

1

00:00:00,000 --> 00:00:15,901

As the mother moves, what happens to the baby in the womb?

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00:00:15,901 --> 00:00:25,408

Does it have any way of knowing what is occurring outside?

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00:00:25,408 --> 00:00:35,056

New discoveries have brought an entirely new focus to the study of life before birth.

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00:00:35,056 --> 00:00:44,703

Scientists now believe that the unborn child can actually hear, feel and see.

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00:00:44,703 --> 00:00:50,708

Is it possible that it can even think?

6

00:01:15,728 --> 00:01:20,732

This series presents information based in part on theory and conjecture.

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00:01:20,732 --> 00:01:36,744

The producer's purpose is to suggest some possible explanations, but not necessarily the only ones to the mysteries we will examine.

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00:01:36,744 --> 00:01:49,754

There are a few moments in the human experience as magical as the instant of birth.

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00:01:49,754 --> 00:01:55,759

What influences has this baby encountered in nine months? How aware was he of his surroundings?

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00:01:55,759 --> 00:02:02,765

Will he remember his birth and life before birth?

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00:02:02,765 --> 00:02:15,775

In nine months, the unborn has traveled an enormous distance from a single fertilized cell to a complete individual.

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00:02:15,775 --> 00:02:21,780

From the moment of fertilization, these minute cells will transform themselves into a human fetus.

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00:02:21,780 --> 00:02:29,786

Two hundred million cells will eventually comprise this new person.

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00:02:29,786 --> 00:02:35,791

A tiny heart beats strongly after only four weeks.

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00:02:35,791 --> 00:02:45,798

Deep in the womb and about the size of an adult thumb, a delicate cartilage skeleton begins to take shape at five weeks.

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00:02:45,798 --> 00:02:59,809

While the physical growth of the fetus is astounding, a great deal of controversy still exists as to when human life actually begins.

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00:02:59,809 --> 00:03:10,818

The fetus is physically complete after twelve weeks. Barely three inches long, it can move its head, squint, frown and stretch its arms and legs.

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00:03:10,818 --> 00:03:16,823

Between three and six months, the fetus grows to eight inches inside these cramped quarters.

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00:03:16,823 --> 00:03:22,828

Its fingernails can scratch its skin and gender is obvious.

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00:03:22,828 --> 00:03:29,833

At eighteen weeks, when the bones are solid and the muscles strong, the baby can punch and kick its mother.

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00:03:29,833 --> 00:03:34,837

Already the unborn wants to suck its thumb.

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00:03:34,837 --> 00:03:50,850

Soft hair grows in the last three months. The senses develop, eyes open and close, and it can hear and perhaps understand the mother's world.

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00:03:50,850 --> 00:03:57,855

Everything that affects a pregnant woman influences her growing fetus.

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00:03:57,855 --> 00:04:08,864

Dr. Kenneth L. Jones, director of the Birth Defects Clinic at the University of California, San Diego, describes the danger of drugs on the fetus during its most vulnerable period of growth.

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00:04:08,864 --> 00:04:18,872

It would appear that the first trimester of pregnancy, the first three months of the pregnancy, is the most critical time as far as the fetus is concerned, as far as most drugs and chemicals are

concerned.

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00:04:18,872 --> 00:04:29,880

The reason for that is that that is the period when the organs are developing in the developing fetus and embryo.

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00:04:29,880 --> 00:04:38,887

By the end of the first trimester, by the end of the third month of gestation, the baby is completely formed. All the organs are formed.

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00:04:38,887 --> 00:04:51,898

And after that, it really just is a process of growth and more development of the fetus. But all the organs are really formed by the time the fetus is three months old.

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00:04:51,898 --> 00:05:00,905

So that time, that first three months of the pregnancy, is most critical as far as most drugs and chemicals are concerned.

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00:05:00,905 --> 00:05:14,916

Despite these warnings, the average woman takes about 14 different drugs during pregnancy, although it is unclear what effect many of these chemicals have on the developing baby.

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00:05:14,916 --> 00:05:26,925

These children were tragically deformed by the tranquilizer thalidomide, taken by many pregnant women in the late 1950s and early 1960s.

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00:05:26,925 --> 00:05:32,930

There are other more commonplace agents that might harm the fetus.

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00:05:32,930 --> 00:05:47,942

Drinking and smoking are a normal part of life. Now it is known that even in minimal amounts, smoking and drinking may have a detrimental effect upon the fetus throughout pregnancy.

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00:05:47,942 --> 00:05:52,945

We were asked to see a group of children, all of whom were born to chronically alcoholic women.

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00:05:52,945 --> 00:06:03,954

And we found that the eight children that we saw all had some very characteristic features which made them very similar.

