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When Your Unborn Child is on Drugs, Alcohol or Tobacco (13 mins)

This videotape explains the dangers to the unborn child when a pregnant woman smokes, drinks, or uses any kind of drugs. Several mothers, from a variety of ethnic backgrounds, look back in horror at what their substance use did to their children.

Animation illustrates how drugs, alcohol and tobacco adversely affect the development of the fetus at each month of pregnancy, while emotional interviews with parents show the long-term psychological behavioural problems.

The program discusses the effects of both over the counter and prescription medications, and street drugs such as heroine, cocaine, and marijuana.

Additional topics include Fetal Alcohol Syndrome, miscarriage, stillbirths and problem pregnancies which put both the mother and fetus in danger.

The program also points out that both sporadic use and consistent abuse can be damaging.

The discussion guide summarizes learning objectives and provides pre and post viewing discussion topics such as the contribution of fathers to a healthy fetus, the social and economic effects of having an impaired child, and the benefits of discontinuing substance use after becoming pregnant (13 mins)

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Il-Video jista jigi akkwistat mis-Segretarjat Assistenza Socjali ta' l-Azzjoni Kattolika, Istitut Kattoliku, Furjana. Tony Mifsud, Tel: 2122 0286, Mob: 7920 4840, E-mail: tonymifsud@onvol.net - sas@socialassistance.org

The Secret Life of the Unborn Child

Thomas Verny, MD, with John Kelly

The womb is the child's first world. How he experiences it, as friendly or hostile, does create personality and character predispositions.

Thomas R. Verny is a psychiatrist, writer and academic. Presently he is Adjunct Professor of Human Development at St. Mary's University. His international best-seller, *The Secret Life of the Unborn Child* (with John Kelly) has been published in 24 countries. He is presently working on a new book: *Secret Lessons*, based on revolutionary new discoveries in the brain sciences and birth psychology.

Synopsis ©1998 by Meryn G. Callander

By creating a warm, emotionally enriching environment in utero, a woman can make a decisive difference in everything her child feels, hopes, dreams, thinks, and accomplishes throughout life.

Verny is a pioneer in the field of pre- and perinatal psychology, a father, and psychiatrist in private practice. Here he presents a wealth of research indicating that the unborn child is a deeply sensitive individual who forms a powerful relationship with his or her parents--and the outside world--while still in the womb.

While it is widely believed that the human fetus is a blank slate, lacking true sensation, emotional affect, or even the ability to feel pain, pregnant women through the ages have intuitively known what scientists have only recently discovered: that a mother's unborn child hears her voice and senses her love. The unborn child has significant sensory capabilities. **He can see, hear, and feel.**

For example, by the fourth month after conception, the unborn child has a well-developed sense of touch and taste. He can perceive a bright light shining on the mother's abdomen; if the light is particularly bright, he will lift his hands to shield his eyes. At five months, he will react to a loud sound by raising his hands and covering his ears. The unborn has the capacity to perceive and remember sounds of speech, to recognize a story heard repeatedly in utero, and to recognize his own mother's voice. He has formed the brain structures necessary for learning, and even awareness, sometime between the 28th and 32nd weeks of development.

Prenatal psychologists see the very core of human personality forming in the womb.

Studies show that this personality formation takes place through intensive communication between parents--especially the mother--and the unborn.

We know that most of what a mother eats, drinks or inhales is passed through her bloodstream into the body of her baby; **maternal emotions are transmitted physiologically as well.**

Stress hormones travel through the mother's bloodstream to the fetus, inducing the same stressful state in the unborn child.

Babies respond not only to a surge of adrenaline, but also to mother's *behavior*.

When she pats her stomach, talks, sings, or dances, the unborn child knows that mother is actively there.

Communication also occurs on the *psychological* plane, with baby responding to mother's

deepest thoughts and feelings.

This does not mean that every fleeting worry, doubt, or anxiety a woman has rebounds on her child.

What matters are deep persistent *patterns* of feeling, such as chronic anxiety or a wrenching ambivalence about motherhood.

On the other hand, thoughts infusing the baby with a sense of happiness or calm, set the stage for a balanced, happy, and serene disposition throughout life.

Because a child is the product of an unhappy marriage or the baby of a cool, ambivalent, or even catastrophic mother does not necessarily mean he will develop an adult case of schizophrenia, alcoholism, promiscuity, or compulsiveness. Nothing about the mind is that neat. But the womb is the child's first world. How he experiences it, as friendly or hostile, does create personality and character predispositions.

