Obstetricians and gynecologists have long been aware of the prevalence of maternal injury sustained in childbirth. However, few public health statistics exist on the subject and doctors have traditionally expressed little interest in studying how postpartum prolapse might be reduced. A thorough, if not widely known, discussion on maternal vaginal injury was presented in the 1989 classic, *Vaginal Surgery* by highly esteemed pelvic reconstructive surgeons, David Nichols and Clyde Randall. Yet, little more appeared in medical literature on making vaginal birth safer for women. The authors begin with the statement,

“In the annals of medical and surgical literature, the reviewer expects to find record of cumulative knowledge which has been responsible for improving the effectiveness of treatment. In the practice of obstetrics and gynecology during the 20th century, however, preventative measures have proven to be most effective.”

Their words hold just as true today as surgeons continue to perform the same defective operations and women continue to experience the same disastrous results. Drs. Clyde and Randall continue their commentary with even stronger charges,

“Stated most simply, there seems to have been a lack of interest or documentation indicating study of the manner in which human parturition can be managed so the effectiveness of preventative measures has been generally recognized, obstetric practices seem to have neglected opportunities to initiate more effective efforts to lessen the maternal injury and subsequent disability possible and not infrequently attributable to the conduct of childbirth. It would seem as though there has been a rather general acceptance of the probability of injury and the need for subsequent repair of maternal tissues as unavoidable consequences of human parturition. During the years while surgical repair of varying types and degrees of maternal injury has been thoroughly described, relatively little has been spoken or written to suggest techniques and procedures recommended to reduce the frequency and extent of maternal injuries.”
These authors asked the same perplexing question in 1989 that women are still agonizing over today,

"Is the occurrence of genital dysfunction due to maternal injury and the discomfort women experience because of pelvic relaxation of little or no concern to the obstetrician? Is the obstetrician-gynecologist justified in concluding 'If it bothers her we can certainly do a satisfactory repair whenever she wants it done?' Such a willingness to disregard the possible effectiveness of prophylactic measures would not seem compatible with usual professional points of view. We believe there are indeed other factors that have accounted for the undeniable fact that the ‘teachers’ of obstetric practice at the undergraduate, graduate, and continuing education levels have, for the most part, failed to emphasize how labor and delivery can best be managed in order to avoid or minimize maternal tissue damage. For generations dedicated teachers of obstetrics have emphasized and personally practiced conservative obstetrics. A virtually universal willingness to perpetuate the conviction that ‘nature does it best’ has made certain that each medical student and resident-in-training becomes sufficiently experienced in the observation of spontaneous delivery that they will recognize and remember the factors accounting for the abilities of the female to deliver normally, while at the same time appreciating the satisfaction of the ‘natural’ delivery of a normal child."

As practicing obstetrician-gynecologists, Nichols and Randall became acutely interested in “Why prolapse later in some patients and not in so many others who were presumably exposed to the same forces of labor and delivery?” They were not to be persuaded by the argument that congenital predisposition to weak connective tissue accounts for most cases of prolapse because “In a majority of instances only the trauma of labor and delivery seems to suggest an etiology.” Careful examination revealed that rather than weak tissue being unable to support the birthing process, it is often strong tissue offering resistance to the dynamics of labor that cause the majority of maternal injury.

Nichols and Randall observed that most birthing women do not have the urge to bear down with their contractions until the fetal head (or breech) begins to distend the pubococcygeus muscle. By this time the cervix is fully dilated and the presenting part can easily descend into the vagina with the force of contractions. The doctors gave very clear warnings of the damage most likely to occur if a woman were coached to push too early,

“When such premature bearing down does occur, certainly the tissues supporting both the fundus and the cervix in normal anatomic relationships with the bony pelvis and adjacent viscera must either succeed in resisting the woman’s efforts to ‘deliver her uterus with the baby in it’ or her efforts will result in considerably more stretching and detachment of uterine supporting tissues than would have occurred had there been no bearing down effort before the cervix was fully dilated.”
Precipitous pushing is an obvious cause of tissue damage, as is the simple geometry of a large fetus leaving the vaginal walls “stretched beyond the ability of tone-regaining involutionary processes to restore to a non-redundant caliber.” It is worth noting, however, that midwives the world over speak of the enormous capacity of vaginal tissue to stretch without noticeable damage. Yet, harm to the elasticity and integrity of the vaginal wall itself remains one possible type of injury noted by these authors. A distention cystocele results from overstretching of the vagina itself and is believed to be related in some cases to long labor and pressure necrosis. Occasionally a short, precipitous labor where distension is so rapid that vaginal muscle cells do not have time to adapt may also cause this sort of prolapse. (Fig. 1) A displacement cystocele is thought to occur when the vagina becomes stretched and detached from the supporting tissues underneath that keep it anchored in its proper position within the pelvis. (Fig. 2) Further study by Nichols and Randall revealed striking and important information as to the probable cause of much of the damage resulting in postpartum cystocele, rectocele, and uterine prolapse,

