

# South-East Asia Networks for Newborn & Birth Defect



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## This Month...

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## Publications

### WHO Recommendations on Interventions to Improve Preterm Birth Outcomes



The primary audience for this guideline includes health-care professionals who are responsible for developing national and local health-care protocols and policies, as well as managers of maternal and child health programmes and policy-makers in all settings. The guideline will also be useful to those directly providing care to pregnant women and preterm infants, such as obstetricians, paediatricians, midwives, nurses and general practitioners. The information in this guideline will be useful for developing job aids and tools for pre- and in-service training of health workers to enhance their delivery of maternal and neonatal care relating to preterm birth.

[Read full publication](#)

## Birth Defects

### [Pregnancy-related complications and adverse pregnancy outcomes in multiple pregnancies resulting from assisted reproductive technology: a meta-analysis of cohort studies](#)

[Qin J, Wang H, Sheng X, Liang D, Tan H, Xia J.](#)

#### Abstract

**OBJECTIVE:** To provide an up-to-date comparison of pregnancy-related complications and adverse pregnancy outcomes of multiple pregnancies generated with assisted reproductive technology (ART) vs. spontaneous conception.

**DESIGN:** Meta-analysis.

**SETTING:** University-affiliated teaching hospital.

**PATIENT(S):** Multiple pregnancies conceived by ART or naturally.

**INTERVENTION(S):** Searches through October 2014 were conducted on PubMed, Google Scholar,

Cochrane Libraries, China Biology Medicine disc, Chinese Scientific Journals Full text Database, China National Knowledge Infrastructure, and Wanfang Data, to identify studies that met prestated inclusion criteria. Either a fixed- or a random-effects model was used to calculate the overall combined risk estimates. Subgroup analysis was performed to explore potential heterogeneity moderators.

**MAIN OUTCOME MEASURE(S):** Pregnancy-related complications and adverse pregnancy outcomes.

**RESULT(S):** Thirty-nine cohort studies involving 146,008 multiple births were included in the meta-analysis. Multiple pregnancies from ART were associated with a higher risk of premature rupture of membranes (relative risk [RR] = 1.20, 95% confidence interval [CI]: 1.05-1.37; I(2) = 15%); pregnancy-induced hypertension (RR = 1.11, 95% CI: 1.04-1.19; I(2) = 6%); gestational diabetes mellitus (RR = 1.78, 95% CI: 1.25-2.55; I(2) = 42%); preterm birth (RR = 1.08, 95% CI: 1.03-1.14; I(2) = 83%); very preterm birth (RR = 1.18, 95% CI: 1.04-1.34; I(2) = 79%); low birth weight (RR = 1.04, 95% CI: 1.01-1.07; I(2) = 47%); very low birth weight (RR = 1.13, 95% CI: 1.01-1.25; I(2) = 62%); and congenital malformation (RR = 1.11, 95% CI: 1.02-1.22; I(2) = 30%). The relevant heterogeneity moderators have been identified by subgroup analysis. Sensitivity analysis yielded similar results. No evidence of publication bias was observed.

**CONCLUSION(S):** Although the role of potential bias and evidence of heterogeneity should be carefully evaluated, the present study suggests that multiple pregnancies generated via ART, vs. spontaneous conception, are associated with higher risks of pregnancy-related complications and adverse pregnancy outcomes. Further research is needed to determine which aspect of ART poses the most risk and how this risk can be minimized.

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### **Assisted reproductive technology and risk of congenital malformations: a meta-analysis based on cohort studies.**

[Qin J](#), [Sheng X](#), [Wang H](#), [Liang D](#), [Tan H](#), [Xia J](#).

#### **Abstract**

**PURPOSE:** To assess the association between assisted reproductive technology (ART) and risk of congenital malformations (CM) by conducting a meta-analysis of cohort studies.

**METHODS:** PubMed, Google Scholar, Cochrane Libraries and Chinese database were searched through August 2014 to identify studies that met pre-stated inclusion criteria. Either a fixed- or a random-effects model was used to calculate the overall combined risk estimates. Subgroup analysis was performed to explore potential heterogeneity moderators.

**RESULTS:** Fifty-seven studies involving 119,874 infants conceived following ART and 1,212,320 infants conceived naturally were included in the analysis. The ART-conceived infants were associated with a higher risk of CM [relative risk (RR) = 1.33; 95 % confidence interval (CI) 1.24-1.43] when compared with those conceived naturally. When data were restricted to singleton births (RR = 1.38; 95 % CI 1.30-1.47), major CM (RR = 1.47; 95 % CI 1.29-1.68), matched/adjusted studies (RR = 1.37; 95 % CI 1.27-1.47) or high quality studies (RR = 1.40; 95 % CI 1.27-1.55), the increased risk of CM still existed in ART pregnancies. Additionally, an increased risk of CM was also found when the ART twin (RR = 1.18; 95 % CI 1.06-1.32) or multiple births (RR = 1.16; 95 % CI 1.05-1.27) were separately compared with spontaneously conceived twin or multiple births. Substantial heterogeneity was observed across studies (I (2) = 68, 44, 39, and 33 % for all infants, singletons, twins and multiples, respectively). Whether confounding factors were matched or adjusted, study quality and sample size as the first three of the most relevant heterogeneity moderators have been identified. No evidence of publication bias was observed (P > 0.10).

