AGI26

55TH GLOBAL CONGRESS ON MIGS

BOSTON, MASSACHUSETTS
NOVEMBER 13-16, 2026

Syllabus

Surgical Tutorial 457

Fertility Preservation in Pelvic Malignancy: Surgical Strategies to Preserve Reproductive Potential

HONORARY CHAIR
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Nash S. Moawad, MD

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Surgical Tutorial 457

Fertility Preservation in Pelvic Malignancy: Surgical Strategies to Preserve Reproductive Potential

Chair: Anis Feki

Faculty: Ursula Catena, Anis Feki, Michael Mueller, Reitan Ribeiro

Course Description

As cancer survival improves in young women, fertility preservation has become an essential component of gynecologic oncology care. This surgical tutorial will provide a practical and evidence-based overview of contemporary fertility-preserving strategies in patients undergoing treatment for gynecologic malignancies or pelvic irradiation. International experts will discuss patient selection, surgical techniques, multidisciplinary coordination, oncologic safety, and reproductive outcomes. Topics will include ovarian tissue cryopreservation and oocyte preservation prior to chemoradiation, conservative hysteroscopic management of endometrial hyperplasia and early endometrial cancer, uterine transposition to preserve reproductive potential before pelvic radiation, and ovarian transposition techniques to maintain ovarian hormonal and reproductive function. Through expert discussion and surgical insights, attendees will gain a comprehensive understanding of modern fertility-preserving approaches in complex oncologic settings.

Learning Objectives: *At the end of this course, the participant will be able to:* 1) Evaluate current fertility-preserving surgical strategies in patients with pelvic malignancy or requiring pelvic irradiation; 2) Identify the indications, techniques and limitations of ovarian and uterine transposition; and 3) Evaluate multidisciplinary decision-making, oncologic safety and reproductive outcomes in complex fertility preservation cases.

Course Outline

3:30 pm	Welcome, Introduction and Course Overview	A. Feki
3:35 pm	Introduction: Why Fertility Preservation Matters in Gynecologic Oncology	A. Feki
3:45 pm	Ovarian Tissue Cryopreservation and Oocyte Preservation Prior to Chemotherapy and Radiation	A. Feki
3:55 pm	Conservative Hysteroscopic Management of Endometrial Hyperplasia and Early Endometrial Cancer	U. Catena
4:05 pm	Uterine Transposition: Surgical Technique, Indications, and Reproductive Outcomes	R. Ribeiro
4:15 pm	Ovarian Transposition Prior to Pelvic Irradiation: Surgical Pearls and Long-Term Outcomes	M. Mueller
4:25 pm	Discussion Questions & Answers	All faculty
4:30 pm	Adjourn	

ADA Statement: In accordance with the Americans with Disabilities Act (ADA), please contact CMEsupport@aagl.org should you require any special assistance.

Disclosure of Relevant Financial Relationships

As an ACCME-accredited provider, AAGL is responsible for ensuring that accredited education is fair, balanced, free of commercial bias, and supports safe, effective patient care. AAGL maintains control over all aspects of educational planning, content, faculty selection, delivery, and evaluation.

All individuals in a position to control educational content are required to disclose financial relationships with ACCME-defined ineligible companies within the past 24 months. AAGL identifies and mitigates all relevant financial relationships before individuals assume their respective roles. Educational content is also subject to independent peer review by individuals without relevant financial relationships.

Disclosure information and acknowledgment of any commercial support are provided to learners before the activity to promote transparency and maintain the independence and integrity of the education.

Asterisk (*) denotes no financial relationships with ACCME-defined ineligible companies to disclose.

PLANNER DISCLOSURES

The following members of AAGL have been involved in the educational planning and/or review of this course (listed in alphabetical order by last name).

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Jamal Mourad, DO – Proctor: Intuitive Surgical
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Nash Moawad, MD, MS, Chairman – Consultant (ended 12/2024): Medtronic, Womed, Integra Life Sciences
Amani Harris, MD*
Ted Lee, MD – Advisory/Consultant: Johnson & Johnson, Regeneron Pharmaceuticals
Nucelio Lemos, MD, PhD – Speakers Bureau: Pfizer, Inc., Medtronic; Advisory Board: Knight Therapeutics, Vecfer Pharma
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Linda Michels, Executive Director, AAGL*

COURSE CHAIR DISCLOSURE

Anis Feki, MD, PhD – Honorarium (Conference): IBSA, Intuitive Surgical

FACULTY DISCLOSURES

The following faculty have agreed to support their presentations and clinical recommendations with the best available evidence from the medical literature (in alphabetical order by last name).

Ursula Catena, MD, PhD*
Anis Feki, MD, PhD – Honorarium (Conference): IBSA, Intuitive Surgical
Michael Mueller, MD – Consultant: Distalmotion, Gedeon Richter Pharmaceuticals, Karl Storz, KLS Martin, Ziwig; Speakers Bureau: Distalmotion, Gedeon Richter Pharmaceuticals, Karl Storz, KLS Martin, Ziwig
Reitan Ribeiro, MD – Ownership Interest: FLK Institute, Scolla

MITIGATION OF RELEVANT FINANCIAL RELATIONSHIPS

All relevant financial relationships have been mitigated.

Drs. Lee, Lemos, Mikhail, and Chaudhari's planning decisions, as part of the Scientific Program Committee (SPC), were peer reviewed by other planners on the SPC who had disclosed no financial relationships with ineligible companies, and found to be fair, balanced, and free of commercial bias. Dr. Moawad's financial relationships ended 12/2024, thus mitigating them. For most of his AAGL Professional Education Committee service, Dr. Mourad had no financial relationships to disclose. He recently disclosed a new relationship as a Proctor for Intuitive Surgical. Since then, he has not participated in activities involving control or influence over accredited educational content; therefore, no additional mitigation was necessary.

Dr. Feki's role as Course Chair was limited primarily to course oversight and moderation, rather than development of educational content. Any planning decisions or content under his influence were subject to independent peer review by individuals without relevant financial relationships.

The presentation content for course faculty, Drs. Feki and Mueller, has been peer reviewed and found to be fair, balanced, and free from commercial bias.

Dr. Ribeiro disclosed ownership interests in Scolla and FLK Institute. Both organizations primarily provide surgical education and professional training and do not meet ACCME's definition of an ineligible company. Therefore, these relationships are not considered relevant financial relationships requiring mitigation under ACCME Standard 3. Nevertheless, Dr. Ribeiro's presentation underwent independent peer review and was determined to be fair, balanced, and free of commercial bias.

Introduction: Why Fertility Preservation Matters in Gynecologic Oncology

Prof. Dr med Anis Feki, MD, PhD · HFR Fribourg – Switzerland

Session 457 · Fertility Preservation in Pelvic Malignancy · Opening

NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

1

Disclosure

- I have no financial relationships to disclose.
- ESHRE-Chair

2

Objectives

- **Review** current fertility-preserving surgical strategies in patients with pelvic malignancy or requiring pelvic irradiation. *(Comprehension)*
- **Distinguish** the indications, techniques, and limitations of ovarian and uterine transposition. *(Analysis)*
- **Discuss** multidisciplinary decision-making, oncologic safety, and reproductive outcomes in complex fertility-preservation cases. *(Evaluation)*

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Define	Describe	Apply	Analyze	Arrange	Appraise
List	Explain	Demonstrate	Compare	Compose	Critique
Recall	Summarize	Illustrate	Contrast	Design	Justify
State	Discuss	Use	Examine	Develop	Evaluate
Identify	Interpret	Operate	Question	Formulate	Recommend
Label	Translate	Schedule	Test	Construct	Defend

BLOOM'S TAXONOMY VERB LIST · COGNITIVE DOMAIN

3

A Question Before a Diagnosis

She is 28.

She has just been told she has cancer.

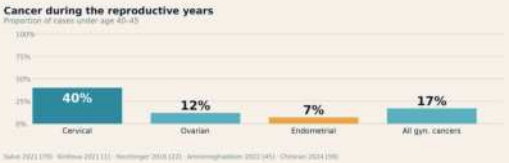
Her first question is rarely only "Will I survive?"

It is often: "Will I still be able to have a child?"

