Women in Transplantation: History of Reproductive Medicine

IVF Ovarian Tissue Reimplantation UTx

Catherine Racowsky, PhD, HCLD
Professor Emerita

Department of Obstetrics, Gynecology & Reproductive Biology
Brigham & Women's Hospital
Harvard Medical School
Boston, USA

5th Congress of the ISUTx
Antalya, Turkey
October 2-3, 2025

Disclosures

FINANCIAL DISCLOSURES (during last 12 months)

I am on the Advisory Board for Igyxos Biotherapeutics

I am on the organizing committee for IBSA Narture 2026

I receive honoraria from:

- Wolkers Kluwer
- Springer Verlag
- Elsevier
- Cambridge University Press

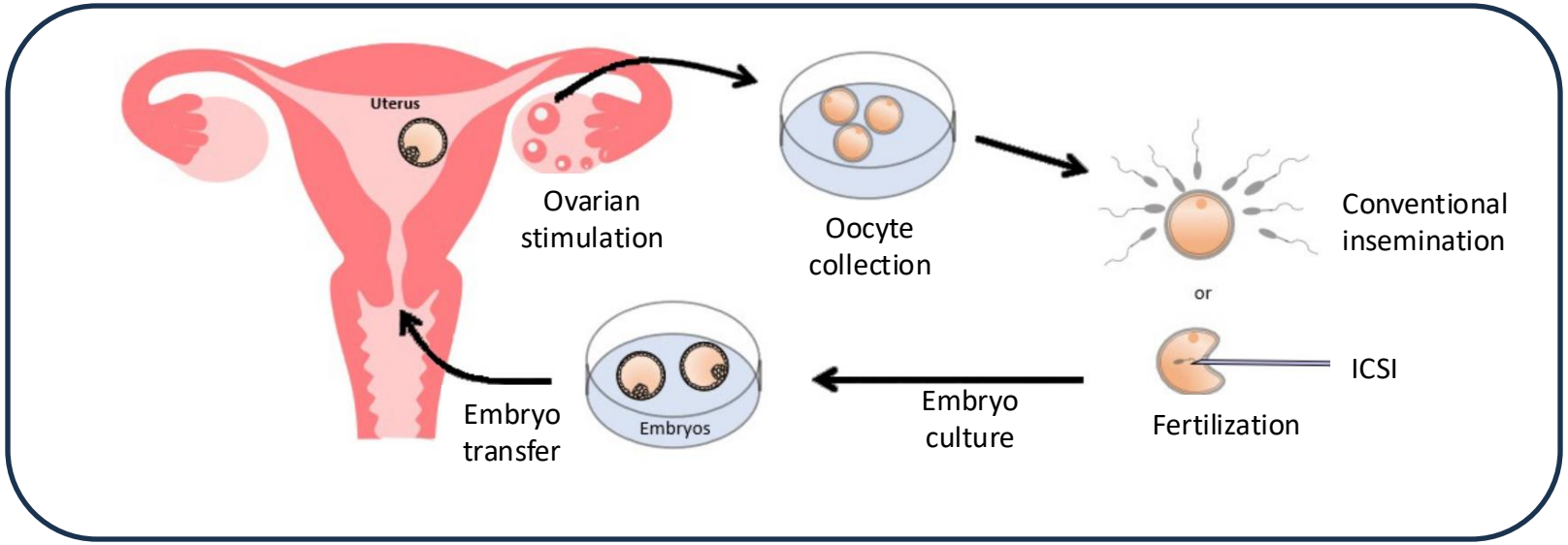
Introduction

- History often highlights male pioneers
- Women have been (and continue to be!) central as scientists, clinicians and patients in so many fields, including:
  - ✓ In vitro fertilization (IVF)
  - ✓ Ovarian tissue reimplantation (OTR) and
  - ✓ Uterus transplantation (UTx)
- Aims:
  - ✓ To recognize key women and their contributions across IVF, OTR, and UTx
  - ✓ To inspire women to play key roles in their chosen field

Cornerstones to clinical translation

- Research with animal models
  - To understand the physiology
  - To clarify the challenges
  - To provide enough evidence for potential efficacy
- To undertake proof-of-principle research to demonstrate potential clinical translation
- To be courageous enough to undertake the basic work to move towards clinical translation ……
- And then to perform the clinical translation

The Road Towards Clinical IVF



It was a long and difficult road …..

12 years, 280 oocyte retrieval attempts and 102 embryo transfers before the first success

The very low efficiency was due to:

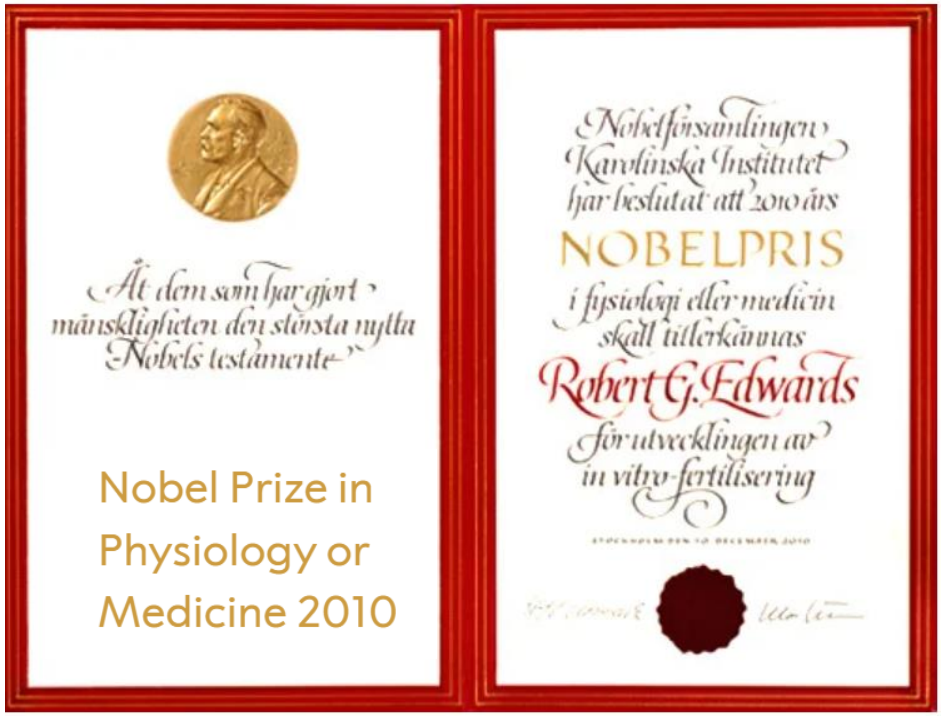
- Suboptimal culture conditions
- Challenges in harvesting the oocytes
- At best, only ~ 2 oocytes were retrieved (mean of 0.7 oocytes/retrieval)

