



Prof. (DR). Abha Majumdar
Director and Head, Center of IVF and Human
Reproduction
Institute of Obstetrics and Gynaecology
Sir Ganga Ram Hospital,
New Delhi, INDIA

‘President’s Medal’ for best medical graduate 1970-75. **‘Dr. B.C Roy’s award’** in 1999 for outstanding contribution towards medicine and field of specialty. **‘Vikas Ratan Award’** by Nations economic development & growth society in 2002, **Chitsa Ratan Award’** by the International Study Circle in 2007 & felicitated by Agra medical college for **‘Outstanding contribution towards field of specialty in 2008**

Appointed by **‘National Board of Examination’** as **Course director** to award post doctoral **Fellowship in Reproductive Medicine** since 2007, and by FOGSI for basic as well as advanced infertility training since 2008.

Member of Editorial board of **‘IVF Worldwide’** and peer reviewer for **‘Journal of Human Reproductive Sciences’** on advisory board for **‘Journal of Fertility Science & Research’** More than 20 chapters in OB/GYN books & more than 20 original articles in indexed journals.

Chairperson of Infertility sub-committee, AOGD; 2007-09 Past President of the Indian Fertility Society; 2008-10.

Field of interest: Management of all cases related to infertility with special focus on reproductive endocrinology, endoscopic surgery for pelvic resurrexion and ART.

She has been in the team of doctors responsible for the first IVF baby born in 1991 and the first frozen oocyte baby born in 2009 in Northern India.



IS ART (IVF) FOR ALL OR SOME

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Nobel Prize winner: The work of British physiologist Robert G. Edwards waited longest to be recognized. His award for medicine comes 32 years after he figured out how to create the beginnings of human life outside the uterus through in vitro fertilization.

Nobel Prize in Physiology or Medicine 2010

Robert G. Edwards

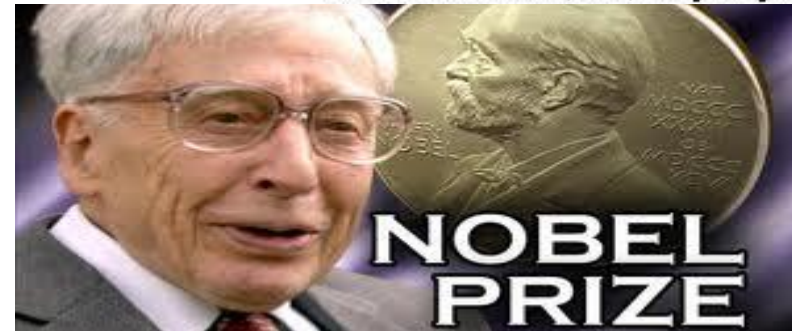
- The development of in vitro fertilization



Born 1925, Manchester, UK.

PhD, Edinburgh University, worked in London and Cambridge
Professor Emeritus, Cambridge University, UK

Jonathan Nackstrand, AFP/Getty Images



IVF FOR ALL OR SOME ?

- Definitely not for all!
- Then for whom?



IVF FOR MEDICAL INDICATIONS ONLY!

Indications for IVF

- Female factor infertility: tubal and pelvic factor such as advanced endometriosis
- Male factor: moderate to severe OATS/ testicular sperms
- Unexplained infertility

