

WEBSTER TECHNIQUE AND  
IN UTERO CONSTRAINT: AN EXPLANATION.  
A LITERATURE REVIEW

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NOVEMBER 2004

## ABSTRACT

Birth is a very exciting time for parents. No one wishes anything but a great outcome for everyone involved; we all want healthy babies. However, the literature is flooded with studies of birth trauma and associated results. It is shocking to realize that infant mortality is higher in the United States than in either Viet Nam or Cuba according to the United Nations World Health Organization. (1). Chiropractic serves very well as a function of prevention by addressing the cause; Chiropractors have the ability to identify causes associated with birth trauma. As many of our patients will become pregnant, it is important to be well educated in serving both the mother and child. The purpose of this study is to educate chiropractors on the risks associated with in-utero constraint, to be able to identify an abnormal presentation such as breech births, to be able to perform Webster's in-utero technique, and understand the current medical management of breech presentations.

Key words: In utero-constraint, breech birth, fetal position, Webster technique, external cephalic conversion, non vertex position.

## INTRODUCTION

A fetus's development depends a great deal on its position in the uterus. Any position other than vertex is considered to create constraint of the fetus to one degree or another. This causes abnormal development which leads to spinal asymmetries. This sets the stage for subluxations (2). The risk of trauma to the child and mother also depends largely on the position of the fetus. Abnormal positions from intrauterine constraint leads to high risk deliveries such as breech. Thirteen percent of all c-sections are due to breech (3). The incidence of perinatal mortality with breech presentation is four times that of a vertex presentation. The current standard of care for a breech presentation, cesarean section, has gone from 58% in 2000 to now 90% of the time even though vaginal delivery is still a viable option (4). Decreasing the number of cesareans for breech presentation has been offered as a way to reach the Healthy People 2000 goal from 22% to 15% cesarean section rate for all births. (3). There is risk with any operation but emergency c-sections are at an even higher risk than planned ones (5). A mother is also more likely to have a cesarean section with her second baby if she had one with the first (6). An additional thought is that breech presentation is more often repeated in women who had elective cesarean delivery in their first pregnancy than in those who had a vaginal breech delivery (7). The trend of c-sections is not dropping and breech births will continue to occur in approximately 4% of all pregnancies (8). Chiropractic may be the first opportunity to reduce morphological changes from extrinsic factors (9). This means ultimately preventing and reducing subluxations.

## DISCUSSION

There are 4 combinations of breech presentations; frank, complete, footling, and kneeling. Two thirds of breech presentation are frank where the legs are straight up in front of the baby and its bottom is down. (2, 9, 4). At 20 weeks, fetal position is unrelated to delivery position (10). Breech is common in the beginning of a pregnancy- up to 25% before 30 weeks (11, 12). At 30 weeks, a malpositioned fetus still has a 75% chance of changing to a vertex position. Most breech presentations will turn at the seventh month (12). If a fetus is already in a vertex position at 30 weeks, it has only a 1% chance of turning into a malposition at delivery. As the baby reaches term, it is more difficult for the baby to turn (2). By 36 weeks, most malpositioned fetuses have only a 1% chance of turning (10). A breech birth is a significant finding and should not be taken lightly. Infant mortality is normally 2.6%. It rises nine times higher with a breech presentation (4). It is not completely understood why breech births occur.

Various causes of breech birth have been considered. Some studies concentrate on maternal factors while others concentrate on reasons within the fetus. One proposal is the fetus is unable to turn to a vertex position because of decreased amniotic fluid. However, insufficient methods of measuring amniotic fluid have led to questionable results (13). Mechanical factors are also considered such as pelvic size but, again, results only show “obvious anatomic deformities of the fetus, uterus and pelvis” in 15% of breech deliveries (13). Because breech babies tend to have a decreased size at birth, one study concluded that “factors causing a moderate intrauterine growth retardation might be involved in the pathogenesis of breech

presentation” (13). Psychophysiological factors may also influence the breech presentation. It has been observed that anxious and fearful women have a higher incidence of breech presentation than other women (14). While no single cause has been identified, the most consistent factor for breech presentation, at 21% of the time, is a previous breech presentation with the mother’s first pregnancy (13). This supports the argument that maternal causes should be carefully considered in breech presentations.

