Reply: Non-invasive prenatal diagnosis: an ethical imperative

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We agree with many of the comments on our Ethics watch article (An offer you can't refuse? Ethical implications of non-invasive prenatal diagnosis. *Nature Rev. Genet.* **10**, 515 (2009))¹ made by Ravitsky (Non-invasive prenatal diagnosis: an ethical imperative. *Nature Rev. Genet.* 15 Sep 2009 (doi:10.1038/nrg2631-c1))². We agree that it is important to eliminate the risk of pregnancy loss, that if termination of a pregnancy is inevitable it is desirable (not only for the mother but also for the unborn child) to perform it as early as possible, and that sometimes (although rarely in reality) the information is used to mentally prepare for the birth of and life with a child who, for example, has trisomy 21. But we do not agree with her conclusion that non-invasive prenatal diagnosis (NIPD) must be introduced as soon as possible, especially not if this means reducing the standards of pre-test counselling, which would negatively affect the patient's ability to make an informed decision.

In proposing such a conclusion, and in characterizing the implementation of NIPD

as an 'ethical imperative', Ravitsky assumes that the knowledge produced by the test is, *per se*, good in a normative sense: that it is always better to know than not to know, irrespective of whether the pregnant woman has a chance to decide in a well-informed manner or indeed of whether she wants to know at all. What could be the underlying justification for this assumption? If the results provided by the test offered a chance to save the life of the unborn child or the pregnant mother or to start a necessary treatment for either of them, then no one would disagree with Ravitsky because in this case the benefits would outweigh the risk of neglecting the autonomy. Only then would the well-established World Health Organization standards³ for medical screening be met. But in the case of NIPD, we cannot think of sufficient medical causes that justify an imperative to know. From a medical point of view alone it is not necessary to know the chromosomal status of an unborn child, and no one would suggest that certain pregnancies have to be terminated, unless they endanger the life of the pregnant

woman. These decisions can only be made by the pregnant woman or the couple. How then can one enhance reproductive autonomy — which includes respecting the right not to know — by pushing mothers or couples to know through lowering the standards of autonomous decision making?

Ravitsky stressed the medical and ethical arguments for NIPD compared with invasive procedures. But she could not offer arguments to support routine prenatal genetic testing compared with the option of informed dissent to prenatal genetic testing. Her arguments are relevant only if the woman or the couple have already decided that they want to know. Only then are the benefits of NIPD clear.

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1. Schmitz, D., Netzer, C. & Henn, W. An offer you can't refuse? Ethical implications of non-invasive prenatal diagnosis. *Nature Rev. Genet.* **10**, 515 (2009).
2. Ravitsky, V. Non-invasive prenatal diagnosis: an ethical imperative. *Nature Rev. Genet.* 15 Sep 2009 (doi:10.1038/nrg2631-c1).
3. Wilson, J. M. G. & Jungner, G. *Principles and Practice of Screening for Disease* (World Health Organization, Geneva, 1968).