Edwards et al. Br J Obstet Gynaecol 1980; 87:737-56

The first clinical IVF success

Patrick C. Steptoe, MD
1913 - 1988

Robert G. Edwards, PhD
1924 - 2013



But there were many who preceded this success……

Steptoe & Edwards, Lancet 1978;2:366

The Key Foundational Work

Achievement	Investigator(s)
Embryo transfer experiments in animals	Heape, 1891; Pincus & Enzmann, 1934; Chang, 1959
Embryo culture studies with in vivo and in vitro fertilized oocytes and transfer to surrogate animals	McLaren & Biggers, 1958; Whittingham, 1968
Advances in culture media to support preimplantation development in mice	Whitten, 1956; Brinster, 1963
Claim of in vitro fertilization of human oocytes	Rock & Menkin, 1944
Maturation of human oocytes in vitro	Edwards, 1965
Unequivocal demonstration of fertilization of human oocytes in vitro	Edwards, 1969
Laparoscopic recovery of human oocytes after gonadotropin priming	Steptoe & Edwards, 1970

Reviewed by Biggers & Racowsky, 2018; In In-Vitro Fertilization: The Pioneers' History; eds G Kovacs, P Brinsden, A DeCherney

The Key Foundational Work

Achievement	Investigator(s)
Embryo transfer experiments in animals	Heape, 1891; Pincus & Enzmann, 1934; Chang, 1959
Embryo culture studies with in vivo and in vitro fertilized oocytes and transfer to surrogate animals	**McLaren** & Biggers, 1958; Whittingham, 1968
Advances in culture media to support preimplantation development in mice	Whitten, 1956; Brinster, 1963
Claim of in vitro fertilization of human oocytes	Rock & **Menkin**, 1944
Maturation of human oocytes in vitro	Edwards, 1965
Unequivocal demonstration of fertilization of human oocytes in vitro	Edwards, 1969
Laparoscopic recovery of human oocytes after gonadotropin priming	Steptoe & Edwards, 1970

Reviewed by Biggers & Racowsky, 2018; In In-Vitro Fertilization: The Pioneers' History; eds G Kovacs, P Brinsden, A DeCherney

Miriam Menkin: The first to successfully fertilize a human oocyte in vitro

Miriam Menkin
1901-1992

- It took her 6 years of failure with 800 oocytes and 138 inseminated before her success … **in 1944**
- Her success proved that clinical IVF might be feasible
- She was not admitted to medical school (Harvard) because she was a woman!

In Vitro Fertilization and Cleavage of Human Ovarian Eggs

John Rock, Miriam F. Menkin

Science, New Series, Volume 100, Issue 2588 (Aug. 4, 1944), 105-107.

Dame Anne McLaren: A key trail-blazer towards clinical IVF!

Dame Anne McLaren DBE, FRS, FRCOG

1927 –2007

- Foundational mouse embryo work for clinical IVF (with Professor John D. Biggers)
- The first female officer in the 330-year history of the Royal Society, London
- A member of the Warnock Committee who wrote the HFEA guidelines on IVF in 1990
- An inspiration to women in science breaking barriers and achieving numerous scientific honors

The Road to IVF: Dame Anne McLaren — Google Arts & Culture

The first clinical IVF team was not just Steptoe and Edwards!

