



Prof. Abha Majumdar
Director, Center of IVF and Human Reproduction
Sir Ganga Ram Hospital, New Delhi, INDIA

- 'President's Medal'** for best medical graduate 1970-75
- 'Dr. B.C Roy's award'** for outstanding contribution towards medicine, 1999
- 'Vikas Ratan Award'** by Nations economic development & growth society 2002
- 'Chitsa Ratan Award'** by International Study Circle in 2007
- 'Life time Medical excellence award'** Obs & Gyne by Hippocrates foundation 2014
- 'Abdul Kalam gold medal'** by Global Economic Prog & Research Association 2015
- 'Distinguished teacher of excellence award'** for post graduate medical education by ANBAI and NBE on 5th September 2017
- 'Rashtriya Gaurav Gold Medal award'**, on 15th October 2017 by GEPR

Course director for post doctoral **Fellowship in Reproductive Medicine** by NBE since 2007 and by FOGSI for basic & advanced infertility training since 2008.
Member of Editorial board of **'IVF Worldwide'**, peer reviewer for **'Journal of Human Reproductive Sciences'**, Member of advisory board for **'Journal of Fertility Science & Research'** and consultant advisor for queries to NDTV.com

Field of interest: Infertility, ART, Reproductive endocrinology, Endoscopic surgery for pelvic resurrection.



DR. ABHA MAJUMDAR

MBBS, MS, FICS

Director & Head of IVF Department
IVF Sir Ganga Ram Hospital

Expertise

Infertility, assisted reproductive techniques,
reproductive endocrinology, endoscopic surgery
for pelvic resurrección.

Director Centre of IVF and Human Reproduction

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Website: www.ivfgangaram.com



IVF SIR GANGARAM HOSPITAL



UNRAVELLING THE JOURNEY OF IVF

Dr. Abha Majumdar
Centre Of IVF and Human Reproduction
Institute of Obstetrics and Gynecology
Sir Ganga Ram Hospital
New Delhi

Evening News
Meet Louise, the world's
first test-tube arrival
SUPERBABE




Louise's birth was a landmark that changed the face of reproductive medicine

Nobel Prize winner: The work of British physiologist Edwards was recognized for his work on the fertilization of the egg and the development of the embryo.

Physiology or Medicine 2010

Robert G. Edwards

- The development of in vitro fertilization



Born 1925, Manchester, UK.
PhD, Edinburgh University, worked in London and Cambridge
Professor Emeritus, Cambridge University, UK

Jonathan Nackstrand, AFP/Getty Images





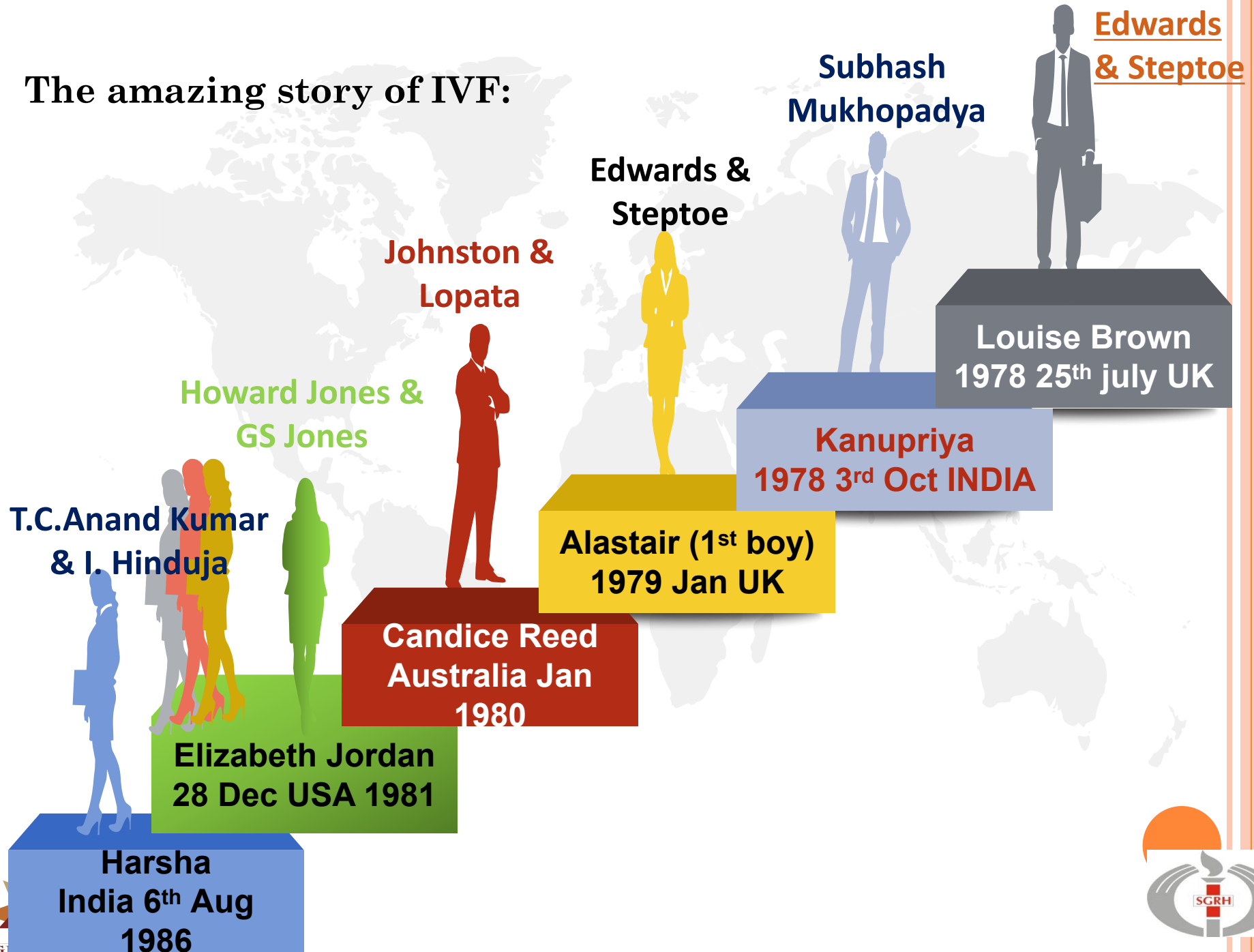
The amazing story of IVF
& 39 years with five
million babies



An old bell jar that sits on top of a cupboard at a Cambridge Shire fertility clinic which made history 39 years ago;
In a dish inside this jar world's first IVF baby spent hours after her conception



The amazing story of IVF:



Subash Mukhopadhyay Kolkata, India reported successful cryo-

A small publication of Mukhopadhyay in 1978 clearly shows he was on the right line of thinking much before anyone else had demonstrated the successful outcome of a pregnancy following the transfer of frozen-thawed embryo into human subjects

achievements are:

Creator, Architect or father....

- HMG for ovarian stimulation for IVF
- First to use trans-vaginal approach for ovum pick up
- First to cyro-preserve human embryos
- First to transfer embryo in a subsequent untreated cycle

KOLKATA PHYSICIAN **SUBHASH MUKHOPADHYAY** DIED ON JUNE 19, 1981

FIRST TO PERFORM **IVF** IN INDIA

He got his recognition only in 2002 ,
disastrously 21 years after he died...

