



Church's duty is clear: respect life

'Human embryo is to be treated as a person from conception,' says London bishop

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The battle over using human embryos in stem-cell research is not just about creating cures for dreaded diseases. It is more importantly about treating human life as raw material that is expendable in the pursuit of scientific research, says Bishop Ron Fabbro of London, Ont.

The bishop laid out the Catholic Church's thinking on stem-cell research in a comprehensive presentation for the fourth annual Connie Heng Lecture sponsored by the Canadian Catholic Bioethics Institute. The lecture, attended by almost 200 people, was held at the University of St. Michael's College on November 5.

"It is difficult to maintain our ethical position, when most of society seems to be heading in a different direction," Fabbro said. "Nonetheless, we have a clear duty to do so. The basis for respect for the embryo, therefore, must be constantly restated by us. No matter what size, no matter what stage of development, a human embryo is to be treated as a person from conception." Stem-cell research is a lightning rod for controversy, combining promises of cures to debilitating diseases with the threat to human life in the form of embryos. Stem cells can be found in all human tissue and have attracted the attention of biologists because they can renew themselves in different ways to create new tissues such as those found in the liver and heart. Research on adult stem cells has received the approval of church authorities because it doesn't involve a threat to human life. However, the church has condemned research on stem cells taken from human embryos because the embryo must be killed in the process.

While scientists have had some success with adult stem cells, a large part of the scientific community is pressing to open up research on embryonic stem cells because early indications are that they have greater potential for curing diseases.

Those promises are behind the drive to legalize the use of embryonic stem cells and even legalize so-called therapeutic cloning, in which embryos are cloned solely for the purpose of creating stem cells for scientific or medical uses. In the United States, prominent Hollywood celebrities such as the late Christopher Reeves, left quadriplegic as the result of an accident, and former First Lady Nancy Reagan, whose husband Ronald Reagan died with Alzheimer's disease, have been in the front row in the campaign for complete freedom for embryonic stem-cell research.

"Arguments such as those raised recently by . . . Nancy Reagan, appealing for embryonic stem cell research using cells from any embryonic source, including clones, in the search for a cure for Alzheimer's, can obviously sway us in our attempts to relieve suffering," Fabbro observed. "And who is not affected by the plight of the late Christopher Reeves, also pleading for a cure and asking scientists to use any means, including cloned embryos, to find cures for serious illnesses or conditions. Celebrity power is evident in many areas of life, and individual situations move us to compassion."

Fabbro said this campaign is just part of a societal atmosphere in favour of treating embryos as simply material that can be sacrificed for the greater good of humanity. He described how many advocates of embryonic stem-cell

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research have been successful at framing the public debate to their advantage by using language that dehumanizes the embryo. Terms such as “pre-embryo”, “a clump of cells,” and “potential human being,” push people to think of embryos as non-human.

“Concerning ‘potential’, it is important to emphasize that we all undoubtedly have potential for development in all sorts of areas. The embryo has too. However, just as we remain who we are through the actualizing of potential, so does the embryo. It does not have the potential to become human. It is human by its very existence.”

Fabbro also said Catholic teaching on cloning is clear. Cloning is an immoral procedure whether it is done to reproduce a human being (reproductive cloning) or to reproduce cells for research.

The bishop pointed out there is a global drive to create an international ban on reproductive cloning, but no similar campaign to ban therapeutic cloning. “The United States is one of the few major powers pushing for a ban on both,” he said.

Earlier this year the Canadian Parliament passed legislation that banned reproductive cloning but allowed research on human embryos left over from fertilization treatments. Fabbro also said Canadian researchers are currently working with existing stem cell lines, which provokes serious questions for Catholic hospitals and medical research bodies.

As part of a bishop's role is to ensure Catholic health-care institutions in his diocese conform to church teaching in their practices, Fabbro offered answers to some of the questions facing the doctors and researchers in these centres.

