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care”

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## Recent Progress and Problem of Reproductive Medicine in JAPAN

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# Where is Tokushima City in Japan ?



Japan  
120 million



Shikoku Island  
4 million



Tokushima city  
0.3 million



Traditional Folk Dance  
"Awa Odori"



Vortex in the Naruto Strait



Traditional puppet show

# Bando POW Camp Site



## The Naruto German House

Music bands in the camp played the Ninth Symphony of Beethoven on June 1st in 1918 for the first time in Japan.

Since then, Beethoven's 'the Ninth' has been played on the first Sunday in June annually in Naruto.

Bando POW Camp that existed during WWI, from 1917 to 1920 in Bando, Naruto, Tokushima. This is the place where approximately 1,000 German POWs lived in relative freedom.



# Tokushima University

Graduate School of Biomedical Sciences is made up of 3 schools, Institute of Basic Medical Sciences and University Hospital



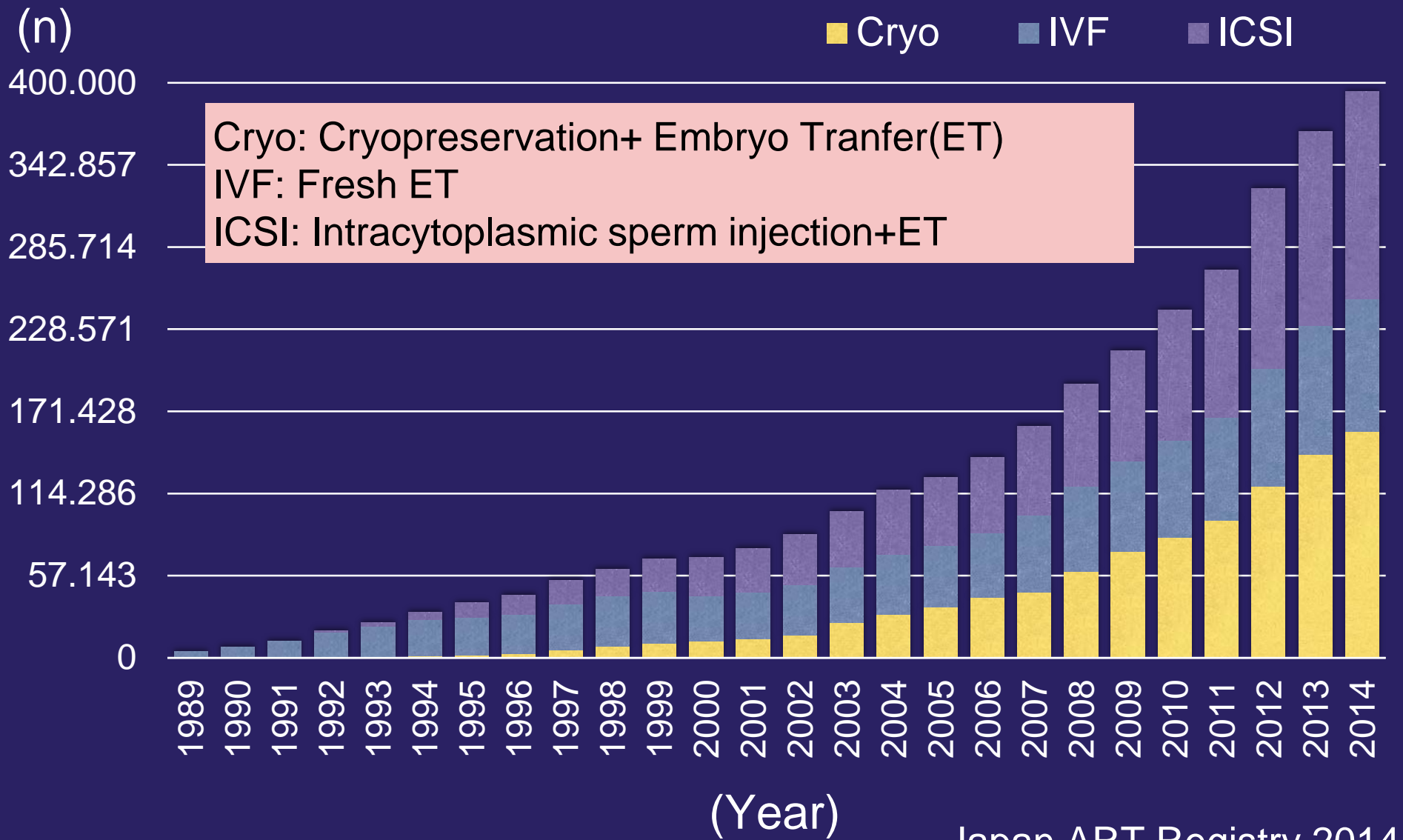
# Today's TOPICS

I . Annual reports of Japan Assisted reproductive  
Technology (ART) registry (1983-2014)

