

History of in-vitro fertilisation

In-Vitro Fertilisation Pre-Embryo Transfer (IVF-ET) is a fertility procedure which first succeeded as recently as 1978 by Dr Edwards (an embryologist) and Dr Steptoe (a gynaecologist) in England. Since then the technology has been further refined and developed by physicians and embryologists, with over 20,000 babies born worldwide.

The possibility of a pregnancy being achieved for any one patient cannot be predicted, as it depends on many variables, such as age and the reproductive health of both the wife and the husband. Although the chance of success varies from case to case, a thorough evaluation is required to predict the probability of pregnancy in any given situation.

http://www.ivf.com

Source:

IVF in Bangladesh: ray of hope for infertile couple

TAREQ SALAHUDDIN

Dr Parveen Fatima is an associate professor of department of Gynaecology and Obstetrics at Banghabandhu Sheikh Mujib Medical University Hospital (BSMMU). She performed in-vitro fertilisation or popularly known as test tube baby in Bangladesh in May 2000 for the first time and is the country's pioneer in the field dealing with infertile couples. As she gained experience Dr Parveen went on to establish a centre for private services. 'Centre for Assisted Reproduction (CARe)' at city's Shyamoli went into functioning on November 2000 providing health care services for the infertile couples. Recently she expressed her views on IVF in Bangladesh to Star Health.



Dr Parveen Fatima

**Star Health:** When did you start in-vitro fertilisation? Who are the first in-vitro fertilised babies in our country?  
**Dr Parveen Fatima:** I started it in November 2000. Hira, Moni and Mukta are the first in-vitro fertilised babies in our country who were born under my supervision.  
**SH:** What inspired you to study this field?  
**Dr PF:** Firstly, as a gynaecologist I saw a lot of patients having problems with fertility.

I used to receive many patients complaining about not having baby. So I thought it would be a good idea to study in-vitro fertilisation. It touched me and inspired me to come to this world of medical treatment. So, I established the center with my own interest and offering infertile couples the necessary services. I got my FCPS in 1986. Since then I was trying to do something in this field. Since 1993 I went to attend many seminars in different countries discussing IVF. Eventually I was interested in training. I spent my own money to materialise these. I invested all my earnings to build my career in the field and never looked back.

**SH:** What is the prospect of IVF in Bangladesh?  
**Dr PF:** I am very much hopeful. Unfortunately there are not many places where people can go and seek IVF treatment. But frankly speaking there are many couples in Bangladesh who are infertile but do not know of their problems. There is a need to aware people about infertility and guide them to the right places at right time. I am sure many more young doctors would be interested in the field and offer better services.

**SH:** Where else people can get facility for IVF?  
**Dr PF:** I am happy to tell you that BSMMU has recently opened infertility department

closely associated with the department of Gynaecology and Obstetrics and appointed me on 14 September this year as associated professor in the department. It is a beginning at BSMMU and I hope that it will go a long way. In private sector some other organisations like 'Harvest' at Mohammadpur has also come forward in dealing with the infertile peoples.

**SH:** What about the success and complications?  
**Dr PF:** I can confidently say that the works done at my place in Shaymoli is successful so far. Complications result from belated pregnancy. Beside this, complication due to IVF is very negligible. Now it is very simple for me to perform an IVF.

**SH:** What are the obstacles you faced to establish this centre?  
**Dr PF:** At first I faced technical problems to set up my centre fully equipped with necessary modern machineries as it was for the first time in our country. As a beginner I had no technical know-how so it was quite difficult to start. Then I had no manpower who knew the subject in addition I had no doctors showing interest in the field. Though I trained many people including nurses and technicians but it was extremely difficult to find young doctors assisting me. The problem was at BSMMU there is no course offering post-graduation in this field so trainee doctors hardly showed any interest. Then I needed an embryologist to complete the fertilisation process. Realising the problem my husband Dr Moazzem who is a paediatrician offered to help me. After training my husband now looks after the embryology section in the centre. The cost of the medicine is very high as they are not duty free.

**SH:** What facilities do you think we need to be successful in this field?  
**Dr PF:** At first we badly need the infrastructural facilities, technical support and trained manpower. So we need a specialised hospital to deal with the infertile people. Equipment used in IVF process need to be duty free. Although BSMMU started to provide the facility it is very scanty in comparison with the total need. Besides it lacks adequate place and other facilities.

**SH:** What is the approximate cost to perform an IVF in our country?  
**Dr PF:** To perform an IVF here the total cost would be around Tk 1.5 lakh. But it would cost you at least three times in Singapore or in Thailand.

**SH:** Do you think that we should go abroad for such kind of problem any longer?  
**Dr PF:** No. We have enough expertise in the field and so far our success rate is satisfactory but what we need is updating the latest innovations in test tube baby technologies.

**SH:** What is your future plan?  
**Dr PF:** My plan is to expand this centre and deal with more people who are incapable of getting their child in normal ways.



The first test-tube babies of Bangladesh Hira, Moni and Mukta with their parents.

### Understanding in-vitro fertilisation

Routine practice  
In vitro fertilization

Intracytoplasmic sperm injection

Cryopreservation

Specialized technique

Preimplantation genetic diagnosis

Uncommon procedure

Cytoplasmic transfer

ICSI (Intracytoplasmic Sperm Injection)

A single sperm is injected into the egg.

