

SEPTEMBER 2012

**EMBRYO
SCREENING**

JAMES SHAW



**DEBATING MATTERS
TOPIC
GUIDES**

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KEY TERMS

'Designer Babies'

de novo

Eugenics

Genetics

Preimplantation Genetic Diagnosis (PGD)

Utilitarianism

INTRODUCTION

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June 2012 saw scientists controversially predicting the entire genetic code of a foetus, information which could be used to prevent the birth of a child suffering from a disorder [Ref: [Telegraph](#)]. One method, alongside screening foetuses, called preimplantation genetic diagnosis (PGD), involves the extraction of a cell during IVF treatment and analysing the DNA for the presence of disease-associated genetic alterations. Only embryos without mutation are then selected, and doctors now commonly prevent serious disorders like cystic fibrosis [Ref: [Nature](#)]. However, some see this procedure being increasingly trivialised by the possibility of identifying cancer disposition and late-onset diseases and so fear doctors may attempt to alter genes to create 'perfect' humans in the future. Many scientists are doubtful of this being a realistic prospect as human traits are significantly influenced by environmental factors and proponents, like Dartmouth College's Professor Green, argue this may not be as ethically-troublesome as critics suggest [Ref: [Nature](#)]. Perhaps these techniques are tools of empowerment rather than manipulation and recent developments in the scope of prenatal screening suggest scientists may soon be able to screen unborn babies for 3,500 genetic disorders [Ref: [Telegraph](#)]. Whilst some celebrate this breakthrough in potentially reducing suffering from disability, others predict that this may lead to increased abortions which, they say, could devalue the lives of disabled people and undermine respect for the human condition [Ref: [Daily Mail](#)]. Fundamentally, those critical of these developments fear a slippery slope, at the bottom of which lies a damagingly utilitarian conception of the value of human life. Proponents of the procedures strongly dispute this, asserting that there is greater moral value in a child being born free from disability and suffering.



Where are we now?

In recent years there has been a rapid development in the scope and availability of screening embryos for genetically-inherited diseases. PGD can already be used to identify more than 200 inherited defects, the most common being Down's Syndrome (the only defect routinely screened for on the NHS), spina bifida, and some forms of cystic fibrosis. In the UK regulation of screening is tightly controlled by the Human Fertilisation and Embryology Authority (HFEA), when compared to the USA, but critics fear an ever-liberalising approach by the HFEA which has recently seen controversial clearance given for scans for breast cancer and Alzheimers disease which often only affect sufferers well into their adult lives [Ref: [Daily Mail](#)]. In the UK sex selection is currently permitted for medical reasons, like the gender-specific disease haemophilia, but is banned for physical, social, or psychological reasons. With the predicted expansion of genetic mapping, and the identification of 'de novo' mutations, doctors could even be able to identify potential sufferers of autism and schizophrenia [Ref: [Telegraph](#)]. It is thought by some that such non-invasive genetic screening may be much more widely available over the next 5 years at an approximate cost of \$50,000 per child [Ref: [BioNews](#)]. This predicted expansion of not only specific techniques but of the scope of genetic screening has raised serious ethical dilemmas, particularly given predictions that parents may be able to deselect, abort, or specifically select an embryo or foetus based solely on that child's future sexual orientation for example [Ref: [Bioedge](#)]. Some even fear the rapid expansion of these techniques, and a liberalising approach to ethical issues, may one day result in the existence of 'Designer Babies' where parents may select embryos

on the basis of intelligence, athleticism, hair or eye colour.

Preventing disability: rebranded eugenics or laudable goal?

Embryonic screening proponents argue they are ending sufferance at the hands of disability and consider it unjust that parents would opt to impose avoidable genetic disorders upon their children. Some have gone so far as to assert that the parents of a child have a moral duty to screen for genetic disorders, not merely a right to do so [Ref: [Opposing Views](#)]. Critics counter that it would be more beneficial for society to accept each other as we are and that to encourage the reduction of the number of disabled people in society would be to send a negative, and potentially harmful, message to disabled people themselves. For some, the relatively recent normalisation of conditions like autism [Ref: [Progress](#)] strongly supports the view that human variance should be celebrated and not eliminated [Ref: [Guardian](#)]. Some point to pledges like that of the Danish governments to eliminate Down's Syndrome by 2030 as evidence of a drive to prevent any deviation from biological 'normality' and question how we can celebrate the Paralympic Games whilst also promote the view that disability is something to be actively eliminated [Ref: [Globe and Mail](#)].

A slippery slope or the yellow brick road?

The prospect of detecting thousands of genetic disorders prior to birth, which can then be used as the basis for an abortion or the deselection of an embryo raises serious ethical dilemmas [Ref: [New York Times](#)]. Some question what is to be meant by 'disability' when in recent years conditions like deafness have



been categorised as a disability less readily [Ref: [spiked](#)]. Further questions are raised about how severe a disability must be to justify termination or deselection and strong opposition exists about the future possibility of conditions like autism being used to justify an abortion. If there are to be limits on which disabilities are sufficiently severe, the question is posed as to whether anyone has the authority or the means to make such an inevitably arbitrary distinction. It's argued that this devalues human life by turning people into commodities [Ref: [BBC News](#)]. But proponents of embryo screening emphasise that abortion is already widespread in the UK and that to further impose limits on a woman's right to choose in this way is highly illiberal.

scientific breakthrough providing an opportunity for the prevention of suffering for thousands of people every year?

