

Epilepsy in Women and Pregnancy

[Disclaimer](#)

This pathway is about contraception, pre-conception, pregnancy, and postpartum care of women with epilepsy. See also:

- [Epilepsy in Adults](#)
- [First Seizure in Adults](#)

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Red Flags

- Two or more seizures in a 24-hour period in a woman who is pregnant

Assessment

Ask all women with epilepsy about contraception and pregnancy planning, if they are of child-bearing age.

Management

Recommend all women of child-bearing age with epilepsy to:

- take routine high-dose **folic acid** supplementation, especially if taking sodium valproate.

Folic acid

Consider folic acid supplementation at all times (especially if taking sodium valproate) in those of child-bearing age, even when not planning pregnancy, as > 50% of pregnancies are unplanned.

- *Take 5 mg daily 1 month before conception and throughout the first trimester may reduce teratogenesis and counterbalance the altered folic acid metabolism found with some AEDs.*
- *Otherwise take 0.8 mg daily.*
- book a long consultation to plan pregnancy three months before ceasing their method of contraception.

Contraception

1. Consider preferred methods:

- Intrauterine device (IUD) e.g., copper, levonorgestrel intra-uterine device (Mirena)
- **Depo-Provera (medroxyprogesterone acetate) given** every 10 weeks if patient on enzyme inducing AED.

Depo-Provera (medroxyprogesterone acetate)

All AEDs can reduce bone mineral density. Depo-Provera may contribute further to this bone density loss, although its effect on bone density is reversible. Consider strategies to protect against bone mineral density reduction.

2. Advise patient that:

- combined hormonal contraceptives may reduce lamotrigine levels resulting in increased seizure activity.
- enzyme-inducing AEDs (carbamazepine, phenytoin, and to a lesser extent topiramate at doses over 200 mg a day) reduce the efficacy of some contraceptives including Implanon. Patients taking AEDs should not use the following:
 - Combined oral contraceptive pills (COCPs)
 - Progestogen-only pills (POPs)

- Etonogestrel implant (Implanon)
 - Emergency contraception
- hormonal contraceptives are not affected by gabapentin, levetiracetam, and sodium valproate. Valproate should be avoided in women of child-bearing age where possible.
3. Ensure that women are aware an increased dose of **emergency contraception is required with enzyme-inducing AEDs**.

Emergency contraception with enzyme-inducing AEDs

Use twice the normal dose of the emergency contraceptive pill (3 mg of levonorgestrel (emergency contraception) in a single dose), or consider a copper IUD within 5 days of unprotected sexual intercourse (UPS).

4. Emphasise the importance of pre-conception planning.

Pre-conception

1. For all patients with epilepsy considering pregnancy, request:
 - [neurology assessment](#) from their regular neurologist, and
 - [urgent or routine obstetric assessment](#).
2. Consider pre-conception drug levels for future comparison, as some drug levels are affected during pregnancy, and may need monitoring and titrating.
3. Review the use of **anti-epileptic drugs (AEDs)**. If AEDs are withdrawn or reduced, advise that conception should be delayed until the dose is stabilised (this may take 9 months) and implications for **driving**.

Driving

- *Austroads and the National Transport Commission require an obligatory stand-down from driving:*
 - *during the withdrawal period, and*
 - *for 3 months after withdrawal is complete.*
- *If a private licence holder has a seizure during or after withdrawal and medication is reinstated, they can return to driving after being seizure-free for 4 weeks.*
- *A commercial licence holder is ineligible to hold their licence if medication is withdrawn.*

Anti-epileptic drugs (AEDs)

- Sodium valproate:
 - Avoid sodium valproate for women of child-bearing age, where possible, due to its **teratogenicity**, and association with developmental delay.

Teratogenic risk

- *The population congenital malformation rate is approximately 2.4%. In women with epilepsy and treated with valproate, it increases to between 3 and 7%.*
- *Teratogenicity may be related to higher doses and number of AEDs used.*
- *For patients using sodium valproate, and considering pregnancy, request specialist assessment to consider slow withdrawal of the valproate, introduction of a new agent, or dose reduction. Valproate teratogenicity is dose dependent, and may still be the most appropriate medication in some women with epilepsy.*
- *It is recommended that the patient is stabilised on the new AED before conception e.g., 6 months on effective dose.*

Valproate teratogenicity is dose-dependent.

➤ Other AEDs:

Consider tapered withdrawal of AEDs for those with inactive epilepsy to **reduce teratogenic risk**. If withdrawal is considered appropriate, refer for neurologist review and recommendation.

Reduce teratogenic risk

- *Withdrawal should be at least 6 months before planned conception.*
- *Consider substitution e.g., valproate to a less teratogenic alternative e.g., lamotrigine or carbamazepine.*
- *Use monotherapy if possible.*
- *Some patients may wish to consider AED discontinuation for the first trimester only, as this is the critical period for organogenesis.*

4. Start [folic acid](#) supplementation if patient is not already using it.

5. Consider discussing:

- **inheritance of epilepsy**

Inheritance of epilepsy

Generally low (< 4%), but is higher if:

- *the mother (rather than the father) has epilepsy.*
 - *the epilepsy is of early onset.*
 - *there is more than one first-degree relative with epilepsy.*
- general safety of pregnancy with epilepsy – most pregnancies and deliveries will be normal.

