INDIAN FERTILITY SOCIETY

SAEBGPP 2025

SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS

Fertility Preservation Practices in India

Editor-in-Chief

(Col) Pankaj Talwar *VSM*

Editors

Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora

Convenor

Nisha Bhatnagar

Team Experts

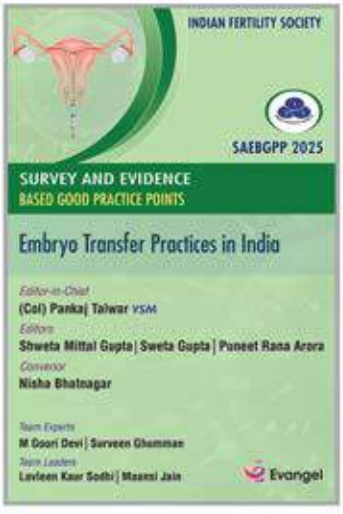
Nalini Kaul Mahajan | Surjeet Kaur

Team Leaders

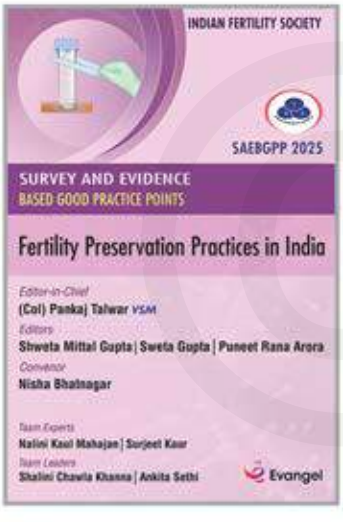
Shalini Chawla Khanna | Ankita Sethi

Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Recurrent Pregnancy Loss
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
Neena Malhotra | Brig Prasad R Lele
Team Leaders
Renu Tanwar | Niti Vijay
Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Embryo Transfer Practices in India
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
M Gouri Devi | Surveen Ghumman
Team Leaders
Lavleen Kaur Sodhi | Maansi Jain
Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Evaluation of Current Practices of Preimplantation Genetic Testing Amongst IVF Clinicians in India
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
Rajvi Mehta | Jayesh Amin
Team Leaders
Pranay Ghosh | Parul Garg
Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Fertility Preservation Practices in India
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
Nalini Kaul Mahajan | Surjeet Kaur
Team Leaders
Shalini Chawla Khanna | Ankita Sethi
Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Ovarian Stimulation
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
Abha Majumdar | Geeta Khanna
Team Leaders
Rashmi Sharma | Shilpa Singal
Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Add-ons in ART
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
KD Nayar | Rajapriya Ayyappan
Team Leaders
Pikee Saxena | Saumya Prasad
Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Congenital Uterine Malformations
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
Sohani Verma | Ritu Khanna
Team Leaders
Rupali Bassi Goyal | SM Rahman
Evangel

SAEBGPP 2025

Survey and Evidence Based Good Practice Points

Fertility Preservation Practices in India

Independent Ethical Committee: F.1/IEC/IFS/2025/No.19

Dated: 05/06/2025

No. of Surveys: 475

SAEBGPP 2025

Survey and Evidence Based Good Practice Points

Fertility Preservation Practices in India

Editor-in-Chief

(Col) Pankaj Talwar *VSM*

MD PhD
President, Indian Fertility Society (2024–26)
Director
Talwar Fertility and Men's Clinic
Academic Director, Clinical ART Program
SEART, Gurugram University
Dean
Department of Clinical Embryology
Shridhar University
Director, i-Ceat Academy of ART
Head, GE Healthcare 3D/4D Ultrasound Training School
Gurugram, Haryana, India

Editors

Shweta Mittal Gupta

Fellowship National Board Reproductive Medicine MD DNB MNAMS MBBS
Co-Director and Unit Head
Department of Centre of IVF and Human Reproduction
Sir Ganga Ram Hospital
New Delhi, India

Sweta Gupta

MD (Obs and Gyne) FRCOG (UK) MRCOG (UK) DFSRH (UK) MSc (Reproduction and Development, UK) Fellowship in ART (London)
Director
Department of IVF
Max Healthcare Ltd
New Delhi, India

Puneet Rana Arora

MBBS MS (Obs and Gyne) FRCOG (UK) MSc Reproduction
Senior Consultant-Gynecologist and Reproductive Medicine
Specialist (IVF)
Founder and Director
CIFAR IVF Centre
Gurugram, Haryana, India

Convenor

Nisha Bhatnagar

MBBS MD
Medical Director
Department of Reproductive Medicine
Aveya IVF and Fertility Center, Rajouri Garden
New Delhi, India

Evangel

New Delhi | Mumbai | Hyderabad | Kolkata
INDIA

Evangel

Evangel Publishing

401, 4th Floor, Pooja Tower
Rohit Kunj Market, Pitam Pura
New Delhi-110034, India
Phone: +91-11-42637878
Email: info@evangelpublications.com

Website: *www.evangelpublications.com*

ISBN: 978-81-990898-1-5

Printed in India and exclusively distributed by EVANGEL PUBLISHING

Team Experts

Nalini Kaul Mahajan
MD MSC (ART)
Director
Department of Reproductive Medicine
Mother and Child Hospital
New Delhi, India

Surjeet Kaur
MBBS MS
Director
Parivaar IVF Centre
Jalandhar, Punjab, India

Team Leaders

Shalini Chawla Khanna
MBBS DGO DNB MNS
Associate Director
Department of IVF and Reproductive Medicine
Max Hospitals, Delhi and NCR
India

Ankita Sethi
MBBS MD DNB MRCOG DM (Reproductive Medicine)
EFRM-ESHRE/EBCOG
Specialist Reproductive Medicine and Infertility
Department of Reproductive Medicine
and Infertility
Fakih IVF
Abu Dhabi, UAE

Team Members

Alka Gahlot	Prajnanika Gurung
Anshu Yadav	Pankush Gupta
Divya Jethwani	Ruchi Hooda
Kumudini Chauhan	Teena Gupta
Mohita Gupta	Yogita Dogra

Dedicated to

All gynecologists of India—those who continue to serve with compassion, courage, and commitment; those who balance science with empathy; those who stand by their patients through hope, uncertainty, and healing; and those who strive every day to raise the standards of women's health and reproductive care in our country.

Your tireless efforts inspire this entire initiative.

Contributors

Alka Gahlot MBBS MS (Obs and Gyne) FICOG PGCC in ART and Embryology
Professor and Head
Department of Reproductive Medicine and Surgery
National Institute of Medical Sciences and Research
Jaipur, Rajasthan, India

Ankita Sethi MBBS MD DNB MRCOG DM EFRM-ESHRE/EBCOG
Specialist
Department of Reproductive Medicine and Infertility
Fakih IVF
Abu Dhabi, UAE

Anshu Yadav MBBS MD (Obs and Gyne) DM (Reproductive Medicine)
Consultant and Director
Jijivisha Hospital and IVF Center
Rewari, Haryana, India

Divya Jethwani MBBS MD (Obs and Gyne)
Consultant
Department of Reproductive Medicine and Surgery
National Institute of Medical Sciences and Research
Jaipur, Rajasthan, India

Kumudini Chauhan MBBS MS DNB
Director
Department of IVF, Gynec Endoscopy, Obstetrics
Ganga Laxmi IVF, Medinity Hospital
Lucknow, Uttar Pradesh, India

Mohita Gupta MBBS DNB FRM IVF
Director and Consultant
Department of Obstetrics and Gynecology
Ashu Nursing Home and Delhi IVF and Gyne Clinic
Patiala, Punjab, India

Nalini Kaul Mahajan MD MSC (ART)
Director
Department of Reproductive Medicine
Mother and Child Hospital
New Delhi, India

Nisha Bhatnagar MBBS MD
Medical Director
Department of Reproductive Medicine
Aveya IVF and Fertility Center
New Delhi, India

(Col) Pankaj Talwar *VSM* MD PhD
President, Indian Fertility Society (2024–26)
Director
Talwar Fertility and Men's Clinic
Academic Director, Clinical ART Program
SEART, Gurugram University
Dean
Department of Clinical Embryology
Shridhar University
Director, i-Ceat Academy of ART
Head, GE Healthcare 3D/4D Ultrasound Training School
Gurugram, Haryana, India

Pankush Gupta MBBS MD DM
Consultant
Department of IVF
ART Fertility Clinics
Faridabad, Haryana, India

Prajnanika Gurung MBBS MD
Consultant Gynecologist
Department of Obstetrics and Gynecology
PHS Fertility (Unit of PHS Helathcare)
Kolkata, West Bengal, India

Puneet Rana Arora MBBS MS (Obs and Gyne) FRCOG (UK) MSc
Senior Consultant–Gynecologist and Reproductive Medicine Specialist (IVF)
Founder and Director
CIFAR
Gurugram, Haryana, India

Ruchi Hooda MBBS MS (Obs and Gyne) DNB FNB
Senior Consultant
Department of Reproductive Medicine
Ridge IVF and Gouri Hospital
New Delhi, India

Shalini Chawla Khanna MBBS DGO DNB MNS
Associate Director
Department of IVF & Reproductive Medicine
Max Hospitals, Delhi and NCR
India

Shweta Mittal Gupta Fellowship National Board Reproductive Medicine MD DNB MNAMS MBBS
Co-Director and Unit Head
Department of Center of IVF and Human Reproduction
Sir Ganga Ram Hospital
New Delhi, India

Surjeet Kaur MBBS MS
Director
Parivaar IVF Center
Jalandhar, Punjab, India

Sweta Gupta MD (Obs and Gyne) FRCOG (UK) MRCOG (UK) DFSRH (UK) MSc (Reproduction and Development, UK) Fellowship in ART (London)
Director
Department of IVF
Max Healthcare Ltd
New Delhi, India

Teena Gupta MBBS MS (Obs and Gyne) Diploma in IVF and Reproductive Medicine (Germany) Diploma in Gynecological Endoscopy
Director
Obs and Gyn and Infertility Unit
Ashapunj Fertility and Gynecology Centre
Bhopal, Madhya Pradesh, India

Yogita Dogra MD (PGIMER, Chandigarh) DM (Reproductive Medicine) (AIIMS, New Delhi) FICOG
Director and Consultant
Arriva IVF Superspeciality Centre
Shimla, Himachal Pradesh, India

Preface

Editor-in-Chief
(Col) Pankaj Talwar *VSM*

Editor
Shweta Mittal Gupta

Editor
Sweta Gupta

Editor
Puneet Rana Arora

Convenor
Nisha Bhatnagar

Team Expert
Nalini Kaul Mahajan

Team Expert
Surjeet Kaur

Team Leader
Shalini Chawla Khanna

Team Leader
Ankita Sethi

The SAEB (Survey and Evidence-Based) Good Practice Points initiative was conceived with the vision of bringing together clinicians, embryologists, researchers, and educators across India to create practical, implementable, and ethically sound guidelines that address real-world challenges in reproductive medicine. Each chapter in this compendium represents months of dedicated teamwork, data collection, expert deliberation, and collaborative refinement.

An important driving force behind this initiative has been the vision of the IFS President, who recognized the prevailing lacunae and knowledge gaps arising from the absence of India-specific recommendations. This endeavor reflects the commitment to develop guidance that is rooted in our own population data, clinical realities, and diversity of practice settings.

The strength of this work lies in its collective wisdom. By combining survey-driven insights with a rigorous evidence-based approach, we have attempted to bridge the gap between everyday clinical practice and evolving scientific knowledge. These GPP documents are not meant to replace existing guidelines; rather, they aim to complement them by offering context-specific recommendations tailored to the Indian ART landscape.

It is our hope that this consolidated effort will support clinicians in making informed decisions, encourage uniformity of care, and ultimately contribute to improved patient outcomes. We extend our gratitude to everyone who contributed to this initiative and made this work possible.

Acknowledgments

We extend our heartfelt appreciation to all the experts, clinicians, embryologists, and young team members who worked tirelessly on each of the eleven SAEB GPP projects. Your commitment to scientific rigor, your enthusiasm for learning, and your willingness to collaborate have been the foundation of this initiative.

We gratefully acknowledge the unwavering support of the team leaders and national coordinators who guided each group with clarity, patience, and vision. The completion of the surveys, the collection of adequate sample sizes, the detailed discussions, drafting, redrafting, and finalization of recommendations would not have been possible without your leadership.

We thank the reviewers, statisticians, and mentors who provided constructive feedback at every stage, ensuring that each chapter meets the highest academic and practical standards. Special appreciation is extended to the editorial and organizational teams whose behind-the-scenes efforts—coordination, communication, formatting, plagiarism checks, and preparation of final deliverables—were indispensable.