4

Cancer in the Reproductive Years

- **15–20%** of all gynecologic neoplasms occur in women under 40[74]
- **Cervical: 40% · Ovarian: 12% · Endometrial: 5–8%** in reproductive-age women[1,22,45,59]
- **European first birth:** 29.7 yr (Italy/Spain: 31.6 yr, 2021)[2,59]



5

Standard Treatments Are Inherently Gonadotoxic

- **Radical hysterectomy & BSO:** uterus removed; ovarian reserve eliminated[3,4]
- **Pelvic radiation:** dose-dependent endometrial and ovarian damage[4,22]
- **Alkylating chemotherapy:** follicle atresia that persists even when menstruation resumes[4,68]

Treatment gonadotoxicity spectrum

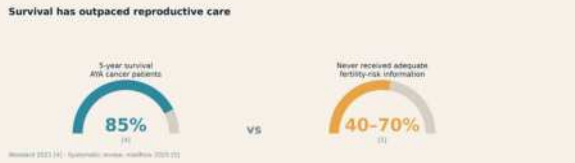
Treatment	Mechanism	Risk level
Radical hysterectomy	Uterus removed	Complete
Bilateral oophorectomy	Gamete reservoir eliminated	Complete
Pelvic radiation	Dose-dependent organ damage	Severe
Alkylating chemotherapy	Follicle atresia persists	High
Non-alkylating chemo	Variable, age-dependent	Moderate

Menstrual recovery after chemotherapy does NOT confirm preserved fertility [4]

6

Survival Has Outpaced Reproductive Care

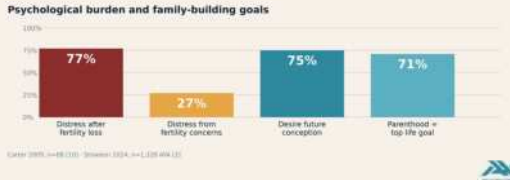
- **85%** 5-year survival for AYA cancer patients[4]
- **40–70%** never received adequate fertility-risk information before treatment[5]
- **77%** of survivors with fertility loss report clinically significant psychological distress[10]



7

What Patients Tell Us

- **75%** of AYA cancer patients desire future conception[2]
- **71%** of those who lost fertility still consider parenthood their most important life goal[2]
- **77.6%** reported that the possibility of preserving fertility improved their coping with treatment[48]



8

Guidance Has Caught Up — Has Practice?

- **ASCO's 2025 update:** 26 recommendations, built on 166 studies[3]
- **Counsel at diagnosis** — and again in survivorship[3]
- **Refer early;** in vitro maturation now recognized as an emerging option[3]

9

Fertility Preservation Reduces Regret

California Cancer Registry — n=918 women, validated scales (DRS, WHOQOL, SWL)[11]

- **Even fertility-specialist consultation alone** reduced decision regret significantly (DRS 8.4 vs 11.0, p<0.0001)[11]
- **Counselling β=−1.24 (p=0.02) · FSS β=−1.26 (p=0.03):** both reduce regret[12]



10

Four Techniques, One Continuum

- **Preserve the oocyte and ovarian reserve** — before treatment even begins
- **Preserve the uterus** — in early endometrial disease · Dr. Catena
- **Preserve the uterus** — from the radiation field itself · Dr. Ribeiro
- **Preserve ovarian function** — from the radiation field itself · Dr. Mueller

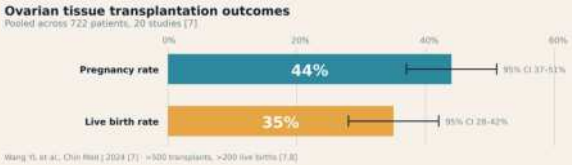
11

What This Session Covers

Pooled outcomes after ovarian tissue transplantation — 722 patients, 20 studies[7]

Over 500 women transplanted worldwide — more than 200 live births[7,8]

Only option available before puberty, or when treatment cannot wait.

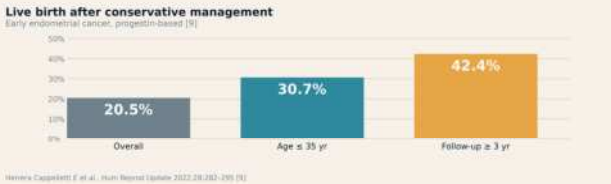


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Freezing Time: Numbers Already Show

Live birth rate by subgroup — progestin-based conservative management[9]

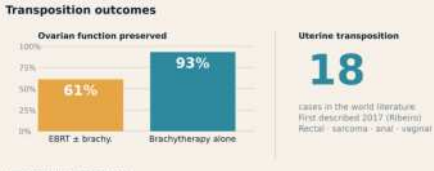
Patient selection and follow-up duration are the strongest determinants of outcome.



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Keeping the Uterus: A Narrow Window

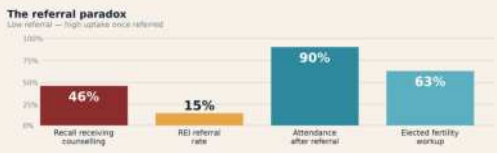
- **Ovarian transposition:** 61–93% ovarian function preserved (EBRT: 61%; brachytherapy alone: 93%)[10]
- **Uterine transposition:** first described 2017 — 18 cases worldwide[11]



14

The Training Gap Is Structural

- **61% of GYN ONC fellows** rate their FP training as fair or poor — vs 11% of REI fellows[14]
- **Only 4%** of GYN ONC fellows counsel 'all the time' — vs 43% of REI fellows[16]
- **90.5% attend when referred · 63% elect workup:** bottleneck is referral, not patient interest[14]



15

From Exception to Standard

The next decade's goal is not a heroic case report.

It is a standard pathway, offered to every patient, everywhere.

Success is measured not only in survival —
but in the family later chosen.

Four techniques. One shared purpose. Let's begin.

16

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SESSION 457 - PART 2

Ovarian Tissue Cryopreservation and Oocyte Preservation Prior to Chemotherapy and Radiation

Anis Feki, MD, PhD · HFR Fribourg – Cantonal Hospital & University of Fribourg, Switzerland

NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

1

Disclosure

- **[TO COMPLETE BEFORE UPLOAD]** Insert exactly the disclosure electronically submitted and attested to AAGL.
- **If none:** *"I have no financial relationships to disclose."*
- **If any:** Consultant: … Speakers Bureau: … (company names as attested)

2

Objectives

- Select oocyte, embryo or ovarian tissue cryopreservation according to time, age and ovarian reserve
- Interpret live-birth rates after ovarian tissue transplantation
- Evaluate the oncological safety of re-implantation in pelvic malignancy
- Design a preservation plan before chemotherapy or pelvic radiation

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Define	Describe	Apply	Analyze	Arrange	Appraise
List	Explain	Demonstrate	Compare	Compose	Critique
Recall	Summarize	Illustrate	Contrast	Design	Justify
State	Discuss	Use	Examine	Develop	Evaluate
Identify	Interpret	Operate	Question	Formulate	Recommend
Label	Translate	Schedule	Test	Construct	Defend

BLOOM'S TAXONOMY VERB LIST · COGNITIVE DOMAIN

3

Three clocks decide the technique

Time before treatment	Age and ovarian reserve	Treatment plan
• ≈2 weeks available → ovarian stimulation • Urgent → random start, or OTC (no delay)	• OTC efficiency questionable >36 y • Avoid OTC if AMH <0.5 ng/ml and AFC <5	• Moderate/high gonadotoxic risk → offer FP • Pelvic RT → add transposition at the same surgery

	Oocytes	Embryos	Ovarian tissue
ESHRE 2020	STRONG ⊕⊕ — established	STRONG ⊕⊕ — established	STRONG ⊕⊕ — if oocytes/embryos not feasible or by preference
Needs	Stimulation ≈2 weeks	Stimulation + partner	Laparoscopy; no stimulation; restores hormones

ESHRE 2020 recs. 22–25, 29, 34, 37–38, 43.

4

Ovarian stimulation in the oncological emergency

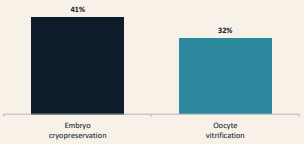
Rec. 22	GnRH antagonist protocol — short, flexible, agonist trigger reduces OHSS	STRONG ⊕
Rec. 24	Random-start stimulation in urgent cycles	WEAK ⊕⊖
Rec. 25	Double stimulation can be considered in urgent cycles	WEAK ⊕⊖
Rec. 26	Add letrozole in estrogen-sensitive disease	GPP
Rec. 41	Stimulation can start immediately after OTC	WEAK ⊕
Rec. 42	OTC on the day of oocyte pick-up — research only	RESEARCH ONLY

ESHRE Female Fertility Preservation Guideline 2020, section D.

5

Oocytes and embryos: what patients get back

Live birth rate per returning woman (meta-analysis)



95% CI: embryo 34–48% (n=175) · oocyte 26–39% (n=177)

Cancer vs elective freezing (Valencia)

- **1,073** women with cancer vitrified oocytes; **80** returned
- Cumulative live birth: **41.1%** oncological vs **68.8%** elective
- Lower CLBR from age 36 onward
- Counsel with **centre-specific** rates; cancer may lower success (GPP)

Fraison E et al. Hum Reprod 2023;38:489–502; Cobo A et al. Hum Reprod 2018;33:2222–2231 (via ESHRE 2020); ESHRE 2020 recs. 31, 36.

