

Tot's development went through ice age

Kimberly Yuen



Kapolei couple Steven and Elizabeth Helgen are calling their son a "miracle baby."

Four-month-old Dylan Helgen is the first baby born through the Pacific In Vitro Fertilization Institute¹ using frozen unfertilized eggs. The Helgens' procedure was done in July 2009, and son Dylan was born on April 6.

"He's a really good baby," Elizabeth Helgen said yesterday. "He's very healthy."

The Helgens are among four couples in Hawaii using the institute's frozen egg program. One couple is currently expecting their baby, and the other two are storing their frozen eggs.

"There was a lot of stress and a lot of emotion," the new mom said, "but we have this miracle that came out of it and we're really thankful."

The process begins the same way as in-vitro fertilization², retrieving a woman's eggs by



¹ Pacific In Vitro Fertilization Institute "is the largest and most experienced IVF clinic in Hawaii. Since opening its doors in 1985, more than 4,000 babies have been born to couples in Hawaii, and around the world, helping to achieve their dream of starting a family." See: <http://www.pacificinvitro.com>

² in vitro fertilization: adjective/adverb: (of processes or reactions) taking place in a test tube, culture dish, or elsewhere outside a living organism: *in vitro fertilization*: The opposite of *in vivo*: (of processes) taking place in a living organism.

stimulating³ her ovaries⁴ with fertility drugs, said Dr. Thomas Huang, medical director for the institute. About 10 to 20 eggs are collected and put into a vitrification⁵ solution that dehydrates⁶ them prior to freezing, shrinking them significantly.

The eggs are then placed into a small plastic straw and sealed. Once sealed, the eggs go into a container that is plunged into liquid nitrogen⁷ for the freezing process.

"It's very cold -- all thermal molecular motions stop, and the eggs are essentially frozen in time," said Huang. "There is no aging of the eggs, so that means the eggs can be stored for decades."

Huang said the institute is prepared to store patients' eggs for a few months or years, but those looking to store eggs for five to 10 years would probably have their eggs shipped to a mainland storage facility.

The average cost for one IVF treatment cycle can run from \$8,500 to \$13,000, and the egg freezing is an additional \$825.

Embryo- and sperm-freezing procedures have been available and successful for many years, but freezing had been problematic because ice crystals tended to develop during the process and the eggs' outer membrane hardened, making fertilization difficult.

When successfully frozen eggs are ready to be used, the process is reversed, Huang said. The straw containing the eggs is removed and thawed in a warm-water bath. The straw is cut, and a syringe is used to get the eggs out. They are

³ stimulating: adjective: encourage increased activity

⁴ ovaries: noun, plural of ovary: a female reproductive organ in which ova or eggs are produced, present in humans and other vertebrates as a pair

⁵ vitrification: noun: to convert something into glass or a glasslike substance, typically by exposure to heat

⁶ dehydrate: verb: remove water from something in order to preserve and store it

⁷ liquid nitrogen: noun: Liquid nitrogen is [nitrogen](#) in a liquid state at an extremely low temperature. Its boiling point is -321 °F

"rehydrated"⁸ back to normal with the vitrification solution.

The next step is using the fertilization technique known as intra-cytoplasmic⁹ sperm injection. A single sperm is injected into the thawed egg to fertilize it. The eggs go through an incubation period for a few days to allow the embryos to develop.

"Then it's a matter of time of selecting the embryos we might want to put back in the patient," Huang said. "Then we sit, wait and hope for the best."

The Helgens sought help through the institute a year ago. "It was scary," said Elizabeth Helgen, 42. "I was unsure of a lot of things. My biggest concern was my age and if this was going to be successful or not."

⁸ rehydrate: verb: absorb or cause to absorb moisture after dehydration

⁹ intra-cytoplasmic: adjective: intra: on the inside; within: cytoplasmic: adjective: the material within a living cell

World History and Culture
Kailua High School
Social Studies Requirement
2023-2024
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Kimberly Yuen. "Tot's development went through ice age."
staradvertiser.com. Friday, August 13, 2010.

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staradvertiser.com. August 13.

1. In what way is the article by Kimberly Yuen different than the article by Rob Stein? The article by Kimberly Yuen is about invitro fertilization using frozen eggs.
2. In what way is the article by Rob Stein different than the article by Kimberly Yuen? The article by Rob Stein is about women being paid for donating eggs.
3. What is the name of the company that helped Dylan Helgen be born?
4. Describe how "[t]he process [of fertilizing frozen eggs] begins."
5. Explain what the "vitrification solution" does to the eggs.
6. Identify the "liquid" that is used for the "freezing process."
7. Because "[t]here is no aging of the eggs," how long can the eggs be stored?
8. Where do eggs get shipped for long term storage?
9. Explain what the two different costs are for.
10. Sequence the steps used to get frozen eggs ready for IVF (invitro fertilization). (straw..., syringe...,rehydrated...,introcytoplasmic..., incubation...,selection)
11. What was Mrs. Helgen's "biggest concern"?

12. Identify at least two of the FIVE THEMES of World History that apply to this article and explain why you chose those themes.
13. Write out three questions that you have about the article.
14. Write out three inferences you can make about the article.
15. Footnoted Vocabulary: word: part of speech: definition.
Write a sentence that uses the word correctly.