

JANUARY 2015

**THREE
PARENT
BABIES**

**BRITTANY L.
JOHNSON**



**DEBATING MATTERS
TOPIC
GUIDES**

www.debatingmatters.com

MOTION:

**“WE SHOULD
EMBRACE THE
ADVENT OF THREE
PARENT IVF”**

ABOUT DEBATING MATTERS

Debating Matters because ideas matter. This is the premise of the Institute of Ideas Debating Matters Competition for sixth form students which emphasises substance, not just style, and the importance of taking ideas seriously. Debating Matters presents schools with an innovative and engaging approach to debating, where the real-world debates and a challenging format, including panel judges who engage with the students, appeal to students from a wide range of backgrounds, including schools with a long tradition of debating and those with none.

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KEY TERMS

[Designer baby](#)

[DNA](#)

[Eugenics](#)

[Germline](#)

[IVF](#)

[Mitochondria](#)

[Nuremburg Code](#)

[Slippery slope](#)

INTRODUCTION

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Experimentation with ‘three-parent babies’ – the use of a female egg donor, and the egg and sperm from the genetic parents - first began in the US in the late 1990’s as a means of treating infertility [Ref: [Nature](#)]. The UK government has recently decided to support three parent IVF [Ref: [The Times](#)], or ‘mitochondrial replacement’ [Ref: [BBC News](#)], and is the first country in the world to do so. The treatment may become available within the next two years, and is aimed at eliminating the otherwise devastating effects of mitochondrial disease; a genetic mutation that affects roughly one in every 5,000 children annually [Ref: [Nature](#)]. While such a procedure offers mothers the potential to give birth to healthy, biologically related children, opponents cite safety concerns, and fear such genetic modification will promote a new form of eugenics, setting a precedent for ‘designer babies’ [Ref: [Wired](#)]. Supporters of the technique refute these claims, pointing to the groundbreaking nature of the treatment [Ref: [BBC News](#)], as well as emphasizing the procedure’s ability to drastically change the lives of children otherwise subject to a catalogue of symptoms including as blindness, seizures, and severe physical disability [Ref: [NBC](#)]. In light of this, do we have a moral obligation to prevent death and disease if we possess the ability to do so? Or is manipulating the human genome a step too far, heralding a dangerous new era of designer babies? Should we welcome the advent of three parent IVF, or should we fear the potential unintended consequences?



Ethical Concerns

Current opinion is split on the potential ethical consequences of pursuing an IVF method which would, ultimately, result in a child holding the DNA of three separate individuals. For supporters, the story of Sharon Bernardi, who lost all seven of her children to rare mitochondrial diseases, illustrates the necessity to embrace the potential benefits of the technique [Ref: [BBC News](#)]. They dismiss concerns over the ethics of the procedure, instead citing its ability to spare children from early death and lifelong suffering [Ref: [Guardian](#)]. Critics though, such as commentator Jessica Cussins, who was born from conventional IVF, feels that it has: “Troubling implications, not only for hopeful parents to be, and their potential future children, but for all humanity” [Ref: [Huffington Post](#)]. The modification of the germ line [Ref: [Medterms.com](#)], or the heritable part of human DNA, some argue, poses serious questions which have yet to be addressed, about the consequences of manipulating the characteristics of future generations [Ref: [Nature](#)]. Critics warn that the impact of the procedure on heredity is largely unknown, and has been underestimated [Ref: [Standpoint](#)]. There is though disagreement about the importance of mitochondrial DNA to a person’s genetic code, with advocates of the procedure asserting that mitochondrial replacement alters just 0.1% of it [Ref: [BBC News](#)], and emphasizing the negligible amount of modification needed to drastically change lives [Ref: [Wired](#)]. One of the strongest points of contention stems from the procedure’s preventative nature: namely, that mitochondrial replacement simply inhibits the inheritance of mitochondrial disease, and does nothing to treat or benefit existing victims [Ref: [Nature](#)].

Subsequently, critics suggest that scientists should instead be focusing their efforts on alleviating the symptoms of present victims [Ref: [Wired](#)], with one writer summarising that: “The attempt to improve future people is not medicine...but a new form of eugenics” [Ref: [Huffington Post](#)]. Amidst the ethical issues involved in three-person IVF, two trains of thought seem come to the fore: the belief in a moral responsibility to prevent death and disease if we possess the means and, alternatively, the insistence that we must not allow the excitement of possibility to overshadow ethical implications, that: “...simply being able to do something does not mean we should” [Ref: [New York Times](#)].

Slippery Slope?