A fetus’s development depends a great deal on its position in the mother’s uterus. Any position other than vertex, where is head down, is considered to create constraint of the fetus to one degree or another. Because of the rapid growth of the fetus, it is most sensitive to biomechanical forces that lead to constraining pressures and molding (9). Shearing, stretching, compression, torsion, and bending are all extrinsic forces that can alter the growth and shape of the musculoskeletal system. Suppression of longitudinal growth may occur from excessive compression forces perpendicular to growth plates. Unequal compression loading and stretching of a growth plate can alter deposition of bone leading to asymmetry of osseous elements (9). The optimum in-utero position is with the long axis of the of the baby’s spine parallel with the mother’s spine. The widest diameter of the fetal cranium (A-P) is lined up with the widest diameter of the pelvic inlet. When this happens, equal pressure is exerted against the paired condylar segments of the occiput (8). Two percent of babies are born with deformations due to extrinsic factors. In-utero constraint is the most common cause of extrinsic deformation (9).

In-utero constraint is defined as “any forces external to the developing fetus that obstructs the normal movement of the fetus” (15). Mothers create in-utero constraint for the baby when

they are subluxated (2). Preexisting subluxations, micro/macro trauma and pelvic malformation cause anterior torquing on uterine ligaments and muscles, decreasing space and creating an altered environment (16). The broad ligament is isolated in the Webster in-utero technique (2). The broad ligament extends from the sides of the uterus to the lateral walls and floor of the pelvis and assists in keeping the uterus in position (17). The location of the uterus is dynamically positioned by the stretch of these ligaments (16). For example, the round ligament limits posterior movement. If stretched, the uterus can shift from anterior to posterior (16). Normal movement is important for proper development as well as for the fetus to prepare itself for birth. In approximately 70% of breech presentations, movement is restricted (9). The position of the fetus determines the amount of risk associated with delivery.

Head presentation itself is a major factor in determining the degree of difficulty of labor. (4). Normal presentation at the time of birth is for the head to be fully flexed at it enters the pelvic inlet. The head turns clockwise until the sagittal suture runs in an A-P diameter. The occiput will touch the pubis and the frontal bone will be closest with the sacrum. The head will flex until it reaches the pubis and then the head will be extended the rest of the way. At birth, the head will be looking laterally at the thigh and come out first in an oblique occiput anterior presentation (18). This optimal presentation will create the best chance for an injury free birth (11).

Even persistent posterior occiput (OP) presentations can present problems for both the mother and the baby. Persistent posterior occiput results from a failure of internal rotation of the baby prior to delivery and occurs in approximately 5% of deliveries (19). It is associated with

increased maternal morbidity as well as a higher incidence of severe perineal laceration resulting in episiotomy (15). Mothers were also more likely to have longer second stages of labor, longer hospital stays, and greater blood loss. Fifty five percent of OP deliveries had to have operative delivery whereas only 17% of anterior occiput babies had to have surgical intervention for delivery (19). The most common reasons for operative intervention were fetal distress and prolonged second stage of labor (19). Infants delivered from the posterior occiput position had a higher incidence of Erb's palsy and facial nerve palsy from forceps. "This injury is due to the excessive lateral traction on the fetal neck during delivery, damaging the brachial plexus" (19). Breech babies also have increased risks such as brachial plexus injury.

While head position is important, breech babies are even more likely to have serious complications from birth. Dunn reviewed 6000 cases of breech babies and found that; 42% had postural scoliosis; 20-25% had deformities such as torticollis, mandibular asymmetry and talipes equinovarus (club foot); approximately 50% had hip dislocation (9). The chance of neurodevelopmental delays also increase with a cluster of factors such as breech, placenta previa, forceps/extraction, cesarean section, and prolonged labor (20). Breech is the most likely position to create these circumstances. Breech positions lead to longer more painful labors with a greater probability of epidurals, episiotomies and cesarean sections (21). Intrauterine constraint itself has been linked to fully expressed deformational plagiocephaly. Some believe that restrictive intrauterine forces can even cause fusion of cranial sutures (22). Breech presentations can cause both obvious and subtle conditions.