The Steptoe-Edwards-Purdy Team

Patrick C. Steptoe, MD
1913 - 1988

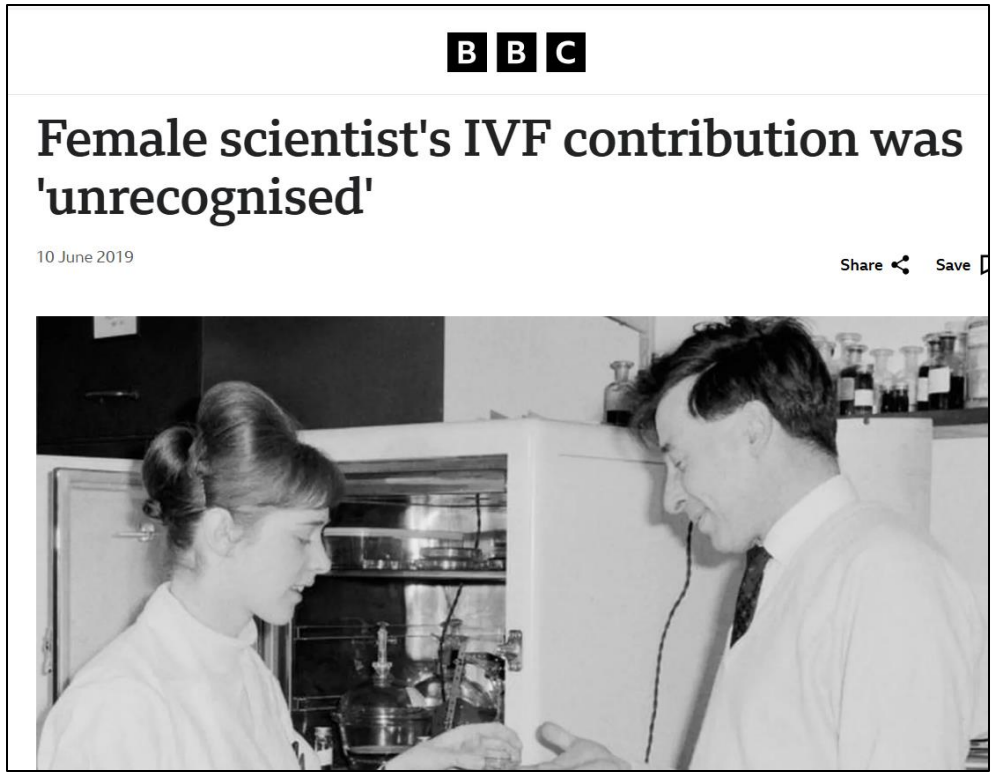
Robert G. Edwards, PhD
1924 - 2013

Jean M. Purdy, RN
1945 - 1985

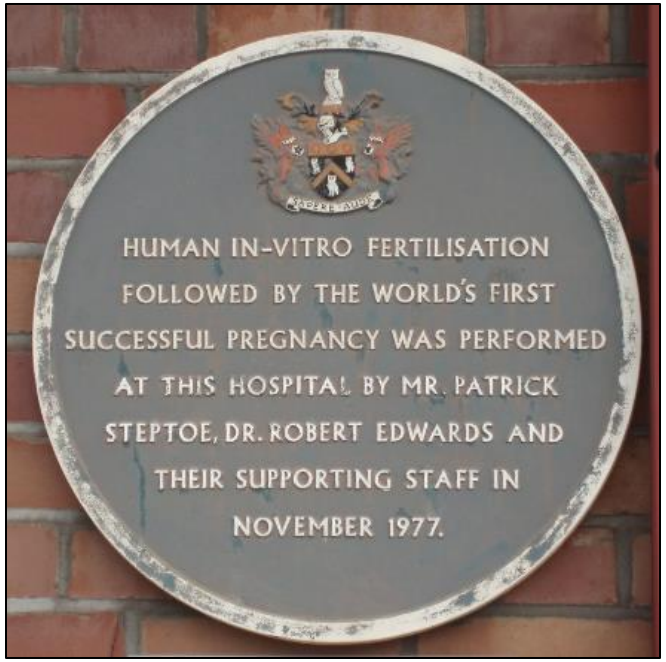
The first clinical IVF team was not just Steptoe and Edwards!

The Steptoe-Edwards-Purdy Team

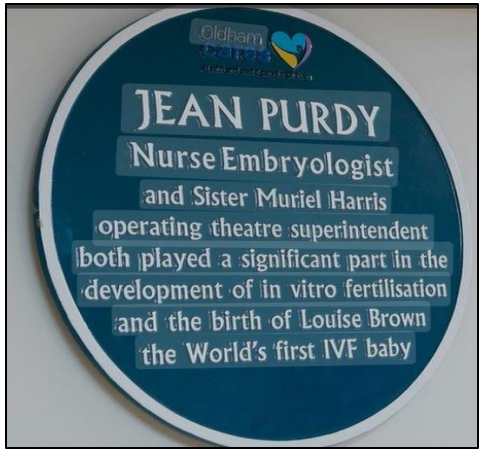
- Jean Purdy was a nurse who became the world's first "clinical" embryologist
- She kept the lab and clinical records meticulously and was essential to the team's success
- She worked with Bob for 20 years and remained a critical member of the team through all their failures before their first success.
- Yet, her role went unrecognized for decades



The unfortunate history of plaques commemorating the IVF pioneers



A lapse of over 40 years



[Royal Oldham Hospital: Overlooked IVF pioneer nurses honoured]

Other key women in the Steptoe-Edwards-Purdy success

Sister Muriel Harris
1923 - 2007

Operating theatre superintendent for 1st IVF team

Lillian Howell
1921 - 2014

A wealthy Californian heiress, who provided considerable financial support for the work from 1968 - 1978

Ruth Fowler Edwards
1921 - 2014

Bob's remarkable wife, eminent scientist, geneticist and mother of five children

Other key women in the Steptoe-Edwards-Purdy success

Steptoe's nurses and midwives

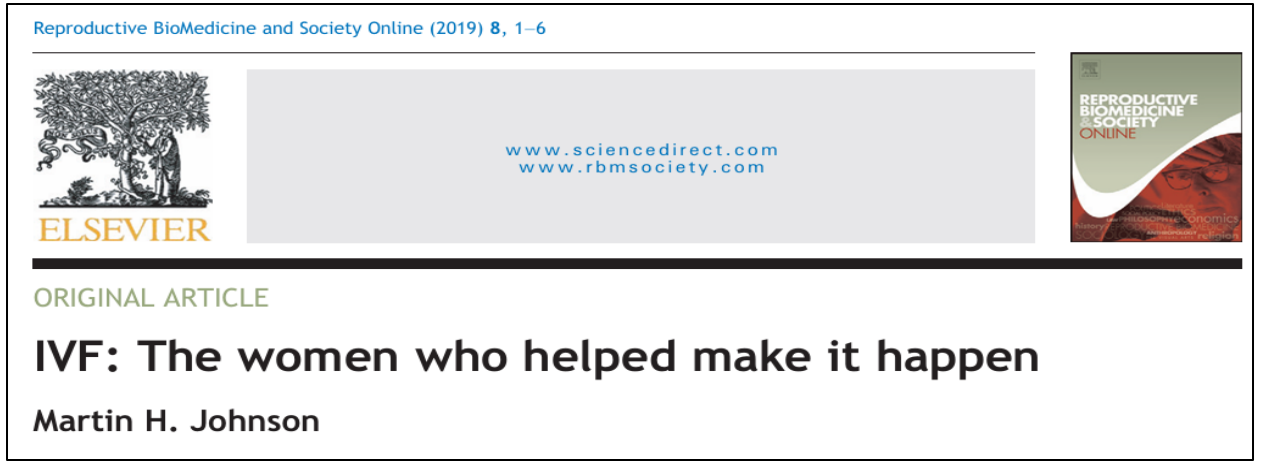
Patrick Steptoe, with Muriel Harris (front, right) were among the nurses involved in the early days of IVF

They were essential to IVF's early acceptance

- Provided care and reassurance amid social stigma
- Enabled patient trust in early IVF
- Contributed significantly to acceptance of IVF

And all the women who were Patrick Steptoe's patients

- 282 women had consultations
- 280 underwent hormone stimulation and laparoscopy for their oocyte retrieval
- 7% underwent more than four retrievals
- Only 2 of these 282, the mothers of their first 2 IVF babies, are known: Leslie Brown and Grace McDonald


Reproductive BioMedicine and Society Online (2019) 8, 1–6

ELSEVIER

www.sciencedirect.com
www.rbmsociety.com

REPRODUCTIVE BIOMEDICINE & SOCIETY ONLINE

ORIGINAL ARTICLE

IVF: The women who helped make it happen

Martin H. Johnson

Johnson MH. RBMOnline 2019;8:1-6.

