A CHIROPRACTIC PREGNANCY * TONGUE-TIE AND BREASTFEEDING

pathways to family wellness™

Birthing in Peace

Ina May Gaskin Explores Forces Surrounding Birth

When Does Parenting Begin?

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The Innate Wisdom of Indigenous People

pathways
to family wellness™

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A CHIROPRACTIC PREGNANCY 18
TONGUE-TIE AND BREASTFEEDING 53
BIRTHING IN PEACE 8
WHEN DOES PARENTING BEGIN? 14
THE INNATE WISDOM OF INDIGENOUS PEOPLE 66

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48
in this issue

4 LETTER FROM THE EDITOR
Letting Go for a Higher Knowing
BY JEANNE OHM, D.C.

6 CONSCIOUS PATH
A Letter to a Midwife's Mamas
BY CARRIE BLAKE, C.P.M.

14 WELLNESS LIFESTYLE
When Does Parenting Begin?
BY DAVID B. CHAMBERLAIN, PH.D.

17 Mindfetalness
BY TRACY DONEGAN, B.SC.

18 CHIROPRACTIC FOR LIFE
A Chiropractic Pregnancy
BY JULIE DAY, M.CHIRO

22 INNATE EXPRESSIONS
My Birth Story:
How Baby No. 3 Was Different
BY ALISHA WALKER

24 PARADIGM SHIFT
The Rituals of
American Hospital Birth
BY ROBBIE DAVIS-FLOYD, PH.D.

30 PREGNANCY
Human Studies Condemn
Ultrasound
BY KELLY BROGAN, M.D.

33 Ultrasound: 8 Reasons
It's Not Safe or Painless
for Your Developing Child
BY JACKIE LOMBARDO

35 The Biology of Ultrasound
BY EMILY CASANOVA, PH.D.

FEATURE

BIRTHING IN PEACE PAGE 8

At the ICPA's Freedom for Family Wellness Summit, Ina May Gaskin, Mother of Authentic Midwifery, sits with Michael Mendizza to talk about her life and work. The thoughts and stories she shares about natural birthing will inspire you.

36 HOLISTIC HEALTHCARE
Antibiotics Given
to Laboring Mothers
BY LINDA FOLDEN PALMER, D.C.

40 BIRTH
Seeking a Balance
BY CATHY DAUB, P.T.

44 OUTER WOMB
Finding Our Feet
BY ELLYNNE SKOVE, M.A.

48 INFORMED CHOICE
Modern Myths About Tongue-Tie
BY ALISON HAZELBAKER, PH.D.

53 Tongue-Tie: A Holistic Approach
for Breastfeeding Infants
BY ANDREA AUERBACH, D.C.

56 PARENTING
Turn It Up:
Parenting from the Heart
BY JANAIAH VON HASSEL

60 NEW EDGE SCIENCE
How Modern Societies
Violate Human Development
BY DARCIA NARVAEZ, PH.D.

64 FAMILY WELLNESS
Siblings at Birth:
A Rite of Passage
Into the Family
BY JEANNE OHM, D.C.

66 COMMUNITY
"If you lay down, the
baby will never come out."
BY COLE DEELAH

70 ANCIENT WISDOM
Aluna: A Message
to Little Brother
BY CHARLES EISENSTEIN

73 MOMENT OF TRUTH
Lakota Code of Ethics

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If you have stories and photos to share about pregnancy, birth, family wellness lifestyle choices, or healthy recipes and nutrition ideas, please contact us by e-mailing editor@pathwaystofamilywellness.org.

Letting Go for a Higher Knowing

When my siblings and I were born, it was the status quo for moms to be knocked out under general anesthesia for birth. They labored alone, restricted to criblike beds, and as the stage of transition approached, they were put under, missing the entire experience of birth. Fathers were not allowed near; they were in the hospital waiting room, pacing and chain-smoking cigarettes.

The day I was born, my mother was laying flagstones in the front yard. She wanted to get those flagstones set…some sort of final nesting project, I suppose, and with me being her third child, the early stages of labor slipped into the later stages without her paying much mind. When she finally realized she was progressing rapidly, she looked at my father and firmly said, "We'd better leave right now." Thus began the mad 45-minute drive to the hospital with her exclaiming, "Oh, oh… he's coming!" (My mother wanted a boy.)

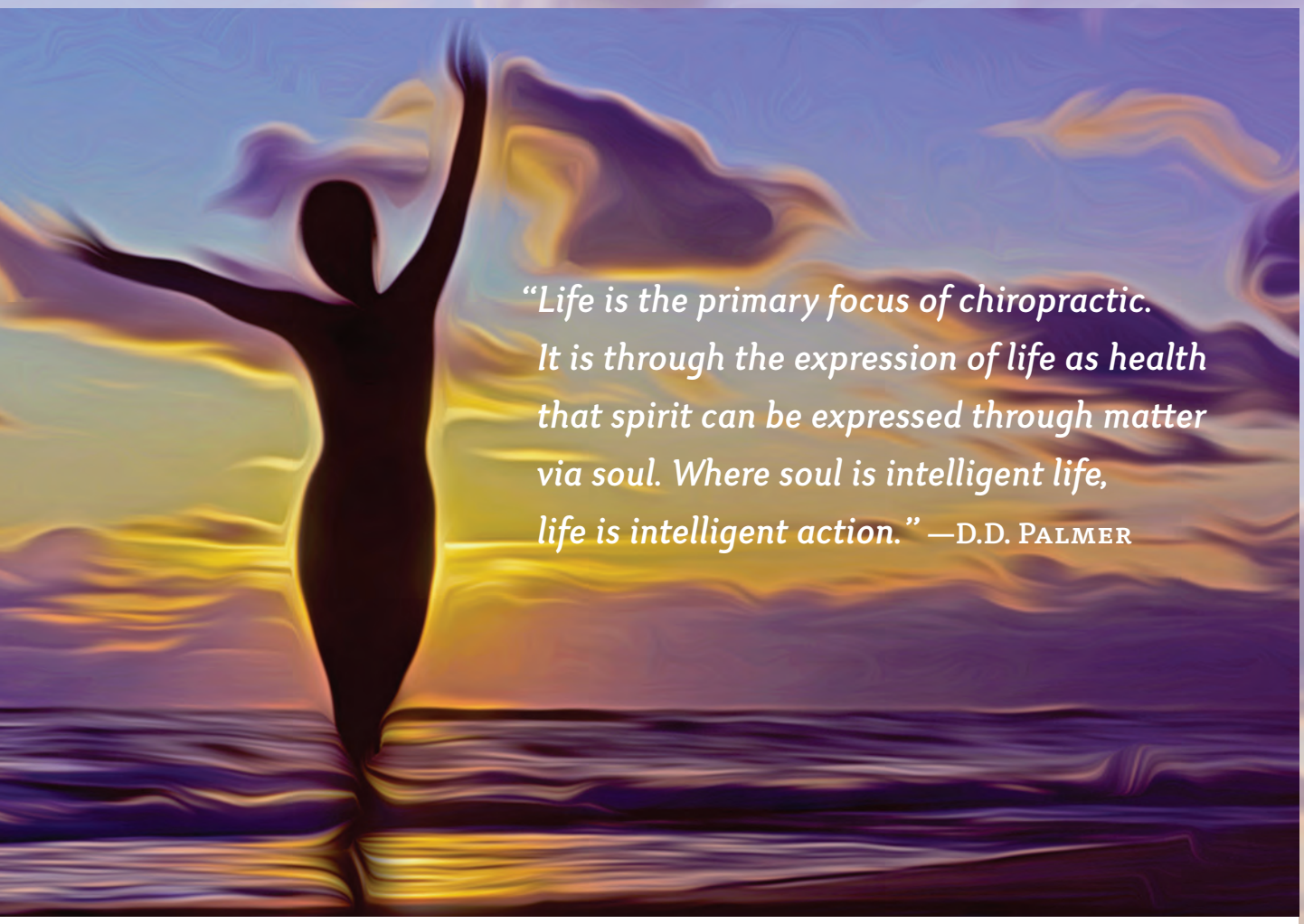
They arrived at the hospital, where nurses rushed my mother into a room and hoisted her onto a bed. They managed to get her "pedal pusher" pants off and I came out almost immediately, her bobby socks and sneakers still on her feet. Somehow, even then, I defied the status quo and averted the ill effects of their operative modes of delivery.

Growing up, I knew nothing about birth. I simply never saw one in person and neither television nor schools would dare show footage of one. Because of this, birth came with a fear of the unknown. With this fear came the assumption that hospitals were the place to give birth. If a birth happened at home, people thought it an awful accident and the woman and baby "lucky" to have made it through alive.

Fast-forward to me at age 19, when I fractured my spine in two places. Tom and I were living together at the time, supporting our way through college. After a year of orthopedic treatment with minimal improvement I wound up going to a chiropractor. We were so fortunate to start with a chiropractor who shared with us the real purpose behind the adjustments. Yes, he explained, we work on the spine, but our purpose is not the treatment of bad backs. We work on the spine, adjusting misaligned vertebrae, to take pressure off of the vital nervous system. This allows the central nervous system to facilitate communication with the entire body—with every system, cell and organ. This maximizes our body's innate wisdom to express itself as it is designed to.

My back got better, but so did the normal function of many systems of my body, and that really impressed me. My asthma went away, my lifelong allergies to animals alleviated, my frequent headaches stopped, and my menstrual cycle regulated. I watched my body heal, regenerate and express more life.

Tom and I decided to go to chiropractic school, and chose a school that adhered to the original, core premise of chiropractic: *Life expresses intelligence*. Our attitudes began to change. The blind reverence for technological healthcare fell away. We started deducing from a new life principle and began to understand that life is more intelligent than we will ever know. More than anything else, this profound and rational principle established confidence in us as we approached the next stages of



our lives. When we conceived we were still in college, and with this newfound confidence, we chose to have a home birth.

At that time and in that location there were no home birth midwives available. Thanks to Ina May Gaskin's book *Spiritual Midwifery* I found the support I needed to have our first child unassisted. *Spiritual Midwifery* confirmed the principle: *Life is intelligent*. It offered numerous birth stories that strengthened our resolve that the intelligence of the body knew how to do what is normal and natural for it to do. It showed us that the strength for birth comes from within us and the more we respect and trust in the process, the more strength we have.

Birth for me was intense. I had pain I'd never felt before in my life. I reached the threshold that midwives talk about, where one must let go and give into the process. In accord with my personality at the time, I continued to instead hold on tightly to my illusion of control. Tom's steadfast confidence in the body's intelligence offered me a soothing strength. He brought me inward to find the courage founded on the rationale that "Of course my body can do this; women are designed to give birth."

With the peace and humility of letting go, we had all six of our children at home. Each birth was different and reflected the emotional state of my being at that particular time of my life. Each and every birth brought me into the embrace of my higher knowing. Trust in life itself entered into my heart and the hearts of everyone present.

Birth is a rite of passage, both an honor and an awakening. It affects us on all levels of our being. I am sincerely grateful for the courage I found to birth as I did. I know that resonating with the chiropractic principle in a practical way laid the path before me. Having my understanding validated by Ina May's wisdom, embracing the reassurance from Tom, and letting go to trust my inner being—for this I am forever thankful.

For the raising of the consciousness,

Jeanne Ohm, D.C.

A Letter to a Midwife's Mamas

By Carrie Blake, C.P.M.

Dear Mama,

I actually hope you don't remember my name. I was your midwife and I've always thought that if I did my job well, you would only remember how amazing *you* were when it was time to birth your baby.

Birth is hard work, and I hate how our culture presents it as a nice, tidy little inconvenience.

But you went against that cultural norm and chose to birth your baby with the help of a midwife, with all of the pain, bodily fluids, doubt and triumph that come with choosing that path.

You were beautiful. I know, I know…you hadn't showered for two days and you threw up six times. But when you got to 8cm, there was a beautiful glow in your cheeks…and there were beads of sweat on your lip. I put a cool washcloth on your forehead, knowing that you were nearly holding your baby, knowing that there might still be a ton of work to do, and knowing that every moment would be worth it for you.

You frantically looked around and gasped, "I can't do this anymore." And I looked you in the eye and said, "You can do this. You *are* doing this. Don't be afraid."

And you believed me, as well you should have, because I was telling you the truth.

I knew the baby would be moving down with these powerful contractions as your cervix melted away. I told you, "You'll feel a lot of pressure, like you have to poop a bowling ball." And then, when that happened (the pressure, not the bowling ball), you had a brief moment when the recognition of "Oh! This is what she was talking about!" passed over your face, and the contraction faded away.

I didn't tell you to push because your body knew

YOU FRANTICALLY LOOKED AROUND AND GASPED, "I CAN'T DO THIS ANYMORE." AND I LOOKED YOU IN THE EYE AND SAID, **"YOU CAN DO THIS. YOU *ARE* DOING THIS. DON'T BE AFRAID."**

damn good and well when it was time to move your baby from your womb to the outside world. And after a few contractions (or maybe a few hours) since you'd started pushing, you said, "I think I'm pushing."

"I know," I said. "Just keep doing what you're doing. It's perfect." If you were a mama who I did actually tell to push, know that there was a good reason.

You may have been in the water, or you may have been on the toilet. You may have been on your hands and knees, or on the birth stool. Or on your side, or standing up, or flat on your back. If I look in my birth log at the day of your birth, I'll remember which of these positions you were in and I'll remember if it was because I asked you to get in that position or because that is where you instinctively went.

It matters to me where you were when your baby was born.

I remember that moment when we could clearly see the head. I love that your baby's daddy thought that the top of the baby's head, when we could see about 3 inches of it in diameter, was the *whole head*—and that as the rest of the head emerged his eyes filled with tears as big as saucers. I remember after your baby's head was born whether your baby turned to the left or to the right. I remember if your baby didn't turn and I helped straighten the shoulders. I remember your baby coming fully into the world, and the look on your face.

I remember the moment that you became a mama. Whether it was for the first time or the ninth. Relief and joy and sweat and tears intermingled.

I remember if I missed your birth. I remember if I was there for three minutes or three days. I remember if we went to the hospital. Believe me when I tell you that I remember all of it.

I handed your baby up to you and just stepped back, always keeping an eye on the two of you. I tried to keep my mouth shut and let you discover your new little person on your own. I'm sorry if I chatted too much. I sometimes am just so proud of mamas that I can't contain myself. But I try hard to honor your space and the sacredness of new life.

I remember what your immediate postpartum was like, too. Really, I do. I talked to you about how babies process things about six times more slowly than we do, and urged you to keep that in mind as you loved on your baby. And after a few hours, I tucked you into bed and went on my way.

You were beautiful and strong and tired. And, I hope, proud.

I got to see you many times over the next six weeks. And after that last appointment, I got in my car and cried. I was so proud of you and so honored to have gotten to be a part of your life that I cried tears of joy, knowing that I might never see you or your precious baby again...but, for those brief months, I hope that I was all that you needed and dreamed of, because *you* were all that I dreamed.

My prayer for you as I drove away that day was, "Oh Lord, please help her to remember that she *can* do it, that she *is* doing it. Please help her to always remember that her midwife said, 'Don't be afraid.'"

Carrie Blake, C.P.M., M.P.H., is a midwife who is passionate about the health of women and babies. She is currently studying in France in preparation for long-term service in a bush hospital and the surrounding villages in Niger, West Africa. View article resources and author information here: pathwaystofamilywellness.org/references.html.

BIRTHING IN PEACE

A conversation with Ina May Gaskin on the forces surrounding birth

Interview conducted by Michael Mendizza

The way that people go through birth—whether it's the mother, the baby, or the father—there is a separating ritual. And that's exactly what shouldn't be done with mammals. Mammals need connection. That's the definition of a mammal, no matter what species of mammal: There's a newborn that needs Mama, and needs her for an extended time, whether in arms, or on the hoof in herds. Mammals are all about connection, and we're the only ones who've turned and created rituals of separation at birth. The United States has led the world in this way, with some countries, say, in Latin America, that took it to a greater extreme, where in some hospitals the C-section rate is 95 percent. This has such a deep, deep set of effects that reverberate throughout the culture.

Essentially there is a disrespect of the creative power of the female. And if there's a disrespect of the female, then everybody becomes infected and flooded with fear hormones. That means up goes distrust, up goes violence, up goes psychological, emotional, spiritual pain. We have become cut off from nature, from Mother Earth. Absolutely cut off. And what is the result then? We destroy that which nourishes and we hold indigenous peoples in contempt as we continue to desecrate and devour the planet. Some have gone so far as to think that if we surpass ourselves scientifically, we'll find another planet to desecrate. Oh yeah, right! It's so obvious that there's something wrong with this type of thinking, and that's what the counterculture in the late '60s was revolting against. It was hopeful for a time, because we saw we were shaking the timbers of the very culture, and at the same time we were learning all the ways we could resist. But it's not easy to get a real paradigm shift.

I think I've always known it was going to take more than one generation to discover a new culture. The real trick is to pass it on to that next generation without them turning around at us and revolting and snapping right back into the mode we were reacting to. We were trying, consciously, not just to be reactive, but to create something that could be sustained. And I didn't see any way that we could do that without respecting and learning from cultures such as the Native Americans, who taught, "Don't take any action unless you're thinking seven generations into the future."

C-sections' Damaging Consequences

A cesarean section has the potential of making the next pregnancy quite a bit more dangerous, because it creates a scar on the uterus. What's the problem there? Well, the placenta could plant itself right over that scar. And if that scar isn't completely healed through all three layers of muscle tissue, and the placenta puts itself there, then there's going to be a heavy bleed at the minimum in the next pregnancy because the placenta won't be able to release itself in the normal physiological way.

Other things can happen. While the surgeons are in there, it's not too hard to nick the uterine artery. The woman could lose her life right there on the table shortly thereafter. It's also not that hard to nick a bowel, causing peritonitis. And a nicked bowel can actually kill a mother within a few days if it's not detected and treated with heavy antibiotics and another surgery rather quickly.

What else? Well, anytime that you have an abdominal surgery, it's major! Just because a C-section is marketed to say it's like a laparoscopy, it isn't. A laparoscopy is minimally invasive, but this is an incision right in the abdominal cavity. Even if it's set up the best way by the most careful doctor, there can still be lots of scarring, especially for some people who have a tendency to form keloid scars, where the scar just keeps growing. If there isn't some sort of preventive way of breaking up those adhesions, they keep growing and attach to organs that are meant to slip and slide nicely against each other. That's called bowel adhesions—abdominal adhesions—and it can happen after any abdominal surgery. I've seen lots of adhesions after just one C-section that I know was very carefully repaired. How can one know going into it whether they have the tendency to develop all this scar tissue?

As for the baby. The baby doesn't get nicely squeezed. We're meant to come through the mother's birth-canal opening. That's nature's plan. It's worked out over hundreds of thousands of years and it works well. And now they're learning to colonize the baby with the bacteria that they would have gotten if they came out the way that nature meant. They're learning that these babies that are born cesarean, who are more susceptible to illness, benefit by a little swab of what they would have gotten if they had been born vaginally. But what they miss is the squeezing of the lungs as the baby comes down the birth canal. Now the baby gets all this fluid, because the lungs of the newborn baby in the uterus are

ILLUSTRATION BY OLEG KREMESHNOY

like a wet sponge that's meant to get squeezed out. So the cesarean-born baby is much more likely to end up in the intensive care unit, needing respiratory therapy, because they've got these wet lungs.

The other thing is that the babies look so surprised. There's a shock. They almost know that it shouldn't be that way, except when the surgeon is wise enough to know to talk to the baby a little. I think some babies know that they need to be born by cesarean section, and that's not so bad.

But the part that bothers me often is to watch how their heads are pulled, because there isn't the force of the uterus pushing them out. Nature's way is actually superior in almost every case, because you've got the force of the uterus, which is the strongest muscle in the body, actually propelling the baby, pushing them out into the world. They're not pulled into the world by the head. It's just as possible to mess up a vaginal birth, too, by pulling and wrenching rather than letting the uterus, or gravity, do the job. But when we pull and tug on the head, that's when the people with chiropractic skills and cranial sacral skills have to fix the damage that can happen from that.

One other consequence of having so many cesareans is that the obstetric profession has lost the skills that it had 40 years ago, because many doctors today, and many labor delivery nurses, have never seen an unmedicated woman in labor. They've never been there. These doctors have never seen a breech birth, not even on a film or video. And that means when there's one that's undiagnosed and coming at them suddenly, they may be in such a panic because their brain can't register that this woman and baby aren't in danger, and to just let them come. Rather, they shove the baby back in and do a panic C-section. I can't stand the loss of manual skills that I've witnessed over the last 30 or 40 years. Doctors 40 years ago knew things that are no longer part of the medical education. It's just absurd how we're dumbing ourselves down to that extent. And we're spreading this deliberate creation ignorance that is just appalling.

But we can still reverse it. I think we must; it just has to be taught again. And it doesn't have to just be learned on live people. There are well-designed models, pelvic models with a doll that behaves like a real baby and a real mother so we would learn those beautiful manual skills of how to help a breech baby on the rare occasion when one actually needs a little manipulation, because the arms might be caught in ways that can keep the baby from descending on its own. Sometimes the baby needs to be helped to roll, and there are various ways to hold the baby that will not hurt it, and there are ways to get the head out without breaking the child's neck. But it's just extraordinary how the know-nothings are ruling now.

The Witch-Hunt Mentality...

The whole witch-hunt mentality is something I really didn't understand until the early '80s, when a couple of German midwives at the Farm Midwifery Center asked, "Ina May, do you know anything about the great European witch hunt?"

And I thought, "Well I've read some European history, but come to think of it…no." I checked it out, and found that midwives actually were the chief victims. It made my blood run cold. I couldn't even speak about it, it was so scary.

So I studied it. Any time I would get on a campus I would go to the women's study section of the bookstore and I would start reading this stuff. It was a form of madness, where the midwife was made the scapegoat. Some people made the interpretation that men just hate women. But I know a lot of men who don't hate women. I just think it must have been a time when there was a great amount of fear. Putting things together, I think it had a lot to do with stopping the peasant knowledge, the folk knowledge, of birth control.

The ironic thing is that it was Europe that kept the profession of midwifery, and here in North America we are the ones who obliterated it and took it right out of people's minds. And then the counterculture brought back midwifery, which had been suppressed since the early part of the 20th century. As midwives started to reappear on the scene, plenty of doctors were happy to help us, and thought it made sense for women to be with other women. And there were a great number of people seeking midwives because hospital care had gotten so brutal in what I'll call the "forceps era" in the first half of the 20th century.

The forceps were the tool that enabled doctors to convince men that they would save their wives from a long labor. It was the device, more than anything, that helped men get into the birth chamber. You can impress a man with forceps, right? This is our secret tool.

Well, if people didn't have a respect for midwifery they wouldn't know, coming up on their first baby, that that old lady down the block knows a lot more, and that there's no need for forceps. She knows the pelvis can move. She knows that a woman on her back is not a woman who's going to have the easy way of getting her baby out. She knows the need to turn over, to get integrated, to get like an animal. Well, that didn't fit into Western thought the way it was going. We were all excited about machines, tools, modern progress and so on. That old lady seemed like the past. In fact, they were putting old ladies who were expert at their work in prison—in Massachusetts, for instance. They had lower death rates than the doctors in town, who were seeking to take them out. Only here in the U.S. did the medical profession get the idea to wipe out the midwife in order to get more business. So that went on, and we made a big dent in that kind of thinking in the late '60s and '70s. And then came the epidural. And the epidural was just what the doctor ordered. Now they could advertise being awake and away.

Cut Off

If I could have put the videos that I was showing to young medical students in the late '70s and early '80s on mainstream television, we wouldn't have C-section rates like we do. People would have seen women who were

ILLUSTRATION BY OLEG KREMESHNOY

WE NEED TO REMEMBER THAT BIRTH CAN BE A DEEPENING OF A RELATIONSHIP; A WONDERFUL ADVENTURE INTO THE BODY AND THE SOUL—AN ADVENTURE OF LIFE! **REMEMBER THAT WE'RE NOT ONLY CONNECTED WITH NATURE, WE *ARE* NATURE, AND WE ARE PART OF A WONDROUS DESIGN.**

exhilarated by the energy of birth, who learned how to get up and ride it the way a surfer will ride waves and who were in harmony with natural forces which is the power that labor brings. I mean, the strongest muscle in the body says, "OK, time to go, child. You're going out into the world, and this is how we do it."

