

**NARRATION**

Pregnancy. It's all about mum, right? Well, not this time. These three men have just discovered they're about to become dads. Mark is excited...

**Mark Lulham**

We're having a baby, we're having a baby, tralalalala.

**NARRATION**

... possibly a little over-excited.

**Mark Lulham**

My wife sees this little jumpsuit, and I nearly wet myself with excitement thinking 'That's the coolest thing I've ever ever ever seen for a baby.' What every self respecting young boy will be wearing this summer, the Kiss jumpsuit.

**NARRATION**

Murray, meanwhile, is taking it all in his stride.

**Alex Henstock**

I think he'll be a great dad.

**Murray Henstock**

Doesn't matter if it's a boy or a girl, they're going to like Mr Potato Head.

**Alex Henstock**

It's going to be interesting in maybe some of the messier moments.

**Murray Henstock**

I've changed a nappy in my time.

**Alex Henstock**

Have you?

**Murray Henstock**

Yes.

**Alex Henstock**

And you're not too bad with the sick cat, if the cat gets sick.

**Murray Henstock**

Yeah, I can... so, we'll see.

**NARRATION**

Then there's Liam. His news was really recent, and less expected. He's clearly still coming to grips with the concept.

**Liam Timms**

Ah, I look at it's like a new hobby that's coming around. If you're passionate about your hobbies. Then, I'll be passionate about this as well.

**NARRATION**

They're all making preparations.

**Liam Timms**

And this is the boat cot.

**NARRATION**

But what we want to know is: are their bodies making secret preparations too?

**Dr Jonica Newby**

We've always tended to focus on the mother. But new science is suggesting something mind-blowing, that fathers too are subtly primed by their hormones for parenting. And it looks like it might begin before the child is even born.

**NARRATION**

It's cutting edge science and all part of a bold new question: is there such a thing as a male pregnancy?

**Dr John Eden**

Welcome and congratulations on your impending fatherhood. I'm Dr. John Eden, and I'm the hormone doctor in the team.

**NARRATION**

Our future dads have all signed on to take part in a pioneering six month pilot study.

**Dr John Eden**

There's been quite a bit of animal work showing that hormones have quite a strong role in fatherhood. There's very little work that's been done in humans, so we're quite excited about this.

**NARRATION**

As the men go from footloose and fancy free to fatherhood, the scientists are keen to track any hormonal changes. But what I'm really keen to see is whether any of them experience anything like this.

**NARRATION**

London is home to expat Frenchman Michel Goulven. Two years ago, his doctor wife, Meriel, got pregnant. But it was her husband that got all the attention.

**Dr Meriel McEntagart-Goulven**

Well, he'd get backache, you know, always complaining about a sore back. And I'd be thinking 'What were you lifting, or you know, what was he doing...?' He'd eat his breakfast and the next thing he'd

be running upstairs and he'd actually be sick. I was thinking 'Maybe he had a lot of beer last night?'

#### **NARRATION**

But the most disturbing symptom was yet to come. Remember, Michel is French. He suddenly developed a food craving for English white bread sandwiches!

#### **Michel Goulven**

Here they're all kind of put in plastic, in kind of cheap plastic. So they kind of sweat inside. And it is, it is oh absolutely disgusting. And I just go over, put it down my face.

#### **NARRATION**

Michel was experiencing sympathetic pregnancy, known as couvade syndrome. The term 'couvade' comes from the French 'couver' meaning to brood or to hatch. It was first used to describe a fascinating ritual of some hunter-gatherer tribes.

#### **Dr Arthur Brennan**

Basically men engaged in the behaviours one would expect of women when they were pregnant.

#### **NARRATION**

They'd avoid hunting, certain foods, and in some cases, even retreat to bed. In more recent years, couvade syndrome came to mean a rare psychological phenomenon in which men got pregnancy symptoms in an un-manly display of sympathy with their partner. But was it really as rare as everyone thought? That's what Dr. Arthur Brennan wondered when he decided to survey a whole lot of Englishmen... and uncovered a massive couvade cover-up!

#### **Dr Arthur Brennan**

There was about 25 per cent of men in the experimental group that suffered from the syndrome, which was a lot more than I expected. So stomach cramps were quite common, particularly during the first and third trimester, toothache, morning sickness, leg cramps. There was a range of psychological symptoms as well: lethargy, difficulty in sleeping at night.

#### **NARRATION**

Well that's the English, but are Aussie blokes as broody as the Brits?