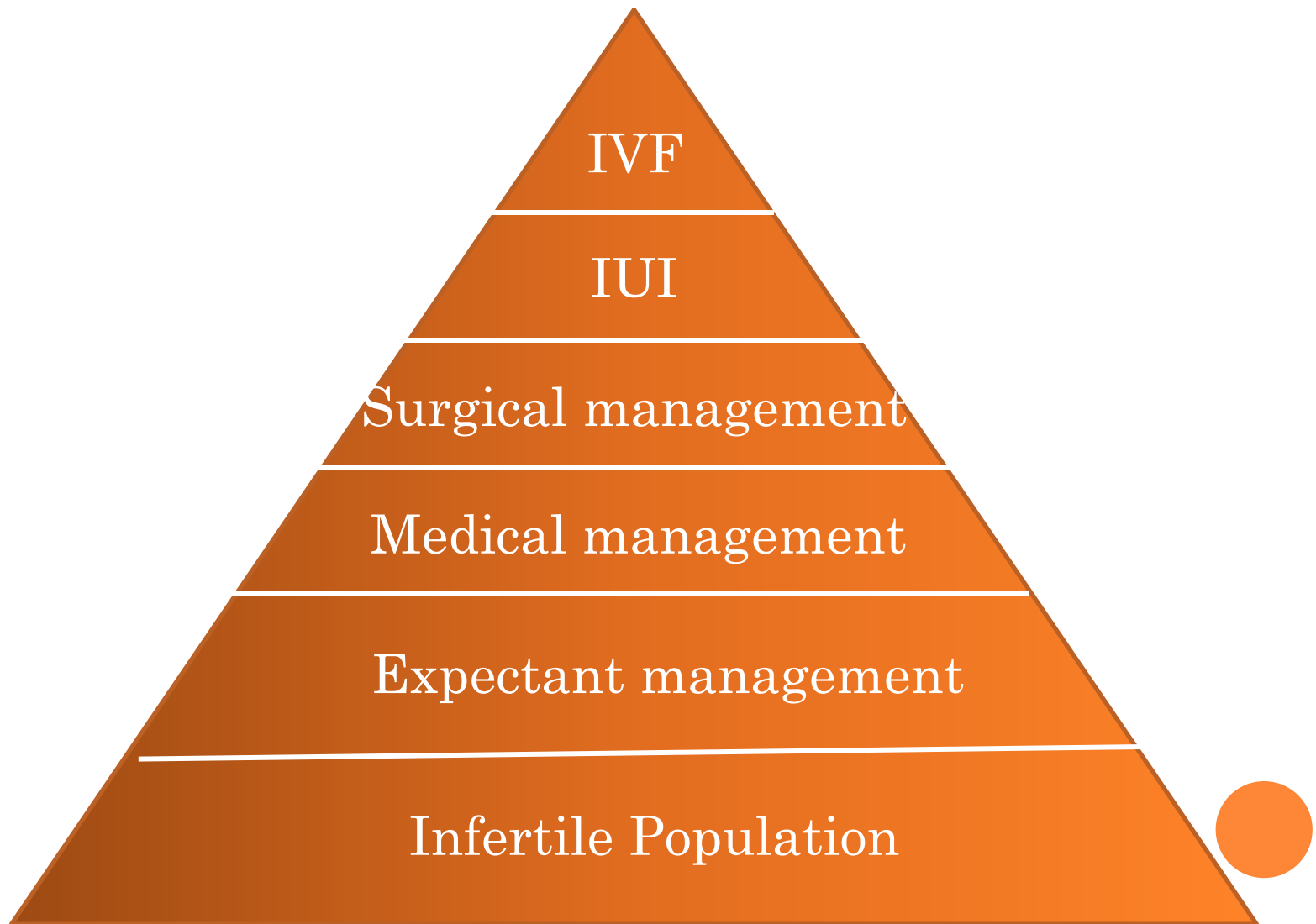
Indication not to do IVF

- Anovulation due to PCOS or hypogonadotropic hypogonadism
- Unilateral tubal block with no pelvic disease
- Mild male factor
- Early unexplained infertility





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

Websites: *Most important source of information about fertility clinics.*
In 2000, “Considerable proportion of patients from all socio-economic levels were using ‘WWW’ for information regarding fertility problems.
In 2010, 77% of people in North America were Internet users.

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!





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

General census: One in six of all couples seek **medical** help because of childlessness