And if the mother says, "No no no no," well, then, she's resisting it. But if she says, "Yeah yeah yeah," there's such a difference. People don't realize how different that is. When they're going along with it, it's an exciting adventure. I can see it in women's eyes when they go, "Wow!" Sometimes they'll actually say, "This is fun!" I mean, people seek adventure by skiing, hang gliding, all kinds of things that are way more dangerous than birth, and they have no idea that birth offers a great adventure of exploration that turns out to be extremely enriching and really prepares for parenthood.

I sometimes see people who love each other's minds; I'll see a couple that's connected intellectually. And then birth will bring them totally together, physically and emotionally, because he'll recognize, "Wow I didn't know you could do that," or "Wow, I'm going to be sure how you grip my hand next time because you almost broke my fingers."

He'll be so amazed by the power and energy that comes from the woman. We don't have words in our language that adequately express that energy. And when they go through that, and have a midwife that sits in the room reminding them that they're doing great and that it's supposed to look just like it does, sometimes they'll ask, "Has it been a long time?"

The midwife will reassure them, "Mine took two days more…"

"Can we go for a walk? Can we eat?" And we'll say, "Sure! What would you like to eat? Do you want to cook, or should I?" It just becomes like part of the day, or night.

And then, sometime into it, an understanding emerges with that couple: "Oh we're actually Nature! We're actually part of nature! We're not separate."

And that is such an important understanding. When couples go through that with their baby, they start to share the same consciousness, and there's this euphoria that binds them together in the most solid ways. Even if that couple later came apart, they wouldn't totally be apart, because they'll continue to share and treasure that.

Pleasure Bonds

The first birth I saw was an ecstatic birth in the '70s. That was such a gift that I got to see in that little school bus, 45 years ago. And I went, Wow! I didn't know birth could be that good. That woman was…she was so radiant, so beautiful, and I was transfixed by her beauty. I had thought birth might be a little bit disturbing, but instead I saw the most beautiful unfolding of nature that

I could have imagined. The closest I'd gotten to birth before that was seeing a turtle lay some eggs on the coastline of Malaysia in the mid '60s. And it seemed easier for that woman to have her mammal baby than it was for a turtle to lay a hundred eggs. All she needed was someone there to look at her eyes, and she was gorgeous. So that was a gift, experiencing that euphoria. It was a contact high that was unbelievable.

And we didn't know in the early '70s what hormones were. I mean, we knew what adrenaline was, but oxytocin or beta-endorphin, nobody knew what those were yet. That research was going on simultaneously through the '70s in Sweden and so forth. But I learned, when paying attention to women and observing what works for them in labor, how to help the mother's attitude, because we don't want to have any negative attitudes. That's another way of saying we don't want adrenaline, catecholamines, norepinephrine or any of those. We want the calming hormones. We're 70 percent liquid. We can be hard as a rock if we're really toned up, but when we sleep, or if our muscles are relaxed, we will jiggle like jelly. And we want everything below the waist to be like jelly. How do we get there? We have to be calm. We can't be scared.

So I would develop all these little tricks of how to get there. One time it was telling a woman and her husband, who were rigid with fear, to kiss. I was afraid she would tear, because the baby was going to come anyway, so I said, "Why don't you kiss him?" So she turned to him and he did the same and they pecked each other on the lips. And I thought, "Oh my God, they don't know how to kiss!" I had to instruct her for the next one.

"Open your mouth." She opened her mouth, and ah, she let go. It was the first time she ever kissed him that way, turns out, and it fixed their marriage. But not only did it fix their marriage, it got her biggest baby, so far, out without a tear.

I had to take it apart later and ask, "Why does that work?" Well it was a good kiss, so the blood left the brain and went where it was needed. That is what the counterculture brought—It put the sexuality back in birth.

IF I COULD HAVE PUT MY VIDEOS ON MAINSTREAM TELEVISION, PEOPLE WOULD HAVE SEEN WOMEN WHO WERE EXHILARATED BY THE ENERGY OF BIRTH, WHO LEARNED HOW TO RIDE IT THE WAY A SURFER RIDES WAVES. **THEY WOULD HAVE SEEN WOMEN WHO WERE IN HARMONY WITH THE POWER THAT LABOR BRINGS.**

A Wealth of Experience

My partners and I, together, have assisted some 2,700 births since that first birth I saw in the parking lot in November, 1970. And I have to count from that first birth, because I have no way of saying at what point I became a midwife. I don't think anybody can answer that question adequately.

We did a birth in the south Bronx, in the late '70s—this was the neighborhood of Fort Apache that white people were supposed to be terrified of. We had a free ambulance service there; it won awards from the city because we entered an area that wasn't being served because of fear. And there were lots of drunks and fights and breaking glass and loud voices and argumentative stuff, but whenever somebody was in labor this calm pervaded the neighborhood. It wasn't that people knew someone was giving birth. Just...calming energy was somehow broadcast in ways that we're not used to thinking of. In Western culture we forget the ways we're connected.

The first inkling I got about this kind of energy in birth was a story told to me by a friend who, after having had a traumatic hospital birth, was going to have baby number two at home. So she found a friend who was a maternity nurse who would act as a midwife. She described the birth: The labor was painless, and after the baby was born, holding the baby in her arms, she looked out the window and the neighbors' cows were looking in. Now, cows don't ordinarily do that, OK? They're not that interested in what we're doing in our homes. They're usually out there eating grass. And here they were, drawn to the energy of birth.

Sometimes wild animals out of the forest will come and they will exhibit behavior we never saw before. We had a snake trying to come into the room—not a poisonous snake, but a six-foot-long black snake—trying to come in through the window once. I know

ILLUSTRATION BY OLEG KREMESHNOY

of a case where a fox entered the room where there was an open door. Foxes are terrified of people ordinarily, but when there's a birth going on they feel that calm energy established and they're not afraid; there's just that sense that they're helping.

And then it occurred to me: People are supposed to worship a woman in labor and treat her like a goddess. What would anyone do for a goddess? They would please her. They would serve her. They would praise her. And if we did all those things, her hormones would be just right. She would have plenty of oxytocin, she would have plenty of beta-endorphins, and she could have an utterly painless, euphoric, and perhaps orgasmic experience.

Wisdom vs. Textbook Knowledge

So much wisdom can be lost in one generation. Who knows how long it took to accumulate? There was a C-section that happened in November 2008 in North Carolina that had the involvement of seven different obstetricians, and not one of them realized that this woman wasn't even pregnant. A C-section, mind you!

How did that happen? Well, they had all the modern tests: They had the pregnancy test, they used the ultrasound. But, apparently, if anyone laid their hand on the woman's belly, they didn't know how to tell accumulated poop from a baby. Accumulated poop does not arrange itself as a baby does, and there is such a thing as a false positive pregnancy. When I tell people from Europe this story, they cannot believe that we could have reached that stunning state of ignorance where this could happen, and yet we've done it. We've shown the world that that can happen. And that's just one anecdote.

This ignorance can cost lives. There are so many doctors today who would be terrified if they saw a baby's feet, and who would prompt for immediate surgery. I say to them, "Get out of the room and let somebody calm be there." And whoop, that baby'd come out! It could be the easiest birth ever. It would be good in case the arms were up if there were somebody there who knew how to lay their hands gently on the baby and have the baby roll just a little bit. It would be so much easier, and now the mother wouldn't have to recover from a major abdominal injury.

What I think so many people forget about surgery is how much surgeons depend on the wisdom of Nature. They make a deliberate injury and then rely on Nature to heal it. If we can trust Nature that far, couldn't we trust that same Nature to deliver the baby? But we've got to do it in calm. We can't have fear hormones in the room. That means the mother's fear hormones can't be activated, and neither should anybody's in her immediate area. But the hospital experience destroys all of that. There's no magic in the hospital setting. It's meat-factory stuff.

It's the height of arrogance when anthropologists today say that the price of having our brain is that we can't give birth. We can get to be such dumbheads when we get this academic arrogance that our culture is fraught with. And on top of that, there's so much revulsion of the body that comes from Western culture. We need to remember that birth can be a deepening of a relationship; a wonderful adventure into the body and the soul—an adventure of life! Remember that we're not only connected with Nature, we *are* Nature, and we are part of a wondrous design.

In the U.S. and the U.K., as well as in many other countries around the world, caesarean section rates are rising. Some of this rise can surely be attributed to the fact that maternity ward policy at many hospitals is more likely now than before to call for induction or augmentation than to send a woman home to await the eventual onset of labor. The higher incidence of C-sections after a failed induction or augmentation of labor is well documented.

How would hospitals and maternity clinics differ if the true physiology of laboring women were understood and taken into account? I believe that they would be organized in much the way that Michel Odent outlined in his early book *Birth Reborn*. Women would give birth in quiet, dimly lit rooms furnished simply with mats on the floor and a good-size tub of water. There might be ropes or ladders attached to the wall for the laboring woman to pull on. And if there is a bed in the room, it is a double bed large enough to accommodate her and her partner. If a caregiver who has not been in the room needs to check on the woman's progress, she or he would knock on the door and enter quietly enough to not destroy the mood and the atmosphere in the room.

What I have described is the best way to reduce the occurrence of intervention in modern, high-tech hospitals. I am sure that redesigning hospital maternity wards and altering maternity-care policies with the goal of preventing intervention would significantly lower current rates of unnecessary C-section for "failed" labor. How good it would be to see hospitals do this during my lifetime!

Ina May Gaskin, M.A., C.P.M., is the founder of the Farm Midwifery Center, and served as its director for more than four decades. She has attended more than 1,200 births. She is author of Spiritual Midwifery, *now in its fourth edition, and* Ina May's Guide to Childbirth. *Ina May has lectured widely to midwives and physicians throughout the world. Her promotion of a low-intervention but extremely effective method for dealing with one of the most-feared birth complications, shoulder dystocia, has resulted in that method being adopted by a growing number of practitioners. View article resources and author information here: pathwaystofamilywellness.org/references.html.*

When Does Parenting Begin?

By David B. Chamberlain, Ph.D.

In our culture, majority opinion is that parenthood starts after birth. This view has been subtly fostered by medical scientists who think of a baby as physical matter, especially brain matter, which they have long believed is insufficient to register or process memory, learning, trauma, emotion or any truly human experiences until months after birth. This effectively excludes the period of life in the womb from active parenting. Hence, we tend to think that parenting cannot really begin until a real baby is actually "delivered" to the parents.

Considering all we know today about the realities of life before birth, we must appropriately reset the clock on parenthood. The womb is no longer a dark, secret place. We know it is not an isolation tank! What goes on in there for nine months is the ceaseless molding and shaping of the whole baby—a collaboration between baby and parents. All the new facts of life plead for parental involvement, participation and cooperation in the powerful matrix of intimate interactions that take place in the womb. Pregnancy is parenting de facto. Parental influence on a child is at its peak during construction in utero. Creating is what parenting is about—creating a physical body and brain, creating emotional foundations for living, and establishing a rich connection with the prenatal self.

1. Creating a Physical Body

Parents provide the immediate physical environment that will determine whether the baby's equipment for living will be poor, average or optimal. As the foundations for physical life are laid, each new part is built upon the previous one so that both limitations and advantages are preserved. Although some degree of "plasticity" is possible during later development, the original parts remain in place. Parents who wait to think about this until after their child is born will be starting too late—nine months after all the basic equipment has been constructed. In the 20th century, parents began to face compounding hazards of reproduction. These included old and new bacteria and viruses, which seem to emerge when our immune system is weak and vulnerable. In addition, environmental dangers became more challenging with the huge new production of industrial and agricultural chemicals, a swelling tide of stimulants and sedatives such as nicotine, caffeine and alcohol, tempting "street" drugs like opiates and amphetamines, the plethora of new drugs prescribed by physicians, and new forms of electromagnetic radiation including the bombardment of ultrasound waves being overused to entertain parents during obstetrical office visits. Because of so much environmental disruption, the safety and sanctity of the womb is threatened as never before.

A mother's diet can innocently invite birth defects. Science has only slowly found the connection between deficiencies of folic acid (one of the B vitamins) and the profound malformations of anencephaly and spina bifida, defects which occur when the neural tube fails to close 18 to 26 days after conception. If construction deficits occur at the top end of the tube, the baby's brain will likely be affected; if at the lower end, the spinal column will likely be affected. Large-scale disruptions in the food supply, as in a famine, can create widespread problems of reproduction. Long-term studies of children born to mothers who were starved in early pregnancy show damage to the mechanisms of appetite control and growth regulation, resulting in obesity in the offspring. Famines produce increased rates of diabetes and schizophrenia, partly through zinc deficiency which contributes to both of these diseases. Suboptimal nutrition, one of the factors behind the plague of low-weight babies, means shortages of essential supplies during brain construction, resulting in a suboptimal brain. In the modern urban environment, estrogenic compounds flow freely and have an impact on human sexual development. Hormonal deficiencies, excesses and imbalances affect both the genes and the environment that ultimately determine sexual identity and orientation—all this before the baby is born.

2. Creating Emotional Foundations

One of the biggest surprises about life in the womb is the extent of emotional involvement and expression, generally not anticipated in psychology or medicine. Spontaneous and graceful movement that can now be observed from about 10 weeks after conception reveals self-expression and early aspects of self-control, needs and interests. Some behaviors reflect a protest against uncomfortable experiences. By 15 weeks, ultrasound shows babies moving in reaction to something as simple as a mother's laugh or cough. More disturbing are the aggressive actions seen toward the needle during amniocentesis—attacking the needle barrel with a closed fist, suggesting self-protection, self-assertion, fear and anger that was previously thought unreal and impossible. With surprising development of hearing and tasting before 16 weeks gestational age, the way is open for babies to have even more extensive interactions with their mothers and fathers. Ultrasound imaging of twins similarly shows the unexpected scope of their social relationships seen in repeated hitting, kicking, kissing or playing together. Life in the womb—now that we can observe it—bears little resemblance to the lazy world previously hypothesized in which a baby was a passive passenger, virtually deprived of sensation. In those days, parents themselves thought that was appropriate.

As it is with the establishment of physical settings in utero, the emotional system is also organizing itself in relation to the range and varieties of experiences encountered. A baby surrounded with anger, fear and anxiety will adjust itself to that world and may carry those settings forward unless something changes. Patterns of fearful reaction visible via ultrasound before birth can be seen after birth. This emotional sensitivity of the fetus is one big reason why adoption cannot be viewed as just a simple experience for the parents. Chances are, an adopted baby has emerged from confusion and conflict, both troubled and conditioned by the turmoil of the birth parents. They have been learning from experience

BABIES IN THE UTERINE WORLD ARE INDEED HAVING A RANGE OF EXPERIENCES, **ESTABLISHING PATTERNS OF INTERACTION, LISTENING TO MUSIC AND CONVERSATION, AND COMMITTING THEM TO MEMORY.**

and are likely to arrive feeling at least uncertain, possibly rejected, carrying unconscious baggage of anxiety about its identity and connections. Parents are potent factors in shaping the dynamic world of the unborn.

3. Establishing a Rich Connection with the Prenate

Not long ago we thought it was impossible for prenates to have any truly personal or significant experiences. We didn't see that they could have a working mind. In retrospect, our false beliefs about their brain power obscured the fact that babies in the uterine world were indeed having a range of experiences, establishing patterns of interaction, listening to music and conversation, and as tests ultimately proved, were committing them to memory. Numerous experiments have made it clear that prenates who have the opportunity to hear stories and music repeated to them in utero can demonstrate recognition for this material later in life. Prenates have become familiar with and show a preference for specific lullabies, musical themes like "Peter and the Wolf," "Mary Had a Little Lamb," and even theme music from television soap operas.

Prenates memorize the voices of their mothers and fathers in utero while learning the basic features of their native language—the "mother tongue," as we say. Spectrographic analysis of voice and cry sounds as early as 26 weeks of gestation show how far babies of this age have already progressed in adopting the voice characteristics of the mother. In a recent experiment, mothers repeated a children's rhyme daily for four weeks from week 33 to 37 in utero. Tested at 37 weeks while still inside, the babies reacted with a change of heartbeat to the familiar rhyme, but not to an unfamiliar rhyme. In other research, babies have demonstrated immediately after birth a preference for their mother's voice and their native language. The womb turns out to be a stimulating place and functions as a school. And all babies attend.

In the last few decades, as these facts were gradually becoming known, many books, tapes and exercises were created to help parents understand and communicate with babies in the womb. All are potentially valuable in helping parents to make a creative and loving attachment (rather than an insensitive or aggressive one), a connection which respects the needs and limitations of the baby and doesn't overwhelm them. Babies are naturally curious and interactive. Taking advantage of this since about the 1980s, organized programs for parents have been developed and tested, revealing the benefits of carefully planned stimulation.

These studies have proven what few believed decades ago: 1) that babies in the womb are alert, aware and attentive to activities involving voice, touch and music; 2) that babies benefit from these activities by forming stronger relationships with their parents and their parents with them, resulting in better attachments and better birthing experiences, and 3) that these babies tend to show precocious development of speech, fine and gross motor performance, better emotional self-regulation, and better cognitive processing. These are the gifts and rewards of active parenting.

David B. Chamberlain, Ph.D., was a California psychologist, author and editor who lectured on birth psychology in 20 countries. In 1974, he began using hypnotherapy to discover and resolve traumas arising in the womb and at birth. In landmark research with mother-child pairs in 1980, he demonstrated that birth memories were reliable memories. David served as president of APPPAH (the Association for Prenatal and Perinatal Psychology and Health) for eight years. His book, The Mind of Your Newborn Baby, *currently travels the world in 13 languages. His new book,* Windows to the Womb: Revealing the Whole Baby From Conception to Birth, *is now available. Dr. Chamberlain's legacy lives on in his writings and in the hearts and minds of all who knew him. View article resources and author information here: pathwaystofamilywellness.org/references.html.*

Mindfetalness

Why being mindful of your baby's movements in pregnancy is so important

By Tracy Donegan, B.Sc.

In a time of obsessive multitasking, instant gratification and digital distractions, it's not surprising that stress levels continue to escalate for expectant parents. Chronic stress in pregnancy brings an extra emotional and physical strain to the mind and body. In my GentleBirth work I encourage moms to take time out of their busy lives to take a "baby bonding" break. This is just a few moments of quiet mindfulness amid the madness to be mentally still and connect with your breath and your baby—to simply pause and tune in to your body and baby. Our babies are communicating with us, but the distractions of modern living make it difficult to pay attention to what they're telling us.

Mindfulness doesn't have to mean hours of silent meditation sitting cross-legged. It can simply mean a few moments of paying attention on purpose. Being mindful of your baby's normal patterns of movement may reduce the numbers of stillbirths. Most studies recommend "kick counting," a daily record of a baby's movements (kicks, rolls, punches, jabs) during the third trimester, as a reliable way to monitor your baby's well-being. If you notice any significant changes to your baby's normal pattern, please talk to your caregiver.

This week I came across some fascinating research (courtesy of Sarah Wickham in the U.K.) about the concept of "Mindfetalness." Many of you reading this will be familiar with my ongoing interest in the area of mindfulness in pregnancy and the increased adaptability of the maternal brain in those wonderful nine months (neuroplasticity).

Each baby's patterns of movement are individual and unique, as are your perceptions of those movements. This perception is influenced by where the placenta is located (a placenta located to the front of the uterus can mean you perceive less movement), obesity and, of course, how far along into your pregnancy you are.

The study by Malm et al., published in *BMC Pregnancy & Childbirth,* compares women's experiences of doing kick counts in late pregnancy, and a method called "Mindfetalness." Kick counting involves asking mothers to measure the time it takes for their baby to kick 10 times in the third trimester. Mindfetalness suggests that the expectant mother lies on her left side for 15 minutes during a time when her baby is usually active, and notice the strength, type and frequency of movements but not counting them. Forty women participated in the study, and the majority of the women preferred mindfetalness.

The women's written experiences demonstrate how the application of mindfetalness as a clinical assessment of fetal wellbeing can be an enjoyable experience, promoting connection and bonding with their unborn baby.

"I truly felt like I had contact with the baby," one wrote. Another said, "I experienced that when I was listening inward the baby was listening vis-à-vis, as if there was a communication between us."

The authors of the study speculate that mothers who prefer this unique application of mindfulness saw their baby more as an individual rather than just the abstract kicks to be counted. This sits so well with the midwifery philosophy. It's not just about the mechanics: This is holistic health promotion between mother and baby.

Studies have also shown that a mother's conscious awareness of her unborn baby positively influences the mother/baby relationship. A 2000 study by Siddiqui and Hägglöf, published in *Early Human Development*, demonstrated that maternal prenatal attachment during the third trimester of pregnancy is associated with more positive postnatal maternal involvement (good for you and your baby). Given the rise in perinatal depression rates, this seems to be a low-cost, holistic intervention to encourage mindfulness throughout pregnancy, and specifically mindfetalness in the third trimester to promote mother/baby bonding before birth.

What a wonderful way to bring the practice of mindfulness to more women in our care, given the known salutogenic benefits to both mother and baby in pregnancy and in the postpartum period.

Tracy Donegan, B.Sc., is an Irish-trained midwife, Mindful Motherhood facilitator, founder and creator of the GentleBirth Positive Birth app. View article resources and author information here: pathwaystofamilywellness.org/references.html.

A Chiropractic Pregnancy

Restoring an innate trust for the natural processes of life clears the way for a healthy, empowered birth

By Julie Day, M.Chiro

Every pregnant mother wants to have a healthy, safe and natural pregnancy. A birthing mother who is connected to her own body, who looks deep within herself, trusting her own body to do what it is hardwired to do, is much more likely to experience a natural birth process than someone who is fearful. Unfortunately, fear can become a self-fulfilling prophecy: The brain responds to fearful emotions by releasing hormones throughout the body that can slow labor and dilation.

When it comes to pregnancy and birth, the most ideal experience is a natural and complication-free birth, one that is peaceful, joyful and safe for mother and baby. Naturally, this is what every pregnant mother wants. So why doesn't it happen more often?

One of the primary causes is something called dystocia, which is defined as abnormal progress in birth. Dystocia often results in a chain reaction of medical interventions that are theoretically designed to help the labor proceed. However, these interventions often inadvertently add increased layers of complexity and stress to the birth process, causing the labor to be less and less natural.

While it is difficult to identify exactly what causes dystocia, there are three main reasons why the birth process can fail to progress, which often leads to medical intervention. Broadly speaking, dystocia is caused by a combination of physical, emotional and medical/technical causes.

While mothers have been birthing naturally for millennia, one of the greatest challenges in the West is restoring an innate trust in a woman's ability to birth in a natural way. Many social and medical pressures can insidiously increase fear and anxiety around the birthing process. But pregnancy isn't an illness or a disease, so we believe that it shouldn't be treated like one. To

WHILE MOTHERS HAVE BEEN BIRTHING NATURALLY FOR MILLENNIA, ONE OF THE GREATEST CHALLENGES IN THE WEST IS **RESTORING AN INNATE TRUST IN A WOMAN'S ABILITY TO BIRTH IN A NATURAL WAY.**

do so only adds emotional stress and strain to bodies and minds that should be peaceful, joyful and well-connected to their world, their friends, their families and their babies.

A natural birth without excessive stress or complications is always preferable to a birth that involves an intervention, because all human interventions inevitably disrupt the body's expression of inborn intelligence. In a paradigm shift that emphasizes inner trust in the body's innate birthing potential, many women are learning to again trust their body's natural instincts. Many couples today are taking a stand against the controlling and fear-inducing methods that have become so common in Western societies, and are instead seeking out professionals who will support their decision to birth naturally.

In order to maximize the natural birthing instincts and support the development of a healthy, vibrant baby, it is important to understand that the mother's body has certain genetic requirements for optimal health expression. Providing the body with the ingredients that are necessary for healthy function means a natural birth is more likely. After all, a healthy mother is far more likely to have a vital, natural pregnancy and birth than one who says that she wants a great birth but then does nothing to support her body toward the realization of her goal.

Preparing for Birth

So what can be done during pregnancy to best prepare the mother's body for a naturally healthy birth? What does the body require in order to function at its highest potential, giving you the greatest chance of a wonderfully natural pregnancy and birth? Research across a multitude of scientific disciplines, such as physiology, anatomy, cellular biology and the genetic study of our ancient Paleolithic human ancestors, strongly suggests the following essential elements for a naturally healthy, vital pregnancy and birth:

- A fully functioning nervous system: to coordinate healing, assist adaptation to stressors associated with pregnancy and support development of the growing baby.
- Genetically congruent dietary intake: to provide the fuel required for healthy cell function and optimal fetal development.
- Genetically congruent movement and exercise: to stimulate optimal brain and cell function, circulation, hormonal balance, strength, flexibility and mobility.
- Positive thoughts and emotions: to powerfully influence the hormones present in the uterus and affect baby's development, as well as the way they learn to perceive the outside world.
- A nurturing environment and loving relationships: to create an optimal atmosphere for a low-stress and relaxed pregnancy and birth.
- A vital birth support team that consists of loved ones and health professionals that understand the importance of each of these elements.