Instead of being recognised, was
insulted & **barred by the govt**
from attending conferences &
movements

India to **perform IVF**
& create a test tube
baby 'Durga' on
Oct 3, 1978



COMMITTED SUICIDE at his Kolkata
residence

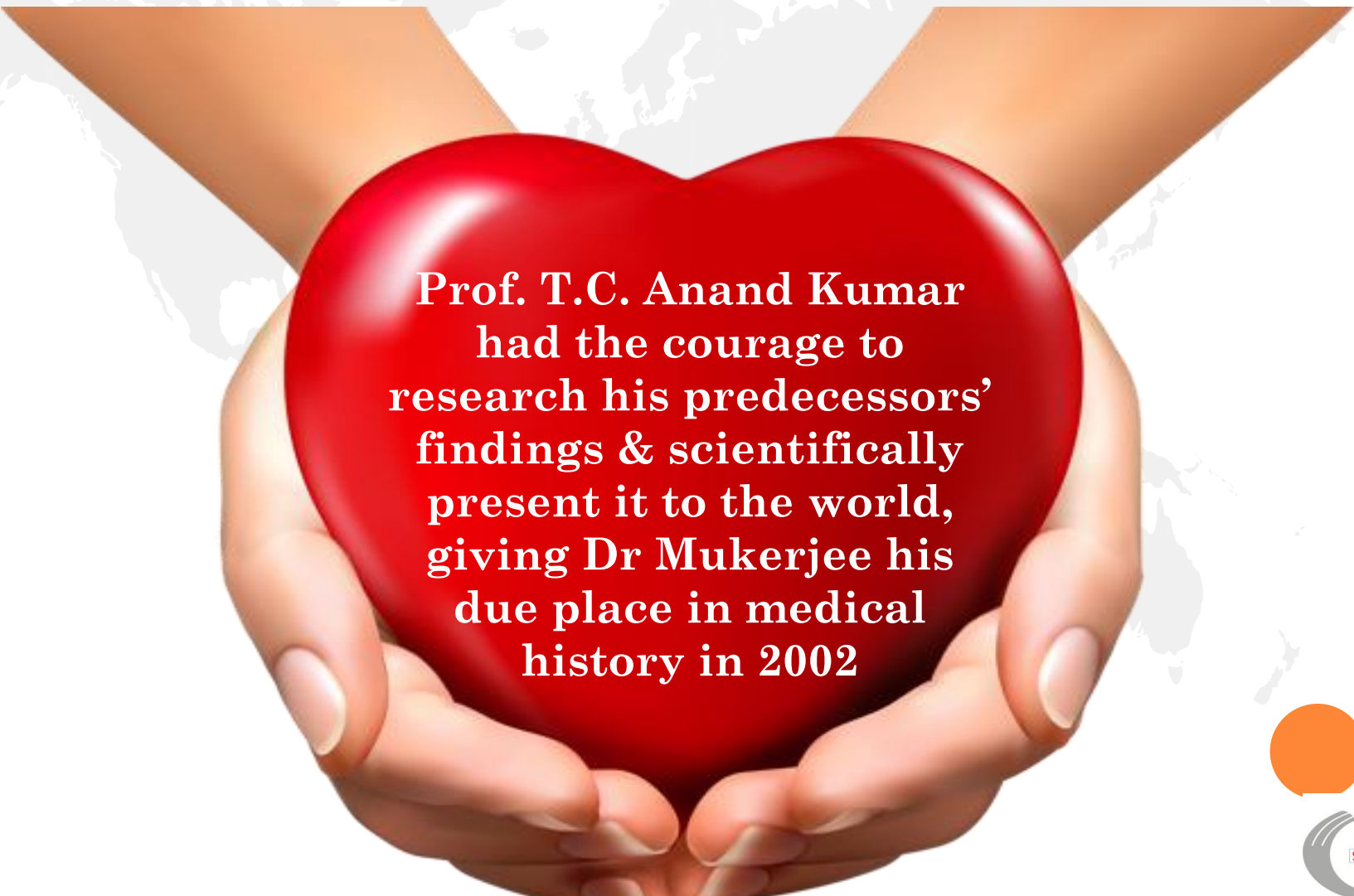
TC ANAND KUMAR, Director of Institute for
Research in Reproduction **acknowledged his**
achievement

THE FILM
DOCTOR KI MAUT
WAS BASED
ON HIS LIFE



Tribute to another unsung hero

Such generosity and honesty are very rare



**Prof. T.C. Anand Kumar
had the courage to
research his predecessors'
findings & scientifically
present it to the world,
giving Dr Mukerjee his
due place in medical
history in 2002**

Prof. T C Anand Kumar ?

The creator of the first officially documented IVF baby of India
Harsha



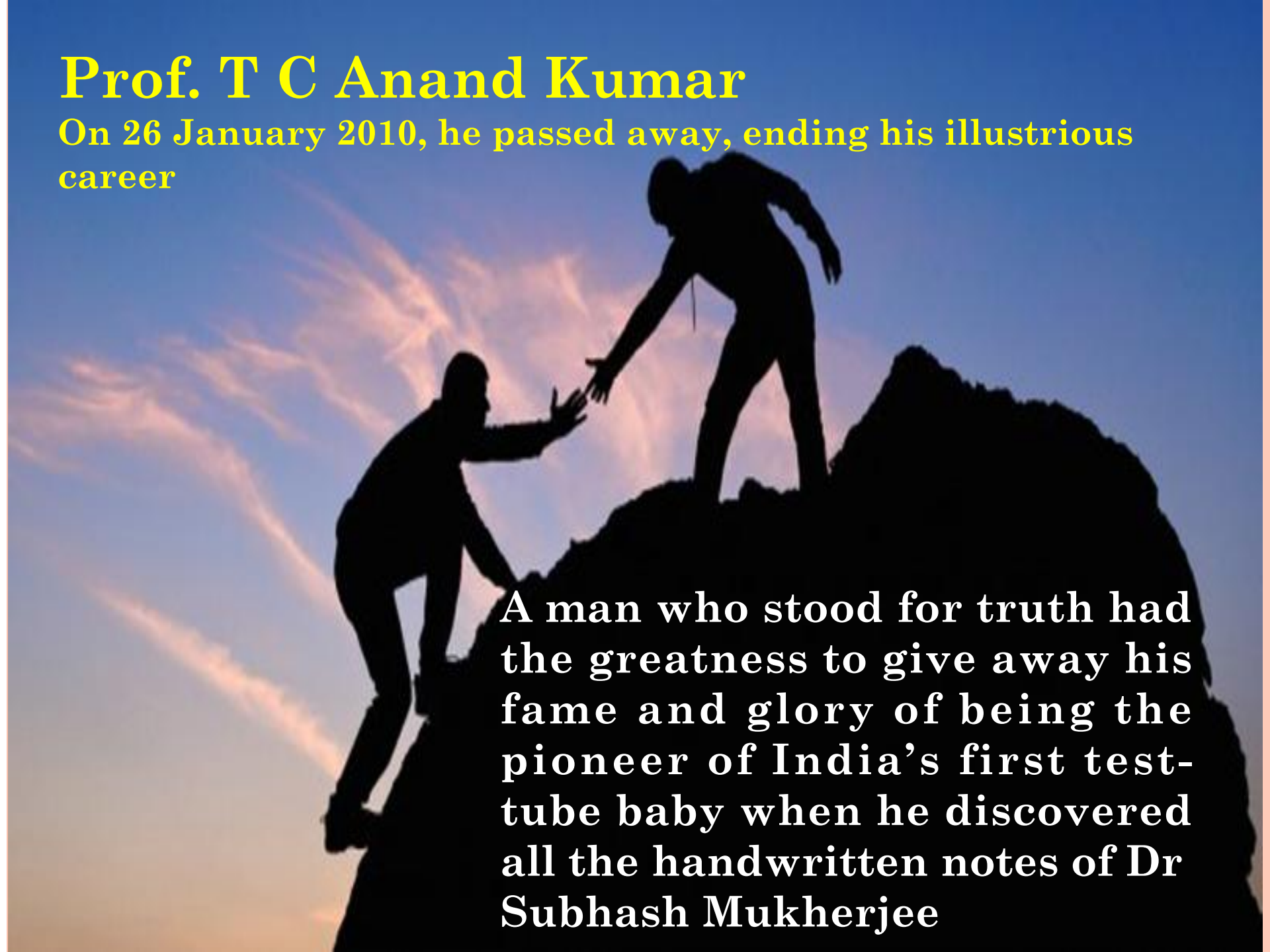
Project Leader from IRR
of ICMR who had 5
collaborators and one of
them was Dr. Indira
Hinduja from KEM
hospital Bombay

**He published their technical
report and procedural
details in the ICMR *Bulletin*.
(1997: 526).**

The work leading to Harsha's
birth was executed by a team of
scientists from the IRR and
clinicians from the KEM
Hospital working under his
direct guidance and supervision

Prof. T C Anand Kumar

On 26 January 2010, he passed away, ending his illustrious career

The background of the slide features a silhouette of two people on a mountain peak. One person is standing on the peak, reaching out their hand towards another person who is climbing up the side of the mountain. The sky is a mix of blue and orange, suggesting a sunset or sunrise. The text is overlaid on the lower right portion of the image.