To every participant who contributed time, expertise, and passion: this work stands as a testament to your dedication to improving ART practice in India.

We are extremely thankful to Meyer Organics Pvt Ltd for providing academic support for this project.

Contents

Fertility Preservation Practices in India

INTRODUCTION

Fertility preservation(FP) has increasingly become a vital component of comprehensive cancer and reproductive care. With significant advancements in cancer treatment over the past few decades, survival rates especially among individuals aged 15–44 years have improved dramatically. As more young cancer survivors look forward to life beyond treatment, the impact of chemotherapy, radiotherapy, and surgery on future fertility has emerged as an important quality-of-life concern. Yet, despite the high prevalence of gonadotoxic treatments, many patients in India remain unaware of FP options or receive counselling too late to benefit from them.

Recognizing the urgent need to bridge this gap, global bodies such as ASCO (American Society of Clinical Oncology) and ESHRE (European Society of Human Reproduction and Embryology) emphasize early counseling, interdisciplinary coordination, and rapid referral pathways. In India, the Fertility Preservation Society of India (FPSI) is trying to advocate structured FP practices, clinician training, and patient education. However, real-world data reflecting how fertility preservation is implemented across India and across different regions, clinical settings, and practitioner backgrounds—has remained scarce.

To address this unmet need, a nationwide survey was conducted to capture current oncofertility practices and perceptions across the country. Ethical approval for this study was obtained from the Ethical Committee of the Indian Fertility Society, ensuring adherence to research and professional standards.

This was a cross-sectional, nationwide survey conducted from June 2025 to September 2025.

A structured questionnaire was developed and circulated digitally via email and online survey links to fertility specialists, ART practitioners, and gynecologists across India. Participation was voluntary, anonymous, and open to all clinicians involved in fertility preservation or reproductive medicine. As per ethical clearance, minimum of 380 surveys were required, however total of 475 practitioners responded, reflecting a diverse and representative sample.

The demographic and institutional characteristics of the participants highlight the diversity of fertility preservation providers in India:

- 72% of respondents were above 40 years of age, indicating a predominantly experienced practitioner base.
- 28% were younger than 40 years, reflecting participation from the emerging generation of ART specialists.
- The majority practiced in the private sector (54.53%), followed by the corporate hospital sector (28.45%).
- 11% were from government and academic institutions, offering valuable insights from tertiary and public healthcare settings.

The collective responses from 475 ART specialists reflected the diversity of practices and the significant interest among clinicians in adopting fertility preservation practices despite the lack of unifying guidelines. Importantly, this exercise has enabled the compilation of data specific to the Indian context—addressing cultural, economic, and clinical realities unique to our population. Based on these insights, new recommendations tailored for Indian practice have been formulated, providing a framework for clinicians to adopt a more standardized and evidence-informed approach to practicing fertility preservation.

PICO 1: WHAT ARE THE DEMOGRAPHIC CHARACTERISTICS OF FERTILITY PRESERVATION IN YOUR REGION?

Recommendations

- Fertility preservation (FP) should be systematically integrated into oncology and reproductive practice, with early counseling offered to all at-risk patients, ideally before starting treatment.
- Greater awareness, easier access, and supportive policies can help more people protect their future fertility.
- Special attention to younger patients and regular audits can strengthen FP services.

Summary of Evidence

Fertility preservation has become a standard component of comprehensive cancer and reproductive care, supported by multiple international and national guidelines. The ASCO Clinical Practice Guideline Update (2018) ASRM emphasized that all reproductive-age patients diagnosed with cancer should receive timely counseling about potential gonadotoxicity and be referred for fertility preservation prior to therapy initiation, wherever feasible.[1,2] In a study by Chin et al.,[3] only 60% of women with cancer received fertility counseling before starting cancer therapy, and only 13% of those women were referred to a fertility specialist. Goldfarb et al.,[4] reported that as few as 9% of patients reported receiving any information on fertility risk or FP options, while Hohmann et al.,[5] reported that 22% of patients were counseled on FP before, 6% during, and 7% after cancer treatment. In an Indian survey conducted by Mahajan et al.,[6] only 42% routinely discuss the impact of the type of cancer on future fertility, and only 37% discuss the impact of cancer treatment on fertility. In another Indian study by Mahey et al.,[7] comparable results were shown, whereby 32% of the study population was counseled by their primary physician about the gonadotoxic effect of cancer therapy on future fertility. ASCO[8] reiterated in its 2025 communication that FP counseling should be embedded not only at diagnosis but also throughout survivorship, underscoring the importance of structured referral pathways and inclusion of FP discussions in survivorship care plans.

The ESHRE 2020[9] Guideline on Female Fertility Preservation stresses rapid response systems, multidisciplinary collaboration, and age-appropriate counseling to ensure equitable access. (FPSI),[10] which advocates localization of international protocols, capacity building, and registry creation to document national practice trends and outcomes.

FPSI underscores challenges such as cost, delayed referral, and lack of awareness as key barriers requiring systemic intervention. From a global perspective, FIGO[11] and other international reviews emphasize the ethical imperative of offering FP options universally, the need for equity of access in low- and middle-income settings, and the integration of FP into standard oncologic and reproductive care pathways. These documents collectively align with ASCO and ESHRE principles—emphasizing informed consent, nondelay of therapy, and comprehensive psychosocial support.

Research Gaps

- Promote multicentric research and national FP registries to assess utilization, barriers, and long-term outcomes.
- Comparative regional and global surveys should be conducted periodically to benchmark progress and identify gaps.
- Quantify geographic and socioeconomic disparities in access to fertility preservation services across Indian states.

Survey Results

1. How often do you encounter cases of fertility preservation in your practice?

Choices	Percentage	Count
Rarely	38.28%	178
Monthly	37.42%	174
Weekly	16.34%	76
Daily	7.96%	37
	Total	**465**
	Unanswered	10

2. What is the Most Common reason for fertility preservation consultations in your institution?

Choices	Percentage	Count
Delayed childbearing due to career or education	49.89%	231
Cancer treatment	41.47%	192
Benign gynecological conditions like endometriosis	7.99%	37
Genetic conditions	0.65%	3
	Total	**463**
	Unanswered	12

3. When do cancer patients typically come to discuss fertility preservation options in your setup?

Choices	Percentage	Count
Before treatment begins	57.24%	265
During treatment	21.17%	98
Rarely discussed	16.85%	78
After treatment	4.75%	22
	Total	463
	Unanswered	12

4. Which is the most common age group of patients referred to you?

Choices	Percentage	Count
Young (20–35 years)	57.14%	264
35 years and above	35.93%	166
Adolescent (12–19 years)	6.06%	28
Pediatric (0–12 years)	0.87%	4
	Total	462
	Unanswered	13

5. What is the time period from cancer diagnosis to a fertility preservation consultation in your institution?

Choices	Percentage	Count
More than 1 week	29.58%	134
More than 2 weeks	28.92%	131
3–5 days	28.70%	130
1–2 days	12.80%	58
	Total	453
	Unanswered	22

Integration of Survey Results with Evidence

In our survey conducted Pan-India, 38.2% reported encountering FP cases *rarely*, and 37.4% monthly, indicating low-to-moderate clinical exposure. This suggests FP remains underutilized, despite increasing awareness. ASCO, ESHRE (2020), FPSI emphasizes that FP discussions should be offered to all at-risk patients, particularly before gonadotoxic therapy.

- Delayed childbearing (49.9%)/social egg freezing and cancer treatment (41.5%) were the leading indications for FP. Global trends also show a shift toward social egg freezing among career-oriented women.[3,4]
- 57.2% of patients discussed FP before treatment, aligning with good clinical practice. Studies from the US and Europe report 50–70% pretreatment counseling rates, showing similar but improvable trends.[5,6]
- The majority were young women (20–35 years; 57.1%), consistent with the literature,[7,8] with minimal pediatric/adolescent referrals (6.9%), suggest a gap in awareness among pediatric oncologists and parents.
- Nearly 60% of referrals occurred >1 week after diagnosis (with ~29.6% >1 week and ~28.9% >2 weeks per your data potentially delaying cancer treatment.
- ESHRE and ASCO recommend FP within days of diagnosis to avoid therapy delays.

PICO 2: WHAT INFORMATION ON FERTILITY PRESERVATION SHOULD BE PROVIDED TO PATIENTS?

Recommendations

- All reproductive-age cancer patients should receive timely, comprehensive fertility counseling before gonadotoxic therapy.
- Counseling should encompass risk assessment, available FP modalities, outcomes, storage logistics, and psychosocial implications.
- Institutions should adopt standardized FP counseling checklists and training programs for oncology and reproductive teams.
- FP discussions should be documented and audited as part of the cancer care workflow.

Summary of Evidence

ASCO, ASRM, ESHRE, and FPSI guidelines recommend that patients with cancer be given sufficient information about cancer treatment-related infertility and available fertility options.[1,2,9,10] Letourneau et al., (2012)[12] analyzed 1,041 reproductive-age women with cancer in the US. Only 56% received fertility counseling prior to therapy. Those counseled demonstrated better quality of life and less decisional regret compared to uncounseled women, reinforcing the long-term psychological value of early discussions.

Ehrbar et al., (2019)[13] conducted a Swiss national survey among 142 oncologists and hematologists. Although 70% reported discussing FP, only half of the patients confirmed adequate information, underscoring a mismatch between physician intent and patient recall.

Forman et al., (2020)[14] surveyed 45 UK oncology units and found wide variability in FP counseling—ranging from full information in tertiary centers to minimal FP discussion in district hospitals, reflecting systemic inconsistency. Mahey et al.,[7] conducted survey in 100 cancer patients at a tertiary level center at Delhi suggested that approximately two-thirds of the patients were not aware of the effect of cancer treatment on fertility and of the gonadotoxic effect of chemotherapy and radiotherapy.

Research Gaps

- No validated decisional aids exist in Indian regional languages.
- There are limited longitudinal data on the knowledge retention of the physicians and decisional satisfaction of the patients.

Survey Results

6. As a treating physician, what information do you share with patients?

Choices	Percentage	Count
Fertility preservation options and issues related to cryopreservation storage, Impact of cancer on reproductive function and fertility, Pregnancy after gonadotoxic treatment	88.48%	407
Fertility preservation options and issues related to cryopreservation storage	5.43%	25
Impact of cancer on reproductive function and fertility	4.35%	20
Pregnancy after gonadotoxic treatment	1.09%	5
	Total	460
	Unanswered	15

Integration of Survey Results with Evidence

In this Indian survey, 88.48% of physicians stated they provide comprehensive FP counseling, including fertility risks, available options, cryostorage, and post-treatment conception potential. However, 11.5% reported only partial counseling focused on select topics, indicating that while awareness is high, uniformity and depth of counseling vary among providers. Survey data show that most clinicians claim to provide full counseling, consistent with guideline recommendations. However, patient-reported surveys reveal persistent knowledge gaps, indicating a disconnect between physician perception and patient understanding. Hence, a National framework to ensure uniformity in fertility counseling is the need of the hour.

PICO 3: IS IT RELEVANT TO DO OVARIAN RESERVE TESTING FOR PATIENTS REQUIRING FERTILITY PRESERVATION?

Recommendations

- Routinely measure baseline AMH in reproductive-age female cancer patients before gonadotoxic therapy.

- Combine AMH with AFC and age for accurate ovarian reserve assessment.
- Use AMH levels to individualize fertility preservation counseling and plan cryopreservation strategies.
- Ensure standardized AMH assays and documentation across oncology centers
- Integrate AMH assessment into national oncofertility protocols and referral pathways

Summary of Evidence

AMH reflects the quantity of developing follicles, and guidelines from ESHRE (2020),[9] ASCO (2018),[1] NICE (UK),[15] and ACOG[16] uniformly recommend AMH as the most reliable, cycle-independent biomarker of ovarian reserve in women at risk of gonadotoxic damage. The Fertility Preservation Society of India (FPSI)[10] also recommends that AMH levels should be measured before and 1 year after gonadotoxic therapy, as they help predict ovarian function recovery and guide long-term follow-up.

Anderson et al., (2017)[17] demonstrated in a prospective study of 206 young breast cancer patients that baseline AMH levels before chemotherapy predicted the likelihood of long-term ovarian function recovery and menstrual resumption up to 5 years post-treatment.

In another large cohort, Dillon et al., (2019)[18] evaluated AMH trajectories in 800 premenopausal women with breast cancer and found that lower pretreatment AMH strongly predicted permanent amenorrhea, highlighting its prognostic and counseling value.

Similarly, Lambertini et al., (2018)[19] confirmed that AMH, when interpreted alongside patient age and chemotherapy regimen, improved the accuracy of gonadotoxic risk estimation, refining fertility preservation recommendations.