The Value of Chiropractic Care

In our practice, we seek to provide our clients with practical help, knowledge and skills that support the desire to birth naturally and have a great pregnancy.

In particular, chiropractic care during pregnancy is vital to assist the normal physiological function of both the mother and baby in pregnancy and birth. For example, chiropractic care helps the mother in pregnancy and birth by:

- Reducing interference to the mother's nervous system, which coordinates all of the systems and functions in her body
- Helping to create a state of balance in the pelvic muscles, ligaments and bony structures, thereby preparing the pelvis for an easier pregnancy and birth
- Reducing torsion to the woman's uterus by removing tension on the ligaments that support the uterus
- Allowing for a safer and easier birth for the mother, thereby decreasing the potential for intervention

Chiropractic care also supports vital physiological functions for the infant by:

- Encouraging better baby development by removing interference to the mother's nervous system
- Helping to create more room in the uterus for the baby to develop without restrictions to its forming skeletal structures, spine and cranium...
- ...thereby allowing the baby room to move into the best possible position for birth
- Significantly reducing the possibility of dystocia (delayed birth) and the resulting birth trauma that can be caused by intervention

RESEARCH STUDIES HAVE REVEALED THAT PREGNANT MOTHERS WHO RECEIVE CHIROPRACTIC CARE DURING THEIR PREGNANCY **TEND TO HAVE A SHORTER LABOR WITH LESS MEDICAL INTERVENTION.**

Chiropractic Care: Essential to Every Pregnancy

In summary, there are three main reasons why chiropractic should be a part of every pregnancy:

1. Chiropractic helps provide structural balance and stability for the mother, resulting in a more comfortable pregnancy.
2. Research studies have revealed that pregnant mothers who receive chiropractic care during their pregnancy tend to have a shorter labor with less medical intervention.
3. By supporting better function in the mother's body, chiropractic care during pregnancy can help to create a healthier and more comfortable in-utero environment for the newborn, helping them to get a better start to life. In fact, research suggests that there is a strong link between the baby's experience in the in-utero environment and his or her lifelong health potential.

Most chiropractors are equipped to help women have a healthier pregnancy with specific, safe and gentle chiropractic adjustments. Because pre-conception, pregnancy and birth are particular areas of interest and specialization in our practice, we also seek to equip our pregnant clients with a holistic approach to ensure they give themselves and their babies the best chance at having a healthy and natural birth. We also seek to work supportively and cooperatively alongside your midwife, doula or obstetrician to help ensure that you have a great team around you seeking to help you have the birth experience you desire. Ask your chiropractor, or visit the International Chiropractic Pediatric Association website to find out how they can support you through your pregnancy.

We believe it is time to reconnect women with their natural birthing instincts and potential. It is important to recreate that sense of inner trust in the healing and birthing power of the body, as well as develop a strong mother/baby bond that lays the foundation for a naturally empowered birth experience. Establishing a supportive and cooperative team, as well as a loving and peaceful home environment, are also incredibly important ingredients. By ensuring the body is functioning, adapting and healing at its greatest potential with chiropractic care, women who are (or wish to be) pregnant can support their innate desire for a healthy, vital pregnancy and birth.

Julie Day, M.Chiro, is a family chiropractor in Sydney's Sutherland Shire. She and her husband Ryan have two beautiful sons. Their first, Joshua, was born in hospital, which fueled Julie's passion for normalizing the natural birth process. Their second son, Caleb, was born unassisted at home into his dad's hands. Julie is passionate about helping women have a healthy pregnancy and a natural birth. View article resources and author information here: pathwaystofamilywellness.org/references.html.

You're on the path to motherhood.

When is your chiropractic visit?

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MY BIRTH STORY
How Baby No. 3 Was Different

By Alisha Walker

The pregnancy and birth of our third child was so much better than the births of my previous two children. My firstborn was induced at a hospital three weeks early due to low amniotic fluid. It was one of the worst experiences of my life. The labor lasted 32 hours and was extremely frustrating and painful. It took my husband and me several years of trying on our own and about two years of fertility treatments to conceive our second baby. We finally gave up…and then found out we were pregnant within a month. Our first two children are eight years apart in age.

Our second baby was also induced, because she was 10 days late, also in a hospital. I had an epidural and many complications from it, including breathing problems and nausea. I was very sick for many weeks. I felt like I almost died; I would stop breathing in my sleep and my body would jolt me awake. On top of that, someone was entering my hospital room every single hour. I couldn't get any rest when I needed it the most.

When our second child developed constipation problems, I took her to a chiropractor. Eventually our whole family started to go after seeing the tremendous results in her. We became pregnant again within six months of my first period. Many of my friends who have had chiropractic work have said it cured their fertility problems; I don't think that was just a coincidence!

That's a quick background of my westernized pregnancy history. With my third pregnancy, I already knew I wanted to do things differently. I just didn't know how yet. I remember my next visit to our OB-GYN office like it was yesterday. The moment I walked in for our third baby, I was pressured to get a flu shot. Not a good sign. After waiting for 90 minutes for the rushed midwife to see me (red flag No. 2), I raised all my concerns from the birth of our daughter, especially the state-mandated vitamin K injection, about which I had a great deal of concern. New York State has a law that Child Protective Services will be called on any and all parents who refuse the vitamin K injection. Having CPS called was not exactly in my birth plan.

The busy, almost absentminded, midwife at the OB-GYN office said, "Even if you don't want to give the vitamin K, you don't want to risk the care with a homebirth." Wait, the experience and care that I had with our daughter could get worse? Thank God I at least had a supportive chiropractor who was on the same page with many of my natural life decisions at that point. Thanks to my biweekly adjustments, I was sleeping better than I had during my previous pregnancies.

The disappointing OB-GYN visit set me on my path to find a homebirth midwife. The last thing on Earth I wanted to hear again was how New York State was

going to tell me what to do and how to birth my child. I connected deeply with the first midwife I interviewed, Kathie, and hired her on the spot.

At 35 weeks, I was driving to my weekly chiropractic appointment and noticed some wetness. I thought maybe I had peed my pants (hey, it happens!). But the flow didn't stop; it just increased. When I arrived at Dr. John's, I called my midwife, Kathie. As a precaution, she suggested I go to the hospital because I was not yet full-term. Going to the hospital felt like a death sentence to me. The crime was having a baby and the punishment was having no say in my own care. It was my worst nightmare, and exactly what I didn't want. I truly felt fine at the time. I compromised with Kathie, and went home but took blood tests and nonstress tests every day to watch for infections.

My instincts were telling me very strongly not to go to the hospital. As a precaution, I even saw a new OB-GYN with whom Kathie had a relationship. But what little research there was did not convince me that a pre-ruptured membrane was safer in a hospital than at home. I felt the most conflict during this time. I had to listen to my gut. To this day, my oldest has a lot of health problems due to inductions and vaccinations. In my experience, most doctors are just looking out for themselves and what is going to be the least risk to them. They don't care about long-term health risks. Once you are discharged, those aren't their problem.

Friday evening I got very little sleep, and by Saturday night I was not feeling well. My baby shower was that Sunday, and I had many relatives visiting from out of town. Around 1:30 a.m. Sunday morning I felt pains (contractions) in my mid stomach, which I had never felt before (having had inductions with my first two children). I called Kathie at about 2 a.m. and she told me to wait an hour and call her back to see how I progressed. I walked around the house with my iPhone playing the Grateful Dead's greatest hits while a houseful of family members slept soundly, even my husband. I didn't even last an hour before calling Kathie back and saying, "I think this is it!" I woke my husband and got into my tub. Looking back, I was waiting for the midwife to arrive—she lived about 50 minutes away. The baby was born about 5 minutes after her arrival. I honestly don't even remember pushing.

Trey Aaron arrived at 4:01 a.m., three weeks early, the day of his baby shower! He received an Apgar score of 10, healthy as could be. He was on the little side, weighing exactly 6 pounds. I had about a 20-minute nap and felt great! My friends and family moved my baby shower from a local venue to our home. I was even up walking around a little for photos! Such a different experience than my first two births, when I felt like I was a unwell prisoner to the doctors and nurses.

Had I known then what I know now, I would have had all of my children at home. However, I'm glad I have experienced childbirth on both ends of the spectrum because it makes me appreciate the power and beauty of homebirth even more, and I feel that in having both experiences, I can be a better advocate for homebirth. If my story can inspire other women to at the very least consider homebirth, then I have accomplished even more.

I learned so much about my body, nature and women during this experience. I learned that women should be better informed about their options during labor and delivery. I feel homebirth should be made more available to all women rather than being viewed as some back-alley, illegal act. Childbirth is a natural event; it is not some physical ailment that needs to be controlled and monitored every second. A woman should be free to try natural methods of pain relief rather than have an epidural before she makes it past the hospital elevator or be offered a buffet of narcotics that will fog her memory of such a glorious event.

HAD I KNOWN THEN WHAT I KNOW NOW, I WOULD HAVE HAD ALL OF MY CHILDREN AT HOME. **HOWEVER, I'M GLAD I HAVE EXPERIENCED CHILDBIRTH ON BOTH ENDS OF THE SPECTRUM.**

A woman should be free to labor and deliver in any position she feels is best, rather than lying flat on her back because it's convenient for the doctor. It never crossed my mind to lie on my back to deliver my baby—I think that might have been the most painful thing I could have done. Women have been birthing babies for thousands of years, and only in the last 75 have hospitals become the "expected" place for births. I can't imagine delivering in a hospital again (although we feel like this is our last baby).

A woman should be free to deliver wherever she likes, and rather than being looked down on for her choices, she should be praised and supported. There is nothing more beautiful and amazing than the birth of a child. I am super thankful I had the support of my chiropractor, my midwife and, of course, my amazing family and husband.

Alisha Walker is a mother of three who owns a photography studio in the Washington, D.C., area. Alisha is a lobbyist in her spare time. View article resources and author information here: pathwaystofamilywellness.org/references.html.

THE RITUALS *of* American Hospital Birth

By Robbie Davis-Floyd, Ph.D.

Why is childbirth, which should be such a unique and individual experience for women, treated in such a highly standardized way in the United States? No matter how long or short, how easy or hard their labors, the vast majority of American women are hooked up to an electronic fetal monitor and an IV, are encouraged to use pain-relieving drugs, receive an episiotomy, and are separated from their babies shortly after birth. Most of them also receive doses of the synthetic hormone Pitocin to speed their labors and give birth flat on their backs. More than one-third of all babies in the U.S. are delivered by cesarean section.

Many Americans, including most of the doctors and nurses who attend birth, view these procedures as medical necessities. Yet mothers in many low-technology cultures give birth sitting, squatting, semi-reclining—all positions far more physiologically efficacious—and are nurtured through the pain of labor by experienced midwives and supportive female relatives. What, then, might explain the standardization and technical elaboration of the American birthing process?

One answer emerges from the field of symbolic anthropology. Early in the 20th century, Arnold van Gennep noticed that in many societies around the world, major life transitions are ritualized. These cultural rites of passage make it appear that society itself effects the transformation of the individual. Could this explain the standardization of American birth?

I believe the answer is yes.

I came to this conclusion as a result of a study I conducted of American birth between 1983 and 1991. I interviewed more than 100 mothers and many of the obstetricians, nurses, childbirth educators and midwives who attended them. I realized that American society's deepest beliefs center around science, technology, patriarchy and the institutions that control and disseminate them, and that there could be no better transmitter of these core values and beliefs than the hospital procedures so salient in American birth.

Rites of Passage

A ritual is a patterned, repetitive and symbolic enactment of a cultural belief or value; its primary purpose is alignment of the belief system of the individual with that of society. A rite of passage is a series of rituals that move individuals from one social state or status to another.

Rites of passage generally consist of three stages, originally outlined by van Gennep: 1) separation of the individuals from their preceding social state; 2) a period of transition in which they are neither one thing nor the other; and 3) an integration phase in which, through various rites of incorporation, they are absorbed into their new social state.

In the year-long pregnancy/childbirth rite of passage in American society, the separation phase begins with the woman's first awareness of pregnancy; the transition stage lasts until several days after the birth; and the integration phase ends gradually in the newborn's first few months of life.

By making the naturally transformative process of birth into a cultural rite of passage, a society can ensure that its basic values will be transmitted to the three new members born out of the birth process: the new baby, the woman reborn into the new social role of mother, and the man reborn as father.

The Characteristics of Ritual

The following primary characteristics of ritual are particularly relevant to understanding how the initiatory process of cognitive restructuring is accomplished in hospital birth.

Symbolism. Rituals transmit their meaning through symbols. A symbol is an object, idea or action that is loaded with cultural meaning. Instead of being analyzed intellectually, a symbol's message will be felt through the body and the emotions. Thus, even though recipients may be unaware of incorporating the symbol's message, its ultimate effect may be extremely powerful.

Routine obstetric procedures are highly symbolic. For example, to be seated in a wheelchair upon entering the hospital, as many laboring women are, is to receive through their bodies the symbolic message that they are disabled; to then be put to bed is to receive the symbolic message that they are sick. One woman told me, "I can remember just almost being in tears by the way they would wheel you in. I would come into the hospital, on top of this, breathing, you know, all in control. And they slap you in a wheelchair! It made me suddenly feel like maybe I wasn't in control any more."

The intravenous drips commonly attached to the hands or arms of birthing women make a powerful symbolic statement: They are umbilical cords to the hospital. By making her dependent on the institution for her life, the IV conveys one of the most profound messages of her initiation experience: In the contemporary American technocracy, we are all dependent on institutions for our lives, "umbilically" linked to them through the water and sewer pipes, electrical wires, and TVs that pervade our homes, through our banking accounts and credit cards, and increasingly through our laptops, cellphones, iPads and the like. The rituals of hospital birth are not accidental—they are profound symbolic and metaphoric expressions of technocratic life.

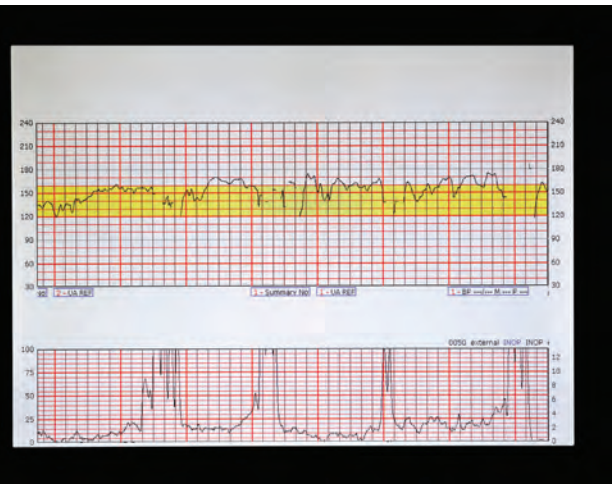
A cognitive matrix. A matrix (from the Latin *mater,* or mother), like a womb, is something from within which something else comes. Rituals are not arbitrary; they come from within the belief system of a group. Their primary purpose is to enact and thereby transmit that belief system into the emotions, minds and bodies of their participants. Thus, analysis of a culture's rituals can lead to a profound understanding of its belief system.

THE INTRAVENOUS DRIPS COMMONLY ATTACHED TO THE HANDS OR ARMS OF BIRTHING WOMEN MAKE A POWERFUL SYMBOLIC STATEMENT: **THEY ARE UMBILICAL CORDS TO THE HOSPITAL.**

A technocracy, as I define it, is a society organized around an ideology of progress through the development and increasing utilization of high technology and the global flow of information. Analysis of the rituals of hospital birth reveals their cognitive matrix to be the technocratic model of reality that forms the philosophical basis of both Western biomedicine and American society.

The technocratic model's early forms were developed in the 1600s by Descartes, Bacon and Hobbes, among others. This model assumes that the universe is mechanistic, following predictable laws that the enlightened can discover through science and manipulate through technology, in order to decrease their dependence on nature. In this model, the human body is viewed as a machine that can be taken apart and put back together to ensure proper functioning. In the 17th century, the practical utility of this body-as-machine metaphor lay in its separation of body, mind and soul. The soul could be left to religion, the mind to the philosophers, and the body could be opened up to scientific investigation.

The metaphor of the body-as-machine was central in the development of modern obstetrics. Wide cultural acceptance of this metaphor accompanied the demise of the midwife and the rise of the male-attended, mechanically manipulated birth. The rising science of obstetrics adopted the assembly-line model of production of goods as its template for hospital birth. Accordingly, a woman's reproductive tract came to be treated like a birthing machine by skilled technicians working under relatively inflexible timetables to meet production and quality-control demands. As one resident explained, "There is a set, established routine for doing things, usually for the convenience of the doctors and the nurses, and the laboring woman is someone you work around, rather than with."



The most desirable end product of the birth process is the new social member, the baby; the new mother is a secondary by-product.

Repetition and redundancy. Ritual is also marked by repetition and redundancy. For maximum effectiveness, a ritual concentrates on sending one basic set of messages, repeating it over and over again in different forms.

In hospital birthing, the message is repeatedly conveyed that the laboring woman is dependent on the institution. She is also reminded in myriad ways of the potential defectiveness of her birthing machine. These include periodic and sometimes continuous electronic monitoring of that machine, frequent manual examinations of her cervix to make sure that it is dilating on schedule, and, if it isn't, administration of the synthetic hormone Pitocin to speed up labor so that birth can take place within the standard 12 to 24 hours. These procedures repeatedly convey the messages that time is important, you must produce on time, and you cannot do that without technological assistance because your machine is defective.

Cognitive Stabilization

When humans are subjected to extremes of stress and pain, they may become unreasonable and out of touch with reality. Ritual assuages this condition by giving people a conceptual handle to keep them from "falling apart" or "losing it."

Labor subjects most women to extremes of pain, which are often intensified by the alien and frequently unsupportive hospital environment. They look to hospital rituals to relieve the distress resulting from their pain and fear. One woman expressed it this way: "I was terrified when my daughter was born. I just knew I was going to split open and bleed to death right there on the table, but she was coming so fast, they didn't have any time to do anything to me.... I like cesarean sections, because you don't have to be afraid."

When you come from within a belief system, its rituals will comfort and calm you.

Order, Formality and a Sense of Inevitability

Its exaggerated and precise order and formality set ritual apart from other modes of social interaction, enabling it to establish an atmosphere that feels both inevitable and inviolate.

In tandem with this sense of inevitability, a cascade of intervention often occurs when one obstetric procedure alters the natural birthing process, causing complications and inexorably necessitating the next procedure, and the next. Many of the women in my study experienced such a cascade when they received some form of pain relief, such as an epidural, which slowed their labor. Then Pitocin was administered to speed up the labor, but it suddenly induced longer and stronger contractions. Unprepared for the additional pain, the woman asked for more pain relief, which ultimately necessitated more Pitocin. Pitocin-induced contractions, together with the fact that the mother must lie flat on her back because of the electronic monitor belts strapped around her stomach, often caused the supply of blood and oxygen to the fetus to drop, affecting the fetal heart rate. In response to the distress registered on the fetal monitor, an emergency cesarean was performed. Countless mothers have found themselves thanking the obstetrician for saving their baby, when the danger to the baby came in fact from the interventions the doctor ordered.

Cognitive Transformation

The goal of most initiatory rites of passage is cognitive transformation: The symbolic messages of ritual fuse with individual emotion and belief. Routine obstetric procedures map the technocratic model of birth onto the birthing

woman's perceptions of her labor experience, aligning her belief system with that of society.

Take the way many mothers come to think about the electronic fetal monitor, for example. The monitor is a machine that uses ultrasound to measure the rate of the baby's heartbeat through electrodes belted onto the mother's abdomen. Observers and participants alike report that the monitor, once attached, becomes the focal point of the labor. One woman described her experience this way: "As soon as I got hooked up to the monitor, all everyone did was stare at it. The nurses didn't even look at me anymore when they came into the room—they went straight to the monitor. I got the weirdest feeling that *it* was having the baby, not me."

This statement illustrates the successful conceptual fusion between the woman's perceptions of her birth experience and the technocratic model. So thoroughly was this model mapped onto her psyche that she began to feel that the machine was having the baby, and that she was a mere onlooker. Soon after the monitor was in place, she requested a cesarean, declaring that there was "no more point in trying."

Affectivity and Intensification

Rituals tend to intensify toward a climax. The order and stylization of ritual, combined with its rhythmic repetitiveness and the intensification of its messages, methodically create the sort of highly charged emotional atmosphere that works to ensure long-term learning.

As the moment of birth approaches, the number of ritual procedures performed upon the woman will intensify toward the climax of birth, whether or not her condition warrants such intervention. For example, once the woman's cervix reaches full dilation (10 cm), the nursing staff immediately begins to exhort the woman to push with each contraction, whether or not she actually feels the urge to push. Yet if the obstetrician has not arrived by the time the head starts to crown, the laboring woman is then exhorted, with equal vigor, not to push. Such commands constitute a complete denial of the natural rhythms of the woman's body. They signal that her labor is a mechanical event and that she is subordinate to the institution's expectations and schedule. Similar high drama may pervade the rest of her birthing experience.

Preservation of the Status Quo

A major function of ritual is cultural preservation. Through explicit enactment of a culture's belief system, ritual works both to preserve and to transmit the culture. Preserving the culture includes perpetuating its power structure, so it is usually the case that those in positions of power will have unique control over ritual performance.

In spite of tremendous advances in equality for women, the U.S. is still a patriarchy. Nowhere is this reality more visible than in the lithotomy (supine) birthing position. Despite years of effort on the part of childbirth activists, including many obstetricians, the majority of American women still labor and give birth lying flat on their backs. This position is physiologically dysfunctional. It compresses major blood vessels, lowering the mother's circulation and thus the baby's oxygen supply. It increases the need for forceps because it both narrows the pelvic outlet and ensures that the baby, who must follow the curve of the birth canal, quite literally will be born heading upward, against gravity.

This lithotomy position completes the process of symbolic inversion that has been in motion ever since the woman was put into the hospital gown. Her normal bodily patterns are turned, quite literally, upside-down—her legs are in the air, her vagina totally exposed. The doctor—society's official representative—stands in control not at the mother's head nor at her side, but at her bottom, where the baby's head is beginning to emerge. Interactionally, the obstetrician is "up" and the birthing woman is "down," an inversion that speaks eloquently to her of her powerlessness and of the power of society at the supreme moment of her own individual transformation.

"AS SOON AS I GOT HOOKED UP TO THE MONITOR, ALL EVERYONE DID WAS STARE AT IT. THE NURSES DIDN'T EVEN LOOK AT ME ANYMORE—THEY WENT STRAIGHT TO THE MONITOR. I GOT THE WEIRDEST FEELING THAT *IT* WAS HAVING THE BABY, NOT ME."

The episiotomy often performed by the obstetrician just before birth also powerfully enacts the status quo in American society. This procedure, which used to be performed on over 90 percent of first-time mothers (those who do not have a cesarean) as they gave birth, expresses the value and importance of one of our technocratic society's most fundamental markers—the straight line. Through episiotomies, physicians can speed up the birth in accordance with our cultural value on time, and can also symbolically deconstruct the vagina (stretchy, flexible, part-circular and part-formless, feminine, creative, sexual, nonlinear), then reconstruct it in accordance with our cultural belief and value system. Doctors used to be taught (incorrectly) that straight cuts heal faster than the small jagged tears that sometimes occur during birth—but in fact, episiotomies often cause severe tearing that would not otherwise occur. (So much scientific evidence has accumulated over the past 40 years about the detriments of episiotomy that its use

CHANGING A SOCIETY'S BELIEF AND VALUE SYSTEM BY CHANGING THE RITUALS THAT ENACT IT IS POSSIBLE, BUT NOT EASY. TO COUNTER ATTEMPTS AT CHANGE, MEMBERS OF A SOCIETY MAY INTENSIFY THE RITUALS THAT SUPPORT THE STATUS QUO.

in the U.S. has dramatically decreased, yet it is still used in over 90 percent of vaginal births in most Latin American countries and in many others around the world where the practice is so ingrained that the evidence, if known, is simply ignored.) These teachings dramatize our technocratic belief in the superiority of culture over nature. Because it virtually does not exist in nature, the line is most useful in aiding us in our constant conceptual efforts to separate ourselves from nature.