A man who stood for truth had the greatness to give away his fame and glory of being the pioneer of India's first test-tube baby when he discovered all the handwritten notes of Dr Subhash Mukherjee

**Endo-
metriosis
with pelvic
factor**

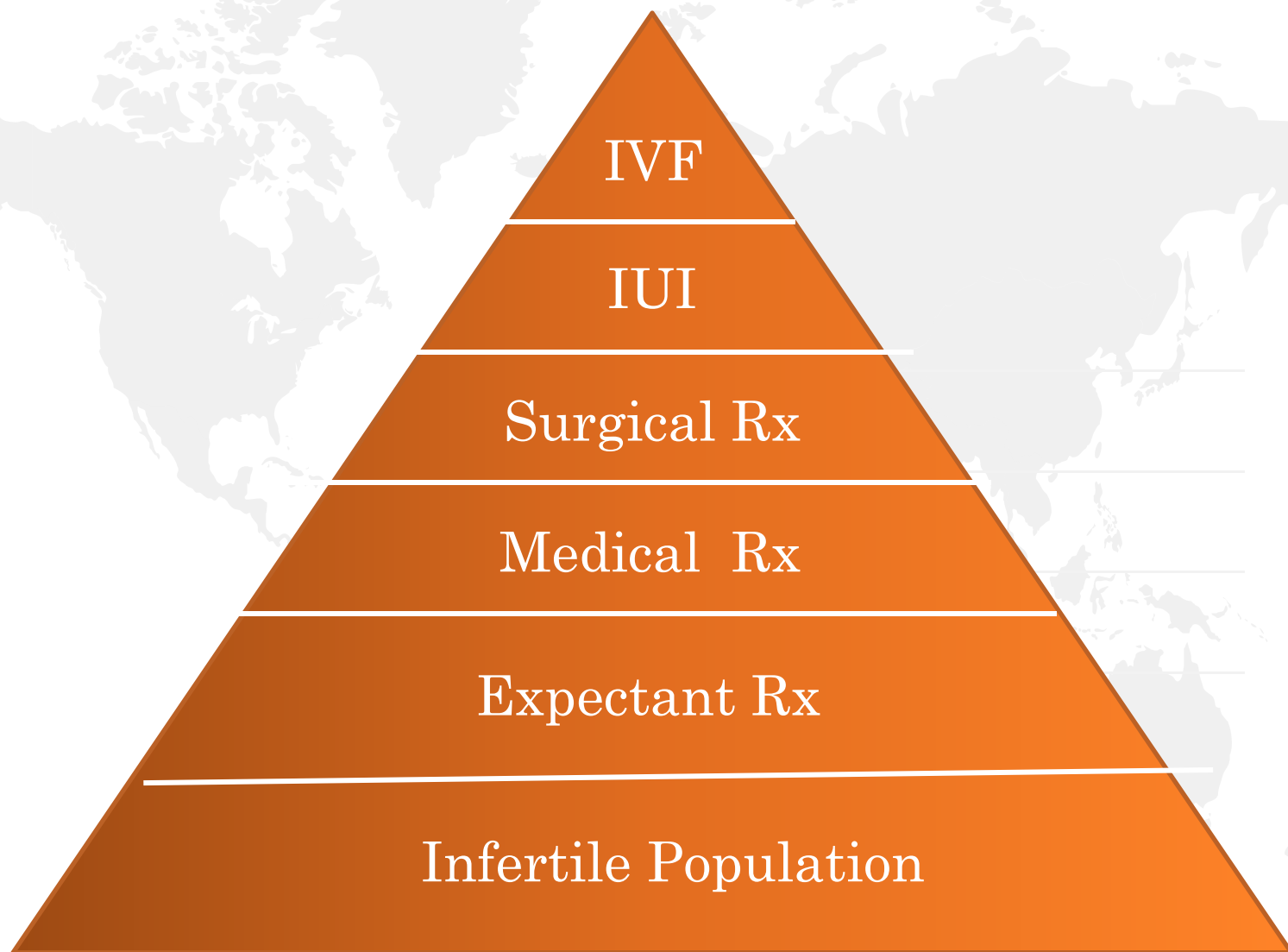
**Severe male
factor with
testicular
sperms**

**Tubal
factor
infertility**

**Unexplained
infertility**

IVF FOR MEDICAL INDICATIONS ONLY!

IVF HAS THE SMALLEST CONTRIBUTION IN TREATING INFERTILE COUPLES





USE OF IVF STARTED TO EXPAND BECAUSE OF:

- **Awareness, knowledge, availability and Acceptance**
- **True rise in incidence of infertility**
- **Advancement of Technology**



AWARENESS, KNOWLEDGE, AVAILABILITY & ACCEPTANCE

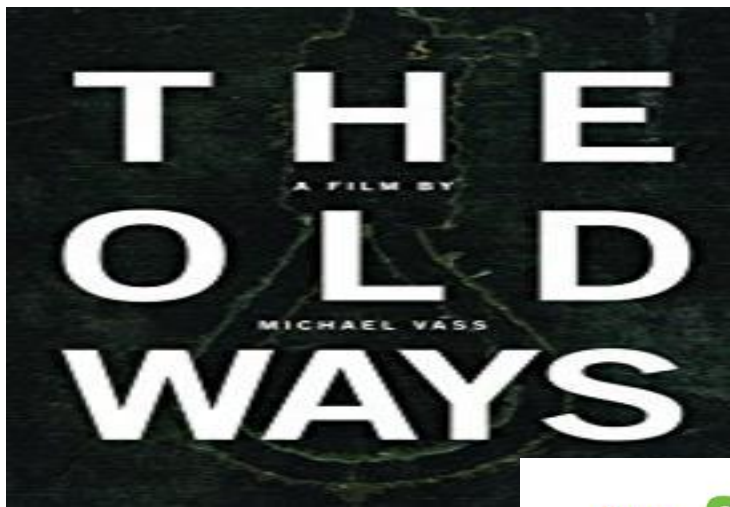
Awareness & knowledge

- News paper, radio and television
- Patient to patient disclosure & openness about using IVF
- Better education
- Internet

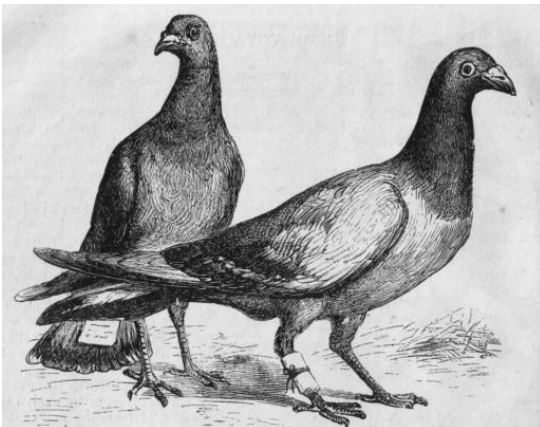
Availability & acceptance

- Institutional centers
- Mushrooming of private stand alone centers
- Flying embryologist managing multiple centers





listen strong positivity
patience flexibility
adjusting scary strength live encouraging
beginning different hope
fight tough brighter
acceptance support



2017 *This Is What Happens In An Internet Minute*



Thinking about IVF?
www.lowcostivf.net

IVF with Egg Donation

IVF with Sperm Donation

Cytoplasmic Transfer

Gender Selection
(family balancing)

Tandem IVF

Mini IVF



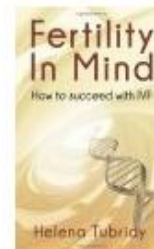
Dreaming of a
 Boy or girl?



VISIT OUR STORE

find the latest deals

Visit Our Online
 Shop & Save!



**Click
 Here!**



Selling ART: An Empirical Assessment of Advertising on Fertility Clinics' Websites

JIM HAWKINS*

Attributes of Care Advertised on Fertility Clinic Websites

Attribute of Care	Percentage Mentioning	Number (of 372 websites)
Excellent Technology	83.87	312
Personal Care	75.00	279
High Quality Doctors	69.89	260
Donors	56.45	210
Success Rates	55.65	207
"Firsts"	25.81	96
Hard to Treat Cases	18.55	69
Facilities	12.37	46
Older Patients	5.91	22



IVF STARTED TO EXPAND BECAUSE OF:

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CHANGING SCENE OF INFERTILITY



According to WHO,
one out of every four couples
in the developing countries,
is said to be affected by infertility.