#### **Dr Jonica Newby**

Well it turns out no one actually knows how many Australian men get couvade syndrome, so Dr. Arthur Brennan has kindly agreed to help us find out. And what do you think are the absolute key things?

#### **NARRATION**

Arthur has helped us design an online survey, and thousands of you answered our call to join in. We'll reveal your results later in the program. Meanwhile, Michel's wife is pregnant again, and his symptoms are back.

#### **Michel Goulven**

Oh yes. I think it is... it makes me feel closer to my wife.

**NARRATION**

So if so many men experience couvade symptoms, how could it be purely psychological? Well, it's possibly not. Because we humans father, we think everyone does, but it's actually very rare. Only 10 per cent of mammals show paternal care. For most mammals, a good dad is one who manages not to kill the kids. And it makes sense. Unlike birds, where both parents can feed the young, mammals have milk. And if fathering is rare in all mammals, it's even rarer in primates. None of our close relatives in the ape family show paternal care. But here in Madison, Wisconsin, a couple of the more humble primates buck this bad dad trend. Meet the marmosets, superdads of the primate world, and the woman who studies them, Dr. Toni Ziegler.

**Dr Toni Ziegler**

Oh they're excellent dads. In other species of marmosets they've even shown the father helping with the birthing process.

**Dr Jonica Newby**

Really?

**Dr Toni Ziegler**

Yes.

**Dr Jonica Newby**

A bit of midwifing?

**Dr Toni Ziegler**

Exactly.

**Dr Jonica Newby**

Wow.

**NARRATION**

From the moment the babies are born, dad carries half the load, if not more. So how come marmoset dads take their responsibilities so seriously when the rest don't?

**Dr Toni Ziegler**

All right. So what I'm going to do is start up the MP3 player, and... Can you hear the infant cries?

**Dr Jonica Newby**

Yeah.

**Dr Toni Ziegler**

They're very high shrill cries. Then we'll let the male out of the cage...

**NARRATION**

You can see how upset he is, but to rescue what he thinks is a baby, he's got to cross what is, for a marmoset, a terrifying bridge. But he summons up his courage...

**Dr Jonica Newby**

Oh, I think, here he comes...

#### **NARRATION**

...and he's made it. It's a testament to his death defying dad urge. But the really extraordinary thing Toni Ziegler has discovered is that he wasn't born this way. Males who've never had kids are too scared to cross the bridge.

**Dr Toni Ziegler**

So there's like a switch, a turnover or a biological priming that occurs when males actually become pregnant for the f... or their mates become pregnant for the first time.

#### **NARRATION**

And Toni's team has found that switch. At mid pregnancy, the males start packing on the pounds, eventually gaining a hefty eight per cent of their body weight. It's triggered by a surge in the hormone prolactin, and followed by rising testosterone and oestrogen. Then after the birth, testosterone suddenly drops and there's a massive surge in prolactin. But hang on... prolactin, isn't that a female hormone that promotes lactation?

**Dr Toni Ziegler**

Prolactin is actually an amazing hormone with over 300 functions in the body. One of its main functions is metabolics. So it's very involved in weight gain and weight loss.

#### **NARRATION**

It's also turning out to have a surprise role in fatherhood. When we look at the standout dads of the animal kingdom – penguins, seahorses – many show this prolactin surge. But how do the males know they're well... pregnant?

**Dr Toni Ziegler**

I can't tell you exactly, but I'm pretty sure I know what's going on. As the foetus is growing, it starts pumping out very large amounts of cortisol. Well, at the same time that these hormones are being pumped out into the urine of the mothers, the male within a week starts responding with very large increases in cortisol as well. So we think that the pheromones are causing the changes in the male.

**Dr Jonica Newby**

Wow.

#### **NARRATION**

From weight gain to hormone swings, marmoset males clearly have a male form of pregnancy. Which makes you wonder... do we? As our dads head into the final straight, their preparations are clearly surging ahead.

**Mark Lulham**

Hey R2, dance program.

**Murray Henstock**

Ah, yeah, this is the... what will be the baby's room. There's still a little bit of more work to do.

**NARRATION**

So are any of them feeling... odd?

**Liam Timms**

At work, I'm, I'm finding that I'm relaxing a lot more in meetings, where I used to want to get my way in the meeting room, I'm sitting back and letting others have their say.

**NARRATION**

Hmm, convincing... But the one who genuinely seems to be being hit by something is Murray.