Verny also presents research indicating that the role of father is much more significant than generally accepted. His support is essential to the mother's--and thus, to their child's--wellbeing; what affects his sense of commitment to the marriage most deeply, is if and when he begins bonding with his child.

Profound parental and environmental influences also occur during and immediately after birth. The newborn responds best to gentleness, softness, and a caring touch--as distinct from bright lights, electrical beeps and the cold, impersonal atmosphere often associated with a medical birth. All this means that a mother's ability to remain calm during her pregnancy, to communicate a sense of love to her unborn baby, and to orchestrate a joyous, positive birth, contributes immensely to the emotional and physical health of her child for the rest of his life. □

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Communicating With Your Unborn Child

by Cassandra Eason

In pregnancy and in some cases even before, quite a high proportion of mothers believe they have been in contact with their unborn children. Up to a point, they have the support of Professor Peter Hepper of the School of Psychology at the Queen's University of Belfast who has studied prenatal learning extensively. He found that babies whose mothers had regularly watched a television soap opera during pregnancy responded to the musical theme after they were born.

Cathy from Essex, England, told me, "During the last month of my second pregnancy, I noticed how the baby inside me would react to familiar TV signature tunes, kicking furiously and moving excitedly. After the birth of my daughter I was constantly amazed at her reactions, almost from birth and for the next four or five months, to hearing these familiar tunes. She would jerk her head towards the TV as soon as the tune started and stop feeding and turn her whole body toward the source of the sound. It was certainly evidence that babies hear and remember prebirth sounds. I only wish I had introduced her to something a bit more classical!"

Professor Hepper noted: "Recognition is undoubtedly based on hearing, and in all probability requires the storing of highly specific patterns of sound. Babies tested only responded to the Neighbours theme and not any other tune or the Neighbours tune played backward. We have demonstrated learning as early as 24 weeks and other research has suggested that the Neighbours tune soothed fetuses as early as 12 weeks. It is unlikely to be psychic communication between mother and fetus, mainly because it is difficult to see how this would occur. There is undoubtedly, however, some communication between mother and baby. For example, there is evidence that the baby responds to the mother or anyone else pushing on the abdomen and will push back. Exactly what the fetus feels or gets from this is unknown, but this certainly stimulates the mother into action and believing she is interacting with her fetus."

One of his projects has also shown that babies just one hour old already prefer their mother's voice to that of another woman. Another project showed that newborns whose mothers had eaten garlic during the last weeks of pregnancy recognized the same smell on cotton wool.

Cathy's story is explicable in terms of known science. Does this inevitably rule out any possibility of a psychic connection?

Two-Way Communication

Many women talk and sing to their unborn children throughout pregnancy. Some believe that the communication is a two-way affair and will "see" or "hear" the infant in the womb. Felicity, who lives in the Home Counties of England, is now in her fifties with a daughter aged fifteen. Before her daughter was born, Felicity picked up information about the unborn child that even the most sophisticated scans today could not record. She used to talk to her unborn child, especially about the infant's father and older brother. Gradually she realized the baby was returning the communication and was talking to her in her mind.

It was as if I heard the baby's voice and conversations took place. When I was about six months pregnant I asked the baby if she was healthy and she said she was. "Any blemishes?" I asked her. It might seem strange to persist when the infant told me she

was healthy but first-time mothers are especially anxious. "Well," the baby told me, "I do have a birthmark on my heel that is shaped like an apple." When the baby was born she was absolutely perfect except for an apple-shaped mark on one of her heels. There were no such marks in the history of our family.

For Diane from Dorset, England, a reassuring message she interpreted as coming from her child helped her through a difficult labor. "I was in the hospital as I started getting contractions eight weeks early. I was put on a drip to stop them. I became very weak and anxious about my baby, as I also had a fibroid growing in my womb. I had developed a chest infection and was treated with large doses of antibiotics. One evening just as I was falling asleep I saw two large brown eyes looking at me calmly and happily telling me that everything was all right. I knew that it was my baby talking to me and I immediately felt relieved and calm.

When my son was born six weeks prematurely, he was in good health except for a long-lasting jaundice and I felt a very strong bond with him though he stayed in an incubator for four weeks.