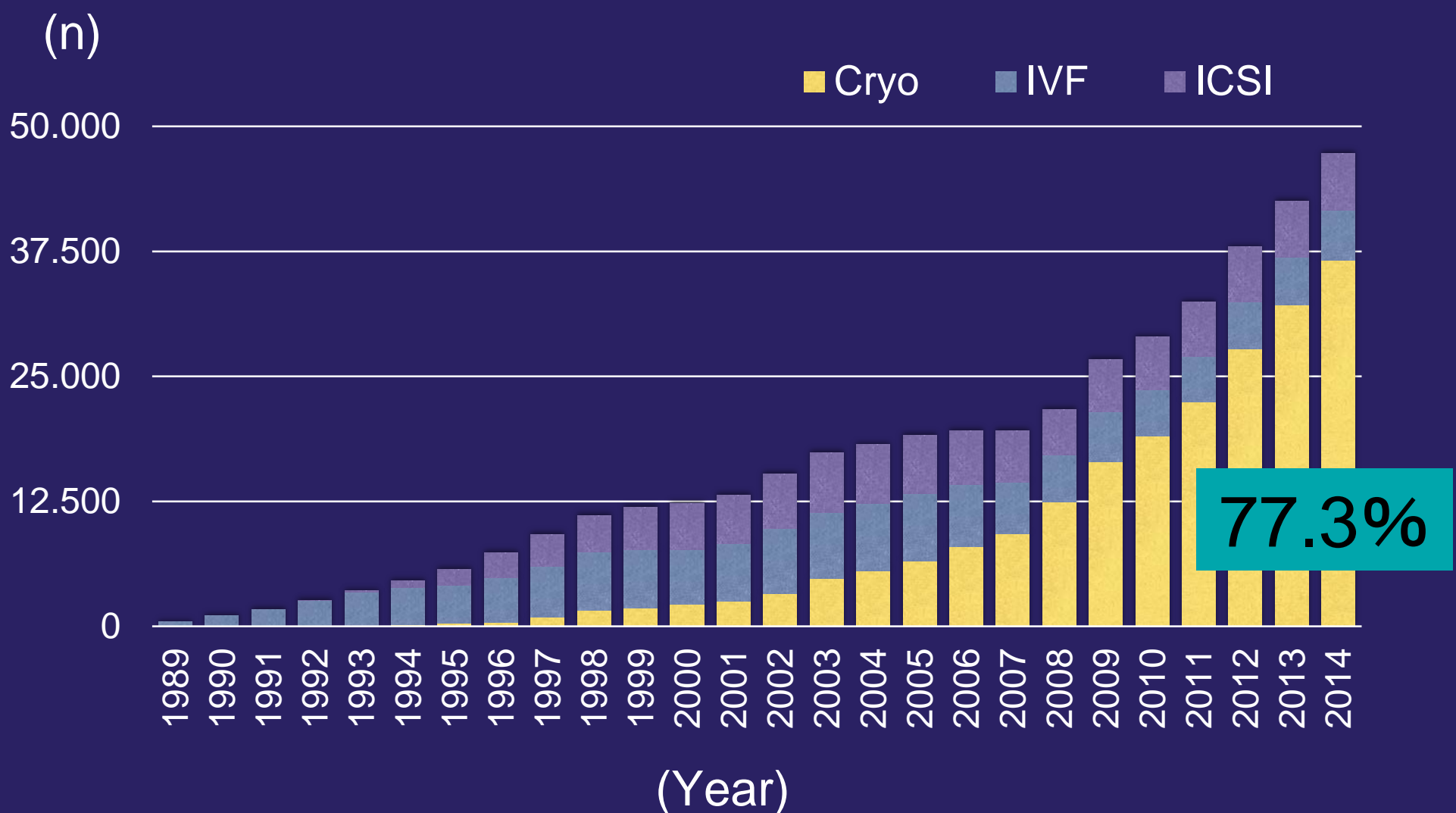
II . Japanese Society for Obstetrics and Gynecology (JSOG)  
Guidelines for Ethics Policy in Reproductive Medicine

