

Mother's cells may linger

By ANNE MCILROY
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There may be little bits of mom in all of us.

Cells can migrate from mother to fetus and remain in their new home long after baby becomes an adult. A number of researchers are now investigating whether these cells cause disease or fight it, and whether most of us are living with our mothers and don't know it.

"My guess is this is very common if not universal," said Dr. Lee Nelson, a pioneer in the nascent field of maternal microchimerism at the Fred Hutchinson Cancer Research Center in Seattle.

It is well known that we each inherit half of our genetic material from our mothers, and the other half from our fathers _ the mixture helps make us who we are.

Nelson is studying something completely different _ cells from the mother that get passed on to baby and continue to thrive for decades.

They are most likely some kind of stem cells _ which have the ability to become different cell types _ but no one knows for sure. Maternal cells, however, make up only a small percentage of all of a person's body, less than one in a million in one study. If the phenomenon is universal, then Ingrid Bergman's cells are alive in Isabella Rossellini's body, and some of Diana, Princess of Wales's cells live on in her sons, William and Harry. It is something to think about it as Mother's Day _ on Sunday _ approaches.

"Some people like the idea and some people don't like the idea," Nelson said.

But we may have to get used to it. Maternal cells were first spotted in newborn male infants in the 1960s, and more recent studies found them in 22 to 55 percent of adults. These studies usually involved small samples, but a larger experiment is under way to see if the phenomenon is more widespread, Nelson said.

Her research suggests that a mother's work is never done. But she and her colleagues are trying to figure out if this is a good thing.

Her latest experiment suggests that maternal cells may come to the rescue, and produce insulin when a child develops diabetes.

But her earlier studies suggest they also may trigger autoimmune diseases in some people, prompting the immune system to destroy healthy cells.

The traffic in cells goes both ways. While we all may have some of our mother's cells in our bodies, we definitely left some of ours behind in mom.

All mothers have fetal cells in their body during pregnancy, said Dr. Diana Bianchi, an expert in fetal microchimerism at Tuft's University School of Medicine in Boston.

They persist for years. Fetal cells have been found in the bone marrow of grandmothers 51 years postpartum, Bianchi said.

Several studies suggest the cells can survive for decades, and the pregnancies don't have to be carried to term. Women who have had an abortion have high levels of fetal cells in their body.

"Women who have early selective terminations are in fact the most chimeric," said Anne Croy, a professor of anatomy and cell biology at Queen's University in Kingston.

In animals, these cells can come to the aid of a sick or ailing mother, helping to repair a diseased or damaged brain, liver or thyroid gland.

"If the thyroid is injured, they turn into thyroid cells. If the liver is injured, they turn into liver cells," Dr. Bianchi said.

This makes sense from an evolutionary point of view, she said. Passing on stem cells could help keep the mother healthy, increasing the chances of the child surviving to adulthood.

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