

This response was submitted to the call for evidence by the Nuffield Council on Bioethics on *Emerging techniques to prevent inherited mitochondrial disorders: ethical issues* between January 2012 and February 2012. The views expressed are solely those of the respondent(s) and not those of the Council.

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1: Summary:

1.1 This short response offers a view on one particular question raised in the Call for Evidence (CfE) and argues that sex selection should not be permitted to limit the potential unforeseen adverse side effects to only male children, as this implies the introduction of experimental treatment for mitochondrial disease at too early a stage in its development.

2: Introduction.

This short response is additional to another, evidence based, contribution we have made with two colleagues. There we focussed on consideration of the women who provide the eggs required for research and possible treatments. Here we offer a more speculative view on one particular question raised in the CfE regarding sex selection.

3: Sex selection to limit potential unforeseen adverse side effects.

3.1 The CfE asks if it would be reasonable to permit prospective parents to use sex selection techniques in order to limit the risks of transmitting to future generations any unforeseen adverse side effects of the manipulations required to eliminate diseased mitochondria. This would be achieved by selecting only male embryos for transfer to the woman. In our view to do so would be unacceptable and render the children born 'experimental offspring'. One implication of such an approach is that the boys born would need to be monitored throughout their lives and deemed healthy before females could be conceived in this way: they would in effect be experiments. In suggesting that only males be conceived initially, there is an underlying assumption that the unknown long-term adverse consequences would relate only to the mitochondria (passed to the next generation through eggs, not sperm). As this may not be the case there is no justification for limiting the risk to one particular sex.

3.2 No technique for the eradication of disease should be permitted until there is reasonable evidence for its safety. We would not argue that experimental treatments should not be permitted in medicine, however, we do argue that if such a course of action as selecting only males needs to be considered, it implies that at the time of offering the treatment too little is known about its safety.

3.3 Another implication is that should sex selection be permitted the boys born from such treatment would live with uncertainty about their future health, beyond that normally experienced. The potential psychological implications of this would need to be included in pre-treatment counselling of the couples.

4: The consequences of sex selection for the 'healthy egg' provider.

4.1 Were such sex selection to be permitted the providers of 'healthy eggs' will live not only with the uncertainty of knowing whether or not a child has been born to the recipient couple but whether or not that child is healthy. Again, the psychological implications of this should be included in counselling the potential 'healthy egg' provider.

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