6

Ovarian tissue cryopreservation: who and how

Offer

STRONG ⊕⊕

- Moderate/high gonadotoxic risk when oocytes/embryos not feasible, or by preference
- After low-gonadotoxic or prior chemotherapy
- Combined with ovarian transposition before pelvic RT
- **Slow freezing = standard**; vitrification in research only

Think twice

WEAK ⊕

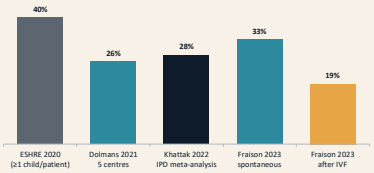
- Age >36 y: efficiency questionable
- Low reserve: AMH <0.5 ng/ml and AFC <5
- Ovary involved by the malignancy: **no transplantation**
- Ovarian / adnexal tumour: OTC only if no alternative

ESHRE 2020 recs. 37, 38, 40, 43, 46–47, 52 and Table 10.

7

Live births after ovarian tissue transplantation

Live birth rate per transplanted woman



Source	Live birth (95% CI)
ESHRE 2020 (Gellert; Pacheco)	≈40%
Dolmans 2021 (n=285)	26% · 95 babies
Khattak 2022, frozen (n=568)	28% (24–34)
Fraison 2023, spontaneous	33% (25–42)
Fraison 2023, IVF	19% (15–24)

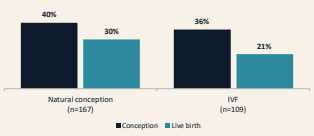
≈1 in 4 to 1 in 3 transplanted women takes home a baby — mostly after natural conception.

ESHRE 2020 (D6); Dolmans MM et al. Fertil Steril 2021;115:1102–1115; Khattak H et al. Hum Reprod Update 2022;28:400–416; Fraison E et al. Hum Reprod 2023;38:489–502.

8

Five European centres, 285 women

88.7%	38%	26%	95
resumed menses (181/204) after a mean 4.5 months	conceived (106 women)	delivered (75 women)	healthy newborns



Reading the data

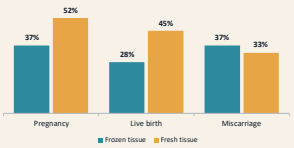
- Endocrine recovery is almost universal
- Natural conception outperformed IVF
- Mean age at freezing 29.3 y; at grafting 34.6 y

Dolmans MM, von Wolff M, Poirot C et al. Fertil Steril 2021;115:1102–1115.

9

Endocrine restoration and graft longevity

Khattak 2022 · IPD meta-analysis (87 studies, 735 women)



Hormone	Before OTT	After OTT
Oestradiol (pmol/l)	101.6	522.4
FSH (IU/l)	68.4	14.1

Durability

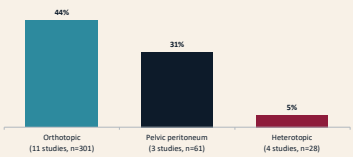
- Median graft function **2.5 years** (0.7–5)
- ESHRE 2020: mean 24.9 months, range 4–144
- Up to 3 live births in one woman
- *Fresh-tissue CIs are wide (LBR 23–86%)*

Khattak H et al. Hum Reprod Update 2022;28:400–416 (frozen LBR 28%, 95% CI 24–34); ESHRE 2020 D6.

10

Where to graft: orthotopic wins

Live birth rate by grafting site (meta-analysis, 18 studies, 560 women)



STRONG ⊕⊕ Rec. 49

Orthotopic OTT recommended to restore fertility

- 95% CI: orthotopic 25–69%; heterotopic 0–21%
- >60% of pregnancies after orthotopic grafting were natural
- One-step laparoscopy; thawing and surgery in the same centre (STRONG ⊕⊕)

Tian L et al. Reprod Biol Endocrinol 2025;24:6; ESHRE 2020 recs. 48–49 (Gellert 2018).

11

Age at freezing is the strongest predictor

26.4 vs 29.6 y	0	30%
age at OTC: women who conceived vs did not	pregnancies when OTC was done after 36 (Valencia cohort)	of pregnancies from vitrified oocytes were in women >36 at FP

- **Under 36:** similar restoration of fertility with OTC and oocyte vitrification
- **Over 36:** oocyte vitrification is superior — OTC probably not offered (WEAK ⊕)

MY POSITION In girls and young women facing urgent pelvic chemoradiation, OTC is often the only option — and it restores hormones, not just fertility.

Gellert SE et al. J Assist Reprod Genet 2018; Diaz-Garcia C et al. Fertil Steril 2018;109:478–485 (both via ESHRE 2020); ESHRE rec. 38.

12

Re-implantation safety in pelvic malignancy

Tumour	ESHRE 2020 position on OTT	Grade
Cervical cancer	Appears safe with fertility-sparing strategy; ovarian involvement rare (more in adenocarcinoma)	Table 10
Endometrial cancer	OTT and pregnancy can be considered after complete remission (hormone-sensitive tumour)	STRONG ⊕⊕
Ovarian / adnexal tumour	OTT probably not recommended — high risk of tissue involvement	Table 10
Ovary involved by malignancy	OTT not recommended	STRONG ⊕
All cancer survivors	Screen cortex (and medulla) for residual neoplastic cells before OTT	STRONG ⊕
BRCA carriers	OTT possible if eggs/embryos not feasible; remove graft after pregnancy	WEAK ⊕

ESHRE 2020 recs. 50–53, 56 and Table 10. Decision to transplant requires a multidisciplinary approach (GPP).

13

Before pelvic radiation: combine, do not choose

One laparoscopy	Same procedure	If time allows	Later
OTC (unilateral oophorectomy or cortex biopsies)	Transpose the remaining ovary out of the field	Stimulate and vitrify oocytes or embryos	Orthotopic re-graft once remission and uterus assessed

Why combine?

- Transposition alone: 0–69.2% preserved function when chemotherapy is added
- OTC + transposition: feasible, no added risk (GPP)

The uterus sets the ceiling

- Irradiated uterus → high-risk pregnancy (STRONG ⊕)
- Uterine transposition: emerging — see Dr Ribeiro

ESHRE 2020 recs. 43, 65, 71; Hoekman EJ et al. Eur J Surg Oncol 2019;45:1328–1340.

14

Decision algorithm before chemotherapy or radiation

Moderate/high gonadotoxic risk · MDT and counseling · ovary free of disease?

≥2 weeks, any age	Urgent, ≤36 y, AMH ≥0.5	>36 y or low reserve	Ovary involved
• Oocyte (± embryo) vitrification • + transposition if RT	• OTC (slow freezing) • ± immediate stimulation • + transposition if RT	• Oocytes if time allows • OTC probably not offered	• No OTT • Consider oocytes / IVM • expert centre

MY POSITION Offer the combination that maximises options — oocytes, tissue and transposition are complementary, not competing.

Synthesis of ESHRE 2020 recs. 24, 29, 37–38, 41, 43, 52, 58, 65. MY POSITION = expert opinion.

15

Take-home messages

1. Oocytes and embryos are established: live birth ≈32% and ≈41% per returning cancer patient.
2. Ovarian tissue transplantation now yields live births in ≈1 in 4 to 1 in 3 grafted women.
3. Age at freezing drives success: favour OTC ≤36 y, oocytes beyond.
4. Graft orthotopically; never re-implant tissue from an involved ovary.
5. Before pelvic radiation, combine OTC, transposition and oocytes in one plan.

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Acknowledgments

- **Session 457 co-faculty:**
- Ursula Catena, MD — Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy
- Reitan Ribeiro, MD — McGill University, Montreal, Canada
- Michael D. Mueller, MD — Inselspital, Bern University Hospital, Switzerland
- Reproductive Medicine team, HFR Fribourg – Cantonal Hospital, Switzerland
- ESHRE Female Fertility Preservation Guideline Development Group

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AGI-26
NOVEMBER 13-16 | BOSTON

Conservative Hysteroscopic Management of Endometrial Hyperplasia and Early Endometrial Cancer

Ursula Catena, MD PhD
Fondazione Policlinico Universitario A. Gemelli, IRCCS, Rome, Italy

1

Early-stage endometrial cancer (EC) Atypical endometrial hyperplasia (AEH)

increasingly diagnosed in **reproductive age:**
- rising **obesity** rates
- **delayed childbearing**

25% are diagnosed in **premenopausal women**
5–7% are younger than **40 years**
the majority are nulliparous

STANDARD TREATMENT:
RECTOMY + BILATERAL SALPINGO-OOPHORECTOMY + ST.

ESGO/ESHRE/ESGE Guidelines for the fertility-sparing treatment of patients with endometrial carcinoma[1,2]

2023

- support **fertility-sparing treatment (FST)**
- in **carefully selected patients**
- **no myometrial invasion or extrauterine disease**

Alexandros Rodolakis, Giovanni Scambia, François Planchamp, Maribel Acien, Attilio Di Spiezio Sardo, Martin Farrugia, Michael Grynberg, Maja Pakiz, Kitty Pavlakis, Nathalie Vermeulen, Gianfranco Zannoni, Ignacio Zapardiel, and Kirsten Louise Tryde Macklon

3

DIAGNOSIS

Establishing a reliable histopathology

- Hysteroscopic-guided endometrial biopsy is preferred over blind biopsy for confirming diagnosis of endometrial carcinoma (Level of evidence III, Grade A).