Effecting Social Change

Paradoxically, ritual, with all of its insistence on continuity and order, can be an important factor not only in individual transformation but also in social change. New belief and value systems are most effectively spread through new rituals designed to enact and transmit them; entrenched belief and value systems are most effectively altered through alterations in the rituals that enact them.

Fifteen percent of my interviewees entered the hospital intent on a natural childbirth and succeeded in reaching that goal, thereby avoiding conceptual fusion with the technocratic model. These women were personally empowered by their birth experiences. They tended to view technology as a resource that they could choose to use or ignore, and often consciously subverted their socialization process by replacing technocratic symbols with self-empowering alternatives. For example, they wore their own clothes and ate their own food, rejecting the hospital gown and the IV. They walked the halls instead of going to bed. They chose perineal massage instead of episiotomy and gave birth sitting up, squatting, or on their hands and knees. One woman, confronted with the wheelchair, said, "I don't need this," and used it for a luggage cart. This rejection of customary ritual elements is an exceptionally powerful way to induce change, as it takes advantage of an already charged and dramatic situation.

During the 1970s and early 1980s, the conceptual hegemony of the technocratic model in the hospital was seriously challenged by the natural childbirth movement. Birth activists succeeded in getting hospitals to allow fathers into labor and delivery rooms, mothers to birth consciously (without being put to sleep), and mothers and babies to room together after birth. They fought for women to have the right to birth without drugs or interventions, to eat and drink at will, to walk around or even be in water during labor. Prospects for change away from the technocratic model of birth by the 1990s seemed bright.

Changing a society's belief and value system by changing the rituals that enact it is possible, but not easy. To counter attempts at change, members of a society may intensify the rituals that support the status quo. Thus a response to the threat posed by the natural childbirth movement was to intensify the use of high technology in hospital births. Starting in 1970, periodic electronic monitoring of nearly all women was introduced and became standard procedure during that decade, resulting in a dramatic rise in the cesarean rate, from 6 percent in 1970 to 23 percent in 1979. By 2012, the U.S. cesarean rate had reached 33 percent. During the 1990s, although the routine use of episiotomy declined significantly and has continued to do so, the epidural rate shot up to 80 percent and remains there today.

Six percent of my interviewees completely rejected the technocratic model altogether and chose to give birth at home under an alternative paradigm, the holistic model. This model stresses the organicity and trustworthiness of the female body, the natural rhythmicity of labor, the integrity of the family, and self-responsibility. Although homebirthers constitute only about 1 percent of the American birthing population, their conceptual importance is tremendous, as through the alternative rituals of giving birth at home, they enact—and thus guarantee the existence of—a paradigm of pregnancy and birth based on the value of connection, just as the technocratic model is based on the principle of separation.

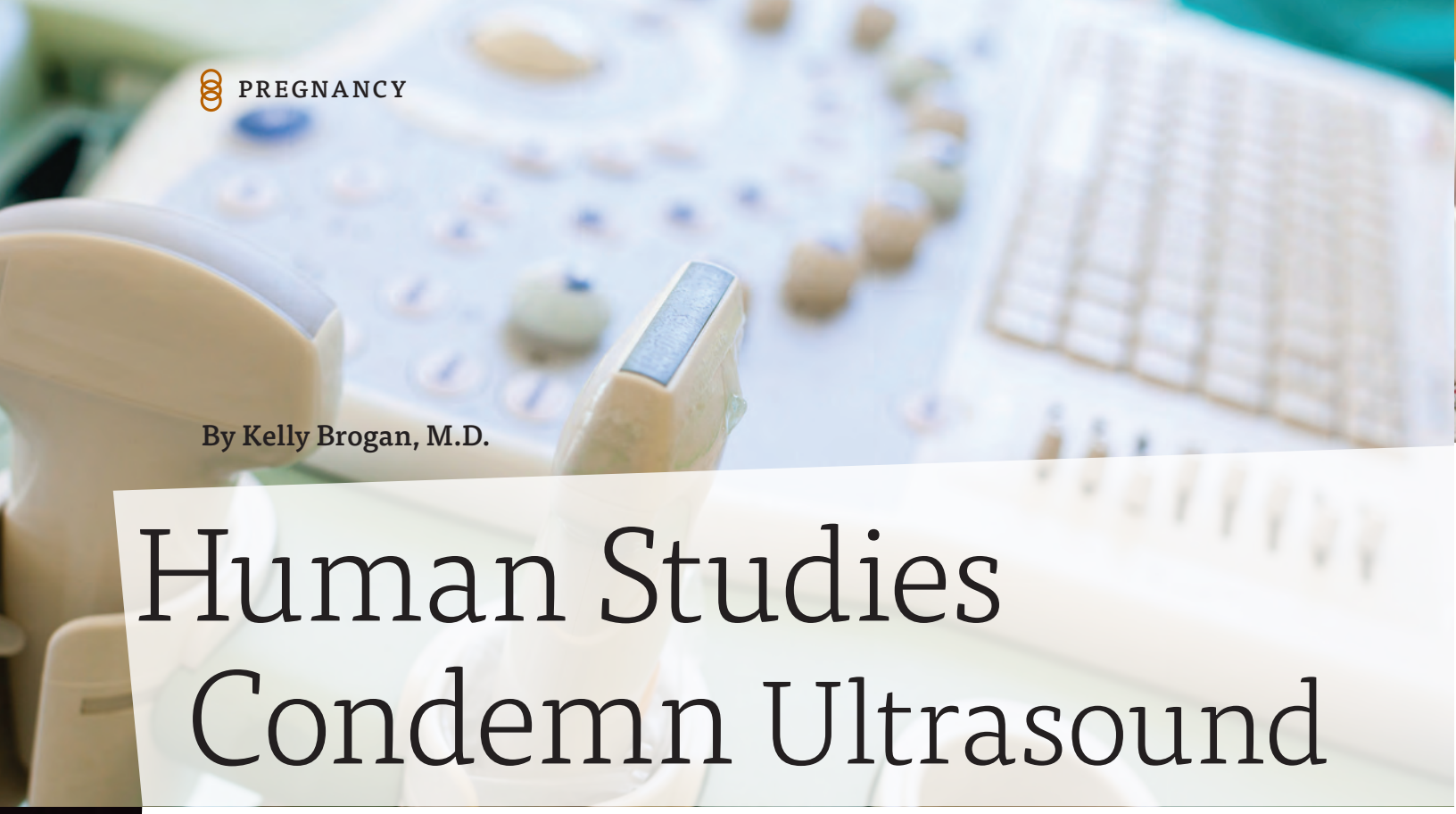
Socialization Through Ritual

Every society in the world has felt the need to thoroughly socialize its citizens into conformity with its norms, and citizens derive many benefits from such socialization. Cultures often find ways to socialize their members from the inside, by making them want to conform to society's norms. Ritual is one major way through which such socialization can be achieved.

American obstetrical procedures can be understood as rituals that facilitate the internalization of cultural values. These procedures are patterned, repetitive and profoundly symbolic, communicating messages concerning our culture's deepest beliefs about the necessity for cultural control of natural processes. Obstetric interventions also attempt to contain and control the physiological process of birth and to transform the birthing woman into an American mother who has internalized the core values of this society. From society's perspective, the birth process will not be successful unless the woman and child are properly socialized during the experience, transformed as much by the rituals as by the physiology of birth.

The full results of this study appear in Robbie Davis-Floyd's book *Birth as an American Rite of Passage*. Berkeley: University of California Press, 2nd edition, 2004. This article is derived from that book. Readers may also wish to see several other relevant articles available at davis-floyd.com, including "The Technocratic, Humanistic, and Holistic Models of Birth," which expands the discussion of this present article into a wider arena.

Robbie Davis-Floyd, Ph.D., senior research fellow, Dept. of Anthropology, University of Texas Austin and fellow of the Society for Applied Anthropology, is a world-renowned medical anthropologist, international speaker and researcher in transformational models in childbirth, midwifery and obstetrics. She is author of more than 80 articles and of Birth as an American Rite of Passage, *coauthor of* From Doctor to Healer: The Transformative Journey *and* The Power of Ritual, *and lead editor of 10 collections, the latest of which are* Birth Models That Work *and* Surviving the Death of an Ex: Managing the Grief No One Talks About. Birth Models on the Global Frontier *is in process. She currently studies the paradigm shifts of holistic obstetricians. Robbie serves as editor for the International MotherBaby Childbirth Initiative (imbci.org) and senior advisor to the Council on Anthropology and Reproduction. Most of her published articles are freely available on her website davis-floyd.com. View article resources and author information here: pathwaystofamilywellness.org/references.html.*



By Kelly Brogan, M.D.

Human Studies Condemn Ultrasound

We want to trust. We want—almost need—to believe that medical and pharmaceutical interventions have been vetted. When our doctors tell us not to worry, we want to take their word for it.

Unfortunately, history has shown us that every recalled drug, every banned intervention, from Vioxx to shoe-store foot x-rays, bore government-approved claims for safety and efficacy before they were pulled from the market.

Ultrasound may be no different.

Condemning Ultrasound

Even the name seems gentle, doesn't it? Ultrasound. It evokes the spa-like experience of the dark, quiet room, the painless glide of the wand over the skin.

When it comes to pregnancy, this intervention has slipped stealthily into the experience of nearly every pregnant woman alive today.

Who doesn't want to see their baby? Who wouldn't want to pass the test? Why bother engaging some woo-woo quest for spiritual communion with your unborn child when you can just sit back and watch the evidence on the TV screen?

This is how insufficiently studied medical interventions grab hold of our consciousness:

- They over-promise on outcomes that appeal in theory (you can learn about the health of your baby with a harmless device!)
- They play on fears (if you don't look, you may not learn about problems)
- Their intensity/frequency/general application is ramped up without evidence to support increases
- They become so routine that controlled human studies are deemed unnecessary

This is the outline of operations behind so many exposures facing our children today, many of which are synergizing to account for the greater than 50 percent incidence of chronic disease, and the 34th ranking for infant mortality worldwide.

The Slippery Slope

Our grandmothers were x-rayed in their pregnancies. Sounds like a bad idea, right? Well, x-rays were advocated as safe for decades before the tide turned, and now the American College of Obstetrics (ACOG), states:

> *Ultrasonography involves the use of sound waves and is not a form of ionizing radiation. There have been no reports of documented adverse fetal effects for diagnostic ultrasound procedures, including duplex Doppler imaging.... There are no contraindications to ultrasound procedures during pregnancy, and this modality has largely replaced x-ray as the primary method of fetal imaging during pregnancy.*

Grandfathered into FDA clearance, ultrasound studies largely ceased in the 1980s despite the fact that the FDA raised limits eightfold in 1992 and current machines employ significantly stronger signals than before, not standardized by any regulations. In the past several

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ULTRASOUND TECHNOLOGY HAS EVOLVED IN TERMS OF PEAK EXPOSURE AND INTENSITY, AND NEWER VERSIONS REMAIN **LARGELY UNSTUDIED, FREQUENTLY DEFECTIVE, AND WITHOUT FEDERAL REQUIREMENTS FOR OPERATOR TRAINING.**

decades, ultrasound technology has evolved in terms of peak exposure and intensity (from 46 to 720 milliwatts per square centimeter, or mW/cm^2), and newer versions remain largely unstudied, frequently defective, and without federal requirements for operator training.

What Is Ultrasound Good For?

In 2001, 67 percent of pregnant women had at least one ultrasound, and in 2009, that percentage jumped to 99.8 percent, with an average of three per woman. A 2006 study found that pregnancies determined to be high-risk undergo an average of 4.2 ultrasounds.

The FDA admits that long-term effects of ultrasound cavitation [see page 35 for more details] are unknown. They self-sanction, however, by stating that "medically indicated" ultrasounds performed by obstetricians allow for benefits that outweigh the risks. Is this evidence-based?

With regard to efficacy, multiple Cochrane reviews have demonstrated a lack of perinatal mortality benefit for routine ultrasound in a normal pregnancy, and an increased risk of cesarean section with third trimester screening. A review of outcomes literature condemns ultrasound when used for dating, second-trimester organ scan, biophysical profile, amniotic fluid assessment, and Doppler velocity in high- and low-risk pregnancies.

We want to believe that this intervention is improving the health of pregnancies, but that is not what has been demonstrated. False positive rates are significant on routine scan, and anxiety-provoking at best. At worst, they result in terminations for anomalies less severe than perceived by ultrasound, as was the case in 1 in 200 ultrasound-influenced abortions.

Given the conspicuous lack of evidence for ultrasonography's role in improving pregnancy and birth outcomes, one might ask why The International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) unilaterally recommends that all pregnant women have routine obstetric ultrasounds between 18 weeks and 22 weeks gestational age. One might also consider that ISUOG suffers from profound conflicts of interests, as evidenced by their public acknowledgment of partnership with the leading global obstetric technology companies, such as GE Healthcare, Phillips, Samsung Medison, Toshiba and Siemens.

How Do We Know It's Safe?

Proving the safety of any modern diagnostic intervention with any empirical certainty is, by principle, impossible. If an adverse effect does not manifest for years to decades, or worse, is transgenerationally passed down, it would take lifetimes of what amounts to non-consented human experimentation to properly assess for safety in humans. The precautionary principle compels the manufacturers and regulators of a product to prove safety before it is released into the marketplace.

Ultrasound's effects on biological tissues are widely acknowledged, according to Plaksin et al., who state, "Not only is ultrasound widely used for imaging; its interaction with biological tissues is known to induce a wide variety of nonthermal effects ranging from hemorrhage and necrosis to more delicate manipulations of cells and their membranes such as permeability enhancement, angiogenesis induction, and increased gene transfection."

Animal data has been dismissed as having limited application to human pregnancies, including a recent study demonstrating behavioral abnormalities in mice exposed to 30 minutes of ultrasound in utero, and older data showing prenatal exposure to ultrasound impacts neuronal migration in mice. At least since 2008 it has been known that ultrasound wavelengths as low as 28 W/cm^2 are capable of causing temperature increases at various depths in the brain of living fetal guinea pigs during in utero exposure between 1.2–4.9 degrees Celsius. Clearly, a plausible mechanism for ultrasound-induced brain changes including changes to neuronal migration implicated in autism have been proposed.

According to Jim West, who has compiled the largest bibliography of human ultrasound studies: "Unknown to Western scientists, the hazards of ultrasound have been confirmed in China since the late 1980s, where thousands of women, volunteering for abortion, thousands of maternal-fetal pairs, were exposed to carefully controlled diagnostic ultrasound and the abortive matter then analyzed via laboratory techniques."

Involving 100 scientists and 2,700 mother-fetal pairs, the data from approximately 65 studies do not appear on the NIH's Pubmed, but can be found on Chinese databases. The studies employed electron microscopy, flow cytometry, and various biochemical analysis (immuno- and histo-) with results compared against those of sham-exposed pregnant women (exposed at zero intensity). Assessing brain, kidney, cornea, chorionic villi and the immune system, researchers determined the amount of ultrasound exposure required to produce damage to the human fetus to be very low.

Jim West cites Professor Ruo Feng of The Institute of Acoustics, Nanjing University, and editor of *The Chinese Journal of Ultrasound in Medicine and Biology*, and member of the World Federation of Ultrasound in Medicine and Biology:

> *Ruo Feng, who reviewed many of the studies, stipulated that routine ultrasound be avoided. Only if there were exceptional medical indications should ultrasound be allowed, and at minimum intensity. Sessions should be very brief, no more than 3 minutes, 5 minutes at most. Multiple sessions should be avoided because hazards are cumulative. Human studies had found sensitive organs damaged at 1 minute exposure.*

The New Normal

Today's pregnancies and today's children are bringing the concept of evolutionary mismatch to life. Just because a lifestyle and an approach to health have become normative does not make them consistent with what our genomes are expecting to see, based on millions of years of evolution. Antibiotics, psychiatric drugs, processed food, pesticides, industrial chemicals, vaccines and ultrasound, couple with surgical birth and bottle feeding—this is not the way to make a healthy child. While we are looking for the smoking gun to explain why 1 in 6 of our children are learning-disabled, we would be best served to reconcile our thinking with what the evidence is showing. Science is demonstrating the relevance of concepts like allostatic load, genetic SNPs, dysbiosis, and nutrient deficiency that render a pregnancy full of ultrasounds the loading of a gun shot by that Hepatitis B vaccine at birth, or perhaps eight at a catch-up visit a year later.

Even if ultrasound didn't load the gun, clinicians like Dr. Sarah Buckley argue that the very existence of ultrasonography opens up a psychic chasm within pregnant women, transforming the seamless experience of "being with child" into the possession of a scannable medical object, a locus of risk instead of a future healthy child. For these reasons and more, seek out pregnancy support that honors the unfolding of this largely enigmatic process and supports the mother-fetal dyad by sending an evolutionarily recognizable signal of safety through nutrient-dense food, movement and calm. Homebirth midwives and doulas know just what this means.

Kelly Brogan, M.D., ABIHM, is a holistic women's health psychiatrist on faculty at George Washington University and in private practice in Manhattan. She completed her psychiatric training and fellowship at NYU Medical Center after graduating from Cornell University Medical College, and has a B.S. from MIT in brain and cognitive science/systems neuroscience. She is board certified in psychiatry, psychosomatic medicine and integrative holistic medicine, and has published widely in the fields of psycho-oncology, women's health, perinatal mental health, alternative medicine and infectious disease. She is on the boards of Green Med Info, Pathways to Family Wellness, *NYS Perinatal Association, Fisher Wallace and Health Freedom Action, and is medical director for Fearless Parent. She is a mother of two. View article resources and author information here: pathwaystofamilywellness.org/references.html.*

ULTRASOUND

8 REASONS IT'S NOT SAFE OR PAINLESS FOR YOUR DEVELOPING CHILD

By Jackie Lombardo

Except for the slimy goo and full bladder, Maureen Markus remembers her first ultrasound fondly: "My husband was with me and together we heard our son's heartbeat for the first time!" She was 10 weeks pregnant. Before she left the doctor's office, Maureen was given the first image of her unborn child. And that was comforting.

Until now, it's been understood that the medical procedure known as ultrasound is safe and painless. But is it so for both mom and baby?

No one's really certain. No one knows for sure what effects ultrasound have on the developing fetus. But since the time when Maureen had her first child, we've learned more.

Research is raising questions about the procedure's safety. In fact, in December 2014, the Food and Drug Administration (FDA) issued its first-ever caution on ultrasound during pregnancy. But first, what exactly is ultrasound?

Aptly named, ultra-sound waves reach a high frequency of about 20 megahertz or 20 million cycles per second, greater than the upper limit of human hearing. Ultrasound machines adapted for use as a medical test must generate waves only in pulses, because one continuous ultrasound wave could produce too much heat potentially damaging the tissue being examined.

Depending on the machine used, ultrasound during pregnancy can pulse to pick up a baby's heartbeat and create an image of the baby and placenta. The pulses bounce off the fetus, providing immediate feedback on a monitor, and a black-and-white image is printed out and offered to the parents to keep.

What are the benefits of ultrasound?

Ultrasound used earlier in pregnancy helps determine your due date, or the age of the fetus, as well as whether you're having more than one baby. Later on the procedure can show the baby's position, the amount of amniotic fluid, and estimate the baby's health and weight.

It's important to know that ultrasound is not medically necessary if all is well with mom and baby. Yet ultrasound is the most widely used medical imaging method during pregnancy.

How many ultrasounds you receive depends on your healthcare provider's evaluation, with you and your partner's input. There is no medical recommendation to receive an ultrasound, and there is no recommended number that should be performed.

While the procedure may be safe and painless for the mom, questions about safety and pain for the baby have been raised.

1 ULTRASOUND VIBRATES THE FETUS. Ultrasound waves are vibrations that pass through matter and transfer their energy from one point to another. If there is no physical matter to bounce off, then nothing can vibrate and there is no sound.

2 ULTRASOUND MAY BE LOUD ENOUGH TO AFFECT FETAL HEARING DEVELOPMENT. Although ultrasound pulses reach a frequency greater than our ability to hear, researchers demonstrated that the fetus may hear them. Greenleaf et al. from the Department of Basic Ultrasound Research, Mayo Clinic and Foundation in Rochester, Minnesota, placed a small hydrophone inside a pregnant woman's uterus and found that the force from the impact of the ultrasound pulses produced an audible localized high-intensity noise due to secondary vibrations in a woman's uterus.

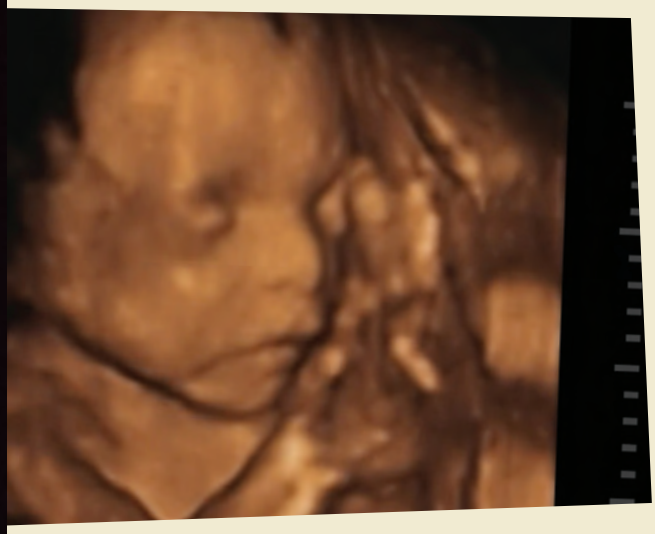
How loud was this high-intensity noise? When the ultrasound probe pointed right at the hydrophone, it registered 100 decibels.

To put that in perspective, 20 decibels sounds like a whisper, 110 is the average human pain threshold, and 150 decibels causes eardrum rupture.

"It's fairly loud if the probe is aimed right at the ear of the fetus," says Greenleaf.

3 PROLONGED USE OF ULTRASOUND CAN RESULT IN UNSAFE ENERGY LEVELS. The FDA is clear: Fetal ultrasound Dopplers for use at home could pose risks to your baby. The agency also strongly discourages keepsake ultrasound scans explaining both could expose the fetus to prolonged and unsafe energy levels.

4 ULTRASOUND IS CAPABLE OF DEFORMING CELL MEMBRANES. Dr. Manuel Casanova, M.D., professor of anatomical sciences and neurobiology at the



University of Louisville and the Gottfried and Gisela Kolb endowed chair in outpatient psychiatry, spoke with my friend, author Jennifer Margulis, Ph.D., about ultrasound.

It is precisely because ultrasound can deform cells that, as Dr. Casanova explained, "...the FDA has approved the use of ultrasound for bone fractures because it accelerates cell division; it accelerates healing of the bone."

5 ULTRASOUND IS CAPABLE OF DEFORMING BRAIN CELL MEMBRANES, WHICH MAY LEAD TO AUTISM. Ultrasound can't tell the difference between brain cells and other cells. "When [ultrasound] deforms the membrane of the cell, it activates mechanisms that have to do with cell growth and with cell divisions," said Casanova during his interview with Margulis. "Within the brain of autistic individuals there appears to be something that promotes the division of these stem cells...at a time when they shouldn't be dividing." Margulis further discusses ultrasound in her book, *The Business of Baby,* and wrote more on the subject in PATHWAYS issue 40.

6 YALE RESEARCHERS ALSO FOUND A SIGNIFICANT NUMBER OF NEURONS FAILED TO ACQUIRE THEIR PROPER POSITION IN THE BRAIN. Instead, the neurons remained dispersed throughout, after mice were exposed to ultrasound waves for 30 minutes or longer. Eugenius et al., Department of Neurobiology and Kavli Institute for Neuroscience, Yale Medical School, demonstrated that while the amount of scattered neurons was variable, the scatter methodically increased with the duration of ultrasound, suggesting long ultrasounds may harm the developing brain.

Yes, ultrasound can affect proper neuron migration to appropriate positions in the developing brain. This process is critical to normal brain function. And we are learning that this process is also vulnerable to environmental and physical factors.

"The bottom line is you only get one chance to develop a brain," says Philippe Grandjean, M.D., of the Harvard School of Public Health.

7 ULTRASOUND CAN MAKE TISSUES HOT ENOUGH TO CAUSE DAMAGE. "Ultrasound can heat tissues slightly, and in some cases, it can also produce very small bubbles (cavitation) in some tissues," explains FDA biomedical engineer Shahram Vaezy, Ph.D. The FDA continues its caution with, "The long-term effects of tissue heating and cavitation are not known. Therefore, ultrasound scans should be done only when there is a medical need, based on a prescription, and performed by appropriately-trained operators."

