

# It's a '**BUMP-Y**' ride

## Understanding and Managing Peripartum Depressive Disorders

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# Declaration of Interests

No conflicts of interests

**BREAKING**

**NEWS**

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# Lauren Dickason found guilty of murder of her three children



Lauren Dickason has been found guilty of the murder of her three daughters. Picture: Facebook

# Lauren Dickason and unpacking the narrative surrounding women who kill their children



*The Dickason family, Lauren and Graham and their daughters, twins Maya and Karla and their older sister, Liane. Picture: Facebook/Supplied*

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# What happened?


## Lauren Dickason murder trial: Triple tragedy

- Dickason admitted to strangling her daughters – Iane, six, and two-year-old twins Maya and Karla – with interconnected cable ties, before smothering them to death one by one at their home in Canterbury, New Zealand on the 16<sup>th</sup> September 2021.
- She then tucked them in with their soft toys before attempting to take her own life with a knife and a cocktail of pills.
- Her orthopaedic surgeon husband, Graham, discovered his daughters' bodies when he arrived home from a work dinner.
- The Pretoria family immigrated to New Zealand and had just completed their hotel quarantine in Auckland, a week before the horrific killings.



# Postpartum Depression in the Spotlight



- Dickason pleaded not guilty to three charges of murder with her defence arguing insanity or **infanticide due to postpartum depression.**
  - Ultimately, the High Court jury delivered a majority verdict of guilty of murder for each child.
- 

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# Where did it all start?

- The husband reported how the now 45-year-old underwent a total of 17 gruelling rounds of IVF and eventually used donor eggs to have their children.
- Dickason had been on chronic psychiatric medication but stopped taking it because she feared it would affect their immigration application.
- New Zealand has strict requirements and potential immigrants can be turned down on the basis of a chronic illness.

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# Postpartum Depression in the Spotlight

- Dickason's depressive symptoms had their onset 11-years ago leading up to the alleged offence.
- Dickason struggled with fertility problems after losing her first child at 18 weeks gestation.
- She suffered with antepartum anxiety and then postpartum depression that remained chronic.



# Introduction

- The birth of a child most often evokes maternal feelings of happiness and joy, but much less attention is paid to the fact that postpartum depression (PPD) is also present for many new mothers (Gavin et al. 2005).
- The conflict between the positive emotions that new mothers often think they should feel and the reality of a depressed mood and anxiety that many of them actually experience can be confusing and overwhelming.

# Postpartum Depression

- Postpartum depression impacts approximately **1 in 7 females** in the first year following pregnancy, and it is one of a range of **common perinatal mental health disorders**, which also include Depression, Anxiety, Obsessive-compulsive disorder, Post-traumatic stress disorder, Bipolar disorder, and Substance use disorders.
- Together, these **perinatal mental health conditions impact 1 in 5 pregnant or postpartum people** (800,000 individuals) each year in the United States.



# Peripartum Depression VS. Other Depressions

- Discrepancy exists about whether PPD is a disorder distinct from other depressions.
- PPD can have its index onset during pregnancy or in the postpartum period.
- PPD is unique in at least two ways.
  1. It is preceded and accompanied by major physiological adaptations due to pregnancy that may also affect mood.
  2. PPD not only affects the mother but also adversely affects the newborn's cognitive, behavioural, and emotional development (Feldman et al. 2009, Fihrer et al. 2009), with effects potentially lasting into adolescence (Verbeek et al. 2012).

# Prevalence of Gestational Diabetes Mellitus

## 16.7%



**International  
Diabetes  
Federation**

**1 in 6 pregnant women**

### **Obstetric outcomes**

- Increased risk caesarean section
- Increased risk for shoulder dystocia
- Preterm delivery

### **Neonatal Outcomes**

- Low one minute Apgar score
- Increased risk for NICU admission
- Macrosomia
- LGA

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# Prevalence of Antenatal Depression

## 20%

### Maternal Outcomes

- Poor ANC follow-up
- Increased risk for substance use
- **Suicide**

### Obstetric Outcomes

- **Miscarriage**
- Antepartum haemorrhage
- Caesarean section delivery
- Prolonged labour

### Neonatal Outcomes

- **Preterm birth (RR 2.3)**
- **Low Birth Weight (RR 1.9)**
- IUGR
- SGA
- Increased NICU Admissions