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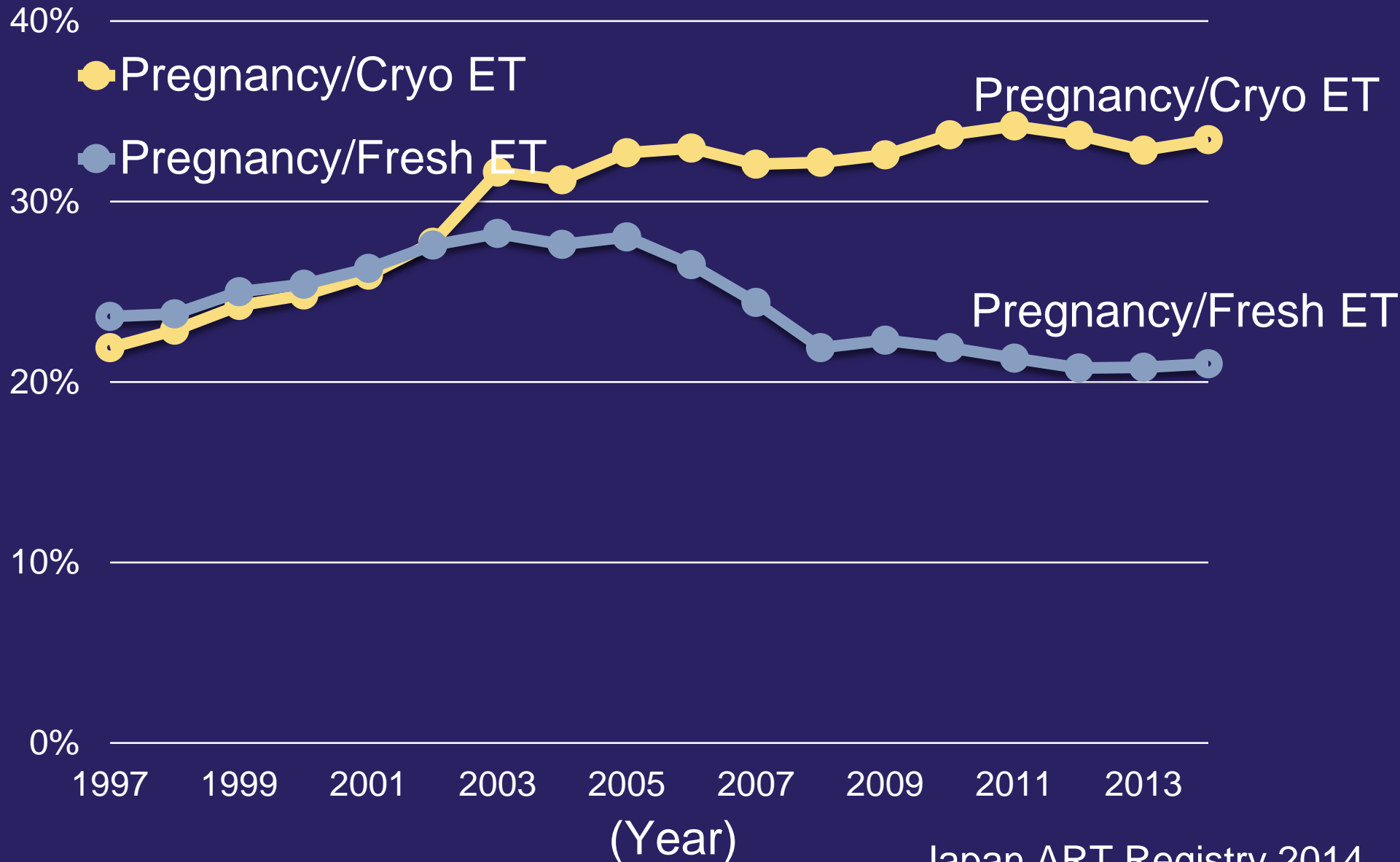
# # of ART cycles has increased



# # of Birth has increased in this decade (cryo-baby rate: about 80%)



# Success rate of ART



# Summary #1

Annual reports of Japan ART registry shows

Attempted treatment cycles 393,745

ART clinics	598
Oocyte Aspiration cycles	231,285
Fresh ET cycles	71,850
Cryo ET cycles	153,868
Delivered babies	46,017

- Japan is a country of largest number of ART treatment in the world
- ART booming among more than 40yo.patients.
- Elective “Cryopreservation ET” have been increased and 80% of delivered babies were by cryoET

II . Japanese Society for Obstetrics and Gynecology (JSOG)  
Guidelines for Ethics Policy in Reproductive Medicine