The link between a mother and her unborn child has been studied by counselor Rosalie Denefeld who lives in Michigan and is the mother of two children. Her thesis studying the relationship between first-time mothers and their unborn children was produced as part of her master's degree in humanistic and clinical psychology at the Center for Humanistic Studies in 1984. She writes, "A woman who is pregnant for the first time seems to experience her relationship with her unborn child as a catalyst for personal expansion and an increased capacity for love. Because of the uniquely intimate physical unity between the pregnant woman and her unborn child there may exist a peak potential for interaction and communication on physical, emotional and spiritual levels. For some women such interaction facilitates a growing attachment between mother and unborn child, paralleling the physical development of the child.

"As the mother's body expanded, so did her personhood stretch and expand. Such expansion included an awareness of time as both limited and infinite. What feeds and empowers the attachment is the love which develops between mother and unborn child." She discovered that as the attachment grows between mother and unborn child, so the fear of the unknown, that is greatest with the first birth, diminishes.

Rosalie worked with ten first-time mothers using such techniques as focusing to discover deep levels of awareness within the body through intuitive means, keeping a journal, interviewing, art and music. The women were well educated, middle-class and married, and were experiencing a minimal amount of internal, family and social conflicts due to their pregnancies. She comments that their impressively clear verbal descriptions and artistic expressions provided a rich introduction to how pregnant women may experience relating to their unborn child.

On the spiritual level, Rosalie points out that "other than experiencing nine months in her own mother's womb, pregnancy is the only time a woman has the opportunity to experience a dramatic contrast with the separateness to which each of us is subject. Pregnancy is the ultimate intimacy possible between human beings. Pregnancy may be a vehicle meant to awaken love within women and bring more love into the world."

Some of the women Rosalie studied found their bodies picking up their unborn babies' feelings. Gail explained, "Every once in a while, I have a feeling but I don't know where it comes from. And then I realize that I am not the one having the feeling."

The first time Gail experienced it was during a thunderstorm. "Where we live is on top of a hill, very open. Our bedroom has two huge windows and the trees are right outside the window, so it seems almost as if you are outside. And when there are storms, it feels as if they enter the room. One night I woke up feeling really afraid. There was lightning

on the inside of the room and intense noise. There was so much noise from the thunder.

"I personally really love storms. I love to hear the thunder and I like to see the lightning. But I woke up and I was really afraid. I got out of bed and I walked around the house. I couldn't figure it out and suddenly I realized I wasn't the one who was afraid. It was the unborn baby. So I talked to the little one. I told the infant inside me that there was a storm and although the noise was disturbing, it was quite safe. The fear went away."

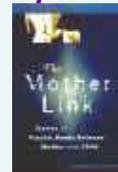
Several of the co-researchers experienced a sense of love coming from within the womb. Rosalie sees the most important implication of her work as helping mothers in disadvantaged circumstances, especially teenage mothers, to become aware of a prenatal bond, not just physically but emotionally and spiritually, so they may be more willing to change a harmful lifestyle that can be threatening to the fetus and also perhaps break out of the cycle of abuse that was reflected in their own lives. If a mother can relate to the fetus as a tiny person with fears and feelings, Rosalie is convinced that she will be less likely to smoke heavily and take drugs or excessive alcohol. What is more, the mother who is bonded to her fetus is more likely to take care of him or her after birth.

One of Rosalie's main conclusions is, "The first-time pregnant woman needs to believe she is capable of communicating with and positively influencing her baby. That belief must be strong enough to replace the need for visual evidence of communication that is available postnatally. After birth the infant's signal responses of body and eye movements will provide her with such visual evidence that she is indeed communicating with her baby. But during pregnancy satisfaction must come from the willing investment in the less tangible yet personally significant beginnings of a bond with her baby."

About The Author

Cassandra Eason is a Fellow at the Alister Hardy Research Center for Religious Experience in Oxford. She is the author of *Psychic Families*, *The Psychic Power of Children*, *The Handbook of Ancient Wisdom*, and *Complete Guide to Psychic Development*. An expert on mother and child bonding, she is the mother of five, and lives on the Isle of Wight. Book can be purchased (at a discount) by clicking on cover to the right, or calling 510-601-8301, faxing 510-601-8307, writing to Ulysses Press, PO Box 3440, Berkeley, CA 94703; ulysses@ulyssespress.com Article excerpted with permission from "**The Mother Link**", published by Ulysses Press/Seastone Books.

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Fetal Psychology

Janet L. Hopson

Psychology Today, October 1998

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Behaviorally speaking, there's little difference between a newborn baby and a 32-week-old fetus. A new wave of research suggests that the fetus can feel, dream, even enjoy *The Cat in the Hat*. The abortion debate may never be the same.