The Indian experience, as reported by Mahey et al., (2019)[7] from AIIMS, aligns with these findings—clinician awareness regarding gonadotoxic effects and AMH use is rising, but structured integration into oncology practice remains limited.

Research Gaps

- There is a lack of longitudinal Indian data correlating pre-/post-therapy AMH with fertility outcomes.
- Assay variability still exists in Indian labs with the absence of national standardization.
- Cost-effectiveness studies of universal AMH screening and integration of AMH with imaging (AFC) and ovarian function recovery models in India are lacking.
- Data for adolescent and pediatric cohorts still remain insufficient.

Survey Results

7. Which biochemical test do you prescribe the most to assess ovarian reserve?

Choices	Percentage	Count
Anti-Müllerian hormone (AMH)	95.88%	442
Serum FSH	2.60%	12
Serum estradiol	0.87%	4
Serum LH	0.22%	1
	Total	461
	Unanswered	14

8. Why do you recommend AMH levels before chemotherapy?

Choices	Percentage	Count
To counsel patients on fertility preservation options, To predict the recovery of ovarian function after chemotherapy, To assess ovarian response to stimulation	83.70%	385
To counsel patients on fertility preservation options	9.78%	45
To predict the recovery of ovarian function after chemotherapy	3.70%	17
To assess ovarian response to stimulation	2.61%	12
	Total	460
	Unanswered	15

Integration of Survey Results with Evidence

In this Indian oncofertility survey (n = 461), anti-Müllerian hormone (AMH) was overwhelmingly identified as the most frequently prescribed biochemical test to assess ovarian reserve, chosen by 95.9% of respondents, compared to FSH (2.6%), estradiol (0.87%), and LH (0.22%).

When asked about the rationale for testing AMH prior to chemotherapy, 83.7% of clinicians selected "All of the above", emphasizing its role in predicting ovarian function recovery, guiding fertility preservation counseling, and assessing ovarian stimulation response. Previous multicounty surveys, such as Kim et al., (2018),[20] reported AMH utilization rates of 60–80%, limited by cost and assay access. In contrast, the present Indian data (95.9%) demonstrate strong adherence to evidence-based international standards and reflect improving national awareness and resource availability.

PICO 4: WHAT ARE THE PSYCHOLOGICAL IMPACTS OF FERTILITY PRESERVATION, AND HOW CAN COUNSELING IMPROVE EMOTIONAL WELL-BEING?

Recommendations

- Structured psychosocial counseling should be integrated into fertility preservation (FP) programs to reduce anxiety, decisional conflict, and improve overall emotional well-being.
- Counseling should ideally be offered before, during, and after the FP process, especially in patients undergoing FP for oncologic or medical indications.

Summary of Evidence

- Fertility preservation is often undertaken during a period of immense psychological stress, particularly among individuals facing gonadotoxic cancer therapy. Studies from India and abroad consistently demonstrate that FP can trigger moderate to severe anxiety and depression, largely due to uncertainty about future fertility and treatment outcomes.[21,22]
- In a systematic review by Deshpande et al.,[23] including 13 studies from across the globe, the authors found that fertility-preservation counseling helps women cope better with a cancer diagnosis and reduces long-term regret about fertility. Counseling was also linked to improved quality of life and a strong patient desire for timely, clear information. They conclude that fertility-preservation counseling should be a standard component of cancer care, although more research is needed on long-term psychological outcomes.
- Bastings et al.,[24] surveyed 108 women offered fertility-preservation counseling, with 64 responding. Most reported positive counseling experiences, but limited time, inadequate information, or lack of support increased decisional conflict

and later regret. The study concludes that high-quality, well-timed counseling is essential to help women make confident fertility-preservation decisions during cancer treatment.

- Dar et al., (2022)[25] conducted a hospital-based cross-sectional study at Government Medical College, North India, from January to November 2021, involving 186 infertile women. The study found that 46.4% of participants had psychiatric morbidity, indicating a substantial mental-health burden among women undergoing fertility preservation. These findings highlight the importance of integrating psychosocial support and mental-health interventions into infertility care and fertility preservation to improve overall patients' well-being.
- ASCO and ESHRE specifically recommend that fertility counseling include psychosocial support and that patients be offered access to psychosocial services as part of fertility preservation pathways. NICE and ACOG likewise emphasize psychological assessment/support as part of comprehensive fertility care. These guidelines highlight that counseling improves informed decision-making and addresses distress, decisional conflict, and long-term quality of life.

Research Gaps

- Limited data exist on how psychosocial counseling affects decision quality, uptake of preservation, and long-term psychosocial outcomes in Indian patients.
- Few validated, culturally adapted decision aids or counseling protocols exist for Indian socioeconomic and linguistic contexts.
- Integration lacks between fertility specialists and psycho-oncology services.
- There are very few trained oncofertility counselors in India.

Survey Results

9. How often do you recommend psychosocial counseling for fertility preservation patients?

Choices	Percentage	Count
Always	62.31%	286
Often	15.69%	72
Sometimes	14.81%	68
Rarely	7.19%	33
	Total	**459**
	Unanswered	16

Integration of Survey Results with Evidence

- Our survey indicates that 62% of clinicians "Always" recommend psychosocial counseling; ~38% recommend it less consistently (often/sometimes/rarely). This indicates good uptake, but there is room for universal implementation.
- Evidence from Indian and international studies supports that structured counseling reduces distress, enhances decision confidence, and improves adherence to FP treatment.
- *Translate the 62% "Always" into 100% practice:* A simple policy that every reproductive-age patient is offered at least one documented psychosocial counseling session before preservation decisions should be adopted.
- Future efforts should focus on developing standardized, culturally adapted counseling modules (e.g., HADS, DCS), establishing collaborations with psycho-oncology units, and ensuring every FP consultation includes a psychological assessment component.

PICO 5: WHAT IS THE EVIDENCE SUPPORTING FERTILITY PRESERVATION IN MALES? (SPERM CRYOPRESERVATION, TESTICULAR TISSUE CRYOPRESERVATION, HORMONAL THERAPY)

Recommendations

- Sperm cryopreservation remains the gold standard for fertility preservation in postpubertal males due to its established efficacy, safety, and accessibility, and should be offered routinely to all postpubertal males prior to gonadotoxic therapy.
- Provide clear, rapid referral pathways and same-day collection options when possible.
- Discuss experimental options (testicular tissue cryopreservation) only in specialist centers and with appropriate consent.
- GnRH agonists are currently not recommended outside of clinical trials due to inconsistent efficacy data.
- Document counseling, storage terms, and partner/parent involvement as needed.

Summary of Evidence

- Sperm cryopreservation is an effective, low-cost, and accessible method for fertility preservation in postpubertal males, with high post-thaw fertilization and pregnancy success rates when samples are collected before chemotherapy or radiotherapy.[26,27]

- Major international guidelines—ASCO, ESHRE, and ASRM—uniformly recommend routine sperm banking for all postpubertal males prior to gonadotoxic therapy.
- The Fertility Preservation Society of India (FPSI) also recommends that all male patients be informed about the potential risk of genetic damage in sperm collected after initiation of chemotherapy[10]
- van Casteren et al., (2008) analyzed 356 cancer patients and found 96% success in semen collection and 70% pregnancy success among those who later used cryopreserved samples.[28]
- Saito et al., (2005) demonstrated a 50% live birth success rate from cryopreserved sperm in male oncology patients, highlighting long-term efficacy.[29]
- Eiser et al., (2011) explored long-term views of men who banked sperm before cancer treatment. The study found that many men made decisions under time pressure and with limited understanding of long-term implications. Follow-up counseling, fertility monitoring, and guidance on sperm disposal were often lacking. The authors concluded that structured support is essential to help men make informed decisions about sperm banking and its future use.[30]
- Testicular tissue cryopreservation (TTC) is being explored in prepubertal boys and remains experimental with limited human data; successful live births are yet to be achieved.[31]
- Hormonal therapy with GnRH analogs offers no consistent protection against gonadotoxic injury and is not advised as a stand-alone fertility preservation strategy.[32]
- *Global data:* International surveys, such as Rashedi et al., (2020), show that 60–90% of fertility centers worldwide routinely offer sperm banking before cancer therapy, aligning with best-practice standards.[33]
- *Indian evidence:* Bakshi (2022) and Kumar et al., (2015) reported growing national awareness and increasing availability of sperm banking facilities in tertiary centers, though cost and regional disparities persist.[34,35]

Research Gaps

- Nationwide data on actual uptake rates (offer vs completion), barriers (cost, logistics, stigma), and long-term outcomes of stored sperm use (fertility/live birth) from Indian centers are lacking
- Registry data for experimental testicular tissue programs and ethical frameworks for minors need to be maintained.

Survey Results

10. Which fertility preservation method do you most often practice in postpubertal males?

Choices	Percentage	Count
Sperm cryopreservation	84.90%	388
Testicular tissue cryopreservation	6.13%	28
None of the options given	5.25%	24
Hormonal therapy	3.28%	15
	Total	457
	Unanswered	18

Integration of Survey Results with Evidence

- The 84.9% adoption rate of sperm cryopreservation among Indian practitioners reflects strong alignment with ASCO, ESHRE, and ASRM guidelines, indicating a significant step toward standardized male fertility preservation in oncology practice.
- The survey's findings highlight that India's clinical practice now parallels global data,[33,30] showing an evolution from awareness to implementation.
- However, the gap in testicular tissue cryopreservation availability underscores the need for national registries, ethical oversight, and research collaboration for prepubertal boys.
- Integrating these practices into national oncofertility frameworks and tracking uptake, counseling rates, and patient outcomes will further strengthen reproductive survivorship care.

PICO 6: WHAT ARE THE STANDARD PRACTICES FOR FERTILITY PRESERVATION IN FEMALES? (OOCYTE CRYOPRESERVATION, EMBRYO CRYOPRESERVATION, OVARIAN TISSUE CRYOPRESERVATION, OVARIAN TISSUE TRANSPOSITION)

Recommendations

- Embryo cryopreservation should be the preferred FP method for woman with partners.

- Oocyte cryopreservation is strongly recommended for single women or those who prefer autonomy over gametes.
- Ovarian tissue cryopreservation should be considered for prepubertal girls and patients who cannot delay treatment, ensuring appropriate counseling regarding its experimental nature in this age group.
- Ovarian transposition should be offered before pelvic radiotherapy when feasible.
- National FP policies (FPSI, ICMR) should ensure equitable access and establish cryopreservation registries.

Summary of Evidence

Oocyte and embryo cryopreservation are the most established and effective fertility preservation (FP) methods for postpubertal females, offering high oocyte survival (90–97%) and live birth rates comparable to fresh IVF cycles.[36,37]

A large multicenter analysis by Cobo et al., (2016) involving 1,500 vitrified oocyte cycles reported a clinical pregnancy rate of 65% per transfer, confirming vitrification as a reliable, nonexperimental FP option.[38]

Similarly, Rodriguez-Wallberg et al., (2019) demonstrated that embryo cryopreservation yields the highest cumulative live birth rates (≈45–55%), making it the preferred strategy for women with partners.[39]

According to ASRM (2021), ESHRE (2023), ASCO (2023), and FPSI (2023), both oocyte and embryo cryopreservation are standard-of-care FP methods and should be routinely offered to all eligible postpubertal females before gonadotoxic therapy. FPSI specifically emphasizes that oocyte cryopreservation ensures reproductive autonomy for unmarried women and that embryo cryopreservation remains the preferred method for women with partners, aligning with this survey's finding that 63.4% of clinicians favored embryo freezing.

Ovarian tissue cryopreservation (OTC) has evolved from an experimental to an accepted clinical technique in selected adult cases.

Donnez and Dolmans (2023)[40] documented over 200 live births worldwide after ovarian tissue transplantation, while Pacheco and Oktay (2019) demonstrated >90% ovarian function recovery postreimplantation.[41]

There is no universal protocol for patient selection, timing of cryopreservation, tissue processing, storage, re-implantation, or follow-up in pediatric OTC across centers. Local practices still vary widely.[42] Moreover, there are low utilization ("return-to-use") rates. In a cohort of 451 pediatric/adolescent OTC patients, the "return rate" for tissue transplantation was 0% among children and only 1% among adolescents.[43] This means that most cryopreserved tissues remain unused—partly because many are still too young to attempt childbearing, or may never need/use their tissue. The FPSI 2023 consensus supports OTC only in centers with ethical

oversight and trained teams, particularly for patients unable to delay cancer therapy.

Ovarian transposition (oophoropexy) remains an underutilized yet effective surgical option.

