

Stem cells and the Norwegian public

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Main points

- The Norwegian public and biotechnology
- Stem cells – the difficult choices
- Stem cell politics
- The consensus conference
- Impacts and take-aways
- Stem cells in education

The Norwegian public and biotechnology

- Eurobarometer ... 2002
- Skeptical Norwegians have recently become more optimistic
- 1999: balance of opinion -5; 23 points < EU
- 2002: + 2; 5 points < EU

Different attitudes

- Attitudes differ with use: Medicine > Food
- > 70% : therapeutic cloning useful
- < 25 %: GM foods useful
- Social benefit is necessary for support
- Risk is a trade off
- moral accept functions as a veto

The color code of 'no'

- Norwegians are knowledgeable
 - 62 % correct answers > EU 56 %
- Increase after public debate:
 - Cloning: from 39% to 69% after Dolly
- Skepticism is made up of two distinct factions:
The **Green** and the **Blue**

The Blue Critique

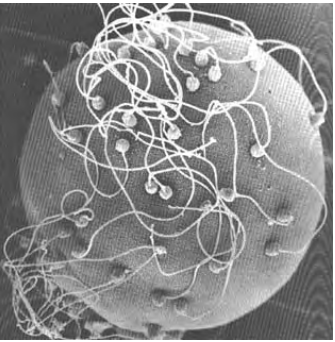
- Relatively old, low education and knowledge
- Religious, Inclines to the right
- Value-based critique: Biotech challenges the order of things
- So; biotech should be banned, forbidden, regulated
- Faust

The Green Critique

- Younger, high education and knowledge
- Strong orientation to the left
- Non-believers
- Risk the central element for skepticism
- Biotech should be monitored and regulated
- But: Attitude changes with risk perception
- Frankenstein

What is a stem cell?

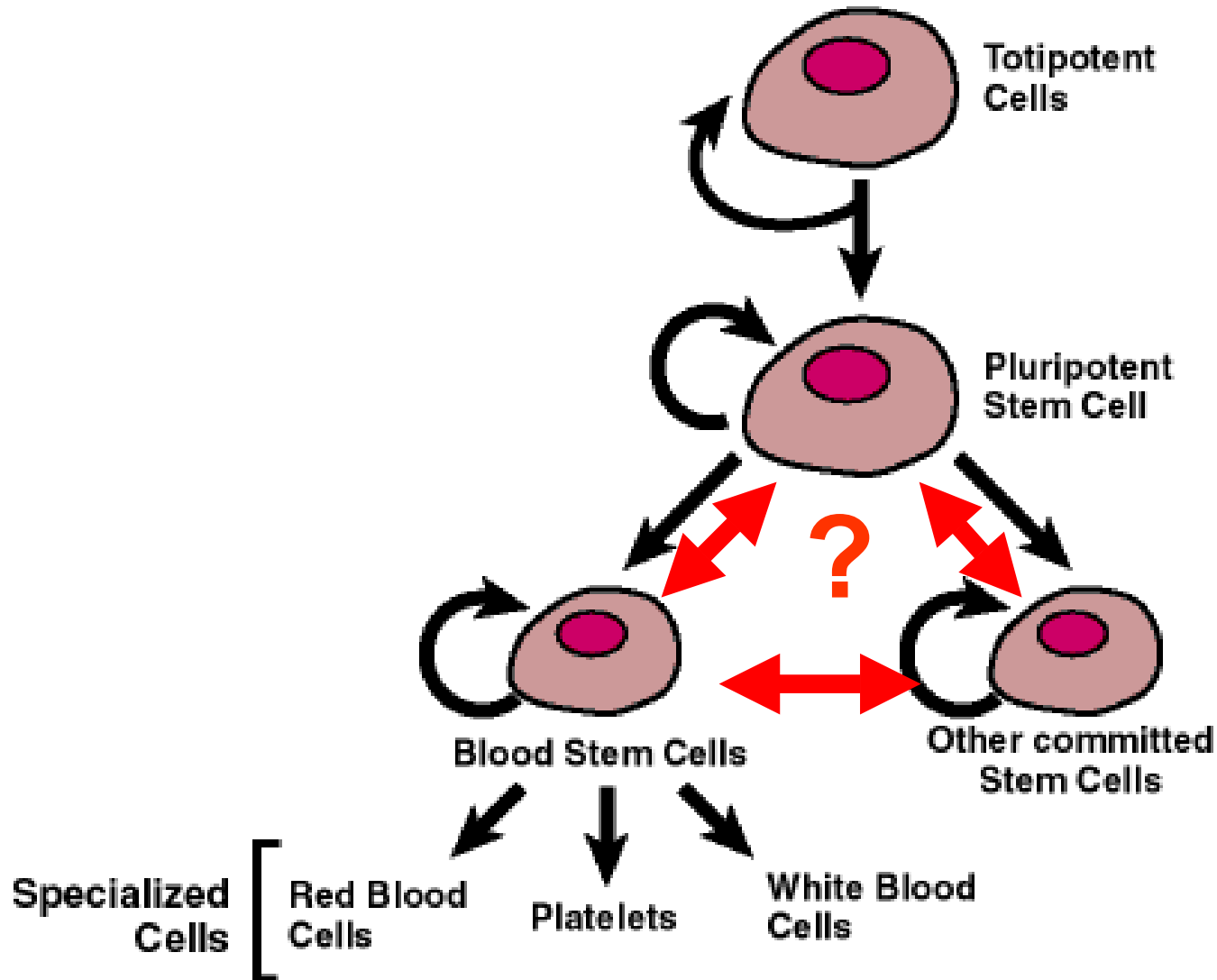
- Thousands of cells are lost every second
- Stem cells are immature cells ultimately responsible for sustaining the homeostasis
- Stem cells are believed to self-renew



