The first of its kind in Western Australia, the Epilepsy & Pregnancy Clinic was established at the Perron Institute in November 2017. The clinic aims to provide specialist advice to women with epilepsy of childbearing age and their medical practitioners on best management of epilepsy prior to conception, during pregnancy and in the postpartum period.

Although more than 90 per cent of women with epilepsy (WWE) deliver a healthy baby, there are still concerns for the mother and the unborn child, particularly in women with recurrent seizures or on antiepileptic drugs (AEDs). The care of WWE therefore needs to start well before pregnancy occurs.

Pre-pregnancy Counselling
This provides the opportunity to establish a baseline and provide information about issues in pregnancy. Two thirds of WWE are seizure-free during pregnancy, and this proportion rises to almost 90 per cent in those who are seizure-free for one year or longer prior to conception. This reinforces the need for adequate seizure management and optimisation of the AED regime well before pregnancy.

Women on AEDs are particularly concerned about the risk of birth defects and developmental problems in their offspring. This risk is particularly high with Valproate especially at high doses or in polytherapy.

There are many ways to reduce risks in a future pregnancy. Folic acid supplementation, for example, is considered beneficial in preventing spina bifida.

For some women it may be possible to reduce the dose and number of AEDs or even consider withdrawal of AED treatment.

Contraception Advice
WWE should be aware that hormonal contraceptive failure may occur with enzyme-inducing AEDs. In addition, use of the combined oral contraceptive pill significantly reduces Lamotrigine serum levels, which may lead to poor seizure control. Dose adjustment or an alternative contraceptive method can be tried in order to minimise risk of unexpected pregnancy.

Pregnancy Care
Convulsive seizures can be harmful to the mother and fetus and need to be adequately controlled. This is especially the case in women who continue to have seizures despite taking one or more AEDs. Ensuring they are on the right medication and the right dose is paramount.

The serum levels of certain AEDs tend to fall as pregnancy progresses; this requires drug monitoring and dose adjustment during pregnancy and after delivery.

WWE who become unexpectedly pregnant need to discuss treatment with an epilepsy specialist urgently. Women who do not take their AEDs regularly or stop them altogether are at risk of suffering more seizures during pregnancy that may result in serious harm.

On the other hand, for some women it may be appropriate to switch or even temporarily stop their medication. Risk factors for seizures, such as sleep deprivation and stress, need to be discussed and addressed. Women should also be assessed for depression and anxiety that may be related to the effects of AEDs or affect medication compliance.

Intrapartum Care
Seizures can occur in 2-3.5 per cent of WWE during labour. In addition, there is a slightly higher risk of obstetric and perinatal complications particularly in women on AEDs. Therefore, women should deliver in a centre with adequate facilities for maternal and neonatal resuscitation and have a birth plan with input from the epilepsy specialist.

Post-Partum Care & Breastfeeding
This is a critical period complicated by sleep deprivation and lifestyle change that may impact on medication adherence and seizure control. If the AED dose was increased in pregnancy, it should be adjusted in the early postnatal period to avoid toxicity. Breastfeeding is encouraged for all women but may require planning to ensure safety for baby and mother.

The Way Forward
The optimal care of WWE who are planning a pregnancy, becoming pregnant or planning delivery & breastfeeding...
requires careful consideration of the woman’s epilepsy type, seizure control, comorbidities and medications, as well as personal circumstances and values.

**Fact File:**
The Epilepsy & Pregnancy Clinic is a public clinic that runs fortnightly; it provides rapid access to WWE and offers personalised advice focusing on patient information and understanding. It is supported by Megan Thorburn, Clinical Nurse Consultant Epilepsy & Movement Disorders, who acts as liaison, offers education, and patient and family support. The clinic provides educational material in partnership with Epilepsy Action Australia and is also linked with the Australian Pregnancy Register (APR). Direct referrals are accepted from GPs, Obstetricians, Obstetric Physicians, Psychiatrists and Neurologists.

**www.perrinstitute.org/movement-disorders-clinics-stroke-clinic/#reclinic**

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**CLINICAL CASE**

**The story:** A woman with epilepsy of unknown cause in her 20s on Valproate (VPA) becomes unexpectedly pregnant while on a combined oral contraceptive pill. Following a referral by her Obstetrician, she is seen urgently in the Epilepsy & Pregnancy Clinic at the beginning of the second trimester.

She developed focal to bilateral tonic clonic seizures in early childhood. Seizures were eventually controlled by moderate dose VPA leading to seizure freedom for many years.

As a child, she had been investigated in another State and was managed by her GP for many years without input from a Neurologist.

She started taking folic acid and multivitamins in early pregnancy. She holds a full-time job that requires driving.

**The issue:** Babies born to mothers who take VPA during pregnancy have a 10 per cent risk of birth defects (such as spina bifida, cleft lip or palate, heart malformations) and a 30-40 per cent risk of neurodevelopmental disorder (such as learning or language difficulties, or autism).

Since these risks are dose-dependent, it is possible that a lower VPA dose will reduce the risk or extent of any neurodevelopmental problems in the offspring.

Lowering the dose of VPA, however, means that the patient cannot drive during the period of dose reduction and for three months thereafter – provided she remains seizure-free.

**The reality:** The patient was not aware of the deleterious effects of VPA to the baby but she now understands the risks. She is happy with her treatment and does not wish to stop it because of the potential for seizure recurrence and the driving restrictions. She will only consider reducing the VPA dose.

**The ideal situation:** The patient should have been referred to an adult Neurologist or Epileptologist as soon as she transitioned to adult care. Epilepsy management, contraception and use of VPA should have been discussed and plans made to either replace VPA with a more suitable AED or reduce the dose.

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Professor Marcus Atlas, Ear Science Institute Australia Director speaking at the 13th International Conference on Cochlear Implants and Other Implantable Auditory Technologies, Munich Germany.

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