8 ULTRASOUND DOES NOT IMPROVE HEALTH FOR BABIES. A case for the procedure can be made for its ability to detect abnormalities early enough for parents to choose to abort. But detection is limited. Of the more than 5,000 potential chromosomal abnormalities, ultrasound can detect only a few, such as Down's syndrome. Ultrasound can also misdiagnose abnormalities when there are none, or detect abnormalities about which nothing can be done. Parents may be left with some tough decisions.

Maureen is pregnant with her third child. "There's no doubt that hearing our baby's heartbeat was deeply moving," she says. "But now we're wondering if a first glimpse of our baby or getting a due date is worth risking harm. Those dates are never exact anyway."

Ultrasound should only be used if medically indicated. Healthy pregnancies do not require ultrasound. If you or someone you know is considering ultrasound during pregnancy, please share this science to help them make an informed decision.

Autism now affects 1 in every 42 boys. There's a lot we don't know yet. So we turn over every rock. Take every precaution. Ensure there will be no harm.

It's your baby. Your body. Your decision. P

Jackie Lombardo is a SafeMinds board member and a mother of three with a keen interest in children's environmental health. As a member of the Sierra Club National Toxics Committee, she has been involved in national projects stressing education, precaution and strong legislation for mercury, bisphenol A, pesticides and lead in children's products. With a strong belief that children's health can be improved through public policy promoting a cleaner and safer environment, she remains confident proper legislation will reverse the tragic decline in children's health. View article resources and author information here: pathwaystofamilywellness.org/references.html.

The Biology *of* Ultrasound

By Emily Casanova, Ph.D.

Ultrasound is exactly that: an auditory waveform (*sound*) that occurs above the upper limit for human hearing (*ultra*). Like all sounds, this flow of sound pressure occurs in waves, broken into half-cycles of compression and expansion. What that means is that the matter hit by this sound undergoes a compression of its material, followed by an expansion. This is one of the things that make ultrasound potentially dangerous.

Bubble formation within a liquid upon ultrasound exposure is called cavitation. The term cavitation is particularly used to refer to the implosion of a gaseous bubble under pressure within a liquid; specifically, this is known as transient cavitation. Stable cavitation is the formation of bubbles that remain relatively stable in the liquid medium. In pure water, bubbles form at more than 1,000 atmospheres of pressure, which is to say that if you were to take pure water and subject it to even the highest intensities of diagnostic or prenatal ultrasound, bubbles would not form because the intensity is far too low. This is not the case for biological tissues. As occurs with almost every solid within a liquid (e.g., cells), small gaseous pockets hide within crevices. The pre-existence of such bubbles essentially lowers the threshold for cavitation within biologic tissue compared to pure water because gaseous cavities, though extremely small, are already present. When subjected to the force of ultrasound, these bubbles undergo expansion and compression. With each subsequent cycle, the bubble compresses less and less, so that over time the size of it grows until the surface area of the bubble can no longer withstand the pressure.

In the case of a bubble in liquid, it implodes and the surrounding water rushes in and meets with the gases once trapped in the bubble, triggering a violent chemical reaction which produces an extraordinary local rise in temperature. Thankfully, the rapid cooling rates of the surrounding medium virtually assure that for a single occurrence the temperature of surrounding tissues rises insignificantly. The problem arises when transient cavitation occurs more frequently in a local tissue such that the rapidity of cooling is not as efficient, which can cause thermally induced tissue damage.

BUBBLE FORMATION WITHIN A LIQUID UPON ULTRASOUND EXPOSURE IS CALLED CAVITATION. WHEN A BUBBLE IMPLODES, IT CAN CREATE CONSIDERABLE PRESSURE IN THE SURROUNDING MEDIUM.

Aside from temperature increase, these little bubbles can also cause other problems. As you might imagine, when a bubble implodes it can create a considerable force of pressure in the surrounding medium, such that nearby cells may be hit with high-pressure water jets. (This can also occur by stable cavitation in which the bubble doesn't implode but merely oscillates next to or within a cell, creating a variety of forces and pressures against the outer membrane and within the cell itself.) In a worst-case scenario, the jets of water may fatally damage the membrane and internal structures of cells, leading to cell death. In a less deadly scenario, the water jet may poke transient holes through the outer membrane of the cell, which allows many communicating molecules such as sodium, calcium and various proteins into the cell. This inward rush of calcium, for instance, can activate many downstream pathways involved in cell repair and cell growth, and even alter cell-to-cell communication, such as in the case of neurons.

So what harm can a little calcium do? It's possible it can kill off the cell through calcium cytotoxicity. Even if it doesn't since many of these extracellular molecules are normally used in a controlled way for cell-to-cell communication, their presence essentially feeds cells the wrong messages and could feasibly alter the development of cells permanently. This is particularly true of stem cells, progenitors and immature cells, which may pass down these alterations through further generations.

Developmental, molecular and cell biologist Emily Casanova, Ph.D., earned her doctorate in anatomy science and neurobiology from the University of Louisville's medical school. She has research background in embryology, genetics, neuropathology and bioinformatics, with particular focus on neurodevelopmental conditions and a strong emphasis on autism. View article resources and author information here: pathwaystofamilywellness.org/references.html.

Antibiotics GIVEN TO LABORING MOTHERS

By Linda Folden Palmer, D.C.

Obstetricians are aware that when a bacterium known as group B strep (GBS) is colonizing a mother's vagina during pregnancy, her baby is more likely to develop an early infection with this bacterium after birth. Around 20 to 30 percent of mothers in the United States are found to be colonized with GBS during late pregnancy screenings. Standard practice is to screen pregnant mothers for the presence of this bacterium and provide antibiotics to colonized mothers during labor in an attempt to prevent early GBS infections in their infants.

No Good Evidence for Treatment

A 2014 scientific review of available studies on such provision of antibiotics to mothers during labor finds reports of a reduction in infections in infants but states that this finding "may well be due to bias." In other words, the researchers found a high risk of bias in study reports, making their conclusions weak.

Antibiotic provision does not always prevent early GBS illness; one study reported that 38 percent of infected babies were born to mothers who had taken antibiotics during labor. Also, many babies who are infected are born to mothers who tested negative for GBS and who were therefore not treated.

I find it difficult to analyze the effects of preemptive antibiotics on GBS rates because some studies report rates of all colonized infants, some report the rates of seriously ill infants, and others report and compare the rates of infant deaths among those with early GBS infections, rather than the rate of infection.

No Defined Drop Since Initiation of Antibiotic Protocols

Infant death rates in those with early GBS infections dropped dramatically before preventive antibiotics were first studied: from 55 percent in 1970; to 22 percent in 1980, before clinical trials began; to 12 percent in 1990, just before standardized testing and treatment became recommended. From 1990 to today, there has been a continuation of the slow but steady decline in the mortality rate to today's 5 percent death rate for those infants who become infected with GBS.

U.S. early infant GBS disease rates prior to the establishment of precautionary antibiotic provisions are reported at 10 to 17 per 10,000 births. The CDC reports the current rate at 3 in 10,000, with some sources reporting slightly higher rates.

Another large review of available studies looked at the occurrence of premature births in relation to antibiotic usage. A predominance of undesirable vaginal bacteria is also associated with an increased rate of premature deliveries. This review found that antibiotic provision did decrease the appearance of vaginal bacterial over-colonization (vaginosis), but it did not reduce the rate of preterm births—the chief purpose of the antibiotic drug prescriptions in these cases.

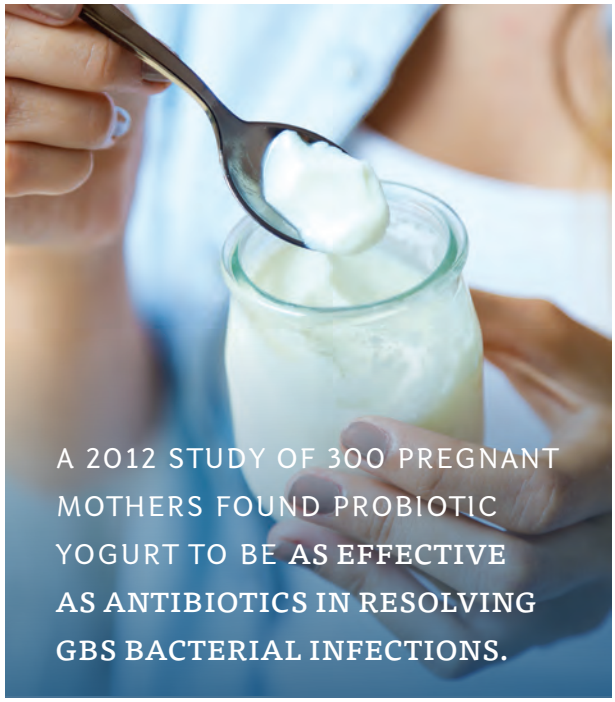
Other Reasons for Drops in Infection Rates

A significant jump in the number of U.S. mothers who initially breastfed their newborns—from 52 percent in the year prior to the beginning of GBS preventive antibiotics to 60 percent only 6 years later, and to 70 percent not long after that—surely accounts for some of the reduction reported in early infant infections. Although cesarean births pose many health problems to infants, early GBS infection risks are lower. A 50 percent increase in C-section births (from 22 percent before the preemptive antibiotic measures to 33 percent at the present) has likely also accounted for some of the drop in early GBS infection rates. Other factors may be involved as well.

The Real Antibiotic Results: More Serious Infections

Even if early serious GBS infections are being reduced by antibiotic practices, there has been an emergence of other types of early infections from bacteria not affected by the kinds of antibiotics used—including a surge of drug-resistant E. coli infections affecting preemies.

Most importantly, the scientific review found that the use of precautionary antibiotics did not reduce the number of infant deaths—neither from GBS infection nor from all causes—and the number of later, serious infections is increased by the use of antibiotics during labor. (Late-onset infections are defined as developing after one week of age.) Serious Candida (yeast) infections are among these, as a direct result of antibiotic exposure.



A 2012 STUDY OF 300 PREGNANT MOTHERS FOUND PROBIOTIC YOGURT TO BE AS EFFECTIVE AS ANTIBIOTICS IN RESOLVING GBS BACTERIAL INFECTIONS.

Later bacterial infections are also increasingly occurring from antibiotic-resistant organisms. These are making the illnesses even more challenging to treat. Today, half of late-onset infections are with the very dangerous MRSA (antibiotic-resistant strep). The conclusion of the above comprehensive review is that evidence is lacking to support preemptive antibiotic usage.

Industrialized Disease

Women in some other countries average far lower rates of GBS colonization than those in the leading industrialized nations. Rates are as low as 7 percent among nations measured, reflecting greater intestinal health in these nations. Prior antibiotic use, consumption of antibiotic-treated animals, low-fiber diets and pesticide consumption are among the factors destroying intestinal health in industrialized nations.

Natural Treatments for Mom

A 2012 study provided either probiotic yogurt or antibiotics to more than 300 GBS colonized pregnant mothers and found equal resolution of vaginal bacterial infection with either treatment. Another study gave garlic tablets or antibiotic drugs to 120 non-pregnant women with bacterial vaginosis. A statistically similar level of bacterial resolution was found between the two treatment groups, while more side effects occurred in those treated with antibiotic drugs. Other women use freshly cut garlic cloves vaginally and find long-term relief of GBS vaginosis, whereas antibiotic treatment is medically recognized to provide only temporary relief and to result in great imbalance of vaginal and intestinal flora.

A WIDE SPECTRUM OF ORAL ANTIMICROBIAL HERBS AND NUTRITIONAL PRACTICES CAN HELP TO IMPROVE A MOTHER'S FLORAL BALANCE BEFORE BIRTH, AS CAN ORAL PROBIOTICS. **SUCH PRACTICES CAN CERTAINLY PROVIDE OTHER LARGE BENEFITS FOR MOTHER AND BABY.**

KANGAROO CARE, IN WHICH A LARGE AMOUNT OF SKIN-TO-SKIN CONTACT IS PROVIDED FOR AN INFANT, ALONG WITH FREQUENT AND NEAR-EXCLUSIVE BREASTFEEDING, **IS SHOWN TO CUT PREEMIE INFECTION RISKS IN HALF.**

Vaginal vitamin C tablets have also been shown to reduce bacterial vaginosis. Some mothers regularly apply probiotics or yogurt vaginally to help balance their florae. Of course, a wide spectrum of oral antimicrobial herbs and nutritional practices can help to improve a mother's floral balance before birth, as can oral probiotics. Such practices can certainly provide other large benefits for mother and baby. More studies are needed on alternatives to antibiotic treatments for the prevention of infant GBS infections.

A pregnant mother can use oral and vaginal treatments with probiotics and other immune-supporting antimicrobials, such as garlic and vitamin C, during her pregnancy. She can then be tested—or retested—for GBS to find out whether these flora-protecting measures are providing the results that doctors would like to see.

Improving Infant Health

Prematurely born infants are the most susceptible to serious infections of all kinds. Kangaroo care, in which a large amount of skin-to-skin contact is provided for an infant, along with frequent and near-exclusive breastfeeding, is shown to cut preemie infection risks in half. Studies also show significant reductions in newborn infection rates in term infants when exclusive human milk feeding is available. These measures help to optimize baby's flora and help to protect against all kinds of potential infections, not just GBS. Donor milk is a proven valuable option when mother's milk is not available.

The infant health effects from exposure to maternal antibiotics during labor have avoided scrutiny because the drugs are given to the mother, not directly to the infant. Because of the potential ramifications of such a study on infants, no one really wants to do it. In 2014, researchers did look into the effects on newborn floral development and found significant reductions in the numbers and variety of health-promoting bifidobacteria in babies from antibiotic-treated mothers. Moreover, they found deficiencies in the very species that actually help to fight against GBS.

Antibiotics create havoc in newborn intestines. They not only increase the risk of serious drug-resistant infections during baby's first few weeks after birth but also create serious impacts on floral balance that influence many other short-term and long-term health factors. In many cases, there are healthier options to antibiotic drugs that may bring few or no side effects and greater overall health to mother and child.

Science is Dr. Linda Folden Palmer's first love and continuing inspiration. While attending the National College of Chiropractic, Palmer received a Bachelor of Science in human biology as she received her Doctor of Chiropractic. With the birth of her son in 1995, she was confronted with his severe health complications; her passion for research turned toward infant health and parenting, leading to her book Baby Matters. *Dr. Palmer has led attachment parenting support groups for five years, and served as an instructor in anatomy and physiology and a research associate for drugless cancer therapy research. She consults in infant nutrition and attachment parenting, writes parenting articles and books, speaks to family and professional audiences, and is a wife and mother. View article resources and author information here: pathwaystofamilywellness.org /references.html.*

SEEKING A BALANCE

The biomedical and systems approaches to labor and birth

By Cathy Daub, P.T.

"My pregnancy was normal and I went to the hospital to give birth. They kept offering me pain relief, and I ended up with an epidural and complications that led to a cesarean that separated me from my baby. I'm still crying and trying to figure out what went so wrong!"

This testimonial from a new mother is an example of an imbalance between the biomedical and systems approaches to birth. The predominant model used by physicians is the biomedical model, which is based on reductionism, the attempt to take apart all the components of a problem to find its roots and to explain biological processes using the same explanations used to interpret inanimate matter. It does not take into account the role of social factors or individual subjectivity.

It is well documented that there are many very effective nonpharmacological comfort measures that are

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WE CANNOT PRESUME THAT MANKIND IS SMARTER THAN NATURE BECAUSE **THERE IS TOO MUCH WE DON'T UNDERSTAND ABOUT THE MARVELS OF THE HUMAN BODY.**

underutilized in birth. These include water immersion, pelvic positioning, and the presence of a doula, to name a few. I recently gave a presentation about labor and delivery to nurses and doctors at a large local hospital. The title was "Supporting Women in Labor Without Epidurals." The hospital has a 41 percent cesarean rate; many nonpharmacological ways of coping with labor, proven to be very effective, are not used there.

In contrast, the systems model of medicine looks at how all the parts come together to form a whole. This model recognizes that the ways in which the body performs, or doesn't, can be better understood by taking into account the larger systems of the community, the family, interpersonal relationships, and individual responses to stress. This model acknowledges that every aspect of a woman's world and environment is constantly and simultaneously affecting her physiology. These include the presence of the doctor and his or her staff, the doctor's expectations, machines and procedures used to monitor the fetal blood pH and gas balance throughout labor, fetal blood pH, the smells in the environment, and the personal characteristics of nurses. Midwives and doctors often use different models to explain and understand birth. A systems model is more natural for midwives.

While both the biomedical and systems models of care seek a healthy mother and baby with normal vital signs and the baby feeding, the systems model raises other important questions:

1. How do epidurals and cesareans affect hormone production, mother-infant bonding relationships, breastfeeding, fetal brain development/maturity and parenting?

2. Since learning comes from experience, what learning does a woman lose when she chooses to numb herself to labor pain?

3. What effects do anesthetics and analgesics have on a baby's hormone production and the overall physical and behavioral properties of hormones?

I believe that the majority of trends in birth today are worrisome, and these include societal beliefs as well as the excessive use of medical procedures and obstetric drugs. Yet other trends promise change for the better: fewer episiotomies, fewer formula samples being given out to women wishing to breastfeed, and more rooming-in of mothers and babies.

The U.S. cesarean rate of 32.2 percent of all live births in 2014 seems to have somewhat plateaued down from 32.9 percent in 2009, but is still high above the World Health Organization's recommended rate of 15 percent. This overuse of C-sections continues to cause an excess of healthcare problems to women and babies in a largely healthy population, according to the Listening to Mothers III Survey of May 9, 2013. Six out of ten women today with a singleton birth received an epidural or spinal anesthesia for pain relief in labor, according to the U.S. Centers for Disease Control National Center for

WOMEN NEED TO BELIEVE THAT THEY ARE BORN WITH THE KNOWLEDGE OF HOW TO GIVE BIRTH AND THAT BIRTH IS INSTINCTIVE, AND **BIRTH TEAMS NEED TO KNOW HOW TO SUPPORT THEM IN THIS TRUTH.**

Health Statistics Report. Because all medical procedures and obstetrical drugs have an element of risk, this means too many low-risk pregnant women are entering the hospital to give birth and are leaving higher risk.

The vaginal birth after cesarean (VBAC) rate remains much too low. After reaching a high in 1996 of 28.3 percent of women who previously delivered by cesarean, the national VBAC rate was reported at 10.6 percent in 2013.

An even greater concern is four cultural shifts in beliefs about birth that have taken root.

Many women now believe that a cesarean is either safer than or as safe as a vaginal birth and avoids potential damage to the pelvic floor musculature. In most instances, neither of these is true.

They also believe it is advantageous to set a definite date in which to give birth so that life events can be planned around that date. What is predictable feels more comfortable to them.

Women believe they can have a baby without having to feel labor contractions if they don't want to. As a result, we now have obstetrical nurses and doctors who may have never seen a normal, physiologic birth without medical intervention. This is a contributing factor to the high cesarean rate as well.

Many women believe that technology is a normal part of giving birth. Their experience of birth then becomes a mechanical memory. Women are depending on others to get their babies out. Learning only comes through experience, and when women numb themselves to the experience of labor and birth, they lose the learning that birth imparts. Birth offers women a peak experience, a moment of their lives they will never forget, empowering and transformative in nature.

I believe that the pendulum of birth has swung to the end of its range; it will have to swing back, because nature must prevail. We cannot presume that mankind is smarter than nature because there is too much we don't understand about the marvels of the human body.

One sign of the pendulum swinging back is the growing awareness of womb ecology, also known as primal health, pioneered by Michel Odent, M.D. Odent identifies primal health as the period of time from conception to the end of the first year of life. Data from extensive clinical and experimental studies indicates that early life events play a powerful role in influencing later susceptibility to certain chronic diseases. These diseases span all medical fields, including heart disease, stroke, obesity, metabolic syndrome and type 2 diabetes mellitus.

In addition, breastfeeding with mother-baby skin-to-skin contact in the hours after birth is crucial for fetal limbic brain development. Even premature babies function better when laid against their mother's skin than when placed into an incubator.

Another sign of the pendulum swinging back is the current trend of more women becoming midwives. Midwives

have a more natural approach to birth than obstetricians, and can work in hospitals as certified nurse midwives (CNMs) or at home as certified professional midwives (CPMs). They believe that birth is a normal and natural event, and their birth practices are reflective of this.

In its reductionist view, the biomedical model encourages the development of new products to improve labor and birth. Take for example a relatively new product called the EPI-NO. It claims to reduce the risk of tearing and episiotomy, and to help condition the pelvic floor muscles before and after pregnancy. The kit comes with a contoured silicone balloon, a hand pump, a pressure display, an air-release valve and a flexible plastic tube. The balloon is inserted two-thirds of the way into the vagina and then gradually inflated from one training session to the next, each lasting 20 minutes.

The producers claim that the perineum normally achieves 8.5 cm to 10 cm over three to four weeks, and if 8.5 cm is achieved, the extra 1.5 cm will come when the head is crowning. This sounds attractive to women tired of being pregnant, but isn't it just another way of trying to rush birth? I personally wouldn't want to be walking around with a dilated perineum weeks before giving birth, and before it is ready to dilate itself. Furthermore, the hormonal state of a pregnant woman's body is different three to four weeks before labor as opposed to the time of crowning. I believe that in labor, as long as the perineum is kept warm to ensure good blood supply and hard pushing is avoided, that it will open for birth, just as it is supposed to.

At first glance, the biomedical model may seem to be working, making many women and their caregivers happy. Women can give birth without feeling strong labor contractions. They can plan when they want to give birth and doctors don't have to wait around. The use of medical procedures and obstetric drugs provides economic and financial incentives for the hospital. Legal consequences are minimized because a cesarean is the ultimate intervention; as far as the court is concerned there is nothing more that could have been done.

But balance is the key because we need both the biomedical and systems models of care in birth. Birthing families need better childbirth preparation so they can become informed to make wiser decisions, avoiding the routine uses of technology and obstetric drugs in birth, and also to learn when they would be necessary to ensure a healthy mother and baby. It is equally important to consider the role of other factors that might be keeping a labor from progressing, such as fear of pain, becoming a mother, and the sacrifices that will need to be made in the home and workplace.

Giving birth requires a woman to open her body completely and let go of all inhibitions. In order to do so, she needs to feel safe to let down her defenses. She is entirely vulnerable to the energies in the room. She needs to be in a place where she feels safe. I would like to see pregnant women be able to choose their safe place for giving birth and feel supported by their caregivers wherever that place may be.

It takes only one concerned look from a doctor to cause her to draw inward in a protective response. Midwife Ina May Gaskin says that even one negative word to a woman in labor can have the effect of undilating her cervix. She says, "I have never noticed anyone's cervix remain tight and unyielding while speaking loving and positive words." A woman in labor must have full trust and faith in her body's ability to give birth and allow it to be her guide.

Good, quality childbirth preparation beginning early in pregnancy is needed now more than ever. Though some knowledge of birth is required, it is emotional preparation that will be the most useful to a woman in labor, because labor is an emotional, sacred event. For example, learning what things can increase oxytocin production to help labor progress is essential in any childbirth preparation class. If the entire birth team could keep the birthing environment full of love and compassion, the birthing woman could feel safe to let go and give birth. They would not keep asking her if she wants pain relief; they would affirm her innate power and wisdom in giving birth. Avoiding rational questions such as "Was that contraction stronger than the last one?"is a way to help her in her primal brain that already knows how to give birth. Women need to believe that they are born with the knowledge of how to give birth and that birth is instinctive, and birth teams need to know how to support them in this truth.

Although I am worried about the current trends in birth, I am also optimistic. As more women are training to become midwives and more midwives are being employed by hospitals and attending home births, and as good, quality childbirth preparation reaches more pregnant women and their families early in pregnancy, I hope that surely we will begin to see change toward a better balance in the biomedical and systems approaches to birth. Birth is and always will be a sacred event, a miracle—one that changes a woman's life and our lives forever.

Cathy Daub, P.T., is a pediatric physical therapist. As founder, designer, and president of BirthWorks International, she is working to help women believe that they are born with the knowledge about how to give birth and that birth is instinctive. Her new book is Birthing in the Spirit, *which opens the world of pregnancy and birth to benefit a woman's health and her full potential to expand her mind, her body, and her spirit. View article resources and author information here: pathwaystofamilywellness.org /references.html.*

Finding Our Feet

Developing necessary tone in the body and finding the way to being vertical

By Ellynne Skove, M.A.

