

Second International Summit on Human Genome Editing  
Session: Social and Philosophical Reflections on Manipulating Genetic Variation

# Genome Editing in Japan: A Bioethical Perspective

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# Aim of the talk

- Explain Japan's regulatory framework concerning genome editing in human embryos
- Discuss the important considerations for future discussions in Japan and beyond

# Outline

1. The Draft Guidelines on Research involving the Use of Gene Editing Tools in Human Embryos
2. The Experts Panel on Bioethics and research using human embryos
3. Discussion

# Word of caution

- Not representing Japan nor any organisation

# 1. The Draft Guidelines on Research involving the Use of GETs in Human Embryos

# Japan set to allow gene editing in human embryos

Draft guidelines permit gene-editing tools for research into early human development.

David Cyranoski

Nature, 03 Oct 2018



Researchers in Japan will be able to edit human embryos in the lab under proposed rules. Credit: Zephyr/SPL/Getty

## RELATED ARTICLES

Chinese scientists  
human embryos

UK scientists appl  
genes in human e

Where in the wor  
CRISPR baby be b

## SUBJECTS

Genetics

The guidelines will ALLOW:

- BASIC research using GETs,
- using SPARE embryos,
- for improvement of ART

It will NOT ALLOW:

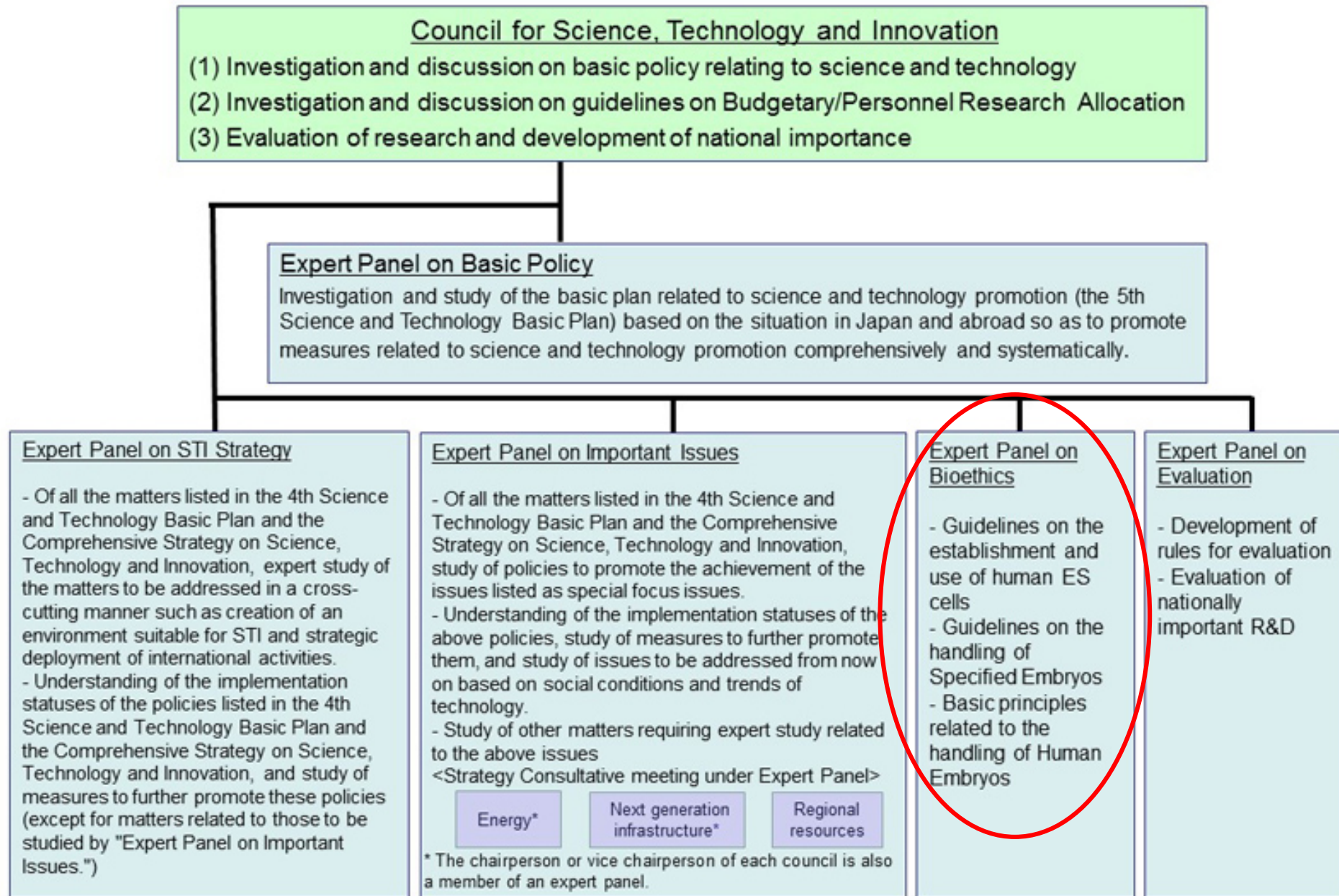
- basic research for the treatment of genetic and other diseases
- CLINICAL application

Japan has issued draft guidelines that allow the use of gene-editing tools in human embryos. The proposal was released by an expert panel representing the country's health and science ministries on 28 September.

Although the country regulates the use of human embryos for research, there have been no specific guidelines on using tools such as CRISPR-Cas9 to make precise modifications in their DNA until now.

## 2. The Expert Panel on Bioethics and research using human embryos

# The Expert Panel on Bioethics





# 1. Basic Principles concerning the Handling of Human Embryos 2004



- human embryos = “sprouts of human life”
- need protection to maintain human dignity
- research use is exceptional but allowed on conditions of 1) scientific validity, 2) assurance of safety, and 3) social validity

## 2. 2016 Expert Panel's Interim Report on Using GETs in Human Embryos

- Basic Research using GETs: Conditionally OK
  - Applied the Basic Principles
  - Approved research of development and differentiation of embryos
  - But not other types of research
  - No new creation of human embryos for research

### 3. 2017 Task Force's First Report to Review the Basic Principles

- No revision of the principles
- Recommendation to create the guidelines on research involving the use of GETs in human embryos
- ⇒ The 2018 draft guidelines

### 3. Discussion

# 1. The Basic Principles Approach

- Applying the principles to the types of research
  - Piecemeal
  - Consistent

# 1. The Basic Principles Approach (Cont.)

- Limitation of Scope
  - Silent on germline cells such as sperm and eggs
    - Not clear whether such research would undermine human dignity
  - Silent on the Clinical Application
    - The interim report is against the clinical application, but the reasons were not derived from the Basic Principles
- ⇒ Needs a major revamp

## 2. Need for more democracy in policymaking

- Tendency to avoid legislation
- Legislation is desirable for more public discussion
- Not doing bioethics *incognito*

### 3. Apparent absence of religion

- No mention of Buddhism or Confucianism
- Human dignity not associated with Christianity
- More democratic discussion may bring forth diverse perspectives including religion



# Thank you for listening

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