The scene never fails to give goose bumps: the baby, just seconds old and still dewy from the womb, is lifted into the arms of its exhausted but blissful parents. They gaze adoringly as their new child stretches and squirms, scrunches its mouth and opens its eyes. To anyone watching this tender vignette, the message is unmistakable. Birth is the beginning of it all, ground zero, the moment from which the clock starts ticking.

Not so, declares Janet DiPietro. Birth may be a grand occasion, says the Johns Hopkins University psychologist, but "it is a trivial event in development. Nothing neurologically interesting happens."

Armed with highly sensitive and sophisticated monitoring gear, DiPietro and other researchers today are discovering that the real action starts weeks earlier. At 32 weeks of gestation - two months before a baby is considered fully prepared for the world, or "at term" - a fetus is behaving almost exactly as a newborn. And it continues to do so for the next 12 weeks.

As if overturning the common conception of infancy weren't enough, scientists are creating a startling new picture of intelligent life in the womb. Among the revelations:

- By nine weeks, a developing fetus can hiccup and react to loud noises. By the end of the second trimester it can hear.
- Just as adults do, the fetus experiences the rapid eye movement (REM) sleep of dreams.
- The fetus savors its mother's meals, first picking up the food tastes of a culture in the womb.
- Among other mental feats, the fetus can distinguish between the voice of Mom and that of a stranger, and respond to a familiar story read to it.
- Even a premature baby is aware, feels, responds, and adapts to its environment.
- Just because the fetus is responsive to certain stimuli doesn't mean that it should be the target of efforts to enhance development. Sensory stimulation of the fetus can in fact lead to bizarre patterns of adaptation later on.

The roots of human behavior, researchers now know, begin to develop early - just weeks after conception, in fact. Well before a woman typically knows she is pregnant, her embryo's brain has already begun to bulge. By five weeks, the organ that looks like a lumpy inchworm has already embarked on the most spectacular feat of human development: the creation of the deeply creased and convoluted cerebral cortex, the part of the brain that will eventually allow the growing person to move, think, speak, plan, and create in a human way.

At nine weeks, the embryo's ballooning brain allows it to bend its body, hiccup, and react to loud

sounds. At week ten, it moves its arms, "breathes" amniotic fluid in and out, opens its jaw, and stretches. Before the first trimester is over, it yawns, sucks, and swallows, as well as feels and smells. By the end of the second trimester, it can hear; toward the end of pregnancy, it can see.

Fetal Alertness

Scientists who follow the fetus' daily life find that it spends most of its time not exercising these new abilities but sleeping. At 32 weeks, it drowns 90 to 95% of the day. Some of these hours are spent in deep sleep, some in REM sleep, and some in an indeterminate state, a product of the fetus' immature brain that is different from sleep in a baby, child, or adult. During REM sleep, the fetus' eyes move back and forth just as an adult's eyes do, and many researchers believe that it is dreaming. DiPietro speculates that fetuses dream about what they know - the sensations they feel in the womb.

Closer to birth, the fetus sleeps 85 or 90% of the time: the same as a newborn. Between its frequent naps, the fetus seems to have "something like an awake alert period," according to developmental psychologist William Filer, Ph.D., who with his Columbia University colleagues is monitoring these sleep and wakefulness cycles in order to identify patterns of normal and abnormal brain development, including potential predictors of sudden infant death syndrome. Says Filer, "We are, in effect, asking the fetus: 'Are you paying attention? Is your nervous system behaving in the appropriate way?'"

Fetal Movement

Awake or asleep, the human fetus moves 50 times or more each hour, flexing and extending its body, moving its head, face, and limbs and exploring its warm, wet compartment by touch. Heidelise Als, Ph.D., a developmental psychologist at Harvard Medical School, is fascinated by the amount of tactile stimulation a fetus gives itself. "It touches a hand to the face, one hand to the other hand, clasps its feet, touches its foot to its leg, its hand to its umbilical cord," she reports.

Als believes there is a mismatch between the environment given to preemies in hospitals and the environment they would have had in the womb. She has been working for years to change the care given to preemies so that they can curl up, bring their knees together, and touch things with their hands as they would have for weeks in the womb.

Along with such common movements, DiPietro has also noted some odder fetal activities, including "licking the uterine wall and literally walking around the womb by pushing off with its feet." Laterborns may have more room in the womb for such maneuvers than first babies. After the initial pregnancy, a woman's uterus is bigger and the umbilical cord longer, allowing more freedom of movement. "Second and subsequent children may develop more motor experience in utero and so may become more active infants," DiPietro speculates.