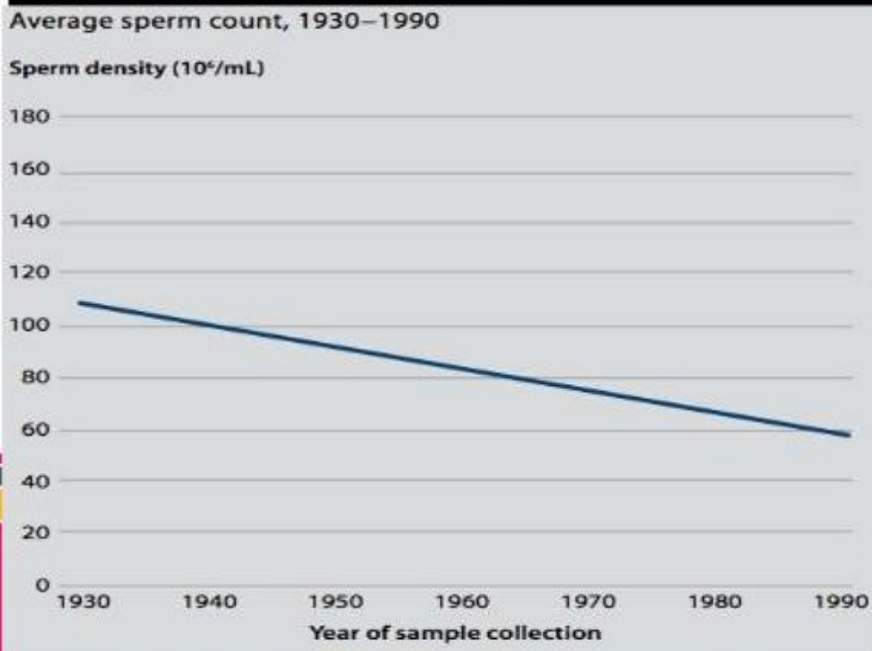
DECREASE IN SPERM COUNT

A REAL GLOBAL PROBLEM OR JUST STATISTICS



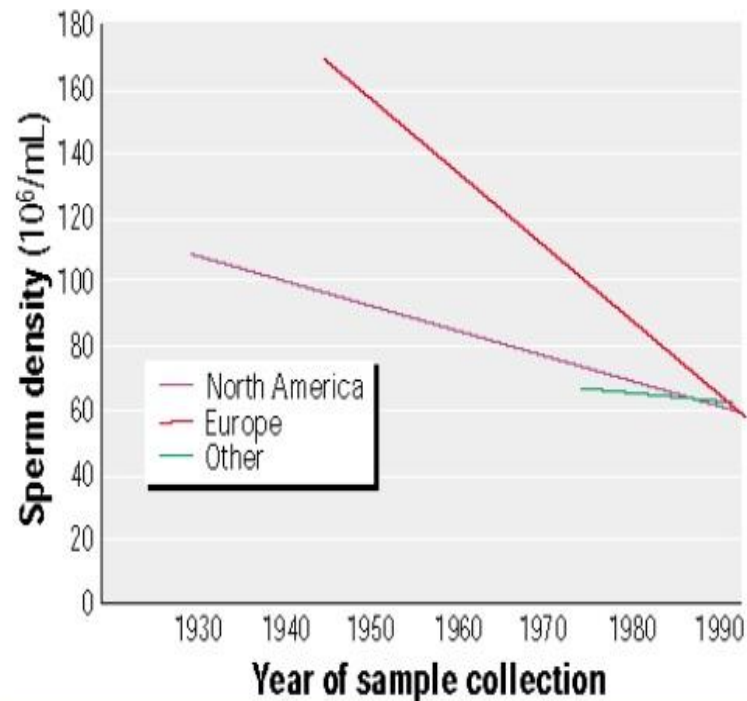
DECREASING SPERM QUALITY AND QUANTITY ? IS IT A REALITY?

Evaluation of decreasing sperm count **Decreasing sperm quality & Quantity** just in Data???????



Environmental Health Perspectives 108 (10) (Oct. 10, 2000); E. Carlsen et al.
British Medical Journal 305 (Sept. 12, 1992).

Reduction in sperm density **Decreasing sperm quality & Quantity** just in Data???????



INCREASING AGE OF MARRIED COUPLES (ESPECIALLY INCREASE IN FEMALE AGE)

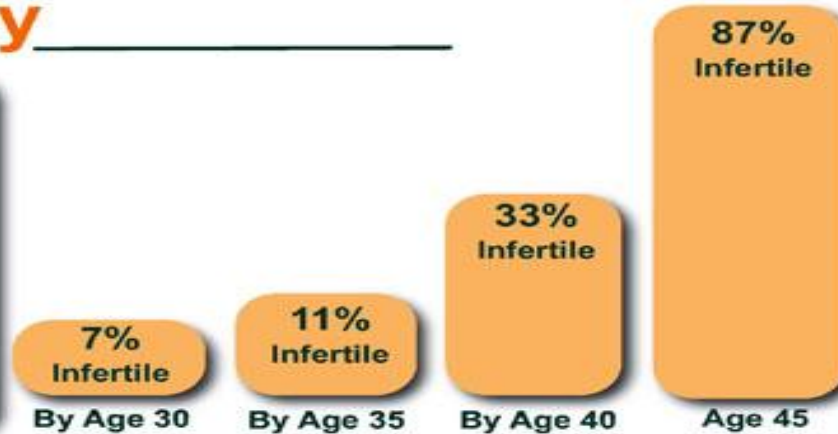
Age & Infertility

According to the Centers for Disease Control (CDC), this chart illustrates the percentage of married women who experience infertility by age group.

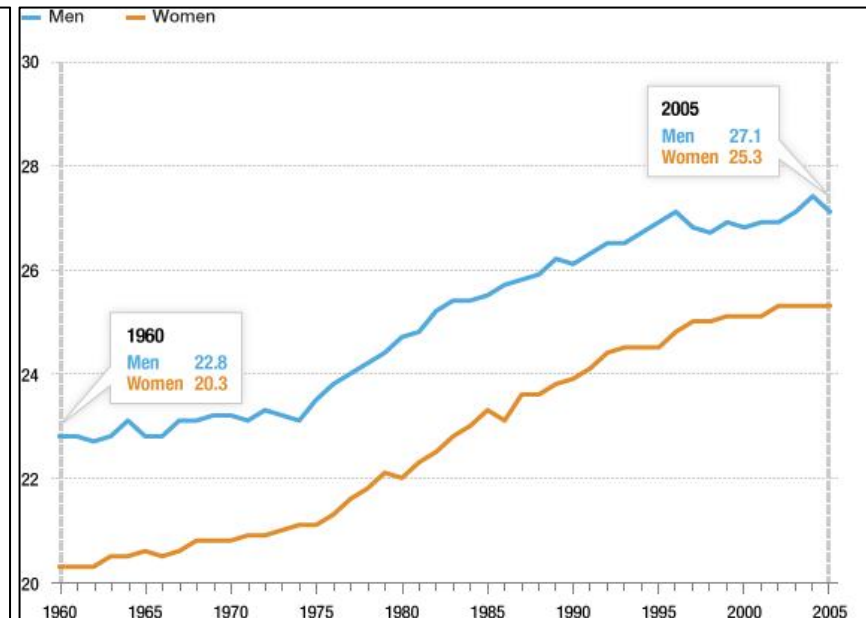
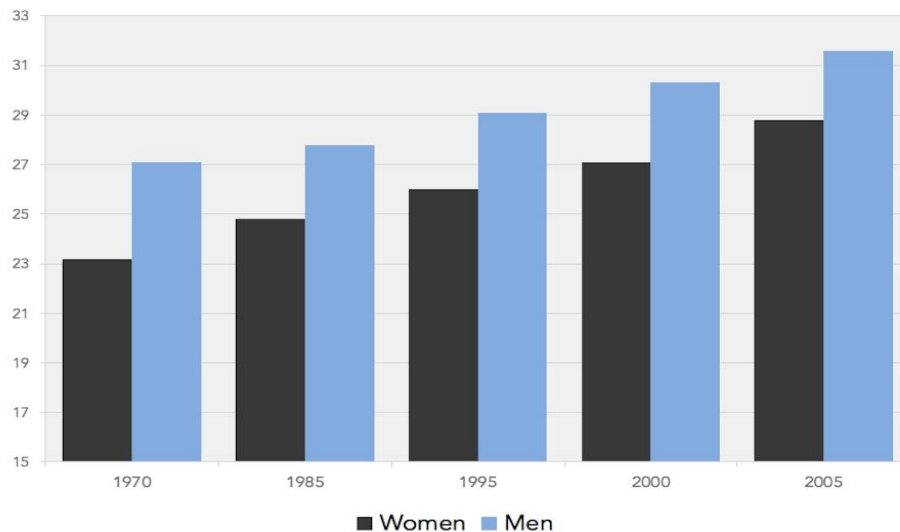
When to seek help*