**Murray Henstock**

This is a typical Friday evening for us, honey. Part of me always kind of thought the fatigue especially for Alex would happen, but I'm surprised it's affecting me as well. So, I can't explain it, I don't know. I also think I'm starting to pack on the weight a little bit more than I had expected.

**Dr Jonica Newby**

What do you put that down to?

**Murray Henstock**

I'm going to put it down to sympathy, and supportiveness.

**Alex Henstock**

I put it down to not eating the right foods.

**NARRATION**

As B-day looms, reality is starting to hit.

**Mark Lulham**

It really makes you step up to the mark and go 'OK, what sort of dad do I want to be? I better be a damn good one, because someone's whole life is riding on it.'

**NARRATION**

But what if some of that paternal potential has already been shaped, by their genes?

**NARRATION**

Welcome to Atlanta, Georgia, where believe it or not, scientists claim to have discovered a gene for fatherhood, a single stretch of DNA that can turn a deadbeat dad into a devoted one.

**Dr Jonica Newby**

Now, you might have the reaction I first did which is 'Pfft, this can't be true.' That's why I had to come all the way here to see for myself. And come with me, because I promise you, this is truly amazing.

#### **NARRATION**

Meet Dr. Larry Young and his daddy voles. This is Mr. and Mrs. Prairie Vole. See, they're the picture of domestic bliss. Now meet the meadow voles. They can't even stand to be in the same room together. And they make terrible dads.

#### **Dr Larry Young**

He probably never even sees his pups.

#### **Dr Jonica Newby**

Classic dead beat?

#### **Dr Larry Young**

Exactly. But contrast that to the prairie vole here. After that moment of their first time together, the male and female form this lifelong bond. Both are sitting there, licking and grooming their pups and the male will help sort of build a nest...

#### **NARRATION**

Meanwhile, the meadow voles have broken out in war! So why the difference? Larry's team had a hunch about a brain chemical called vasopressin, known for its role in the love centres. But when they looked at the vasopressin receptor gene, it was identical in the good and bad dads. Then they looked more closely at what was in front of the gene. Jackpot!

#### **Dr Larry Young**

The only difference that we see is in this so called junk DNA, which is much shorter in a meadow vole than it is in a prairie vole.

#### **NARRATION**

This tiny little stretch of what used to be called junk, is the DNA of fathering. It works by telling the gene where to put vasopressin receptors in the teeny vole's brain.

#### **Dr Larry Young**

The dark spots are the areas that have high concentration of receptors.

#### **NARRATION**

The longer the DNA stretch is, the more love receptors in the brain, the greater the urge to be a good dad. Perhaps most incredible of all, the team has proven this DNA doesn't just code for fathering.

#### **Dr Larry Young**

This same gene also controls the bonding of the male to the female.

#### **NARRATION**

It's not so much a fathering gene they've discovered, as a family gene. So might it apply to us?

**Dr Larry Young**

Well, if you have a particular version of this DNA element, you're more likely to have trouble in your relationship, report a crisis in your marriage, we see that the same genes that are regulating behaviour in animals, seem to be influencing our own behaviour.

**NARRATION**

So why evolve a gene for fatherhood at all? As we've seen, most mammals don't bother. Dr. Sarah Blaffer Hrdy is one of the world's most influential anthropologists. She says fathering tends to evolve in mammals when childrearing is too big a job for one parent alone. Marmosets, for example, give birth to twins.

**Dr Sarah Blaffer Hrdy**

So that would be equivalent to somebody my size giving birth to a 30 pound baby. And this is just so much more than she can cope with by herself.

**NARRATION**

So what was it in our lineage that was so different to our closest ape relatives?

**Dr Sarah Blaffer Hrdy**

One hypothesis is that around 1.8 million years ago, our ancestors were encountering tremendous climatic changes, and mothers were needing a lot of help. You start to have this shared care where fathers and other group members – older siblings, grandmothers – help to provision children. Well, this meant they could take longer to grow up. So there was an opportunity for natural selection to favour something that's very hard to evolve, which is bigger brains.

**NARRATION**

So fathering is part of what made us human, with our big brains. Yet it's not obligatory, more like a backup system.

**Dr Sarah Blaffer Hrdy**

I have wondered whether there might not be two morphs of men out there: the very caring ones and the less caring ones. But even among the caring ones, I know that that is shaped by experience. Nurturing men are both born and produced by experience.

**NARRATION**

And these days, men are being pressured more than ever to step up to the nurturing plate. B-day is nearly here, and our soon-to-be dads are entering a frenzy of final preparations, including moving house!