Breech births are also associated with certain types of subluxations for the baby as it encounters the mother's pubis. As a breech baby descends the canal to the pelvic floor, the buttocks rotates under the pubic bone creating a high likelihood of pelvis and lumbar subluxations. The baby then laterally flexes around the pubis and their legs unfold as they exit the canal. Pressure from the shoulders engaging the pubis create the likelihood of thoracic subluxations. The baby internally rotates and the shoulders are born. As the occiput encounters the pubis, the head may be flexed or extended. If flexed, the strain is on posterior cervical structures. If extended, anterior structures are strained. (12). Cord prolapse and hypoxia are also more likely to occur to the baby (23, 4). These subluxations are often minimalized or overlooked in children.

Often times, the pathogenetic importance of asymmetric posture and motion in small children is down played if it is recognized at all. Often times, parents will comment on their child's appearance or behavior. Biedermann termed the phrase "kinematic imbalances due to suboccipital strain" (KISS syndrome) (24). Risk factors for these symptoms are intrauterine misalignment, application of extraction aids, prolonged labor and multiple fetuses. The typical KISS baby is first seen at age 6-12 months. Chiropractors should take note of parent's comments and make their own observations such as: tilt posture, decreased motion in the neck and spine often by 30%, torticollis, asymmetric muscular tone, C-scoliosis, increased pain or sensitivity in the upper cervical area, retarded hip development, unable to hold head erect, deformed foot, restless sleep, not eating or drinking well (24). While symptoms can be minor in the first few months of life, at age 5-6, they can suffer from headaches, postural problems or diffuse symptoms like sleep disorders, being unable to concentrate, etc. Traumatization of the



suboccipital structures at birth can inhibit functioning of the proprioceptive feedback loops. The motor development, although preprogrammed, cannot develop normally (24). The aim of correction is the central nervous system rather than the muscles. Upon palpation, KISS syndrome babies were found to have an atlas subluxation to the right more often. Adjustments at C1/C2 were just as effective as C0/C1 adjustments (24). KISS syndrome has a wide range of clinical signs that can be effectively dealt with by upper cervical chiropractic adjustments in many cases (24). . However, the best scenario would be to have an optimum birth and prevent such conditions. The definition of an optimum birth is under debate in healthcare circles today.

Breech presentations were not always delivered by cesarean like they are today. In the 1960's vaginal delivery was the accepted approach to breech presentation. Some 1970's studies suggested increased neonatal morbidity and birth injury with vaginal breech delivery. Apprehension plus a medicolegal environment led a trend away from the teaching and use of breech vaginal delivery in the 1980's (25). The year, 2001, became 'the year of cesarean for the breech' after results of the Term Breech Trial were published in October 2000 (7). The Term Breech Trial concluded that neonatal morbidity was significantly lower in the planned cesarean section group than in the planned vaginal birth group (26). Caesarean section for breech presentations accounted for 1.9% of all births in 1991, 1.8% in 1996, 1.8% in 2000, and 4.3% in 2001 (7). The question arises how one study produced such a change in the standard of care.

In response to Dr. Hannah's study, the Committee on Obstetric Practice of The American College of Obstetricians and Gynecologists (ACOG) in December 2001, issued Opinion 256 titled "Mode of term singleton breech delivery." It stated "Patients with persistent

breech presentation at term in a singleton gestation should undergo cesarean delivery.” While not law, this opinion has been treated as an absolute (27). This study has brought much controversy to the protocol for breech presentations. With doctors being trained to deliver breech via cesarean, vaginal delivery will become a “rare and risky obstetric event in this litigious society” (27). It is also important to mention that not all patients have the luxury of available cesarean and many times plans do not go as scheduled when it comes to birth. The validity and generalizability of Dr. Hannah’s study has been challenged and the ACOG has been called to reconsider its opinion. However, given the two choices, the choice that minimizes professional liability will most likely prevail (27).

The controversy over appropriate management of breech presentation as well as disagreement regarding appropriate candidates for a trial of labor makes for a difficult phenomenon to study. The uncertainty of proper management of breech delivery is because of varying risks between vaginal versus cesarean delivery for both the mother and child. Cesarean sections are not without risks and added social costs. In general, all women who undergo cesarean are at risk of infection, hemorrhage, amniotic fluid emboli and venous thrombosis (28). Specifically, the risk of maternal mortality increases 6-8 times in a cesarean versus vaginal breech delivery (28). Added health care costs are also to be considered in respect to breech births. Cesarean sections add to the cost of childbirth in terms of theatre time, post-partum nursing requirements, and additional specialized physicians (7). The economic impact of cesarean delivery for all breech presentations has been estimated at \$1.4 billion annually (25). Brachial plexus injury is also a topic within the debate of cesarean versus vaginal delivery for breech presentation. In one study, vaginal delivery was the major cause of brachial plexus injury

whereas caesarean delivery protected against it (29). Vaginal breech delivery poses risks for fetal brain damage, trauma to the spine, skeleton, and internal organs as well umbilical cord prolapse (28). While cesarean may protect the fetus, it increases the risk for the mother. On the other hand, vaginal breech birth may decrease the risk for the mother, but it increases the risk for the fetus. This is the reason that alternatives are being studied.