A meta-analysis by Terenziani et al., and ASCO (2023) guidelines report 70–90% preservation of ovarian function post-transposition in women receiving pelvic radiotherapy.[8,44]

The FPSI and RCOG[45] recommend offering transposition whenever pelvic RT is planned.

Indian data are consistent with these global trends: Bakshi et al., documented increasing adoption of oocyte and embryo cryopreservation in tertiary centers, though barriers remain in peripheral hospitals and public institutions.[34]

Research Gaps

- Limited long-term follow-up data on live births post-OTC, especially in prepubertal cohorts.
- Lack of standardized national protocols for FP counseling and multidisciplinary coordination in India.
- Need for cost-effectiveness and accessibility studies in low- and middle-income settings.

Survey Results

11. Which of the following statements is False?

Choices	Percentage	Count
None of the below options	52.75%	240
Ovarian tissue cryopreservation is still experimental in prepubertal girls	26.81%	122
Ovarian tissue transposition is suggested before pelvic radiotherapy	11.43%	52
Oocyte and embryo cryopreservation are established methods of fertility preservation	8.35%	38
	Total	455
	Unanswered	20

12. What Fertility Technique would you offer a woman who has a partner?

Choices	Percentage	Count
Embryo freezing	63.40%	291
Split the oocytes to attempt both embryo and oocyte cryopreservation	29.85%	137
Cryopreserve oocytes	6.10%	28
Ovarian tissue cryopreservation	0.22%	1
	Total	459
	Unanswered	16

Integration of Survey Results with Evidence

Over half the respondents (52.75%) selected *"None of the above"* as the false statement, indicating some uncertainty regarding standard practices.

63.4% said preference for embryo cryopreservation, 29.8% for combined embryo and oocyte freezing, and 26.8% awareness of OTC's experimental nature in prepubertal girls, indicating growing awareness but highlighting the need for continued education and standardized national FP protocols, as urged by FPSI.

PICO 7: HOW DO PREGNANCY OUTCOMES DIFFER BETWEEN OOCYTE CRYOPRESERVATION AND EMBRYO CRYOPRESERVATION FOR CANCER PATIENTS UNDERGOING FERTILITY PRESERVATION?

Recommendations

- Embryo cryopreservation offers higher cumulative live birth rates as compared to oocyte cryopreservation.
- However, both methods are now considered established (nonexperimental) FP options, endorsed by ESHRE (2020), ASCO (2023), and the Fertility Preservation Society of India (FPSI).[1–3]

Summary of Evidence

In a systematic review and meta-analysis by Bríd Ní Dhonnabháin et al., (2022), clinical pregnancy rates were 34.9%, 49.0%, and 43.8% for oocyte, embryo, and ovarian tissue cryopreservation, respectively, with no statistically significant differences in live birth rates (25.8%, 35.3%, and 32.3%).[46]

Cobo et al., (2018) and the ASRM (2021) guideline reaffirmed that vitrified oocytes yield comparable pregnancy and live birth outcomes to embryos, provided procedures are performed in high-volume, experienced centers using modern vitrification and thawing protocols.[36,38]

Oktay et al., (2015) analyzed fertility preservation outcomes in 248 women with cancer who underwent either oocyte or embryo cryopreservation prior to chemotherapy. The study demonstrated higher live birth and ongoing pregnancy rates with embryocryopreservation (36.5%) compared to oocyte cryopreservation (23.4%), largely attributed to the greater developmental competence of embryos and higher post-thaw survival. However, the difference narrowed in cycles using vitrified oocytes and with younger patient age, indicating an improvement in the efficiency of oocyte freezing over time.[8]

Goldrat et al., (2019) conducted a systematic review and meta-analysis of 19 studies evaluating pregnancy outcomes after fertility preservation for cancer patients. Among over 1,200 women, embryo cryopreservation resulted in the highest pregnancy rate (49%), followed by oocyte (43%) and ovarian tissue (32%) cryopreservation, but these differences were not statistically significant after adjusting for patient and disease characteristics. The authors concluded that both oocyte and embryo cryopreservation are clinically effective, with embryo preservation slightly favored for women with partners, while oocyte vitrification remains essential for single patients or urgent cases.[4]

Together, these studies confirm that embryo cryopreservation continues to provide a modest success advantage, but advances in oocyte vitrification have effectively bridged the gap, establishing both as standard-of-care fertility preservation options in cancer patients.

Research Gaps

- Limited long-term Indian data comparing live birth outcomes between embryo and oocyte cryopreservation.
- Lack of cost-effectiveness and patient satisfaction studies in Indian FP programs.
- Need for national outcome registries stratified by age, diagnosis, and stimulation protocols.

- Underrepresentation of FP outcomes in nononcological indications within Indian literature.

Survey Results

13. Based on your experience, which technique yields better pregnancy outcomes for fertility preservation in cancer patients?

Choices	Percentage	Count
Embryo cryopreservation	68.78%	315
Embryo cryopreservation and Oocyte cryopreservation are comparable	15.07%	69
Not enough data	8.08%	37
Oocyte cryopreservation	7.64%	35
	Total	458
	Unanswered	17

Integration of Survey Results with Evidence

In this survey, 68.78% of respondents favored embryo cryopreservation as yielding better pregnancy outcomes, consistent with global and Indian guideline consensus. About 15% felt outcomes were comparable, mirroring increasing confidence in oocyte vitrification.

Clinician perception and evidence both support an individualized, patient-centered approach, balancing clinical prognosis, marital status, ethical considerations, and time constraints before cancer therapy.

PICO 8: HOW SHOULD OVARIAN STIMULATION BE PERFORMED IN CANCER PATIENTS UNDERGOING FERTILITY PRESERVATION TREATMENT?

Recommendations

For fertility-preservation (FP) patients, especially oncology patients or other time-sensitive cases

- GnRH-antagonist protocols with agonist trigger are preferred to minimize the risk of ovarian hyperstimulation syndrome (OHSS) and to facilitate rapid luteolysis before oncology treatment commencement.
- Random-start ovarian stimulation protocols are recommended for cancer patients requiring urgent fertility preservation (FP) to avoid delays in chemotherapy or radiotherapy initiation.

Summary of evidence

- GnRH-antagonist protocols allow shorter cycles, flexible/random-start stimulation, and permit the safe use of a GnRH-agonist trigger to sharply reduce moderate/severe OHSS risk—important in FP where many cycles are freeze-all. This is specifically recommended by ESGO, ESHRE, and ESGE for ovarian stimulation and discussed for FP contexts; the same is endorsed by the Fertility Preservation Society of India.[6,9,47]
- Oocyte yield and maturity are generally comparable between agonist and hCG triggers, in a retrospective cohort study of 341 Cancer patients undergoing COS by Pereira et al.,[48] where 9 (29.0%) were in the in the GnRH-agonist group and 242 (71%) in the hCG group, multivariate linear regression demonstrated approximately three more MII oocytes and 2PN embryos available for cryopreservation in the GnRH-agonist trigger group, irrespective of cancer and COS protocol type. Hence, by using GnRH antagonist protocols with agonist trigger, one can improve the yield of oocytes and embryos in these patients; hence, one can potentially increase their chances of future genetic parenthood.

Research Gaps

- Absence of uniform national guidelines for coordination between oncology and fertility units.
- Long-term reproductive outcomes specifically comparing agonist-triggered FP cycles (with freeze-all) vs hCG-triggered cycles in large, prospective cohorts are limited—live-birth rates per oocyte from FP cycles needs more high-quality longitudinal data.

Survey Results

14. Which ovarian stimulation protocol do you prefer for fertility preservation patients in your practice?

Choices	Percentage	Count
Antagonist, protocol with agonist trigger	79.42%	359
Antagonist, protocol with agonist trigger, Long agonist protocol with hCG trigger	10.6%	48
Long agonist protocol with hCG trigger	5.97%	27
None of the above	3.54%	16
	Total	452
	Unanswered	23

Integration of Survey Results with Evidence

- The survey results show a clear national consensus (≈80%) among Indian fertility specialists in favor of GnRH antagonist protocols with an agonist trigger, consistent with international recommendations.
- The 10.6% reporting "both" suggests some clinicians tailor the protocol per patient (reasonable where fertility timeline, ovarian reserve, or center logistics vary). Clear Documentation of indications for each approach and outcome tracking should be encouraged.
- The limited use of long agonist protocols (6%) highlights a shift away from traditional stimulation regimens due to time constraints and OHSS concerns in this population.

PICO 9: SHOULD GNRH AGONISTS BE PRESCRIBED UNIVERSALLY FOR OVARIAN PROTECTION IN ALL MALIGNANCIES?

Recommendations

- GnRH agonists should not be prescribed universally for ovarian protection in all malignancies.

- Use GnRHa as an adjunctive option to reduce chemotherapy-induced premature ovarian insufficiency (POI) in premenopausal women, especially in hormone-sensitive cancers such as breast cancer, or when oocyte/embryo cryopreservation is not feasible.[6,49]
- GnRHa should be initiated before or at the start of chemotherapy and continued through the chemotherapy course when used for ovarian protection.
- Cryopreservation (oocyte/embryo/tissue) remains the gold-standard fertility preservation approach; GnRHa is a complementary strategy when cryopreservation cannot be performed or as added ovarian function preservation.[50]

Summary of Evidence

- Lambertini et al., (2018) meta-analysis (12 RCTs, >1,200 women) demonstrated a significant reduction in POI and higher post-treatment pregnancy rates with GnRHa during chemotherapy compared to no treatment.[19] Evidence is strongest in breast cancer, with trials such as OPTION and POEMS/SWOG showing preserved ovarian function without increasing recurrence risk.[51] Fertility outcomes (menses resumption and pregnancies) are generally higher with GnRHa use, though live-birth data remain limited.[52]
- GnRHa given before chemotherapy initiation is most effective. Evidence in non-breast cancers (lymphoma, gynecologic, pediatric) is limited to smaller or observational studies, so universal recommendation across all malignancies is not supported.[19]
- Guidelines (ASCO (2018), ASRM (2019), ESHRE (2020), ESMO (2020) and RCOG) recommend GnRHa as an adjunct—not a replacement—to cryopreservation in premenopausal women undergoing gonadotoxic therapy.[1,2,9,45] The Cancer Council Australia and RCOG echo these recommendations. The FSPI (India, 2025) supports a combined approach, using GnRHa for temporary suppression when cryopreservation is unfeasible.[6]
- *Safety:* No increased recurrence risk in estrogen receptor–positive or estrogen receptor-negative breast cancer in RCTs and pooled analyses. Side effects minimal; ovarian function recovery higher vs. controls.[19]

Research Gaps

- Limited high-quality RCTs for non-breast malignancies; extrapolation may not be valid.
- Long-term fertility and live-birth outcomes post-GnRHa remain unclear
- Impact with novel therapies (targeted agents, immunotherapy) is unknown
- Optimal protocol, duration, and predictive biomarkers for benefit are yet to be defined.

Survey Results

15. You prescribe GnRH agonists for ovarian protection in:

Choices	Percentage	Count
Hormone-sensitive cancers like breast cancer	49.77%	215
All types of malignancies	36.34%	157
Non-hormone sensitive cancers	8.10%	35
Pediatric cancers	5.09%	22
	Total	**432**
	Unanswered	43

16. When do you recommend GnRH agonists ideally be initiated for ovarian protection?

Choices	Percentage	Count
Before chemotherapy starts	77.70%	338
During chemotherapy	9.20%	40
Anytime during cancer treatment	8.28%	36
After chemotherapy begins	4.37%	19
	Total	**435**
	Unanswered	40

Integration of Survey Results with Evidence

Our survey revealed that 49.7% prescribe GnRHa for hormone-sensitive cancers, 36% for all malignancies, and 77.7% initiate therapy before chemotherapy. This pattern aligns with global and FSPI guidance, reflecting prudent adoption in breast cancer and cautious extension to other cancers. However, one-third of clinicians

using GnRHa for all malignancies indicates a need for continued education about the limited evidence base outside breast cancer and the importance of multimodal FP counseling.

PICO 10: BREAST CANCER PATIENTS: DOES USING LETROZOLE/TAMOXIFEN DURING OVARIAN STIMULATION IN BREAST CANCER PATIENTS REDUCE ESTROGEN-RELATED RISKS COMPARED TO THE STANDARD OVARIAN STIMULATION PROTOCOL?

Recommendations

- For estrogen-receptor positive breast cancer patients, Letrozole co-administration during ovarian stimulation is preferred as it significantly reduces peak estradiol (E2) levels without compromising oocyte yield.
- Tamoxifen-based stimulation is an alternative but may yield slightly fewer mature oocytes than letrozole.
- Nonhormonal (barrier) contraception is recommended for 3–9 months before attempting pregnancy.