### Postpartum Outcomes

- Child neglect
- Lactation difficulties
- **Infanticide**



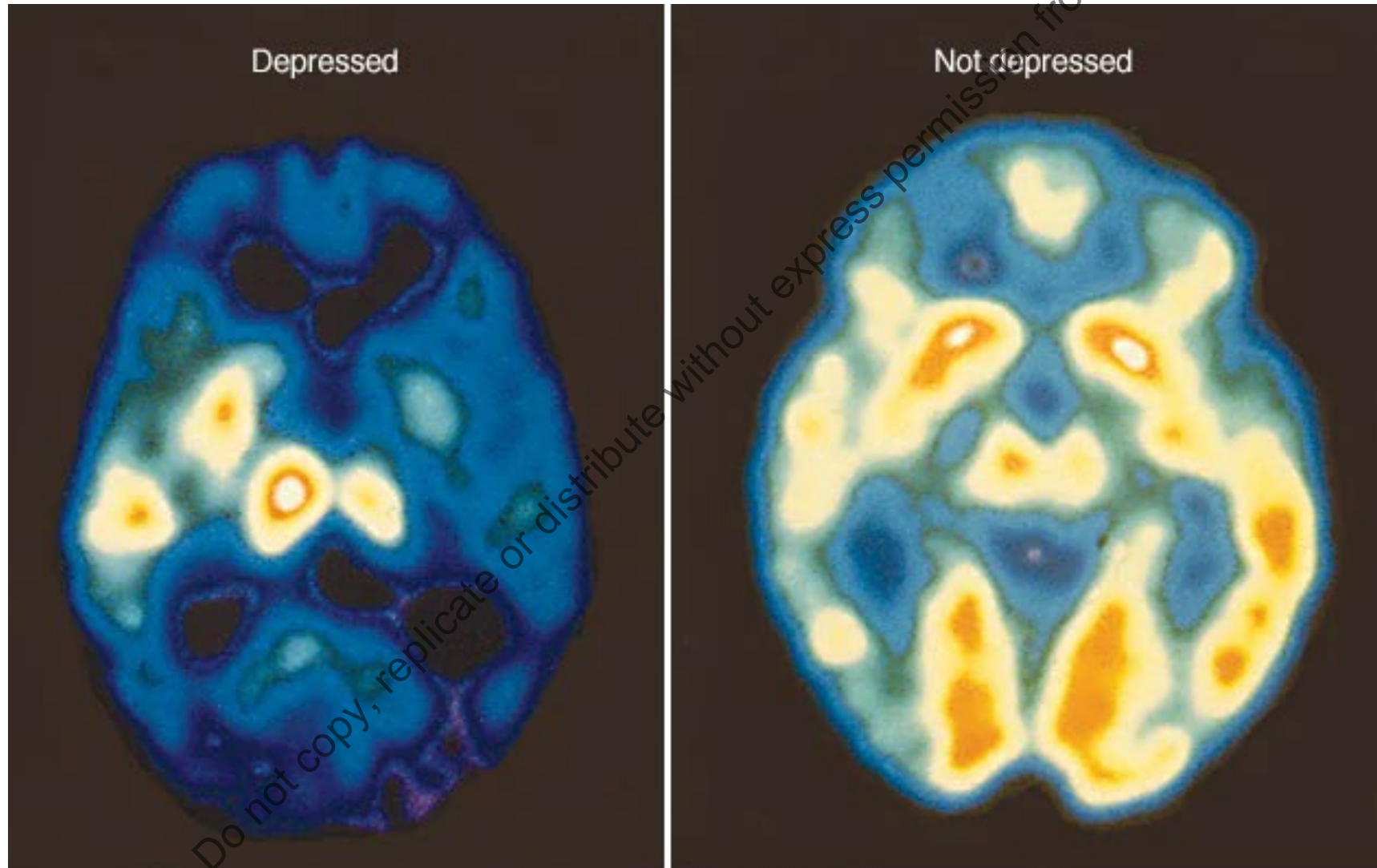
**1 in 5 pregnant women**



**The  
Neurobiology  
of Postpartum  
Depression  
&  
The BUMPY  
Hormonal  
Ride**

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# Neuroimaging in Depression



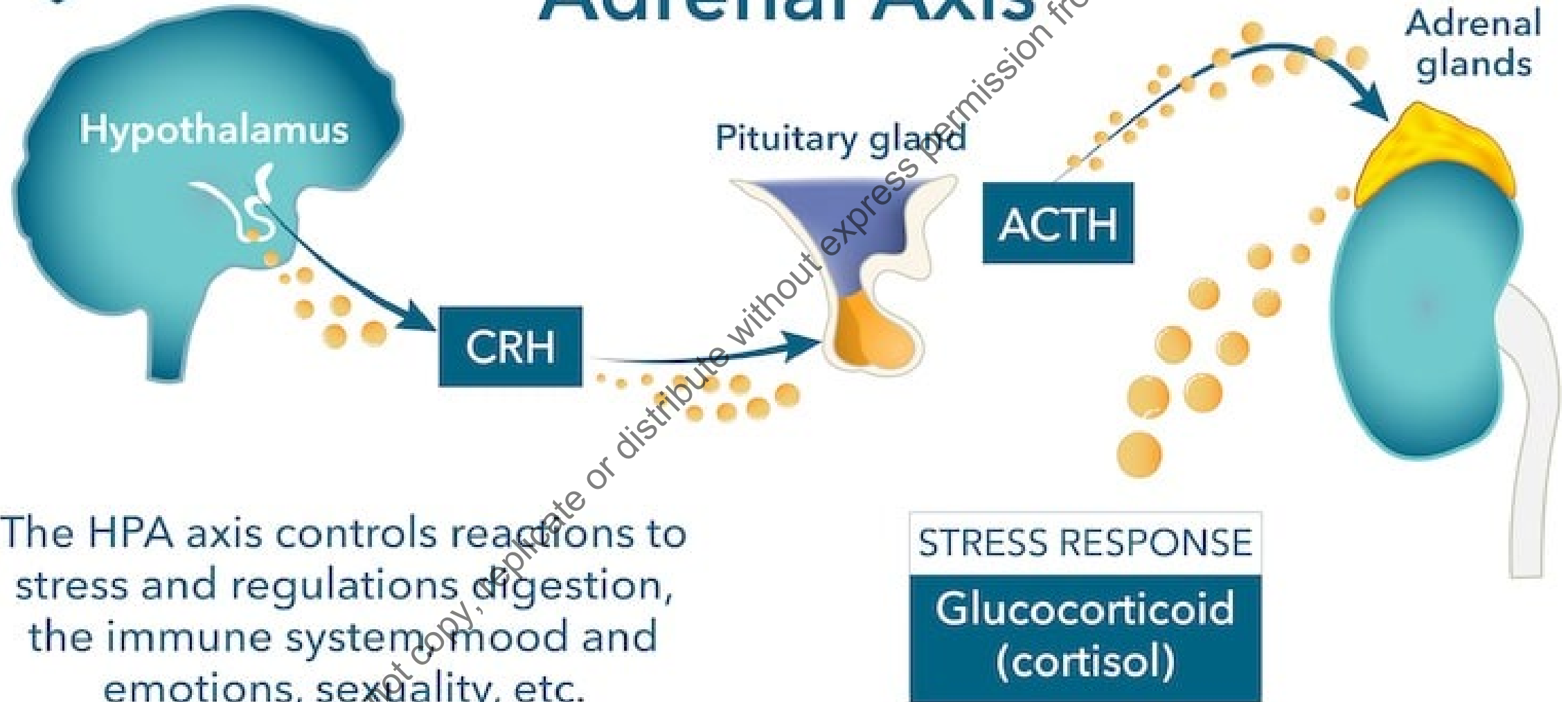


# Genetic Factors

- Family, twin and adoption studies, and epidemiological evidence for a genetic contribution to the development of depression.
- Heritability is significantly greater in females than in males.