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00:06:03,954 --> 00:06:21,968

They were all very small at the time of birth, which is to say they failed to thrive inside their mother, presumably because that high alcohol content that she was drinking was getting through her bloodstream across the baby's placenta and into the baby's bloodstream.

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00:06:21,968 --> 00:06:25,971

And it was affecting the growth of the baby in utero.

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00:06:26,972 --> 00:06:37,981

Babies born to women who smoke during their pregnancy are smaller at the time of birth than babies born to women who don't smoke during pregnancy.

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00:06:37,981 --> 00:06:40,983

And obviously they are.

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00:06:40,983 --> 00:06:44,986

Dr. Thomas Verney, author of *The Secret Life of the Unborn Child*.

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00:06:44,986 --> 00:06:51,992

Now, for a long time we have known, of course, that there is physiological communication between the unborn child and the mother.

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00:06:51,992 --> 00:07:00,999

We know that everything that the mother eats and drinks, alcohol, smoking, all these things, the nicotine, go right through the placental barrier.

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00:07:00,999 --> 00:07:09,005

One researcher did an interesting study which went a little bit further than just what the mother eats.

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00:07:09,005 --> 00:07:18,012

He asked several of the mothers who were habitual smokers to only think of having a cigarette.

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00:07:19,013 --> 00:07:22,015

Just consider for a moment that you're going to light up.

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00:07:22,015 --> 00:07:34,025

The moment that mothers just thought of having a cigarette, their unborn children immediately reacted to their thoughts as if they, in fact, were smoking up.

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00:07:34,025 --> 00:07:39,029

Now, there is no physiological explanation for this.

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00:07:40,030 --> 00:07:48,036

We know of no neurochemicals that are produced in a person when they just think of having a cigarette.

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00:07:48,036 --> 00:07:51,038

So something else is going on here.

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00:07:52,039 --> 00:07:57,043

The fetus may be more aware of its surroundings than previously understood.

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00:08:00,045 --> 00:08:07,051

At Cedars-Sinai Hospital, Dr. Calvin Hobel, director of obstetrics and gynecology, comments.

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00:08:07,051 --> 00:08:17,059

There are indications and studies which suggest that the fetus can interpret its mother's feelings and how the mother feels about its fetus.

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00:08:17,059 --> 00:08:28,067

If a mother is stressed and concerned about her pregnancy and she can release hormones which influence the environment of the fetus,

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00:08:28,067 --> 00:08:40,077

and I think that the fetus is in a position where it can interpret that type of information which can have an effect on the fetus and its development.

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00:08:40,077 --> 00:08:47,082

New methods of monitoring the health and development of the fetus may relieve the usual anxieties that accompany pregnancy.

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00:08:48,083 --> 00:08:57,090

Carol Jackson, one of Dr. Hobel's patients, is now in her fourth month and has decided to have a sonogram to be sure that her baby is healthy.

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00:08:57,090 --> 00:09:04,096

On a television screen, she can see her baby move and actually count its fingers and toes.

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00:09:05,096 --> 00:09:15,104

A sonogram uses the principle of sound waves, much like sonar is used in the Navy to search for submarines in the ocean.

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00:09:16,105 --> 00:09:22,110

Sound waves of this magnitude are very safe and do not harm the fetus.

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00:09:25,112 --> 00:09:33,118

Because Carol is 38 and has a family history of problem pregnancies, her doctor has also recommended amniotic testing.

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00:09:33,118 --> 00:09:41,125

A hollow needle is carefully inserted through the abdomen into the amniotic sac that surrounds and protects the fetus.

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00:09:42,125 --> 00:10:03,142

In this fluid are cells that are exfoliated from the fetus into the amniotic fluid and by taking a sample of the fluid and then in tissue culture in the laboratory we can grow these cells and we can study their genetic components.

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00:10:04,143 --> 00:10:11,148

Using this test we can then identify that fetus which has abnormal chromosomes.

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00:10:13,150 --> 00:10:21,156

The test results indicate no down syndrome. Given a normal pregnancy, she will give birth to a healthy baby girl.

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00:10:24,158 --> 00:10:29,162

Carol might wonder if her baby locked in the womb is aware and can feel.

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00:10:30,163 --> 00:10:42,173

The fetus seems insulated from outside thoughts and feelings. However, new studies indicate that the unborn is capable of thought, emotion and memory.

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00:10:46,176 --> 00:10:54,182

A lift, again keeping the knees over the toes, and bring them back.

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00:10:54,182 --> 00:11:01,188

There are a number of influences upon the baby that would surprise many pregnant women.