ESGO/ESHRE/ESGE Guidelines for the fertility-sparing treatment of patients with endometrial carcinoma[1,2]

4

Structured Reporting of Diagnostic Hysteroscopy Findings in Women with Reproductive Disorders: An ESGE–ESHRE–IFFS International Consensus

International Hysteroscopy Working Group of ESGE, ESHRE and IFFS: Ursula Catena, Grigoris Grimbizis, Alessandro Arena, Rudi Campo, Carlo De Angelis, Attilio Di Spiezio Sardo, Ana Felix, Hervé Fernandez, Marcos Horton, Edgar Mocanu, Luis Alonso Pacheco, G. Fedon, Attila Vereczkey, Sokratis Sarantis, Amerigo Vitagliano, Maribel Acién, Luca Gianaroli

SEE
Assess cavity geometry directly.

DESCRIBE
Use structured, reproducible hysteroscopic language.

STANDARDISE
Make data, outcomes and therapeutic indications comparable.

FACTS, VIEWS & VISION human reproduction

5

Targeted Endometrial Biopsy During Office Hysteroscopy

5 mm hysteroscope + 5 Fr grasping forceps

Instruments

5 mm Hysteroscope

5 Fr Grasping Forceps

Office Hysteroscopy Approach

5 mm hysteroscope + 5 Fr forceps
= targeted biopsy without anesthesia

Key Advantages
- ✓ Office procedure
- ✓ Patient awake - no anesthesia
- ✓ Immediate targeted sampling
- ✓ Short waiting time
- ✓ No pre-operative testing required

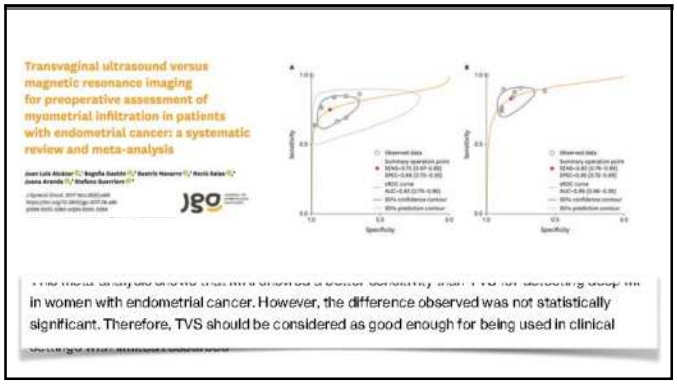
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Effect of hysteroscopy on the peritoneal dissemination of endometrial cancer cells: a meta-analysis

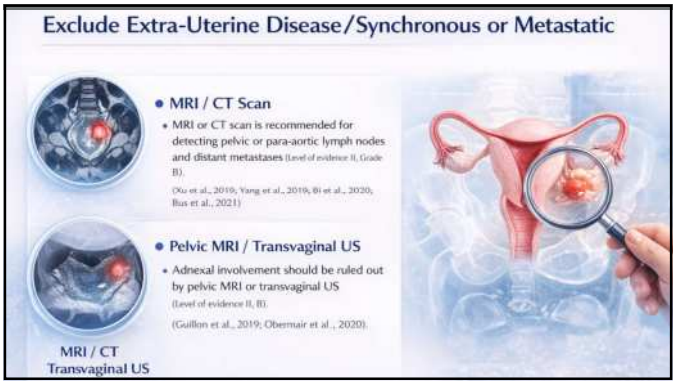
Yu-Nan Chang, M.M., Ying Zhang, M.D., Yong-Jun Wang, M.D., Li-Ping Wang, M.M., and Hui Duan, M.D.

There is **no evidence** to support an **association** between **preoperative hysteroscopic** examination and a **worse prognosis**.

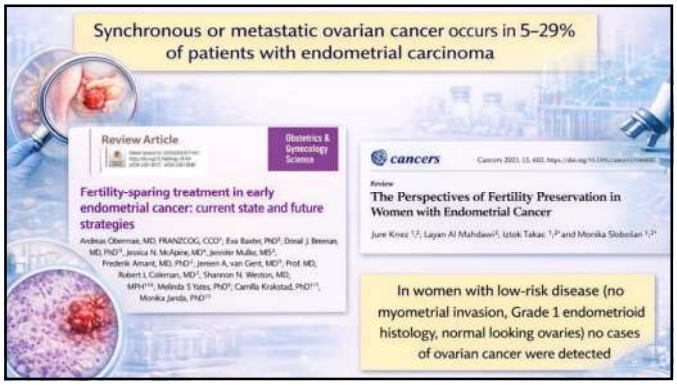
There is no reason to avoid diagnostic hysteroscopy before surgery in patients with endometrial cancer, **especially in early stages.**


Transvaginal ultrasound versus magnetic resonance imaging for preoperative assessment of myometrial infiltration in patients with endometrial cancer: a systematic review and meta-analysis
in women with endometrial cancer. However, the difference observed was not statistically significant. Therefore, TVS should be considered as good enough for being used in clinical

7


Exclude Extra-Uterine Disease/Synchronous or Metastatic
MRI / CT Scan
MRI or CT scan is recommended for detecting pelvic or para-aortic lymph nodes and distant metastases (Level of evidence II, Grade B).
(Xu et al., 2019; Yang et al., 2019; Bi et al., 2020; Bus et al., 2021)
Pelvic MRI / Transvaginal US
Adnexal involvement should be ruled out by pelvic MRI or transvaginal US
(Level of evidence II, B).
(Guillon et al., 2019; Obermair et al., 2020).
MRI / CT
Transvaginal US

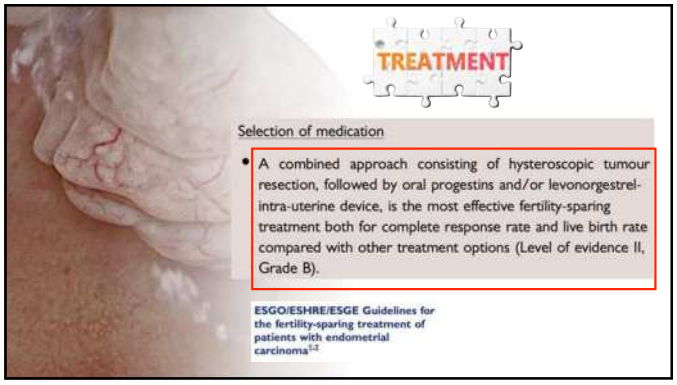
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Synchronous or metastatic ovarian cancer occurs in 5–29% of patients with endometrial carcinoma
Review Article
Obstetrics & Gynecology Science
Fertility-sparing treatment in early endometrial cancer: current state and future strategies
cancers
The Perspectives of Fertility Preservation in Women with Endometrial Cancer
In women with low-risk disease (no myometrial invasion, Grade 1 endometrioid histology, normal looking ovaries) no cases of ovarian cancer were detected

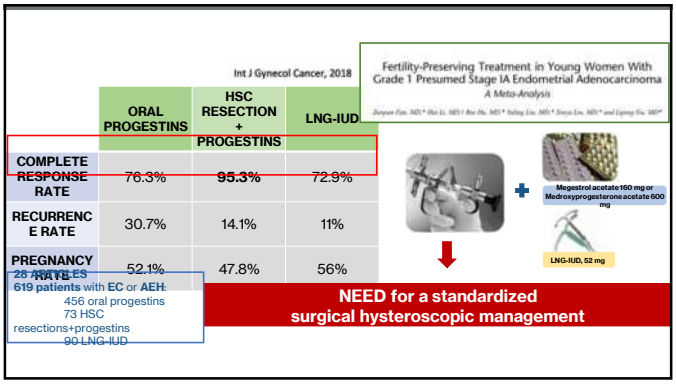
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COUNSELING
• FST is not considered the standard of care for endometrial cancer, but TH with BSO and lymph nodes assessment would be recommended.
• Women undergoing FST should be encouraged to actively aim to conceive as soon as the CR is achieved
• In any case, radical surgery is mandatory after completing childbearing, or in case of non-response to treatment.