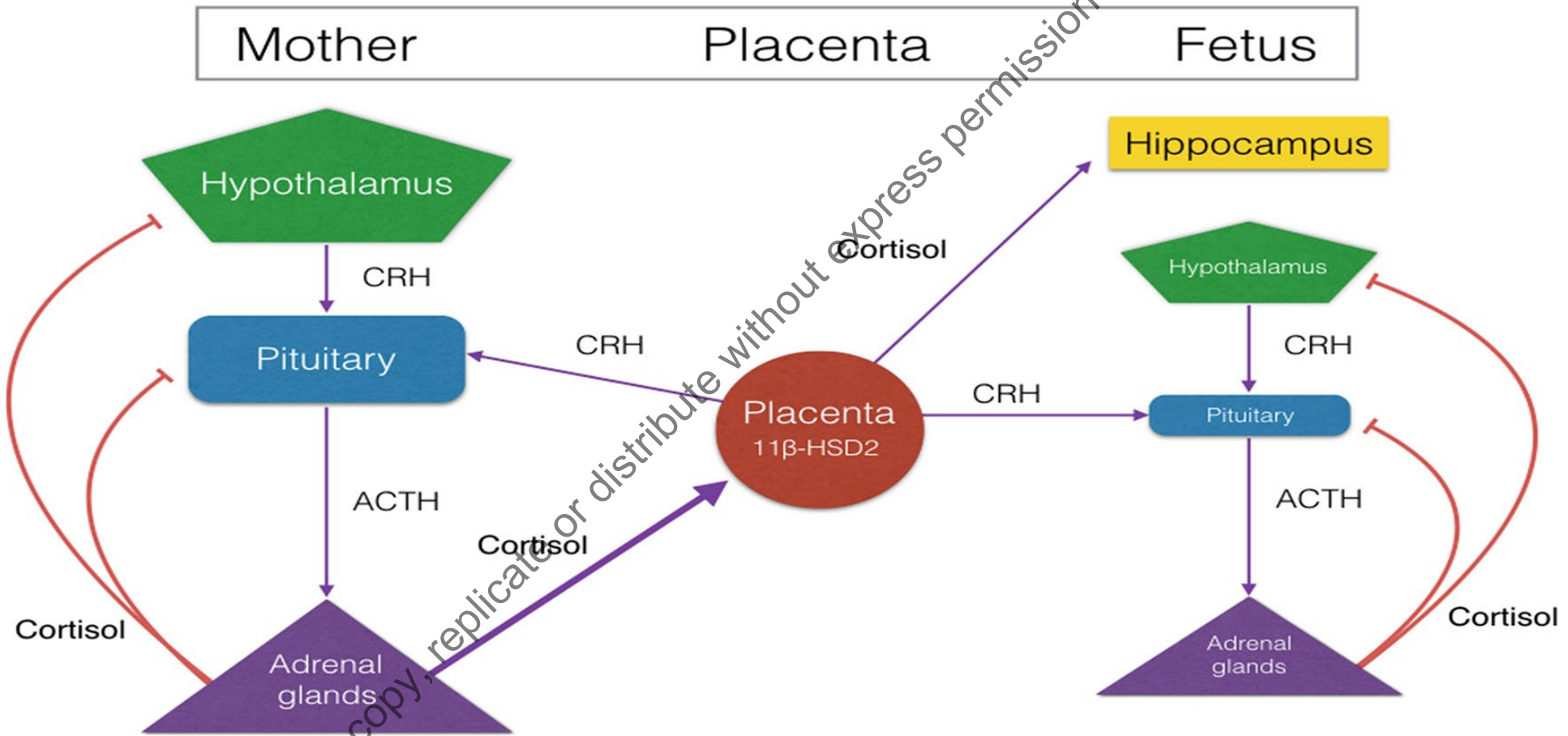
# Hypothalamic Pituitary Adrenal Axis



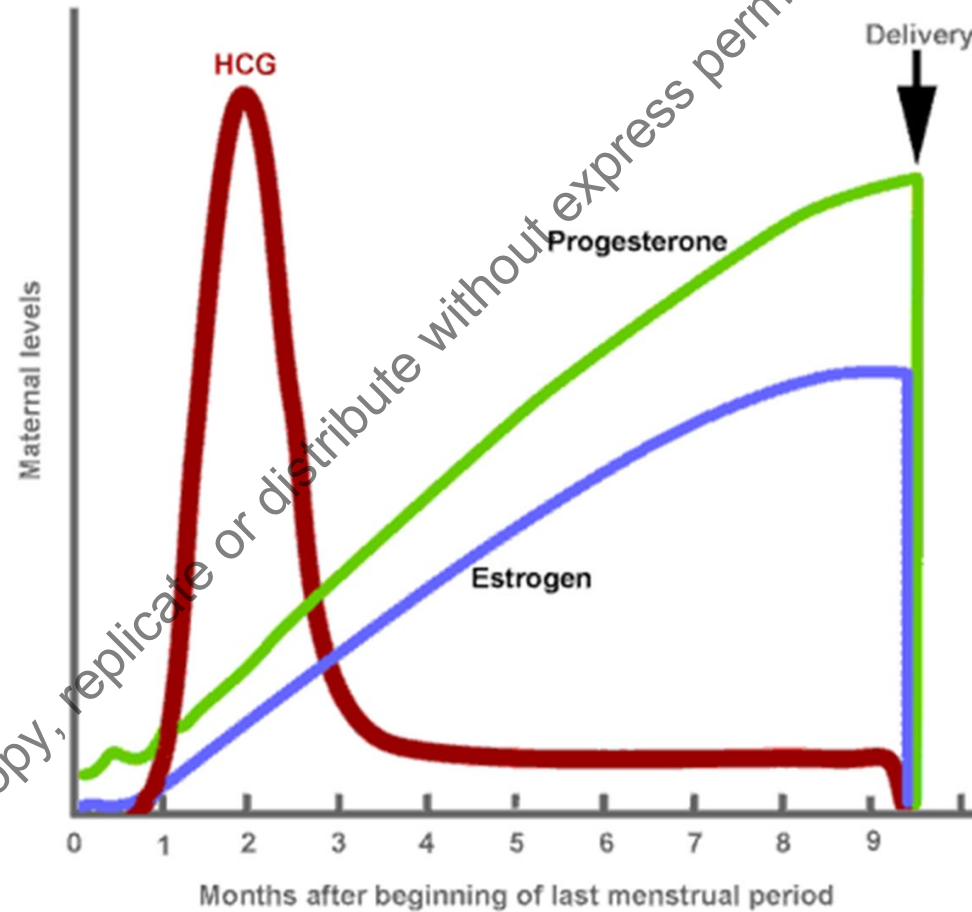
The HPA axis controls reactions to stress and regulations of digestion, the immune system, mood and emotions, sexuality, etc.