Fetuses react sharply to their mother's actions. "When we're watching the fetus on ultrasound and the mother starts to laugh, we can see the fetus, floating upside down in the womb, bounce up and down on its head, bum-bum-bum, like it's bouncing on a trampoline," says DiPietro. "When mothers watch this on the screen, they laugh harder, and the fetus goes up and down even faster. We've wondered whether this is why people grow up liking roller coasters."

Fetal Taste

Why people grow up liking hot chilies or spicy curries may also have something to do with the fetal environment. By 13 to 15 weeks a fetus' taste buds already look like a mature adult's, and doctors know that the amniotic fluid that surrounds it can smell strongly of curry, cumin, garlic, onion and other essences from a mother's diet. Whether fetuses can taste these flavors isn't yet known, but scientists have found that a 33-week-old preemie will suck harder on a sweetened nipple than on a plain rubber one.

"During the last trimester, the fetus is swallowing up to a liter a day" of amniotic fluid, notes Julie Mennella, Ph.D., a biopsychologist at the Monell Chemical Senses Center in Philadelphia. She thinks the fluid may act as a "flavor bridge" to breast milk, which also carries food flavors from the mother's

diet.

Fetal Hearing

Whether or not a fetus can taste, there's little question that it can hear. A very premature baby entering the world at 24 or 25 weeks responds to the sounds around it, observes Als, so its auditory apparatus must already have been functioning in the womb. Many pregnant women report a fetal jerk or sudden kick just after a door slams or a car backfires.

Even without such intrusions, the womb is not a silent place. Researchers who have inserted a hydrophone into the uterus of a pregnant woman have picked up a noise level "akin to the background noise in an apartment," according to DiPietro. Sounds include the whooshing of blood in the mother's vessels, the gurgling and rumbling of her stomach and intestines, as well as the tones of her voice filtered through tissues, bones, and fluid, and the voices of other people coming through the amniotic wall. Fifer has found that fetal heart rate slows when the mother is speaking, suggesting that the fetus not only hears and recognizes the sound, but is calmed by it.

Fetal Vision

Vision is the last sense to develop. A very premature infant can see light and shape; researchers presume that a fetus has the same ability. Just as the womb isn't completely quiet, it isn't utterly dark, either. Says Fifer: "There may be just enough visual stimulation filtered through the mother's tissues that a fetus can respond when the mother is in bright light," such as when she is sunbathing.

Japanese scientists have even reported a distinct fetal reaction to flashes of light shined on the mother's belly. However, other researchers warn that exposing fetuses (or premature infants) to bright light before they are ready can be dangerous. In fact, Harvard's Als believes that retinal damage in premature infants, which has long been ascribed to high concentrations of oxygen, may actually be due to overexposure to light at the wrong time in development.

A six-month fetus, born about 14 weeks too early, has a brain that is neither prepared for nor expecting signals from the eyes to be transmitted into the brain's visual cortex, and from there into the executive-branch frontal lobes, where information is integrated. When the fetus is forced to see too much too soon, says Als, the accelerated stimulation may lead to aberrations of brain development.

Fetal Learning

Along with the ability to feel, see, and hear comes the capacity to learn and remember. These activities can be rudimentary, automatic, even biochemical. For example, a fetus, after an initial reaction of alarm, eventually stops responding to a repeated loud noise. The fetus displays the same kind of primitive learning, known as habituation, in response to its mother's voice, Fifer has found.

But the fetus has shown itself capable of far more. In the 1980s, psychology professor Anthony James DeCasper, Ph.D., and colleagues at the University of North Carolina at Greensboro, devised a feeding contraption that allows a baby to suck faster to hear one set of sounds through headphones and to suck slower to hear a different set. With this technique, DeCasper discovered that within hours of birth, a baby already prefers its mother's voice to a stranger's, suggesting it must have learned and remembered the voice, albeit not necessarily consciously, from its last months in the womb. More recently, he's found that a newborn prefers a story read to it repeatedly in the womb - in this case, *The Cat in the Hat* - over a new story introduced soon after birth.

DeCasper and others have uncovered more mental feats. Newborns can not only distinguish their mother from a stranger speaking, but would rather hear Mom's voice, especially the way it sounds filtered through amniotic fluid rather than through air. They're xenophobes, too: they prefer to hear Mom speaking in her native language than to hear her or someone else speaking in a foreign tongue.

