

## Japanese baby-bot with runny nose teaches parenting skills (w/ Video)

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An engineering student soothes Yotaro, a robot which emulates a real baby at Tsukuba University in Japan. Yotaro's face, made of soft translucent silicon with a rosy hue, is backlit by a projector connected to a computer to simulate crying, sneezing, sleeping and smiling, while a speaker can let out bursts of baby giggles.

It giggles and wiggles its feet when you shake its rattle, but will get cranky and cry from too much tickling: Meet Yotaro, a Japanese robot programmed to be as fickle as a real baby.

The cuddly baby-bot looks unearthly with a pair of luminous blue eyes and oversized cheeks, but engineering students are hoping it will teach young people the pleasures of parenting as Japan faces a demographic crisis.

"Yotaro is a robot with which you can experience physical contact just like with a real baby and reproduce the same feelings," said Hiroki Kunimura of Tsukuba University's robotics and behavioral sciences lab north of Tokyo.

Yotaro's face, made of soft translucent silicon with a rosy hue, is backlit by a projector connected to a computer to simulate crying, sneezing, sleeping and smiling, while a speaker can let out bursts of baby giggles.

The baby changes its [facial expressions](#) and moves its arms and legs when different parts of its face and body are touched. Physical contact is detected by sensors, and Yotaro's mood changes based on the frequency of touches.

Yotaro also simulates a runny nose, with the help of a water pump that releases body-temperature droplets of water through the nostrils.

While the baby robot has a balloon-sized head and exaggerated [facial features](#), its inventors nonetheless hope "Yotaro could help young parents to learn about raising a baby," said research team member Masatada Muramoto.

"We came up with the idea of a baby robot because we wanted to reproduce a human being's warmth and skin colour," said Kunimura.

"We decided on an infant that has not yet learnt to talk because the feelings generated towards a newborn will be the same for everyone, and because interaction is less complicated than if we had made it talk."

Japan is already famous for highly sophisticated robots, from Honda's humanoid Asimo to pancake-flipping chef Motoman to Paro the fluffy robot seal that helps ease loneliness among the elderly.

Hundreds of thousands of industrial robots toil in factories, while robo-receptionists can serve tea, greet guests or vacuum corridors. Japan even has a robot supermodel, the HRP-4C.

The pretty humanoid, which boasts 42 motion motors programmed to mimic the movements of flesh-and-blood fashion models, was unveiled last year ahead of Tokyo Fashion Week.

The world last year also got a glimpse of Japan's first child-robot, the CB2, with a so-called "biomimetic" body designed to learn and interact just like a human infant, mimicking a mother-baby relationship.

Elsewhere the University of Osaka last week unveiled a [robot](#) that mimics a crawling baby, part of a research project to examine the process by which a human being acquires the skills to move and speak.

The 50-centimetre (20-inch), 3.5-kilogram (7.7-pound) M3-neony has a body similar to that of a newborn. It is equipped with 22 motors, 90 tactile sensors and microphones placed near the eyes and ears.

When ordered to move forward, the baby-bot, lying down, will wave its feet and arms, gradually learning which movements will allow it to push itself up and crawl, said project leader professor Minoru Asada.

Yotaro and M3-neony are part of Japan's push for a robotics revolution as the country seeks solutions to a demographic crisis that threatens to deplete its workforce and the number of carers for the elderly.

[Japan](#) has the world's longest average life expectancy -- 79 years for men and 86 years for women -- and one of the lowest birth rates, meaning its population is headed for a steep decline.

The Tsukuba students hope Yotaro may help Japanese want babies to

revitalise a country where more than a fifth of the population is aged 65 or older. By 2050, that figure is expected to rise to 40 percent.

Yotaro may look unusual, with its broad face wrapped in a hoody sporting a pair of teddy-bear ears, but the students think most Japanese will be comfortable with it, thanks to their long exposure to robots in pop culture.

"Japanese have always been comfortable with robots who are not seen as threats but as beings that have the potential to develop friendly relationships," said Muramoto.

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