



The top papers on reproduction research 2004–2008

Which papers have provided the most interesting advances in reproduction research over the past three or four years? Which new discoveries have been the most important to or are likely to have the highest impact on the field?

Rather than relying solely on citations, we posed these questions directly to a large group of leaders in reproductive biology and medicine, asking them to identify what they perceived as the most important papers in their respective fields over the past three to four years. We received feedback from nearly 40 experts, and their responses were incredibly varied—much more than what we found in our previous issues on tuberculosis or metabolic disease—no doubt reflecting the diverse expertise of the scientists we polled. The list of papers suggested by at least three experts, along with some illuminating comments, is presented below. The numbers in blue show the percentage of respondents who picked that paper.

Topping the list are two papers that could not be more different: on the one hand, the discovery that natural killer cells regulate developmental processes at the site of implantation and, on the other, the production of tissue-engineered follicles that produce live offspring.

Perusing the whole list, several broad themes emerged as having seen important advances: the immunology of reproduction, the pathophysiology of preeclampsia, the effect of environmental toxins on reproduction and the intricate relationship between germ cells and stem cells. In the pages that follow, experts in each field discuss the key papers that advanced these and other areas (shaded in yellow) in a series of News and Views articles. The remaining papers from the list (shaded in blue) are discussed in brief on pages 1192–1193. And to find out how much resemblance this list bears to a list of high-impact papers generated by more traditional means (citations), turn to page 1180.

17%

Hanna, J. *et al.* Decidual NK cells regulate key developmental processes at the human fetal-maternal interface. *Nat. Med.* **12**, 1065–1074 (2006).

Xu, M. *et al.* Tissue-engineered follicles produce live, fertile offspring. *Tissue Eng.* **12**, 2739–2746 (2006).

▲ “A three-dimensional matrix system that mimicked the *in vivo* environment allowed immature mouse follicles to mature and be fertilized *in vitro*, ultimately yielding viable, fertile offspring. This technology may provide an opportunity for female cancer survivors to preserve their fertility.” **Louis De Paolo**, US National Institute of Child Health and Human Development

Hiby, S.E. *et al.* Combinations of maternal KIR and fetal HLA-C genes influence the risk of preeclampsia and reproductive success. *J. Exp. Med.* **200**, 957–965 (2004).

14%

▲ “Some of the strongest evidence for an immunological basis for miscarriage and preeclampsia, although we now appreciate that the uterine natural killer cells probably play more of a physiological than strictly immunological role in pregnancy.” **Graham Burton**, University of Cambridge