- Under 34 – One year of trying to become pregnant without success
- 35-38 – After 6 months
- 39 and older- After 3 months

* Cleveland Clinic



Average Age at Marriage: Men vs Women



INCREASE IN INCIDENCE OF INFERTILITY

- Male factor
 - Decreasing sperm counts, motility and morphology
- Female factor
 - Increasing age of marriage especially the female
 - Increase prevalence of PCOS in western world as well as urban India (over nutrition): anovulatory infertility
 - Increase in STD's in developing countries: increase in tubal factor infertility (PID STD's)
- Unexplained infertility : Low tolerance for expectant management





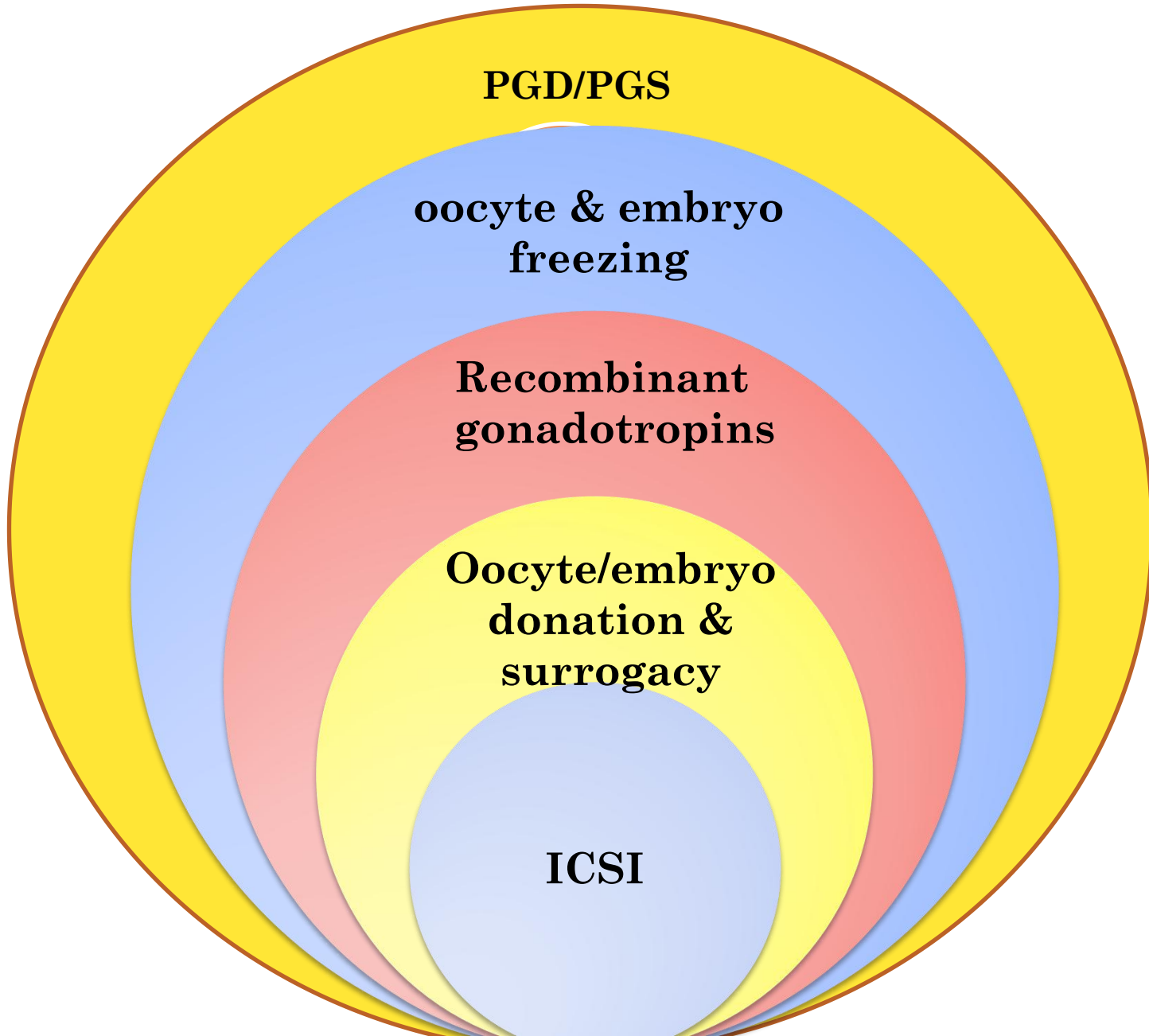
IVF STARTED TO EXPAND BECAUSE OF:

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- Advancement of Technology





Advancement of technology :





TECHNOLOGICAL ADVANCEMENTS



Widening of applications of IVF

- **ICSI:** Couples with severe male factor infertility
- **Oocyte donation:** Women with ovarian failure and insufficiency
- **Embryo donation:** Couples with deficiency of sperm and oocyte both
- **Surrogacy:** Couples where woman had no uterus or non-correctable defects in uterus
- **Oocyte freezing:** Fertility preservation before cancer therapy
- **PGD and PGS:** Select disease free or euploid embryo



Right way

Wrong way

Amparo Huapochi



IMPROPER USE OF TECHNOLOGICAL ADVANCEMENTS

- **ICSI** for all undergoing IVF
- **Donated oocytes:** all women with one cycle failure to cover for sub-optimal performance of a centre, or for older women (+50 years)
- **Embryo donation:** For couples of any age, 'Older the better' greater publicity of the centre
- **Surrogacy:** couples with a family but financially powerful to afford a large family but, *'not wanting to jeopardize owns health with motherhood'*, single men, gay couples
- **Oocyte freezing:** To preserve fertility for career priorities
- **PGD/ PGS:** sex selection of embryo



PAST: IVF WAS THE LAST RESORT



PRESENT: IT IS BECOMING THE FIRST RESORT





BUT WHY SHOULD IT NOT BE THE FIRST RESORT
IF IT HAS SO MANY POSITIVE SIDES TO IT?

WHY IVF NOT FOR ALL IF THIS GIVES THE
HIGHEST CHANCE OF PREGNANCY TO AN
INFERTILE COUPLE?





WITH EXPANSION OF IVF CAME PROBLEMS:

- Affordability and financial issues
- Complications and health concerns
- Emotional drain with denial of failure
- Use/(misuse) of technology for personal gains or social reasons





FINANCIAL IMPLICATIONS

Britain:

30,000 cycles /year, cost £2,500 each with £75 million turnover.

‘Pregnancy rates per IVF cycle 25% or more only by "good" clinics with women under forty and men with normal fertility’.

Dr Mercia Page, Medical Director of Serono Laboratories, which has 80% of the market in infertility drugs.

A mere 12.7% of treatment cycles in many clinics actually result in a live birth of a baby. Disturbing fact ‘birth rates for individual IVF clinics over a six month period can vary from 0% to 50%

recent report

HFEA

Success rates are so low that if this were any other area of medicine, the IVF clinics would probably be closed down.



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LONG-TERM HEALTH EFFECTS OF IVF

There had been a growing body of evidence that IVF babies may be less healthy than naturally conceived children.

Conventional IVF, ICSI, blastocyst culture, ovarian stimulation drugs, and embryo freezing and PGT

Birth defects can range from genital and urological abnormalities, kidney problems or deformities of stomach & intestine. Chromosomal abnormalities, alteration of key gene responsible for suppressing cancerous tumor growth, and epigenetic changes are also being explored

The fact that the warning came from Lord Robert Winston in 2001 a man who was one of the world's leading IVF pioneers gives it extra power

Hum Reprod Update. 2013 Jul-Aug;19(4):330-53.

Assisted reproductive technology and birth defects: a systematic review and meta-analysis.