# Every country has every ethics policy which regulates ART

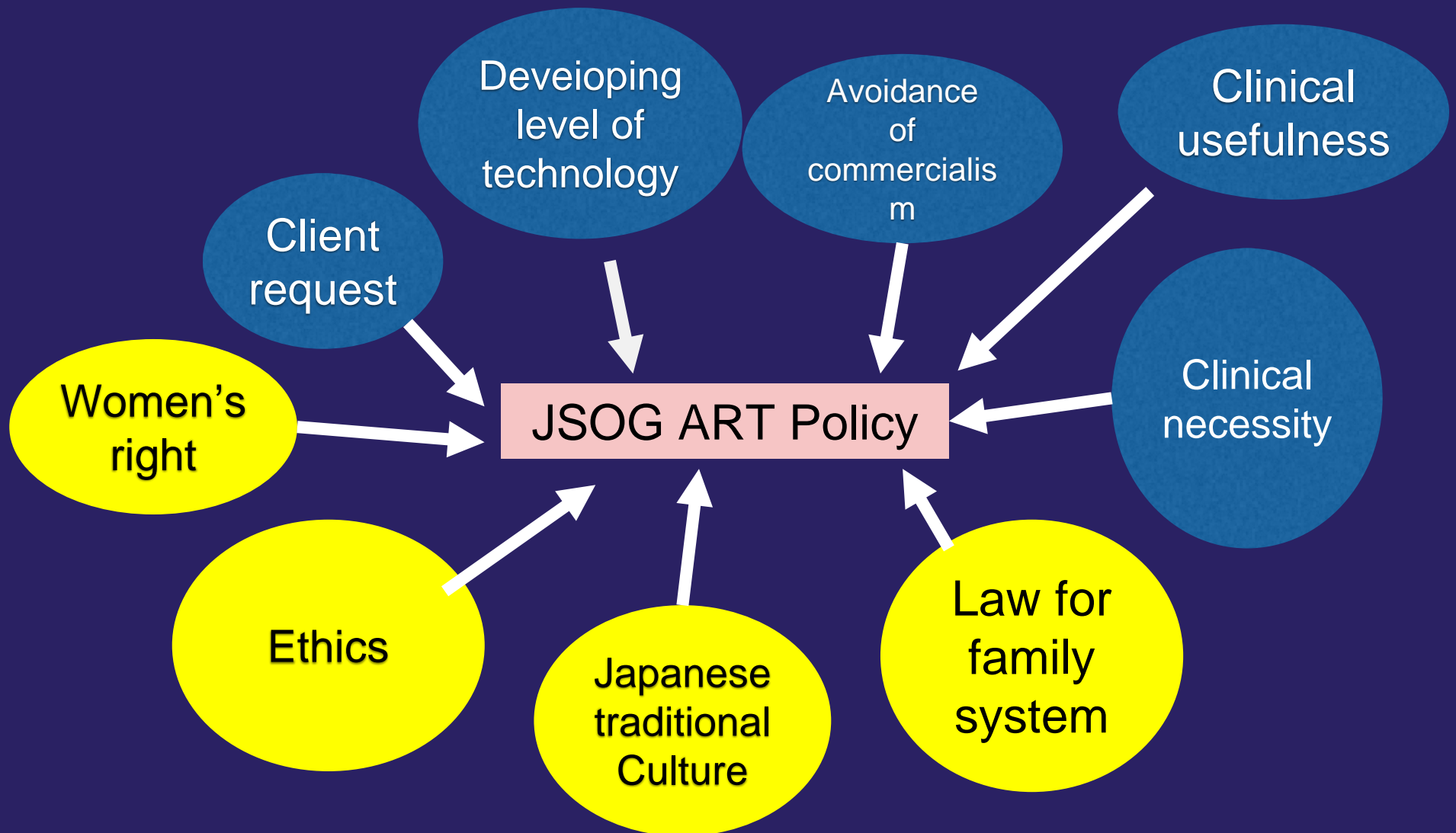
- Law
- Government guideline
- Academic guideline

- In Japan, ART is supervised by Academic guidelines

# Various JSOG Guidelines for Ethics policy in reproductive medicine

- ART clinic registration
- ART annual report
- ICSI policy
- Cryopreservation of ART
- Artificial insemination with donor sperm (AID)
- Avoidance of multiple pregnancy
- Clinical research policy for ART
- Basic research policy using embryo and died babys Organs
- Preimplantation genomic diagnosis
- Oocyte, sperm and embryo donation policy
- Gamete cryopreservation technics for patient with malignant disease