The medical literature understands the need to balance the benefits and risks for both the mother and child. Current literature looks at ways to turn the baby before delivery. Increasing as a popular alternative to cesarean delivery is external cephalic version (ECV). Before the procedure, blood is drawn, an ultrasound is performed, a nonstress test is performed, an intravenous access is established and a subcutaneous tocolytic agent is administered. The doctor then places his/her hands on the abdomen moving the baby up and out of the pelvic bones. The baby is either turned forward or backward until the baby is in the head-down position. Rhogam is then administered after the procedure. This procedure is performed around the 37<sup>th</sup> week (30). External version has been practiced since the time of Aristotle (30). In the 1950's interest in ECV declined with reports of fetal death and maternal morbidity (25). ECV is taught in most obstetric residency programs and in some family practice residency programs (30). It has been shown to lower the incidence of breech presentation at birth and decrease the number of cesarean sections (31). The success rate is between 41%-77% with a 4.1% reversion rate. (30). The larger studies have success rates averaging 51%-58%. White women have a lower success rate and a higher reversion rate (31). Low uterine tone (an easily palpable head and less than one contraction every 10 minutes) may be the most important predictor of success (25). ECV is not

without its contraindications or possible complications. Overall complication rates have ranged from 1-3% since 1979 (30).

The risk of ECV include umbilical cord entanglement, abruption placenta, premature labor, premature rupture of membranes and severe maternal discomfort (30). Transient fetal bradycardia is the most common complication for the fetus after ECV in up to 36% of cases (31). The long term effects of bradycardia are still unknown. There are also numerous contraindications for the hospital procedure such as: significant third trimester bleeding, amniotic fluid abnormalities, uterine malformation, maternal cardiac disease, pregnancy induced hypertension, major fetal abnormality, uncontrolled hypertension, placenta previa, twins, and suspected intrauterine growth restriction, abnormally small size, established labor, and gestational diabetes requiring insulin, (30,31). Because of possible complications, the patient must also have ready access to a facility capable of cesarean delivery (30). The use of ECV in patients with a previous cesarean is controversial (31). Although it would save 12.3% per birth if applied routinely, ECV itself costs approximately \$1000 per procedure (30). Another option for turning is hypnosis. With hypnosis, 81% of fetuses converted to a vertex position with or without ECV while only 48% of those in the comparison group converted (14). Overall, the ECV alternative to cesarean is invasive and not without potential harm to the baby. The root of the cause must be addressed in order to further prevent breech births.

Lowering the incidence of breech babies would be ideal. Webster's in-utero technique is a specific chiropractic technique to identify and correct in-utero constraint (32). It facilitates the balance of muscles and ligaments in the pelvis which in turn reduces the constraint in the uterus

allowing the baby to obtain the best possible position for birth (32). Since 1978, the success rate of this technique is 82% of the time (3). In one study of 800 cases, 25 did not respond but other factors were determined to be related (9). The theory behind Webster's is to decrease the pressure in the pelvic cavity by diagnosing subluxations and aligning the bones of the pelvis. (4) Diagnosis of breech is imperative whereas the classification of which type of breech is not (2).

The first step in diagnosing a breech baby is to determine the presenting part. To do this, the patient is supine with shoulders slightly raised and knees supported to relax abdominal muscles. (2) The doctor takes a web index with the inferior hand at the lower uterine segments and the superior hand counter pressures. The head can be identified with the most certainty. It is palpated as a hard, round, regular shape and is easily ballotable (2). The buttocks is most often found at the uterine fundus. It feels softer, more irregular, and less defined. It is not as easily movable and is continuous with the spinal column. Palpation of smaller parts will be felt along with the buttocks (2). Breech presentation can be confirmed by auscultation. Heart sounds above the umbilicus is breech and below the umbilicus is vertex presentation (8). Also, the patient seldom experiences the lightening sensation prior to birth but may experience fetal movement of the small parts in the lower abdominal quadrants and may complain of painful kicking against the rectum or bladder (2).

