

# Advanced Cervical Ripening System (ACRS)

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## Technology description

UT Health San Antonio researchers have developed a unique method for advanced cervical ripening which causes the effacement and thinning that occurs in natural child birth. This advanced cervical ripening system is superior to traditional methods because the unique design allows for uniform ripening by adapting to the geometry of each patient, and the device does not cause localized pressure to the fetus' head.

### Background:

In normal child birth, cervical ripening (the effacement or thinning of the cervix) is followed by dilation in preparation for the birthing process. The ripening process is naturally initiated through enzymes, hormonal factors, and local pressure on the inner surface of the cervix. When cervical ripening does not occur naturally or it progresses too slowly, cervical ripening devices are used to facilitate ripening through localized pressure on the cervical OS (opening of the cervix).

Presently, the Foley urinary catheter is employed in cervical ripening to provide the localized pressure on the cervical OS. The Foley catheter is inserted into the cervix, and a balloon is inflated with saline solution to create the local pressure. Unfortunately, fundamental design problems are associated with the Foley method which results in uneven ripening and injury to the fetal head. The Foley catheter balloon also contains extra tubing on the tip which may injure the fetus' head. Additionally, the bag of saline which is used to inflate the balloon typically hangs over the side of the bed and can be inadvertently snagged. The current invention's superior design (large inverted umbrella) conforms to the internal OS, conforms to the fetal head, and it includes a stabilization device which can be attached to the patients leg. The advanced engineering design solves the problems associated with current cervical ripening methods by addressing the women's physiology.

## Advantages

Hastening the birthing process reduces mortality risk during birth and can reduce medical care costs.

Balloon conformation to that of internal OS applies uniform pressure to cervical OS.

Eliminates pressure points and injuries to fetal head.

Safe, low-cost manufacturing.

## Institution

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