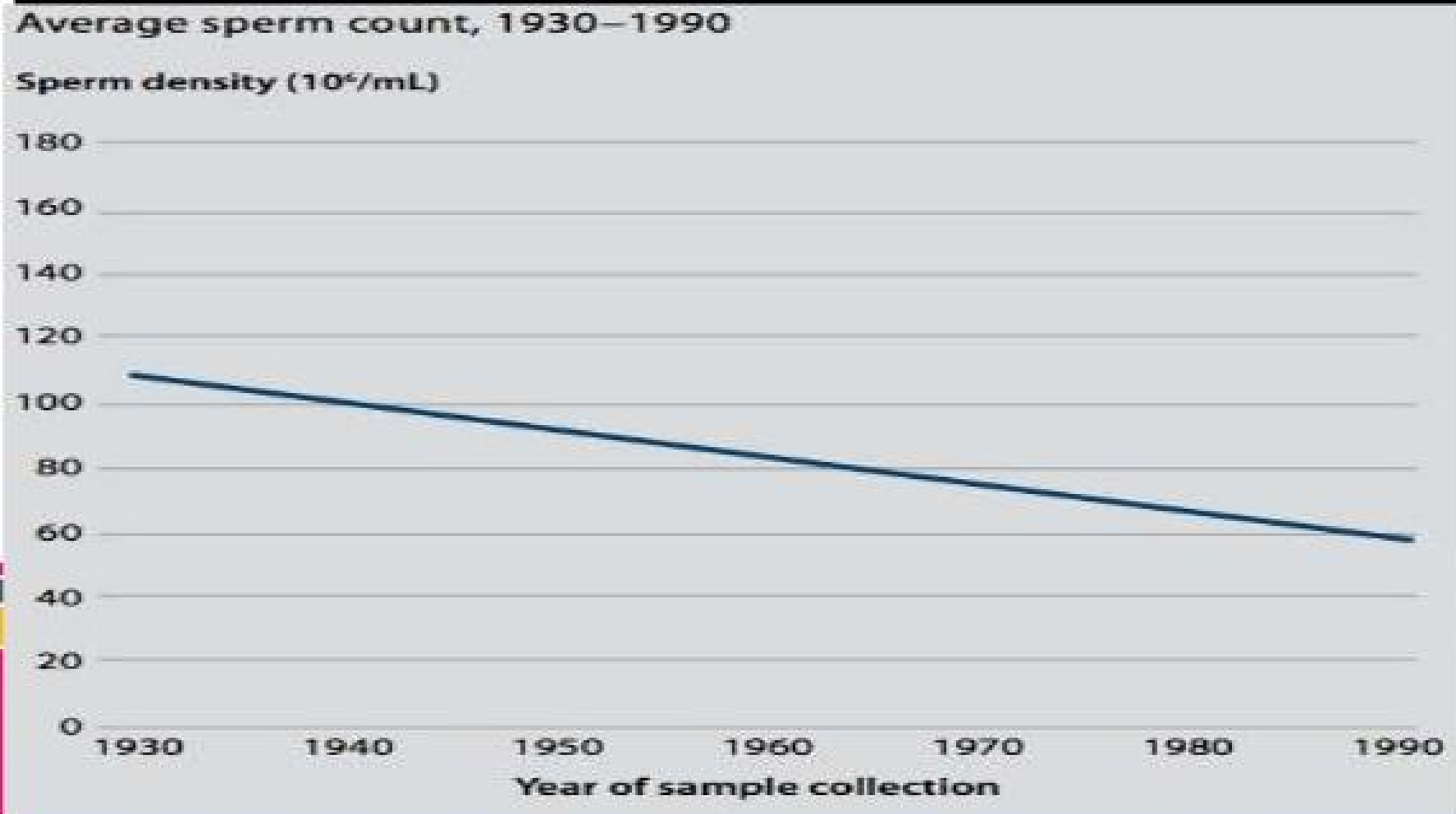




DECREASE IN SPERM COUNT A REAL GLOBAL PROBLEM OR JUST STATISTICS

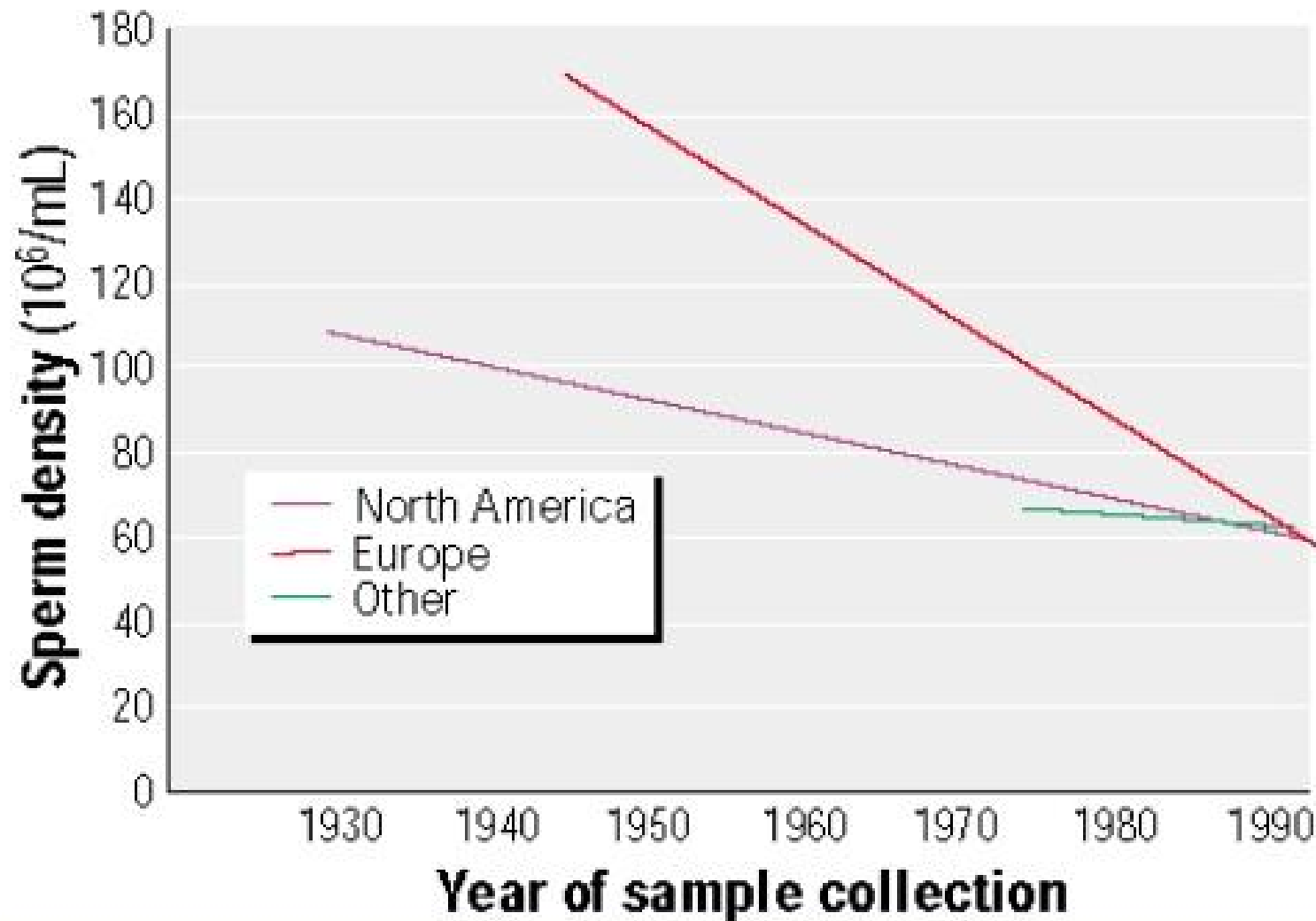


Evaluation of decreasing sperm count **Decreasing sperm quality & Quantity** just in Data???????