Finally, Louise Brown: The first IVF baby (born July 25,1978)

- Her birth was a global turning point in reproductive medicine
- It changed public perceptions of assisted reproduction
- She is a symbol of hope for infertile couples worldwide
- She is currently an ambassador for Bourn Hall and for helping infertile couples in India

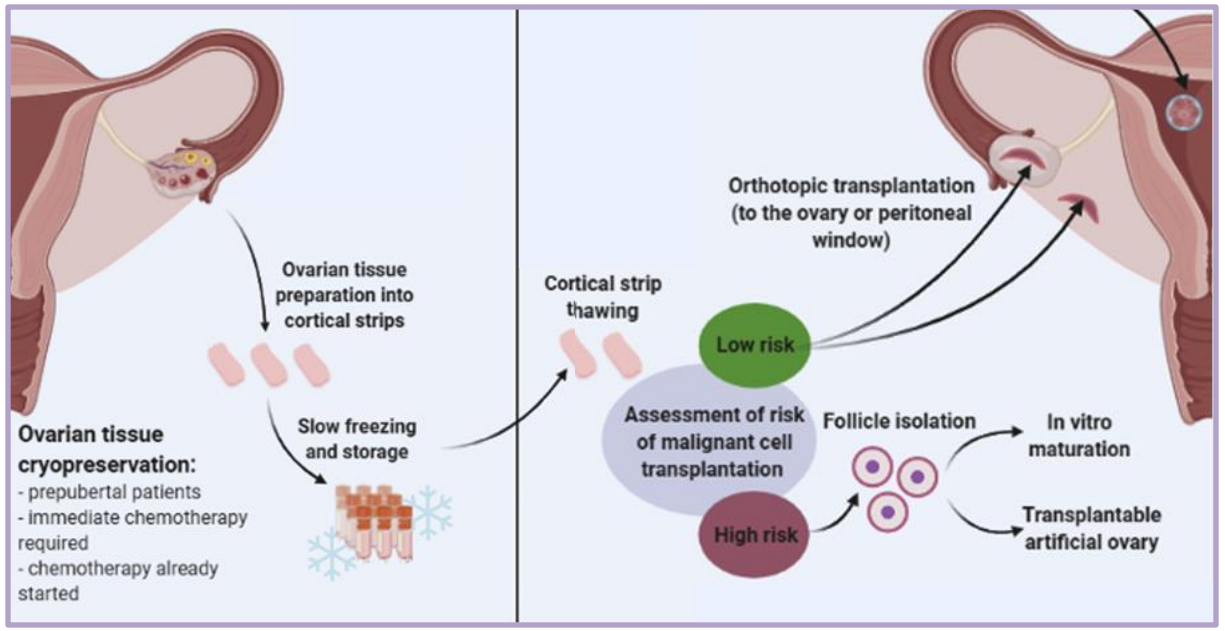
Netflix
https://www.netflix.com › joy-release-date-cast-news

Joy Tells the Moving Story Behind the World's First 'Test ...

Nov 22, 2024 — **Joy tells the remarkable true story behind the birth of Louise Joy Brown in 1978**, the world's first “test-tube baby,” and the tireless 10-year journey to make ...

Watch JOY - The Birth of IVF | Netflix Official Site

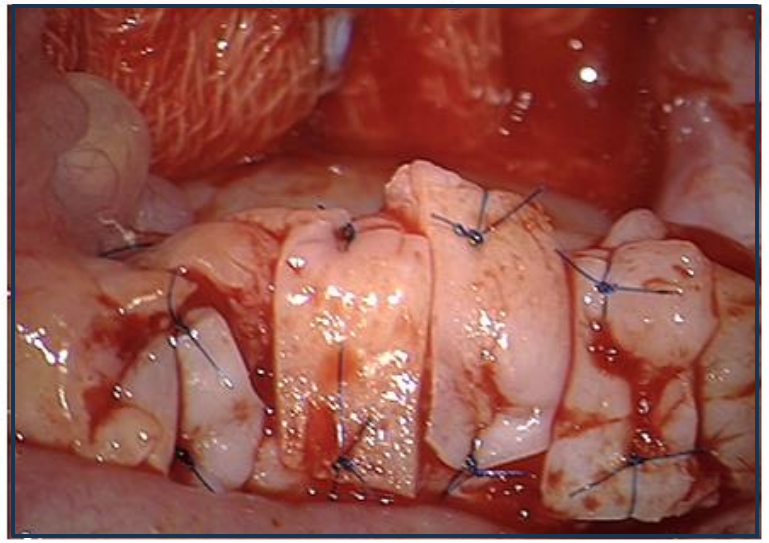
The Road Towards Ovarian Tissue Reimplantation



Adapted from Dolmans et al. Fertil Steril 2021;115:1102–15

Why are we discussing OTR – and the role of women in its development?

- Each year, an estimated 0.9 million prepubertal girls and young women require aggressive cancer treatment, which is gonadotoxic
- Survival is greater than 90% in most cases
- Live birth rate of ~30% post OTR[1]
- What roles from basic science to clinical translation have women played in the landmark developments in this ground-breaking field?



Donnez J et al 2013; Fertil Steril 99:1503–13

[1]*Dolmans MM et al 2012; Fertil Steril;115:1102–15*

Dr. Ruth Deanesly: A woman scientist far ahead of her time!

Basic science research to clinical translation

PROCEEDINGS
OF THE ROYAL SOCIETY B
BIOLOGICAL SCIENCES 1957

Article

Egg survival in immature rat ovaries grafted after freezing and thawing

R Deanesly

Published: 03 December 1957
https://doi.org/10.1098/rspb.1957.0060

Abstract

Immature rat ovaries grafted subcutaneously after freezing and thawing show a heavy loss of eggs. A number of variations in the freezing technique have been tried but have not led to any substantial increase in egg survival. Similarly treated ovaries may show a wide variation as grafts. Methods for estimating and comparing the effects of different freezing techniques on the eggs have been worked out.

Dr. Debra Gook: A pioneer in cryopreservation of follicles & ovarian tissue

Debra Gook

Human Reproduction vol.14 no.8 pp.2061–2068, 1999

1999

Effect of cooling rate and dehydration regimen on the histological appearance of human ovarian cortex following cryopreservation in 1,2-propanediol

Debra A.Gook[1,3,4], D.H.Edgar[1,2] and C.Stern[1,2]

ELSEVIER

Molecular and Cellular Endocrinology 169 (2000) 99–103

MCE Molecular and Cellular Endocrinology

2000

The effects of cryopreservation regimens on the morphology of human ovarian tissue

Debra A. Gook [a,b,*], D.H. Edgar [a,c], C. Stern [a,c]

Human Reproduction Vol.16, No.3 pp. 417–422, 2001

Development of antral follicles in human cryopreserved ovarian tissue following xenografting

2001

Debra A.Gook[1,3], B.A.McCully[2], D.H.Edgar[1,2] and J.C.McBain[1,2]

Available online at www.sciencedirect.com

SCIENCE DIRECT®

European Journal of Obstetrics & Gynecology and Reproductive Biology 113S (2004) S41–S44