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00:11:06,192 --> 00:11:13,197

Jane Fonda's work out is one of many health centers recognizing the benefits of well-planned exercise during pregnancy.

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00:11:14,198 --> 00:11:24,206

Recent testing indicates that the baby, particularly during the later months in the womb, is very much aware of its mother's activities.

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00:11:28,209 --> 00:11:36,215

Recently it has been shown that by the age of six months you can do electron cephalograms which have brain waves studies of the unborn child.

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00:11:37,216 --> 00:11:45,222

From these you can see that some of the time the unborn child is asleep and some of the time he is awake.

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00:11:46,223 --> 00:11:52,228

Furthermore, during the time that he is asleep it can be shown that he has ram sleep which is rapid eye movement sleep.

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00:11:53,228 --> 00:11:59,233

Rapid eye movement sleep almost always connotes in adults dreaming.

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00:12:00,234 --> 00:12:05,238

There is no reason to suppose that the same would not apply to the unborn child.

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00:12:06,239 --> 00:12:18,248

So that what we have here in terms of the hard scientific data is proof positive that at least the neurological substrate is there and which memory can build.

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00:12:19,249 --> 00:12:28,256

Which really is the absolute foundation. Without that I could not say that a child is an aware, sensing, feeling human being as I am saying.

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00:12:29,257 --> 00:12:34,261

If the unborn baby has a memory what kind of events could it recall?

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00:12:35,261 --> 00:12:40,265

Dr. David Chamberlain of the Anxiety Treatment Center in San Diego has tried to find out.

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00:12:41,266 --> 00:12:46,270

Through hypnosis Linda Nickerson retraces her pre-birth experiences.

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00:12:47,271 --> 00:12:50,273

I am in my mother but we are in the house.

82

00:12:51,274 --> 00:12:53,276

You are in your mother but we are in the house.

83

00:12:54,276 --> 00:12:55,277

Yeah.

84

00:12:56,278 --> 00:12:57,279

What part of the house are you in?

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00:12:57,279 --> 00:12:59,280

By the door. The front door.

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00:13:00,281 --> 00:13:02,283

By the front door? What is happening there?

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00:13:03,283 --> 00:13:06,286

My mom is laughing and we are going somewhere.

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00:13:07,287 --> 00:13:08,287

She is laughing?

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00:13:10,289 --> 00:13:11,290

And you are going somewhere?

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00:13:12,291 --> 00:13:14,292

Is it just you and your mother together?

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00:13:15,293 --> 00:13:16,294

No.

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00:13:17,294 --> 00:13:19,296

I think she is going somewhere with my father.

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00:13:21,298 --> 00:13:23,299

So the three of you are going off somewhere?

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00:13:23,299 --> 00:13:24,300

Uh huh.

95

00:13:26,302 --> 00:13:28,303

How is it for you when your mother laughs?

96

00:13:29,304 --> 00:13:30,305

It's nice.

97

00:13:32,306 --> 00:13:33,307

It's like...

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00:13:36,309 --> 00:13:38,311

I can't explain it. It's just nice.

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00:13:39,312 --> 00:13:40,313

It's nice.

100

00:13:41,313 --> 00:13:44,316

It makes me feel like a warm fuzzy or something. A little ball of warmth.

101

00:13:45,316 --> 00:13:46,317

Uh huh.

102

00:13:47,318 --> 00:13:50,320

I would be alright with you to remember something unpleasant that happened in the womb.

103

00:13:50,320 --> 00:13:54,324

Alright, when I touch your forehead, that memory will come to you.

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00:13:55,324 --> 00:13:58,327

Something very unpleasant that happened while you were inside.

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00:14:02,330 --> 00:14:03,331

Where are you now?

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00:14:04,331 --> 00:14:06,333

In the bedroom.

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00:14:08,335 --> 00:14:10,336

My mother is crying.

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00:14:11,337 --> 00:14:13,338

And she is really upset.

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00:14:15,340 --> 00:14:17,342

Everything seems dark.

110

00:14:17,342 --> 00:14:19,343

Everything seems dark.

111

00:14:22,346 --> 00:14:23,346

It feels...

112

00:14:24,347 --> 00:14:26,349

She keeps shaking and it makes me shake.

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00:14:28,350 --> 00:14:30,352

And I keep wanting it to stop, but it won't.

114

00:14:33,354 --> 00:14:35,356

Alright, why don't you come forward now?

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00:14:36,357 --> 00:14:40,360

And this time when I touch your forehead, let it be the time that you are actually being born.

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00:14:41,361 --> 00:14:42,361

Be there now.

117

00:14:43,362 --> 00:14:47,365

The doctor is putting his hands on my temples.