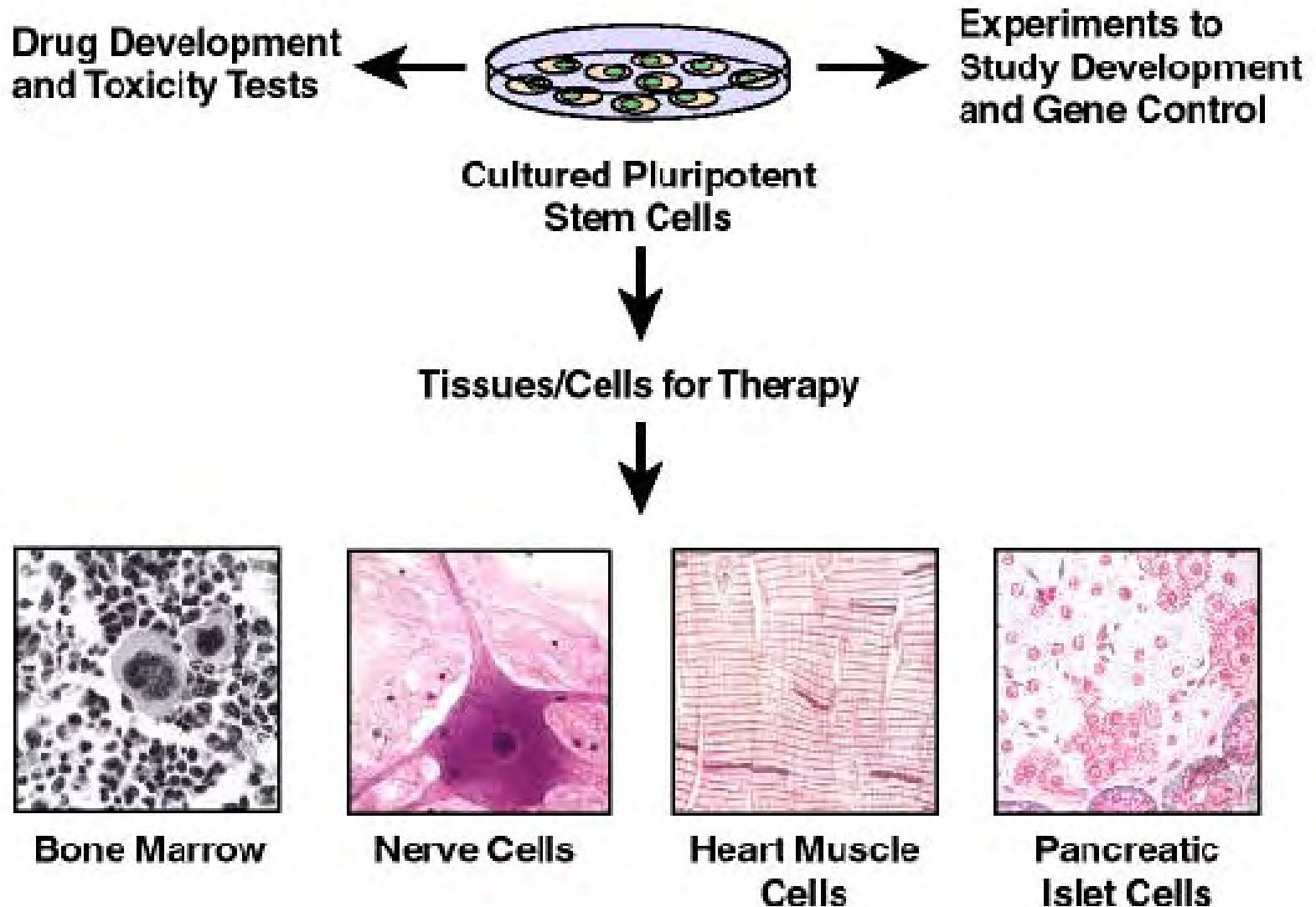
Blastocyst



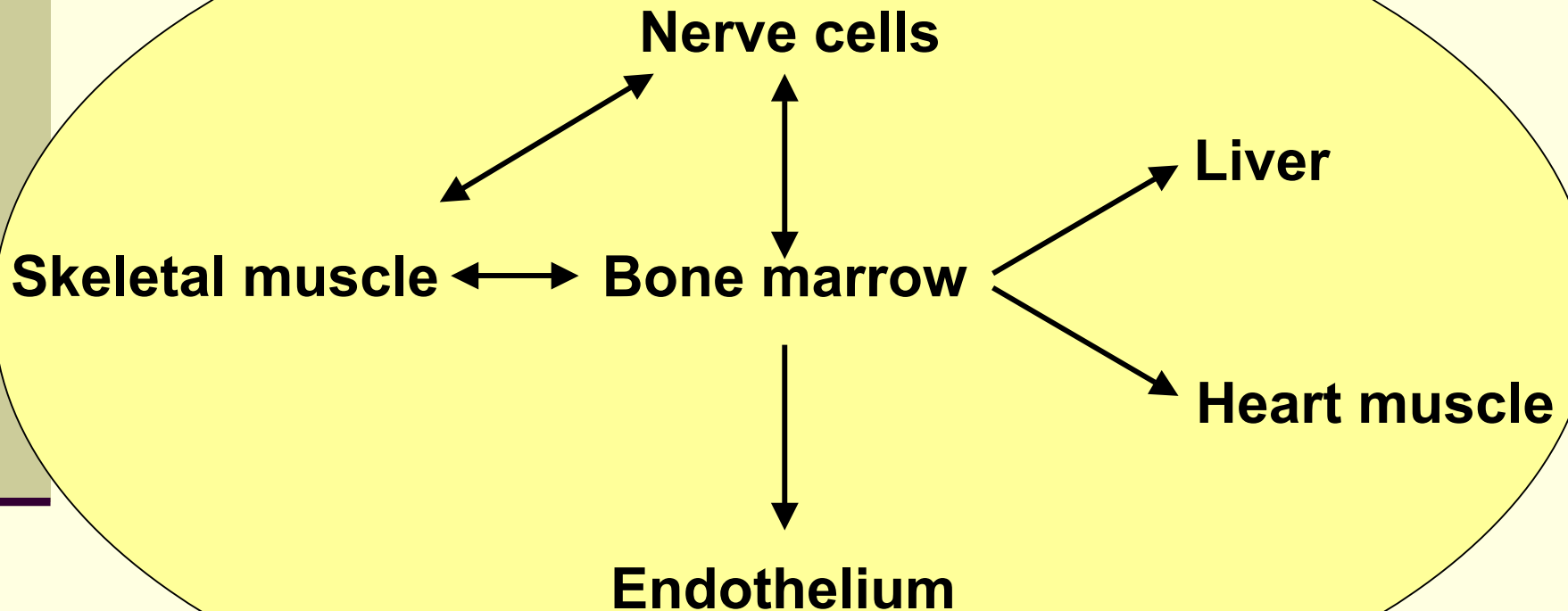
Stem cell hierarchy



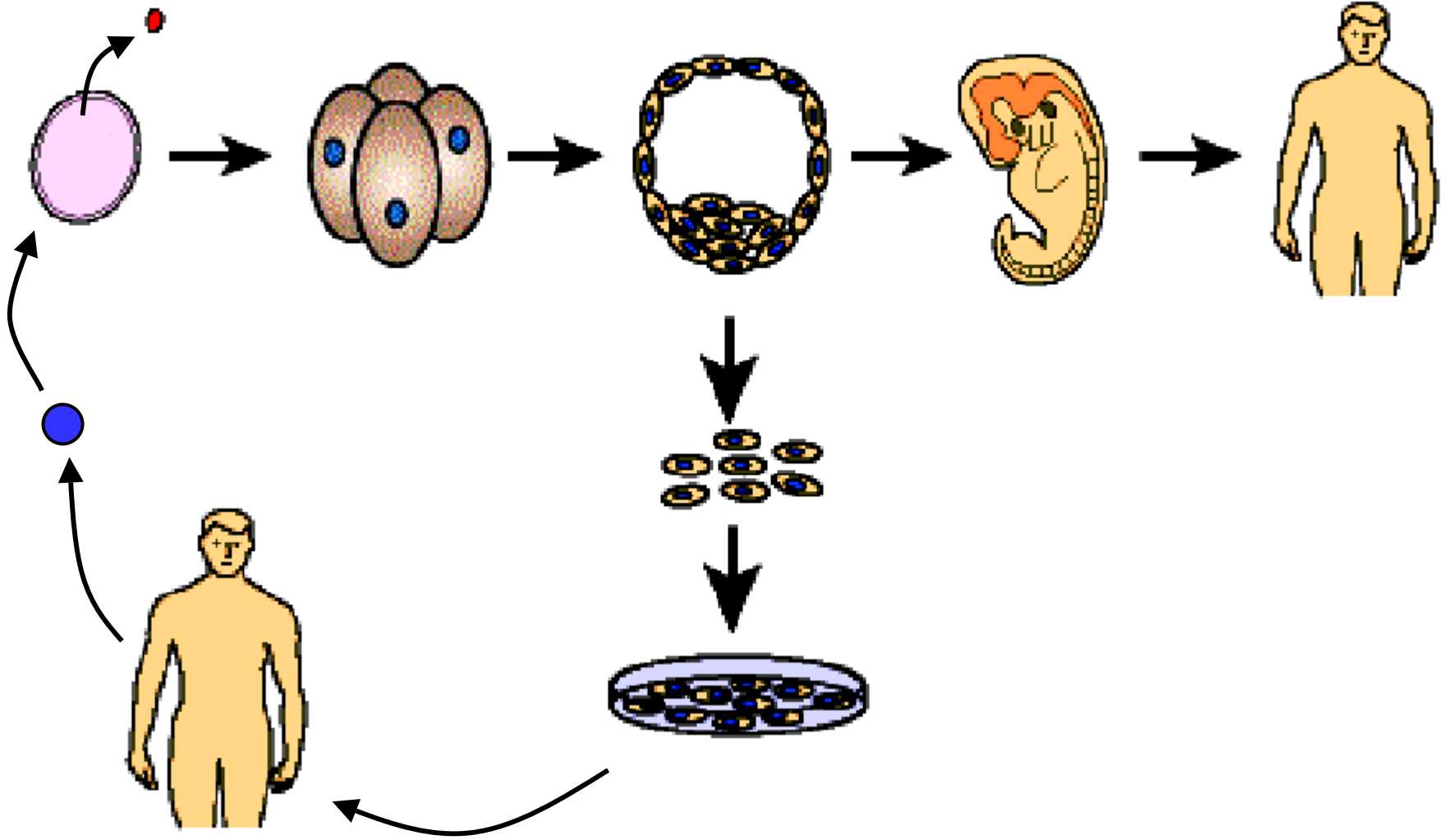
The Promise of Stem Cell Research



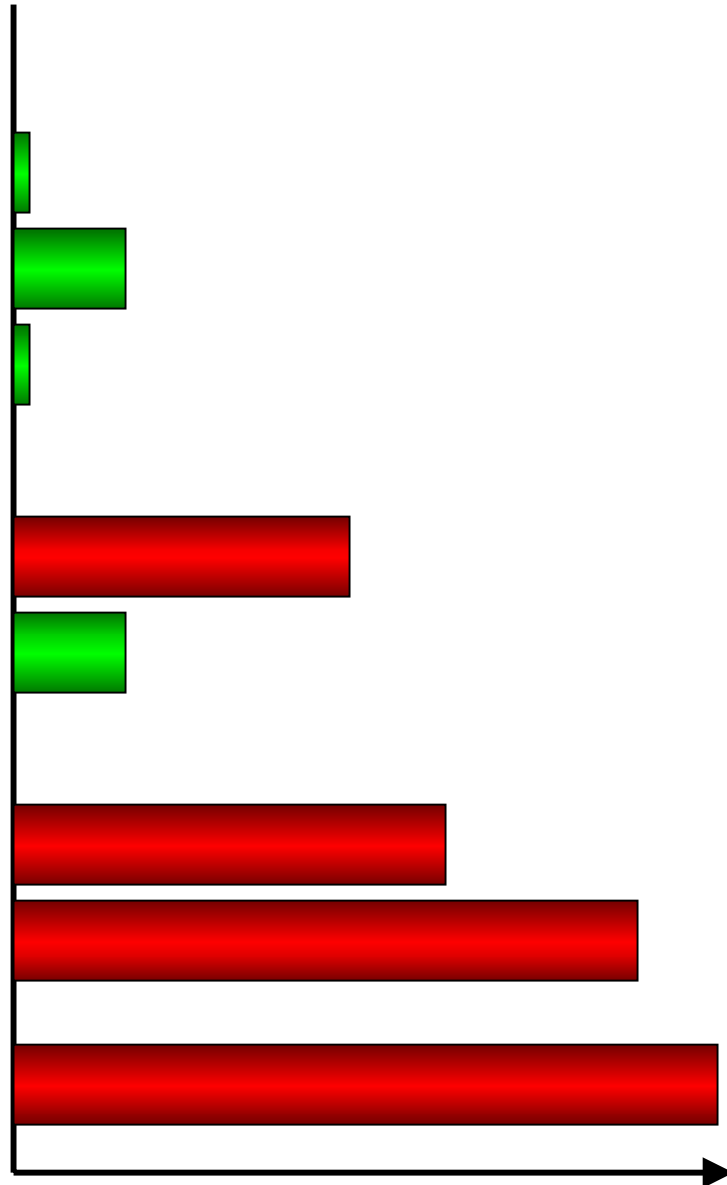
Stem cells from adult - new potentials -



Therapeutic and reproductive cloning



Ethics is linked to the sources



- **Adults**
 - live
 - dead
 - umbilical cord blood
- **Aborted foetuses**
 - elective abortion
 - spontaneous abortion
- **Fertilised egg**
 - supernumeraries from IVF
 - fertilised for research
- **Therapeutic cloning** (or other methods providing pluripotent stem cells)

The Norwegian Government and Stem Cells

- Centre-Right Coalition: the Conservatives (38), the Liberals (2), the Christian Democrats (22). Total: 62 of 156
- Division of labour: CD has the PM, OED and Health.
- **Blue critique**
- The Sem-declaration: vs therapeutic cloning and research on fertilized eggs; more research on adult stem cells,