Summary of Evidence

- Letrozole-based controlled ovarian stimulation (COS) has been widely evaluated in breast cancer patients. Oktay et al., 2005 (n = 60): Compared letrozole + gonadotropins vs. conventional COS. Letrozole-COS significantly reduced peak estradiol levels (≈75% lower) while preserving oocyte/embryo yield.[53] The same authors conducted another prospective trial (Oktay et al., 2012) (n = 337): Patients underwent letrozole-COSP prior to chemotherapy, and outcomes showed no increase in recurrence risk after a median 5-year follow-up and good oocyte yield comparable to conventional stimulation.[54] Kim et al., 2016 (meta-analysis of 1,559 patients) and Goldrat et al., 2017 (systematic review of 12 studies) concluded that Letrozole-COS showed no increase in breast cancer recurrence and significantly lower estradiol exposure than standard COS.[55,56]
- *Tamoxifen-based stimulation:* Revelli et al., 2013 conducted a systematic review including 14 studies and reported that tamoxifen-based stimulation resulted in lower oocyte yield than letrozole-FSH but remains a safe alternative when letrozole is contraindicated.[57]
- *Contraception while on tamoxifen:* Tamoxifen is potentially teratogenic—guidelines recommend non-hormonal (barrier) contraception during tamoxifen therapy. Martínez et al., 2016 conducted a systematic review including 2,000 tamoxifen-exposed pregnancies and found ~20% congenital

anomaly rate, including craniofacial, skeletal, and genital tract defects, hence strongly recommended effective contraception during tamoxifen therapy.[58] In another study by Lænkholm et al., 2018 (Danish registry; n = 1,754) concluded that women who conceived during or immediately after tamoxifen had higher miscarriage and congenital anomaly rates vs. unexposed controls.[59]

- Tamoxifen and its active metabolites (e.g., N-desmethyl-tamoxifen, endoxifen) have long half-lives (5–7 days) and can persist in the circulation for weeks. Because of the teratogenic risk, most studies and guidelines recommend a washout interval of ~3 months before attempting conception. The POSITIVE trial (Prospective, international, single-arm trial by Partridge et al, Included 516 women, ≤42 years, NEJM 2023) concluded that after a mandatory 3-month washout after stopping tamoxifen,74% achieved pregnancy with 64% live birth and live birth outcomes were favorable.[60] Hence, a 3-month washout period is mandated before attempting pregnancy. However, more recent regulatory advice (e.g., TGA) now advises up to 9 months post-tamoxifen in some jurisdictions; Clinicians should follow local regulatory guidance and oncology advice before attempting conception.
- ASCO (2018), (1) ESHRE (2020) (9), NCCN (2024), ESMO (2023), FPSI (6) guidelines support:
  - Letrozole-based COS as the first-line protocol for breast cancer patients requiring fertility preservation.
  - Tamoxifen-COS may be used only when letrozole is contraindicated.
  - Counseling on teratogenicity and strict non-hormonal contraception during tamoxifen therapy.
  - Minimum 3-month washout after stopping tamoxifen before conception attempts—aligned with POSITIVE trial and international guidelines.

Research Gaps

- Large prospective/registry long-term oncologic safety data after letrozole-COS with ≥10 years follow-up are limited.
- Head-to-head RCTs comparing letrozole vs tamoxifen co-treatment or standard COS powered for live-birth/recurrence endpoints are lacking.
- Optimal protocols (letrozole dosing, timing, random-start variations) and effect with neoadjuvant therapy remain incompletely defined.
- Effects in varying breast cancer subtypes and concurrent targeted therapies need study.

Survey Results

17. Do you recommend letrozole during ovarian stimulation in breast cancer patients?

Choices	Percentage	Count
Always	57.14%	256
Often	18.75%	84
Sometimes	13.62%	61
Rarely	10.04%	45
	Total	448
	Unanswered	27

18. What contraceptive do you advise while patients are on Tamoxifen?

Choices	Percentage	Count
Nonhormonal contraception	66.21%	290
Progesterone only	19.63%	86
No contraception	9.13%	40
Combined Estrogen-Progesterone	4.57%	20
	Total	438
	Unanswered	37

19. What is the minimal time interval you recommend to stop Tamoxifen before attempting pregnancy?

Choices	Percentage	Count
3 months	56.31%	250
6 months	31.08%	138
12 months	8.56%	38
9 months	3.60%	16
	Total	444
	Unanswered	31

Integration of Survey Results with Evidence

- *Letrozole use:* 57.1% "Always" and 18.8% "Often"—strong alignment with guideline-preferred practice favoring letrozole-COS for ER+ breast cancer (survey total ~76% frequent use → consistent with recommendations)
- *Contraception while on tamoxifen:* 66.2% advise non-hormonal contraception, consistent with teratogenic risk and guideline/regulatory recommendations to avoid pregnancy during tamoxifen.
- *Time to stop tamoxifen before pregnancy:* 56.3% recommend 3 months, but recent regulatory updates (TGA) and some guideline discussions suggest longer washouts (up to 9 months) may be prudent in certain jurisdictions—advise local oncology discussion before attempting conception

PICO 11: WHAT IS THE EFFECT OF PREVIOUS GONADOTOXIC TREATMENTS AND UNDERLYING CONDITIONS ON OBSTETRIC OUTCOMES?

Recommendations

- Use a risk-stratified approach between cancer treatment and conception
- For most cancers, a minimum interval of 1 year is reasonable after chemotherapy before attempting conception.
- A 6–12-month interval is generally acceptable for low-risk cases, while 2 years or more is advisable for patients with hormone-sensitive or high-recurrence cancers.

Summary of Evidence

- The above recommendations are endorsed by ASCO/ASRM/ESHRE/ESMO. The final decision should involve a multidisciplinary team, including oncology input.[1,2,9,61]
- *FSPI (India):* Recommends a minimum 12-month waiting period in routine cases, extended intervals after pelvic RT or heavy gonadotoxic exposure, and mandatory preconception workup and high-risk obstetric referral.[6]
- Ovarian recovery after chemotherapy typically stabilizes within 6–12 months, though recovery varies by agent and dose; alkylating agents carry the highest risk for POI.[62] Pelvic radiotherapy may cause lasting uterine vascular and structural damage, increasing Obstetric complications like miscarriage, preterm birth, and low birthweight risks, warranting longer intervals and preconception uterine assessment.[63] The table below summarizes the key findings of various studies done to evaluate the obstetric outcome postgonadotoxic treatment.

Study	Sample size	Population and treatment	Key findings
Lambertini et al., 2021 (Systematic Review & Meta-analysis)[62]	7 studies, n ≈ 1,200	Breast cancer survivors	Pregnancy ≥12 months after therapy is not associated with increased recurrence; obstetric outcomes are generally reassuring; pelvic RT is associated with preterm birth
Anders et al., 2016 (Meta-analysis, JCO)[63]	14 studies, n > 1,400	Breast cancer survivors	No increase in recurrence or mortality post-pregnancy; most conceived ≥1 year after treatment
Signorello et al., 2010 (Pelvic RT)[64]	n = 1,264 survivors + controls	Childhood cancer survivors	High miscarriage, preterm birth, LBW after pelvic RT due to uterine damage
Green et al., 2002 (CCSS)[65]	n = 1,915 pregnancies	Childhood cancer survivors	Pelvic RT increases obstetric risks; chemo alone minimal effect
Lundberg et al., 2018 (Danish registry)[66]	n = 1,800 pregnancies	Mixed cancer survivors	Obstetric risks mainly after pelvic RT; timing since treatment is not linked to recurrence

Research Gaps

- Limited long-term prospective data on fertility and obstetric outcomes after modern chemo-immunotherapy.

- Need for region-specific follow-up data and predictive models for ovarian recovery timelines.

Survey Results

20. What is the minimal interval you recommend following chemotherapy completion before attempting pregnancy to reduce the risk of pregnancy complications?

Choices	Percentage	Count
1 years	41.07%	184
6 months	33.71%	151
2 years	19.20%	86
More than 2 years	5.58%	25
	Total	448
	Unanswered	27

Integration of Survey Results with Evidence

Survey findings (41% respondents) reflect a global consensus favoring a 12-month interval for most patients, balancing ovarian recovery, oncologic safety, and obstetric outcomes, while highlighting the need for individualized planning in high-risk exposures.

PICO 12: WHAT STRATEGIES WOULD IMPROVE ACCESSIBILITY AND AFFORDABILITY OF FERTILITY PRESERVATION TECHNIQUES IN INDIA?

Recommendations

Adopt a multipronged, system-level strategy combining

- Mandated early FP counseling and referral pathways,
- Financial support schemes/subsidized FP packages,
- Hub-and-spoke service networks with telemedicine, and
- Workforce training and registry/audit—prioritized nationally and regionally through FSPI and cancer-care partnerships to make FP broadly accessible and affordable in India.

Evidence Summary

- Barriers are multifactorial. In a prospective cohort of 312 women with breast cancer, Seth et al., (2021 reported that <15% received FP counseling—due to physician knowledge gaps and financial concerns.[67] Mahajan et al.,[6] in a nationwide survey across India found that awareness gaps, cost, and late referrals are the leading barriers to FP integration nationally. Peddie et al., 2012 (UK multicenter survey, n = 499) identified awareness gaps and inconsistent referral pathways as major barriers.[68] Rodriguez-Wallberg et al., 2019 (Swedish national registry, n > 8,000) demonstrated that public funding dramatically increases FP uptake.[69]
- *Guideline consensus:* ASCO (1), ESHRE (9), NCCN (70) and FSPI (6) all emphasize *early counseling and rapid referral for FP,* provider education, and that FP should be integrated into cancer pathways to avoid treatment delays.

Research Gaps

- *Implementation science:* Few prospective studies on which combinations of policy, financing and delivery models most cost-effectively increase equitable uptake in India.
- *Cost-effectiveness analyses:* Need India-specific health-economic evaluations (cost per live birth preserved, budget impact).

Survey Results

21. What is the biggest barrier to fertility preservation in your region?

Choices	Percentage	Count
Lack of awareness among patients, Financial concerns, Fear of delaying cancer treatment, Limited access to specialized centers	70.83%	323
Lack of awareness among patients	17.11%	78
Financial concerns	5.92%	27
Fear of delaying cancer treatment	3.07%	14
Limited access to specialized centers	2.63%	12
	Total	456
	Unanswered	19

Integration of Survey Results with Evidence

With 70.8% of respondents selecting "All of the above" as the main barrier, roll-out plans must be multicomponent (awareness + financing + access + minimizing delay) rather than single interventions. The existing clinician support (survey shows willingness to use FP protocols) is a strength to mobilize policy, funding, and operational changes driven by FSPI and cancer networks to convert intent into access.

PICO 13: WHAT ARE THE ETHICAL CONSIDERATIONS FOR OBTAINING CONSENT FOR FERTILITY PRESERVATION IN MINORS?

Recommendations

- Obtain parental/legal guardian consent for fertility preservation (FP) in minors, plus the child's assent when developmentally appropriate.
- For postpubertal adolescents who understand the procedure, both assent and parental consent should be documented.
- Court approval is reserved for cases of legal dispute, unclear guardianship, or when experimental procedures are planned.
- A multidisciplinary team (oncologist, reproductive specialist, psychologist/ethicist) should guide decision-making following local laws and institutional ethics policies.

Evidence Summary

ASCO, ASRM, ESHRE, FPSI, FIGO, ethics statements.[1,2,9,10,11]

- Offer FP to children/adolescents with assent (where possible) and parent/guardian consent. These bodies emphasize that minors lack full legal capacity but should be actively involved through assent when appropriate to their maturity.[71]
- *Future use and re-consent:* Plan for re-consent of stored gametes/tissue when the minor reaches legal adulthood; document owners/decision-makers and storage terms.
- Use court approval only when there is a legal dispute, uncertainty about guardianship, or when an experimental procedure is proposed, and parents disagree.[72]
- Always involve a multidisciplinary team (oncology, pediatric/adolescent medicine, reproductive specialist, psychiatry/ethics) and follow local law and institutional policy.

- Ensure consent processes are available in local languages and account for socioeconomic constraints; avoid coercion when parents are distressed.
- *Experimental status and risk–benefit:* Be transparent about experimental nature (especially prepubertal tissue cryopreservation), uncertain efficacy, potential future need for assisted reproduction, and storage/financial implications. Ethics committee oversight is recommended.[73]

Research Gaps

- Standardized age thresholds and competency assessments for assent vs independent consent across jurisdictions.
- Guidance and legal clarity on ownership/use of gametes/tissue cryopreserved from minors, and mandated re-consent procedures at adulthood.
- Empirical data on minors' understanding of FP decisions and long-term psychosocial outcomes after pediatric FP.