“To understand and anticipate that vaginal injuries commonly associated with parturition, the attendants should recognize that normally, and certainly in the labor of the primapara [first-time mother], at full dilation of the cervix the presenting part does not at that time emerge from the cervix and, for the first time, begin to descend into and through the vagina. Rather, the fully engaged presenting part, almost completely covered by thinned, beginning to dilate cervix, has in all probability occupied the upper third to half of the vagina for 2 or more weeks. As a result, distention of the upper vagina, with accommodation of the engaging vertex or breech, has occurred very gradually, so gradually in fact that the patient may not be aware of the descent taking place until she notices a new awareness of heaviness, low backache, and at times rectal pressure, while at the same time breathing becomes somewhat easier, for ‘lightening’ has occurred.”

However, the researchers found that such is not always the case, especially with the multigravida, or woman who is giving birth for the second or more time, and who experiences a short, intense labor. Gradual distention may not occur before the fetus begins to descend rapidly through an undilated upper vagina.
Likewise, if the first-time mother begins labor with the presenting part not engaged, her vaginal tissues become vulnerable to injury even if they are very strong.

“Under such circumstances the force of uterine contractions may tend to push an undulating, contraction ring-like segment of vagina ahead of the presenting part. If this situation persists the forces of labor will be exerted, not so much on distending or dilating the vagina as upon the supporting fascia that is trying to hold that segment of vagina in its normal position within the maternal pelvis.”

With each contraction, the forces that are pushing the fetus down the vaginal canal begin to push a fold of vagina ahead of the presenting part, pulling on the fascial fibers underneath the undilated segment of vaginal wall. (Fig. 3)

“Under such circumstances, descent can be accomplished only by pushing the undilated segment or ring of vaginal wall ahead of the presenting part. In all probability, once a resisting contraction ring-like segment of vagina is pushed ahead of the presenting part, the damage to vaginal supporting tissue has been done. As the fascial attachments give way, the rim or roll of resisting, undilated vaginal wall irons out rapidly, and descent of the presenting part proceeds to the perineal stage. There is no evidence of the damage done until weeks later when postpartum examination reveals loss of vaginal rugae and a loss of the concavity of the superior vaginal fornices. The persistence of redundant vaginal wall and the development of eversion (with or without uterine prolapse) confirm that a satisfactory reattachment of vaginal wall support does not necessarily occur spontaneously during involutionary tightening of the pelvic fascial planes.”

Nichols and Randall became keen researchers into the process of vaginal injury and contributed vital information on how to avoid the most common types of maternal soft tissue damage as a result of labor and delivery. Their primary recommendations were to encourage relaxation so that the upper vagina may fully dilate; to never coach a birthing woman to bear down with contractions until the cervix is known to be fully dilated; and not until the presenting part has come down through the upper vagina and is beginning to distend the perineum.

In keeping with the philosophical framework of their profession, Nichols and Randall advised implementation of their recommendations through total obstetric management of labor, including use of anesthesia, oxytocic hormones, episiotomy and forceps. A decade later when it became obvious that this level
of intervention was only increasing maternal soft tissue damage, the American College of Obstetricians and Gynecologists began to promote elective cesarean as a preventive measure against vaginal injury and pelvic floor dysfunction.

The midwifery model of care recognizes the profound importance of relaxation to the process of natural childbirth. Ina May Gaskin writes about “sphincter law” and the role maternal emotions play in the healthy progression of labor. Obstetrician-midwife Michel Odent is the world’s leading advocate of a “wise maternal figure” being present with the birthing mother. Several studies have shown that this type of attendant is most associated with calming maternal anxiety and producing healthy birth outcomes. Unfamiliar surroundings of hospital and staff are believed by many educators to be primarily responsible for the psychological barrier associated with obstructed labor. Furthermore, the majority of birthing women requesting anesthesia do so believing labor will be more relaxed and comfortable if sedated. Childbirth researcher Penny Simkin tells us,

“Normally, the woman’s pelvic floor provides a resilient platform on which the fetal head can rotate, and the muscles lining the pelvis also provide a resilient cushion that encourages rotation. Pressure on these muscles elicits a stretch response that plays an important role in the cardinal movements of descent (flexion, internal rotation, extension, and external rotation.) However, when anesthetized, there is a reduction in the tone of these muscles, which tends to inhibit rotation of the fetal head. When combined with maximal breath-holding and straining by the woman, the likelihood of persistent malposition or a deep transverse arrest is greatly increased.”