One of the loudest forms of resistance comes from those who insist that three-person IVF would set a precedent for an ever-widening set of criteria for genetic modification. Opponents such as Lord Winston caution against the technique, arguing that this could be the first step on a slippery slope [Ref: [Independent](#)], eventually leading to parents selecting genes based on desirable traits, resulting in ‘designer babies’ and: “...high tech eugenics”, as one critic describes it [Ref: [New York Times](#)]. In fact, critics argue, by deliberately choosing to alter an offspring’s characteristics (or lack thereof), some argue that scientists have already progressed to the first stages of eugenics, because it: “... involves the improvement of humans by deliberately choosing their inherited traits” [Ref: [Huffington Post](#)]. However, supporters of the technique suggest that fears have been overplayed, maintaining that: “There is a big difference between replacing defective mitochondria, and making sure all babies are blue



THE THREE PARENT BABIES DEBATE IN CONTEXT CONTINUED...

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eyed and blonde” [Ref: [Slate](#)], and note that mitochondria play no role in genetic characteristics other than the energy of cells, meaning that no aspect of a child’s personality or physicality is affected by the technique [Ref: [NBC](#)]. Advocates go on to say that such concerns about a slippery slope should not dissuade us from grasping the vital benefits of medical breakthroughs such as this [Ref: [The Times](#)], because: “Not everything about genetic engineering is morally horrible” [Ref: [NBC](#)].

An Unpredictable Future

The unknown implications of the use of this technique have recently come under increased scrutiny. As a result, some critics dismiss the idea that we should: “Celebrate the advent of a new and life enhancing therapy” [Ref: [Guardian](#)], and instead describe it as an: “...uncontrolled experiment” [Ref: [Huffington Post](#)].

They cite fears over the unpredictability of the treatment’s long-term effects and potential consequences. Melanie McDonagh articulates this uncertainty by arguing that we are attempting to: “Push the boundaries of science ever further, on the off chance that something will happen” [Ref: [Telegraph](#)]. In this sense, it is unlike a normal drug trial for instance, because: “...all the unforeseeable risks of the experiment, will be assumed by this future individual” [Ref: [New York Times](#)], something which troubles many observers. Others though are more relaxed, and advance the argument that: “Humanity has always innovated and shaped its own physical future through technology” [Ref: [The Times](#)], noting that unpredictability is inherent to reproduction, because: “Passing on physical change down the generations,

both benign and problematical” [Ref: [The Times](#)], is what humanity has always done, and will continue to do. Questions have also been raised about the impact on the nature of parenthood, and the identity of the child in this scenario, something which has forced the UK government to ban prospective children born by the procedure, from ever finding out who the egg donor is [Ref: [Telegraph](#)]. However, others question the wisdom of this decision because, for them, three person IVF creates no profound change to how we understand parenthood or identity: “It’s not a child with three parents; it’s a child with two parents and a mitochondrial donor” [Ref: [Telegraph](#)], as one commentator argues. Where, then, do we draw the line between a life-saving treatment option with the ability to pass on healthy DNA for generations to come, and a procedure with the potential to open a host of moral and biological consequences? Do the potential benefits outweigh the risks? Or does three-person IVF indeed mark the top of a very slippery slope?



ESSENTIAL READING

Third scientific review of the safety of Mitochondrial transfer

HFEA 1 June 2014

Debating Mitochondrial transfer

Wellcome Trust

FOR

Three parent IVF is here, and there's nothing to fear

Paul Raebern *Aljazeera* 9 April 2014

We should approve three parent IVF

Alex Berezow *Real Clear Science* 29 July 2013

Three parent IVF is about saving lives, not eugenics

Liat Clarke *Wired* 28 June 2013

Misleading talk about three parent babies helps no one

John Harris *Guardian* 19 September 2012

AGAINST

Former IVF baby on three parent babies

Jessica Cussin *Huffington Post* 24 October 2013

A slippery slope to germline modification

Dr Mary Darnovsky *Nature* 9 July 2013

The Chamber of eugenics

Stuart Newman *Huffington Post* 11 March 2013

Three parent babies: miracle cure or eugenics?