# Consideration on many factors in decision of JSOG ART Policy



# Ethics of reproductive medicine is specific and complicated

General Medicine

An Individual

Family

Reproductive Medicine

An Individual

Couple

Family

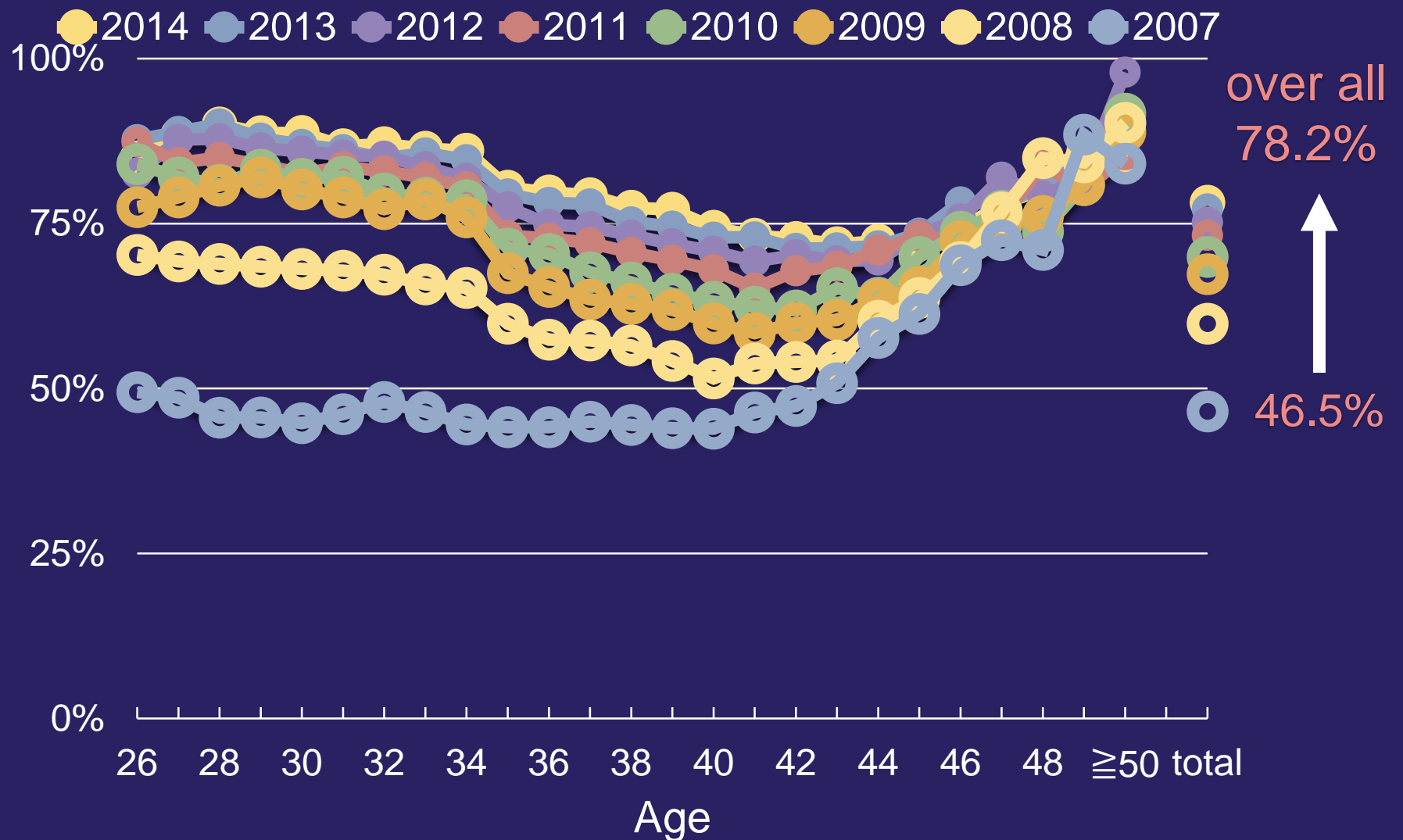
Child

# JSOG single embryo transfer (SET) Policy started in 2008 with JSOG guideline

	1st	2nd	3rd	4th ...
34 y.o. or younger	SET	SET	SET or DET	SET or DET
35 yo. or elder	SET or DET	SET or DET	SET or DET	SET or DET

( no transfer with 3 or more embryos )