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00:14:48,366 --> 00:14:52,369

And I don't want him to do that because I want to do it by myself.

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00:14:55,372 --> 00:14:56,372

Now he's pulling me out.

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00:14:58,374 --> 00:14:59,375

And I feel kind of...

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00:15:00,375 --> 00:15:01,376

Scared.

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00:15:02,377 --> 00:15:03,378

Scared?

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00:15:03,378 --> 00:15:04,379

Well...

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00:15:06,380 --> 00:15:07,381

It feels real different.

125

00:15:08,382 --> 00:15:09,383

It's kind of cold.

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00:15:09,383 --> 00:15:10,383

Cold?

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00:15:10,383 --> 00:15:11,384

Yeah, because I'm all wet.

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00:15:15,387 --> 00:15:20,391

And then the doctor brings me over and he lays me on my mother's stomach.

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00:15:21,392 --> 00:15:22,393

Lays you on your mother's stomach?

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00:15:22,393 --> 00:15:23,394

Mm-hmm.

131

00:15:24,394 --> 00:15:25,395

How is that?

132

00:15:25,395 --> 00:15:26,396

It's nice.

133

00:15:29,398 --> 00:15:33,401

Adele Miller, Linda's mother, is surprised by the accuracy of her daughter's recollections.

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00:15:33,401 --> 00:15:39,406

When I think back about the birth when she was born, I thought of it as an experience that I had.

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00:15:41,408 --> 00:15:44,410

And now I find out it's an experience we both had.

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00:15:44,410 --> 00:15:45,411

It's one we both shared.

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00:15:47,412 --> 00:15:51,416

You have to appreciate the fact that in the normal operation and economy of the mind,

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00:15:52,416 --> 00:15:56,419

we're always storing things, we're always filing away old experiences.

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00:15:57,420 --> 00:16:00,423

And we're always finding things that are not the same.

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00:16:00,423 --> 00:16:01,423

We're always storing things.

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00:16:01,423 --> 00:16:03,425

We're always filing away old experiences.

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00:16:03,425 --> 00:16:05,427

This is simply the way we're built.

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00:16:05,427 --> 00:16:08,429

We don't have immediate memory of everything that ever happened to us.

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00:16:08,429 --> 00:16:09,430

We file it away.

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00:16:12,432 --> 00:16:14,434

Naturally, things that happened long, long ago,

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00:16:15,434 --> 00:16:17,436

are kind of filed away the deepest.

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00:16:17,436 --> 00:16:19,438

And it takes a little more work to get back to them.

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00:16:19,438 --> 00:16:20,438

They are there.

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00:16:20,438 --> 00:16:23,441

They are somehow recorded by the mind and held.

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00:16:24,441 --> 00:16:27,444

And you have to go to a bit of effort to get at that.

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00:16:27,444 --> 00:16:32,448

But hypnosis is the very best means that I know of for uncovering that material.

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00:16:33,449 --> 00:16:34,449

But it's not the only means.

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00:16:35,450 --> 00:16:38,452

Some people remember their birth without any help at all.

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00:16:39,453 --> 00:16:42,456

An opposing view is voiced by Dr. Elizabeth Loftus,

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00:16:42,456 --> 00:16:47,460

psychologist at the University of Washington, Seattle, and author of Memory.

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00:16:48,460 --> 00:16:52,463

There is a widespread belief that everything we ever experienced is stored in the mind.

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00:16:52,463 --> 00:16:55,466

And even if we can't get at it, potentially we could,

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00:16:55,466 --> 00:17:00,470

if we could hypnotize a person or if we could electrically stimulate their brain in some way.

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00:17:01,471 --> 00:17:04,473

But I have examined the evidence for this proposition,

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00:17:04,473 --> 00:17:11,478

and I find there is absolutely no good evidence for the idea that everything we ever experienced is stored in the mind.

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00:17:12,479 --> 00:17:19,485

In fact, it seems more likely to me that some of our memories undergo transformations or alterations or distortions

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00:17:19,485 --> 00:17:25,489

because of suggestions that come in later and that original memories are no longer there.

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00:17:26,490 --> 00:17:32,495

There is a lot of evidence that babies, even in utero, are able to understand what's going on,

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00:17:33,496 --> 00:17:37,499

whether they happen to understand that language or not. Somehow they get the message.

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00:17:39,500 --> 00:17:45,505

To many, the difficulty and pain of childbirth is as traumatic for the baby as it is for the mother.

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00:17:45,505 --> 00:17:51,510

Natural childbirth, to some, is one of the means of making the first breath of life more gentle.

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00:17:52,511 --> 00:17:56,514

This class teaches the father to assist the mother during labor and delivery.