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# Stress Hormones and Effects in Pregnancy



# Reproductive Hormonal Withdrawal Hypothesis



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# Reproductive Hormones



Douma et al. 2005

- Reproductive hormones play an important role in orchestrating pregnancy, labour, and birth.
- They have also been implicated in nonpuerperal depression.
- Research has demonstrated that mood disturbance is associated with the **sudden withdrawal of Oestrogen, Oestrogen fluctuations, and sustained Oestrogen deficiencies**

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# Reproductive Hormones

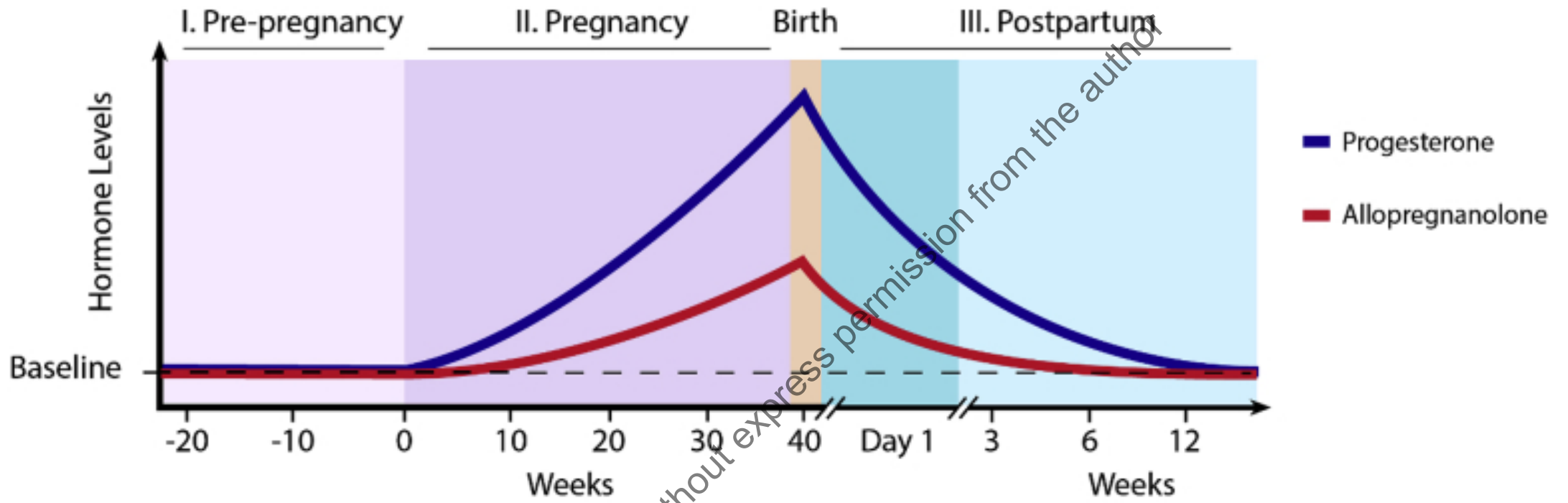


- Similarly, **Progesterone** is thought to be protective against depression because of its **anxiolytic** and **anaesthetic properties** (Herrmann & Beach 1978, Itil et al. 1974).
- Progesterone **modulates serotonergic receptors** (Biegon et al. 1983).
- Therefore, the fluctuations in Oestrogen and Progesterone during pregnancy and postpartum may contribute to PPD (Bloch et al. 2000).

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# The Neurobiology of Postpartum Depression

- **Allopregnanolone (ALLO)** is a neuroactive **metabolite of progesterone** that binds to **GABA-A receptors** and increases the sensitivity of these receptors, which results in an anxiolytic and antidepressant effects.
- Women with Premenstrual Syndrome (PMS) and Premenstrual Dysphoric Disorder (PMDD) have been found to have lower levels of Allopregnanolone than women without PMS/PMDD.
- **Low levels of Allopregnanolone** has also been associated with an **increased risk of postpartum depression**.