EUROPEAN JOURNAL OF OBSTETRICS & GYNECOLOGY AND REPRODUCTIVE BIOLOGY

2004

Cryopreservation of human ovarian tissue

Debra A. Gook[a,b,*], D.H. Edgar[a,b], C. Stern[a,b]

Dr. Christiani Amorim: A pioneer in cryopreservation of follicles & ovarian tissue

Christiani Amorim

Human Reproduction, Vol.24, No.1 pp. 92–99, 2009
Advanced Access publication on September 23, 2008 doi:10.1093/humrep/den343

2009

human reproduction ORIGINAL ARTICLE *Embryology*

Survival of human pre-antral follicles after cryopreservation of ovarian tissue, follicular isolation and *in vitro* culture in a calcium alginate matrix

Christiani A. Amorim, Anne Van Langendonckt, Anu David, Marie-Madeleine Dolmans, and Jacques Donnez[1]

J Assist Reprod Genet (2011) 28:1157–1165
DOI 10.1007/s10815-011-9672-z

2011

FERTILITY PRESERVATION

Impact of freezing and thawing of human ovarian tissue on follicular growth after long-term xenotransplantation

Christiani A. Amorim · Anu David · Marie-Madeleine Dolmans · Alessandra Camboni · Jacques Donnez · Anne Van Langendonckt

Vitrification of human ovarian tissue: effect of different solutions and procedures

2011

Christiani Andrade Amorim, V.M.D., Ph.D., Anu David, M.Sc., Anne Van Langendonckt, Ph.D., Marie-Madeleine Dolmans, M.D., Ph.D., and Jacques Donnez, M.D., Ph.D.

Department of Gynecology, Institut de Recherche Expérimentale et Clinique, Université Catholique de Louvain, Brussels, Belgium

Fertil Steril 2011;95(3):1094-7

Human Reproduction, Vol.28, No.8 pp. 2146–2156, 2013
Advanced Access publication on April 16, 2013 doi:10.1093/humrep/det103

2013

human reproduction ORIGINAL ARTICLE *Infertility*

Successful vitrification and autografting of baboon (*Papio anubis*) ovarian tissue

Christiani A. Amorim[1], Sophie Jacobs[1], Ram V. Devireddy[2], Anne Van Langendonckt[1], Julie Vanacker[1], Jonathan Jaeger[3,5], Valérie Luyckx[1], Jacques Donnez[1], and Marie-Madeleine Dolmans[1,4,*]

OXFORD human reproduction

Human Reproduction, 2025, **40(3)**, 410–419
https://doi.org/10.1093/humrep/deae291
Advance Access Publication Date: January 2, 2025
Mini-Review

2025

Developments in reproductive biology and medicine

Human ovarian tissue xenotransplantation: advancements, challenges, and future perspectives

Paweena Thuwanut[1], Ellen C. R. Leonel[2], Thalles Fernando Rocha Ruiz[3,4], Porntip Sirayapiwat[1], Stine Gry Kristensen[5], and Christiani A. Amorim[4,*]

Dr. Kirsten Schmidt: A ground-breaker toward the clinical translation of OTR

Kirsten Schmidt (Macklon)

RBM Online - Vol 8. No 4. 2004 448-453 Reproductive BioMedicine Online; www.rbmonline.com/Article/1234 on web 18 February 2004

Article

February 2004

Orthotopic autotransplantation of cryopreserved ovarian tissue to a woman cured of cancer – follicular growth, steroid production and oocyte retrieval

Dr Kirsten L Tryde Schmidt graduated as a medical doctor from the University of Copenhagen in 1992. After some years of clinical work at various departments of obstetrics and gynaecology, she enrolled in a PhD programme on cryopreservation of human ovarian tissue at the University Hospital of Copenhagen, Rigshospitalet, Denmark. Her research also includes culture of ovarian tissue. After obtaining her PhD she hopes to continue her clinical work with special attention to the field of infertility treatment.

Kirsten L Tryde Schmidt[1,2,4], Claus Yding Andersen[2], Jørgen Starup[3], Anne Loft[1], Anne Grete Byskov[2], Anders Nyboe Andersen[1]

The first documentation that cryopreserved transplanted ovarian tissue was functional for more than 1 cycle and produced a mature oocyte

Dr. Marie-Madeleine Dolmans: A key pioneer in OTR

Marie-Madeleine Dolmans

Livebirth after orthotopic transplantation of cryopreserved ovarian tissue

September 2004

J Donnez, M M Dolmans, D Demylle, P Jadoul, C Pirard, J Squifflet, B Martinez-Madrid, A Van Langendonckt

Published online
September 24, 2004

Donnez J, Dolmans MM, Demylle D, Jadoul P, Pirard C, Squifflet J, Martinez-Madrid B, Van Langendonckt A. Livebirth after orthotopic transplantation of cryopreserved ovarian tissue. The lancet. 2004 Oct 16;364(9443):1405-10.

Dr. Marie-Madeleine Dolmans: A key pioneer in OTR

MM Dolmans

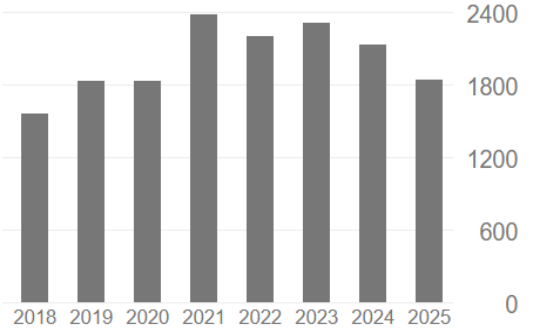
FOLLOW

Université catholique de Louvain, Brussels, Belgium
Verified email at uclouvain.be - Homepage

infertility fertility preservation fibroids endometriosis

Citations 25,267
H-index 81

TITLE	CITED BY	YEAR
Livebirth after orthotopic transplantation of cryopreserved ovarian tissue J Donnez, MM Dolmans, D Demylle, P Jadoul, C Pirard, J Squifflet, ... The lancet 364 (9443), 1405-1410	2229	2004
Uterine fibroid management: from the present to the future J Donnez, MM Dolmans Human reproduction update 22 (6), 665-686	1023	2016
Fertility preservation in women J Donnez, MM Dolmans New England Journal of Medicine 377 (17), 1657-1665	925	2017
Restoration of ovarian activity and pregnancy after transplantation of cryopreserved ovarian tissue: a review of 60 cases of reimplantation J Donnez, MM Dolmans, A Pellicer, C Diaz-Garcia, MS Serrano, ... Fertility and sterility 99 (6), 1503-1513	703	2013
Ovarian tissue cryopreservation and transplantation: a review J Donnez, B Martinez-Madrid, P Jadoul, A Van Langendonckt, D Demylle, ... Human reproduction update 12 (5), 519-535	600	2006



Public access VIEW ALL

25 articles not available
109 articles available

Based on funding mandates

Dr. Teresa K. Woodruff: A champion for oncofertility!!!