Through extensive study, Nichols and Randall concluded that the majority of maternal injuries sustained during vaginal delivery are not the result of genetic weakness, but ensue from the mechanical forces of the birth process. No consideration of the dynamics of childbirth would be complete without careful focus on the bony birth passage itself. The evolution of the human pelvis culminated in a design perfectly balanced between bipedal efficiency and birthing capacity.

The primate birth canal is essentially a straight, horizontal tube with a sacrum that lacks the broad concavity marking the human sacrum. Even in our closest hominid relatives, the pelvic inlet and outlet are situated along the same geometric plane, while in humans the long axes of the openings are perpendicular. This results in a curvature to the birth passage that requires the fetus to make several complex maneuvers over the course of delivery.

During the 1930’s, obstetricians Caldwell and Moloy believed they had identified four distinct human female pelvic shapes, (Fig. 4) a classification scheme that can still be found in obstetric textbooks today. Not
without racial overtones, this typing system also has proven less than accurate in predicting what ethnic group of women might possess a particularly shaped pelvis. It is now understood that the rounded, anatomically superior “gynecoid” pelvic shape appears in about half of all women, regardless of race or ethnicity. Furthermore, the shape of the female pelvis is considered to have more to do with developmental factors than genetic inheritance.  

While cephalo-pelvic disproportion is a rare occurrence and the vast majority of women are able to birth vaginally if given proper support, pelvic shape can be a determining factor in the development of some forms of prolapse. If the subpubic arch is more “android” or narrow (a relatively uncommon finding), the fetal skull must move back against the posterior vaginal wall to be born (Fig. 5). This could possibly cause weakening or separation of the rectovaginal septum and lead to future rectocele, especially if delivering in the lithotomy position. If the process of human birth moves the fetus down and back from the abdominal wall, then maternal birthing postures that best facilitate this dynamic should be encouraged.

It is a simple truth that pregnancy and childbirth change a woman forever. Some women are certain that motherhood is not for them and grow old with no regrets. Others who would love to birth a child never get the opportunity and spend their lives burdened with sorrow. Still, some women suffer significant physical impairment after delivery, the causes of which are often resistant to a simple explanation, while others give birth easily and return to their original body structure with little noticeable affect.

Although prolapse may result in spite of every precaution, there is no historical precedent for the epidemic of maternal vaginal injury occurring in the world today. We have some idea of maternal and fetal death rates in centuries past, yet very little information exists on maternal injury other than a few ancient references to pessary use among women. However, I believe a thread does exist that can be followed not only down through the ages but also throughout all cultures of the world.
Oral traditions in human society describe a wide range of cultural and historical information. Women’s oral traditions in particular often describe the common flow of events in everyday life. In Anglo Saxon culture, nursery rhymes and fairy tales were largely women’s songs and stories, for it was mothers, aunts and sisters who were at home most often to sing them to each other and to their young. Many of our most important teachings on morality, justice, health, and safety are skillfully contained within these stories and verses.

The ancient rhymes and songs were eventually written down and exist today in classic English and German children’s literature. Almost invariably, the young mothers in these tales are capable and attentive. Old women are quick and spry, if sometimes ornery. Old women outnumber old men by a wide margin, and nowhere is there a hint that something crippling happens to women after giving birth. It is the nature of women to tell and share, and something as pervasive as maternal injury is today would surely have been captured, however well disguised, in story or rhyme.

We have both the information and power to stop the most devastating pandemic in the history of women’s health. However, it is going to require awareness, courage, and a willingness to accept that if a time comes when most births are cesarean and most menopausal women hysterectomized and reconstructed, the vitality of the entire human race is threatened. Already in some parts of the United States it is a cultural assumption that women over fifty years of age should and will undergo hysterectomy.

The evidence is overwhelming that removal of female reproductive organs and associated operations take from women their core ability to remain vital into old age. It is also true that healthy and active golden years are the gift of a life well lived.

The human spirit worked exceedingly hard to master the crown of earthly creation: total freedom to walk and dance on two legs. Human hip joints do not work the same when the uterus is removed and the vagina tethered to the spine. Orthopedic surgeons understand this fact as do chiropractors, physical therapists, osteopaths, naturopaths, doctors of Oriental medicine, Rolfers, and post-hysterectomy women themselves. Yet, the deafening silence reigns on.

- May young children be well fed and encouraged to be active outdoors.
- May girls and young women become educated on the importance of maintaining a strong and healthy spine.
- May pregnancy, labor and delivery be treated with gentle and intelligent care.
- May women continue to share, to heal, and to remember…


1 Nichols DH Randall CL. *Vaginal Surgery* Williams & Wilkins 1989
3 Odent M. *The Caesarean* Free Association Books 2004
6 Ibid