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# Classification

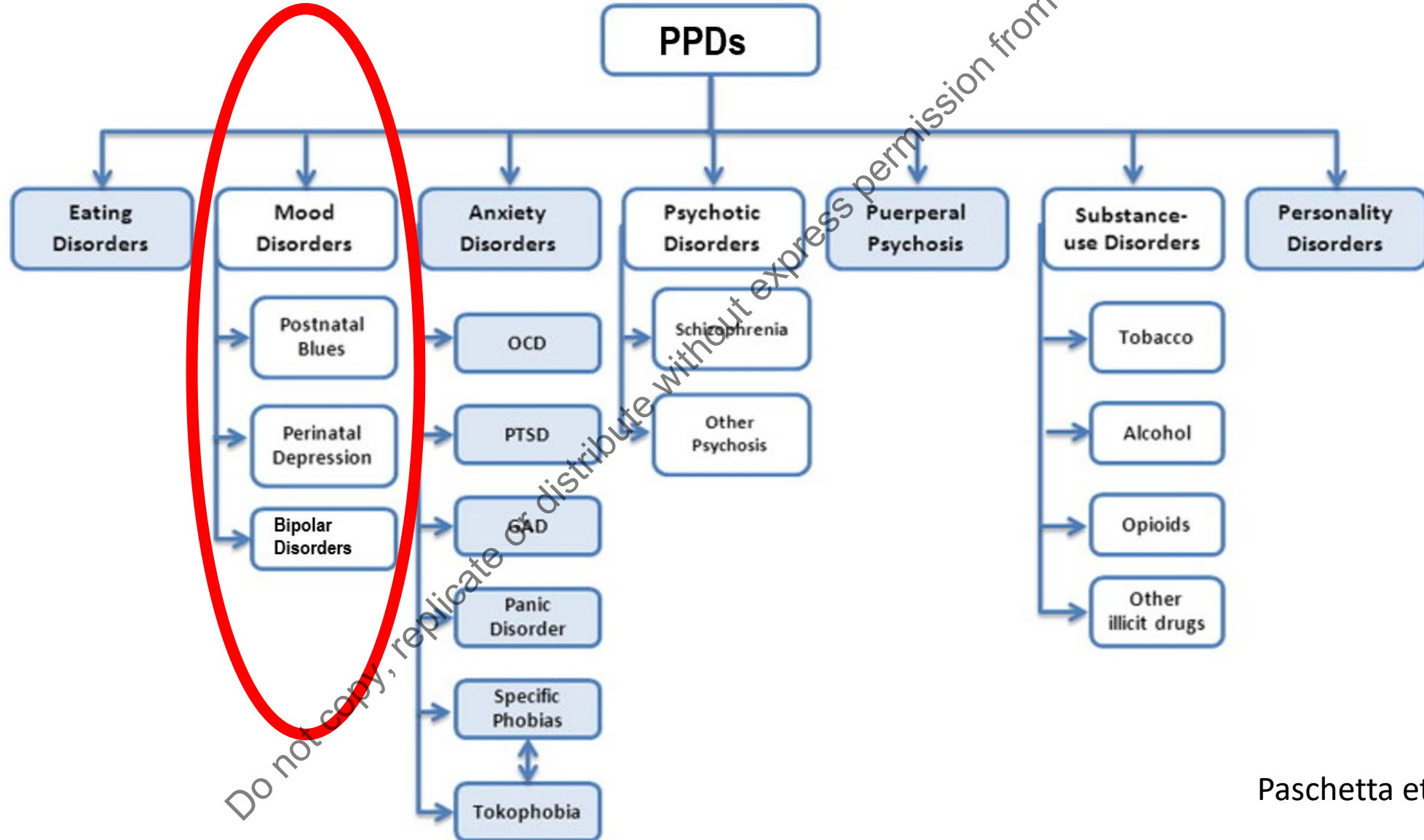
## The first 1000 days

Perinatal (pregnancy and postpartum period – up to 2 years ) psychiatric disorders can arise for the first time during the perinatal period or may represent a relapse of a pre-existing condition.

Mood and anxiety disorders are the most prevalent disorders during the perinatal period and are often referred to as the **Common Perinatal Mental Disorders**

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# Perinatal Psychiatric Disorders



# Baby Blues

- **Baby blues" are mild, temporary mood swings and feelings of sadness or anxiety that many women experience within the first 2 weeks after birth.**
- **Postpartum depression is a more serious and persistent mood disorder that can last for weeks or months.**

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# Peripartum depression signs and symptoms

( 5 or more for at least 2 weeks within 4 weeks postpartum)

- Depressed mood or severe mood swings
- Excessive crying
- Difficulty bonding with your baby
- Withdrawing from family and friends
- Loss of appetite or eating much more than usual
- Inability to sleep (insomnia) or sleeping too much
- Overwhelming fatigue or loss of energy
- Reduced interest and pleasure in activities you used to enjoy
- Intense irritability and anger

- Fear that you're not a good mother
- Hopelessness
- Feelings of worthlessness, shame, guilt or inadequacy
- Diminished ability to think clearly, concentrate or make decisions
- Restlessness
- Severe anxiety and panic attacks
- **Thoughts of harming yourself or your baby**
- **Recurrent thoughts of death or suicide**

# Who is at risk?

## Psychiatric Factors

- History of mood/psychotic disorders in the family
- Previous mood/psychotic disorders before pregnancy
- Previous diagnosis of mood/bipolar disorder before pregnancy
- Substance use disorders

## Social Factors

- Unwanted/unplanned pregnancy
- Teenage pregnancy
- Poverty/unemployment
- No support/single parent
- Intimate-partner violence/ Gender-based violence

## Obstetric/neonatal factors

- Complications after birth with mother/baby
- Twins/triplets
- Congenital abnormalities
- Neonatal ICU admission
- Difficulty with breastfeeding

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# Perinatal Depression in South Africa

The prevalence of postpartum depression is reported to be approximately 20% and 25% for women in LAMICs.

In **South Africa**, the prevalence of depression ranges between 21 and **39% antenatally** and between 16 and **32% postnatally**.