By monitoring changes in fetal heart rate, psychologist JeanPierre Lecanuet, Ph.D., and his colleagues in Paris have found that fetuses can even tell strangers' voices apart. They also seem to like certain

stories more than others. The fetal heartbeat will slow down when a familiar French fairy tale such as "La Poulette" ("The Chick") or "Le Petit Crapaud" ("The Little Toad"), is read near the mother's belly. When the same reader delivers another unfamiliar story, the fetal heartbeat stays steady.

The fetus is likely responding to the cadence of voices and stories, not their actual words, observes Fifer, but the conclusion is the same: the fetus can listen, learn, and remember at some level, and, as with most babies and children, it likes the comfort and reassurance of the familiar.

Fetal Personality

It's no secret that babies are born with distinct differences and patterns of activity that suggest individual temperament. Just when and how the behavioral traits originate in the womb is now the subject of inter

In the first formal study of fetal temperament in 1996, DiPietro and her colleagues recorded the heart rate and movements of 31 fetuses six times before birth and compared them to readings taken twice after birth. (They've since extended their study to include 100 more fetuses.) Their findings: fetuses that are very active in the womb tend to be more irritable infants. Those with irregular sleep/wake patterns in the womb sleep more poorly as young infants. And fetuses with high heart rates become unpredictable, inactive babies.

"Behavior doesn't begin at birth," declares DiPietro. "It begins before and develops in predictable ways." One of the most important influences on development is the fetal environment. As Harvard's Als observes, "The fetus gets an enormous amount of 'hormonal bathing' through the mother, so its chronobiological rhythms are influenced by the mother's sleep/wake cycles, her eating patterns, her movements."

The hormones a mother puts out in response to stress also appear critical. DiPietro finds that highly pressured mothers-to-be tend to have more active fetuses--and more irritable infants. "The most stressed are working pregnant women," says DiPietro. "These days, women tend to work up to the day they deliver, even though the implications for pregnancy aren't entirely clear yet. That's our cultural norm, but I think it's insane."

Als agrees that working can be an enormous stress, but emphasizes that pregnancy hormones help to buffer both mother and fetus. Individual reactions to stress also matter. "The pregnant woman who chooses to work is a different woman already from the one who chooses not to work," she explains.

She's also different from the woman who has no choice but to work. DiPietro's studies show that the fetuses of poor women are distinct neurobehaviorally--less active, with a less variable heart rate--from the fetuses of middle-class women. Yet "poor women rate themselves as less stressed than do working middle-class women," she notes. DiPietro suspects that inadequate nutrition and exposure to pollutants may significantly affect the fetuses of poor women.

Stress, diet, and toxins may combine to have a harmful effect on intelligence. A recent study by biostatistician Bernie Devlin, Ph.D., of the University of Pittsburgh, suggests that genes may have less impact on IQ than previously thought and that the environment of the womb may account for much more. "Our old notion of nature influencing the fetus before birth and nurture after birth needs an update," DiPietro insists. "There is an antenatal environment, too, that is provided by the mother."

Parents-to-be who want to further their unborn child's mental development should start by assuring that the antenatal environment is wellnourished, low-stress, drug-free. Various authors and "experts" also have suggested poking the fetus at regular intervals, speaking to it through a paper tube or "pregaphone," piping in classical music, even flashing lights at the mother's abdomen.

Does such stimulation work? More importantly: Is it safe? Some who use these methods swear their children are smarter, more verbally and musically inclined, more physically coordinated and socially adept than average. Scientists, however, are skeptical.

"There has been no defended research anywhere that shows any enduring effect from these

stimulations," asserts Filer. "Since no one can even say for certain when a fetus is awake, poking them or sticking speakers on the mother's abdomen may be changing their natural sleep patterns. No one would consider poking or prodding a newborn baby in her bassinet or putting a speaker next to her ear, so why would you do such a thing with a fetus?"

Als is more emphatic. "My bet is that poking, shaking, or otherwise deliberately stimulating the fetus might alter its developmental sequence, and anything that affects the development of the brain comes at a cost."

Gently talking to the fetus, however, seems to pose little risk. Fifer suggests that this kind of activity may help parents as much as the fetus. "Thinking about your fetus, talking to it, having your spouse talk to it, will all help prepare you for this new creature that's going to jump into your life and turn it upside down," he says--once it finally makes its anti-climactic entrance.

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