Webster's technique consists of two parts. The first part is to determine the side of the mother's sacral subluxation. With the mother prone, the doctor flexes the legs bringing them to the buttocks. The resistant side, or the side that feels as though it pushes back at the doctor, is the posterior sacral rotation subluxation (PL or PR) (9, 12). The subluxation can be confirmed by

Logan basic checks or motion (2, 11). If the mother has had a knee replacement or has knee contracture, the prone leg flexion is not recommended (11). Eighty percent of the time, one leg will be more resistant and 20% of the time both legs will kick back with resistance (12). If both legs are resistant, the sacrum is base posterior and can be adjusted with a P-A/ S-I line of drive(2). If both legs are equal, the baby is in vertex position (2). The adjustment can be done with activator, diversified prone, diversified side posture (11). If a post check of equal leg flexion does not show up, more pressure may be necessary to move the sacrum (11).

The second step of Webster's is a release of a trigger point in the rectus abdominus (9). The theory is that trigger points, which are a hyperirritable areas in muscle or fascia, prevent full lengthening. This creates further torque and contributes to intrauterine constraint (16). To release the trigger point, the patient is supine and the doctor stands on the opposite side of the sacral adjustment. To find the trigger point, with a knifedge/hypothenar contact, the doctor draws an imaginary 45 degree line lateral and inferior from umbilicus and another 45 degree line from the ASIS inferior and medial. The trigger point should be where the lines intersect. The thumb can be rotated 15 degrees in either direction to feel the muscle bundle. The thumb holds 3-6 oz of steady pressure with a inferior to superior contact to isolate the round ligament. Pressure is held for 1 to 2 minutes or until the muscle drops away (12,9). Fetal movement may also help to release the trigger point. The doctor can coach the baby to move by pressing medial on the opposite side of the trigger point if it doesn't do so on its own (2). Classically, there are no more adjustments made on the mother that day (12). However, some doctors have done adjustments prior to Webster's on the same day with a 100% success rate (11). Also, some doctors have held the trigger point up to 35 minutes although this is rare (2).

Treatment protocol calls for Webster's every 2-3 days until the baby turns (12) or 3-10 visits in a 2-3 weeks period (9). When the legs are found to be equal on a visit Webster's has been concluded. Webster's is not recommended for twins (2). Variations on presentation may require that Webster's be altered. For example, if the baby is in a transverse lie, there may be bilateral trigger points. If the baby has a facial or brow presentation, the trigger point may be on the same side as the sacral adjustment (2). With a base posterior adjustment, there may also be bilateral trigger points that should be released at the same time (2).

## CONCLUSION

“Chiropractic care is based on the principle that the body naturally strives toward health. This striving is an expression of the innate intelligence of the body. The nervous system is the primary system that the body uses in this striving” (33). Specific chiropractic care throughout pregnancy facilitates optimal nervous system function for greater health potential of both baby and mom. If a breech position presents itself, chiropractic offers a safe, noninvasive and effective solution and should be considered as a first option. Chiropractic has been found to effectively and safely correct subluxations which create balance in the body. In utero constraint is a lack of balance that obstructs normal movement and development.

Webster’s in-utero technique has a higher success rate at 82% than the average external cephalic conversion rate of 69%. The list of contraindications for external cephalic version is lengthy and the potential risks are real. Webster’s in-utero technique is non invasive, less costly and works with the body’s innate intelligence. Cases of birth trauma can be both obvious and subtle as seen in the cases of KISS syndrome children. It is important for the chiropractor to be aware and link subtle findings together because chiropractic has been shown to effectively help many of these cases. Breech presentation and abnormal head presentation are serious concerns. Chiropractors have a responsibility to share with and educate their patients as well as the medical community what they have to offer. Clearly, there is no consensus on the cause or best management of breech presentation. Chiropractic needs to have a clear voice when it comes to these issues. More research concerning Webster’s In-utero technique needs to be considered as Webster’s is a very important tool for the chiropractor. The purpose of this literature review is to



educate chiropractors on the issues surrounding breech birth so they can offer educated opinions and practice.

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