**CONCLUSIONS:** The ART-conceived infants have a higher risk of CM compared with those conceived naturally. However, these estimates have to be viewed with caution because of heterogeneity.

#### **Newborn**

### **Adverse maternal and perinatal outcomes in adolescent pregnancies: The Global Network's Maternal Newborn Health Registry study**

[Althabe F](#), [Moore JL](#), [Gibbons L](#), [Berrueta M](#), [Goudar SS](#), [Chomba E](#), [Derman RJ](#), [Patel A](#), [Saleem S](#), [Pasha O](#), [Esamai F](#), [Garces A](#), [Liechty EA](#), [Hambidge K](#), [Krebs NF](#), [Hibberd PL](#), [Goldenberg RL](#), [Koso-Thomas M](#), [Carlo WA](#), [Cafferata ML](#), [Buekens P](#), [McClure EM](#).

## Abstract

**BACKGROUND:** Adolescent girls between 15 and 19 years give birth to around 16 million babies each year, around 11% of births worldwide. We sought to determine whether adolescent mothers are at higher risk of maternal and perinatal adverse outcomes compared with mothers aged 20-24 years in a prospective, population-based observational study of newborn outcomes in low resource settings.

**METHODS:** We undertook a prospective, population-based multi-country research study of all pregnant women in defined geographic areas across 7 sites in six low-middle income countries (Kenya, Zambia, India, Pakistan, Guatemala and Argentina). The study population for this analysis was restricted to women aged 24 years or less, who gave birth to infants of at least 20 weeks' gestation and 500g or more. We compared adverse pregnancy maternal and perinatal outcomes among pregnant adolescents 15-19 years, <15 years, and adults 20-24 years.

**RESULTS:** A total of 269,273 women were enrolled from January 2010 to December 2013. Of all pregnancies 11.9% (32,097/269,273) were in adolescents 15-19 years, while 0.14% (370/269,273) occurred among girls <15 years. Pregnancy among adolescents 15-19 years ranged from 2% in Pakistan to 26% in Argentina, and adolescent pregnancies <15 year were only observed in sub-Saharan Africa and Latin America. Compared to adults, adolescents did not show increased risk of maternal adverse outcomes. Risks of preterm birth and LBW were significantly higher among both early and older adolescents, with the highest risks observed in the <15 years group. Neonatal and perinatal mortality followed a similar trend in sub-Saharan Africa and Latin America, with the highest risk in early adolescents, although the differences in this age group were not significant. However, in South Asia the risks of neonatal and perinatal death were not different among adolescents 15-19 years compared to adults.

**CONCLUSIONS:** This study suggests that pregnancy among adolescents is not associated with worse maternal outcomes, but is associated with worse perinatal outcomes, particularly in younger adolescents. However, this may not be the case in regions like South Asia where there are decreasing rates of adolescent pregnancies, concentrated among older adolescents. The increased risks observed among adolescents seems more likely to be associated with biological immaturity, than with socio-economic factors, inadequate antenatal or delivery care.

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## Short-term nutrition education reduces low birth weight and improves pregnancy outcomes among urban poor women in Bangladesh

Jahan K, Roy SK, Miharshahi S, Sultana N, Khatoon S, Roy H, Datta LR, Roy A, Jahan S, Khatun W, Nahar N, Steele J.

## Abstract

**BACKGROUND:** Maternal malnutrition and poor gestational weight gain are the most important causes of low birthweight and infant mortality in Bangladesh.

**OBJECTIVE:** To assess the effect of short-term nutrition education on weight gain in the third trimester of pregnancy, birth outcomes, and breastfeeding.

**METHODS:** Three hundred pregnant women participated in this randomized, controlled trial during a 3-month intervention period. The study was conducted in two antenatal clinics in urban Dhaka. One group of women was given monthly education sessions during the third trimester of pregnancy to promote consumption of khichuri, while the control group received only routine services from the health facilities. Birthweight was recorded within 24 hours after delivery. Breastfeeding practices were observed for 1 month after delivery.

**RESULTS:** In the intervention group, maternal weight gain in the third trimester was 60% higher (8.60 vs. 5.38 kg,  $p = .011$ ), mean birthweight was 20% higher (2.98 vs. 2.49 kg,  $p < .001$ ), the rate of low birthweight was 94% lower (2.7% vs. 44.7%;  $p < .001$ ), and the rate of initiation of breastfeeding within 1 hour after birth was 52% higher (86.0% vs. 56.7%,  $p < .001$ ), in comparison with the control group. Birthweight was associated with frequency of intake of khichuri ( $p < 0.001$ ).

**CONCLUSIONS:** Nutrition education with a focus on promoting consumption of khichuri during the third trimester of pregnancy significantly reduced the rate of low birth weight and increased maternal weight gain.

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