Regulation of stem cell research (before 2002)

- Biotechnology Act (1994/2003)
 - research on a fertilised egg is prohibited
 - use of techniques to generate genetically identical organisms is prohibited
- Transplantation Act
 - research using foetal material is legal given certain preconditions
- Biotech act does not regulate:
 - therapeutic cloning
 - import of embryonic stem cell lines

Consensus conference

November 2001

- 2000 randomly selected Norwegian citizens received a letter inviting them to participate
- >100 replied positively
- 16 were selected based on gender, age, geography and work/education



The prelude:

- Read feature articles about consensus conferences and stem cells
- Met at two weekends to get to know each other and listen to overview presentations about stem cells, philosophy
- Read more in depth articles and chronicles
- Generated questions and selected experts

A broad group of experts

- 3 stem cell scientists
- Parkinson's patient
- Judge
- Theologian
- Medical ethicist
- Philosopher
- NGO for the disabled
- NGO for the invol. childless
- MP, chair Standing committee for health
- Forensic MD, former chair of the BAB
- CEO BioMed company

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- Day 1:
 - Experts answer written questions
 - Day 2:
 - Dialogue between the experts and the citizen panel
 - Day 3:
 - The citizen panel decide their standing
 - Day 4:
 - The consensus report is presented

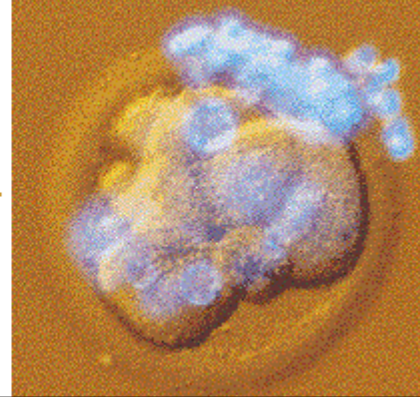
Conclusion: Yes, but no

- Yes: legalize research on embryos that are super numerals after IVF
- Emphasize the possibilities for new treatments for chronic/serious diseases
- Yes: The state must support stem cell research
- No: Ban therapeutic cloning. Can be carried on to a cloning of humans
- No: Ban fertilization of eggs. Life should not be created exclusively for the purpose of research

EXCLUSIVE

The First Human Cloned Embryo

By Jose B. Cibelli, Robert P. Lanza and
Michael D. West, with Carol Ezzell



Enter the Media





18:39

NRK 1



NRK 1



NRK 1
19:01



NRK NYHETER

MAREN RANHOFF





Press coverage

- Printed articles: 138
- Radio: 29
- TV: 23
- In total 35 mill readers, listeners and viewers
- 60% mention the conference explicitly, nobody questions its legitimacy
- Generated debate on ethics/politics and with other participants than usual

So what?

- CC is referred to by Gov and Stortinget
- The MOH + the Socialist Left: The blue and the green
- Adult stem cell research as the preferred way
- Very strict law, forbids research with
 - fertilized eggs
 - *human embryos*
 - *cell lines from fert. eggs or human embryos*
 - *and, of course, cloning of embryos*

But the debate goes on

- Signal effect: Lay people as legitimate and relevant participants in complex tech disc.
- Ethics: the moral intuition
- Model effects: Broad definition of what constitutes the stem cell debate
- Stem cells as a subject for public debate:
 - Papers
 - Prime time debates on TV
 - Plans for films etc

Stem cells in education

- Interdisciplinary study project
- Started spring 2002 by the NBT and the BAB
- Two schools participated in a pilot project.
- Booklet with introductory texts on biology and biotechnology, ethics and politics and society.
- Two writers contributed
- Additional resources on websites
- On a national level in 2004.

Lessons from school

- 26 students aged 15 or 18 evaluated
- 18 very/interesting, 8 ok, 0 not
- Not too difficult – no age difference
- Ethics more difficult than science (test)
- Graphics and interface are substantial