

A man and a pregnant woman are shown from the waist up. The man, on the left, is wearing a light blue button-down shirt and jeans, looking down at the woman's belly. The woman, on the right, is wearing a purple long-sleeved shirt and grey pants, looking down at her belly. A fetal monitoring device is attached to her belly. The device consists of a small white rectangular unit with a black cable, and several white circular electrodes. The background is a blurred indoor setting.

PHILIPS

Mother &
Child Care

Fetal and maternal
monitoring

A moving **birth experience**

For mom, for baby, for you

Finding a comfortable position, taking a shower, or walking around are simple activities. Yet, for a mother-to-be who is connected to a fetal and maternal monitor, these activities can be quite challenging – complicating the birthing experience. As a caregiver, you want to make your

patients comfortable, and offer flexibility in their labor and delivery positions, while you focus on the most important factor – their wellbeing. The latest Avalon Cableless fetal monitoring solution (Avalon CL) provides all of this, and more.

Deliver more birthing options

Avalon CL transducers provide continuous monitoring underwater*. This means mothers-to-be can use birthing pools or bathtubs, secure in the knowledge that they are being closely watched. The beltless solution can be used in the shower, allowing pregnant women the comfort that can bring during labor.



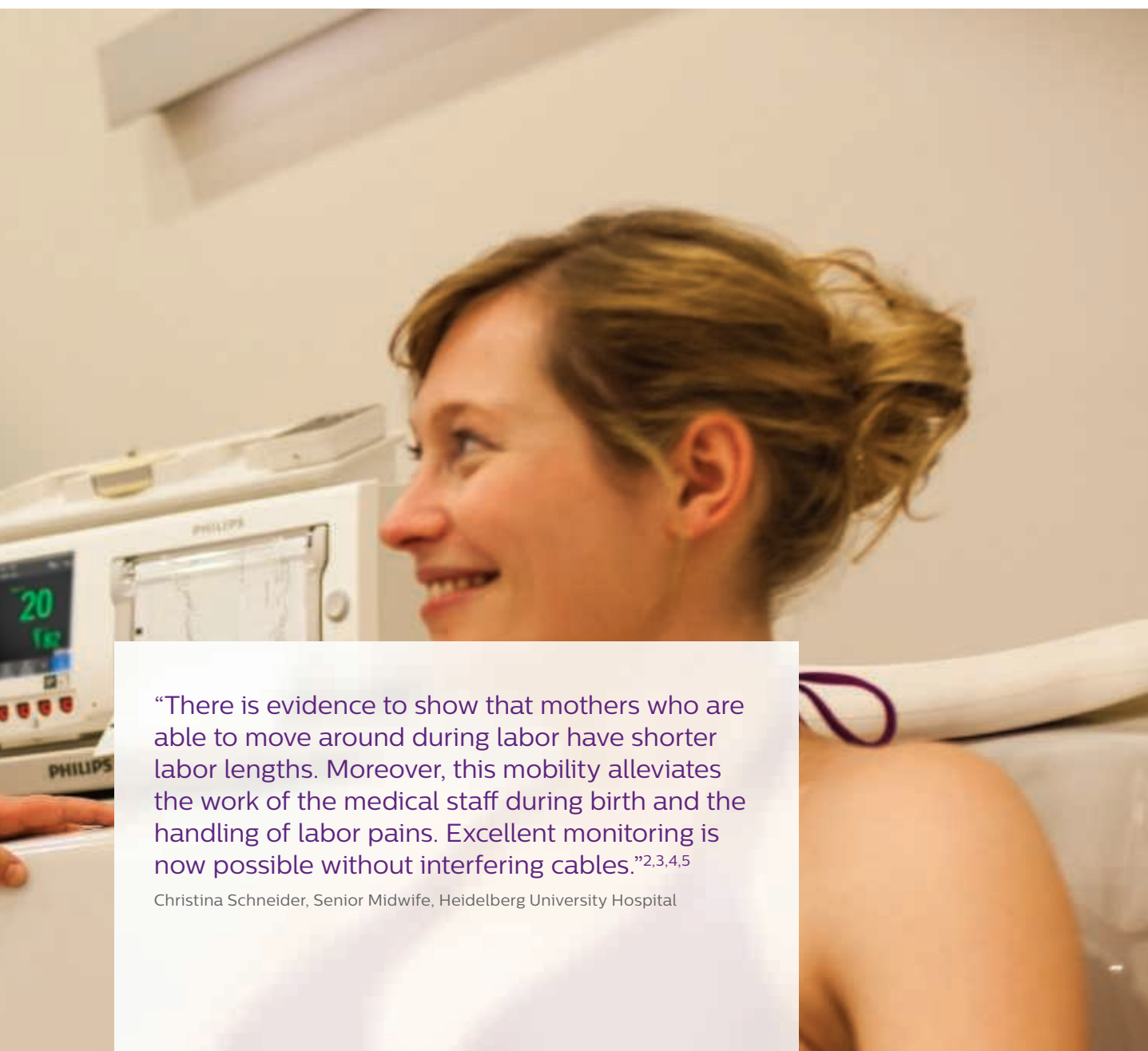
Monitoring that's
comfortable

Freedom to move

Research suggests that with more mobility, mothers-to-be experience increased comfort, less pain, and a shorter duration of second stage labour^{2,3}. With Avalon CL, your patient will have the freedom to move without worrying about cables restricting their position, allowing them to experience the benefits of mobility.

