

Worldwide report shows increase in assisted reproduction: 250,000 babies a year

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Assisted reproductive technology (ART) is responsible for an estimated 219,000 to 246,000 babies born each year worldwide according to an international study. The study also finds that the number of ART procedures is growing steadily: in just two years (from 2000 to 2002) ART activity increased by more than 25%.

The study, which is published online today (Thursday 28 May) in Europe's leading reproductive medicine journal *Human Reproduction* , gives figures and estimates for the year 2002, the most recent year for which world figures are available. A total of 1563 clinics in 53 countries provided data for the report, but data were missing from several other countries, mostly in Asia, Africa, Oceania and the West Indies. The authors estimated that these missing countries probably performed between 10-20% of ART procedures, and they took this into account when they calculated the total number of ART babies born worldwide.

Professor Jacques de Mouzon, a specialist in [public health](#) at INSERM (Paris, France), led the International Committee for Monitoring Assisted Reproductive Technology (ICMART) that compiled the report. He said: "This is the eighth world report on ART produced by ICMART since 1989, and is useful because, even if it is imperfect, it gives data that can inform debate and decision-making on issues such as availability and the benefits and risks of this important medical practice. It allows us to make comparisons between countries and regions, and to analyse trends by comparing with previous reports.

"There are several important points to highlight. There has been a constant increase in ART activity: it increased by more than 25% in the two years since the previous report for the year 2000. This is due not only to an increase in the number of countries participating in this report but also to an increase in ART activity in most individual countries.

"However, there are wide variations between countries in the availability and quality of ART. There are several reasons for this, such as fertility rates, women's age, insurance cover, the national economy, but the most important is certainly inequality in access to healthcare and ART. In Western Europe it is easier for people to access good healthcare, and funding for ART tends to be more generous than in developing countries. This raises the question of developing so called 'low cost' ART in low-income countries; it would probably mean lower success rates (the problem would be to define what rates would be acceptable), but greater access to treatment. In addition, treatment is usually more aggressive in developing countries and in all countries where ART is expensive for patients, leading to the consequent problems of multiple births, ovarian hyperstimulation syndrome and the need for foetal reductions."

Availability of ART varied from two cycles per million inhabitants (Ecuador) to 3688 per million in Israel.

Other key findings from the study include:

1. A large increase in the use of ICSI (intracytoplasmic sperm injection) as opposed to conventional IVF (in vitro fertilisation) worldwide. Since 2000 it increased from 54% to 61% in North America, 46% to 54% in Europe, and in 2002 it had reached 76% in Latin America and more than 92% in the Middle East.

2. Pregnancy and delivery rates have increased for both fresh and frozen embryo cycles despite a decrease in the number of embryos transferred. More than 601,250 ART cycles worldwide resulted in delivery rates after IVF, ICSI and frozen embryo transfer (FET) of 22%, 21% and 15% respectively per aspiration (attempt at egg retrieval). This compares with delivery rates after IVF, ICSI and FET in 2000 of nearly 19%, 20% and 12% respectively.
3. When cycles using fresh embryos were combined with frozen embryo cycles, the cumulative delivery rate per aspiration was 26%.
4. Cumulative delivery rates per aspiration varied among countries, ranging from 14% to 39%. While Tunisia and Libya reported the highest rates at 39%, this represented only a few fertility centres in each country. Therefore, the USA, where reports cover almost all fertility centres in the country, had the highest rate at 37.5%.
5. The transfer of multiple embryos has decreased, leading to a small decline in multiple births. The percentage of four or more embryo transfers decreased from 15.4% in 2000 to 13.7% in 2002. The proportion of twin and triplet pregnancies decreased from 26.5% to 25.7%, and from 2.9% to 2.5% respectively.
6. There has been a 47% increase in the proportion of FET cycles, which is due mainly to the decrease in the number of embryos transferred at one time, with any left over being frozen for future attempts.

Prof de Mouzon said: "It is difficult to explain the reasons behind the increase in ICSI as we have no reason to believe there has been a similar increase in the rise in male infertility, and ICSI has not been

demonstrated to improve treatment results for infertility that is not caused by infertile men. It could be because more infertile men are agreeing to seek treatment, that the diagnosis of male infertility is improving, that male infertility per se is increasing (due to exposure to sperm-damaging compounds in the environment), that fertility teams turn to ICSI more rapidly when conventional IVF fails, or that ICSI is still viewed as more efficient, even in the absence of scientific proof, which may be the major factor in Latin America and the Middle East. I suspect the overall explanation is probably a mixture of several of these factors."

The increased use of frozen embryo cycles was very good news because it improved cumulative pregnancy and delivery rates and helped reduce the number of multiple embryo transfers and multiple births, he said.

"Our report shows that delivery rates per aspiration increased in 2002 even though the average number of embryos transferred was reduced. For example, in Australia where a mean average of 1.8 embryos were transferred, the delivery rate per aspiration was 19.5% for fresh cycles and 29.4% for fresh and frozen cycles together. This should encourage countries to implement embryo transfer policies that reduce the risk of multiple births," said Prof de Mouzon.

The authors warn that variation in data quality, in addition to differences in practices, legislation, guidelines, culture and religion, means that comparisons between countries "must be done with caution".

More information: World Collaborative Report on Assisted Reproductive Technology. *Human Reproduction*.
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