Developmental movement works on the body and the brain. The movement of infants is driven by their senses and their drive to thrive. As a baby grows, these forces, along with innate curiosity and will, set the movement process in motion. With this will come communication and choice. Essentially, children who are supported during their progression through the stages of movement build a strong foundation for making choices.

In our classes we use songs, finger plays, and movements done by adults holding the baby. This gives babies a chance to work through the stages on their developmental path. One important benefit of this approach is that we help with developing the curves of the spine—the architecture of the aligned spine that enables us to stand and relate in the human world.

Our classes support the natural patterns of development by exercising its basic elements: flexing, extending, pushing, pulling, reaching, etc. Using breath work, tummy time, rolling, reaching for toys and people, pushing up, sitting up and down and belly crawling, GoGo Babies provides nourishing, developmentally appropriate play that supports bonding, early cognition, emotional regulation and coordination.

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Babies initially elevate their lower legs and feet when in prone tummy time. It takes a strong effort to find the feet and toes engaging in a push pattern when making contact with the floor. When this happens, the spine elongates out of the fetal "C" curve shape and works to develop the natural form of the lumbar, thoracic and cervical curves. This is the internal architecture necessary to find aligned and strong vertical positions, such as sitting unassisted and standing.

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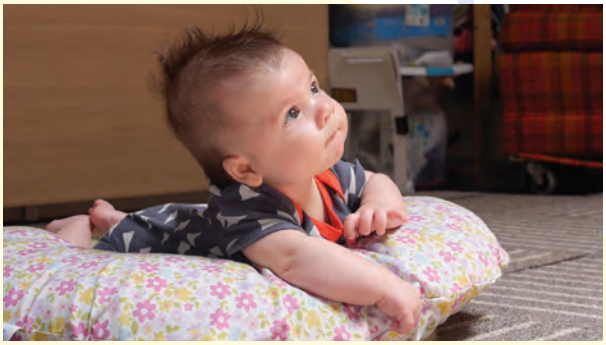
This baby is in the early stage of finding the push through the toes. The baby shows a long and strong push, pull and reach. The whole body is fired up from toes to head, and head to toes! This helps develop muscle tone and strength in the legs all the way through the trunk, or core, of the body.



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Placing a breastfeeding pillow or a rolled-up towel or blanket under your baby's chest can help her find her feet and engage with the floor to add to the necessary push/reach/pull patterns needed to develop the spinal form. Such a prop makes tummy time more pleasurable, and makes it less difficult to lift her heavy head, which is bigger than her bottom at this stage. It also helps in the reach from the chest and push from the arms and feet. Note that the eyes reach, helping the head to lift as well.

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This baby is engaged in creeping, so he is using his arms to pull as well. This movement helps the joints of his lower body line up and bring his knees in line with his hips. It's like the song: "The toe bone's connected to the foot bone, the foot bone's connected to the ankle bone, the ankle bone's connected to the leg bone, and the leg bone's connected to the knee bone!" And so on, up the body. The bones connecting the joints are like the tracks and train stations necessary for building the ability to travel and move. The engine is the baby's drive to explore, and its curiosity of the world outside the womb.

© GLENDA POWERS

Bear walking on hands and feet builds more strength, tone and alignment; it helps a baby move into pushing her lower body so strongly that she stands up. Many people refer to this as "pulling up," but actually it is a huge push, defying gravity and working toward joining the bigger humans who are vertical, two-legged mammals!

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When a baby is placed involuntarily in a seated position before she is able to sit up on her own, the body is impeded from developing necessary tone for creeping and crawling. Many babies will develop the less-than-optimal movement pattern of bottom scooting instead of crawling to try to get to where they want to go. This is not good for the joints or development of lower body and torso tone. It also hampers the upper tone and chest strength related to speech and language development. A baby that can sit on her own will look like an erect and present little Buddha!

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Babies have the ability to arrive in a vertical position on their own if we let them have floor time to explore and develop their developmental movement patterns. Skipping a part of the pattern is not helpful, as each pattern connects to brain and social-emotional developments, as well as speech and language and developing stereoscopic vision. Encouraging and being present with your baby helps him develop a strong sense of body- and self-awareness and a deep trust and attachment with his parents and caregivers.

Ellynne Skove, M.A., LCAT, BC-DMT, is a licensed movement therapist and body worker focusing in pre and perinatal psychology and health. Her work encompasses developmental movement, infant massage, newborns and parents in the "fourth trimester," and birth-trauma healing. She works in groups and individually, and teaches professional trainings in the United States and abroad. View article resources and author information here: pathwaystofamilywellness.org/references.html.

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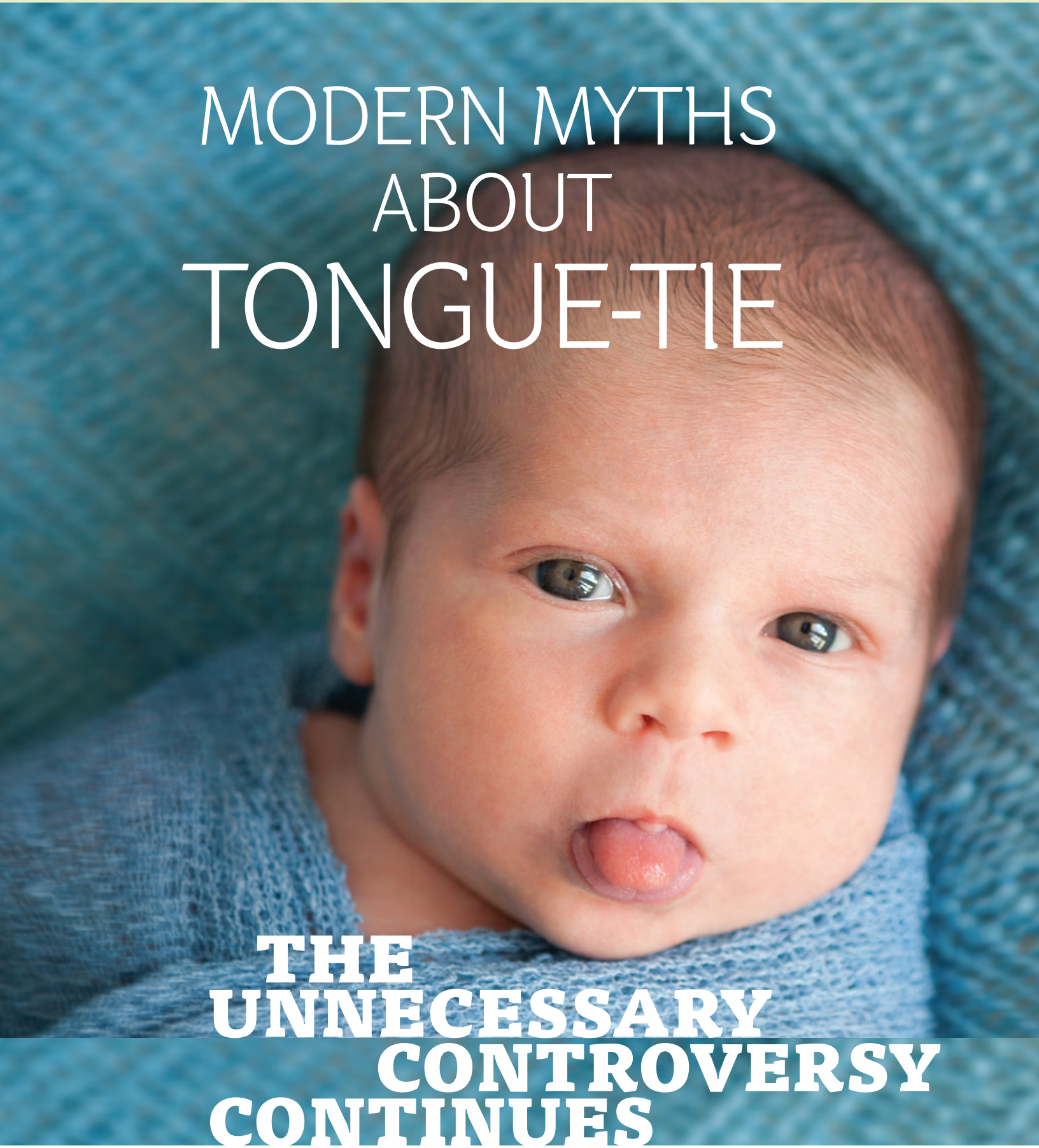

MODERN MYTHS ABOUT TONGUE-TIE

THE UNNECESSARY CONTROVERSY CONTINUES

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By Alison Hazelbaker, Ph.D.

Twenty-three years ago, when I was doing my research on tongue-tie's impact on breastfeeding and developing the Assessment Tool for Lingual Frenulum Function, the most problematic attitude I ever encountered was resistance to the idea that tongue-tie could create a breastfeeding problem. This resistance was purely due to lack of knowledge about the physiology of infant suck. Occasionally back then, I might have met someone whose resistance was ego-driven—the "not invented here" line of thinking—but that was the exception rather than the rule. Then, the challenge for those of us who understood how tongue-tie impacted infant suck was to educate, educate and educate some more.

Today, the controversy over various aspects of the tongue-tie phenomenon are liberally laced with ego-driven resistance. It seems as if the entire world of practitioners has something to say about tongue-tie, regardless of level of expertise on the subject. And now the notions of "lip" and "buccal" tie, and to complicate matters even more, this thing called "tethered oral tissue," have entered the picture to further confuse parents and practitioners alike. Is this labyrinth of information, misinformation and dis-information helping us to get treatment for truly tongue-tied babies?

A dialectic between smart people who have no vested interest other than to help others remains ever useful. An out-and-out brawl between various factions of people spouting dogma that is liberally littered with poorly informed opinion does not. I am all for helping moms and babies, but I am definitely for helping them using solid evidence, so that they get the right kind of help, at the right time, from the right practitioner.

IT IS COMPLETELY LEGITIMATE TO REMAIN SKEPTICAL UNTIL MORE DATA EMERGES, **ESPECIALLY WHEN THE "CURE" SUGGESTED INVOLVES CUTTING A BABY.**

I vote that we get back to anatomy and physiology, *and* get back to using the evidence to support what we do as practitioners and as parents faced with making the decision to have surgery performed on our infants. Let's start with what we know about tongue-tie.

The facts:

Fact 1: Tongue-tie does exist. It even has its own gene(s) that codes for it.

Fact 2: It manifests with various syndromes, which in and of themselves are relatively rare.

Fact 3: It is hereditary.

Fact 4: It has for a very long time had a clear definition: Tongue mobility restriction due to a tight and/or short lingual frenum.

Fact 5: It is a congenital anomaly. Regardless of whether tongue-tie is genetic or epigenetic, it occurs during development in the embryonic period.

Fact 6: Because tongue-tie, by definition, is impaired tongue mobility due to a congenital anomaly, it can cause deficits in all functions

that require optimal tongue mobility, whether that be breastfeeding, bottle-feeding, chewing, protecting the airway, cleaning the teeth, or helping to form speech sounds. The degree to which this happens is somewhat known but more research needs to be done before we have a firm grasp on this. Only then can we fine-tune our treatment approach.

Fact 7: The incidence of tongue-tie was only hypothesized until of late. A study out of Australia has shown that the incidence hovers around 5 percent of all people. More research needs to be done before we know an exact figure. The problem with incidence figures in the past was that no standardized assessment was being used. The study's author, Dr. Todd, however, used a standardized, evidence-based screening tool for three years in a row in a large sample of infants. He was able to come up with what appears to be a very solid incidence statistic as a result. Please note here that Mother Nature does not create catastrophic increases in incidence of congenital anomalies unless some catastrophic epigenetic influence is at play. To claim that there is a rise in incidence to the tune of 20 to 50 percent is a clear misunderstanding of how epigenetic influences function epidemiologically.

Fact 8: Scissors frenotomy performed by trained practitioners has little to no risk. (No such data exists for laser, electrocautery or scalpel frenectomy.)

Fact 9: Breastfeeding improves post-frenotomy/frenectomy as long as tongue function is normalized as a result. Not all babies will show such improvement. Anecdotally, many babies will need further therapy to restore proper tongue-function post-surgery.

Fact 10: Any connective tissue in the body (frena included) can be tight and impair optimal function. At what point that tightness can so severely impact function that no compensation can override the restriction is an important question to put to the researchers.

Now, why do I bring up Fact 10? Because two interesting theories have emerged in the last 10 years. One theory proposes that the upper lip frenum can cause breastfeeding problems. One case history was published detailing the way in which the upper lip frenum created a problem. Recently, an article fleshing out the theory was published proposing a classification schema to help people determine the presence of a lip frenum that negatively impacts breastfeeding. Unfortunately for the proposer, the classification system proposed did not go through the validation process, so it really cannot yet be said that it accurately identifies the type of upper lip frenum that could cause a breastfeeding problem.

Let's look more closely at the assertion that a tight, prominent upper lip frenum causes breastfeeding problems. We can use anatomy, physiology and development as our guide. First: The upper gumline changes with growth. A frenum that appears to be restricted in early infancy may substantially change as the baby grows. Second: Breastfeeding does not require a lip flange, merely lip eversion. Third: The assertion that dental caries are caused by an upper lip tie begs to be proven. Breastmilk does not pool in the mouth. The position of

MY EXPERIENCE AS A STRUCTURAL THERAPIST HAS SHOWN THAT THIS TYPE OF TONGUE AND MOUTH FLOOR RESTRICTION RESOLVES WITH SIMPLE BODYWORK.

THE ACTUAL CAUSE OF THIS TYPE OF RESTRICTION IS AN ACQUIRED SOFT-TISSUE STRAIN PATTERN DUE TO INTRAUTERINE OR BIRTH EVENTS.

the nipple in the mouth and the manner in which that milk is moved into the pharynx for the swallow won't allow it. Both the peristaltic action of the tongue and the pressure differential created by tongue movements quickly push/pull the milk to its ultimate destination.

Fourth: The lips follow the tongue; if the tongue retracts, the lips move inward toward the gumline and when the tongue everts, the lips also evert. This is a developmental reflex that remains active throughout life. Anyone who has ever French-kissed can assert the truth of this. Tongue position plays such a keen role in the positioning of the lips that many types of acquired structural issues, like torticollis, can cause the tongue to retract thereby pulling in the lips. In my experience, this can be mistaken for what the theorists call an upper lip tie.

In my clinic this past year I saw such a baby. She had been misdiagnosed with both a tongue-tie and an upper lip tie. She actually had low cheek tone and overactive, tight lip tone. One of my colleagues performed some very effective bodywork to bring down the lip tone and bring up the cheek tone. It took her three minutes to rectify the problem at no cost to the mother and the baby was saved from unnecessary surgery.

That leads me to my next point. Without a valid definition of upper lip tie (one based on solid facts about how the labial frenum impairs lip mobility in the specific manner that actually impairs breastfeeding), we are hard-pressed to be able to assess it properly. The exact characteristics of a phenomenon must first be established before assessment tools can be generated to assist the clinician in proper diagnosis. No such work has yet been done.

We have put the proverbial cart before the horse when it comes to the theory of upper lip tie. How many babies have suffered the consequences as a result?

Does that mean upper lip tie doesn't actually exist? Theoretically it could because any connective tissue in the body might, out of tightness, negatively impact function. Does a tight, prominent labial frenum actually negatively impact breastfeeding? Only future research will prove or disprove this theory. Until the evidence shows us what is true, ethics dictate that practitioners remain conservative in their clinical approach.

Let's talk about the second theory: that of the sub-mucosal posterior tie. I have been liberally accused of not believing in the posterior tie. Belief has nothing to do with it! Any clinician operating by belief is shirking his or her professional and ethical duty.

My clinical approach to the sub-mucosal tie theory is conservative. To my knowledge, no research has ever been done to verify that a restriction at the tongue-base that presents as a thick, shiny string under the mucosa is an actual tongue-tie. My experience as a structural therapist, and in the experience of many a bodyworker throughout the world, has shown this type of tongue and/or mouth floor restriction resolves with simple bodywork; the actual cause of this type of restriction is an acquired soft-tissue strain pattern due to intrauterine or birth events.

Once again, anatomy can inform us. That tight shiny string of tissue underneath the mucosa at the tongue base may very well be the septum of the genioglossus muscle, the tough aponeurosis (a type of fascia) that connects the two halves of the genioglossus muscle together helping to stabilize the tongue in the mouth. The septum attaches to both the inside of the mandible at the mentis and to the hyoid bone in the upper throat and is confluent with the hyoepiglottic ligament. The septum is easily visualized when two fingers press back against the tongue-base. Some practitioners claim this maneuver renders an accurate diagnosis of "sub-mucosal tongue-tie," but it may be revealing the septum of the genioglossus muscle. One has to know what one is visualizing to avoid making an erroneous diagnosis.

Ultimately, what seems to get lost in the argument over sub-mucosal tie's existence or nonexistence is that theories must be proven. We all share the burden of that proof (or disproof). It is completely legitimate to remain skeptical until more data emerges, especially when the "cure" suggested involves cutting a baby! I remain skeptical. The dearth of evidence for this phenomenon, which may or may not be the congenital anomaly we call tongue-tie, coupled with my own experience working with these babies as a bodyworker keeps me sitting on the fence.

Let's now turn to the myths:

Myth 1: The incidence of tongue-tie is increasing. No one, anywhere can make this assertion. No accurate incidence statistics existed prior to Todd's 2014 study. The incidence may well indeed be population-based, but epidemiological studies must be done to assert this as fact.

Myth 2: All babies who have a tongue-tie have an upper lip tie. How can this be true? We have no idea what a lip tie actually is, and no valid, reliable assessment tool to even begin discerning who may have an issue and who does not.

Myth 3: Laser frenectomy is better than scissors frenotomy. No evidence demonstrates that this is the case. Any advantages of either are postulated.

Myth 4: All tongue-tied babies need a deep frenotomy. It might be true that some babies will achieve optimal range of motion of the tongue with a shallower snip. We need more evidence to make such a determination.

Myth 5: Laser frenectomy is completely safe. Lasers are, in fact, very dangerous and can do significant damage when used by an untrained practitioner. A definitive set of safety rules guide practitioners to utilize laser equipment without posing harm to themselves or their patients. There are several different types of lasers; some more suited for soft-tissue surgery. The wrong laser can damage collateral tissue and create excessive scar tissue that may cause reattachment. Currently, there is no requirement for a dentist or doctor to receive training to use lasers before performing surgery on babies.

Myth 6: The scar tissue in the wound bed must be broken down several times per day to prevent excessive scar tissue formation (reattachment). According to new research, the frenum is a tendon, a type of fascia. Breaking down the scar tissue in the fascial wound bed causes myofibroblasts to lay down a dense collagen network (excessive scar tissue formation). Gentle is better, both physiologically and psychologically. It is a shame when we cause a baby trauma from too aggressive post-surgical management. Come to think of it, there is no solid evidence that post-surgical aftercare prevents reattachment. Two studies have been performed; one was extremely flawed.

Myth 7: There is a posterior tie behind every anterior tie. Histologically this is not true. This cute statement is misleading if the purpose is to encourage surgeons to remove enough tissue to adequately mobilize the tongue. It seems much clearer to say that enough tissue must be removed (without cutting into muscle) to restore optimal tongue mobility in some babies.

Myth 8: Posterior ties are more common than anterior ties. Oops! Todd's research definitively shows this is not true. Proper assessment, proper assessment, proper assessment and differential diagnosis!

Myth 9: Classification schema serve as proper assessment. Nope, they don't. An assessment tool must possess the following: validity, reliability, sensitivity and specificity. In other words, it must be designed and be proven to accurately identify the phenomenon being assessed, be able to do so accurately from assessment to assessment and from assessor to assessor and must be able to do so nearly 100 percent of the time. A tool that falsely identifies someone as having a problem when they don't, or not having a problem when they do, is not accurate enough.

Myth 10: Any lactation consultant knows how to properly assess for tongue-tie. As in any profession, members of that profession must be trained to properly assess for any given phenomenon. For that matter, not all physicians, dentists, speech-language pathologists, etc., have been trained to assess for tongue-tie. It behooves parents to ask if the practitioner has been trained to assess for tongue-tie using an evidence-based assessment tool.

For some reason, tongue-tie has become the poster child for dogma and controversy. We are at the very beginning of our understanding of this congenital anomaly. (Don't let anyone tell you otherwise!) That means that no one knows the entire story yet. Time and more research will tell us what is true and not true about this phenomenon. Until then, we must exercise healthy skepticism, continue to ask the hard questions, engage in respectful dialectic and err on the side of caution. Our vulnerable babies depend on us to keep them safe from harm, and that includes holding off on surgery if no evidence exists to put them through such surgery.

Our egos must learn to stand the strain of not knowing.

Alison Hazelbaker, Ph.D., IBCLC, FILCA, C.S.T., RCST, has been a therapist for nearly 30 years. She specializes in cross-disciplinary treatment, and has trained in several modalities to best assist her clients. She is a certified craniosacral therapist, a lymph drainage therapy practitioner, and an international board-certified lactation consultant. Her 1993 research on tongue-tie changed clinical practice both in the United States and abroad (tongue-tie.org), and she is recognized as an expert on infant sucking issues and their treatment. View article resources and author information here: pathwaystofamilywellness.org/references.html.

Tongue-tie

A holistic approach for breastfeeding infants

By Andrea Auerbach, D.C.

New moms are well aware of the importance of breastfeeding. Moms who are eager to breastfeed their newborns often find themselves disheartened if they run into difficulties with nursing.

They may find the infant is having trouble maintaining suction, or chewing on the nipple, or becoming irritable during and after nursing. An infant may tire from the added effort and fall asleep before eating enough. Insufficient weight gain may become a concern. The mother, in turn, may suffer from blocked milk ducts, painful breasts or cracked nipples, and may become frustrated and discontinue nursing. Often this leads to the mother feeling depressed and believing that if she cannot meet her child's needs she is not a good mother.

> "SIGNIFICANT RESEARCH SHOWS THAT FROM A NUTRITIONAL, IMMUNOLOGICAL, DIGESTIVE, NEUROLOGICAL, DEVELOPMENTAL, MENTAL, PSYCHOLOGICAL AND EMOTIONAL STANDPOINT, THERE IS NO REPLACEMENT." —JEANNE OHM, D.C.

Breastfeeding is by far the best choice for infant feeding for numerous reasons. In an article in PATHWAYS No. 11 titled "Breastfeeding Difficulties and Chiropractic," author Jeanne Ohm, D.C., offers the chiropractic perspective: "Significant research shows that from a nutritional, immunological, digestive, neurological, developmental, mental, psychological and emotional standpoint, there is no replacement."

Chiropractic care offers a conservative approach that appeals to many parents. It is gentle, non-invasive and proven safe for children. As chiropractors we assume the structural makeup of the infant is intact and then we look for what is obstructing normal function. Chiropractic care facilitates the child's body to heal on its own. In her article, Ohm states, "In the case of breastfeeding difficulty, as with many childhood disorders, the cause of the problem often traces back to undetected biomechanical injuries to the spine and cranium at birth. The failure to recognize these biomechanical injuries and their relationship to difficulty in breastfeeding leads to incorrect conclusions and, therefore, inadequate recommendations and treatments."

These "biomechanical injuries" are termed subluxations. Subluxations are misalignments of the bones that interfere with the nerve transmission (communication) to the area and in turn the function of a joint. The spinal bones (vertebrae), bones of the skull (cranial bones) and facial bones including the TMJ (temporomandibular joint) all participate in the process of latching and sucking. A baby that is having difficulties nursing most likely has subluxation in one or more of these areas. It has been my experience that when an infant is subluxated in these areas and adjusted, these obstacles to nursing are corrected and normal function returns. Breastfeeding is then resumed.

Subluxations can occur in a number of ways exacerbated by physical, chemical or emotional stresses. *Williams Obstetrics,* the "bible of obstetrics," parallels chiropractic theory by stating, "the diameter of the woman's pelvis is decreased when the sacrum is displaced." In this circumstance the mother has a misalignment or subluxation of the pelvis. This may interfere with the baby's ability to attain the optimal positioning. Compression on

developing fetal structures and the nerves they protect may occur with this alteration in positioning.

Additionally, the birth process is a traumatic event for the newborn even under normal circumstances. Even when the baby is in the optimal position, obstetric intervention to extract the baby may cause undue force to the baby's head and neck. Another article by Ohm, "Birthing with the Wisdom of the Ages" (published in PATHWAYS No. 40), reports: "One medical study, published in *Developmental Medicine & Child Neurology,* addresses this issue even further. The study's author, Dr. Abraham Towbin, writes, 'The birth process even under optimal controlled conditions is potentially a traumatic, crippling event for the fetus.... Moreover during the last part of delivery, during the final extraction of the fetus, mechanical stress imposed by obstetrical manipulation—even the application of standard orthodox procedures—may prove intolerable to the fetus.'" The resulting subluxations in the cranium and upper neck region may have a negative impact on breastfeeding. Deliveries employing mechanical devices, such as forceps and vacuum extractions, use excessive force and add extreme stress to the baby's cranium, spine and nervous system.

