

Labor Induction Techniques: Which Is the Best?



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KEYWORDS

- Labor induction • Bishop score • Prostaglandins • Foley balloon • Oxytocin
- Amniotomy

KEY POINTS

- A modified Bishop score of 6 or less is the generally accepted threshold to define an unfavorable cervix, which will benefit from cervical ripening before induction of labor.
- The most effective cervical ripening agent to achieve delivery in 24 hours is vaginal misoprostol; oral misoprostol is the most likely to achieve vaginal delivery overall.
- The combination of Foley catheter and misoprostol may be more effective than single-agent cervical ripening agents.
- The combination of amniotomy and intravenous oxytocin the most effective induction method for a favorable cervix.

INTRODUCTION

Induction of labor is the artificial stimulation of labor before its spontaneous onset to promptly achieve vaginal delivery. It is a commonly performed procedure, with approximately 1 in 5 gravid women undergoing induction of labor in both the United States and Canada in recent years.^{1,2}

Induction of labor may be advisable whenever the risks of continuing the pregnancy outweigh the risks associated with induced labor and delivery. When labor induction is undertaken for appropriate reasons and with a safe and efficient approach, this procedure can greatly benefit the health of the both mothers and newborns. The indications, contraindications, and various other considerations that factor into the decision to induce labor are complex and beyond the scope of this article.

The first description of artificial induction of labor dates back to 1948 when a posterior pituitary extract of oxytocin was administered by intravenous drip for the purpose of

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inducing labor.³ Since then, multiple methods have been developed to recreate parturition artificially. Some methods, such as administration of ergot alkaloids, vaginal and uterine douches, and stimulant injections, have since been abandoned owing to ineffectiveness and adverse side effects, whereas other methods have withstood the test of time and continue to be used successfully in modern obstetric practice.

The modern techniques of labor induction can be divided into the following 2 broad categories depending on the status of the cervix before induction of labor.

- *Cervical ripening agents for the unfavorable cervix:* This category includes the local administration of medication, which softens and opens the cervix (prostaglandins) as well as mechanical methods, including insertion of catheters or dilators directly into the cervix.
- *Induction methods for the favorable cervix:* Administration of systemic medications that stimulate uterine contractions (ie, synthetic oxytocin) and mechanical methods such as amniotomy.

Each technique of labor induction has associated advantages and disadvantages, and as a result there is no single method that is uniformly superior for labor induction. Instead, the approach to labor induction should be tailored to the clinical scenario, with consideration given to gestational age, prior uterine surgery, fetal status, and the presence or absence of spontaneous contractions. Additionally, system factors, such as cost and the availability of immediate emergency cesarean delivery, may also weigh on the decision. Finally, an induction of labor should consider individual needs and preferences, and allow women the opportunity to make informed choices in partnership with health care providers.

ASSESSING THE CERVIX

Before starting a labor induction, the clinician must first assess the cervix to determine whether or not it is ready to start the labor process. A cervix is termed “favorable” or “ripe” to begin labor when it has softened or thinned out, making it pliable for stretching and subsequent dilation. Accurate assessment of the cervix is essential, because the selection of induction method is typically centered on the cervical status.

Bishop Score

Developed in 1964, a cervical scoring system, referred to as the Bishop score, is the most commonly used method to assess the ripeness of the cervix before induction. This system takes into account the position, consistency, effacement (shortening), and dilation of the cervix, as well as the station (location) of the presenting fetal part relative to ischial spines (**Table 1**). A modified Bishop score has also been developed that replaces effacement with cervical length.⁴ In these systems, each category is assigned a score from 0 to 3, with a total maximum score of 13. A higher score reflects a cervix that is more “ripe” or “favorable” for labor induction. Traditionally, a score of 6 or less is used as a threshold to classify an “unfavorable” cervix that would benefit from cervical ripening agents during an induction of labor.¹

In addition to determining cervical favorability, the Bishop score can also be used to predict the likelihood of vaginal delivery with induction of labor. Used in this way, a score of 6 or less is associated with a higher probability of failed induction. With a score of greater than 8, the probability of a vaginal delivery is the same for induced or spontaneous labor.¹ Aiming to make the Bishop score even more convenient, a recent study validated a simplified Bishop score using only dilation, station, and effacement. Compared with the original Bishop score cutoff of greater than 8, a

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