# Change of % of SET (2007-2014)

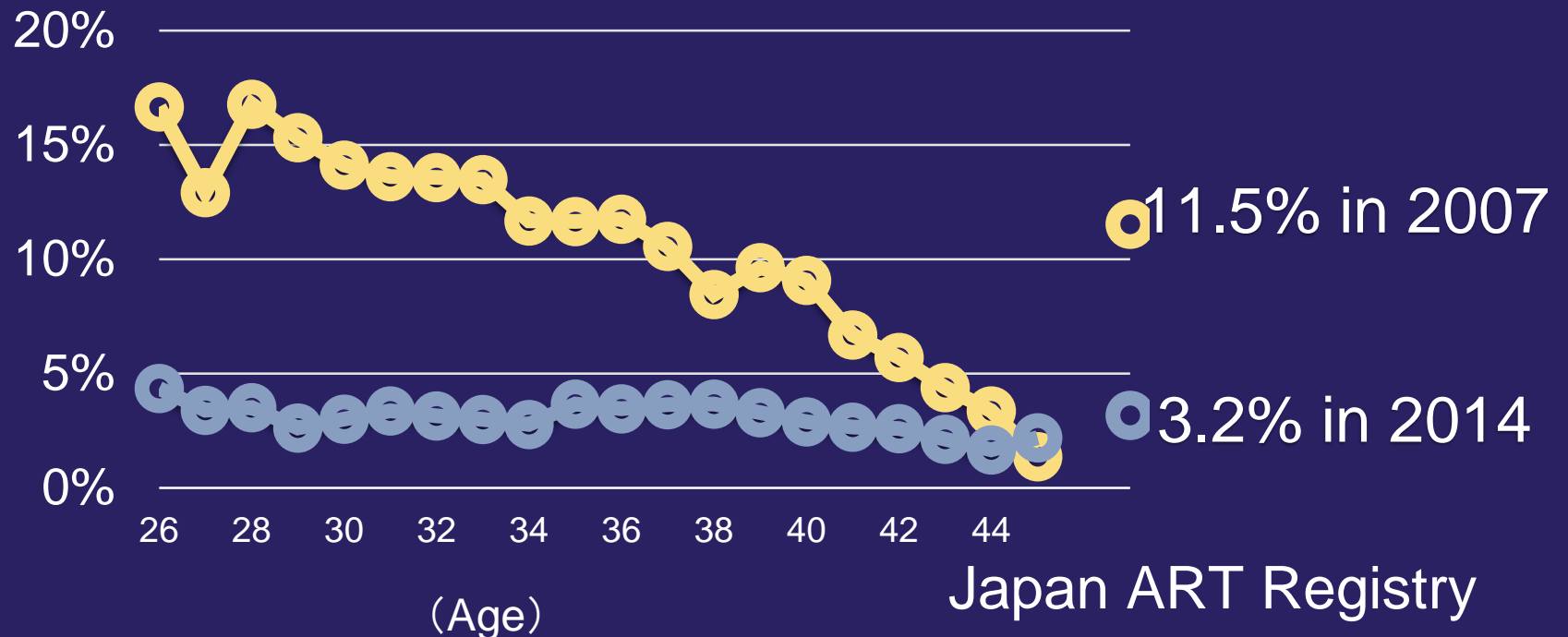


# % of multiple pregnancy in ART

Multiple pregnancy rate of ART decreased by JSOG SET policy

JSOG SET policy started

year	2001	2007		2009	2010	2012	2014
Rate	17.2%	11.5%		5.1%	4.7%	3.7%	3.2%



Japan ART Registry  
2014

# JSOG Ethics Committee have discussion on new guideline as below

- Preimplantation Genomic Test
- Gamete and embryo donation and IVF surrogacy

# Preimplantation Genomic Test (PGT)

- **Preimplantation Genomic Test for Monogenic**  
(PGT-M: Check one specific abnormality of chromosome)
- **Preimplantation Genomic Test for Aneuploidy**  
(PGT-A: check the abnormality of number of chromosome)

# Present JSOG policy for PGT

- We carry out only PGT-M as clinical research trial
- Ethics Committee must review every PGT-M cases
- We permit PGT-M for two targets
  1. Serious genomic disease without appropriate treatment
  2. Recurrent Spontaneous abortion due to genomic factor
- PGT-A is prohibited in ART

