA (PATIENT ACCOUNT OFFICER, FINANCIAL SERVICES)

"I thank her for precious time on settling our financial problem. She was so patient towards us and tried to solve our problem for more than six hours." - Mr Than K. S.