Teresa K. Woodruff

Oncofertility: a grand collaboration between reproductive medicine and **oncology**
TK **Woodruff** - Reproduction, 2015 - rep.bioscientifica.com
There has never been a greater need for scientists trained in reproductive science. Most developed countries are witnessing unprecedented rates of recourse to assisted conception …
☆ Save 99 Cite Cited by 116 Related articles All 7 versions

The Oncofertility Consortium—addressing fertility in young people with cancer
TK **Woodruff** - Nature reviews Clinical **oncology**, 2010 - nature.com
… Late on a Friday afternoon, the Oncofertility Consortium national helpline (Fertline) received a call from a pediatric **oncologist** with an urgent request. His patient was a girl of high-school …
☆ Save 99 Cite Cited by 269 Related articles All 13 versions

The emergence of a new interdiscipline: oncofertility
TK **Woodruff** - Oncofertility fertility preservation for cancer survivors, 2007 - Springer
… girls diagnosed with cancer, means most medical **oncologists** do not discuss potential threats to … **Woodruff** was part of a panel including a patient advocate (Lindsay Nohr-Beck, Founder …
☆ Save 99 Cite Cited by 187 Related articles All 10 versions

Incorporating fertility preservation into the care of young **oncology** patients
AJ Redig, R Brannigan, SJ Stryker, TK **Woodruff**… - Cancer, 2011 - Wiley Online Library
… care offered to younger **oncology** patients to include discussions … **oncologists**, radiation **oncologists**, and medical **oncologists** … **oncology** practice to enhance the lives of cancer survivors. …

The Road Towards Clinical Uterus Transplantation

The first successful live birth following UTx (2014)

Achieved by the fabulous team led by Professor Mats Brannstrom!!

Livebirth after uterus transplantation

Mats Brännström, Liza Johannesson, Hans Bokström, Niclas Kvarnström, Johan Mölne, Pernilla Dahm-Kähler, Anders Enskog, Milan Milenkovic , Jana Ekberg, Cesar Diaz-Garcia, Markus Gäbel, Ash Hanafy, Henrik Hagberg, Michael Olausson, Lars Nilsson

Summary

Background Uterus transplantation is the first available treatment for absolute uterine infertility, which is caused by absence of the uterus or the presence of a non-functional uterus. Eleven human uterus transplantation attempts have been done worldwide but no livebirth has yet been reported.

Lancet 2015; 385: 607–16

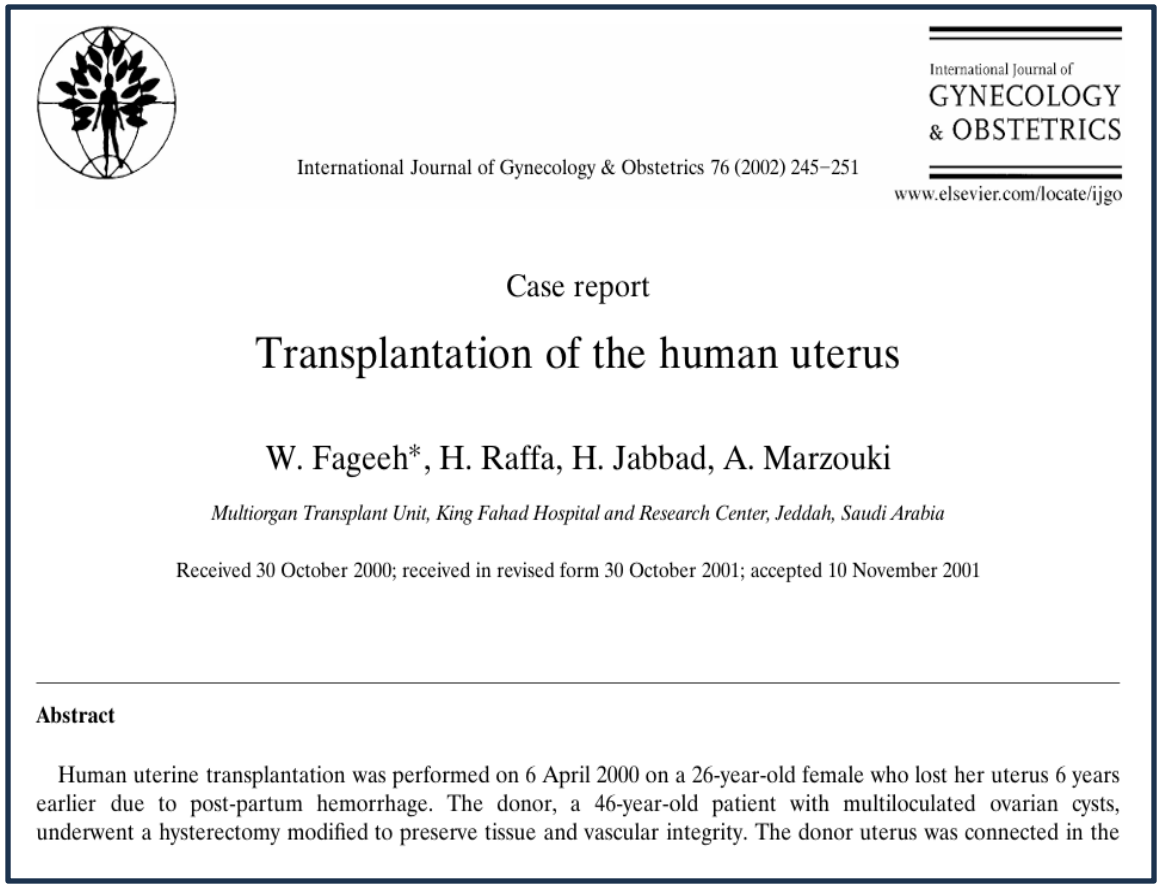
Published Online
October 5, 2014
http://dx.doi.org/10.1016/

Brannstrom et al., Lancet 2015; 607-16.