Assisted Hatching

A portion of the egg shell is removed to allow the embryo to hatch and escape.

In IVF, eggs are harvested from the woman's ovary and fertilized in the laboratory with sperm. The embryos are then transferred into the uterus.

Somewhere in the world, a "test-tube" baby is born every day. The miracle of babies born through in-vitro fertilisation (IVF) no longer seems so miraculous. In fact, fertilisation outside the human body is now available in our country.

The technique applied in our country is likely the ovum is removed through the abdominal wall and is fertilised by the sperm of her own husband in a small laboratory dish in an artificial medium. At the stage of blastocyst, the embryo is returned to the uterus through the uterine cervix which gets implanted in the endometrium.

Simply stated, IVF involves removing eggs from a woman, fertilising them in the laboratory (in a culture dish, actually, not a test tube) and then transferring the fertilised eggs, or zygotes, into the uterus a few days later.

More specifically, after super-ovulation with hormones to produce multiple eggs, the IVF team places the retrieved eggs in sterile culture media along with processed sperm and keeps them at normal body temperature inside an incubator, where fertilisation and early cell division take place. Then the team returns the fertilised and dividing eggs to the uterus. From that point, if the zygotes implant successfully and become embryos, the pregnancy progresses as it would naturally.

### Have a sound sleep

Good night's sleep may rescue memories

Scientists have found that peaceful slumber apparently restores memories that were lost during a hectic day.

It is not just a matter of physical recharge. Researchers say sleep can rescue memories in a biological process of storing and consolidating them deep in the brain's complex circuitry.

Researchers who conducted the experiments said the results may influence how students learn, and someday could be incorporated into treatments for mental illnesses involving memories, such as post-traumatic stress disorder.

In separate studies, scientists at the University of Chicago and the Harvard Medical School trained college-age people to perform specific tasks, then tested them to see how much they recalled after either a night's sleep or several hours awake.

The University of Chicago study found that test subjects who listened to a voice synthesizer's murky speech understood more words after a night of sleep than counterparts who were tested just hours after the training, with no sleep.

"We all have the experience of going to sleep with a question and waking up with the solution," said Daniel Margoliash, a professor of neurobiology at the University of Chicago.

Margoliash, who worked with colleagues Howard Nusbaum and Kimberly Fenn, said it could be that a person acquires so many memories each day that some details are lost in that jumble – but that the brain sorts and reorganizes the memories during sleep.

Or, memories could actually be lost during the day, he said, but reconstituted by the brain during sleep by some process that taps into the general rules the test subjects learned in their voice-recognition training.

Source: <http://www.cnn.com>

### American and British medics win Nobel for MRI

American Paul C. Lauterbur and Briton Sir Peter Mansfield won the 2003 Nobel Prize for medicine for discoveries leading to a technique that reveals images of the body's inner organs.

Magnetic resonance imaging or MRI, has become a routine method for medical diagnosis and treatment. It is used to examine almost all organs without need for surgery, but is especially valuable for detailed examination of the brain and spinal cord.

Lauterbur, 74, discovered the possibility of creating a two-dimensional picture by producing variations in a magnetic field. Lauterbur is at the Biomedical Magnetic Resonance Laboratory at the University of Illinois in Urbana.

Mansfield, 70, showed how the signals the body emits in response to the magnetic field could be mathematically analysed, which made it possible to develop a useful imaging technique. Mansfield also showed how extremely fast imaging could be achievable. This became technically possible within medicine a decade later. Mansfield is at the University of Nottingham in Britain.

"Well it's, I suppose, every scientist's hope (that) one day that they maybe singled out for such an honor but I must say that in my case I did think about it a few years ago, but then dismissed it," he told Swedish radio.

Worldwide, more than 60 million investigations with MRI are performed each year, the Nobel Assembly said. MRI represents a breakthrough in medical diagnostics and research.

Essentially, MRI turns hydrogen atoms in the body's tissues into tiny radio transmitters. Hydrogen atoms are plentiful because they are found in water molecules, which are very widespread in the body.

By tracking where those atoms are, an MRI machine can build up a picture of internal organs. It is a little like flying over a city at night, and discerning its outlines by noticing where the lights are.

The prize includes a check for 10 million kronor, or US\$1.3 million, and bestows a deeper sense of academic and medical integrity upon the winners.

Source: <http://www.cnn.com>

### Magnetic Resonance Imaging (MRI) machine

### Male contraceptive tests positive

The world's first injectable male contraceptive is a step closer to reality, Australian scientists have said.

Active-year study, conducted by the ANZAC Research Institute in Sydney, involved 55 men using hormonal injections and implants as birth control.

None of the men's partners conceived and there were no side effects compared to other trials, which have been terminated due to unforeseen problems.

The contraceptive works by inhibiting sperm production through injections of progesterone every three months.

Since this hormone also reduces the sex drive, testosterone had to be implanted under the men's skin every four months to maintain their libido.

After a 12-month period, participants would stop the treatment to recover their fertility.

It is a method that proved entirely successful for Chris Hains, a police officer from Sydney, whose wife became pregnant seven months after he stopped taking the injections, according to media reports.

This study has brought the reality of the male contraceptive pill one step closer.

Source: <http://www.cnn.com>