



## Birth spacing – report from a WHO technical consultation<sup>1</sup>

The World Health Organization (WHO) and other international organizations recommend that individuals and couples should wait for at least 2–3 years between births in order to reduce the risk of adverse maternal and child health outcomes. Recent studies supported by the United States Agency for International Development (USAID) suggest that an interval of 3–5 years might help to reduce these risks even further. Programme managers responsible for maternal and child health at the country and regional levels have requested WHO to clarify the significance of the new USAID-supported findings for health-care practice.

To review the available evidence, WHO, with support from USAID, organized a technical consultation on birth spacing on 13–15 June 2005 in Geneva, Switzerland. The participants included 35 independent experts as well as staff of the United Nations Children’s Fund (UNICEF), WHO and USAID. The specific objectives of the meeting were to review evidence on the relationship between different birth-spacing intervals and maternal, infant and child health outcomes, and to provide advice on recommended birth-spacing intervals.

### Method of review and findings of the consultation

Prior to the meeting, USAID submitted to WHO for review six unpublished, draft papers emanating from studies the Agency had supported on birth spacing. These, along with a supplementary paper (also unpublished at the time), served as background papers for the technical consultation.

WHO sent the six draft papers to a selected group of experts, and received a total of 30 reviews. The reviewers’ comments were compiled and circulated to all meeting par-

ticipants. At the meeting, the authors of the background papers presented their findings, and selected discussants presented the consolidated set of reviewers’ comments, including their own observations. Together, the draft papers and the various commentaries constituted the basis for the consultation’s deliberations.

The background papers<sup>2</sup> (see list on the back page of this policy brief) were based on studies that had used a variety of research designs and data analysis techniques. The meeting participants noted that the length of the intervals analysed and the terminology used in the papers varied

<sup>1</sup> This policy brief is based on the report of the WHO technical consultation on birth spacing, held in Geneva, Switzerland, on 13–15 June 2005. This report can be found on the following Internet site: [www.who.int/reproductive-health/publications](http://www.who.int/reproductive-health/publications)

<sup>2</sup> It was planned that after the meeting the draft papers would be revised by the authors, taking into account the comments of the participants in the technical consultation.



considerably, making it difficult to compare the results. They therefore agreed to use “birth-to-pregnancy interval” as a standard term in making their recommendations. Specifically, this term refers to the interval between the date of a live birth and the start of the next pregnancy.

The participants discussed the strengths and limitations of the studies, identified areas requiring further work and requested the authors to conduct additional analyses and research. The authors are currently responding to the reviewers’ questions and undertaking the requested analyses. They are to revise their papers and resubmit them to WHO for a second review, following which WHO will issue a supplementary report.

### Conclusions and recommendations

The group came to separate conclusions for the different health outcomes considered, i.e. one on birth spacing after a live birth, and one on birth spacing after an abortion. Details of the discussions, the process of achieving final agreement on the recommendations and the necessary caveats are documented in detail in the full report.

The participants emphasized that their recommendations (in bold below) must be read in conjunction with the following preamble:

*In choosing the timing of the next pregnancy, individuals and couples should consider health risks and benefits along with other circumstances such as their age, fecundity, fertility aspirations, access to health-care services, child-rearing support, social and economic circumstances, and personal preferences.*

#### *Recommendation for spacing after a live birth*

- **After a live birth, the recommended interval before attempting the next pregnancy is at least 24 months in order to reduce the risk of adverse maternal, perinatal and infant outcomes.**<sup>3</sup>

#### *Recommendation for spacing after an abortion*

- **After a miscarriage or induced abortion, the recommended minimum interval to next pregnancy should be at least six months in order to reduce risks of adverse maternal and perinatal outcomes.**

*Caveat.* The recommendation on spacing after an abortion is based on one Latin America study that examined hospital records of 258 108 women (delivering singleton infants) whose previous pregnancy had ended in an abortion. Because this was the only available study of this scale, it was considered important to use its findings, but with some qualifications. Abortion events in the study were of three types: safe abortion, unsafe abortion and spontaneous pregnancy loss (miscarriage). The relative proportion of each of these types was unknown. The study sample was taken from public hospitals only, with much of the data coming from only two countries (Argentina and Uruguay). Thus, the results may neither be generalizable within the Latin American region nor applicable to other regions, which have different legal and service contexts and conditions. Additional research was recommended to clarify these findings.