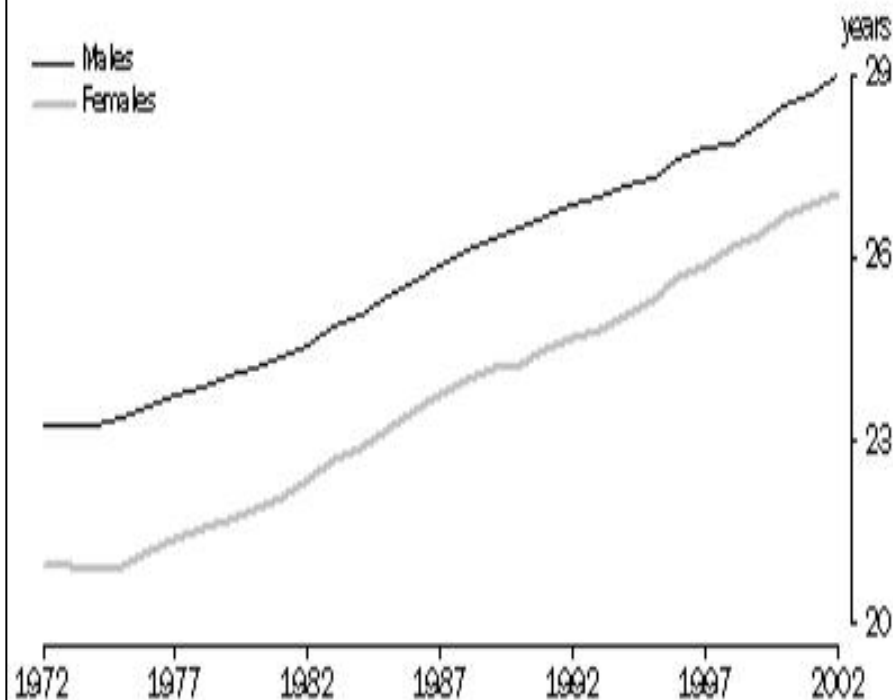
Environmental Health Perspectives 108 (10) (Oct. 10, 2000); E. Carlsen et al.
British Medical Journal 305 (Sept. 12, 1992).

Reduction in sperm density
Decreasing
sperm quality & Quantity just in
Data??????? What is reality



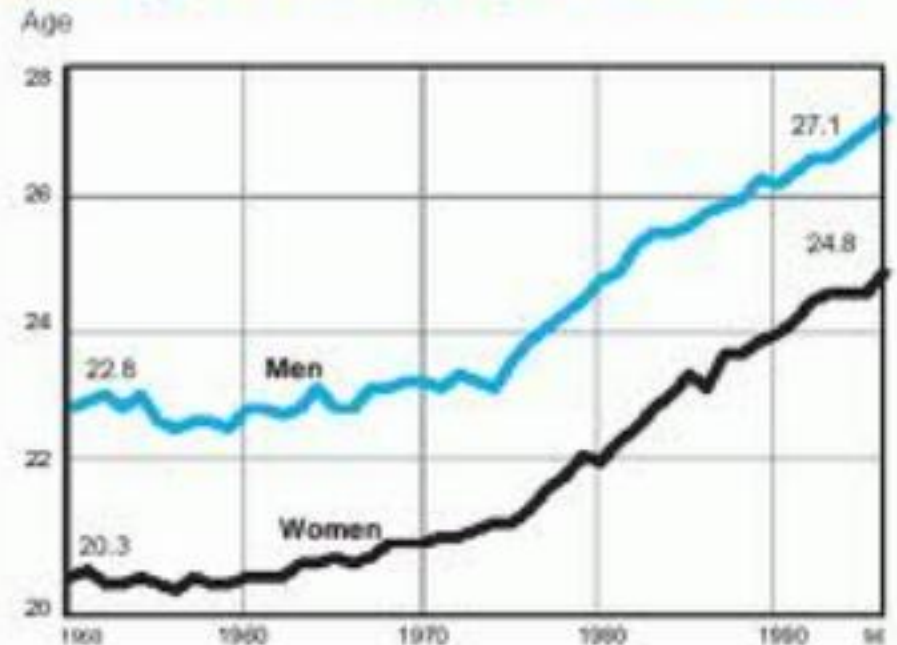
INCREASING AGE OF MARRIED COUPLES (ESPECIALLY INCREASE IN FEMALE AGE)

5.50 MEDIAN AGE AT FIRST MARRIAGE



Source: Marriages and Divorces, Australia (3310.0).