Hansen M¹, Kurinczuk JJ, Milne E, de Klerk N, Bower C

45 cohort recent studies in the last 10 years included in this review to estimate birth defect risk after ART

ART infants (n=92671) had higher risk of birth defects compared to naturally conceived infants (n = 3870760).
[RR 1.32, 95% CI 1.24-1.42]

Risk further increased when data were restricted to
Major birth defects (RR 1.42, 95% CI 1.29-1.56)
Singletons only (RR 1.36, 95% CI 1.30-1.43)

CONCLUSIONS:

Birth defects remain more common in ART infants



NOT GIVING COMPLETE INFORMATION TO
PATIENTS IS EQUIVALENT TO
REPRODUCTIVE FRAUD





On a brighter note!

If we allow diabetics and epileptics to conceive with its antecedent 4 and 7 times respective increased risk of congenital abnormality then IVF and ICSI stand a far better chance for giving birth to a healthy baby.

Iran J Pediat, 2013 Dec; (Malformations in fetuses of gestational and pre-gestational diabetic mothers)
Neurology, 2005 march (Increase rate of major malformations in offspring exposed to Valproate during pregnancy)





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EMOTIONAL DRAIN AND DENIAL TO FAILURE

Myth: IVF can treat all infertile couples

Reality: one in 6 couples seek medical help because of childlessness, and *1 in 20 will never have a child* despite all that medicine can offer.

When IVF fails! Which is the ultimate resolve to infertility; it entangles the emotional and physical lives of tens of thousands of people every year, affecting their sex lives, causing tension in relationships, creating guilt, embarrassment and feelings of shame or inadequacy.



HIGH FAILURE RATE

J Reprod Infertil. 2012 Jul-Sep; 13(3): 123.

PMCID: PMC3719356

Low Success Rate of ART, an Illusion, a Reality or Simply a Too High Expectation?

Mohammad Reza Sadeghi, Editor-in-chief

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Assisted reproductive technologies have spread worldwide to help infertile couples but access to these advanced treatments is of varying degrees in different countries. Access to infertility treatment is very limited and insurance coverage of these treatments is insufficient in developing, underdeveloped and low-income countries.



WITH EXPANSION OF IVF CAME PROBLEMS:

- Affordability and financial issues
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PREVIOUS MEDICAL INDICATIONS ONLY!! PRESENT ANY COUPLE!!!

- Mind set of people changing towards need for *fast and easy conception*

Service providers

Service at door step
Future of IVF: Embryo

- By companies
- By doctors
- By laboratories



Service takers

Baby crawls
out of bed



INTENSE
COMMERCIALIZATION

IMMEDIATE
RESULTS



Intense commercialization

THE INDEPENDENT ON SUNDAY

100% FREE FROM PARTY POLITICAL TIE | 100% FROM PROPRIETORIAL INFLUENCE

IVF

THE BABY BUSINESS

THE INFLATED CLAIMS AND THE BIG PROFITS



Watchdog to crack down on private clinics as Lord Winston hits out at 'scandal'

YES, we Canine
Who will rule the Palace of Or?

Save! The whole South U.S. just makes a break for it

It's written in the stars! We will survive, says Hollywood

STANDARD 100% COTTON

Daily Mail

FREE DVD

THE ELEPHANT MAN

STARRING ANTHONY HOPKINS AND JOHN HURT

NEW HOPE FOR IVF MOTHERS

British scientists develop test that trebles chance of a baby and removes Down's risk

Cheryl goes for the Sox Factor

The first and only revolutionary concept in the world

LIVE Birth or 100% Money Back

What more an infertile couple would want?

Q: Who can avail this guaranteed plan?
A: Any couples undergoing IVF treatment at Bavishi Fertility Institute can avail, whether they are taking IVF treatment with self eggs, donor eggs, donor embryos or even surrogate mother treatment. They can avail it at Ahmedabad Mumbai or Delhi Institutes.

Q: How does it help budget sensitive couples?
A: There is fixed budget so it's an easy plan and there is no fear of losing the money so there is peace of mind.

Q: How does it help couples when money is not a problem?
A: It is even more helpful for them. They get a fix time line. Finish treatment fast. It takes away the stress of the treatment. There is no double mind and confusion at the end of every failure. If any. Peace of mind is priceless and they get it for a very small price.

Q: How can you promise a live born child?
A: If a couple tries for appropriate IVF treatment enough number of times at our institute, we are confident that a couple will get a live born child. However, we do not guarantee a live born child as it is scientifically not

BASIC CONSIDERATION

- Patient has to pay a fixed amount at the beginning for the treatment.
- Patient has to try a certain pre decided no. of IVF cycles.
- The cost of this is included in the package cost paid at the beginning of the treatment.
- If at the end of those pre decided number of IVF treatment cycles, patient does not get the live born child, the entire amount paid at the start of the treatment is refunded.

POWER BRAND
BAVISHI
TECHNOLOGY | TRUST

A BFI Moment of Pride
Bavishi Fertility Institute is all about success.

Miracle mom at 60
Saroj Chhangar, a primary school teacher at Patiala, was shattered when she lost both her sons. One died of cancer in 1983 and the other in an accident in 2012. She desperately needed children to make her life whole again and consulted Dr. Falguni Bavishi. "Saroj was 58 years old but her womb was healthy. We used a donor egg and implanted the embryo. She became pregnant in the first cycle itself and subsequently delivered twin boys," says Dr. Falguni Bavishi.

Q: What is 100% money back guarantee?
A: Any couple, who takes IVF treatment under this plan, gets assurance of a live born child or 100% money back!

Q: Why is this useful?
A: When a couple tries treatment for a child and does not get it, gets a feeling that they lost the money and still did not get the child. Any couple, taking any treatment for infertility, any number of time may not get a live born child. This uncertainty prevents many couples from taking appropriate treatment for enough number of times and ultimately they may remain childless even when they can get a child. Assurance of "either a live born child or 100% money back" protects them against the situation that they lost money also and did not get the child also. It helps couples plan for a fixed budget. It takes off the stress of treatment and uncertainty of the outcome, which helps improve the outcome of the treatment and help them sustain till success!

Win a Free Basic Micro-IVF Cycle!

Enter the Long Island IVF contest today.



LONG ISLAND IVF
Building Families Every Day



Social reasons

Third party reproduction

COMMERCIAL SURROGACY

A multi-million-dollar business, with majority of money spent going to agencies, lawyers and brokers - not the women actually carrying and birthing the children so desperately wanted.

History is witness to the fact that once middle man is created, it gives birth to only one thing.....
corruption!!

Gammy's situation has highlighted necessary ethical questions that must be asked!
'Clementine Ford'



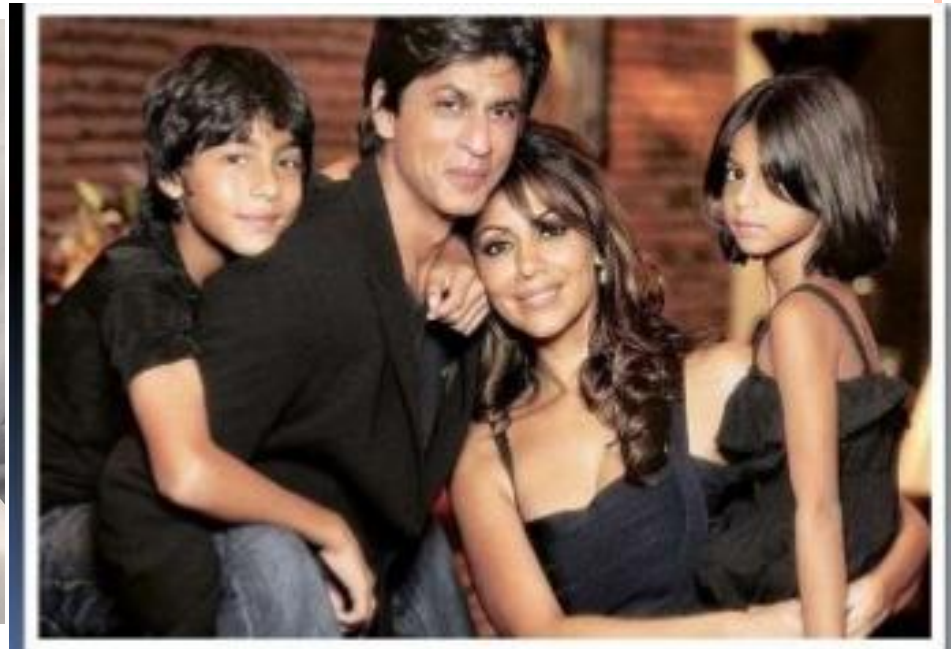
Social reasons involving Third party reproduction

SAME SEX COUPLES

PSEUDO INFERTILITY



Elton John Singer for lion king



The bollywood King Khan

Punch line, 'Donating parents are greater than adopting parents'!!!!

