

## Upper Age Limit for Assisted Reproductive Technologies: Ethics Opinion

Fertility in women is closely related to reproductive age and becomes significantly compromised before the onset of perimenopausal menstrual irregularity. There is decrease in oocyte quality with age which is reflected by the increase of chromosomal aberrations in the oocytes and embryos. Oocyte or embryo donation to women of advanced age should be discouraged.

**KEYWORDS:** *Assisted reproductive technology, chromosomal aberrations, embryo donation, ethics, infertility, in vitro fertilization, oocyte donation, ovarian reserve*

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### OVERVIEW

The natural limits to reproduction for women have been extended by available reproductive technologies. With oocyte and embryo donation, women well beyond menopausal age can aspire to give birth. Donation and hormonal treatments can medically overcome age-related decline in egg and embryo quality. However, significant dangers from age-related diseases remain which can complicate pregnancy.

Maternal and neonatal morbidity and mortality are significantly increased at advanced maternal ages. To avoid harm, fully informing women of the significant health risks and fetal risks, as part of counseling, is critical for informed consent.

In India, unregulated treatment has led to many “grandmother” mothers, with a very high morbidity

for the woman and the neonates as well.<sup>[1,2]</sup> The Indian Council of Medical research (ICMR) guidelines of 2005 states that the recipient “should be a healthy woman (determined by medical and psychological examination) having normal genitalia (as determined by physical examination) and uterine cavity (as determined by hysterosalpingography).”

The guidelines of the Ministry of Health, Government of India, 2005,<sup>[3]</sup> have no recommendation on the upper age limit for recipients of donated oocytes or embryos. However, the 2017 ICMR draft bill for assisted reproductive technology (ART) suggests an upper age limit of 45 for women and 50 for men.

There is a need to determine when ART can be safely offered to women of advanced age and when it should be denied.

There are a number of considerations supporting childbearing for couples of advanced age, which are described as follows:

1. Average life expectancy in India has increased significantly from 58.3 in 1990 to 70 in 2015.<sup>[4]</sup> Women are living well beyond menopause which is 47.5 (2008) in India.<sup>[5]</sup> Rising life expectancy encourages women to become mothers at a later age
2. Women may delay childbearing beyond their 40s for financial, career, and personal reasons
3. There is no cutoff to define advanced age, but for women, it may be considered as age of natural menopause.

There are also considerations against childbearing in couples of advanced age, which are described as follows:

1. As age advances, there are higher chances of pregnancy-related complications which may become life-threatening, especially after the age of 55
2. Preterm birth, low birth weight, genetic abnormalities, and higher fetal mortality increase with maternal age. Higher rates of genetic abnormalities also can be related to advanced paternal age. “Advanced paternal age” has not been defined though evidence exists of increased risks of disabilities

#### Address for correspondence:

Indian Society for Assisted Reproduction,  
Flat No. 23 A, 2<sup>nd</sup> Floor, Elco Arcade, Hill Road, Bandra (West), Mumbai - 400 050,  
Maharashtra, India.  
E-mail: isar.office@gmail.com

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and disorders resulting from single-gene mutations and chromosomal abnormalities in offspring of men of advancing age

3. Social, economic, and medical fitness of the couple to raise a child to adulthood, at an advanced age, may be compromised
4. Family support may diminish with advancing age. Younger family members may have their own children to focus on and may not have the capacity to provide additional support to elderly family members who are new parents or to the children born to them
5. Compromised medical fitness in either partner leads to a higher risk of mortality and morbidity which may ultimately affect the well-being of the child. Loss of a parent is the worst kind of stress for any child and an acknowledged factor in diminishing their success in life.

The major ethical issues include whether the best medical interests (beneficence) and avoidance of harm in medical care (nonmaleficence) of the couple and the child thus born are served by pregnancy at advanced parental age.<sup>[6]</sup> The ethical responsibility to assure careful medical evaluation with full counseling and informed consent is heightened, especially when there are increased risks for short- and long-term harm to patients and their offspring.

### Recommendations

1. A health professional may ethically decline treatment to women of advanced maternal age based on their health status and the risk of potential harm to them or their offspring
2. Couples of advanced age considering ART should be counseled about adoption as an additional option for child raising
3. For women up to 45, ART could be offered after routine evaluation reveals that there are no underlying medical conditions that would significantly increase the obstetrical and neonatal risks. Expert opinion suggests that women up to 50 could potentially be medically considered with the same criteria for risk assessment based on the age of menopause and life expectancy. Additional counseling regarding the increased risks added by age for maternal and fetal health must be given
4. For men up to 50, ART may be offered after routine evaluation reveals satisfactory parameters for sperm. Counseling regarding potential for genetic and other abnormalities needs to be provided
5. In all circumstances where oocyte or embryo donation is offered, a careful and truthful informed consent is necessary
6. Given the high risk of pregnancy at advanced age, couples should be counseled about the need for

access to high levels of maternal and neonatal care for the pregnancy.

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Duru Shah, Madhuri Patil, Sujata Kar, Nalini Mahajan, Sadhana Desai, Ameet Patki, (Indian Society for Assisted Reproduction), Manohar Motwani (Private Practitioner), Sanjay Chauhan (Scientist F, ICMR-NIRRH), Hitesh Bhatt (Medico Legal Advisor), Amit Karkhanis (Legal Advisor), Anushree Patil (Scientist D, ICMR-NIRRH), Flavia Agnes (Lawyer and Activist), and Subarna Ghosh (Reproductive Activist).

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### Conflicts of interest

There are no conflicts of interest.

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