Figure 2.
Median Age at First Marriage, by Gender: 1950 to 1996



Source: U.S. Bureau of the Census

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: anovulatory infertility
 - Increase in STD's : increase in tubal factor infertility
- Unexplained infertility : Low tolerance for expectant management





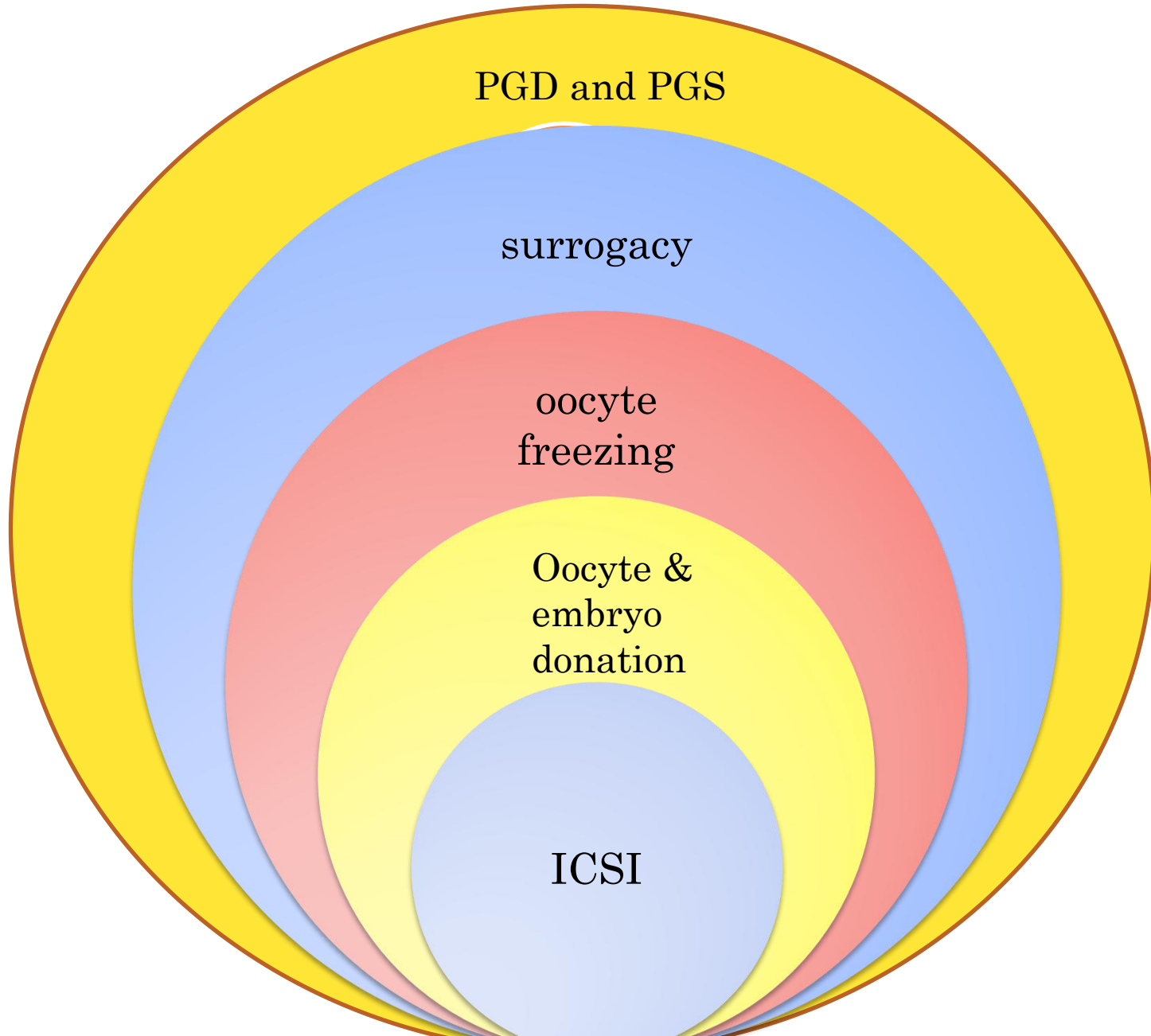
IVF STARTED TO EXPAND BECAUSE OF:

- Awareness, knowledge, availability and Acceptance
- True rise in Incidence of infertility
- 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 with no uterus or non-correctable defects in uterus