Survey Results

22. What consents do you take before proceeding with fertility preservation in minors?

Choices	Percentage	Count
Parental or guardian consent	83.78%	377
Only patient consent	13.11%	59
Court approval	2.00%	9
No specific legal requirement	0.67%	3
	Total	**450**
	Unanswered	25

Integration of Survey Results with Evidence

The survey shows 83.8% of clinicians take parental/guardian consent before FP in minors, 13.1% take only patient consent, and 2% require court approval. This practice aligns with international guidance emphasizing guardian consent plus assent, with court approval reserved for exceptional/legal cases. The small

group taking only patient-consent likely reflects older adolescents capable of independent consent in some legal systems—document competency carefully.

PICO 14: WHAT ARE THE STORAGE GUIDELINES ACCORDING TO THE NEW INDIAN ART BILL, 2021?

Recommendations

- Under the Assisted Reproductive Technology (Regulation) Act, 2021 (India), gametes and embryos may be stored for up to 10 years, extendable under specific medical or legal circumstances.[74]
- Clinics must maintain traceable documentation, ensure renewal of consent before extension, and dispose ethically upon expiry or withdrawal.[74,75]
- For cancer and fertility preservation (FP) cases, extensions beyond 10 years may be granted with patient consent and Medical Board approval.[75,76]
- Clinicians should provide clear pretreatment counseling on storage duration, renewal requirements, and posthumous use regulations.[77,78]

Summary of Evidence

Most global and national frameworks limit gamete and embryo storage to defined durations with scope for medical extensions and are summarized in the table below:

Guideline/ authority	Permitted storage duration	Extension criteria	Key notes
india (ART Act, 2021)	10 years	With renewed consent and medical justification	Mandatory documentation and registry compliance[74,75]
FSPI (India, 2025)	10 years standard; extensions for oncofertility	Case-based	Recommends centralized tracking & reconsent[78]
UK (HFEA, 2022)	Up to 55 years	For medical infertility or FP	Requires reconsent every 10 years[79]
ESHRE (2023)	10 years (recommended)	Extended for FP or medical need	Advocates for the harmonization of laws[80]
ASRM (2024)	No fixed limit	Subject to ongoing consent and viability	Focus on ethical use and safety monitoring[81]
Australia (NHMRC)	10 years	Extended for medical or legal grounds	Clinic-level regulatory oversight[82]

Research Gaps

- Lack of public and practitioner awareness of the ART Bill storage limits.
- Absence of national database integration for gamete and embryo tracking.
- Limited research on the cost-effectiveness and safety of ultra-long storage (>20 years).
- Need for standardized reconsent protocols and clear legal guidance for posthumous use.

Survey Results

23. In cases of fertility preservation, how long can gametes or tissues legally be stored in most jurisdictions?

Choices	Percentage	Count
10 years	48.23%	218
No restriction for the number of years	33.85%	153
5 years	9.73%	44
20 years	7.74%	35
	Total	452
	Unanswered	23

Integration of Survey Results with Evidence

- The survey result showing 48.23% citing a 10-year limit aligns well with the Indian ART Bill (2021).[1] However, one-third of respondents (33.85%) reported no legal restriction, highlighting knowledge gaps or state-level implementation differences. This underscores the need for uniform dissemination of ART regulations, particularly among oncofertility and IVF practitioners.
- Incorporating FSPI (2025) recommendations—centralized digital registries and standardized reconsent protocols—can enhance compliance, ethical oversight, and patient trust.

KEY GOOD PRACTICE POINTS

1. Fertility preservation (FP) should be systematically integrated into oncology and reproductive practice with early counseling offered to all at-risk patients, ideally before starting treatment. Greater awareness, easier access, and supportive policies can help more people protect their future fertility. Special attention to younger patients and regular audits can strengthen FP services.
   In our survey conducted pan India, 38.2% reported encountering FP cases rarely, and 37.4% monthly, indicating low-to-moderate clinical exposure. Delayed childbearing (49.9%) / Social Egg freezing and cancer treatment (41.5%) were leading indications for FP. Majority were young women (20–35 years; 57.1%), consistent with literature (7,8) with minimal pediatric/ adolescent referrals (6.9%) suggest a gap in awareness among pediatric oncologists and parents.Nearly 60% of referrals occurred >1 week after diagnosis (with ~29.6% >1 week and ~28.9% >2 weeks as per our data potentially delaying cancer treatment.

2. All reproductive-age cancer patients should receive timely, comprehensive fertility counseling before gonadotoxic therapy.Counseling should encompass risk assessment, available FP modalities, outcomes, storage logistics, and psychosocial implications.Institutions should adopt standardized FP counseling checklists and training programs for oncology and reproductive teams.
   In this Indian survey, 88.48% of physicians stated they provide comprehensive FP counseling, including fertility risks, available options, cryostorage, and post-treatment conception potential. However, 11.5% reported only partial counseling focused on select topics, indicating that while awareness is high, uniformity and depth of counseling vary among providers.FP discussions should be documented and audited as part of the cancer care workflow.

3. Routinely measure baseline AMH in reproductive-age female cancer patients before gonadotoxic therapy. Combine AMH with AFC and age for accurate ovarian reserve assessment.
   Use AMH levels to individualize fertility preservation counselling and plan cryopreservation strategies.Ensure standardized AMH assays and documentation across oncology centres
   Integrate AMH assessment into national oncofertility protocols and referral pathways.

In this Indian oncofertility survey (n = 461), Anti-Müllerian Hormone (AMH) was overwhelmingly identified as the most frequently prescribed biochemical test to assess ovarian reserve, chosen by 95.9% of respondents, compared to FSH (2.6%), estradiol (0.87%), and LH (0.22%).
When asked about the rationale for testing AMH prior to chemotherapy, 83.7% of clinicians emphasized its role in predicting ovarian function recovery, guiding fertility preservation counseling, and assessing ovarian stimulation response.

4. Structured psychosocial counseling should be integrated into fertility preservation (FP) programs to reduce anxiety, decisional conflict, and improve overall emotional well-being.
   Counseling should ideally be offered before, during, and after the FP process, especially in patients undergoing FP for oncologic or medical indications.
   Our survey indicate that 62% of clinicians "Always" recommend psychosocial counselling; ~38% recommend it less consistently (often/sometimes/rarely). This indicates good uptake but there is room for universal implementation.

5. Sperm cryopreservation remains the gold standard for fertility preservation in post-pubertal males due to its established efficacy, safety, and accessibility and should be offered routinely to all post-pubertal males prior to gonadotoxic therapy. Provide clear, rapid referral pathways and same-day collection options when possible. Discuss experimental options (testicular tissue cryopreservation) only in specialist centres and with appropriate consent. GnRH agonists are currently not recommended outside of clinical trials due to inconsistent efficacy data. Document counselling, storage terms, and partner/parent involvement as needed.
   84.9% adoption rate of sperm cryopreservation among Indian practitioners reflects strong alignment with ASCO, ESHRE, and ASRM guidelines, indicating a significant step toward standardized male fertility preservation in oncology practice.

6. Embryo cryopreservation should be the preferred FP method for women with partners.Oocyte cryopreservation is strongly recommended for single women or those who prefer autonomy over gametes.Ovarian tissue cryopreservation should be considered for prepubertal girls and patients who cannot delay treatment, ensuring appropriate counseling regarding its experimental nature in this age group.Ovarian transposition should be

offered before pelvic radiotherapy when feasible.National FP policies (FPSI, ICMR) should ensure equitable access and establish cryopreservation registries. In our survey , Over half the respondents (52.75%) selected "None of the above" as the false statement, indicating some uncertainty regarding standard practices.

63.4% said -preference for embryo cryopreservation, 29.8% for combined embryo and oocyte freezing, and 26.8% said that OTC was experimental in prepubertal girls, indicating growing awareness but highlighting the need for continued education and standardized national FP protocols, as urged by FPSI.

7. Embryo cryopreservation offers higher cumulative live birth rates as compared to oocyte cryopreservation. However, both methods are now considered established (non-experimental) FP options, endorsed by ESHRE (2020), ASCO (2023), and the Fertility Preservation Society of India (FPSI) .

   In this survey, 68.78% of respondents favored embryo cryopreservation as yielding better pregnancy outcomes, consistent with global and Indian guideline consensus. About 15% felt outcomes were comparable, mirroring increasing confidence in oocyte vitrification.

8. For fertility-preservation (FP) patients, especially oncology patients or other time-sensitive cases

   GnRH antagonist protocols with agonist trigger are preferred to minimize the risk of ovarian hyperstimulation syndrome (OHSS) and to facilitate rapid luteolysis before oncology treatment commencement.Random-start ovarian stimulation protocols are recommended for cancer patients requiring urgent fertility preservation (FP) to avoid delay in chemotherapy or radiotherapy initiation.

   This survey results show a clear national consensus (≈80%) among Indian fertility specialists favoring GnRH antagonist protocols with agonist trigger, consistent with international recommendations.The 10.6% reporting "both" suggests some clinicians tailor protocol per patient (reasonable where fertility timeline, ovarian reserve or center logistics vary). Clear documentation of indications for each approach and outcome tracking should be encouraged.

9. GnRH agonists should not be prescribed universally for ovarian protection in all malignancies. Use GnRHa as an adjunctive option to reduce chemotherapy-induced premature ovarian insufficiency (POI)

in premenopausal women, especially in hormone-sensitive cancers such as breast cancer, or when oocyte/embryo cryopreservation is not feasible. GnRHa should be initiated before or at the start of chemotherapy and continued through the chemotherapy course when used for ovarian protection. Cryopreservation (oocyte/embryo/tissue) remains the gold-standard fertility preservation approach; GnRHa is a complementary strategy when cryopreservation cannot be performed or as added ovarian function preservation.

Our survey revealed that 49.7 % prescribe GnRHa for hormone-sensitive cancers, 36 % for all malignancies, and 77.7 % initiate therapy before chemotherapy. This pattern aligns with global and FSPI guidance, reflecting prudent adoption in breast cancer and cautious extension to other cancers. However, one-third of clinicians using GnRHa for all malignancies indicates a need for continued education about the limited evidence base outside breast cancer and the importance of multimodal FP counselling.

10. For estrogen-receptor positive breast cancer patients, Letrozole co-administration during ovarian stimulation is preferred as it significantly reduces peak estradiol (E2) levels without compromising oocyte yield .Tamoxifen-based stimulation is an alternative but may yield slightly fewer mature oocytes than letrozole. Non-hormonal or barrier contraception is recoomended for 3-9 months before attempting pregnancy.

    In our survey, 57.1% clinicians always use Letrozole and 18.8% use it Often for ER+ breast cancer. 66.2% advise non-hormonal contraception while on tamoxifen, consistent with teratogenic risk and guideline/regulatory recommendations to avoid pregnancy during tamoxifen. 56.3% recommend 3 months time to stop tamoxifen before pregnancy.

11. Use a risk-stratified approach between cancer treatment and conception. For most cancers, a minimum interval of one year is reasonable after chemotherapy before attempting conception.A 6–12-month interval is generally acceptable for low-risk cases, while 2 years or more is advisable for patients with hormone-sensitive or high-recurrence cancers.

    Survey findings (41% respondents) reflect global consensus favoring a 12-month interval for most patients, balancing ovarian recovery, oncologic safety, and obstetric outcomes, while highlighting the need for individualized planning in high-risk exposures.

12. Adopt a multi-pronged, system-level strategy combining
    a. Mandated early FP counselling and referral pathways,
    b. Financial support schemes / subsidized FP packages,
    c. Hub-and-spoke service networks with telemedicine, and
    d. Workforce training and registry/audit — prioritized nationally and regionally through FSPI and cancer-care partnerships to make FP broadly accessible and affordable in India.

    With 70.8% respondents selecting "All of the above" as the main barrier, roll-out plans must be multi-component (awareness + financing + access + minimising delay) rather than single interventions. The existing clinician support (survey shows willingness to use FP protocols) is a strength to mobilize policy, funding and operational changes driven by FSPI and cancer networks to convert intent into access.

13. Obtain parental/legal guardian consent for fertility preservation (FP) in minors plus the child's assent when developmentally appropriate. For post-pubertal adolescents who understand the procedure, both assent and parental consent should be documented.Court approval is reserved for cases of legal dispute, unclear guardianship, or when experimental procedures are planned. A multidisciplinary team (oncologist, reproductive specialist, psychologist/ethicist) should guide decision-making following local laws and institutional ethics policies.