# Why PGT-A prohibited in the present ?

## There are many ethics opinions on PGT in Japan

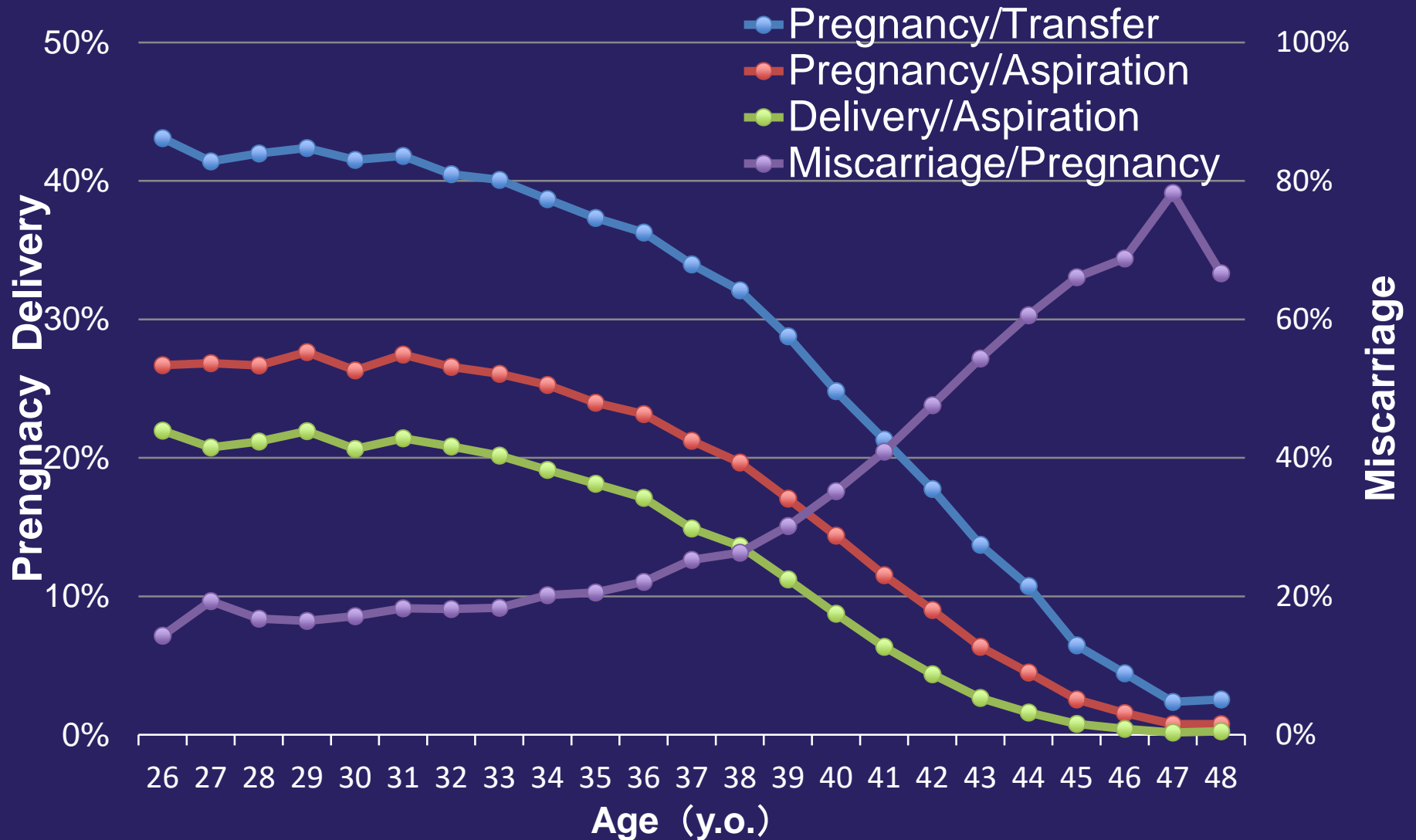
### Agreement

- Decrease serious genetic disease
- Decrease miscarriage rate of pregnancy
- Increase ART successful rate