Frequently, present-day obstetricians advocate C-sections as a comparable alternative to vaginal birth. However, many prospective parents and practitioners are aware of the traumatic effects of C-section on the newborn and mother. Extracting the baby through layers of the mother's muscles puts even greater force on the baby's head and spine and may result in changes in alignment of the spine or the cranium. Additionally, a C-section delivery deprives the baby of an essential process called molding. The cranium of an infant is made up of separate bones held together by cartilage. During the birth process the bones overlap and return to an optimal position that allows them to be freely moveable. The mobility of the cranial bones is important because subluxated cranial bones can interfere with the child's ability to latch and suck.

Chiropractors are interested in educating our communities as to the effectiveness of chiropractic care in restoring the baby's normal ability to breastfeed. Presently, ankyloglossia is diagnosed in 5 percent of newborns. There is no clear evidence in the literature that surgery for tongue-tie is the answer for latching issues or that it occurs as often as it is diagnosed.

"AS WITH MANY CHILDHOOD DISORDERS, THE CAUSE OF THE PROBLEM OFTEN TRACES BACK TO **UNDETECTED BIOMECHANICAL INJURIES TO THE SPINE AND CRANIUM AT BIRTH.**"
—JEANNE OHM, D.C.

Moms who receive this diagnosis for their child should look further into the possible cause of distress and seek out chiropractic care before resorting to surgery. This alternative approach can be their "Plan A," before moving to an invasive "Plan B."

I encourage you to learn about the many benefits of chiropractic care as part of a wellness and healthy lifestyle program as your children develop and grow into young adults.

Dr. Auerbach's healing hands, warm heart and deep concern for her patients make her a sought-after chiropractor in the Park Slope, Brooklyn, community, where she has been practicing for more than 15 years. She holds an advanced certification in pediatric and prenatal care (CACCP) from the International Chiropractic Pediatric Association (ICPA), and is certified in the Webster technique. She includes cranial and extremity adjusting and neurosensory integration as part of her chiropractic care. Visit her website, YourParkSlopeChiropractor.com. View article resources and author information here: pathwaystofamilywellness.org/references.html.

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TURN IT UP

Parenting from the Heart

By Janaiah von Hassel

My first son was born in February of 2010, just before my 30th birthday. I had dreamed of having a child since I was one myself, and I was blessed to be in a situation where I could leave my career to become a stay-at-home mom. The days leading up to childbirth were full of anticipation, yet with each day that my perfect little boy grew inside of me, my anxieties of how to perfectly care for him grew as well.

I began reading every parenting book that came my way. I subscribed to motherhood blogs, and I took advice from grandparents, neighbors, friends and strangers. After my son's birth, I joined online support groups and made sure to leave no question unasked. I prepared my list of inquiries for the pediatrician at each well visit, and spent endless hours researching milestones, sleep training, introduction of solid foods, the proper amount of "tummy time," and any other topic that piqued my intense desire to do everything perfectly.

I breastfed for the first year, and while I didn't get my period during that time, I developed a new sort of PMS: Perfectionist Motherhood Syndrome. After all, if God saw fit to bless me with this tiny, helpless, perfect little being, then wasn't it my job to become anxious, stressed, exhausted and completely confused in my quest to do the perfect job raising him?

My exhaustion soon turned to frustration as, despite my newly acquired "Parenting 101" education, nothing was working. The sleep training guide I followed blew up in my face, exacerbated the sleep issues, and caused me to feel depressed and unfit. Likewise, despite our perfect food introduction schedule, we couldn't figure out the culprit of my son's eczema, and when the doctor assured me that the steroid cream would fix all of our troubles, I felt a complete unease when applying it.

Over time I realized that everything that came hard for us was accompanied by my fighting a very basic instinctual feeling. How perfectly natural it felt to nurse my son to sleep as we both drifted off into a peaceful slumber in my bed. It seemed so mechanical to set an alarm to make sure he didn't stay there, or to fight my urge to sleep so I could attempt to return him to bed, only to hear his cries moments later.

Friends weighed in with experiences, but no two stories were alike. Whose advice should I take? Nothing felt right. I had always excelled at my jobs, and most

things came to me with some degree of ease. I knew that motherhood wouldn't be without its challenges, but I had not expected to be so utterly horrible at it.

As my parenting evolved, I found a group of mothers who resonated more deeply with me. Some referred to themselves as "granola moms." I quickly gained confidence in our co-sleeping habit and found relief in the support of my belief that children needed to be lovingly guided, not admonished and punished. I appreciated my newly acquired friends and soon began to feel I'd found my stride.

However, it didn't take long for new concerns to catch my ear. Some of my new "crunchy moms" shared devastating research about circumcision with me. They explained the reasons I needed to get rid of my microwave and my WiFi, and expressed their disapproval of common life experiences that would be detrimental to my child. I was quickly made aware of all the things I was doing wrong, and became overwhelmed by the new demands.

As the birth of my second son approached, I was swirling with a new avalanche of information. How would I grow my organic garden, keep up with my household duties, afford all-natural cleaners, and keep my children from being traumatized by sensory-overloaded toys, BPA, fluoride and all the dangers lurking under the surface of my world that was beginning to crumble?

Two years ago, after receiving my youngest son's autism diagnosis, I contemplated the path my parenting had taken. Where was I? How did I get there? Who had I followed? And why could I reflect back on moments of deep regret, despite the fact that I had done it all "right"? My youngest son was diagnosed with regressive autism, so he had lost abilities that he formerly had, but it wasn't an overnight occurrence. It was a slow and painful slide toward a rabbit hole of confusion. During that whole time, I struggled to buy into the advice of doctors and friends around me that everything was fine. I fought my intuition on what I should do, and allowed interventions that went against every fiber in my being.

The details of my first three years of parenting do not support, nor do they discourage, any particular parenting style. They neither prove nor disprove any science regarding the causation of autism, and there is no evidence that suggests that either of my sons would be better or worse off had I done one thing over another. But I will tell you that two years ago something in me changed that has made my life 100 percent better, and as the old saying goes, "A happy mom is a happy home."

An incredible awareness came over me shortly after I began chiropractic care and learned about our body's innate ability to heal itself with the removal of subluxation or misalignment of the spine. It made such obvious sense to me; it was as if I had known it all along. An "aha" moment, so to speak. When disturbances creep in, preventing the body's basic ability to connect with itself, disease ensues because the body is basically placed under arrest and unable to respond, act and heal as it was designed to do. There is no substitute for our body's natural response, because each person is so uniquely created that any one-size-fits-all approach will fall dramatically short of the body's intricate knowledge of itself and ability to provide exactly what it needs.

It became indisputable to me that the same was true of motherhood. From the moment of conception, our bodies know exactly what to do to grow and nurture our babies. Our body supplies oxygen and nutrients to our baby in the womb, while removing deoxygenated blood and waste products. During this time, our body slowly creates the space necessary for this growing baby, and our entire structure changes to allow a safe passage at birth. None of this happens by our command or understanding. We do not direct our bodies on what to do, how to encourage the growing spine, intelligent brain, beating heart, functioning organs, eyes, ears or nose and

OVER TIME I REALIZED THAT EVERYTHING THAT CAME HARD FOR US WAS **ACCOMPANIED BY MY FIGHTING A VERY BASIC INSTINCTUAL FEELING.**

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their ability to take in those senses through the central nervous system, sending those inputs to the brain and receiving messages. This is done by an innate intelligence that lives within us to create and form life.

By the time babies are born, they can already hear and recognize their mother's voice and touch, and they can sense their mother's presence. They innately know to cry when they are separated from their mothers, to ensure that their mothers will return to them and continue to nurture them. How can we believe that this innate intelligence, which creates and sustains life on the inside and then causes our body to create a life-sustaining fluid on the outside, could somehow be shut off on the day that our baby is born?

AN INCREDIBLE AWARENESS CAME OVER ME SHORTLY AFTER I BEGAN CHIROPRACTIC CARE AND LEARNED ABOUT OUR BODY'S INNATE ABILITY TO HEAL ITSELF WITH THE REMOVAL OF SUBLUXATION OF THE SPINE.

From the first time you hold your baby in your arms through childhood and adolescence, doctors, grandmothers, well-meaning friends, neighbors and strangers will tell you what is best for your baby, and in hasty moments of panic and confusion, we often surrender our God-given connection—our innate intelligence—to the confidence of the outside world. As a mother who has learned the hard way, I plead with you: Don't shut it off! Don't ignore your intuition! You are hardwired with a connection and ability to care for your child. You know what no one else can know. You are the best provider for your child, and when something feels wrong, when medical doctors tell you what is necessary but deep inside your gut—that same gut that once held and formed your child from a lifeless egg into a human being—is telling you to look for other answers, then I urge you to listen. Mothers, it's time we take back the health of our children. As a mother of two young boys, I am eternally grateful for doctors in all different fields who can lend their skills when necessary. But doctors are not equipped to raise our children.

Why are our children suffering? Why is one out of every four school-aged children medicated? Why is this the first generation whose life expectancy is shorter than their parents? Because the noise outside has become too loud to hear the voice within. Silence the world. Believe in your ability.

You are designed with the intelligence and ability to create and sustain life. You have a gift and, with that gift, an obligation to care for your child and ensure that their innate intelligence is left intact to guide them.

I found nothing so freeing as the day I left more than 20 motherhood on-line groups, unsubscribed from several motherhood blogs, and boxed up a plethora of parenting guidebooks. I'm not saying that these things can't be useful, encouraging and helpful at times, but I had allowed them to subluxate a guiding system that knew exactly what to do.

Mothers, don't turn off the noise inside. Turn it up!

Janaiah von Hassel, CEO of Kiro Kidz, is a the proud mother of two young boys, Landon and Corbin, who she happily nurtures alongside her husband, Matthew. Janaiah turned to chiropractic after receiving her son's autism diagnosis and, in doing so, discovered that her entire family benefited from care. In her desire to spread the word, she has found great fulfillment in her work with Dr. Todd Defayette on the creation and development of Kiro Kidz. *This animated children's book tells an exciting tale of the benefits of chiropractic care. Children will connect with these lovable characters all while learning about their central nervous system, subluxation and the important role chiropractic care plays in their health. View article resources and author information here: pathwaystofamilywellness.org/references.html.*

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How Modern Societies Violate Human Development

Withholding human needs changes human nature

By Darcia Narvaez, Ph.D.

The modern world has been making itself into a pathological place by establishing as "normal" various practices that violate basic human needs. This leads to the development of suboptimal creatures who willy-nilly destroy their habitat (yes, us!). I present a short list of violations; there are many more.

1. Early Trauma

Dominant cultures of the last centuries tend to induce early pain and trauma on their young, shaping the brain away from trust, compassion and receptivity, which are otherwise our human heritage for getting along with the natural world.

Early trauma leads to emotional numbness and dense reptilian "me-ism," which emphasizes "doing it my way" ruthlessly, with an incapacity or resistance to acting with others in mind, including those in the natural world. Indigenous peoples of the Americas frequently commented on the deadness of heart in the European settlers who took over and ravaged the land. Many of us are their descendants.

2. Continual Isolation

We have known scientifically for more than 60 years that forced **physical isolation** (no touch) has significant negative long-term effects on mammals, including humans. Even separation from their mothers right after birth can have long-term effects. Yet, physical isolation is routinely coerced on babies (with playpens, cribs, plastic seats) and young children (time out, sleeping alone), during the critical early years for social development.

Isolation also refers to **emotional isolation.** Parents who were mistreated themselves may not know how to be emotionally present to their children. Children will feel deeply lonely if they don't connect and communicate feelings and thoughts with another human being. The child will grow up to be as dead inside as the parent.

In our evolved context, **isolation and expulsion** from the group was a last resort for a dangerous individual who became impervious to restorative justice, reason and behavior change. Expulsion and isolation could mean certain death. When it happens psychologically or emotionally, isolation kills spirit.

Isolation also includes **mother-child isolation.** Children and mothers are not meant to spend life apart from others. They are meant to be surrounded by community members who assist in raising the child and supporting the mother. Mothers who are not supported are less responsive to their children. Parenting in conditions of community support is a pleasurable activity, a far cry from the experience of many parents today. Isolating mother-child pairs is a potential source for depression in both mother and child.

Same-age groupings are a form of isolation. Mixed-age grouping is normal in the small-band hunter-gatherer context in which we evolved. Mixed-age grouping supports cooperative interactions. The younger children love to learn from the older ones and the older love to teach

the younger. This is a "natural pedagogy." The lack of wide-range, mixed-age-group experience impairs the development of cooperation skills that humans otherwise learn in community groups.

When we isolate children into same-age groups, they don't have much to learn from one another and so they learn to compete. Same-age grouping also increases risk-taking in adolescents who hang out only with other adolescents. Adolescents are still developing self-control systems and need older, wiser folks around to calm down and direct their eager energy rather than rev it up (just like male adolescent elephants do!).

Gender-based isolation. In complex hunter-gatherer contexts, separating the sexes might be used short-term for building up testosterone in males for a raiding party (emphasis on party—touching but not harming the enemy was a sign of courage).

Isolation can also empower women during childbirth or menstruation. But long-term isolation can throw social life out of whack. Think of what happens in fraternity houses. That is not "normal" in an evolutionary sense, where older males would be around to guide young male energy so it does not become destructive.

Schooling can be a form of isolation. Children, and humans generally, are designed to learn easily (without effort) from their experiences in the real world. Schooling is an artificial world that rewards those who can put up with it and those who excel at detaching themselves from real life to memorize mostly inert knowledge. Schooling is largely about training the explicit mind in inert knowledge (facts) and training the implicit mind to be obedient to a system of reward (hidden curriculum).This is not really "intelligence," except that moderns in the 20th century decided it was. Instead, such capacities may be a form of insanity, because they don't have much to do with living well or flourishing (speaking as a professor who has learned to do these things). This type of detached thinking (without heart) is the source of much environmental destruction, since those who create products and innovations usually don't do a full-cost accounting of their effects.

Indoorism is a form of isolation. Adults in the United States typically keep children inside walls these days, unlike previous generations who allowed their children to spend hours unsupervised outside. Every animal learns its neighborhood and integrates with it—except modern humans, who typically spend less than 24 hours a year outside.

We are so used to isolation that we think nothing of sitting in rooms or cars alone for hours. Of course, we have media to keep us company. In fact, television and other media may fool us into thinking we are not socially alone. And, over generations, as we get less socially skilled from our experiences of extensive isolation, electronic media and social media allow us the illusion of socializing without the need for the skills to function in a real social world. To function in a real social world, you need lots of subtle perceptual, expressive and receptive skills. But the way we treat babies, children and adolescents undermines the development of these skills. And we all suffer from an abundance of loneliness as a result.

NOTE: Isolation does not refer to a person going off at will, away from other humans—this used to be a normal part of human autonomy, a built-in need. Actually, a human who is away from humans is really not alone—we all are always surrounded by other life forms.

SCHOOLING IS AN ARTIFICIAL WORLD THAT REWARDS THOSE WHO CAN PUT UP WITH IT AND THOSE WHO EXCEL AT **DETACHING THEMSELVES FROM REAL LIFE TO MEMORIZE MOSTLY INERT KNOWLEDGE.**

3. Coercion

Small-band hunter-gatherers spend most of their lives in enjoyable social leisure and they even make hunting and gathering situations ones of social joy. Relationships are fiercely egalitarian, and even children are not bossed around.

Instead of enjoying life through social leisure and community feeling, in the U.S. we have come to believe that work is the only truly worthwhile activity. And so

children are raised around the work schedules of parents. Some moms don't even feel relaxed enough to breastfeed their newborns because they are anticipating going back to work within weeks. Work-distracted parents who live alone with a baby will not be able to meet its full needs, and a baby that doesn't get what it evolved to need becomes an insecure adult.

When child-rearing is forced into the frame of an ideology like work and achievement, it often requires "breaking the spirit" of the child. Children won't be subservient to an ideology unless they are broken early. This happens in many subtle ways, including ignoring a baby's emotions, letting babies cry, pushing children away from joy in being social and toward being alone, achievement and book learning. The lack of ongoing immersion in a supportive social life leads children to use a primitive self-survival morality instead of the compassionate morality that otherwise develops within a supportive group life.

Autonomy and sense of belonging are built-in human needs. But trauma, isolation and punishment are good ways to undermine them and create insecure people who need an ideology or authority to feel safe (perpetuating the system they are in). Corporal punishment seems particularly useful in teaching a child to expect a hierarchical, unjust world and thereby to latch onto a nearby ideology for psychological self-protection.

AUTONOMY AND SENSE OF BELONGING ARE BUILT-IN HUMAN NEEDS. BUT TRAUMA, ISOLATION AND PUNISHMENT ARE GOOD WAYS TO UNDERMINE THEM AND **CREATE INSECURE PEOPLE WHO NEED AN IDEOLOGY OR AUTHORITY TO FEEL SAFE.**

The Outcome: Denatured Selves, Derailed Intelligence

Traumatized and isolated, our minds don't work as well as they should. This has been happening for some time. Westerners for centuries have ascribed personhood only to humans (and perhaps some pets). This is unlike perhaps all other societies in the history of the world, who treat animals and even plants and mountains as agents with interests of their own.

Indigenous societies recognize that the world is full of non-human *beings*. And these beings communicate. Other animals and even plants are considered teachers to the easily-self-absorbed human beings.

In indigenous cultures, children learn to listen to the entities of the natural world. This is best started in early life when receptive intelligence can grow into one's way of being.

Over the last centuries, dominant Western culture has decidedly cut off non-humans from lines of communication. Nature has been "de-person-ated" into dead objects instead of living beings. (Ancient traditions and modern physics agree that all things are filled with energy.)

All the prior steps above push us into human "ingroupism," valuing humans over everything else. We humans chop down, cut into, eat up, and carelessly waste everything else for our own ends. A sense of human superiority is costing the rest of life on the planet (save microorganisms, who love having lots of us around as hosts). Of course, those who perceive things deeply note that we are in effect destroying our habitat, which will ultimately result in destroying ourselves. Is this really what we want to do?

IN INDIGENOUS CULTURES, CHILDREN LEARN TO LISTEN TO THE ENTITIES OF THE NATURAL WORLD. **THIS IS BEST STARTED IN EARLY LIFE WHEN RECEPTIVE INTELLIGENCE CAN GROW INTO ONE'S WAY OF BEING.**

One Remedy

Although we can learn about our earth by watching shows like *Cosmos*, it is not enough to know a place intellectually. One must feel connected to a land or place. Otherwise, placelessness leads to endless environmental destruction by those who don't care for any particular place.

To save ourselves, we could adopt the mindset of most peoples through history—that we are one among many creatures that share the life-giving earth. We would save more than ourselves.

To save ourselves and future generations of humans and non-humans, we could learn to reconnect to the entities of the earth. We could learn to listen to the other lives around us.

We can practice listening to the voices outside our windows. Better yet, we can step out and feel the breeze, touch the earth with our skin. We can say hello. We can learn more about our neighbors, whether they are tree, mountain or squirrel. We can conscientiously support their lives and interests.

Although this sounds crazy to a Western-raised mind, it is our heritage to be one among many, to be brothers and sisters in a biodiverse community. Maybe this is the crazy that isn't crazy.

Darcia Narvaez, Ph.D., is professor of psychology at the University of Notre Dame. She writes a blog for Psychology Today *called "Moral Landscapes" from which this essay is drawn. View article resources and author information here: pathwaystofamilywellness .org/references.html.*

Siblings at Birth:

A Rite OF Passage INTO THE Family

By Jeanne Ohm, D.C.

Photos courtesy of the Ohm family

We birthed all six of our children at home. Although the first four were what are now called "unattended" births (meaning no official birth practitioner was present), all but our first were attended by their siblings. For my husband and me, the decision to have our children with us at birth seemed most fitting. We considered birth to be the expansion of the family, and therefore an experience that the whole family should partake in.

In each of our births, our kids observed, casually commented and interacted to the level that they each chose. They were free to come in and out of our room throughout the whole process and they all elected to be present for the actual moment of birth. Regardless of their age, they did not react with fear or anxiousness. Rather there was in all of them a sense of awe.

Having our kids present at birth was one of the best family decisions we ever made. It set us up, in part, to be the close family that we are today. Certainly, each and every one of our kids got real clear about where they came from. They saw how they were an inherent part of their mother. They developed a profound trust in the abilities of the human body. They watched their mother gather strength and courage to complete a challenging process. They experienced their father providing unconditional love and unwavering support to their mother. And when they witnessed their sibling emerge into this world, and the miracle of life's first breath, they saw how the baby was cuddled, embraced, loved and accepted, just as they had been. They gained an immediate protectiveness and connection with the new baby as their own.

Children also bring their profound wisdom to birth. After my fifth baby was born, I curled up in bed with him, drawing him close to my breast as I had done with the others. His older brother, who had just witnessed me shedding the necessary blood, sweat and tears, snuggled up behind me and said, "Aww, it was all worth it, wasn't it?"

I believe that being present at birth allows a child to connect to their primal, human, vulnerable self in order to better unite with their liberating, invincible, spiritual essence. As individuals, they are strengthened in their trust and respect for the inborn intelligence that resides in each of us. This powerful experience imprints itself on their very being. Best of all, the value of birth becomes established as a familial tradition. Now our children have had their own homebirth experiences with all of their baby's siblings present. And then, shortly after, all cousins, aunts and uncles show up to celebrate and honor the precious new expression of life. We all share in the emotions, the love and some much-appreciated food. Everyone bonds together as a family just a bit more tightly.

For our family, these births continue to contribute to the special connection we now share. We all live within five minutes of each other. We get together every night of the week for dinner. We share our minds and emotions with diverse and interesting conversations. We share our love as we witness the cousins joyfully play. We partake of some much-appreciated food.

Jeanne Ohm, D.C., is an instructor, author and innovator. Her passions include training chiropractors for wellness care in pregnancy, birth and infancy; forming alliances for chiropractors with like-spirited practitioners; empowering mothers to make informed, conscious choices; and developing pertinent educational materials. View article resources and author information here: pathwaystofamilywellness.org/references.html.

"If you lay down, the baby will never come out."

An overview of traditional Native American birth practices

By Cole Deelah

As I celebrated Thanksgiving this year, I couldn't help but remember the culture and heritage of America's indigenous people, a culture mostly lost because of the establishment of European colonies. For PATHWAYS, I would like to highlight one of the lesser-celebrated aspects of the Native American people: their pregnancy and birth practices.

Ancient peoples, not understanding women's menstrual cycles, looked for answers in the natural world. They were astute enough to see the correlation between the lunar cycles and the cycles of a woman's life: waxing (young and nubile); full (middle-age and reproducing); and waning (old and wise). The bleeding time, like the lunar cycles, came cyclically and to fullness often when the moon was most ripe. Many saw menstrual blood as the origins of life and a deep source of wisdom.

Women were given special menses and birth huts in many Native American cultures. In today's society, we would see this as a disgraceful shunning. Yet, the tribes' women saw this as a time to rest from their daily chores, to bond with women around them, and to talk about womanly things, such as marriage, sex, birth and childrearing.

The land was seen as feminine: the mountains as breasts, the rivers and streams as the life flow, caves as the womb, and the plains as the body. Women were revered and regarded with respect and dignity, seen as the life-giving and tribe-nurturing citizens.

Pregnancy

The Blessing Way was a Navajo ritual meant to pamper the pregnant woman, bestowing blessings and well-wishes on her for her upcoming birth. Its ritualistic ceremonial cleansing, grooming, gifting, and nourishing lasted nine days, culminating in an all-night "no sleep" ritual, after which the expectant woman would greet the morning sun. The women of the tribe would surround the mother, rubbing her body, feeding her healthy foods, and giving her talismans of strength and remembrance. They would sing their creation song over her, the story of the Changing Woman.

Some tribes believed that pregnant women should not cross their legs, wear tied neckerchiefs, or have sex, and most taught that pregnant women should visualize only good things and should eat pregnancy-specific foods for a healthy baby. For example, the Cherokee recommended abstaining from eating raccoon, speckled trout and black walnuts.