10


TREATMENT
Selection of medication
• A combined approach consisting of hysteroscopic tumour resection, followed by oral progestins and/or levonorgestrel-intra-uterine device, is the most effective fertility-sparing treatment both for complete response rate and live birth rate compared with other treatment options (Level of evidence II, Grade B).
ESGO/ESHRE/ESGE Guidelines for the fertility-sparing treatment of patients with endometrial carcinoma

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Int J Gynecol Cancer, 2018
Fertility-Preserving Treatment in Young Women With Grade 1 Presumed Stage IA Endometrial Adenocarcinoma
A Meta-Analysis
ORAL PROGESTINS
HSC RESECTION + PROGESTINS
LNG-IUD
COMPLETE RESPONSE RATE
76.3%
95.3%
72.9%
RECURRENCE RATE
30.7%
14.1%
11%
PREGNANCY RATE
52.1%
47.8%
56%
28 STUDIES
619 patients with EC or AEH:
456 oral progestins
73 HSC resections+progestins
90 LNG-IUD
Megestrol acetate 160 mg or Medroxyprogesterone acetate 600 mg
LNG-IUD, 52 mg
NEED for a standardized surgical hysteroscopic management

12

Fertility-Preserving Treatment in Young Women With Grade 1 Presumed Stage IA Endometrial Adenocarcinoma

A Meta-Analysis

Zunpan Fan, MD,* Hui Li, MD,† Rui Hu, MD,* Yuling Liu, MD,* Ninyn Liu, MD,* and Liping Gu, MD* 2018

- 28 ARTICLES
- 619 patients with EEC or ACH:
  - Progestins: 456 oral progestins; 73 HSC resection + progestins; 90 LNG-IUD

	ORAL PROGESTINS	HSC RESECTION + PROGESTINS	LNG-IUD
COMPLETE RESPONSE RATE	76.3%	95.3%	72.9%
RECURRENCE RATE	30.7%	14.1%	11%
PREGNANCY RATE	52.1%	47.8%	56%

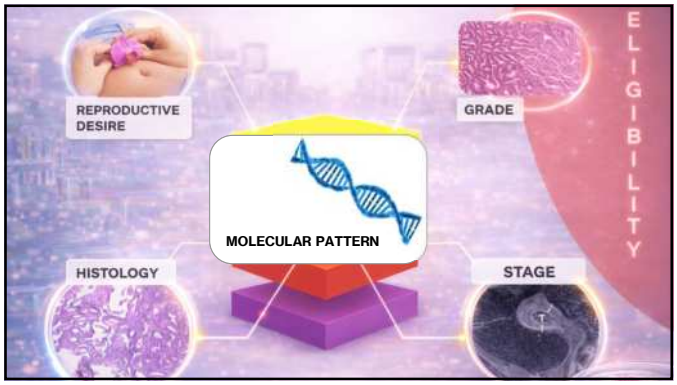
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Evaluation of decision regret and reproductive concerns following fertility-sparing treatment in adolescents and young adults with atypical endometrial hyperplasia or endometrioid endometrial cancer—a single-center cross-sectional study

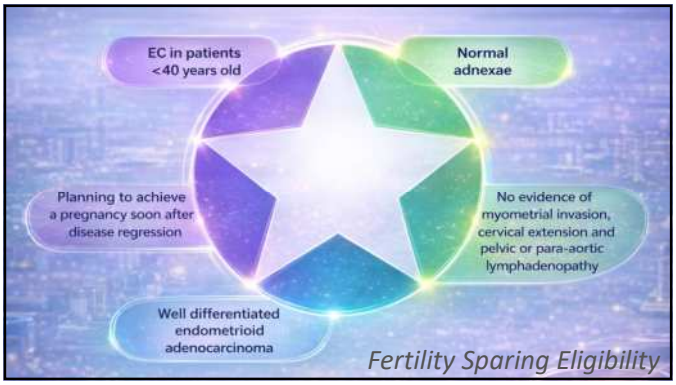
2025

Variable		Histological diagnosis: All (N = 32)		EAH (N = 16)		EEC G1 (N = 9)		EEC G2 (N = 7)		p-value
		N	%	N	%	N	%	N	%	
Age at diagnosis, years - median (IQR; range)*		34	(30-36; 21-39)	34	(31-36; 23-39)	34	(30-36; 26-39)	35	(25-36; 21-37)	801
BMI, kg/m2 - median (IQR)*		23.2	(20.3-27.7)	21.9	(20.9-25.1)	25.4	(21.5-28.0)	26.2	(20.4-33.3)	588
Oncological outcomes										
Complete response										711
	No	1	3.0	1	6.3	0	0.0	0	0.0	
	Yes	30	93.8	14	87.5	9	100.0	7	100.0	
	Unknown	1	3.1	1	6.3	0	0.0	0	0.0	
Time to complete response, months - median (range)*		6	(6-16)	6	(6-14)	6	(6-16)	6	(6-9)	532
Duration of oncological follow-up, months - median (range)*		29.0	(11-44)	19.0	(11-44)	33.0	(26-42)	34.0	(19-44)	**< 0.001**
Relapse/progression										770
	No	25	78.1	13	81.3	7	77.8	5	71.4	
	No, persistent disease	1	3.1	1	6.3	0	0.0	0	0.0	
Total number of pregnancies achieved[a]		12	60.0	5	62.5	5	83.3	2	33.3	384