Oocyte freezing: Fertility preservation before cancer therapy

PGD and PGS: Select disease free or euploid embryo





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

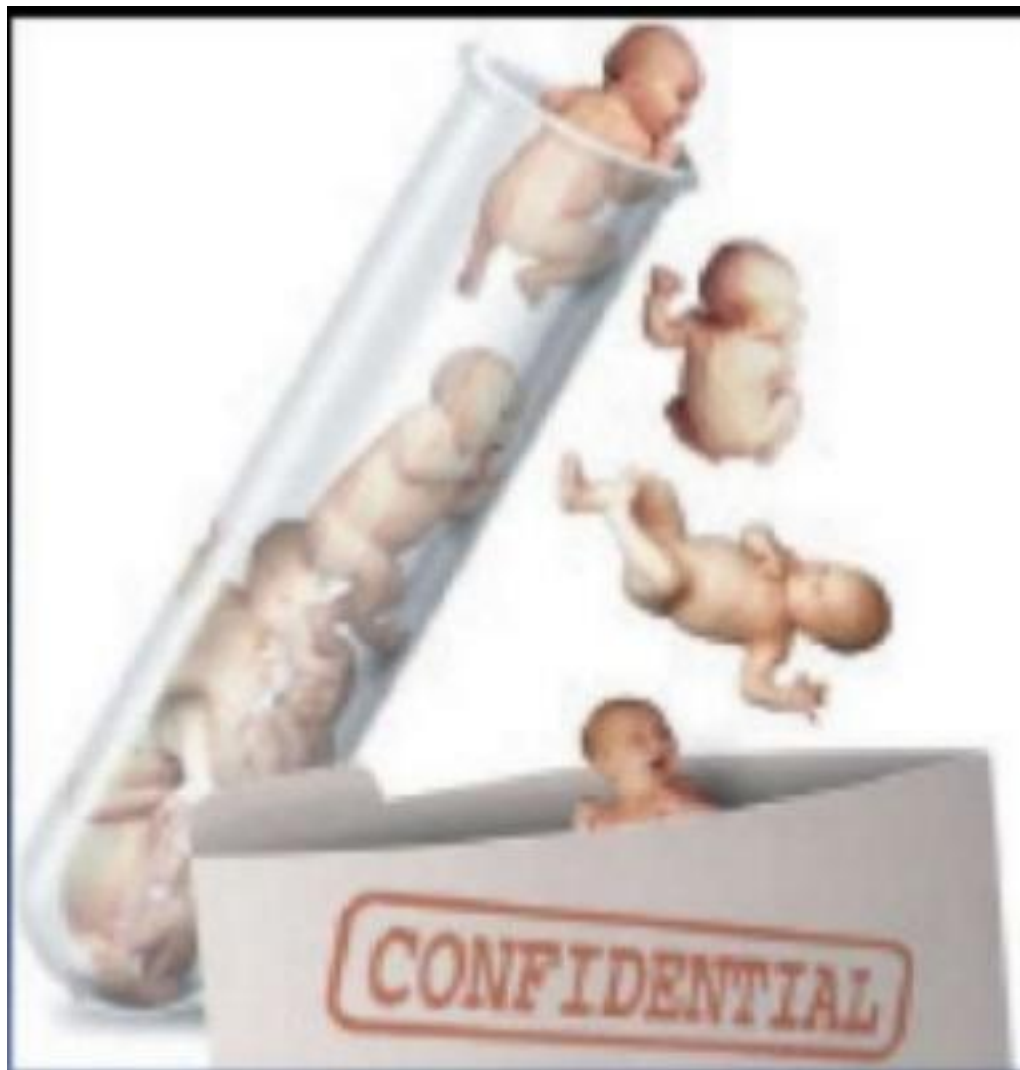
Surrogacy: couples with a family but financially powerful to afford a large family but, *‘not wanting to jeopardize owns health with motherhood’*, **single men, gay couples**

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

Lord Winston, head of fertility services at Hammersmith Hospital & professor Imperial College, London, lecture at prestigious British Association Festival of Science in Salford, the year's biggest gathering of UK scientists.

IVF babies: 2.5 times more likely to have a low birth weight. (Small babies more likely to grow up to develop vascular disease, diabetes, hypertension and osteoporosis).

The number of peri-natal deaths in IVF babies is also double the national average, partly because multiple pregnancies are common and often result in premature delivery.

Maternal complications: OHSS (short term) or (borderline ovarian malignancies (long term)



Complications and health concerns

LONG-TERM HEALTH EFFECTS OF IVF

Growing body of evidence that IVF babies are less healthy than naturally conceived children.

Conventional IVF: twice risk of birth defects.(genital and urological abnormalities, kidney problems or deformities of stomach & intestine).

ICSI: 3 times of birth defects than natural conception.

Blastocysts: May have deleterious effect on genes - seen in mouse models."

Ovarian stimulation drugs: Chromosomal abnormalities in offspring?

Embryo freezing: Key gene responsible for suppressing cancerous tumor growth is altered.

The fact that the warning comes from a man who was one of the world's leading IVF pioneers gives it extra power (Lord Winston)



On a brighter note!

If we allow diabetics and epileptics to conceive with its antecedent 4 and 7 times (respectively) increase 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

Editorial

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

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.

From the birth of the first IVF baby in 1978, procedures of diagnosis and treatment of infertility have been improving and they have revolutionized infertility treatment in such a way that even infertile men without mature sperm in their semen could have a child by extracting a few spermatozoa from their testicular tissue. In comparison to most other surgical and medical treatments, success rate of assisted reproductive technologies are low and consequently, successful pregnancies and take home babies require several bouts of treatment. Since these treatments are highly expensive and time-consuming, their repetition is not affordable for most infertile

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2. Practice Committee of American Society for Reproductive Medicine in collaboration with Society for Reproductive Endocrinology and Infertility. Optimizing natural fertility. *Fertil Steril*. 2008;90(5 Suppl):S1-6.
3. Luke B, Brown MB, Wantman E, Lederman A, Gibbons W, Schattman GL, et al. Cumulative birth rates with linked assisted reproductive technology cycles. *N Engl J Med*. 2012;366(26):2483-91.