    The survey shows 83.8% of clinicians take parental/guardian consent before FP in minors, 13.1% take only patient consent, and 2% require court approval.

14. Under the Assisted Reproductive Technology (Regulation) Act, 2021 (India), gametes and embryos may be stored for up to 10 years, extendable under specific medical or legal circumstances . Clinics must maintain traceable documentation, ensure renewal of consent before extension, and dispose ethically upon expiry or withdrawal. For cancer and fertility preservation (FP) cases, extensions beyond 10 years may be granted with patient consent and medical board approval. Clinicians should provide clear pre-treatment counselling on storage duration, renewal requirements, and posthumous use regulations .

    The survey result showing 48.23% citing a 10-year limit aligns well with the Indian ART Bill (2021) . However, one-third of respondents (33.85%) reported no legal restriction, highlighting knowledge gaps or state-level implementation differences.

SURVEY QUESTIONNAIRE OF FERTILITY PRESERVATION PRACTICES IN INDIA

Basic Demographic Questions

1. Which city and state do you practice in?
   Ans: _____
2. Do you practice in:
   a. Corporate Sector
   b. Private IVF Centre
   c. Government Institutional Sector
   d. Other (Please specify): _____
3. What age group do you belong to?
   a. <30 years
   b. 30 -39 years
   c. 40-49 years
   d. >50 years

Survey Questions

PICO 1: What are the demographic characteristics for fertility preservation in your region?

1. How often do you encounter cases of fertility preservation in your practice?
   a. Daily
   b. Weekly
   c. Monthly
   d. Rarely
2. What is the Most Common reason for fertility preservation consultations in your institution?
   a. Cancer treatment
   b. Delayed childbearing due to career or education
   c. Genetic conditions
   d. Benign Gynecological Conditions like Endometriosis
3. When do cancer patients typically come to discuss fertility preservation options in your setup?
   a. Before treatment begins
   b. During treatment
   c. After treatment
   d. Rarely discussed
4. Which is the most common age group of patients referred to you?
   a. Pediatric (0-12 years)

b. Adolescent (12-19 years)
c. Young (20-35 years)
d. 35 years and above

5. What is the time period from cancer diagnosis to a fertility preservation consultation in your institution?
   a. 1-2 days
   b. 3-5 days
   c. More than 1 week
   d. More than 2 weeks

PICO 2: What information on fertility preservation should be provided to patients?

6. As a treating physician What information you share with patients?
   a. Impact of cancer on reproductive function and fertility
   b. Fertility preservation options and issues related to cryopreservation storage
   c. Pregnancy after gonadotoxic treatment
   d. All of the above

PICO 3: Is it relevant to do ovarian reserve testing for patients requiring fertility preservation?

7. Which biochemical test you prescribe the most to assess ovarian reserve?
   a. Serum FSH
   b. Anti-Müllerian Hormone (AMH)
   c. Serum Estradiol
   d. Serum LH
8. Why do you recommend AMH levels before chemotherapy:
   a. Predict recovery of ovarian function after chemotherapy
   b. Counsel on fertility preservation options
   c. Counsel for ovarian response to stimulation
   d. All of the above

PICO 4: What are the psychological impacts of fertility preservation, and how can counseling improve emotional well-being?

9. How often do you recommend psychosocial counseling for fertility preservation patients?
   a. Always
   b. Often
   c. Sometimes
   d. Rarely

PICO 5: What is the evidence supporting fertility preservation in males? (Sperm cryopreservation, testicular tissue cryopreservation, hormonal therapy)

10. Which fertility preservation method do you most often practice in post-pubertal males?
    a. Testicular tissue cryopreservation
    b. Sperm cryopreservation
    c. Hormonal therapy
    d. None of the above

PICO 6: What are the standard practices for fertility preservation in females? (Oocyte cryopreservation, embryo cryopreservation, ovarian tissue cryopreservation, ovarian tissue transposition)

11. Which of the following statements is False?
    a. Oocyte and embryo cryopreservation are established methods of fertility preservation
    b. Ovarian tissue cryopreservation is still experimental in prepubertal girls
    c. Ovarian tissue transposition is suggested before pelvic radiotherapy
    d. None of the above
12. What Fertility Technique would you offer a woman who has a partner?
    a. Cryopreserve oocytes
    b. Split the oocytes to attempt both embryo and oocyte cryopreservation
    c. Embryo freezing
    d. Ovarian tissue cryopreservation

PICO 7: How do pregnancy outcomes differ between oocyte cryopreservation and embryo cryopreservation for cancer patients undergoing fertility preservation?

13. Based on your experience, which technique yields better pregnancy outcomes for fertility preservation in cancer patients?
    a. Oocyte cryopreservation
    b. Embryo cryopreservation
    c. Outcomes are comparable
    d. Not enough data

PICO 8: How should ovarian stimulation be performed in cancer patients undergoing fertility preservation treatment?

14. Which ovarian stimulation protocol do you prefer for fertility preservation patients in your practice?
    a. Long agonist protocol with HCG trigger
    b. Antagonist protocol with agonist trigger

c. None of the above
d. Both of the above

PICO 9: Should GnRH agonists be prescribed universally for ovarian protection in all malignancies?

15. You prescribe GnRH agonists for ovarian protection in:
    a. Hormone-sensitive cancers like breast cancer
    b. Non-hormone sensitive cancers
    c. Pediatric cancers
    d. All types of malignancies
16. When do you recommend GnRH agonists ideally be initiated for ovarian protection?
    a. After chemotherapy begins
    b. During chemotherapy
    c. Before chemotherapy starts
    d. Anytime during cancer treatment

PICO 10: Breast Cancer Patients: Does using letrozole/Tamoxifen during ovarian stimulation in breast cancer patients reduce estrogen-related risks compared to standard ovarian stimulation protocol?

17. Do you recommend letrozole during ovarian stimulation in breast cancer patients?
    a. Always
    b. Often
    c. Sometimes
    d. Rarely
18. What contraceptive do you advise while patients are on Tamoxifen?
    a. Combined Estrogen-Progesterone
    b. Progesterone only
    c. Non-Hormonal Contraception
    d. No contraception
19. What is the minimal time interval you recommend to stop Tamoxifen before attempting pregnancy?
    a. 3 months
    b. 6 months
    c. 9 months
    d. 12 months

PICO 11: What is the effect of previous gonadotoxic treatments and underlying conditions on obstetric outcomes?

20. What is the minimal interval you recommend following chemotherapy completion before attempting pregnancy to reduce the risk of pregnancy complications?
    a. 6 months
    b. 1 year
    c. 2 years
    d. More than 2 years

PICO 12: What Strategies would Improve Accessibility and Affordability of Fertility Preservation Techniques in India?

21. What is the biggest barrier to fertility preservation in your region?
    a. Lack of awareness among patients
    b. Financial concerns
    c. Limited access to specialized centers
    d. Fear of delaying cancer treatment
    e. All of the above

PICO 13: What are the ethical considerations for obtaining consent for fertility preservation in minors?

22. What consents do you take before proceeding with fertility preservation in minors?
    a. Only patient consent
    b. Parental or guardian consent
    c. Court approval
    d. No specific legal requirement

PICO 14: What are the storage Guidelines according to new Indian ART Bill, 2021?

23. In cases of fertility preservation, how long can gametes or tissues legally be stored in most jurisdictions?
    a. 5 years
    b. 10 years
    c. 20 years
    d. No Restriction for number of years

REFERENCES

1. Oktay K, Harvey BE, Partridge AH, et al. Fertility preservation in patients with cancer: ASCO clinical practice guideline update. J Clin Oncol. 2018;36(19):1994-2001.
2. Ethics Committee of the American Society for Reproductive Medicine. Fertility preservation and reproduction in patients facing gonadotoxic therapies: an Ethics Committee opinion. Fertil Steril. 2019;112(6):1022-33.
3. Chin HB, Howards PP, Kramer MR, et al. Which female cancer patients fail to receive fertility counseling before treatment in the state of Georgia? Fertil Steril. 2016;106(7):1763-71.e1.
4. Goldfarb SB, Kamer SA, Oppong BA, et al. Fertility preservation for the young breast cancer patient. Ann Surg Oncol. 2016;23(5):1530-6.
5. Hohmann C, Borgmann-Staudt A, Rendtorff R, et al. Patient counseling on infertility risk in childhood cancer survivors: results from a national survey. J Psychosoc Oncol. 2011;29(3):274-85.
6. Mahajan N, Patil M, Kaur S, et al. The role of Indian gynecologists in oncofertility care and counseling. J Hum Reprod Sci. 2016;9(3):179-86.
7. Mahey R, Kandpal S, Gupta M, et al. Knowledge and awareness about fertility preservation among female cancer patients: a cross-sectional study. Obstet Gynecol Sci. 2020;63(4):480-9.
8. ASCO. Fertility preservation in cancer care: clinical practice communication update. J Clin Oncol. 2025;In press.
9. ESHRE Guideline Group on Female Fertility Preservation. ESHRE guideline: female fertility preservation. Hum Reprod Open. 2020;2020(4):hoaa052.
10. Fertility Preservation Society of India (FPSI). Consensus guidelines for fertility preservation in cancer patients. J Hum Reprod Sci. 2023;16(Suppl 1):S1-15.
11. FIGO Working Group. Fertility preservation statement and recommendations. Int J Gynaecol Obstet. 2023;161(S1):page range pending.
12. Letourneau JM, Ebbel EE, Katz PP, et al. Pretreatment fertility counseling and preservation improve QOL in reproductive-age women with cancer. Cancer. 2012;118(6):1710-7.
13. Ehrbar V, Urech C, Rochlitz C, et al. Fertility preservation in cancer patients: a national survey among oncologists and hematologists. Crit Rev Oncol Hematol. 2019;143:38-43.
14. Forman EJ, Kaser DJ, Missmer SA. Fertility preservation for cancer patients: practice patterns and barriers in the UK. Hum Fertil (Camb). 2020;23(2):87-94.
15. National Institute for Health and Care Excellence (NICE). Fertility problems: assessment and treatment. NICE Guideline NG156. London: NICE; 2020.
16. American College of Obstetricians and Gynecologists (ACOG). Committee Opinion No. 747: Gynecologic issues in children and adolescent cancer patients and survivors. Obstet Gynecol. 2018;132(3):e67-77.
17. Anderson RA, Cameron DA. Pretreatment AMH predicts long-term ovarian function after chemotherapy for early breast cancer. J Clin Endocrinol Metab. 2017;102(6):1947-55.
18. Dillon KE, Sammel MD, Prewitt M, et al. Pretreatment AMH levels predict amenorrhea after chemotherapy. Fertil Steril. 2019;112(5):870-7.
19. Lambertini M, Moore HCF, Leonard RCF, et al. GnRH agonists during chemotherapy to preserve ovarian function: systematic review and meta-analysis. J Clin Oncol. 2018;36(19):1981-90.