Likewise, a woman was encouraged to walk a lot in order to keep her hips wide and open and to keep their baby small enough to pass through her pelvis. Women were encouraged to wash their hands and feet daily, and to avoid harsh weather.

The Navajo extended these proscriptions to the father as well, forbidding him to tie up animals (which was thought to tie up a baby in the womb, making labor difficult) and requiring that he wash his hands and feet daily.

Some women employed the use of herbs and tinctures to hasten birth, such as a Mahican concoction made of root bark or a Cherokee infusion of wild cherry bark, both of which were drank to bring about contractions. Other tribes used less medicinal means, such as having an elder "scare" the baby out.

Birth

Some tribes, such as the Hopi, required that a woman have a solitary birth, but many more tribes had woman-assisted births. Often, the laboring woman's mother or grandmother, or an elder tribal woman, would assist during the birth. Some tribes, such as the Kickapoo, allowed men to witness the labor and even assist.

Some gave birth within the sanctuary of the village, either in their homes or in ceremonial birth buildings (the Inuit and Algonquian tribes did this), while others (like the Mi'kmaq and Bella Koola) left the village to give birth in the woods or at the edge of a body of water.

The Navajo called a midwife "the one who holds." The Inuits called their midwives "cord mothers." The term *midewiwin* ("medicine man/medicine woman") was used universally to some degree or another, and particularly by the Anishinaabeg and Apache peoples.

Women walked, strutted, crawled, swayed and leaned. They remained mobile, moving their baby down, facilitating a faster birth. Laboring women would stand, kneel, sit, squat, hang, dance or otherwise move their babies down; the one position that a woman never birthed in was lying down. Some Native American cultures used smoke baths during birth to help relax the perineum. The smoke was usually created from laurel

leaves burned in a small clay pot, which the mother would squat or kneel over. Other times a secondary birth attendant would blow the smoke onto the mother's perineum.

Sometimes, a birth attendant helped by providing counterpressure on the perineum, or providing fundal pressure for prolonged labor. Other times, the mother would provide her own counterpressure to her fundus to help bring down a baby by wrapping a cloth or leather belt around her and pulling on the ends during a contraction.

Tribes had different birthing devices to help women to labor down. These included ropes (hung from rafters or tree branches), wooden blocks to squat on, stakes pounded into the ground to press against, low birth stools to sit upon, and others. Many tribes lit birth fires, warmed water for poultices or medicinal teas, and used oils for body or perineal massage. Some tribes used musical gourds, songs and chanting to help the mother during labor; other women would make sympathy sounds to help the woman cope.

More often than not, babies were not "caught" by human hands, but welcomed by the earth. Women would lay leaves under the mother's bottom and allow the baby to fall out onto the ground. The short drop would act as a stimulus, akin to our rough handling in today's Western cultures. Babies were generally rubbed vigorously with ashes or animal fats, and were bound tightly soon after birth. Women were encouraged to "discover" their babies and nurse them soon after birth.

THE LAND WAS SEEN AS FEMININE: THE MOUNTAINS AS BREASTS, THE RIVERS AND STREAMS AS THE LIFE FLOW, CAVES AS THE WOMB, AND THE PLAINS AS THE BODY.

Native American women were educated in the use of herbs and other natural means of helping with labor. Black or blue cohosh, red raspberry leaf, partridgeberry, American licorice, broom snakeweed, buckwheat, black chokeberry, smooth sumac, balsam root bark, birth root, corn smut, wild yam, black haw, hottentot fig, pennyroyal, bayberry, and cotton root were all employed for common childbirth issues, including long labor, postpartum hemorrhage and retained placenta.

The most publicized account of a birth-related Native American medicine is that of Sacagawea. As noted by Captain Meriwether Lewis in *The Journals of the Lewis and Clark Expedition:*

> *About five O clock this evening one of the wives of Charbono was delivered of a fine boy. It is worthy of remark that this was the first child which this woman had born, and as is common in such cases her labor was tedious and the pain violent. Mr. Jessome [a Mandan interpreter] informed me that he had frequently administered a small portion of the rattle of a snake, which he assured me had never failed to produce the desired effect, that of hastening the birth of the child; having the rattle of a snake by me I gave it to him and he administered two rings of it to the woman broken in small pieces with the fingers and added to a small quantity of water. Whether this medicine was truly the cause or not I shall not undertake to determine, but I was informed that she had not taken it more than ten minutes before she brought forth, perhaps this remedy may be worthy of future experiments, but I must confess that I want faith as to its efficacy.*

The Labyrinth

Native American peoples, especially the Hopi, Akimel O'odham, Tohono O'odham and Yaqui, used labyrinths to symbolize birth, rebirth and transition from one world to the next—emergence. The labyrinths were usually depicted with a cross in the center, representing the four cardinal directions, seasons of change, and sources of spirit and power. Unlike a maze, there is only one way in and out, so there is no fear of losing oneself. Instead, the labyrinth is a means of rebirth and discovery: finding oneself.

The Hopi people used the labyrinth to teach the principle of Mother/Child (*Tapu'at*). This included the Mother Earth and her relationship with her mortal child; the mortal mother and her relationship/journey to bringing forth her mortal child; and the creation story. The outer walls are the womb, while the lines of the labyrinth represent the twists and turns of life's journey and the umbilical cord, always connected either physically or spiritually with the mother. The center symbolizes the amniotic sac, the center of life, or the beginning of all knowledge and wisdom.

It is not certain that women walked labyrinths, but we do know that some drew them in the sands as a meditative rite during labor.

Postpartum

Native American women were robust, in excellent physical health, devoid of outside diseases and influences (by and large). They ate a diet rich in fresh produce and seasonal foods. This allowed for a quick and relatively uneventful recovery from childbirth. Although certain welcoming and new-parent rituals were observed, they were often quick to return to regular duties, usually after a short respite and lying-in period. Many women would take an after-birth tonic (of ergot or another remedy

indigenous to their area) to expel the placenta and help reduce blood loss.

Many tribes' customs required a lying-in time where women attended to the new mother and baby, banding together to take care of her house's needs, while also pampering the mother with grooming, binding, special nourishing, washing, steaming and massaging. Some cultures would swaddle the mother in a warm bed over heated stones, while others would house the mother in special steam huts.

The Shawnee required 10 days of lying-in in which the father could not see either the mother or his baby. The Picuris Pueblo required a 30-day lying-in period, after which the baby was named. Many tribes required that the father and a helper stay with the mother for this entire time of lying-in.

An example of the extent of naming and postpartum rituals is the Hopi purification ritual. The Hopi people require a 20-day lying-in period, during which the mother must not have the sun shine on her. On the night of the 19th day, a great feast is prepared in the mother's honor, and both she and the newborn are bathed carefully and ritualistically. The baby is rubbed with ash and anointed by the family, who suggest names to the father. The father, in turn, announces the sun's arrival. The grandmother of the tribe chooses the child's name and announces it as the baby's face is shown the light of day for the first time. Then, everyone except the mother returns to the home to feast; the mother goes to the sweat house to complete her purification.

Many Native American tribes cherish the placenta and/or the umbilical cord as sacred or mystical. Navajo tribes require that a baby's placenta be buried within the sacred four corners of the tribe's land, essentially binding the infant to the land and the tribe's ancestors. Likewise, the midewiwin traditionally performed the rites of cord-cutting and naming.

In many Plains tribes, the newborn was presented with a small beaded pouch that contained the remnants of their umbilical cord stump. The child would wear this throughout their lifetime, and many were buried with it in their old age. This talisman was thought to bring connection to the tribe and family unit, and serve as protection.

The Pueblo people would either bury the umbilical cord in the floor of the home (if it was a girl) or in the corn field (if it was a boy). On the fourth day after birth, the infant was presented to the sun. The shaman would name the child, and present him or her with a flint arrowhead or an ear of corn, depending on gender.

The Wichita people had their own postpartum customs. On the morning after a baby's birth, the elder women of the tribe would take the newborn down to a stream and pray for protection, strength and health, bathing the babe. Other Native American tribes have done similar river-immersion rituals for the first year of life for the baby.

The father had his own responsibility for ensuring a baby's health in Wichita culture. His first job as a new father was to make a cradling board. It was very ceremonial, with many specifics to adhere to while choosing the willow tree that would become his child's carrying place. He would offer supplications and prayers while laboring over the hewn wood to ensure his child's health.

Most tribes required that the father participate in the restrictions postpartum, or he was prescribed his own set of rituals to perform. The Tillamook people, for example, required the mother to have a 15-day lying-in time, during which the father forfeited sleep for 10 days. Likewise, many fathers swore to abstain from intercourse for a time or went on dietary restrictions with the mother of his child.

Childcare

Some women of the plains would grind dried buffalo manure to use as an absorbent powder in their babies' swaddling blankets. If a baby were to wet themselves, the damp powder was shaken out and new powder was added. Other tribes practiced elimination communication, and were able to move the infant into a position to relieve themselves without soiling the blankets or wrappings.

Women of all tribes carried their babies nearly exclusively for the first year. This allowed for ease of transportation, warmth, and immediate and extended nursing, while assuring that the newborn would have minimal chance of falling into natural harm (scrapes, nicks, falls, infection, puncture wounds, drownings or animal attacks). Babies slept with their mothers for the same reasons.

Carrying it Forward

I hope that you enjoyed learning a little about the beautiful rites of passage that our land's native people have practiced since time immemorial. One hopes that we, amid our technology, our busy lifestyles, and our impersonal communication practices, could take a step back and consider a lesson from this group of people. Life is sacred, life should be honored, and life should be cherished through holistic care and ritual.

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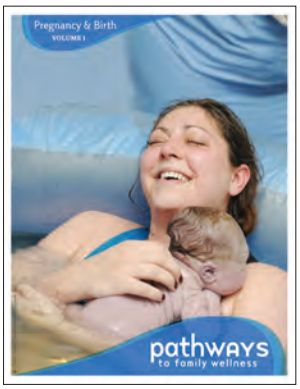

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Aluna

A Message to Little Brother

By Charles Eisenstein

A black line, a network of hidden connections, links all the sacred places on earth. If that line should be broken, calamities will ensue, and this beautiful world shall perish. Destroying a forest here and draining a swamp there might have dire consequences across the globe. The Kogi shamans cannot perform their work of maintaining the balance of nature much longer in the face of our depredations.

How are we to interpret this warning coming from the Kogi people of the Sierra Madre in Colombia, delivered through their latest film, *Aluna*?

Some may respond to the film with resistance, dismissing the Kogi's message as primitive magico-religious thinking. Or some may stuff the Kogi's beliefs and way of life into various ethnographic categories, a form of "Orientalism" that makes new ideas safe and makes them ours—a kind of imperialism. Or others who take for granted that scientific materialism constitutes basal reality will say, with sophistication, "Well, perhaps the Kogi are onto something after all. That 'black line' is a metaphor for ecological interconnectedness. Their talk of the 'voice of water' is code for the hydrological cycle. They are keen observers of nature and have articulated scientific truths in their own cultural language."

All these responses discourage any real, conceptual shifts in our understanding and they assume that we know better the nature of reality. If their message were merely, "We must take better care of nature," then our current understanding would be sufficient. But the Kogi people are inviting us into a much deeper change, one that begs us to ask if we really understand the nature of reality better than they do. It once seemed so. But today the fruits of our supposed understanding—social and ecological crisis—gnaw at our surety.

Reversing Colonialism

What makes *Aluna* remarkable is that fundamentally it is not a documentary. I have always been a little uncomfortable with documentaries about other cultures because they of necessity objectify their subjects, turning them into material for a video "document." By documenting others we incorporate them into our world, into a safe educational or inspirational frame. But this film is not a documentary.

The Kogi are not interested in being studied. They have not allowed anthropologists to live among them. They have not let their civilization become an object within ours. The implicit power relation between the ethnographer and the Kogi has been reversed. They, in fact, have been studying us, and with increasing alarm. "We have warned little brother," they tell us, "and little brother has not listened." Dare we take the Kogi at face value? Dare we hold them in full agency as the true authors not only of this film, but of a message sent to us on their initiative?

The Gift of Humility

In one telling scene, the Kogi mama (shaman) Shibulata visits an astronomical observatory in England. The astronomer is struck by the fact that Shibulata evinces no curiosity about the telescope. Perhaps he recognizes the telescope as another manifestation of the same desire to conquer nature that has destroyed the forests and rivers and mangrove swamps near his home. The astronomer shows him photographs of galaxies invisible to the naked eye. The mama is not impressed—he is here to teach us, not to learn from us. Shibulata displays an uncanny power, picking out from a large photograph the single star in it among multitudinous galaxies and other objects. Naming it, he says, "That star is not visible to our eyes."

In this film the Kogi tell us, sternly, imploringly, and with very great love, "You mutilate the world because you don't remember the Great Mother. If you don't stop, the world will die." Please believe us, they say. You must stop

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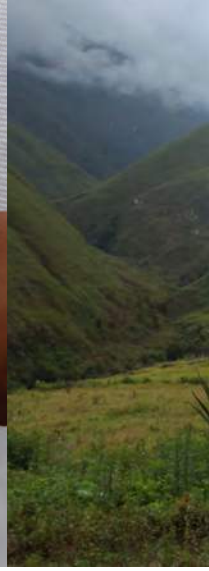

doing this. "Do you think we say these words for the sake of talking? We are speaking the truth."

Why hasn't "little brother" listened? It has been more than 20 years since the Kogi first spoke their message to the modern world. I think perhaps we have not listened because we have not yet inhabited the humility that this film embodies. We continue to box, contain and reduce the Kogi people and their message so that it can rest comfortably in our existing Story of the World.

The Kogi themselves say that thought is the scaffolding of matter; that without thought, nothing could exist. The official *Aluna* website describes the Kogi's view thusly: "We are not just plundering the world, we are dumbing it down, destroying both the physical structure and the thought underpinning existence." The conceptual reduction of the Kogi and indigenous groups in general to academic subjects, museum specimens, New Age fetish objects, exploitable labor or tourist spectacles is part of this dumbing down.

Thankfully, the requisite humility to truly hear the Kogi is fast upon us as our dominant cultural mythology falls apart. We face repeated humiliation in the failure of our cherished systems of politics, law, medicine, education and more. Only with increasingly strenuous and willful ignorance can we deny that the grand project of "civilization" is failing. We see now that what we do to nature we do to ourselves, that its conquest brings our death. The utopian mirage of the technologist and the social engineer recedes ever farther into the distance.

The breakdown of our categories and narratives, the breakdown of our Story of the World, gives us the gift of humility. That is the only thing that can open us to receive the teachings of the Kogi and other indigenous people—to truly receive them, and not merely insert them into some comfortable silo called "indigenous wisdom."

I am not suggesting that we adopt, part and parcel, the entire Kogi cosmology. We need not imitate their shamanic practices or learn to listen to bubbles in the water. What we must do is embrace the core understanding that motivates the attempt to listen to water in the first place: the understanding that nature is alive and intelligent, bearing certain qualities of a self that Western thought has arrogated to human beings alone. We must make it no longer an other; we must grant to nature the same agency that this film humbly grants to the Kogi. Then we will find our own ways of listening.

What Does Nature Want?

Granting subjectivity and agency to nature and everything in it does not mean to grant it human subjectivity and agency. It means asking, "What does the land want? What does the river want? What does the planet want?"—questions that seem crazy from the perspective of nature-as-thing.

The modern mind does not easily comprehend the idea of the intelligence of nature except through anthropomorphizing or deifying it—another attempt at conquest. The Kogi are not talking about a non-material, supernatural spirit infusing consciousness into otherwise dead matter. They do not abstract spirit, sacredness or consciousness out from matter. To do this denies the inherent being-ness of nature just as much as scientific materialism does. For the Kogi, matter is not a container for thought. Matter is thought made manifest—the thought of the Mother.

Materialism, however, isn't what it used to be. Science is recognizing that nature is composed of interdependent systems within systems, just like a human body; that soil mycorrhizal networks are as complex as brain tissue; that water can carry information and structure; that the earth and even the sun maintain homeostatic balance just as a body does. We are learning that order, complexity and organization are fundamental properties of matter, mediated through physical processes that we recognize—and perhaps by others we do not. The excluded spirit is coming back to matter, not from without but from within.

So the question "What does nature want?" does not depend on anything supernatural, like an external intelligence. The "wanting" is an organic process, an entelechy born of relationship, a movement toward an unfolding wholeness.

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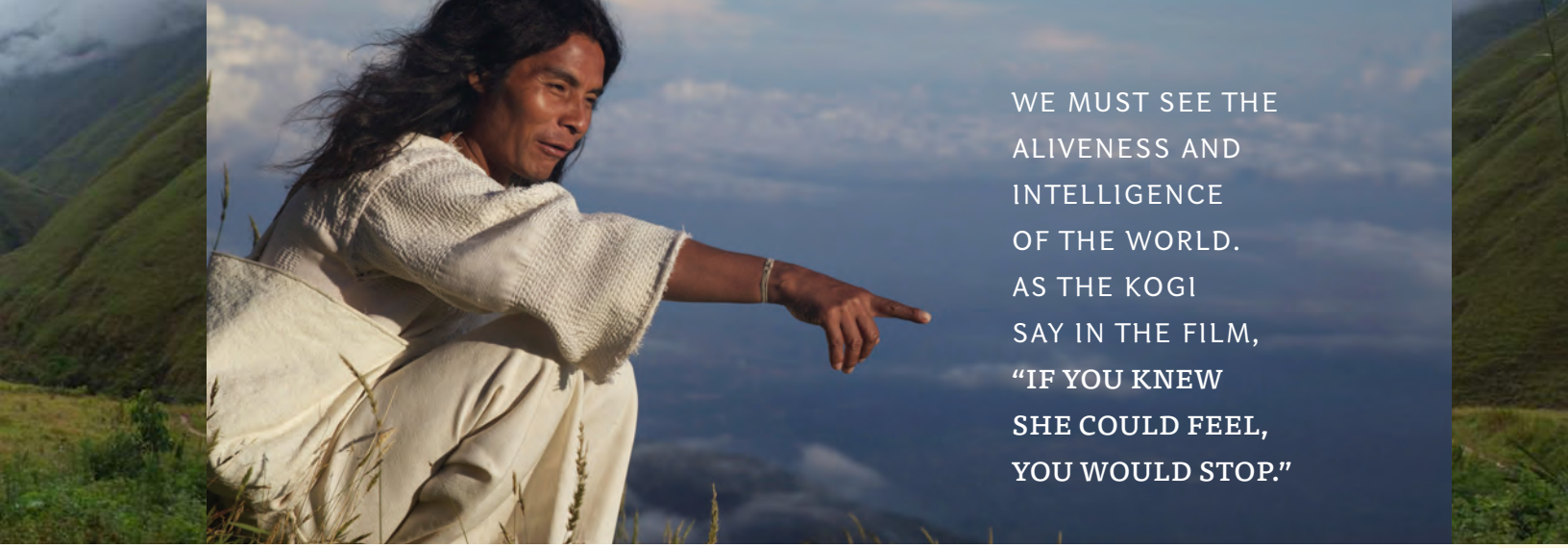


A Non-Utilitarian Argument Against Ecocide

In that understanding, we can no longer cut down forests and drain swamps, dam rivers and fragment ecosystems with roads, dig pit mines and drill wells with impunity. The Kogi say to do so damages the whole body of nature, just as if you cut off a person's limb or remove an organ. The well-being of all depends on the well-being of each. We cannot cut down one forest here and plant another there, assuring ourselves through the calculation of net carbon dioxide that we have done no damage. How do we know that we have not removed an organ? How do we know we have not destroyed, what the Kogi call an *esuana*—a key node on the black thread scaffolding the natural world? How do we know we have not destroyed a sacred tree, what the Kogi call "the father of the species," upon which the whole species depends?

Until we can know it, we'd best refrain from committing further ecocide on any scale. Each intact estuary, river, forest and wetland that remains to us, we must treat as sacred, while restoring whatever we can. The Kogi say we are close to the dying of the world.

As the film makes clear, science is beginning to recognize what the Kogi have always known. An invisible web of causality does indeed connect every place on Earth. Building a road that cuts off the natural water flow at a key site might initiate a cascade of changes—more evaporation, salinization, vegetation die-off, flooding, drought—that have far-reaching effects. We must understand these effects as exemplifications of a general principle of interconnectedness. Furthermore, we must see the aliveness and intelligence of the world. As the Kogi say in the film, "If you knew she could feel, you would stop."

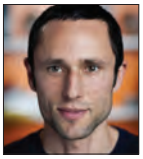
Otherwise, we are left only with the logic of instrumental utilitarianism as our reason to protect nature—save the rainforest because of its value to us. But that mindset is part of the problem. We need more love, not more self-interest. We know it is wrong to exploit another person for our own gain, because another person is a full subject with her own feelings, desires, pain and joy. If we knew that nature, too, was a full subject, we would stop ravaging her as well.

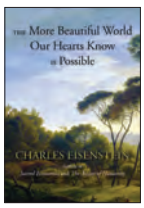
Aluna brings this knowing a little closer. Only by hardening our hearts can we view the film's images of filled-in swamps and bare, scarred mountains, and disbelieve that something is feeling very great pain. Only by the colonialistic dismissal of an entire culture's cosmology and ways of knowing can we uphold our own dying mythology of nature as an insensate source of materials and repository of wastes. The sober indignation of the Kogi defies easy dismissal. It is not hard to believe that they—the largest intact civilization that has remained separate from global industrialized society—are indeed "Elder Brother." It is not hard to believe their warning. To act on it, though, might require the same courage, patience and wisdom revealed in the Kogi.

From the Kogi Women:

When a baby is born the Mother is rejuvenated.
A daughter is like the Mother. She is the guardian of
the Mother. The Mother is the owner of everything.
All the rivers, all the mountains.
Without women, daughters, who would guard all of this?

When a baby is born you must have good thoughts.
Teach the example of others who have lived well.
If we don't teach this baby boy, he will not know how to think.
This baby girl will teach the next generation...
she will carry on the thread.





Charles Eisenstein is a speaker and writer focusing on themes of human culture and identity. He is the author of several books, most recently Sacred Economics *and* The More Beautiful World Our Hearts Know Is Possible. *His background includes a degree in mathematics and philosophy from Yale, a decade in Taiwan as a translator, and stints as a college instructor, a yoga teacher, and a construction worker. He currently writes and speaks full-time. He lives in Pennsylvania with his wife and four children. View article resources and author information here: pathwaystofamilywellness.org/references.html.*

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~ ~ ~ LAKOTA CODE OF ETHICS ~ ~ ~

Rise with the sun to pray.
Pray alone. Pray often. The Great Spirit will listen, if you only speak.

Be tolerant of those who are lost on their path.
Ignorance, conceit, anger, jealousy and greed stem from a lost soul. Pray that they will find guidance.

Search for yourself, by yourself.
Do not allow others to make your path for you.
It is your road, and yours alone. Others may walk it with you, but no one can walk it for you.

Treat the guests in your home with much consideration.
Serve them the best food, give them the best bed, and treat them with respect and honor.

Do not take what is not yours, whether from a person, a community, the wilderness or a culture.
It was neither earned nor given. It is not yours.

Respect all things that are placed upon this earth, whether they be people or plants.

Honor other people's thoughts, wishes and words.
Never interrupt another or mock or rudely mimic them.
Allow each person the right to personal expression.

Never speak of others in a bad way.
The negative energy that you put out into the universe will multiply when it returns to you.

All persons make mistakes.
And all mistakes can be forgiven.

Bad thoughts cause illness of the mind, body and spirit.
Practice optimism.

Nature is not for us, it is a part of us.
Things in nature are part of your worldly family.

Children are the seeds of our future.
Plant love in their hearts and water them with wisdom and life's lessons.
When they are grown, give them space to grow.

Avoid hurting the hearts of others.
The poison of your pain will return to you.

Be truthful at all times.
Honesty is the test of one's will within this universe.

Keep yourself balanced.
Your mental self, spiritual self, emotional self, and physical self all need to be strong, pure and healthy.
Work out the body to strengthen the mind. Grow rich in spirit to cure emotional ails.

Make conscious decisions as to who you will be and how you will react.
Be responsible for your own actions.

Respect the privacy and personal space of others.
Do not touch the personal property of others, especially sacred and religious objects. This is forbidden.

Be true to yourself first.
You cannot nurture and help others if you cannot nurture and help yourself first.

Respect others' religious beliefs.
Do not force your belief on others.

Share your good fortune with others.


"Humankind has not woven the web of life.
We are but one thread within it.
Whatever we do to the web, we do to ourselves.
All things are bound together.
All things connect."
—Chief Seattle, Duwamish (1780–1866)
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