Mohammad Reza Sadeghi
Editor-in-chief



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PREVIOUS MEDICAL INDICATIONS ONLY!! PRESENT ANY COUPLE!!!

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

INTENSE COMMERCIALIZATION

Service at door step
Future of IVF: Embryo

- By companies
- By doctors
- By laboratories



Service providers

SOCIAL REASONS



Service takers

Intense commercialization

BY COMPANIES
BY LABORATORIES
BY DOCTORS

THE INDEPENDENT ON SUNDAY

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'

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

The first and only revolutionary concept in the world
LIVE Birth or 100% Money Back
What more an infertile couple would want?

The goal of every patient going for IVF treatment is to get a LIVE BORN CHILD. No institute in the world can guarantee any IVF patient a live born child in any given treatment cycle or even at the end of X number of cycles. Hence many times patients get a feeling that they lost their money and did not get a child also. This discourages the patients from trying multiple attempts and hence many patients remain childless. At the same time, many patients keep on trying but still do not get a child. Our Aim at Bavishi Fertility Institute is to give a normal healthy live born child to every couple who comes to us for treatment. MONEY BACK ASSURANCE TREATMENT PACKAGE PLAN is the perfect solution of this problem.

POWER BRAND
BAVISHI
TECHNOLOGY | TRUST |

FIRST TIME IN WORLD
MONEY BACK 100% GUARANTEE
TO LIVE PATIENTS

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 embryo 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 to 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.

A BFI Moment of Pride
Miracle mom gets twins at 60

Miracle mom at 60
Saroj Changukar, a primary school teacher at Peralad, 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.

Win a Free Basic Micro-IVF Cycle!
Enter the Long Island IVF contest today.

LONG ISLAND IVF
Building Families Every Day

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LONG ISLAND IVF
Building Families Every Day

Social reasons

Third party reproduction

COMMERCIAL SURROGACY

This is 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. The average cost of surrogacy is somewhere between \$50,000 & \$150,000.

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

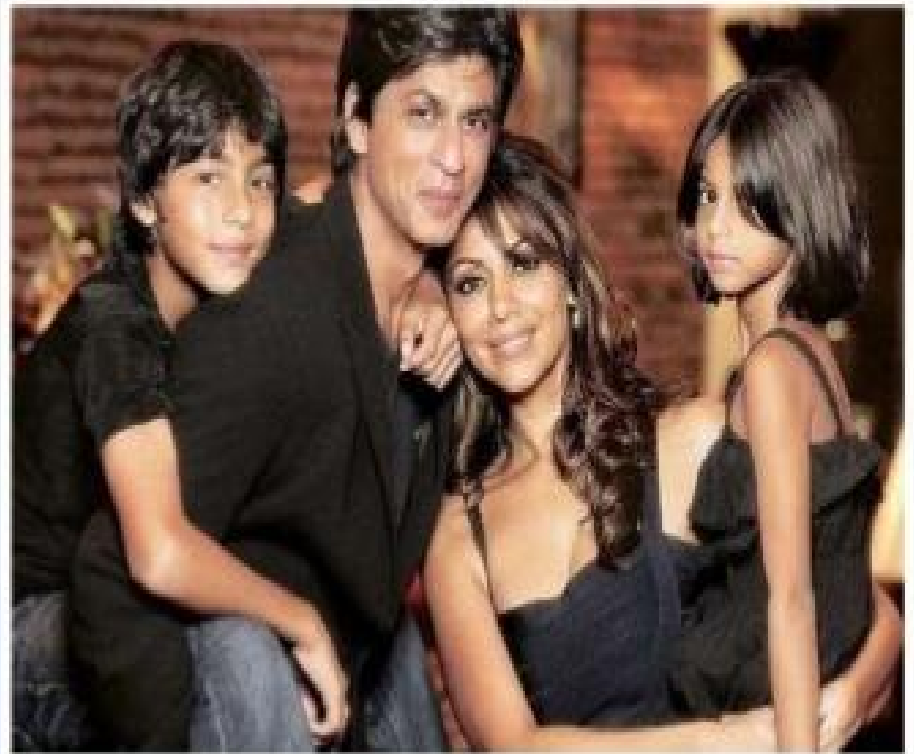
The cost of surrogacy doesn't come cheap. But as Gammy's situation has highlighted there are necessary ethical questions that must be asked! 'Clementine Ford'



Social reasons involving third party reproduction

SAME SEX COUPLES

PSEUDO INFERTILITY





EMBRYO OR OOCYTE 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.



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



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 mother of triplets in the world

SUNDAY MAIL 14 FEB 2007

Baby for Brisbane IVF mum aged 56

By AINSLEY PAVEY

A 56-YEAR-OLD woman who has given birth in a Brisbane hospital is believed to be the oldest IVF mother in Australia. The woman, who was 36 weeks pregnant, gave birth last week after undergoing Queensland Fertility Group treatment. Sources said the woman was the recipient of a donor egg after failing three other children aged from their mid-teens to mid-30s. They said the mother also required treatment with the heart drug Digoxin following the birth at the Mater Hospital on Tuesday.

The mother has refused to comment on the case but *The Sunday Mail* has been told she was forced to move suburbs because of "negativity towards her pregnancy". Her husband is believed to be aged in his mid-30s.