All-encompassing monitoring

Avalon CL's solution offers the best of both exceptional monitoring without sacrificing critical data, and keeping your patient comfortable without cables. In addition to the usual measurements, you can measure the fetal heart rate of twins and triplets – along with maternal NBP and SpO₂. Built-in Avalon Smart Pulse provides a convenient source for maternal pulse, enabling constant coincidence detection and providing you with reliable information on your patient's state.



“There is evidence to show that mothers who are able to move around during labor have shorter labor lengths. Moreover, this mobility alleviates the work of the medical staff during birth and the handling of labor pains. Excellent monitoring is now possible without interfering cables.”^{2,3,4,5}

Christina Schneider, Senior Midwife, Heidelberg University Hospital

Mother's heartbeat or baby's? Now you know.

“Erroneous recording of maternal heart rate as fetal during the second stage of labor may lead to perinatal morbidity and mortality due to non-recognition of intrapartum hypoxic insult to the fetus.”⁶

Catch the change in tempo when it counts

Helping reduce the confusion between fetal and maternal heartbeats is critical to making informed clinical decisions during labor and delivery.

Avalon CL's patented Smart Pulse technology provides peace of mind by continuously monitoring maternal and fetal heart rates – even for twins and triplets. It can detect heart rate coincidence by automatically comparing the maternal pulse and multiple fetal heart rates. This allows for separation to be maintained, helping to reduce the possibility of continued coincidental heartbeats. It also provides information to support timely recognition and early intervention.

Since Smart Pulse is built into the CL Toco+ MP transducer, this extra information is available without extra steps in your clinical workflow.



Enhancing freedom, while supporting clinical needs

Multiple research studies show that ambulation may significantly shorten labor,^{2,3} reduce the need for pain relief and labor induction drugs,³ decrease the number of episiotomies,² and slightly lower the need for assisted deliveries.² Research also reveals less frequent abnormal heart rate patterns for women in the upright position, as well as less pain and backache.⁴

Avalon CL enhances the labor experience through mobility while offering the extra layer of confidence of monitoring with Smart Pulse technology.

In addition, the Avalon beltless fetal monitoring solution provides these benefits, using an adhesive patch. This can further enhance the mother-to-be's comfort, remove the need for repositioning, and enable the monitoring of patients with a high BMI.





Cableless transducers

can be easily clipped, secured, and repositioned for freedom of movement

Beltless fetal monitoring solution

is particularly suited for high-BMI patients, or when belts are not practical

Wide range solution

extends your cableless measurements to the full reach of your WiFi/WLAN



“Our main aim is to deliver more choice for women in labor. We want to ensure that mothers-to-be and their babies benefit from the advantages of being mobile and upright in labor, while also providing the best possible birth experience.”

Dawn Morrall, Assistant Divisional Director of Midwifery, Gloucestershire Royal Hospital

Your wireless obstetrics department at work

Avalon CL, part of the Philips obstetrical portfolio, works easily with our Avalon fetal and maternal monitors. Up to four transducers can transmit vital signs information to a monitor via the base station or over your WLAN (802.11). From there, patient information can be transferred to your IntelliSpace Perinatal information management system.

Four types of cableless transducers

- The CL Ultrasound transducer measures fetal heart rate and fetal movement
- The CL Toco+ MP transducer measures uterine activity, maternal pulse, and either maternal ECG, fetal ECG, or intrauterine pressure (IUP)
- The CL ECG/IUP transducer measures either maternal ECG, fetal ECG, or IUP
- The beltless fetal monitoring solution measures fetal and maternal heart rates and uterine activity from the abdomen (aFHR, aHR, and aToco)

CL SpO₂ Measurement Pod

uses the Philips FAST-SpO₂ algorithm.

CL NBP Measurement Pod

uses the oscillometric method to produce numeric values for systolic, diastolic, and mean blood pressure.



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1. The transducers are rated IP68, for underwater monitoring at 1m depth for up to 5 hours.
2. Gupta JK, Nikodem VC. Woman's position during second stage of labour. Cochrane Database Syst Rev. 2000;(2):CD002006.
3. Lawrence A, Lewis L, Hofmeyr GJ, Dowswell T, Styles C. Maternal positions and mobility during first stage labour. Cochrane Database Syst Rev. 2009 Apr 15;(2):CD003934. doi: 10.1002/14651858.CD003934.pub2
4. Flynn et al., "Ambulating in labour," Br Med J. (1978) Aug 26, 2 (6137):591-3
5. World Health Organization, "Care in Normal Birth," (1996)
6. Nurani R, et al. "Misidentification of maternal heart rate as fetal on cardiotocography during the second stage of labor: the role of the fetal electrocardiograph." Acta Obstet Gynecol Scand. (2012): 91.