Neil Scolding *Standpoint*

IN DEPTH

The brave new world of three person IVF

Kim Tingley *New York Times* 27 June 2014

Reproductive medicine: the power of three

Ewen Callaway *Nature* 24 May 2014

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BACKGROUNDERS

The three parent technique is genetic modification
Melanie McDonagh *Spectator* 29 July 2014

Lets change the rhetoric on three parent children
Max Pemberton *Telegraph* 8 July 2014

Beware alarmists of slippery slopes
Matt Ridley *The Times* 14 July 2014

We are asking the wrong questions about three parent embryos
Ellen Painter Dollar *Patheos* 10 July 2014

Fertility ethics tested by three parent babies
Kim Tingley *Sydney Morning Herald* 5 July 2014

How can a baby have three parents?
Economist 4 July 2014

Litany of unknowns surface over germline modification techniques
Jessica Cussins *Biopolitical Times* 6 March 2014

Designer babies are not on their way
Jessica Grose *Slate* 26 February 2014

Three parent babies are an ethical choice
Art Caplan *NBC News* 26 February 2014

Genetically modified babies
Dr Mary Darnovsky *New York Times* 23 February 2014

This treatment would save lives
Polly Toynbee *Guardian* 11 February 2014

Three parent babies? This is science gone mad
Melanie McDonagh *Telegraph* 29 August 2013

A bold step for science and society
Fergus Walsh *BBC News* 28 June 2013

Don't fear three parent babies
New Scientist 20 March 2013

Three parent IVF would give a kid two mothers
Brian Alexander *NBC News* 24 October 2012

Three parent babies are worth the ethical risk
Art Caplan *NBC News* 24 October 2012

Mitochondrial techniques would be ethical
Nuffield Council on Bioethics 12 June 2012

On designer babies
Dr Sheldon Krimsky *Tufts Medicine* Summer 2013

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ORGANISATIONS

HFEA

Nuffield Council on Bioethics

USFDA

Wellcome Trust



IN THE NEWS

Babies banned from knowing 'second' mother

Telegraph 23 July 2014

Three parent IVF update reveals how little we know

Huffington Post 6 June 2014

Britain comes a step closer to three parent babies

Catholic Herald 5 June 2014

Scientists urge government to pass three parent bay law

National Post 4 June 2014

Genetic treatment may be ready in two years

Guardian 3 June 2014

Is the UK being too hasty over three parent IVF?

New Scientist 3 June 2014

Lord Winston warns of three parent babies

Independent 4 May 2014

Three genetic parents for one healthy baby

L.A Times 21 March 2014

US FDA weigh up three parent embryos

Reuters 25 February 2014

Families hope lobby wont stop gene cure

Guardian 15 February 2014

UK Government backs three parent IVF

BBC News 28 June 2013

Britain ponders three parent IVF

Guardian 20 March 2013

Eugenics fear of three parent IVF

Guardian 15 March 2013

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AUDIO/VISUAL

UK Government backs three parent embryos

BBC News 28 June 2013



ADVICE FOR DEBATING MATTERS

DEBATING MATTERS
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FOR STUDENTS

READ EVERYTHING

In the Topic Guide and in the news - not just your side of the argument either.

STATISTICS ARE GOOD BUT.....

Your opponents will have their own too. They'll support your points but they aren't a substitute for them.

BE BOLD

Get straight to the point but don't rush into things: make sure you aren't falling back on earlier assertions because interpreting a debate too narrowly might show a lack of understanding or confidence.

DON'T BACK DOWN

Try to take your case to its logical conclusion before trying to seem 'balanced' - your ability to challenge fundamental principles will be rewarded - even if you personally disagree with your arguments.

DON'T PANIC

Never assume you've lost because every question is an opportunity to explain what you know. Don't try to answer every question but don't avoid the tough ones either.

FOR TEACHERS

Hoping to start a debating club? Looking for ways to give your debaters more experience? Debating Matters have a wide range of resources to help develop a culture of debate in your school and many more Topic Guides like this one to bring out the best in your students. For these and details of how to enter a team for the Debating Matters Competition visit our website, www.debatingmatters.com

FOR JUDGES

Judges are asked to consider whether students have been brave enough to address the difficult questions asked of them. Clever semantics might demonstrate an acrobatic mind but are also likely to hinder a serious discussion by changing the terms and parameters of the debate itself.

Whilst a team might demonstrate considerable knowledge and familiarity with the topic, evading difficult issues and failing to address the main substance of the debate misses the point of the competition. Judges are therefore encouraged to consider how far students have gone in defending their side of the motion, to what extent students have taken up the more challenging parts of the debate and how far the teams were able to respond to and challenge their opponents.

As one judge remarked *'These are not debates won simply by the rather technical rules of schools competitive debating. The challenge is to dig in to the real issues.'* This assessment seems to grasp the point and is worth bearing in mind when sitting on a judging panel.



**“A COMPLEX
WORLD REQUIRES
THE CAPACITY
TO MARSHALL
CHALLENGING IDEAS
AND ARGUMENTS”**

**LORD BOATENG, FORMER BRITISH HIGH
COMMISSIONER TO SOUTH AFRICA**