However, the first UTx was actually performed by a woman in 2000

April 2000

Dr. Wafa Fageeh, a professor at Abdulaziz University, performed the first UTx in Apri 2000 at King Fahad Hospital and Research Center in Jeddah, Saudi Arabia but the graft had to be removed after 99 days due to a vascular occlusion



International Journal of Gynecology & Obstetrics 76 (2002) 245–251

International Journal of GYNECOLOGY & OBSTETRICS

www.elsevier.com/locate/ijgo

Case report

Transplantation of the human uterus

W. Fageeh*, H. Raffa, H. Jabbad, A. Marzouki

Multiorgan Transplant Unit, King Fahad Hospital and Research Center, Jeddah, Saudi Arabia

Received 30 October 2000; received in revised form 30 October 2001; accepted 10 November 2001

Abstract

Human uterine transplantation was performed on 6 April 2000 on a 26-year-old female who lost her uterus 6 years earlier due to post-partum hemorrhage. The donor, a 46-year-old patient with multiloculated ovarian cysts, underwent a hysterectomy modified to preserve tissue and vascular integrity. The donor uterus was connected in the

The press was appropriately excited!

World news

This article is more than **23 years old**

Surgeons hail world's first womb transplant

Sarah Boseley, *health editor*

Thu 7 Mar 2002 10.41 CET

Share

The world's first womb transplant has taken place on a 26-year-old woman in Saudi Arabia, it is revealed today, raising the hopes of thousands of childless couples whose only chance of a baby is currently surrogacy.

More than 15,000 women a year in the UK who seek the help of fertility specialists are found to be incapable of becoming pregnant because their womb has been destroyed by fibroids or as a result of cancer treatment or because they were born without one. Only around 200 go down the precarious and emotionally draining route of finding a surrogate mother to carry their child for them. Among Muslims, surrogacy is unacceptable.

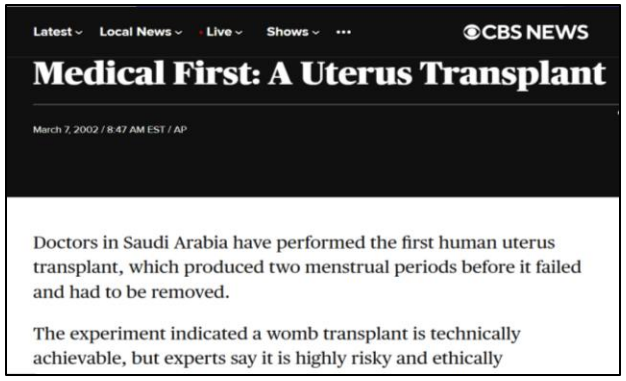
The New York Times

Medical First: A Transplant Of a Uterus

Share full article

By Denise Grady

March 7, 2002



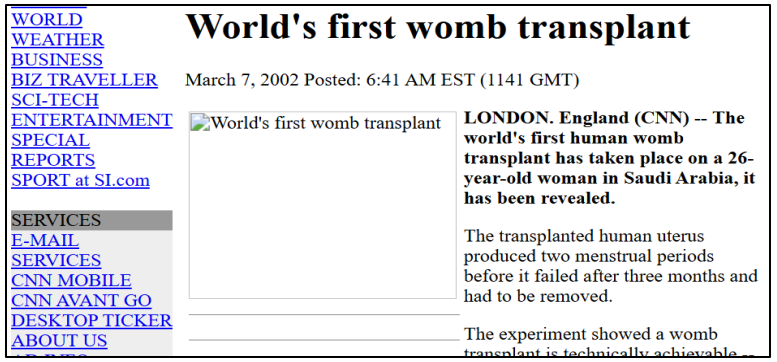
Latest Local News Live Shows CBS NEWS

Medical First: A Uterus Transplant

March 7, 2002 / 8:47 AM EST / AP

Doctors in Saudi Arabia have performed the first human uterus transplant, which produced two menstrual periods before it failed and had to be removed.

The experiment indicated a womb transplant is technically achievable, but experts say it is highly risky and ethically



WORLD
WEATHER
BUSINESS
BIZ TRAVELLER
SCI-TECH
ENTERTAINMENT
SPECIAL
REPORTS
SPORT at SI.com

SERVICES
E-MAIL
SERVICES
CNN MOBILE
CNN AVANT GO
DESKTOP TICKER
ABOUT US

World's first womb transplant

March 7, 2002 Posted: 6:41 AM EST (1141 GMT)

World's first womb transplant

LONDON, England (CNN) -- The world's first human womb transplant has taken place on a 26-year-old woman in Saudi Arabia, it has been revealed.

The transplanted human uterus produced two menstrual periods before it failed after three months and had to be removed.

The experiment showed a womb

However, there were controversies surrounding the animal experimentation performed by this team, the lack of ethical approvals obtained and the reasons for graft failure.
A lapse of 13 years followed …

Clinical pregnancy after uterus transplantation

Munire Erman Akar, M.D.,[a] Omer Ozkan, M.D.,[b] Batu Aydinuraz, M.D.,[c] Kerem Dirican, Ph.D.,[c] Mehmet Cincik, M.D.,[d] Inanc Mendilcioglu, M.D.,[a] Mehmet Simsek, M.D.,[a] Filiz Gunseren, M.D.,[e] Huseyin Kocak, M.D.,[f] Akif Ciftcioglu, M.D.,[g] Omer Gecici, M.D.,[h] and Ozlenen Ozkan, M.D.[b]