Fabbro said his answers were based on traditional church teachings on “co-operation with evil,” which guide Catholics in making decisions on a day-to-day basis when working in areas where their actions may have evil consequences, unintended or otherwise. He made a distinction between “formal co-operation” in which there is both participation in evil action and approval of the action, which is always immoral, and material co-operation that implies some co-operation without approval in the hopes of achieving a good result.

The questions:

1. “Is there a difference between making use of an embryo frozen as surplus to requirements for in vitro fertilization and making use of an embryo created for the precise purpose of research?”

Fabbro argued that there is no moral distinction between using a “spare” embryo and using one created by cloning.

2. “What co-operation in evil is involved in the matter of using embryonic stem cells from existing stem cell lines?”

The bishop argued that since Catholic researchers would be using stem cells derived from embryos killed for that purpose, they would be “complicit in the deaths of the early embryos.” He also said the Catholic researchers would be co-operating in “present and future deaths of embryos” because they would be working in a context in which embryos are seen simply as biological matter and used accordingly. And some cures may themselves require the insertion of embryonic stem cells into patients, thus requiring the deaths of more and more embryos.

“The simple fact is that they cannot restrict themselves to stem-cell lines that are derived from killings of embryos which took place in the distant past,” the bishop said. “This being so, surely the hospitals cannot stand around with outstretched hands awaiting a new batch of cells, all the while quietly protesting their disapproval of the killings of the embryos. This is blatantly deceptive behaviour.”

3. “Is a Catholic health-care institution permitted morally to make use of a ‘cure’ which was discovered by immoral means, i.e., through research involving embryonic stem cells?”

Fabbro described two possible answers.

“If the cure demands the insertion in the patient of embryonic stem cells obtained precisely by killing the embryo for this purpose (which seems likely), then that cure should not be allowed in a Catholic institution.”

The second possibility was that a cure could be based on embryonic research but not require any further use of embryonic stem cells. Fabbro said this was at present

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a hypothetical question, however he believed Catholic institutions should not be compelled to avoid the use of such cures since they are working in an environment where patients and their families would not understand why a cure that could save lives would not be used.

"I am aware that this way of thinking could help embed the immorality of killing embryos into the social and cultural fabric of society. On the other hand, by continually emphasizing the moral status of the embryo and by forbidding obvious formal co-operation in their deaths or complicity in their deaths, a firm statement will be made about the dignity of the embryo."

Fabbro finished by encouraging further work on adult stem cell lines, which then avoids the threat to embryos.

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Successes in the use of Adult Stem Cells

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In any discussion about the cures and treatments we hope will be developed through stem cell experimentation, it is important that we know the basic differences, morally and factually, between embryonic stem cells and adult stem cells. We know we may not use stem cells derived from embryos, because in the process the embryo dies. The good news about the use of adult stem cells and stem cells obtained from other sources is that there is no such moral dilemma. Bishop Fabbro, as you see above, ended his lecture by encouraging research which uses these other, non-embryonic stem cells.

Those scientists who want to use embryonic stem cells know that this type of stem cell rapidly replicates itself in special cultures used in laboratories. It does this so well that the term "proliferation" is used. This looks like a clear advantage over adult stem cells, which are harder to obtain, and which do not replicate themselves

at the same rate. Scientists, however, are working on developing growth cultures that would speed the process for non-embryonic stem cells.

The major advantage of embryonic stem cells over adult stem cells, however, is that embryonic stem cells are "multipotent". That means they are capable of regenerating many different types of tissue in the person in whom they will be used. Not so long ago, adult stem cells were thought to be less useful, because they are geared to producing a particular tissue. It was thought they would be able to repair and regenerate only the same type of tissue in other people, but it is now clear that some adult stem cells are also capable of regenerating more than one kind of tissue. Their potential is now recognized to be much greater, and investigative work is being done using adult stem cells in areas such as spinal cord injury, stroke, heart disease, diabetes, Parkinson's, Alzheimer's, and other diseases, with preliminary success in some of these.

