

# Antiseizure medications and pregnancy

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## 1 Antiseizure medications are associated with increased risk of major congenital malformations

Use of antiseizure medications has become more common, with 90% of patients using them to manage psychiatric and pain conditions.<sup>1</sup> In-utero exposure to these medications is associated with a two- to fivefold increased risk of major congenital malformations, although this risk varies among medications. The risk is lowest (2%–3%) with lamotrigine, levetiracetam and oxcarbazepine and highest with valproate (5%–15%), especially when used with other antiseizure medications.<sup>2</sup>

## 2 Lowest effective dose of antiseizure medication is an important part of preconception planning

The risk of teratogenicity for many medications is dose dependent.<sup>2</sup> The risk for major congenital malformation is greatest in the first trimester of pregnancy, especially during the period of organogenesis (3–8 wk). Preconception counselling by a specialist may help to determine the lowest effective dose of the fewest number of antiseizure medications with the least teratogenic potential if these cannot be safely stopped.<sup>2</sup>

## 3 Folic acid is recommended for individuals taking antiseizure medications

Pregnant patients are at increased risk for neural tube defects when taking antiseizure medications, and preconception folic acid reduces this risk (relative risk 0.28, 95% confidence interval 0.12–0.71).<sup>3</sup> All individuals who are taking antiseizure medications and who could potentially conceive a pregnancy should take 1 mg folic acid daily, with doses up to 4–5 mg/d considered in patients at higher risk for neural tube defects.<sup>2</sup>

## 4 Physiologic changes of pregnancy alter serum drug levels

Given that pregnancy is associated with increased clearance of some antiseizure medications (e.g., levetiracetam, lamotrigine and oxcarbazepine) and a fall in serum levels of 35% or greater can contribute to seizures in pregnancy,<sup>4</sup> serum levels should be monitored for epilepsy at least once per trimester, with more frequent monitoring if clinically indicated (e.g., change in seizure frequency, adverse effects).

## 5 Breastfeeding while taking antiseizure medications is safe

Despite theoretical concern of exposure to antiseizure medications, no adverse effects of breast milk exposure have been found.<sup>2</sup> Rather, 1 study of 181 children observed that infants exposed to antiseizure medications through breast milk had higher intelligence and language abilities at 6 years.<sup>5</sup>

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