Diet and lifestyle before and during pregnancy – Practical recommendations of the Germany-wide Healthy Start – Young Family Network

Supplement Table 1
Cohort studies related to IOM recommendations.

<table>
<thead>
<tr>
<th>Reference (author/journal/title)</th>
<th>Type of study</th>
<th>Endpoint/Outcome</th>
<th>Number of cases</th>
<th>Descriptive and quantitative description of effect</th>
<th>Conclusion</th>
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<tbody>
<tr>
<td>Beyerlein A, Lack N, von Kries R. <em>Obstet Gynecol 2010; 116(5): 1111-8</em></td>
<td>Observational study</td>
<td>Calculation of the prevalence of following outcome in GWG-Ranges according to IOM an in interquartile ranges IQR (25th to 75th percentile) and interdecile ranges IDR (10th to 90th percentile): • preeclampsia • gestational diabetes • nonelective cesarean delivery • SGA • LGA</td>
<td>N = 678,560 singleton deliveries in Bavarian obstetric units (2000 to 2007)</td>
<td>Underweight women Preterm delivery GWG-IOM 5,22 (4,84-5,60) GWG-IQR 7,14* (6,78-7,52) GWG-IDR 7,57* (7,24-7,90) SGA GWG-IOM 12.09 (11.54–12.65) GWG-IQR 14.26* (13.70–14.82)</td>
<td>Perinatal outcomes are likely to be improved if underweight and normal-weight pregnant women adapt their gestational</td>
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<td>weight gain</td>
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<td>• preterm delivery (before 37+0 completed weeks of gestation, irrespective of underlying cause) stillbirths • early neonatal deaths (within the first 7 days of life). GWG Ranges Underweight women IOM 12,5 – 18,0 kg IQR 11-16 kg IDR 8-20 kg Normalweight women IOM 11,5-16,0 kg IQR 11-17 kg IDR 7-20 kg Overweight women IOM 7,0 – 11,5 kg IQR 10- 17 kg IDR 7-20 kg Obese women IOM 5,0-9,0 kg IQR 7-15 kg IDR 3-19 kg</td>
<td>GWG-IDR 14.61* (14.18–15.04) <strong>Overweight women:</strong> Preeclampsia GWG-IOM 1.66 (1.53–1.78) GWG-IQR 2.30* (2.20–2.41) GWG-IDR 2.38* (2.29–2.47) GDM GWG-IOM 2,30 (2,15–2,45) GWG-IQR 1,69* (1,60–1,78) GWG-IDR 1,82* (1,74–1,90) Nonelective cesarean delivery GWG-IOM 11.55 (11.22–11.87) GWG-IQR 13.31 (13.07–13.55)* GWG-IDR 13.49 (13.29–13.69)* <strong>Obese women</strong> Preeclampsia GWG-IOM 4.94 (4.64–5.24) GWG-IQR 6.23 (5.99–6.47)* GWG-IDR 6.30 (6.10–6.50)*</td>
<td>weight gain to the Institute of Medicine criteria. Overweight and obese mothers seem to increase the risks for adverse perinatal outcomes related to the offspring such as SGA, gestational age, preterm delivery and perinatal mortality if they restrict their gestational weight gain to the ranges recommended by IOM</td>
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| Rogozinska E, Marlin N, Jackson L, Rayanagoudar G, et al. Health Technol Assess 2017;21(41) | Individual patient data (IPD) meta-analysis | analysis to assess if the effects of diet- and physical activity-based interventions on GWG, composite maternal and composite fetal/neonatal outcomes vary in subgroups of women based on BMI at booking, age, parity, ethnicity and underlying medical conditions | GWG: 9320 participants  
Maternal composite: 8852  
Fetal and neonatal composite: 7981 | Preterm delivery  
GWG-IOM 8.58 (8.19–8.96)  
GWG-IQR 7.10 (6.84–7.36)*  
GWG IDR 7.42 (7.21–7.64)*  
SGA  
GWG-IOM 7.26 (6.90–7.62)  
GWG-IQR 6.33 (6.08–6.57)*  
GWG-IDR 6.41 (6.20–6.61)*  
*P <0.001 | Composite adverse maternal effects / fetal complications  
Normalweight women  
Below IOM: 0.99 (summary OR; 0.67-1.46) 0.87 (0.40 to 1.90)  
Exceeds IOM: 1.05 (0.61-1.80) 1.26 (0.60 to 2.65)  
Overweight women  
Below IOM: 1.28 (0.79-2.08) 1.07 (0.51 to 2.22)  
Exceeds IOM: 0.78 (0.49-1.26) 1.09 (0.68 to 1.74)  
Obese women | The odds of adverse composite outcome were not significant when normal weight, overweight and obese women gained above and below the recommended targets. |

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1 https://www.journalslibrary.nihr.ac.uk/hta/hta21410#/abstract
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| Fetal outcome: intrauterine death, small for gestational age fetus, large for gestational age fetus, admission to the NICU |               | Below IOM: 1.38 (0.95-2.01)  
1.57 (1.05 to 2.32)  
Exceeds IOM: 1.15 (0.85 – 1.56)  
1.36 (0.89 to 2.06) |               |         | |  

² https://www.journalslibrary.nihr.ac.uk/hta/hta21410#/s6