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# Untreated Depression

# Untreated Depression

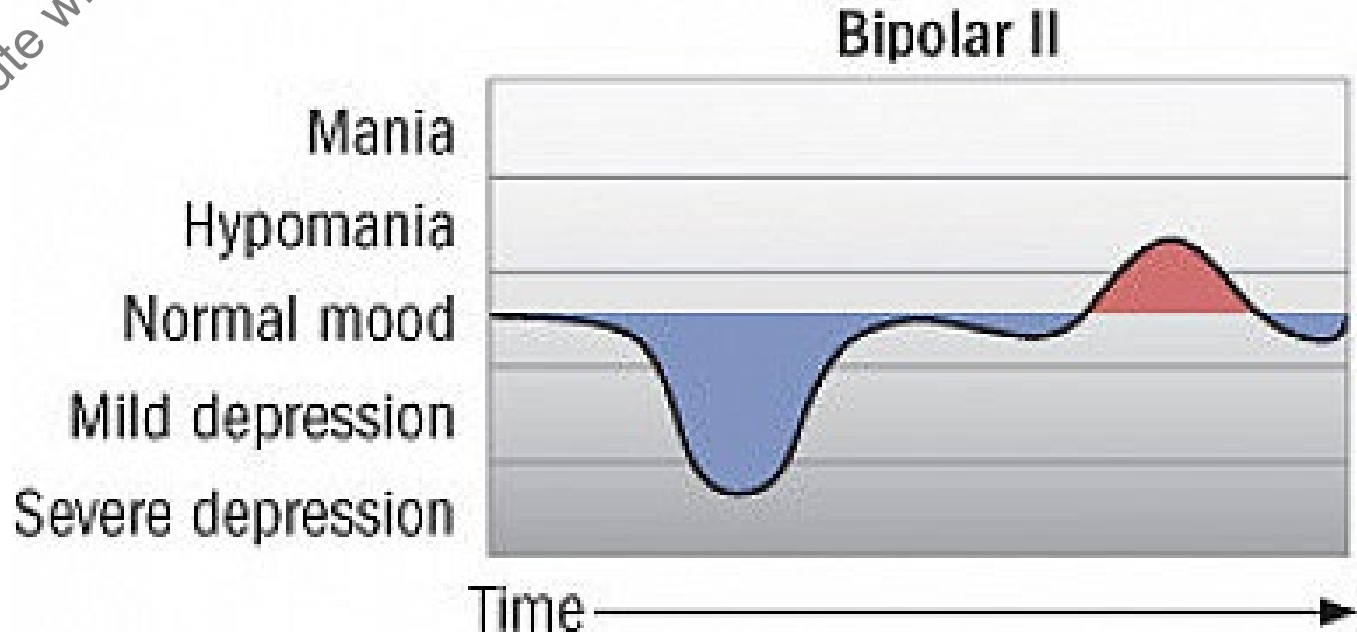
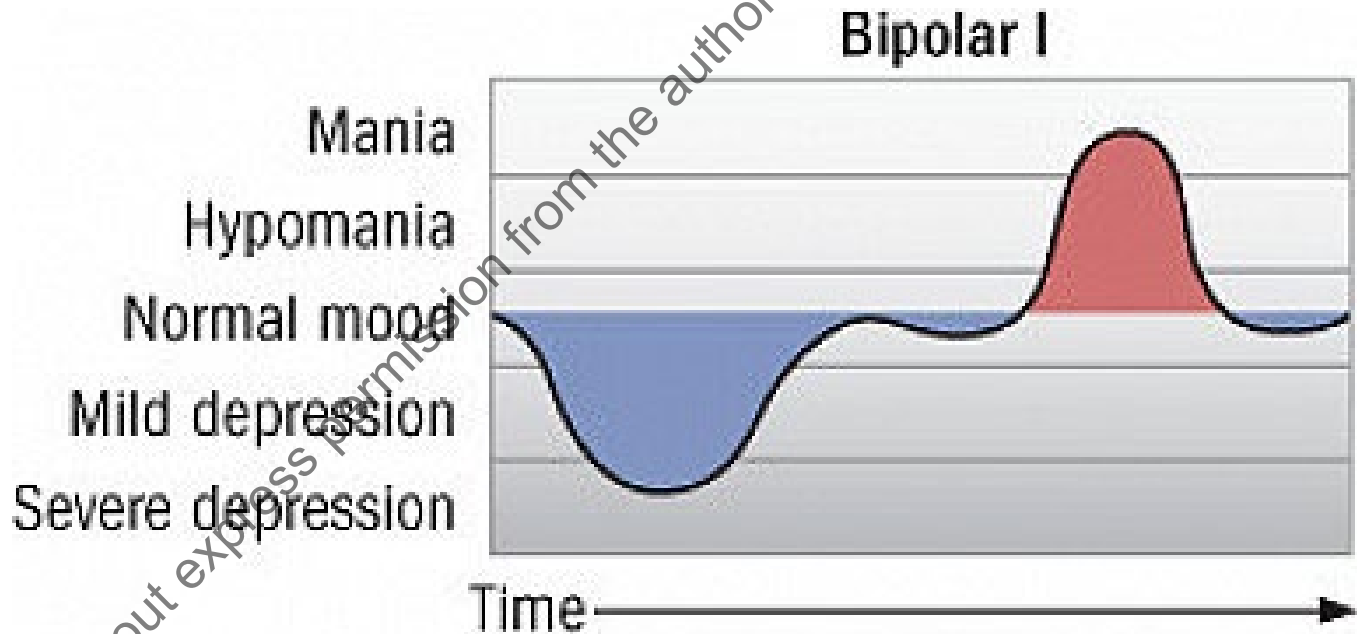
Obstetric Outcomes: Antenatal depression may have a small increased risk of **pre-eclampsia** and a moderately increased risk of giving birth to a baby with a **low birth weight**.

Other studies have demonstrated that pregnant women with depression are associated with higher risk of **hyperemesis gravidarum, miscarriage, malpresentation, and caesarean section**.

Psychiatric outcomes: Untreated depression can result in increased risk of **suicidality, psychosis** and **infanticide**. Postpartum there is a risk of **child neglect** by mothers who are severely depressed.

# The Bumpy ride of BIPOLAR DISORDER

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# Untreated Bipolar Disorder

- Bipolar Disorder has been associated with **placental abnormalities** and **ante partum haemorrhages, foetal abnormalities, restricted birthweight or gestational age.**
- First presentation of Bipolar Disorder in women commonly presents in the postpartum period in the form of **postpartum psychosis** or **severe postpartum depression/mania with/without psychotic features.**

# Screening tools



- Edinburgh Postnatal Depression Scale
- Whooley Questions

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# MATERNITY CASE RECORD



DEPARTMENT OF HEALTH

THIS DOCUMENT MUST ALWAYS ACCOMPANY THE CLIENT WHEN  
SHE IS TRANSFERRED TO ANOTHER HEALTH FACILITY

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# Maternal Mental Health Screen

1. In the last 2 weeks, have you on some or most days felt unable to stop worrying or thinking too much? Yes [1] No [0]
2. In the last 2 weeks, have you on some or most days felt down, depressed or hopeless? Yes [1] No [0]
3. **In the last 2 weeks, have you on some or most days had thoughts and plans to harm yourself or commit suicide?\***  
Yes [1] No [0]

• TOTAL SCORE = 2/3 **REFER**

Offered Counselling: Yes/ No

Accepted Counselling: Yes/ No

# Peripartum Depression Management



PSYCHOTHERAPY



ANTIDEPRESSANTS



MOOD STABILISERS



ECT



NOVEL  
TREATMENTS

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# MEDICATIONS IN THE PERIPARTUM PERIOD

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Are psychotropic medications  
safe  
in  
pregnancy?