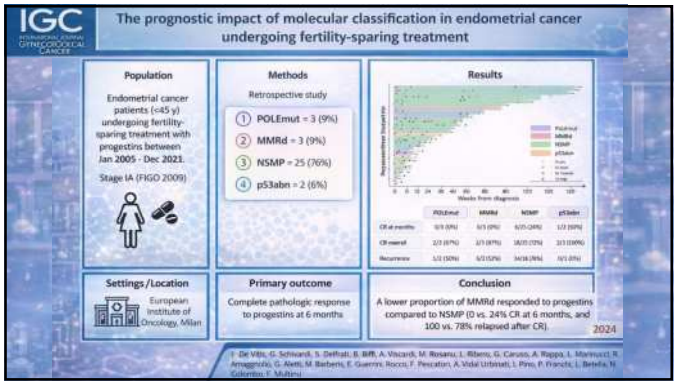
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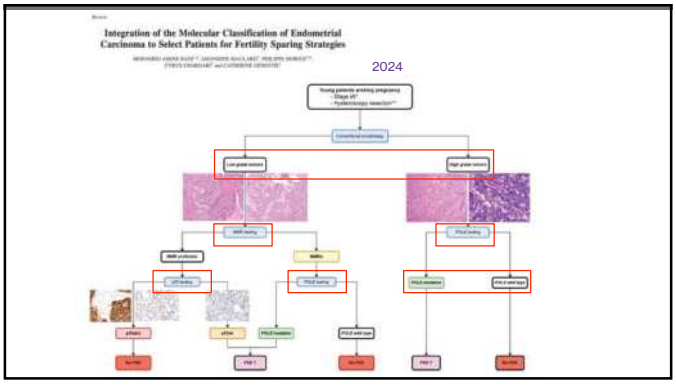
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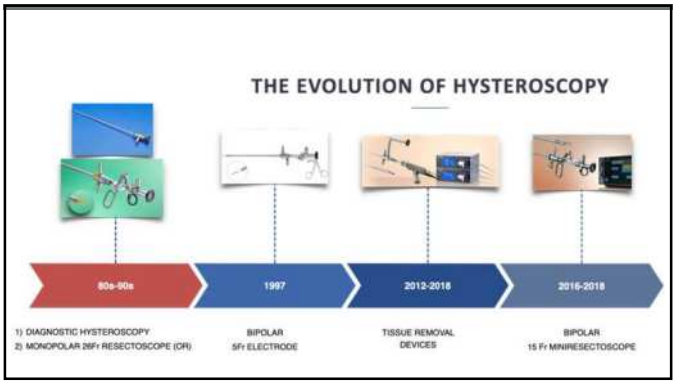
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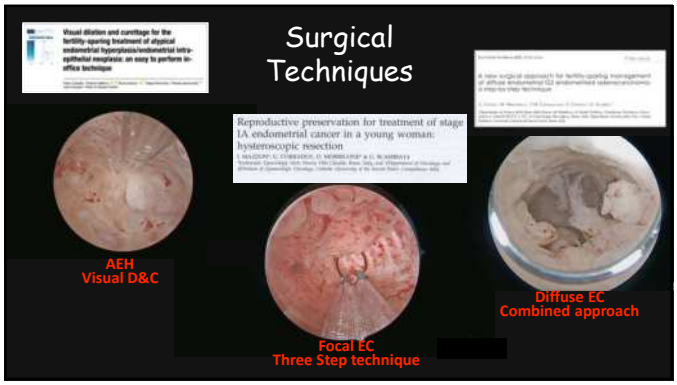
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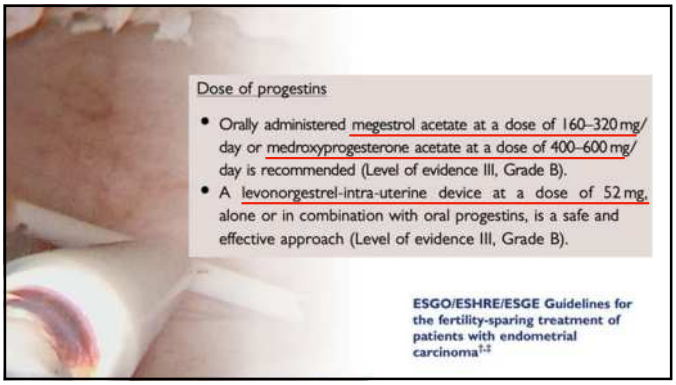
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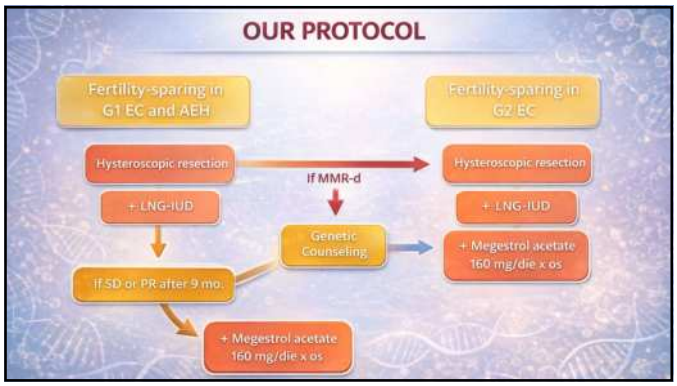
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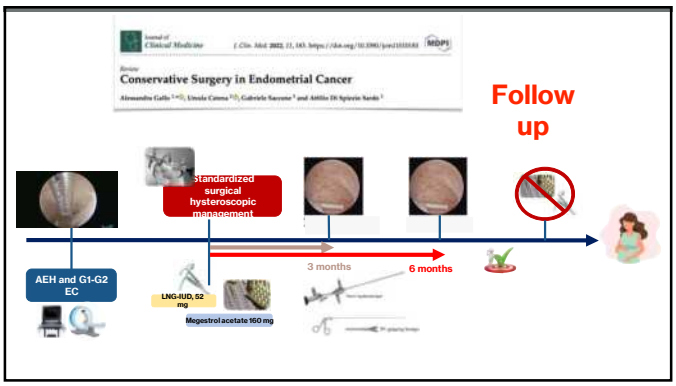
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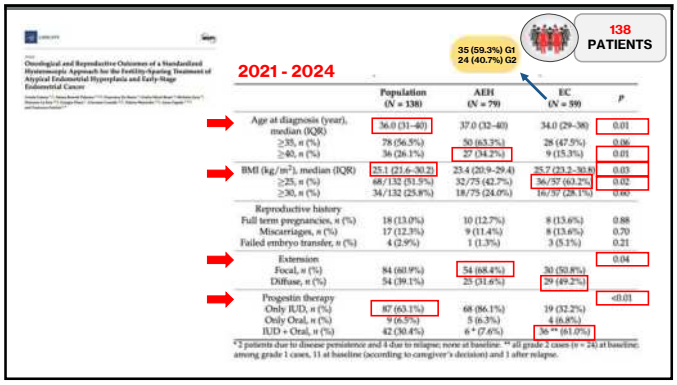
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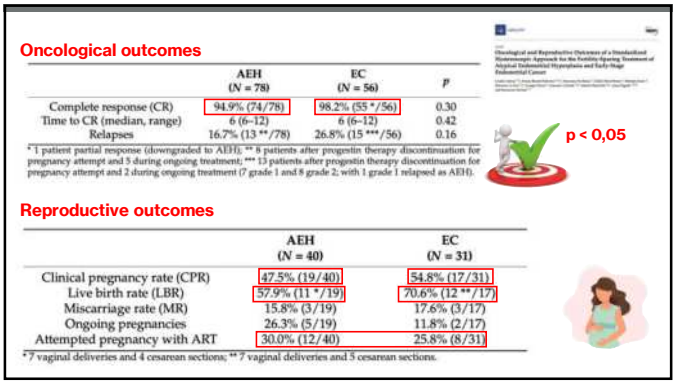
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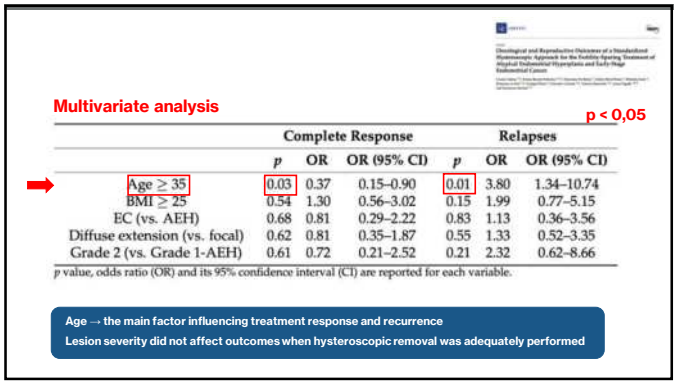
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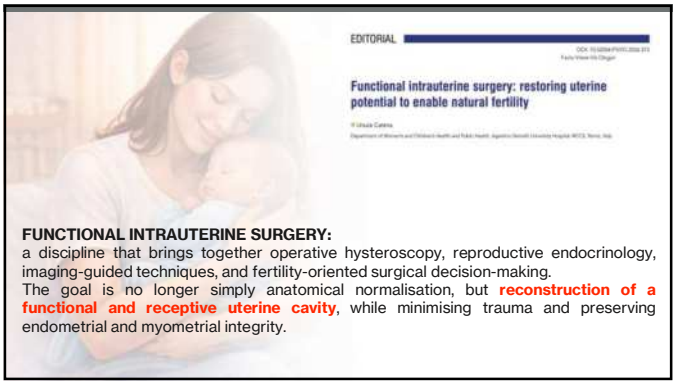
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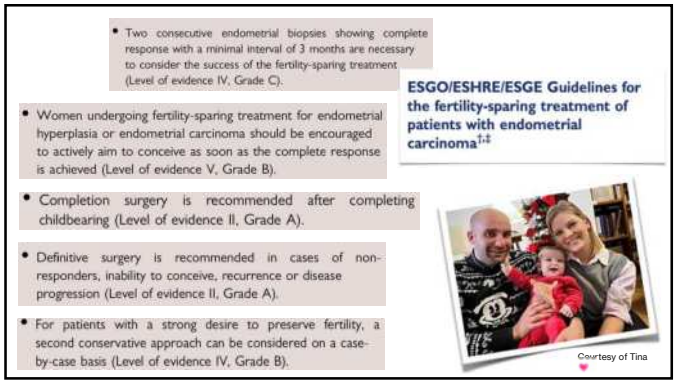
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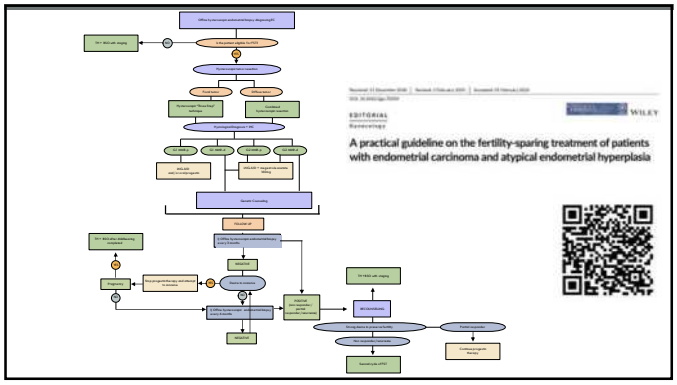
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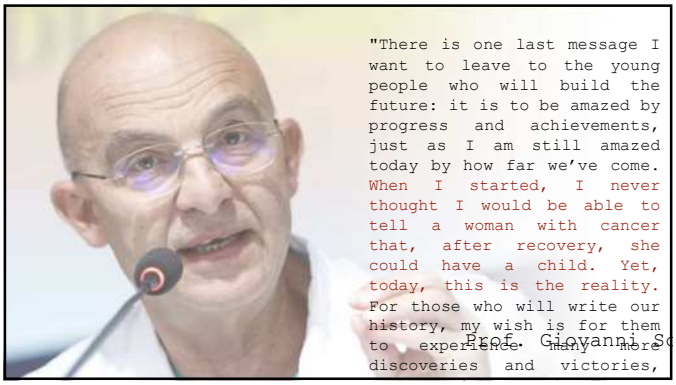
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Uterine Transposition: Surgical Technique, Indications, and Reproductive Outcomes

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Disclosure

- Scolla - Stock ownership
- FLK Institute - Stock ownership

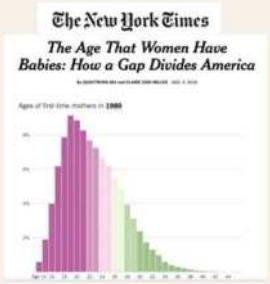
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Objectives

- Explain the rationale for uterine transposition
- Identify appropriate candidates
- Describe the surgical technique
- Describe the outcomes
- Summarize current practice

3

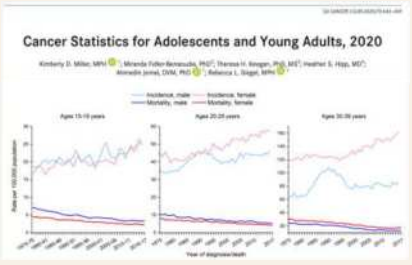
Background





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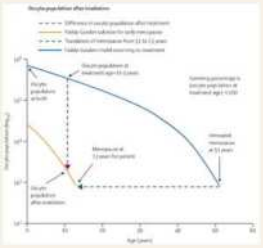
Background



Miller KD, et al. CA Cancer J Clin. 2020 Nov;70(6):443-459.

