

## WMA STATEMENT ON STEM CELL RESEARCH

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### PREAMBLE

The fields of stem cell research and therapy are among the fastest growing areas of biotechnology.

Stem cells can be harvested from established tissue (adult stem cells) or from the blood of the placenta via the umbilical cord. These sources may create no specific ethical dilemmas.

Stem cells can also be obtained from an embryo (embryonic stem cells). Obtaining and using these stem cells raises specific ethical questions and may be problematic for some people. Another source of stem cells valuable for research is induced pluripotent stem cells, which can be generated from adult tissues, and may in some cases be functionally equivalent to embryonic stem cells, although they are not derived from embryos.

Some jurisdictions have prohibited using embryonic stem cells. Others have allowed using so-called “spare or excess embryos” from assisted reproduction procedures for research purposes, but the production of embryos solely for research purposes may be prohibited. Other jurisdictions have no specific laws or regulations with respect to embryonic stem cells.

Human embryos are considered by some people to have a specific and special ethical status. This has generated debate amongst ethicists, philosophers, theologians, clinicians, scientists, health workers, the public and legislators.

In vitro fertilisation involves the production of embryos outside of the human body. In many cases, some of the embryos are not used to achieve pregnancies. Those not used may be donated for the treatment of others, or for research, or stored for some time and then destroyed.

Stem cells can be used to conduct research into basic developmental biology, human physiology and disease pathogenesis. There are many current research programs investigating the use of stem cells to treat human disease. Adult stem cell therapies, including using bone marrow, cord blood or blood-derived stem cells for transplantation, include several important and well-validated clinical advances. In contrast, clinical studies have not yet validated the use of embryonic stem cells in therapy.

Embryonic stem cells may at times be superior to induced pluripotent stem cells for certain applications, and research with embryonic stem cells may continue to be needed. Some experts anticipate future use of a variety of therapies based on stem cells, including transplants of genetically matched tissue. It is too early to assess the likelihood of success of any specific therapy based on stem cells.

Public views of stem cell research are as varied as those of doctors and scientists. Much public debate centers on concerns of abuse of the technology and the potential for harm in recipients, and specific concerns continue to be raised about the use of embryos. Investigational stem cell products also may pose unique risks, including unknown long-term health effects such as mutations.

Adoption of laws in accordance with established ethical principles is likely to alleviate concerns for many members of the public, especially if such laws are carefully and credibly monitored and enforced.

### RECOMMENDATIONS

## WMA STATEMENT ON EMBRYONIC STEM CELL RESEARCH

1. Whenever possible, research should be carried out using stem cells that are not of embryonic origin. Research with stem cells from unused embryos after in vitro fertilization techniques should only be carried out if obtaining the potential results could not also be addressed with the use of other types of stem cells, including induced pluripotent stem cells. Research and other uses should be in accordance with the WMA Resolution on the Non-Commercialisation of Human Reproductive Material.
2. All research on stem cells, regardless of stem cell type, must be carried out according to established ethical principles and with appropriate informed consent. Both established and proposed laws must conform to these principles to avoid confusion or conflicts between law and ethics.
3. The ethical principles should, where possible, follow international agreements. Recognising that different groups have widely varying views on the use of specific stem cell types, these principles should be drafted with enough flexibility to allow different jurisdictions to appropriately regulate levels of research.