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00:17:57,515 --> 00:18:02,519

Pelvic rocking is real important for pregnancy because there is so much stress in the lower back.

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00:18:03,519 --> 00:18:07,522

This helps to bring the baby up out of the pelvis.

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00:18:08,523 --> 00:18:16,530

After much consideration, Kim and Bob Haley have allowed in search of to film this most extraordinary event,

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00:18:17,530 --> 00:18:19,532

the birth of their first child.

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00:18:21,533 --> 00:18:25,537

Sally Berman, trained nurse midwife, assists at their side.

173

00:18:26,537 --> 00:18:29,540

Bob coaches Kim throughout the entire birth.

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00:18:29,540 --> 00:18:36,545

The Bradley method of natural childbirth employs unusual procedures, including standing and squatting,

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00:18:37,546 --> 00:18:40,548

to oxygenate the baby and move it into position.

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00:18:43,551 --> 00:18:46,553

Dr. Misha Askren will deliver the baby.

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00:18:47,554 --> 00:18:51,557

Emergency equipment is concealed, preserving the home-like feeling.

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00:18:52,558 --> 00:18:57,562

What you're about to see is an actual natural birth using no drugs.

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00:19:00,564 --> 00:19:02,566

The baby is an adult.

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00:19:03,566 --> 00:19:05,568

The baby is a baby.

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00:19:06,569 --> 00:19:08,570

The baby is a child.

182

00:19:09,571 --> 00:19:11,573

And the baby is a baby.

183

00:19:13,574 --> 00:19:15,576

The baby is a child.

184

00:19:17,577 --> 00:19:23,582

After ten hours of labor, a healthy baby boy, Morgan, is born.

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00:19:23,582 --> 00:19:29,887

is born. We have not solved all the mysteries of life before birth and the

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00:19:29,887 --> 00:19:34,771

debate as to when life begins continues. But for the first time we know the

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00:19:34,771 --> 00:19:40,215

dimension of feeling and perhaps memory that's passed from mother to child.

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00:19:40,215 --> 00:19:47,221

Kim Haley. During the whole pregnancy and through the whole nine months

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00:19:47,221 --> 00:19:52,405

everything you're doing is for this little baby and giving them the chance

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00:19:52,405 --> 00:19:59,370

to start out the right way. It was just the I'm sure the most choice moments

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00:19:59,370 --> 00:20:02,413

that I'll have in my life.

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00:20:07,737 --> 00:20:13,301

When does life before birth really begin?

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00:20:15,343 --> 00:20:20,187

Dr. Jeffrey Fielin, a family practitioner and spokesman for the

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00:20:20,187 --> 00:20:25,471

Right to Life organization, comments. My view and that view of contemporary

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00:20:25,471 --> 00:20:30,395

biology on when life begins is that life begins with fertilization. When the

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00:20:30,395 --> 00:20:35,599

sperm and the egg come together from that point on the human being is

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00:20:35,599 --> 00:20:39,762

genetically complete. Everything that makes up a human being, the hair color,

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00:20:39,762 --> 00:20:44,926

the eye color, that type of fingerprints is determined at that time at the time

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00:20:44,966 --> 00:20:50,410

of fertilization. Dr. Hugh Anwill, director of the Los Angeles chapter of

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00:20:50,410 --> 00:20:56,575

Planned Parenthood. We haven't really defined when human life begins. Does it

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00:20:56,575 --> 00:21:04,622

begin in the coming together of the sperm and the egg? Is it something that is

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00:21:04,622 --> 00:21:12,067

there when birth takes place? My own view is that it's somewhere in the later

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00:21:12,268 --> 00:21:21,235

stages of the pregnancy. The issue is extremely sensitive and volatile. The

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00:21:21,235 --> 00:21:24,837

Supreme Court has declared the mother now holds the right to terminate her

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00:21:24,837 --> 00:21:30,482

pregnancy in many cases up to 24 weeks. The court however did not address itself

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00:21:30,482 --> 00:21:36,286

directly to the question of when does life begin? Meanwhile the controversy

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00:21:36,286 --> 00:21:41,490

continues. I think the important thing really in the final analysis to remember

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00:21:41,651 --> 00:21:47,295

is that the unborn child certainly from the six months on is sensing, feeling

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00:21:47,295 --> 00:21:53,340

aware human being and capable of laying down memory tracks. Consequently he or

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00:21:53,340 --> 00:21:58,224

she will really have to be treated with much more love, much more caring, much

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00:21:58,224 --> 00:22:02,067

more respect than it has been our practice in the past.

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00:22:41,538 --> 00:22:43,599

you