Devaluing human life?

Critics argue that all human life should be valued equally, and they ask if we can value the life of a non-disabled person who cannot speak multiple languages, play sport, write novels, or do handstands just as much as we value the life of a non-disabled person who can do these things, in which case how can the singling out of disability be justified? This has led to harsher critics branding genetic screening 'modernised eugenics' - gradually eliminating the weak in society on the basis of their physical or mental capabilities [Ref: [Journal of Medical Ethics](#)]. However, proponents attack this comparison, pointing out that whilst eugenics is state-sponsored and coercive, genetic screening merely provides information to prospective parents. Scientists continue to face accusations that they are attempting to 'play God' using these procedures, but is this a sensationalistic appeal to emotion or does it have merit [Ref: [Telegraph](#)]? Is this a push towards the devaluation of human life or a laudable



ESSENTIAL READING

Glimpse at destiny comes with great responsibility

Roger Highfield *Telegraph* 7 June 2012

Embryo screening and the ethics of human genetic engineering

Leslie A. Pray *Nature* 2008

FOR

Foetal screening: Good or Evil?

M.R. Hall *Huffington Post* 23 June 2012

Wiping out human variation

Dan Kennedy *Guardian* 2 February 2010

If we screen out autism we run the risk of losing genius, too

Magnus Linklater *The Times* 12 January 2009

The Case Against Perfection

Michael Sandel *Christian Science Monitor* 5 June 2007

AGAINST

Eugenics or 'reprogenetics'? Call it what you will, but let's do it

Alexandre Erler *Practical Ethics* 24 February 2010

Designer Babies: A right to choose?

James Hughes *Wired.com* 9 March 2009

Hysteria about designer babies is laughable, they already exist

Carol Midgley *The Times* 24 July 2004

Debating 'designer babies'

Dr Ellie Lee *spiked* 17 April 2003

IN DEPTH

The wrongs, and rights, of genetic screening of children

Tom Chivers *Telegraph* 16 August 2012

Prenatal testing: a double-edged sword leading to abortion

Steven Ertelt *LifeNews.com* 27 July 2012

'Three parent babies' cure for illness raises ethical fear

Ian Sample *Guardian* 5 June 2012

When is a life form worthy of life?

Der Spiegel 7 July 2010

Science – and ethics – of this screening are complex

Sarah Boseley *Guardian* 10 January 2009

There's more to life than being Joe Normal

Bryan Appleyard *Independent* 6 June 1996

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BACKGROUNDEERS

Should We Be Allowed to Design Babies?

Daniel Malynn *BioNews* 21 May 2012

Genetic testing has little value if there's no chance of a cure

Mary Dejevsky *Independent* 8 April 2011

Genetic testing is 'ethically sound'

NHS 6 April 2011

Inside the Ethics Committee

BBC Radio 4 2009

Pushing eugenics as smart science

Wesley Smith *Opposing Views* 8 March 2009

Mandatory Genetic Testing isn't Eugenics, it's Smart Science

Jacob M Appel *Opposing Views* 4 March 2009

Medical science must understand its limits

Daily Mail 9 January 2009

Should we stamp out 'designer deafness'?

Sandy Starr *spiked* 31 March 2008

Choosing a deaf baby is criminal

Daniel Finkelstein *The Times* 12 March 2008

Genetic Testing + Abortion = ???

Amy Harmon *New York Times* 13 March 2007

Introduction: Genetics

New Scientist 4 September 2006

Head to head: Genetic Screening

Baroness Ruth Deech v Dr David King *BBC* 10 May 2006

The genetics and sociology of the autism spectrum

Dr Michael Fitzpatrick *Progress Educational Trust*

Screening for disability: a eugenic pursuit?

John Gillott *Journal of Medical Ethics*

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ORGANISATIONS

Comment on Reproductive Ethics (CORE)

Human Fertilisation and Embryology Authority (HFEA)

Progress Educational Trust



IN THE NEWS

British women fly to US to choose sex of baby

Telegraph 28 August 2012

Genetically engineering 'ethical' babies is a moral obligation, says Oxford professor

Telegraph 16 August 2012

Parents can now screen their embryos for Alzheimer's so they can have babies free of the disease

Daily Mail 11 August 2012

Designer baby row over US clinic

BioEdge 10 August 2012

Doctors could screen for gay gene in near future

BioEdge 10 August 2012

Genetic testing for gayness not too far off for expectant parents

Examiner 8 August 2012

Dozens of IVF babies are being aborted because they have

Down's syndrome

Daily Mail 16 July 2012

Euroscience Open Forum 2012: DNA gene testing 'will screen out lovers'

Telegraph 13 July 2012

Unborn babies could be tested for 3,500 genetic faults

Telegraph 6 July 2012

DNA of unborn baby mapped from just mother's blood paving way for new genetic disease screening

Daily Mail 4 July 2012

Egg DNA transplant is ethical, says UK panel

New Scientist 13 June 2012

Whole fetal genome sequenced for the first time

BioNews 11 June 2012

Gene 'revolution' has stalled, says Winston

The Times 9 June 2012

Genetic screening of unborn babies 'may be inaccurate'

Telegraph 7 June 2012

Party time for children born free of gene disorders

London Evening Standard 22 November 2011

Designer baby row over clinic that offers eye, skin and hair colour

Telegraph 28 February 2009

Call to offer genetic screening for married cousins

Guardian 17 May 2008

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