20. Kim J, Oktay K, Wallace WHB. Global survey of fertility preservation practice. J Assist Reprod Genet. 2018;35(8):1447-55.
21. Dadhwal V, Choudhary V, Perumal V, et al. Depression, anxiety, quality of life, and coping in women with infertility: a cross-sectional study from India. Int J Gynaecol Obstet. 2022;158(3):671-8.
22. Normen M, Sahaya FE, Kulkarni K, et al. Patients with cancer are distressed! Indian healthcare provider perspectives on distress screening and referrals to psycho-oncology services - a mixed methods study. Indian J Palliat Care. 2021;27(4):561-70.
23. Deshpande NA, Braun IM, Meyer FL. Impact of fertility preservation counseling and treatment on psychological outcomes among women with cancer: a systematic review. Cancer. 2015;121(22):3938-47.
24. Bastings L, Baysal Ö, Beerendonk CC, et al. Deciding about fertility preservation after specialist counseling. Hum Reprod. 2014;29(8):1721-9.
25. Dar MA, Shah SB, Ahmad SN, et al. Psychiatric morbidity and quality of life in infertile females: a cross-sectional, case-controlled hospital-based study. Middle East Curr Psychiatry. 2022;29:89.
26. Bahadur G, Ling KL, Hart R, et al. Semen quality and cryopreservation in adolescent cancer patients. Hum Reprod. 2002;17(12):3157-61.
27. Fu L, Zhou F, An Q, et al. Sperm cryopreservation for male cancer patients: more than 10 years of experience in Beijing, China. Med Sci Monit. 2019;25:3256-61.
28. van Casteren NJ, van Santbrink EJ, van Inzen W, et al. Use rate and assisted reproduction technology outcomes of cryopreserved semen from 629 cancer patients. Fertil Steril. 2008;90(6):2245-50.
29. Saito K, Suzuki K, Iwasaki A, et al. Sperm cryopreservation before cancer chemotherapy helps in the emotional battle against cancer. Cancer. 2005;104(3):521-4.
30. Eiser C, Arden-Close E, Morris K, et al. The legacy of sperm banking: how fertility monitoring and disposal of sperm are linked with views of cancer treatment. Hum Reprod. 2011;26(10):2791-8.
31. Goossens E, Jahnukainen K, Mitchell RT, et al. Fertility preservation in boys: recent developments and insights. Hum Reprod Open. 2020;2020(4):hoaa023.
32. Meistrich ML, Shetty G. Hormonal suppression for fertility preservation. Reproduction. 2008;136(6):691-702.
33. Rashedi A, de Roo SF, Ataman LM, et al. Global survey of fertility preservation practices: 2020 update. Reprod Biomed Online. 2020;40(1):133-45.
34. Bakshi R, Maan M, Tiwari K. Knowledge, attitude and practice regarding fertility preservations among specialists involved in care of cancer patients in India. Int J Appl Res. 2022;8(11):93-9.
35. Kumar N, Singh AK. Trends of male factor infertility, an important cause of infertility: a review of the literature. J Hum Reprod Sci. 2015;8(4):191-6.
36. Practice Committee of the ASRM. Mature oocyte cryopreservation: guideline. Fertil Steril. 2021;116(1):36-47.
37. ESHRE Guideline Group on Female and Male Fertility Preservation. ESHRE guideline: fertility preservation in men and women. Hum Reprod Open. 2023;2023(1):hoad004.
38. Cobo A, García-Velasco J, Domingo J, et al. Outcomes of elective and oncofertility oocyte vitrification: multicenter analysis. Hum Reprod. 2016;31(2):249-56.
39. Rodriguez-Wallberg KA, Oktay K. Fertility preservation and pregnancy in breast cancer: review. Eur J Cancer. 2019;114:76-84.
40. Donnez J, Dolmans MM. Ovarian tissue cryopreservation and transplantation: 30 years of research. Fertil Steril. 2023;119(2):239-56.

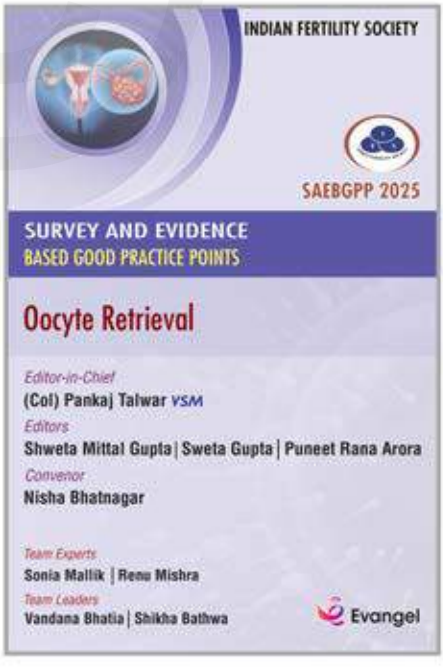
41. Pacheco F, Oktay K. Efficiency of autologous ovarian transplantation: meta-analysis. Reprod Sci. 2019;26(9):1221-30.
42. Brouillet S, Ferrieres-Hoa A, Fournier A, et al. Cryopreservation of oocytes retrieved from ovarian tissue to optimize fertility preservation in prepubertal girls and women. J Vis Exp. 2020;(164).
43. Emrich NLA, Einenkel R, Färber CM, et al. Ovarian tissue cryopreservation for fertility preservation: a two-decade single-center experience with 451 children and adolescents. Reprod Biol Endocrinol. 2025;23(1):51.
44. Terenziani M, Piva L, Meazza C, et al. Oophoropexy: a relevant role in preservation of ovarian function after pelvic irradiation. Fertil Steril. 2009;91(3):935.e15-6.
45. RCOG. Scientific Impact Paper No.73: Fertility preservation for medical reasons. London: RCOG; 2022.
46. Ní Dhonnabháin B, Elfaki N, Fraser K, et al. A comparison of fertility preservation outcomes in patients who froze oocytes, embryos, or ovarian tissue for medically indicated circumstances: a systematic review and meta-analysis. Fertil Steril. 2022;117(6):1266-76.
47. Morice P, Scambia G, Abu-Rustum NR, et al. Fertility-sparing treatment and follow-up in patients with cervical cancer, ovarian cancer, and borderline ovarian tumours: guidelines from ESGO, ESHRE, and ESGE. Lancet Oncol. 2024;25(11):e602-10.
48. Pereira N, Kelly AG, Stone LD, et al. Gonadotropin-releasing hormone agonist trigger increases the number of oocytes and embryos available for cryopreservation in cancer patients undergoing ovarian stimulation for fertility preservation. Fertil Steril. 2017;108(3):532-8.
49. Blumenfeld Z. GnRH agonists for fertility preservation: rationale and evidence. Hum Reprod Update. 2019;25(5):673-93.
50. Dolmans MM, Letourneau JM, et al. Utility of GnRH agonists for fertility preservation. Fertil Steril. 2020;114(1):45-56.
51. Moore HCF, Unger JM, Phillips KA, et al. Goserelin for ovarian protection (POEMS/SWOG S0230). N Engl J Med. 2015;372(10):923-32.
52. Massarotti C, Stigliani S, Gazzo I, et al. Long-acting gonadotropin-releasing hormone agonist trigger in fertility preservation cycles before chemotherapy. ESMO Open. 2023;8(4):101597.
53. Oktay K, Buyuk E, Libertella N, et al. Tamoxifen/letrozole stimulation for FP in breast cancer: prospective comparison. J Clin Oncol. 2005;23(19):4347-53.
54. Oktay K, Turan V, Titus S, et al. Live births after banked oocytes in breast cancer patients. J Clin Oncol. 2012;30(22):2678-83.
55. Kim J, Turan V, Oktay K. Long-term safety of letrozole for FP in breast cancer: systematic review. Cancer Treat Rev. 2016;44:59-67.
56. Goldrat O, Gervy C, Englert Y, et al. Letrozole COS does not increase recurrence in breast cancer: systematic review. Hum Reprod. 2017;32(2):393-401.
57. Revelli A, Porcu E, Levi-Setti PE, et al. Is letrozole needed for COS in ER+ breast cancer? Gynecol Endocrinol. 2013;29(11):993-6.
58. Martínez MT, Aznar E, Escrig J, et al. Tamoxifen exposure during pregnancy: systematic review. Reprod Toxicol. 2016;65:114-21.
59. Lænkholm AV, Nørgaard M, Jensen AØ, et al. Maternal exposure to tamoxifen: fetal outcomes. Eur J Cancer. 2018;95:127-35.
60. Partridge AH, Niman SM, Ruggeri M, et al. Interrupting endocrine therapy to attempt pregnancy after breast cancer. N Engl J Med. 2023;388(18):1645-56.
61. Peccatori FA, Azim HA Jr, Orecchia R, et al. Cancer, pregnancy and fertility: ESMO guidelines. Ann Oncol. 2013;24(Suppl 6):vi160-70.

62. Lambertini M, Martel S, Campbell C, et al. Pregnancy after breast cancer: meta-analysis. Breast Cancer Res Treat. 2021;190(1):1-16.
63. Anders CK, Marcom PK, Peterson BL, et al. Pregnancy after breast cancer: population-based meta-analysis. J Clin Oncol. 2016;34(26):3354-63.
64. Signorello LB, Mulvihill JJ, Green DM, et al. Pregnancy outcomes after pelvic radiotherapy. Lancet Oncol. 2010;11(8):801-8.
65. Green DM, Whitton JA, Stovall M, et al. Pregnancy outcomes after childhood cancer treatment. N Engl J Med. 2002;346(19):1411-8.
66. Lundberg FE, Johansson ALV, Ahlgren J, et al. Obstetric outcomes after cancer: nationwide cohort. J Natl Cancer Inst. 2018;110(12):1242-54.
67. Seth S, Mukherjee S, Sharma A, et al. FP counseling in young breast cancer patients: Indian cohort. South Asian J Cancer. 2021;10(4):234-8.
68. Peddie VL, Porter M, Barbour R, et al. Decision-making about FP after cancer diagnosis: qualitative study. BJOG. 2012;119(9):1049-57.
69. Rodriguez-Wallberg KA, Lundqvist M, et al. Fertility preservation outcomes in Sweden: nationwide cohort. J Natl Cancer Inst. 2019;111(5):1-10.
70. National Comprehensive Cancer Network (NCCN). Fertility Preservation. Version 1.2024. Plymouth Meeting (PA): NCCN; 2024.
71. Pawłowski P, Szymusik I, et al. Fertility preservation in children and adolescents—clinical review. J Pediatr Adolesc Gynecol. 2023;36(1):3-15.
72. Children's Oncology Group. Fertility preservation in children: clinical practice guidance. COG; 2025.
73. Mitchell RT, Goodyer CG, ESHRE recommendations: testicular tissue cryopreservation in boys. Hum Reprod Open. 2025;2025(1):hoad012.
74. Ministry of Health and Family Welfare, Government of India. The Assisted Reproductive Technology (Regulation) Act, 2021. New Delhi: GOI; 2021.
75. Indian Council of Medical Research (ICMR). National guidelines for ART clinics and banks in India. New Delhi: ICMR; 2022.
76. Seshadri S, Mahajan N, et al. Implementation gaps in the Indian ART Bill: implications for oncofertility. J Hum Reprod Sci. 2023;16(4):451-7.
77. FIGO Committee on Ethical Aspects of Human Reproduction. Ethical guidelines on gamete and embryo storage. Int J Gynaecol Obstet. 2023;162(1):112-8.
78. Fertility Preservation Society of India (FSPI). Consensus recommendations on long-term gamete and tissue storage. FSPI White Paper; 2025.
79. Human Fertilisation and Embryology Authority (HFEA). Storage limits and consent requirements. London: HFEA; 2022.
80. ESHRE. Good practice recommendations for gamete and embryo cryopreservation and storage. Hum Reprod Open. 2023;2023(2):hoad032.
81. Ethics Committee of the ASRM. Ethical considerations in gamete and embryo storage. Fertil Steril. 2024;121(3):456-63.
82. National Health and Medical Research Council (NHMRC). Ethical guidelines on assisted reproductive technology. Canberra: NHMRC; 2023.


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Use of Ultrasound in ART
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
Umesh Jindal | Bharti Jain
Team Leaders
Leena Wadhwa | Kalpana Singh
Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Unexplained Infertility
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
Sudha Prasad | Chitra T
Team Leaders
Reeta Mahey | Nitasha Gupta
Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Luteal Phase Support after ART
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
Kuldeep Jain | Kokila Desai
Team Leaders
Siddharth Nagireddy | Neeti Tiwari
Evangel


INDIAN FERTILITY SOCIETY
SAEBGPP 2025
SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS
Oocyte Retrieval
Editor-in-Chief
(Col) Pankaj Talwar VSM
Editors
Shweta Mittal Gupta | Sweta Gupta | Puneet Rana Arora
Convenor
Nisha Bhatnagar
Team Experts
Sonia Mallik | Renu Mishra
Team Leaders
Vandana Bhatia | Shikha Bathwa
Evangel

INDIAN FERTILITY SOCIETY

SURVEY AND EVIDENCE
BASED GOOD PRACTICE POINTS

Fertility Preservation Practices in India

Prof (Col) Pankaj Talwar *VSM*, is a renowned Fertility Specialist and Director, Talwar Fertility and Men's Clinic, Gurugram, Haryana, India. Recipient of the Vishisht Seva Medal from the President of India, he has performed over 17,000 IVF cycles with a success rate exceeding 60%. A PhD in Embryology and pioneer of ovarian cortex freezing in India, he has established 29 ART units globally and trained over 2,500 gynecologists across 34 countries.

He serves as Academic Director, Clinical ART Program, SEART, Gurugram University; Dean, Department of Clinical Embryology, Shridhar University; Director, i-Ceat Academy of ART; Head, GE Healthcare 3D/4D Ultrasound Training School; and Advisor, DocInfra Solutions.

Author of 10 books and over 100 scientific publications, he is currently the President of the Indian Fertility Society (IFS).

Prof (Col) Pankaj Talwar *VSM* MD PhD
President IFS

IFS SECRETARIAT

FLAT NO. 302, 3RD FLOOR, KAILASH BUILDING 26. KASTURBA GANDHI MARG, C.P. NEW DELHI-110001

+91 9899308083 (MS FARAHA KHAN) +91 11 40018184

www.indianfertilitysociety.org indianfertilitysocietydelhi@gmail.com

Evangel
www.evangelpublications.com

ISBN: 978-81-990898-1-5