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Cesarean Section: Incidence in the Middle East & Long-term Complications

Global rising rates of Cesarean sections



There is a **global increase** in the use of Cesarean section (C-section), now accounting for more than **1 in 5 (21%)** of all childbirths.^{1,2}

It is estimated that **29.7 million births** occurred through C-section in **2015**, which was almost double the number of births by this method in **2000 (16.0 million births)**.¹



In **Europe**, almost **3 out of 10 infants** are born by C-section.¹

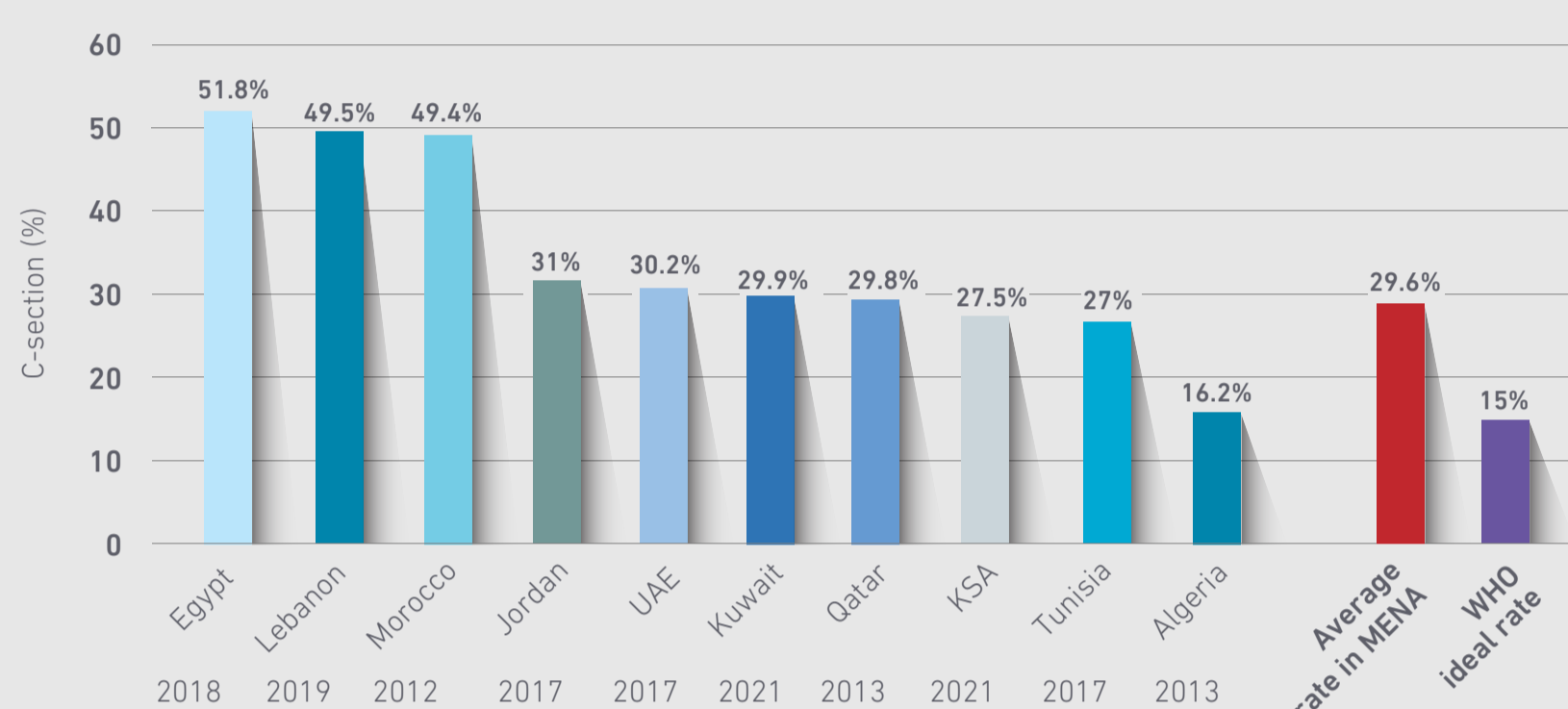


In **MENA** **1 in 3 infants**¹ are born by C-section.¹

Rising rates of C-section in the Middle East

There is large disparity in the use of Cesarean section amongst the Middle East and North Africa (MENA) countries.³⁻¹²

Increase of C-section rates in the MENA region^{1, 3-13}



• C-section use increased across time in all MENA countries, excluding Jordan, which had no change between the survey periods.¹²



But why should we be concerned with these rising rates?

Long-term complications of C-section in infants

1. Immune development



Infants born by C-section are at higher risk of infections



~10% increased risk of infection-related hospitalization (respiratory & gastrointestinal) in infants born by C-section (n= 1,681,966) compared with vaginal birth (p < 0.001). Risks persisted for **up to 5 years** of age.¹⁴



10-39% increased risk of LRTI hospital admission during infancy.¹⁶

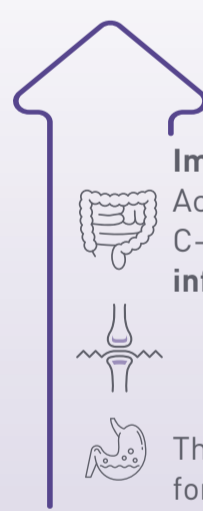
LRTI: lower respiratory tract infections



Infants born by C-section are at higher risk of allergies



Children delivered by C-section had a **three times increased risk** of developing asthma by age 6.^{17,18}



Immune-mediated chronic inflammatory diseases According to a study conducted in >2 million children, C-section led to **increased susceptibility for chronic inflammatory diseases** that last for decades:^{19,20}

- Inflammatory bowel disease (HR: 1.12, p<0.001)¹⁹
- Rheumatoid arthritis (HR: 1.15, p<0.001)¹⁹
- Coeliac disease (HR: 1.17, p<0.001)¹⁹

The increased risk was detectable in the offspring for **at least 40 years of follow-up from birth**.¹⁹

HR: hazard ratio

2. Metabolic impact (obesity, diabetes)



• C-section has been associated with increased risk of childhood **obesity**^{21,22} and **type-2 diabetes** later in life.²²

• C-section born children had **greater adiposity in preadolescence**.²³

3. Cognitive and emotional development



C-section has been associated with changes in **brain development** (white matter myelination),^{24,25} **cognition**²⁶ and **behavioral changes** (a more pronounced anxiety).²⁷



Conclusion

C-section rates are increasing in the Middle East.³⁻¹³ This leads to increased risks for complications, such as higher risk of infection, allergies, chronic inflammatory diseases, metabolic disorders and altered brain development, which could last for years to come.¹⁴⁻²⁷

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Middle East

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Important Notice: Breastfeeding is best for babies and a healthy diet / maternal nutrition is important when breastfeeding. A decision not to Breastfeed can be difficult to reverse. Infant formula is suitable from birth when babies are not breastfed. It is recommended that all formula milks be used on the advice of a doctor, midwife, health visitor, public health nurse, dietitian, pharmacist, or other professional responsible for maternal and childcare and the financial implications should be considered. All preparation and feeding instructions should be followed carefully as inappropriate preparation could lead to health hazards.