The case is being investigated by the Fertility Society of Australia, Reproductive Technology Accreditation Committee, which provides accreditation for IVF clinics — over whether it breached the self-regulating industry's code of practice.

But because there are no age limits in the code, which stipulates only assisting any fertility treatment that may be harmful to the mother or baby, the committee is unable to take any action against the clinic.

It is the second time in two years the clinic has been targeted by RTAC.

In 2005, founding QFC director Warren DeAmbrosis was suspended after he helped Brisbane woman Dale Clark fall pregnant with her second set of quadruplets, believed to be a world first.

The high-powered IVF Directors Group, comprising medical directors from every IVF clinic in Australia and New Zealand, topped the list of pushing 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 over 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 35.4 and their partners were 37.8.

In 1998, an Adelaide woman, 55, gave birth to triplets after undergoing an IVF treatment with embryos she and her husband had stored 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 embryo.

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 boasted that Bhateri Devi's government birth certificate proved she was born on May 21, 1944, making her 66 and the oldest mother

The world's oldest mother pregnant by embryo donation is dying just 18 months after giving birth at the age of 70. Rajo Devi Lohan says she is too weak to recover from complications after her IVF pregnancy.





AND THE UNBORN SPEECHLESS BABY?

Who has given us the right to write the destiny of these children?

Is this a factory for orphan production?
Are we playing God?

OR

It is another feather in our cap!
Is it material for advertising and new catches





ADOPTION RULES BY 'CENTRAL ADOPTION RESOURCE AGENCY' (CARA) INDIA

The following documents are required to be produced in original along with two self-attested copies by the PAPs (Prospective adoptive parents)

- Proof of Identity: (voter card/pan card/passport/driving license)
- Proof of Age: (Birth certificate) – Composite age of PAPs cannot exceed 90**
- Marriage certificate
- Family photograph
- Contact Number
- Proof of Address: (indicating residence in India exceeding 365 days)
- Religion
- Educational Qualification**
- Occupation
- Designation





ADOPTION RULES BY 'CENTRAL ADOPTION RESOURCE AGENCY' (CARA) INDIA

- Gross yearly income: (if self employed, IT statement for the last 3 years, if employed, Income certificate from the employer)
- Financial statement including copies of bank statement for the last six months. Details of movable and immovable property owned by the family and details of loans taken by the PAPs.
- Health Certificate by registered medical practitioner certifying PAPs are not suffering from any contagious or terminal disease or any such mental or physical condition which may prevent them from taking care of the child**
- 3 recent postcard sized photographs of the adoptive family
- Number of live birth(s)
- Number of live children





Screening/ Selection criterion for Recipient's for Embryo Adoption at IVF centre SGRH

Following documents in original with two self-attested copies by the PAPs (Prospective adoptive parents)

Proof of Identity: (voter card/pan card/passport/driving license)

Proof of Age: (Birth certificate) – **Composite age of PAPs cannot exceed 90**

Marriage certificate Family photograph Contact Number

Proof of Address: (indicating residence in India exceeding 365 days)

Religion

Educational Qualification

Occupation

Designation

Gross yearly income: (if self employed, IT statement for the last 3 years, if employed, Income certificate from the employer)

Financial statement (copies of bank statement of last 6 months. Details of movable and immovable property owned & details of loans taken by PAPs.

Health Certificate by a registered medical practitioner certifying PAPs are not suffering from any contagious or terminal disease or any such mental or physical condition which may prevent them from taking care of the child

3 recent photographs of the adoptive family Number of live birth(s)

Number of live children

Self regulation is the best and only regulation which works

“IS ART FOR ALL OR SOME” ?

- It is the one and only technology in reproductive medicine that can fulfill the desire to parent hood for millions of couples

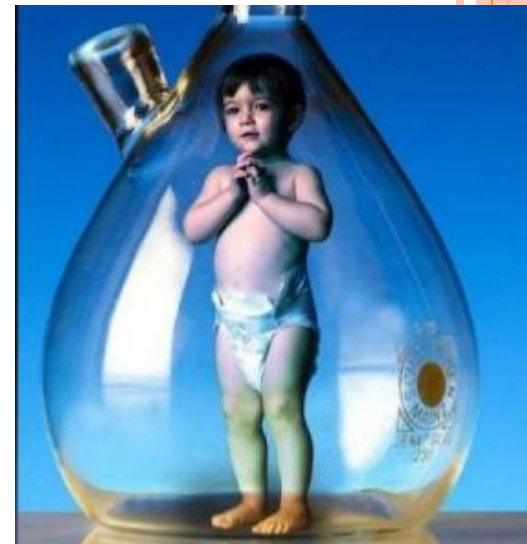
yet

- We have to draw a line in its applications so as to limit its use keeping in mind the ***mothers and child's welfare as the ultimate goal.***



TO CONCLUDE

- 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 narrow dirt path winding through a dense, misty forest. The path is covered in fallen leaves and ferns. Tall, slender trees line the path, their trunks partially obscured by the thick mist. The overall atmosphere is serene and ethereal.

Thank you

Abha majumdar