5

The problem



Radiation dose necessary to cause ovarian failure

20.3 Gy at birth
18.4 Gy at age 10 years
16.5 Gy at age 20 years
14.3 Gy at age 30 years

The Lancet Oncol. 2005; 6:209-218
Int J Radiat Oncol Biol Phys 2005;62(3):738-44

6

Radiation effect in the uterus (Dose dependent)

- Reduces uterine volume
- Impaires uterine distensibility due to myometrial fibrosis
- Causes uterine vasculature damage
- Causes endometrial injury / atrophy

Larsen EC, et al Acta Obstet Gynecol Scand 2004;83:96–102.

Holm K, et al. Bone Marrow Transplant 1999; 23:259–263.

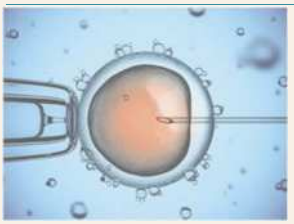
Laursen EM, et al. Ultrasound Obstet Gynecol 1996;8:341–345.

Pridjian G, et al. Am J Obstet Gynecol 1990;162: 1205–1206.

Li FP, et al. J Am Med Assoc 1987;257:216–219

7

Options



- Frozen Embrio
- Oocyte vitrification
- Ovarian criopreservation
- Ovarian transposition
- Uterine transplant*

8

The problem



9

Uterine transposition



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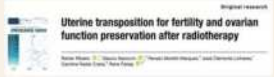
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Historical perspective



12

Outcomes



Uterine transposition for fertility and ovarian function preservation after radiotherapy

Table 1 Patients' data

Patient	Age	Tumor	Stage	Follow-up (months)	Surgical complications	Uterine preservation with regular menses	Tumor recurrence/ death
1	37	Rectal cancer	pT2 pN2 cM0	51	Cervical ischemia/ stenosis	Yes	No
2	36	Rectal cancer	pT3 pN1 cM0	39	Cervical ischemia/ stenosis	Yes	No
3	35	Rectal cancer	cT3 cN0 cM0	38	Cervical ischemia/ hematocolpos	Yes	No
4	28	Pelvic liposarcoma	T1 N0 M0	34	No	Yes	No
5	29	Rectal cancer	cT3 cN1 cM0	34	Uterine necrosis	No	No
6	19	Rectal cancer	cT3 cN1 cM0	31	No	Yes	No
7	26	Rectal cancer	pT4 pN2 cM0	4	No	No	3 months carcinomatosis/death 4 months after the uterine transposition
8	34	Rectal cancer	T3 N1 M0	14	No	Yes	No
Mean	30.5			30.6			

Int J Gynecol Cancer. 2023 Dec 4;33(12):1837-1842.

13

Outcomes



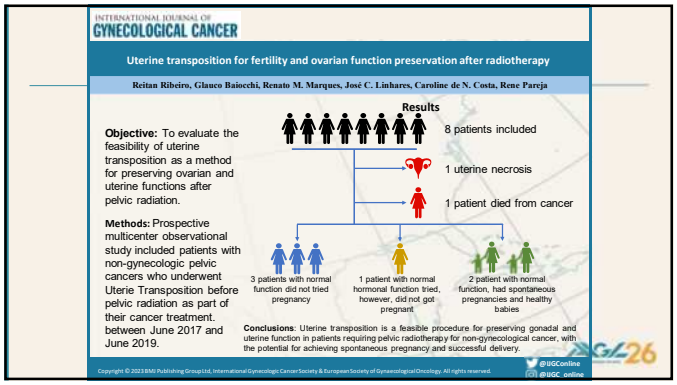
Uterine transposition for fertility and ovarian function preservation after radiotherapy

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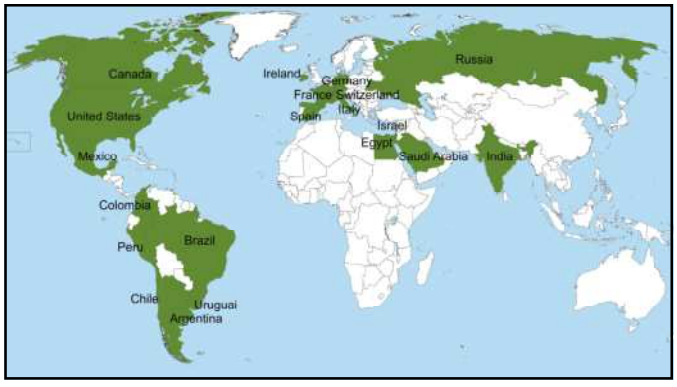
Int J Gynecol Cancer. 2023 Dec 4;33(12):1837-1842.

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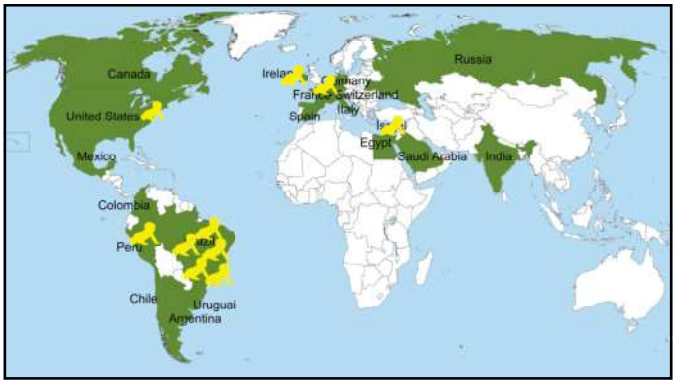


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Conclusion

- UT might be offered to patients with pelvic cancers not evolving the uterus, tubes and ovaries.
- The procedure is feasible, whoever complication risk might not be underestimated
- Spontaneous normal pregnancies are possible, however the fertility rate despite been promising, still under investigation.

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Acknowledgement



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References (Last Slide)

- Miller KD, et al. CA Cancer J Clin. 2020 Nov;70(6):443-459.
- The Lancet Oncol. 2005; 6:209-218.
- Int J Radiat Oncol Biol Phys 2005;62(3):738-44.
- Larsen EC, et al Acta Obstet Gynecol Scand 2004;83:96–102.
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- Int J Gynecol Cancer. 2023 Dec 4;33(12):1837-1842.

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Ovarian Transposition Prior to Pelvic Irradiation

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NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

1

Disclosure

Paid lectures:
Gedeon Richter, Storz, KLS Martin, Distalmotion, Ziwig

Advisory board:
Gedeon Richter, Storz, KLS Martin, Distalmotion, Ziwig



2

Objectives

- Identify suitable patients and assess oncologic safety.
- Describe high-lateral ovarian transposition and radiation planning.
- Compare operative platforms and counsel about outcomes.
- Recognize complications and plan follow-up.

3

Scope and evidence base

- Ovarian transposition before pelvic radiotherapy in cervical cancer and other pelvic malignancies.
- This review concerns transposition, not ovarian-tissue transplantation.
- Evidence consists of retrospective cohorts, case series and systematic reviews.
- No randomized comparisons of operative approaches were identified.



Buonomo B, et al. Systematic review, 2021 · Hoekman EJ, et al. Systematic review, 2019

4

Patient counseling

- Not all patients retain ovarian function after transposition and pelvic RT. Premature ovarian insufficiency remains a real risk.
- Transposition does not reliably preserve the capacity to carry a pregnancy after pelvic irradiation.
- Discuss oocyte / embryo or ovarian-tissue cryopreservation when genetic parenthood is a priority or treatment exposure is high.



Buonomo B, et al. Systematic review, 2021 · Hoekman EJ, et al. Systematic review, 2019

5

Cervical cancer: favorable selection

- Premenopausal patient with functioning ovaries.
- Low anticipated risk of ovarian metastasis.
- Non-bulky primary, often <4 cm.
- No suspicious ovarian, nodal, parametrial or uterine-corpus involvement.
- Squamous-cell histology has the most reassuring evidence



Buonomo B, et al. Systematic review, 2021 · Hu T, et al. Eur J Gynaecol Oncol, 2013

6

Cervical cancer: reasons to defer

- Bulky tumor or suspected ovarian involvement.
- Suspicious nodes, parametrial invasion or uterine-corpus invasion.
- Small-cell / neuroendocrine cancer is not a routine indication.
- Radiation field cannot realistically spare the ovaries.
- Adenocarcinoma / adenosquamous histology requires more stringent review.