For many different reasons, experiments with embryonic stem cells have not been as successful as was hoped. At the same time it is becoming clear that adult stem cells have more "plasticity" than was realized. If non-embryonic stem cells are truly multipotent, and some examples will suggest this is so, then our moral dilemma about the source of the stem cells will dissolve, and we can confidently rely on cures found through such experimentation.

At this point it is important to note that the term "adult" stem cells sounds rather misleading, since many recent treatments have been developed through the use of stem cells taken from umbilical cord blood. This has prompted some to use the term "somatic" stem cells, but in fact "adult" stem cells simply means stem cells from all non-embryonic sources.

Most experimentation at present is being done on mice and rats, because in the ordinary case we need to know about injurious side effects before using any treatment on human beings. These stringent requirements are for our protection, and reputable scientists accept this. There are some medical conditions which will not benefit from obvious safe and accepted medical treatment, and people then may consent to experimental treatment. There have been some startling successes, which have encouraged more researchers to turn their attention towards working in that field.

Success in the use of Adult Stem Cells

For example, recent reports tell us that scientists have treated stress incontinence by removing cells from muscle tissue. The cells are treated in the laboratory before being inserted into the wall of the urethra and sphincter muscles. In patients treated in this way, muscle volume was increased and the incontinence halted. This condition affects at least fifteen million people around the world, mostly women, therefore, while long-term studies are needed, it is clear that this treatment could bring relief to many.

In another recent experimental treatment, Brazilian scientists successfully transplanted adult stem cells into a woman's brain. She recovered from a brain hemorrhage that had paralyzed her for twenty years, and is now walking. Bone marrow stem cells were taken from her pelvis and injected into her brain, also re-enabling her power of speech, which had been lost.

Scientists have also used stem cells derived from umbilical cord blood as transplant treatment for adult leukemia patients, with success rates equal to bone marrow transplants. In another experimental area, research is being done on pancreatic stem cells, in the hope that a supply of insulin-producing tissue can be made. This would be a radical treatment for people suffering from Type I diabetes, and it is thought that people suffering from Type II diabetes, who make up nearly 95% of all diabetics, will also benefit.

The list of treatments using adult stem cells is growing rapidly, with new treatments being announced frequently. Yet the results of embryonic stem cell experimentation are not as good as expected, while some other physical problems arise from their use which are not met in the use of adult stem cells. First, rejection of foreign tissue is a problem in many forms of transplantation. It is expected that people who receive embryonic stem cell treatment will have to use immunosuppressant drugs for the rest of their lives. In contrast, people treated with adult stem cells taken from their own bodies will have no rejection problems, and will have no need to take immunosuppressant drugs.

Second, researchers are working on ways to make embryonic stem cells differentiate, that is, to be capable of repairing a specific tissue in the body. They then have to find ways to convey these cells to the body parts affected. Adult stem cells are already specialized, and require less information to go to work. This

apparently also avoids or reduces the problem of tumour formation, a problem which frequently arises in experimental embryonic stem cell work. This is another reason why the use of adult stem cells would better serve patients over the long run.

Third, a moral advantage of using adult stem cells is that there will be no need for self-cloning as a way of obtaining genetically identical cells. It should also make any trend towards "designer babies" unnecessary. In this scenario, parents have several eggs fertilized and then select those embryos which, when they reach childhood, will be best suited towards helping an existing child. When these embryos are implanted and brought to term, the hope is that they will be a source of stem cells for use in treating existing older siblings. This is not at all far-fetched. The approach has been approved in the United Kingdom, and the first "designer baby" is already on its way. (Not so incidentally, society has to find a better name for these infants who are to be brought into the world to be useful for someone else, and are not really wanted for themselves in all their uniqueness.)

It is of value for Catholics to continue to encourage the use of adult stem cells, while maintaining our moral opposition to embryonic stem cell experimentation and research. Even if adult stem cells were of no scientific or medical interest, we would still say embryonic stem cell experimentation is wrong. As things are turning out, adult stem cells are proving to be of unforeseen value. This is especially good news for those suffering from serious illnesses, and indeed for all of us who believe that God is at work in gradually revealing part of the mystery of life through the dedication of scientists and researchers.

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