6. For advice, call the [neurology registrar](#).

Pregnancy

Most women (> 90%) taking anti-epilepsy medication (AEDs) will have a normal pregnancy.

1. Once pregnancy is confirmed:
 - **do not alter or stop AED** – the risk of losing control of epilepsy is too high.

Avoid altering AEDs to reduce teratogenesis in established pregnancy

- *Increased likelihood of precipitating seizures, and limited benefit if the pregnancy has already been established for several weeks.*
 - *Most major malformations will have occurred before the woman knows she is pregnant. Structural abnormalities can be assessed at the 11-to-13-week and 18-to-20-week ultrasounds.*
 - *Risks to the fetus are greater with multi-drug use and higher dosages.*
 - request [urgent or routine neurology assessment](#) and urgent or routine obstetric assessment.
2. Ensure 5 mg folic acid supplementation daily.
 3. Consider monitoring drug levels during pregnancy – dosage adjustment may be needed due to decreases in free drug levels. This applies to all AED, but particularly lamotrigine.
 4. Encourage women with epilepsy who are pregnant to register with the [Australian Epilepsy Pregnancy Register](#).
 5. **Manage seizures during pregnancy.**

Manage seizures during pregnancy

Convulsive seizure can be harmful to the fetus when related to trauma or accidents, including directly to the abdomen, and from prolonged maternal hypoxia. Recurrent seizures are associated with significant increased fetal risk.

1. *If two or more seizures in 24 hours, call **000** for an ambulance and contact the [Emergency Department](#).*
2. *Consider **eclampsia** and, if likely, call **000** for an ambulance and arrange an [immediate obstetric assessment](#).*

Eclampsia

- *New-onset generalised tonic-clonic seizures, with pre-eclampsia*
- *Headache, confusion, and visual symptoms with or without hypertension having been noted*
- *Pre-eclampsia work-up required*
- *Neurological deficits do not persist*

- *Seizures occur after 20 weeks gestation*
 - *Seizure activity controlled by magnesium infusion*
 - *Definitive treatment is induction of labour, or caesarean delivery*
3. *Otherwise, for single seizures:*
- *check **compliance**, and for the presence of triggers like:*
 - *sleep deprivation.*
 - *altered drug absorption from morning sickness and hyperemesis.*
 - *altered drug metabolism.*
 - *difficulty taking medication especially during and after labour.*

Compliance

Check whether the patient is taking AEDs, the dose, and whether any doses have been missed.

- *arrange AED blood levels.*
 - *request [urgent or routine neurology assessment](#) and urgent or routine obstetric assessment.*
6. For advice, call the [neurology registrar](#).

Delivery and breastfeeding

1. Advise that all pregnant women with epilepsy should deliver in hospital.
2. Advise the patient about increased maternal seizure risk during delivery and the puerperium.
3. Adjust medications – down-titrate to non-pregnant levels following delivery.
4. Provide advice for safely caring for the baby, and minimising risks to patient:
 - Change baby on mat on floor.
 - Bathe baby in minimal depth water, and only when another person present.
 - It is safer for mother to shower rather than bath.
 - Offer advice to the family, and provide an [epilepsy management plan](#).
5. Advise the patient that there is no risk of harm to the infant from AEDs during breastfeeding – encourage patient to breastfeed irrespective of their medication type.
6. Consider contraception options as appropriate.

Referral

- Include appropriate [epilepsy information](#) with each request.

Include in your request

- *Type of epilepsy*
- *Age of onset*

- *Seizure frequency*
 - *Current and previous medications used*
 - *Previous specialist assessment*
 - *If patient is pregnant*
 - *All relevant investigation results (EEG, neuroimaging etc)*
- If two or more seizures in pregnancy, or if eclampsia is likely, call **000** for an ambulance and contact the [Emergency Department](#) or obstetric registrar to advise that the patient is being referred.
 - Request [urgent or routine neurology assessment](#) and urgent or routine obstetric assessment:
 - pre-conception for medication review, especially if patient is on sodium valproate.
 - for all patients with epilepsy who are on AEDs, once a pregnancy is confirmed.
 - for single seizures in pregnancy in a woman with pre-existing epilepsy.
 - for advice about altering any AEDs in pregnancy.
 - Request urgent or routine obstetric assessment for all pregnant patients with epilepsy.
 - For advice, call the [neurology registrar](#).

Information

For health professionals

Further information

Australian Family Physician – [Epilepsy in Pregnancy](#)

For patients

- Better Health Channel:
 - [Epilepsy](#)
 - [Epilepsy – First Aid and Safety](#)
 - [Epilepsy – Lifestyle Issues](#)
- [Epilepsy Foundation](#)

References

1. Meador KJ. [Breastfeeding and antiepileptic drugs](#). *Jama – Journal of the American Medical Association*. 2014;311(17):1797-1798.

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