

# SUBSTANCE USE DISORDERS IN PREGNANCY

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## Introduction

The use of substances (drugs) among women of child bearing age is growing. In the United States, women make up 40% of the lifetime prevalence rates for drug use disorders. Women are also at highest risk for developing a Substance Use Disorder during their reproductive years (18–44), especially ages 18–29.

The use of substances not only has negative outcomes for the unborn foetus, but also the mother herself. Pregnant women with Substance Use Disorders are less likely to seek antenatal care and have higher rates of infectious diseases such as HIV, hepatitis, and other sexually transmitted infections. Substance use is also often associated with other Co-morbid Psychiatric Disorders. This makes it important for healthcare professionals to identify substance use early in pregnancy.

## Prevalence

According to the SASH (South African Stress and Health Study) study, the lifetime prevalence for any Psychiatric Disorder in South Africa was 30.3%. Being female was associated with increased risk.

The most used substances in the study were:

1. Alcohol use - 38.7%
2. Tobacco smoking - 30.0%
3. Prescription/ over-the-counter medication - 19.3%
4. Cannabis use - 8.4%
5. Other drug use (cocaine, LSD, heroin, opium, glue, etc.) - 2.0%

## Alcohol

The World Health Organisation Global Status Report on Alcohol and Health 2014 stated that South Africa has one of the highest alcohol consumption rates per drinker in the world. South Africa also has one of the highest rates of FASD (Foetal Alcohol Spectrum Disorders) in the world. Since 1997, various prevalence studies in SA have revealed FASD rates as high as 26 per 1 000 (grade 1 learners) in Gauteng and 290 per 1 000 (grade 1 learners) in the Winelands, Western Cape.

Heavy alcohol use in pregnancy has been associated with a range of negative birth outcomes, including increased risks of:

- Miscarriage
- Stillbirth
- Infant mortality
- Congenital anomalies
- Low birth-weight
- Reduced gestational age
- Preterm delivery
- Small-for-gestational age

## Screening tools for alcohol use in pregnancy

The T-ACE was developed by an obstetrician specifically for use in obstetric-gynaecologic practices and takes less than 1 minute to administer.

Its 3 *yes/no* questions:

### T-ACE Screening Tool

- A → Have people **Annoyed** you by criticising your drinking?
- C → Have you felt that you ought to **Cut** down on your drinking?
- E → Have you had to have a drink first thing in the morning to steady your nerves or get rid of a hangover – **Eye Opener?**)

**Tolerance:** How many drinks does it take to make you feel high?

A positive screen is an answer of “yes” to two or more of the A, C, or E screening questions (2 points are assessed if the woman indicates that it takes 2 or more drinks for her to feel high in response to the T question).



## Alcohol Withdrawal in pregnancy

Alcohol withdrawal occurs with the sudden cessation of alcohol consumption in someone who has sustained alcohol intake, and is marked by physiologic instabilities that range from:

- Irritability
- Tremor
- Hypertension
- Tachycardia
- Seizures
- Hyperthermia
- Hallucinations
- Sudden death

Alcohol withdrawal is often a medical emergency, especially in pregnancy.

## Management alcohol withdrawal in pregnancy

The standard medical treatment for alcohol withdrawal is the use of benzodiazepines. Studies regarding foetal malformations due to benzodiazepine exposure are mixed.

Therefore, in the absence of clear evidence, the health professional must carefully weigh the risks and benefits of benzodiazepine use during pregnancy against the potential risks posed by alcohol withdrawal as highlighted above.

## Pharmacological management of alcohol

### *Naltrexone*

Naltrexone is a opioid-receptor antagonist shown to decrease drinking. However, there are no published studies on the safety or efficacy of either formulation of naltrexone for use in Alcohol Use Disorders in pregnant women. Naltrexone is classified as a category C medication by the FDA, meaning that animal studies have shown adverse effects on the foetus.