2 of the 12 authors were women

Akar et al., Fertil Steril 2013;100:1358–63

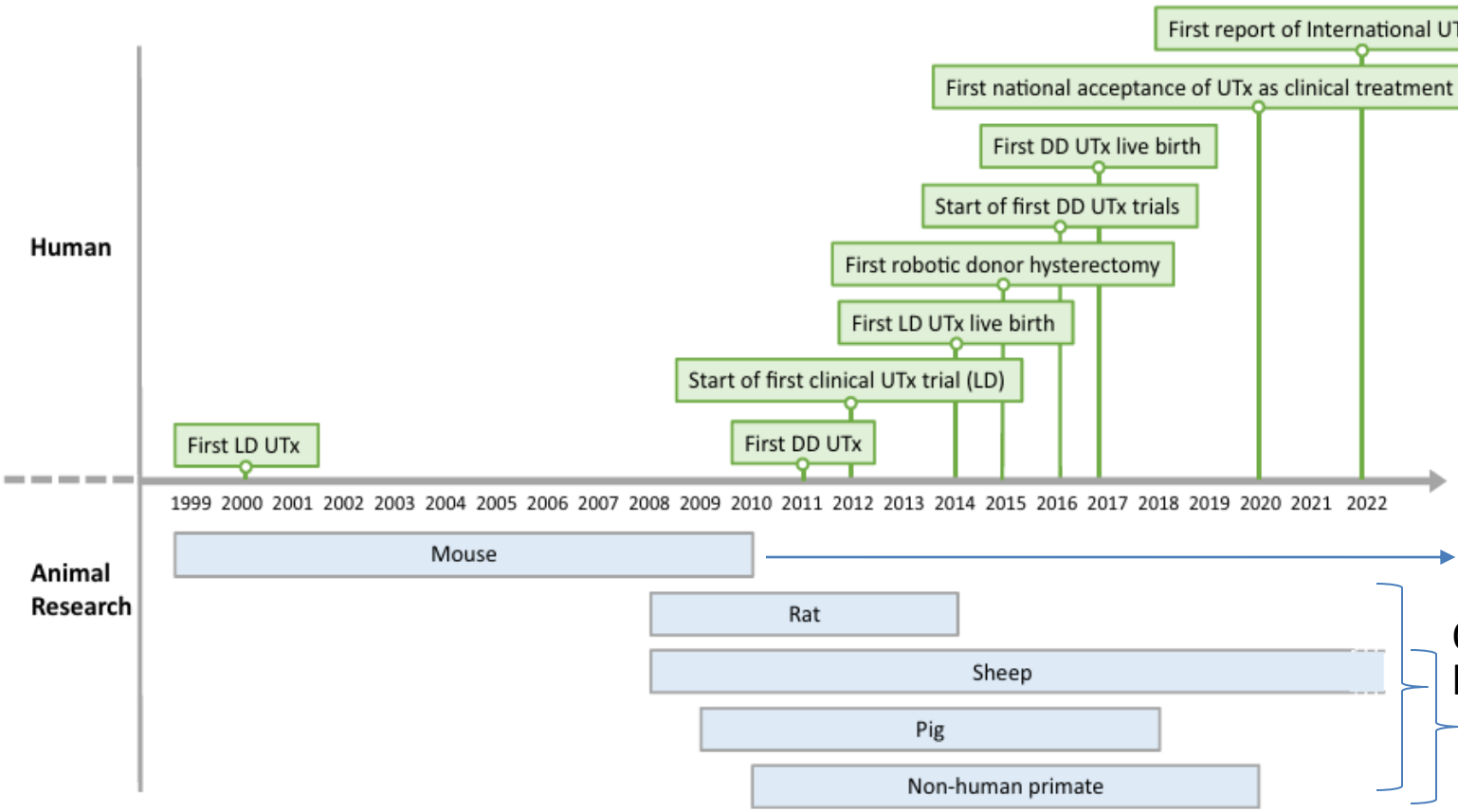
Preliminary results of the first human uterus transplantation from a multiorgan donor

Omer Ozkan, M.D.,[a] Munire Erman Akar, M.D.,[b] Ozlenen Ozkan, M.D.,[a] Okan Erdogan, M.D.,[c] Necmiye Hadimioglu, M.D.,[d] Murat Yilmaz, M.D.,[d] Filiz Gunseren, M.D.,[e] Mehmet Cincik, M.D.,[f] Elif Pestereli, M.D.,[g] Huseyin Kocak, M.D.,[h] Derya Mutlu, M.D.,[i] Ayhan Dinckan, M.D.,[d] Omer Gecici, M.D.,[j] Gamze Bektas, M.D.,[b] and Gultekin Suleymanlar, M.D.[h]

6 of the 15 authors were women

Ozkan et al., Fertil Steril 2013;99:470–6

Meanwhile critical foundational research with animal models was underway



One woman was essential for the mouse UTx studies: **Rayna Akouri**

One woman was essential for rat, pig, sheep studies: **Caiza Wranning**

Two women were essential for pig, sheep to human: **Ceclia Lundmark & Maria Lidemyr**

Brannstrom et al., Hum Reprod Update, 2023, 29(5), 521–544

Livebirth after uterus transplantation

Mats Brännström, Liza Johannesson, Hans Bokström, Niclas Kvarnström, Johan Mölne, Pernilla Dahm-Kähler, Anders Enskog, Milan Milenkovic , Jana Ekberg, Cesar Diaz-Garcia, Markus Gäbel, Ash Hanafy, Henrik Hagberg, Michael Olausson, Lars Nilsson

Not surgery per se, but held retractors

Surgical assistant to Mats

2 of the 7 surgeons were women!

Photo courtesy of Mats Brannstrom

Several of the OR nurses and surgical support staff were women!

Photo courtesy of Mats Brannstrom

Now look where we are today …. at least 10 key women in UTx!!

Rayna Akouri

Past President
Sara Brucker

Marie Carbonnel

Permilla Dahm Kähler

Rebecca Dean

Liza Johannassen

Ozlenen Ozkan

President
Paige Porrett

Katharina Rall

Padmapriya Vivek

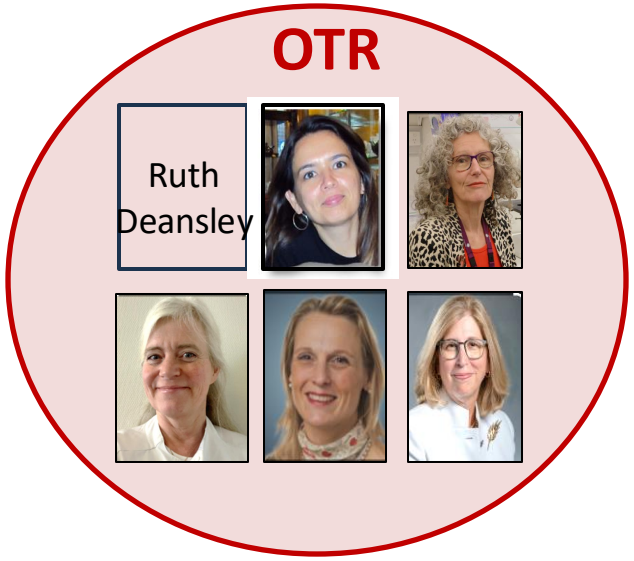
Reflections and legacies

- Women's contributions were, and still are, essential in these remarkable fields but were often previously overlooked
- We must always appreciate the vital role of support staff

Patrick Steptoe, with Muriel Harris (front, right) were among the nurses involved in the early days of IVF

Reflections and legacies

- In all 3 of the fields we've discussed, women's roles have spanned laboratory, clinical care, and patient advocacy. Their legacy continues to inspire.



And we must not forget all the women patients
who had the courage to participate in the pioneering work, often not for themselves, but to give hope to other women with similar medical problems