### Suggestions for future research

The consultation made the following suggestions for further research in the area of birth spacing:

- Coherent theoretical frameworks need to be developed that can explain and analyse the possible causal relationships between birth-to-pregnancy intervals and maternal, perinatal and infant outcomes, particularly child mortality.

<sup>3</sup> Some participants felt that it was important to note in the report that, in the case of birth-to-pregnancy intervals of five years or more, there is evidence of an increased risk of pre-eclampsia, and of some adverse perinatal outcomes, namely pre-term birth, low birth weight and small infant size for gestational age.

- It would be useful to include in ongoing studies analyses of relationships between birth spacing and maternal morbidity. For instance, examination of the effects of multiple short birth-to-pregnancy intervals would be useful, as would be more detailed data on the effects of very long intervals. Further analysis of the relationship between birth spacing and maternal mortality would help confirm or refute existing findings, although it is acknowledged that this may not always be feasible as it may require a very large number of cases.
- There is a need to investigate the relationship between birth spacing and outcomes other than mortality – for instance, maternal and child nutrition outcomes, or impact on the psychological development of children. Also, it would be helpful to have information on possible benefits, as well as possible risks, of particular birth spacing intervals.
- More studies are needed on the effects of postabortion pregnancy intervals in different regions. A distinction between induced and spontaneous abortion, and between safe and unsafe induced abortion, would be particularly helpful in future studies.
- Good-quality longitudinal studies that take more potential confounding factors into account are needed to:
  - (i) clarify the observed associations between birth-to-pregnancy intervals and maternal, infant and child outcomes; (ii) estimate the potential level of bias in the use of different measures of intervals (birth-to-birth vs. inter-pregnancy interval, for instance); and (iii) clarify the potentially confounding effect of short intervals following a child death, both because of shortened breastfeeding and because parents may seek to replace the dead child.
- Finally, there is a need to develop an evidence base for effective interventions to put recommendations on birth spacing into practice.

## Papers reviewed at the meeting

1. Conde-Agudelo A (draft, 2004). Effect of birth spacing on maternal and perinatal health: a systematic review and meta-analysis. Report prepared for The Academy for Educational Development and The CATALYST Consortium.

An amended and abridged version of this report (not reviewed by the WHO consultation) has now been published as follows:

Conde-Agudelo A, Rosas-Bermúdez A, Kafury-Goeta AC. Birth spacing and risk of adverse perinatal outcomes: a meta-analysis. *JAMA*, 2006, 295:1809–1823.

2. Conde-Agudelo A, Belizán, JM, Breman R, Brockman SC, Rosas-Bermúdez A (draft, 2004). Effect of the interpregnancy interval after an abortion on maternal and perinatal health in Latin America.

This paper has now been published as follows:

Conde-Agudelo A, Belizán, JM, Breman R, Brockman SC, Rosas-Bermúdez A. Effect of the interpregnancy interval after an abortion on maternal and perinatal health in Latin America. *International Journal of Gynaecology and Obstetrics*, 2005, 89: S34–S40 (supplement).

3. DaVanzo J, Razzaque A, Rahman M, Hale L, Ahmed K, Khan MA, Mustafa AG, Gausia K (draft, no date). The effects of birth spacing on infant and child mortality, pregnancy outcomes and maternal morbidity and mortality in Matlab, Bangladesh.

4. Dewey KG, Cohen RJ (draft, 2004). Birth-spacing literature: maternal and child nutrition outcomes. Report prepared for The Academy for Educational Development and The CATALYST Consortium.

5. Rutstein SO (draft, no date). Effects of preceding birth intervals on neonatal, infant and under-five years mortality and nutritional status in developing countries: evidence from the Demographic and Health Surveys.

This paper has now been published as follows:

Rutstein SO. Effects of preceding birth intervals on neonatal, infant and under-five years mortality and nutritional status in developing countries: evidence from the Demographic and Health Surveys. *International Journal of Gynaecology and Obstetrics*, 2005, 89:S7–S24 (supplement).

6. Rutstein SO, Johnson K, Conde-Agudelo A (draft, 2004). Systematic literature review and meta-analysis of the relationship between interpregnancy or interbirth intervals and infant and child mortality. Report prepared for The CATALYST Consortium.

### Supplementary paper

7. Zhu BP (draft, 2004). Effect of interpregnancy interval on birth outcomes: findings from three recent US studies.

This paper has now been published as follows:

Zhu BP. Effect of interpregnancy interval on birth outcomes: findings from three recent US studies. *International Journal of Gynaecology and Obstetrics*, 2005, 89:S25–S33 (supplement).

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