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# Aren't psychotropics dangerous in pregnancy?

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- **Antidepressants:** SSRIs except Paroxetine ( Relatively safe – PPHN = Evidence a large study of publicly insured pregnant women may be consistent with a potential increased risk of PPHN associated with maternal use of SSRIs in late pregnancy. However, the absolute risk was small, and the risk increase appears more modest than suggested in previous studies)
- **Antipsychotics:** Haloperidol and most SGAs may be used with relative safety (Olanzapine may be associated with gestational diabetes).
- **Mood stabilisers:** SGAs are preferred choice. Lithium ( 1:1000 chance of Epstein's Anomaly), Lamotrigine (may be used with relative safety).

**Sodium Valproate is contra-indicated in women of child-bearing age**

- **Benzodiazepines:** Contra-indicated during pregnancy except in acute settings



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**Risks of  
untreated  
illness**

**vs.**

**Risk  
of  
treatment**

# Antidepressants in Pregnancy

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# ANTIDEPRESSANTS IN PREGNANCY

## SSRIs (Selective Serotonin Reuptake Inhibitors)

Fluoxetine	Relatively Safe
Citalopram	Relatively Safe
Sertraline	Relatively Safe
Escitalopram	Relatively Safe
<b>Paroxetine</b>	<b>Increased risk of cardiac malformations</b>

## SNRIs ( Serotonin and Noradrenaline Reuptake Inhibitors)

Venlafaxine	Relatively Safe
Duloxetine	Relatively Safe

## NDRIs (Noradrenaline-Dopamine Reuptake Inhibitors)

Bupropion	Relatively Safe
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## Tricyclic Antidepressants ( TCAs) and Atypical Antidepressants

Clomipramine, Amitriptyline	Relatively Safe
Trazadone, Mirtazapine	Relatively Safe

## Newer antidepressants

<b>Vortioxetine, Agomelatine, Desvenlafaxine</b>	<b>No data available, Not recommended in pregnancy</b>
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# Mood Stabilisers in Pregnancy



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# Mood Stabilisers

**Epstein's Anomaly  
1:1000**

**Lamotrigine**

**SECOND-  
GENERATION  
ANTIPSYCHOTICS**

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# An Overview of Reviews on the Safety of Electroconvulsive Therapy Administered During Pregnancy

Coshal, S et al. 2019



“Our overview supports the conclusion, which has also been endorsed by the American College of Obstetricians and Gynecologists and the American Psychiatric Association, that administration of ECT during pregnancy is relatively safe.”

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# Novel treatments in Postpartum Depression

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# Brexanolone Infusion

- Brexanolone is a novel treatment, approved by the **FDA in March of 2019**, for moderate to **severe postpartum depression**.
- Brexanolone is **rapidly responsive** — Remission of depression within 24 hours.
- The efficacy of Brexanolone provides support for the role of neurosteroids like **Allopregnanolone** in the treatment of PPD.
- Increased activity of **GABA<sub>A</sub> receptors** is known to produce a **potent anxiolytic** and **antidepressant** response.

**FDA  
Approves  
Zuranolone  
The First  
Oral  
Treatment  
for  
Postpartum  
Depression**

- **Zuranolone is the first oral tablet** indicated for the treatment for **moderate to severe PPD.**
- It is taken for **14 days** and has been proven to significantly **reduce the symptoms** of postpartum depression.
- Early studies of Zuranolone showed significant improvements in the safety and effectiveness in treating postpartum depression compared to standard treatments.

