

Handy Fetal Monitor Brings Peace of Mind to Mothers

Japan is world-famous for its top-class perinatal care. The prefecture with the lowest maternal and prenatal mortality rate in the country is Kagawa, in western Japan. Now, a company in the very same prefecture has produced a new device and system facilitating safe pregnancies worldwide.



Left: The Petit CTG is simple to use, providing OB/GYN professionals with the fetal heart rate remotely, and almost in real time.
Bottom: The heart-shaped Petit CTG comes in blue for the mother's cardiocotography, and pink for the baby's.

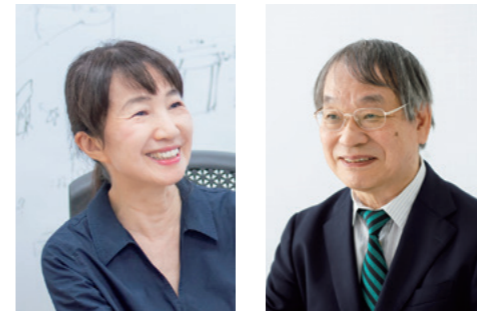


From the time a fetus is inside the womb until immediately after birth, fetal heart rate is an incredibly important piece of information for determining the health of a baby. It used to be the norm for an OB/GYN (obstetrician/gynecologist) to use a stationary fetal monitor to measure a baby's heart rate. Melody International Ltd.,

a startup in Kagawa Prefecture, has downsized and digitized the device, enabling the remote monitoring of pregnant women and fetuses worldwide.

A fetal monitor uses ultrasound to provide a real-time look at the fetal heart rate. Back in the 1970s, HARA Kazuhiro, M.D., Ph.D., a gynecologist who is now a specially appointed

professor at the Seto Island Sea Regional Research Center of Kagawa University, and others applied the Doppler method to ultrasound and combined it with the autocorrelation function to develop the Doppler-based fetal monitoring system. The system later became the standard for prenatal care around the world, making a great contribution to



Melody International CEO OGATA Yhuko (left) and HARA Kazuhiro, M.D., Ph.D. Their collaboration is helping to improve perinatal care not only in Kagawa, but also all over the world.

reducing prenatal and neonatal mortality rates.

Prof. Hara says, "It is the mission of an obstetrician to do everything in his or her power to help babies be born strong and healthy." After inventing the monitoring system, he went on to help build a world-class perinatal care system in Kagawa Prefecture by making fetal monitors mobile and applying ICT to medical data management.

Living in the same prefecture as Prof. Hara is a woman who knew of his research, and who wanted to "deliver safe and secure births to mothers all over the world, using fetal monitors and ICT." That woman is OGATA Yhuko, who was previously promoting an electronic medical-record business in Kagawa. In 2015, she founded Melody International.

With Prof. Hara's help, the company produced a mobile fetal monitor in 2018 called Petit CTG, which fits in the palm of the hand. The device is different from all those that came before, as it has the same capabilities as conventional stationary fetal monitors in a hospital. When a pregnant mother places it on her belly, the endearingly heart-shaped device measures the sound of the baby's heart and the extent to which the mother's belly has stretched. Users also have access to Melody i, an IoT (Internet of Things) platform that allows them to store measurements on a cloud-based service and share

them with OB/GYN professionals via smartphones and tablets. That way, the mother can learn about the health of the fetus without having to visit the hospital. That is especially helpful for mothers living on remote islands and in secluded areas, as well as for working mothers.

The device should also make a major contribution to achieving the Sustainable Development Goals (SDGs) target of lower maternal and child mortality rates. As COVID-19 now makes it more difficult to leave the home, monitoring pregnancies with Petit CTG holds even greater significance.

Since 2019, Petit CTG has been introduced to all 25 public hospitals in Thailand's Chiang Mai region, including clinics in hard-to-reach

mountainous areas where access to large hospitals is lacking. Nurses in the countryside can share data at any time with specialists in cities, and the device has also helped with emergency treatment. Furthermore, Ogata says that "pregnant mothers love the heart-shaped design, and the region has recorded an uptick in medical checkups." While use of the device had already been established in South Africa, Zambia, and Myanmar, as of 2020 it is also available in Cambodia and Bhutan.

Ogata said, "I want to use Japanese technology to make fetal monitors more widely available. That way, we can reduce the stress of pregnant mothers who worry over not knowing about their soon-to-be-born baby's health, and make them feel reassured about childbirth."

Japanese technology, which instigated a revolution in obstetrics and gynecology 50 years ago, helps to save the lives of pregnant mothers and their babies around the world, this time with a lovely handheld device. *



Hospitals in rural areas, such as in the Thai countryside, have also installed the Petit CTG. A pregnant mother's information can be shared with nurses and doctors via smartphones and tablets, enabling quick decisions on whether the mother needs to receive treatment at a hospital offering more advanced care.