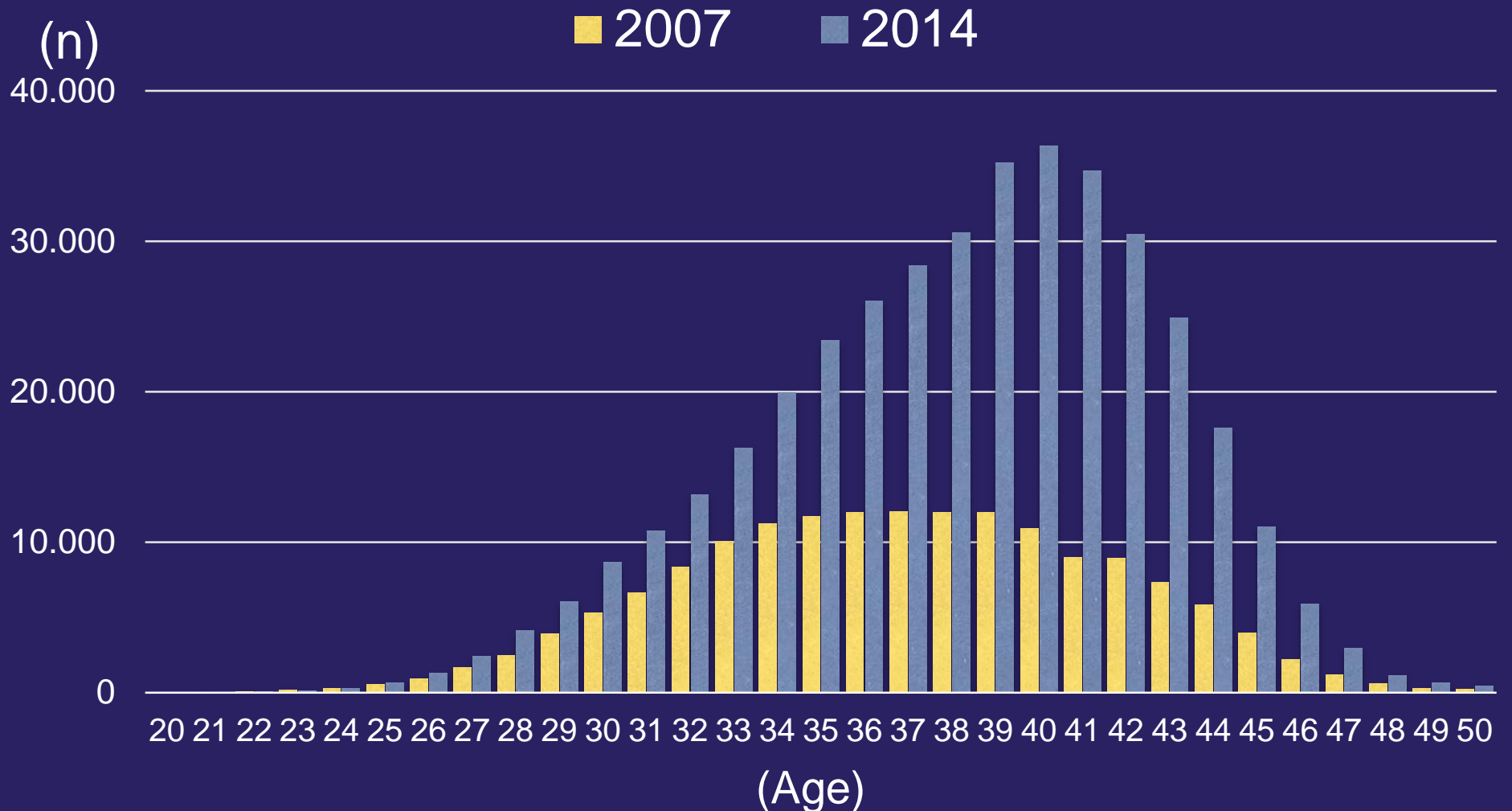
### Non-agreement

- Can check whole genomic information
- Pregnancy Termination is easily performed
- No reviewed data for usefulness of this technology

# Pregnancy and miscarriage rates of ART



# Age-distribution of ART cases in 2007 and 2014



# PGT-A is expected as useful technique now

- Recently there has been a rapid shift to late marriage and late child-bearing in Japan and abnormal pregnancy increased.
- PGT technology has rapidly developed ( biopsy techniques and examination methods as microarray or New Genomic Sequencer)
- Clinical trial has been performed in Europe and USA
  - ① High age patient (more than 37 years old)
  - ② Recurrent miss ART (more than 3 )
  - ③ Recurrent spontaneous abortion
  - ④ Serious male factor
  - ⑤ Past history of abnormal baby

We must arrange the environment of PGT-A before JSOG PGT policy will be changed to permission

- Study for evaluation of the effect of PGT-A
- Discussion for ethics problems which are pointed out by non-agreement opinions

# Government supports (to make a law) is necessary in ART medicine using donation with egg and sperm and IVF surrogacy

- National regulating system is necessary
- Definition of “who is mother” in Japanese law  
→ “The Mother” will be the women who has child-bearing
- Prohibition of Commercialism for donation and ART surrogacy with punishment
- Keeping baby’s the priority of origin

# Summary #2

What is necessary in order to introduce new ART technology ?

- A lot of ethics factors must be discussed
- National consensus including ethics and law
- Avoidance of commercialism
- Suitable and proper information for client patients

# Acknowledgment



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