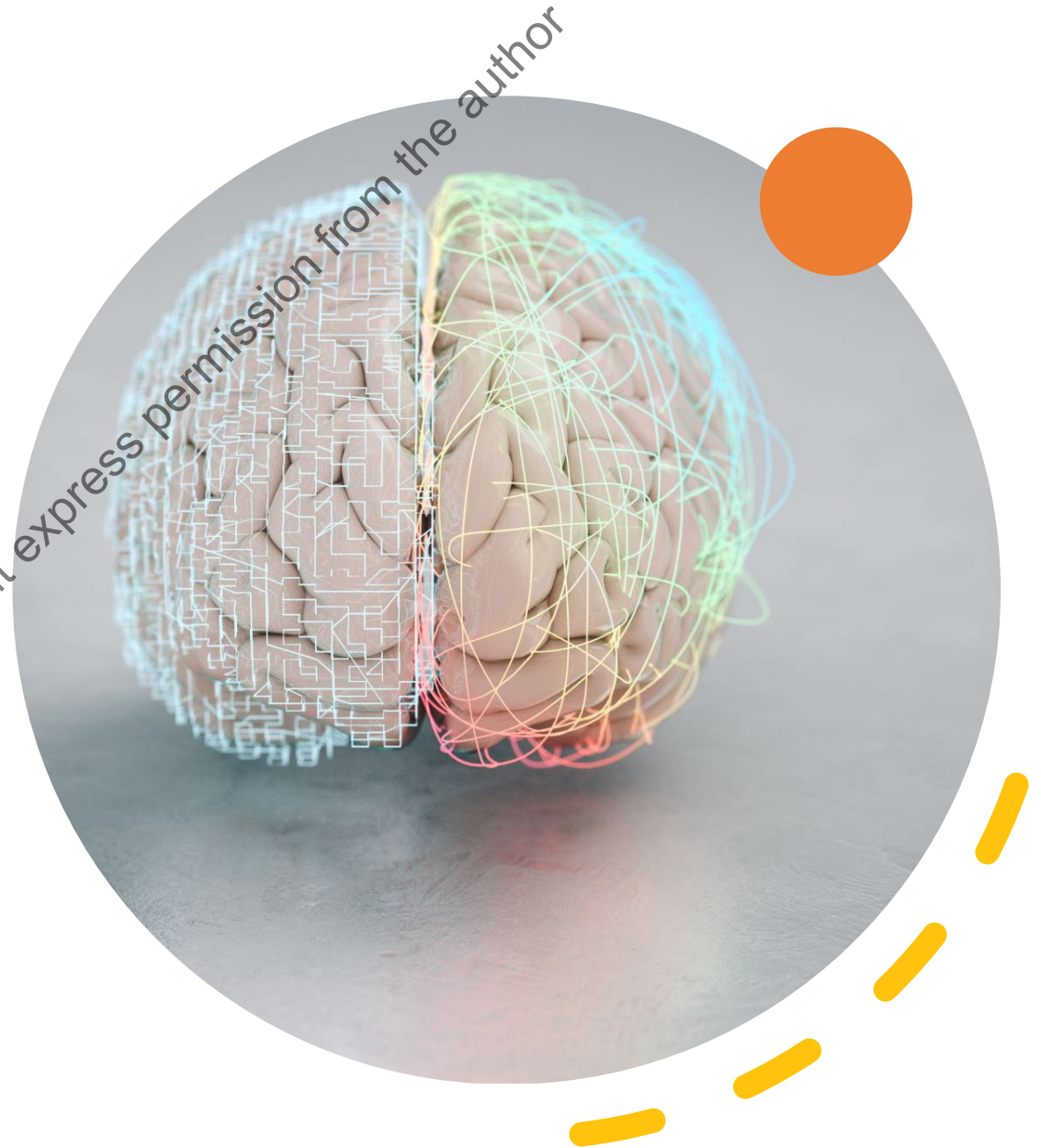


The image shows a clinical setting where a woman is seated in a NeuroStar transcranial magnetic stimulation (TMS) machine. A healthcare professional, wearing a blue shirt and glasses, is standing and adjusting the settings on a control panel. The machine is white and blue, with a large coil positioned over the woman's head. The control panel displays various parameters and a graph. The background features a large window with a wooden frame.

# Transcranial Magnetic Stimulation

# Transcranial Magnetic Stimulation

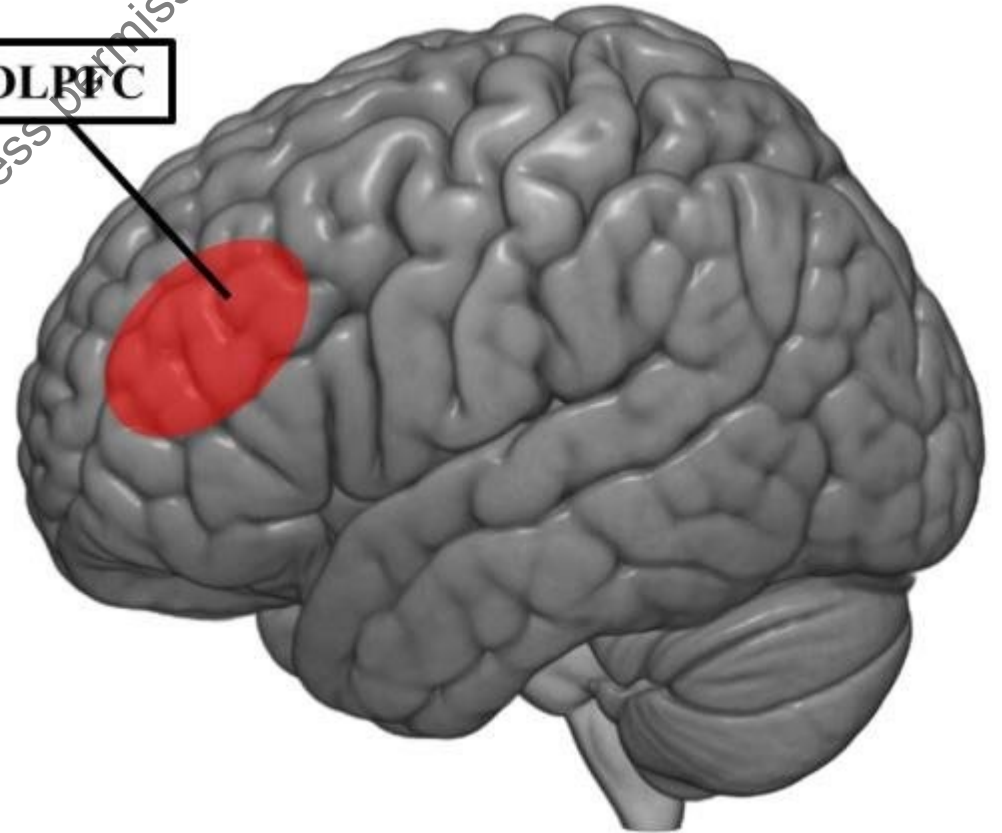
- Transcranial magnetic stimulation (TMS) is a **non-invasive treatment** that involves using a magnetic coil to influence the brain's natural electrical activity.
- This treatment, first developed in 1985, now sees widespread use for a variety of mental health and brain-related conditions.



# Depression

Left Dorsal Lateral Prefrontal Cortex hypoactivity is associated with negative emotional judgment rather than with emotional perception.

DLPFC



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# In conclusion...

- Depression can present at anytime during pregnancy and in the postpartum period.
- Untreated depressive disorders increase medical morbidity and mortality for both mother and baby.
- Stopping psychotropic medication will result in adverse outcomes for both mother and baby.
- PPD is a serious and common mood disorder that can be effectively treated.



**There is no  
health without  
mental health.**

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**The International Marcé Society  
for Perinatal Mental Health**

<https://marcesociety.com/>



<https://mothertobaby.org/fact-sheets/>



**SOUTH AFRICAN  
SOCIETY OF PSYCHIATRISTS**

<https://www.sasop.co.za/>



<https://www.ncbi.nlm.nih.gov/books/NBK501922/>



*“New mothers need to be mothered, to be nurtured and cared for by a support network that assists with physical recovery from birth, transition into infant care and the immense psychological leap into a new role.” - Lauren Porter*

Questions?

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