EMBRYO DONATION:

Boon or Bane for the baby who's fate we are going to decide!!!!

Donate Your Embryos?

Uncertain what to do with your *frozen embryos*?

Ease the *pain of infertility* for others.

Give hope through embryo donation.

**YOU CAN
GIVE BIRTH
TO YOUR
ADOPTED CHILD?**

donate





TO COMPLICATE ALL OF THIS –CAME IN PROBLEMS OF OLD AGE PREGNANCY!!

- Older women (of grand mother's age) can get pregnant by oocyte or embryo donation
- Older parents or handicapped parents who are unfit to have a pregnancy can also use a surrogate to carry their child

Irony! The ART guidelines specify age limit for oocyte donors and surrogates but there is no age limit for intending parents.





COMPLICATIONS TO THE MOTHER OVER 40

- Increase abortion rate
- Medical complications: gestational diabetes, pre-eclamptic toxemia, hypertension, intra hepatic cholestatic pruritis and jaundice
- Obstetrical complications: abruption, IUGR, APH PPH and preterm delivery
- Higher maternal morbidity and mortality owing to increase in high order gestations
- Lowered life expectancy post delivery

Is this not writing a early demise sentence for the woman?

How old is too old?

Bhateri Devi, 66, became the oldest

Baby for Brisbane IVF mum aged 56

By AINSLEY PAVEY

Group, comprising medical directors from every IVF clinic in Australia, and New Zealand, topped list of Brisbane Dr DeAmbrosis but pushed for the industry to do everything it could to avoid such an outcome again.

According to the latest Australian Institute of Health and Welfare data, the success rate for women aged 40 and 44, who had undergone fertility treatment, was 7.1 per cent, compared with 33.5 per cent for women aged 20 to 24 years.

The average age of women undergoing treatment in 2004 in Australia and New Zealand was 30.4 and their partners were 37.8.

In 1996 an Adelaide woman, 55, gave birth to triplets after undergoing an IVF treatment with embryos she and her husband had stored for years earlier.

In January 2005, 60-year-old Romanian woman Adriana Iliescu became the world's oldest mother after giving birth to a daughter after conceiving through IVF with a donor egg.

Meanwhile, a sample test that more than doubles the chance of having a healthy baby could transform the IVF process.

Scientists have found a way to test the genetic make-up of a woman's eggs, allowing the best to be chosen.

A trial has produced more than 30 healthy babies and dramatically increased the success rate.

Performed by doctors in Las Vegas, comparative genomic hybridisation counts the number of chromosomes in an egg.

Up to 70 per cent of miscarriages are thought to be due to embryos having the wrong number of chromosomes, with eggs from older women particularly likely to be defective.



The doctor
birth cer
1944, mal

The world
pregnant
dying just
birth at 1

74 year old
mother and
82 year old
father

Lohan says she is too weak to
recover from complications after
her IVF pregnancy.



AND THE UNBORN SPEECHLESS BABY?

*Who
these*

*Is this
Are w*

OR

*It is a
Is it r*

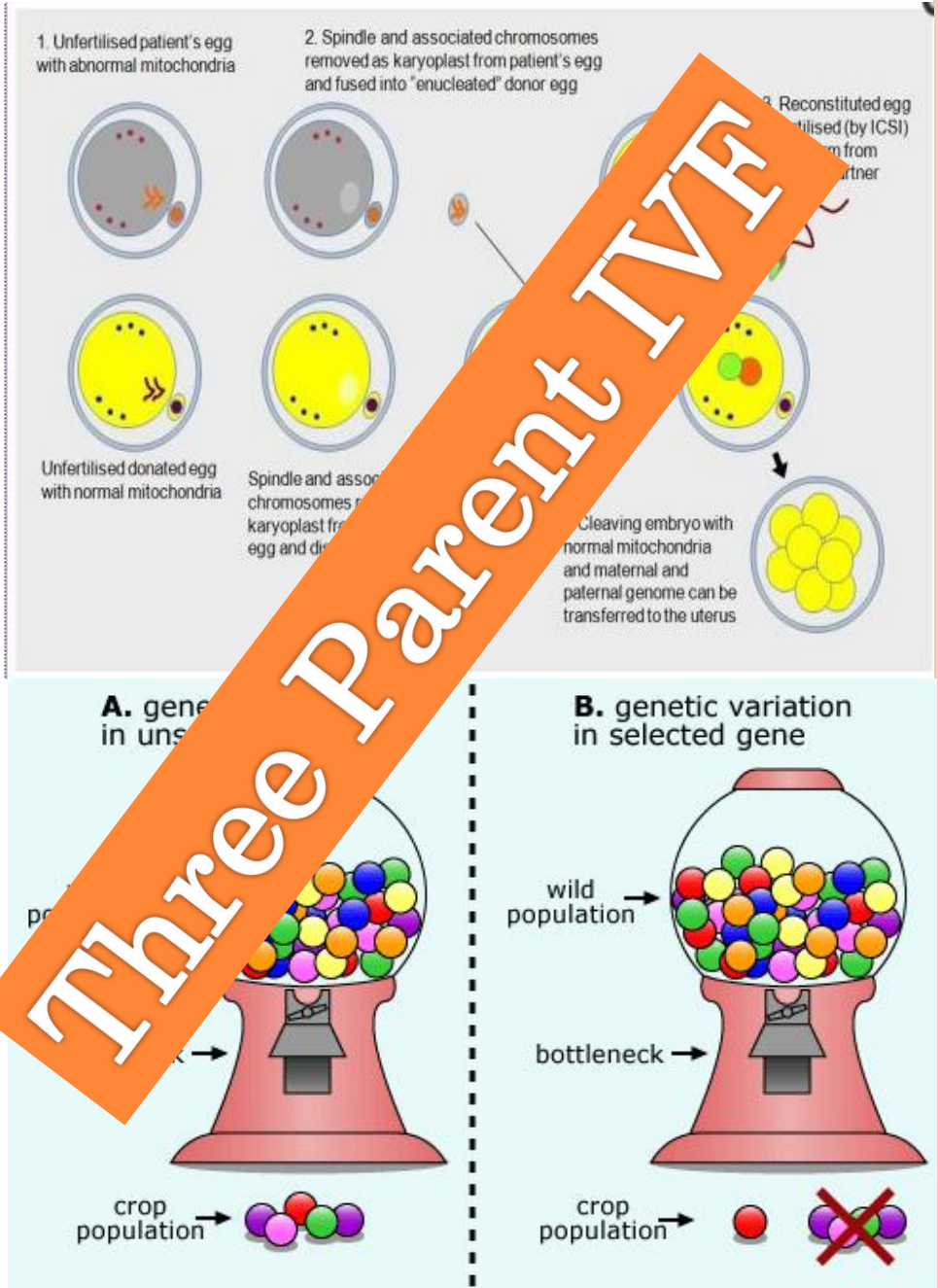


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NEW TIME LAPSE TECHNOLOGY MAY INCREASE IVF SUCCESS RATE

Natural-Fertility-Info.com



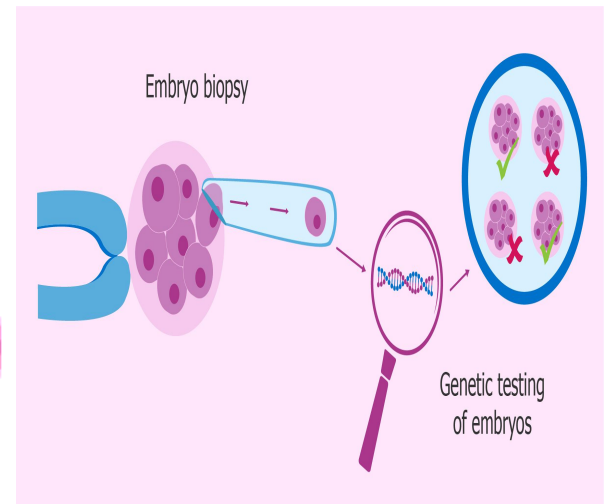
PGS (Preimplantation Genetic Screening)

screens embryos to ensure 23 pairs of chromosomes (22 autosomes and the sex chromosomes X and Y) are present and there is no aneuploidy.