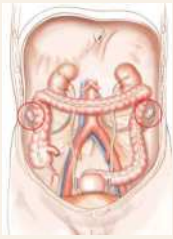


Buonomo B, et al. Systematic review, 2021 · Hu T, et al. Eur J Gynaecol Oncol, 2013

7

Operative technique: mobilization and placement

- Goal: move both ovaries outside the irradiation field while preserving gonadal perfusion.
- Preserve infundibulopelvic / gonadal vessels. Avoid tension, kinking and unnecessary pedicle dissection.
- Place the ovaries high and lateral in the paracolic region, clearly outside the target field.
- Position >1.5 cm above the iliac crest was associated with retained function.



Hwang J, et al. Gynecol Oncol, 2012 · Žilinskas K, et al. Medicina, 2014 · Lv X, et al. Radiat Oncol, 2019

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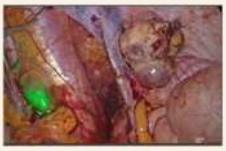


Marchocki Z, May T, Int J Gynecol Cancer 2021

9

Operative technique: fixation and RT planning

- Fix securely to reduce ovarian descent and torsion risk.
- Mark with radiopaque clips to support dose verification.
- Plan jointly with radiation oncology.
- Ovarian-to-target distance and dose-volume exposure determine benefit.



Hwang J, et al. Gynecol Oncol, 2012 · Žilinskas K, et al. Medicina, 2014 · Lv X, et al. Radiat Oncol, 2019

10

Ovarian function and oncologic outcomes

- 61.7% retained ovarian function after transposition and pelvic RT, with wide variation between studies.
- 0.4% ovarian metastasis rate in appropriately selected cervical cancer patients.
- 69.8% retained hormonal function at 5 years in one report.
- Lower bone mineral density was noted and routine FSH assessment advocated.

Buonomo B, et al. Systematic review, 2021 · Olejek A, et al. Eur J Gynaecol Oncol, 2001

11

Endocrine preservation and fertility

- Transposition can preserve endocrine function.
- It does not reliably preserve the capacity to carry a pregnancy after pelvic irradiation.
- Evidence on fertility and live birth remains limited.



Buonomo B, et al. Systematic review, 2021 · Hoekman EJ, et al. Systematic review, 2019

12

Robotic transposition

- Reasonable alternative, with sparse outcome evidence.
- A 22-patient rectal / anal-cancer series retained ovarian function in 12 of 18 evaluable patients.
- Consider when robotic surgery is otherwise planned or provides the team's strongest technical platform.
- No evidence of superior endocrine or fertility outcomes versus laparoscopy.



Swift B, et al. Gynecol Oncol, 2018 · Sioulas V, et al. Int J Gynecol Cancer, 2016

13

Laparoscopic transposition

- Default platform with evidence from multiple cervical-cancer cohorts and reviews.
- High flexure placement achieved median ovarian doses of approximately 0.5 Gy in one series.
- Recommended when the team routinely performs laparoscopic retroperitoneal dissection.



Swift B, et al. Gynecol Oncol, 2018 · Sioulas V, et al. Int J Gynecol Cancer, 2016

14

Complications: adnexal events

- Ovarian torsion is rare but threatens viability. Use secure fixation and avoid an excessively mobile or tensioned pedicle.
- Cysts / adnexal masses are the most frequent late adnexal issue and may cause pain or prompt imaging.
- Assess new abdominal or flank pain promptly. The altered ovarian location changes anatomic interpretation.



Gomez-Hidalgo NR, et al. J Minim Invasive Gynecol, 2015 · Gubbala K, et al. BJOG, 2014

15

Complications: endocrine and oncologic risks

- Premature ovarian insufficiency is the key clinical failure mode.
- Risk depends on age, radiation dose and field, chemotherapy, and final ovarian position.
- Oncologic events are rare in appropriately selected patients but serious.
- Selection is particularly critical in bulky / advanced cancer and adenocarcinoma.

Buonomo B, et al. Systematic review, 2021

16

Long-term follow-up framework

- No transposition-specific follow-up schedule has been validated.
- Embed ovarian monitoring in standard cervical-cancer survivorship care.
- Focus particularly on the first year after chemoradiation. Published follow-up ranged from 7 to 87 months.
- At RT completion: record operative details, clip locations, ovarian contours and dose-volume data.
- At 3, 6 and 12 months: assess vasomotor symptoms, vaginal dryness and menstrual pattern.
- Check FSH / estradiol when symptoms or amenorrhea warrant testing.

Buonomo B, et al. Systematic review, 2021 · Jose T, et al. J Obstet Gynaecol India, 2017 · Olejek A, et al. Eur J Gynaecol Oncol, 2001

17

Decision pathway: benefit and safety

- 1. Confirm benefit: premenopausal patient, acceptable ovarian reserve and planned / likely pelvic radiation.
- 2. Establish oncologic safety: review histology, tumor size, imaging, nodes, parametria, uterine corpus and ovaries at tumor board.
- 3. Choose technique: minimally invasive bilateral high-lateral placement when perfusion can be preserved and the RT plan gains meaningful clearance.

Buonomo B, et al. Systematic review, 2021 · Hu T, et al. Eur J Gynaecol Oncol, 2013

18

Decision pathway: planning and counseling

- 4. Plan radiation jointly: contour clip-marked ovaries and document achievable dose before treatment begins.
- 5. Counsel honestly: risk reduction is meaningful but incomplete.
- Discuss oocyte / embryo or ovarian-tissue cryopreservation when genetic parenthood is a priority.

Buonomo B, et al. Systematic review, 2021 · Hu T, et al. Eur J Gynaecol Oncol, 2013

19

Clinical conclusion

- For carefully selected premenopausal patients with low ovarian-metastasis risk, laparoscopic bilateral high-lateral transposition is the most defensible strategy in this review.
- Preserve gonadal vessels, fix securely, mark with clips and verify the radiation plan.
- The procedure reduces the risk of premature ovarian insufficiency but does not eliminate it.
- Confirm both oncologic safety and dosimetric benefit before proceeding.

Buonomo B, et al. Systematic review, 2021 · Hoekman EJ, et al. Systematic review, 2019

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CULTURAL AND LINGUISTIC COMPETENCY & IMPLICIT BIAS

The California Medical Association (CMA) outlines standards for Cultural Linguistic Competency and Implicit Bias in CME. The goal of the standards is to support the role of accredited CME in advancing diversity, health equity, and inclusion in healthcare. These standards are relevant to ACCME-accredited, CMA-accredited, and jointly accredited providers located in California. AAGL is ACCME-accredited and headquartered in California.

CMA developed the standards in response to California legislation (Business and Professions (B&P) Code Section 2190.1), which directs CMA to draft a set of standards for the inclusion of cultural and linguistic competency (CLC) and implicit bias (IB) in accredited CME.

The standards are intended to support CME providers in meeting the expectations of the legislation. CME provider organizations physically located in California and accredited by CMA CME or ACCME, as well as jointly accredited providers whose target audience includes physicians, are expected to meet these expectations which began on January 1, 2022. AAGL has been proactively adopting processes that meet and often exceed the required expectations of the legislation.

CMA CME offers a variety of resources and tools to help providers meet the standards and successfully incorporate CLC & IB into their CME activities, including FAQ, definitions, a planning worksheet, and best practices. These resources are available on the CLC and IB standards page on the CMA website.

Important Definitions:

Cultural and Linguistic Competency (CLC) – The ability and readiness of health care providers and organizations to humbly and respectfully demonstrate, effectively communicate, and tailor delivery of care to patients with diverse values, beliefs, identities and behaviors, in order to meet social, cultural and linguistic needs as they relate to patient health.

Implicit Bias (IB) – The attitudes, stereotypes and feelings, either positive or negative, that affect our understanding, actions and decisions without conscious knowledge or control. Implicit bias is a universal phenomenon. When negative, implicit bias often contributes to unequal treatment and disparities in diagnosis, treatment decisions, levels of care and health care outcomes of people based on race, ethnicity, gender identity, sexual orientation, age, disability and other characteristics.

Diversity – Having many different forms, types or ideas; showing variety. Demographic diversity can mean a group composed of people of different genders, races/ethnicities, cultures, religions, physical abilities, sexual orientations or preferences, ages, etc.

Direct links to AB1195 (CLC), AB241 (IB), and the B&P Code 2190.1:

Bill Text – AB-1195 Continuing education: cultural and linguistic competency.
Bill Text – AB-241 Implicit bias: continuing education: requirements.
Business and Professions (B&P) Code Section 2190.1

CLC & IB Online Resources:

Diversity-Wheel-as-used-at-Johns-Hopkins-University-12.png (850×839) (researchgate.net)
Implicit Bias, Microaggressions, and Stereotypes Resources | NEA
Act, Communicating, Implicit Bias (racialequitytools.org)
https://www.contemporaryobgyn.net/view/overcoming-racism-and-unconscious-bias-in-ob-gyn
https://pubmed.ncbi.nlm.nih.gov/34016820/
https://hr.ucdavis.edu/departments/learning/certificate/implicit-bias
https://pmc.ncbi.nlm.nih.gov/articles/PMC7011228/