**Liam Timms**

Seven days to go till the baby is born, and 40 boxes left to unpack.

**Mark Lulham**

The novelty of being pregnant has worn off, just be born.



## **NARRATION**

And now it's time to reveal all: have their bodies been secretly preparing too?

### **Dr Jonica Newby**

Well, earlier, I got you all to fill out our online men's health survey, which was really a test for sympathetic pregnancy, otherwise known as couvade syndrome. So, Mark, you had a few little niggly symptoms there but nothing out of the ordinary. Liam, you answered no to every single question, so definitely not. Murray, with a grand total of more than eight sympathetic pregnancy symptoms, including weight gain, change to eating patterns, change to sleeping patterns, sciatica, and the rest... congratulations, you have couvade syndrome.

## **NARRATION**

Now let's cross to the UK for the results of our national father's survey. How many of you caught the pregnancy bug?

### **Dr Jonica Newby**

So, Arthur, what have you found? Are our Australian men as broody as the British?

### **Dr Arthur Brennan**

Well, they're perhaps more broody. Around 31 per cent of the national Australian population appeared to have the couvade syndrome. So that's much higher than the UK population. But this is so exciting because this challenges misconceptions about the syndrome not existing in Australia.

## **NARRATION**

Now, the million dollar question: what's been happening to our dad's hormones? We're going to fast forward in time a bit, because the study went through until two months after the birth.

### **Dr John Eden**

Well gentlemen, these are your results, and these are the testosterone levels. Now keep in mind they are preliminary, there are only seven subjects in this trial. However, after the birth of the baby, I think you can see there's definitely a trend down. All of these results go down except that one there, so we actually think this is probably a real result. So gentlemen, your testosterone has dropped.

### **Liam Timms**

So this has come at great cost to us, that's what you're telling us?

### **Dr John Eden**

Well, some would say maybe to improve us actually.

## **NARRATION**

In fact, that testosterone plunge after birth is remarkably similar to what's seen in marmosets. And while this small pilot didn't show hormonal changes *during* pregnancy, two larger international studies already have.

### **Dr Sarah Blaffer Hrdy**

Their prolactin levels went up, testosterone levels went down, they were endocrinologically transformed.

#### **NARRATION**

It's not every man, and it's not conclusive proof, but it's enough to suspect that humans, too, can be subtly primed for fatherhood.

#### **Dr Larry Young**

These emotions, like love, either love for a partner or love for our children, are really built upon the biological mechanisms that evolved millions of years ago. And I think that it is a little naive to think that they are *not* also regulating many aspects of our behaviour.

#### **NARRATION**

And now, rewind, unpredictable emotions are about to start flying: we're going to have a baby!

#### **Mark Lulham**

First thought 'This is great, this is it, it's finally here!' Split second later 'Oh my God, I'm so not ready for this!'

#### **Murray Henstock**

Just focus on me babe, focus on me, you look at me, forget about them.

#### **Mark Lulham**

He comes out, like all babies do, with one of those 'What the?' looks on their face.

#### **Murray Henstock**

I'm crying, and she's crying. And she's going 'It's okay.' And I... 'I know it's okay, but I can't help it.'

#### **Mark Lulham**

I'm looking at this little person going 'Wow, you're the person I'm stuck with for the rest of my life.'

#### **NARRATION**

There's just one more baby to come.

#### **Liam Timms**

I'm getting very excited now.

#### **NARRATION**

But in the days leading up to now, Liam's been strangely quiet. It's only later he reveals he's scared, that he lacks the right emotions, that he won't bond with the baby.

#### **Liam Timms**

Been going for 48 hours... tough.

#### **NARRATION**

And now, something's wrong. The doctors inform him the baby has turned. It's an emergency caesarean.

**Liam Timms**

I think that was like a sense of relief, you know, given the pain everyone was in, and how tired everyone was. So... The next thing you are in an operating theatre and a little baby appears.

**NARRATION**

Then something happens he'd never anticipated.

**Liam Timms**

We just got left alone for a couple of hours.

**Dr Jonica Newby**

You and the baby?

**Liam Timms**

Yeah.

**Dr Jonica Newby**

You fall in love?

**Liam Timms**

How could you not?

**NARRATION**

It's a transformation he hardly dared hope for...

**Liam Timms**

We were just waiting for each other.

**NARRATION**

But there are many more challenges and changes ahead for our new dads.

**Murray Henstock**

I can't describe it, I'm in love with our son.