PGS —VS— PGD

PGD

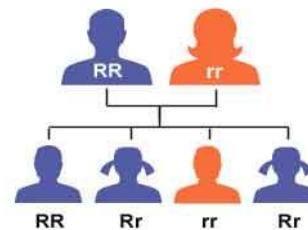
(Preimplantation Genetic Diagnosis) diagnoses embryos for known genetic disorders that both the patient and partner are carriers of including: Sickle cell, Cystic Fibrosis, SMA1, Tay Sachs, Fragile X, etc.



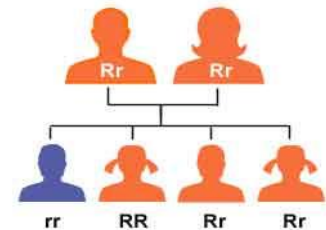
■ Disease present

■ Disease free

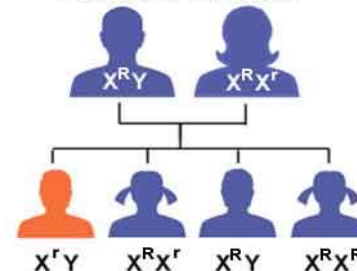
Autosomal dominant



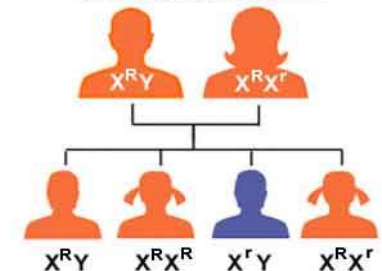
Autosomal recessive



Sex-linked dominant



Sex-linked recessive





20 July 2016

Menopause reversal restores periods and produces fertile eggs

Women who have already passed through the menopause may be able to have children

October 17, 2016

First working eggs made from stem cells points to fertility breakthrough

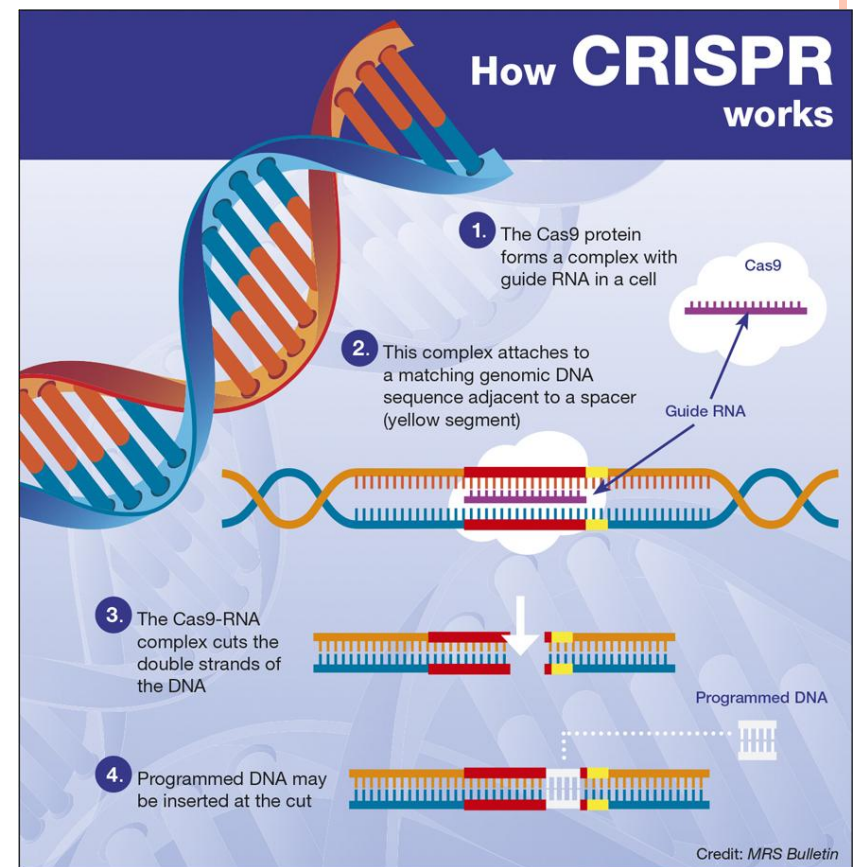
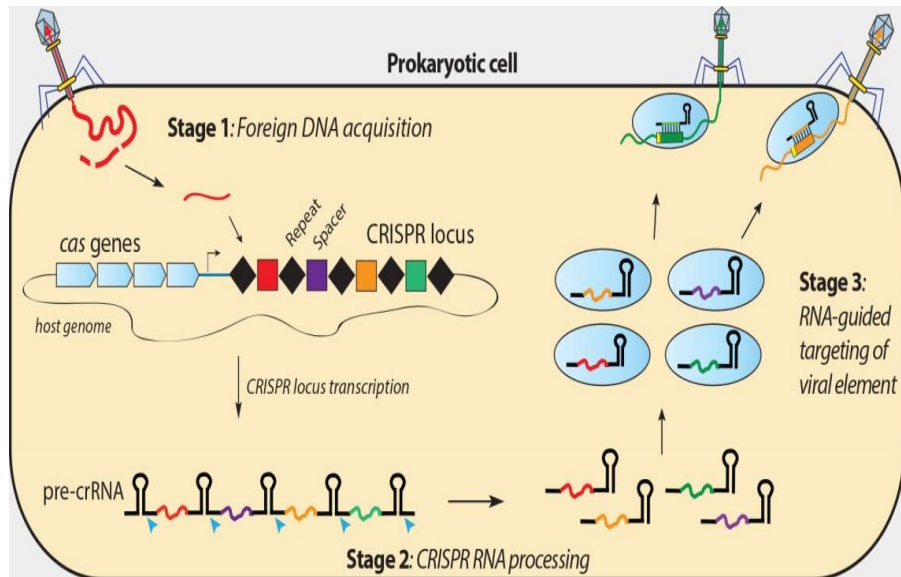
**Adam Watkins, *Aston University*
Kyushu University, Japan,**

OVARIAN REJUVENATION THERAPY is a

procedure that may create new eggs in the ovaries of women who are unable to conceive because of early menopause, advanced maternal age or low oocyte (egg) reserve, yet who wish to have their own biological child.

July 28, 2017

Editing human embryos with CRISPR is moving ahead – now's the time to work out the ethics



CRISPR – an acronym for clustered, regularly interspaced, short palindromic repeats – allows scientists to cut and edit small pieces of DNA at precise areas along a DNA strand, essentially modifying DNA.

Louise's own birth was the landmark that changed the face of reproductive medicine

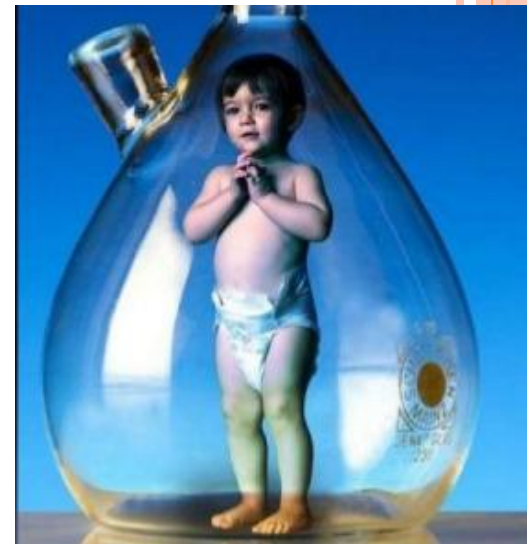
It was the tenacity of Steptoe and Edwards, and the courage of their early patients that so many parents today have happy families.



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- We need good and strong legislation to safe guard mothers as well as the unborn child who might get entangled in this rut of human race unknowing and unaware of the complications.
- Human brain is very fertile and cannot stop at this ! It will continue to find more and more applications to the technology.
- The technology must continue to grow as it is one of the greatest advancements in the field of medicine where *'life is created outside the human body'*.



A photograph of a forest path with a green text box overlay. The path is a narrow, winding trail of brown earth, flanked by lush green ferns and other forest floor vegetation. Tall, dark tree trunks line the path, and the background is a dense, misty forest. A green rectangular box with yellow text is positioned in the upper left quadrant of the image.

**The woods are lovely, dark and
deep, but I have promises to keep,
and miles to go before I sleep**

Robert Frost's 1923

Abha majumdar