### *Disulfiram*

Disulfiram results in a severe reaction when alcohol is consumed concurrently with it, resulting in a strong deterrent effect. It's also a category C medication. There is some inconsistent evidence that exposure to Disulfiram in the first trimester may increase the risk of foetal malformations.

### *Psychological interventions*

Research has been conducted on educational and psychological interventions for reducing drinking in pregnancy.

The research although inconclusive, indicated the individual studies themselves suggest either psychological or educational interventions "may encourage women to abstain from alcohol in pregnancy."

## Cannabis

There has been an anticipated increase in cannabis use in pregnancy as legalisation of cannabis increases throughout the United States.

Some pregnant women view cannabis use as harmless in pregnancy. Cannabis has been linked to several negative outcomes,

including preterm labour, low birth-weight, small-for-gestational-age and admission to the neonatal intensive care unit and also cognitive impairment and behavioural problems later on in life.

Placental transfer of cannabis to the foetus does occur, and this results in detectable cord blood levels. Neonates have also tested positive for cannabis in urine.

## Cannabis and breastfeeding

Cannabinoids consumed by mothers reach the newborn during breastfeeding. The amount that reaches the infant is estimated at 0.8% of the mother's exposure.

Despite the lack of research, women should clearly be educated regarding the potential adverse effects of ongoing cannabis exposure through breast milk and encouraged to stop using cannabis while breastfeeding.



## Opioids

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The prevalence of opioid use among women of childbearing age has reached epidemic proportions in the United States. Opioids are found in many painkillers and other examples of opioids include heroin and nyoape, which also contains opioids.

Opioid exposure in pregnancy has also been associated with postnatal growth deficiency, microcephaly (small head circumference), neurobehavioural problems neonatal abstinence syndrome (neonatal opioid withdrawal), and sudden infant death syndrome.

## Pharmacological management of Opioids

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### *Methadone*

Methadone maintenance treatment is the standard of care for opioid dependence in pregnancy. Methadone is a synthetic opioid antagonist commonly used for the treatment of opioid dependence.

Methadone has been shown to cause harmful respiratory depression, constipation, and potential addiction and convulsions if toxic amounts are administered. The US black box warning for Methadone indicates life-threatening arrhythmias can occur in patients using methadone. ECG monitoring is required during the initiation of treatment and after increasing the dose. Methadone requirements in pregnancy increase in dose with advancing gestation.

### *Buprenorphine*

Buprenorphine acts as a partial opioid agonist, lessening the high brought on by opioid abuse.

Pregnant women who use Buprenorphine to treat opioid addiction have children with higher birth weights, larger head circumferences, and fewer defects compared to those who use Methadone.

Use of Buprenorphine over Methadone lowers the risk for preterm birth in pregnant women addicted to opioids.

### *Buprenorphine/ Naloxone*

Naloxone is a pure opioid antagonist that can also reverse the effects of opioid use. Buprenorphine/ Naloxone combination guarantees minimal street value to this drug by taking away the high and causing a withdrawal state. The withdrawal state experienced by the patient upon injection or intranasal administration further opposes misuse.

### *Breastfeeding*

Studies, although limited, suggest that concentrations of both Buprenorphine and Methadone in human breast milk are quite low, and pose little risk for neonates.

## Stimulants

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There have been several large studies, which have all identified several risk factors associated with cocaine and methamphetamine use during pregnancy; including premature rupture of membranes, pre-eclampsia, placental abruption, preterm birth, low birth-weight, small-for-gestational-age infants and intrauterine foetal death.

### *Management*

Existing evidence-based psychological interventions for cocaine use in pregnancy including CBT (Cognitive Behavioural Therapy) have been shown to be effective. Currently, there are no evidence-based pharmacological treatments for antenatal cocaine use.

## Nicotine/Tobacco

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According to the World Health Organisation, about 200 million of the world's one billion smokers are women.

The tobacco industry aggressively targets women in order to increase its consumer base and to replace those consumers who quit or die prematurely from cancer, heart attack, stroke, emphysema or other tobacco-related diseases.

Smoking during pregnancy results in negative birth outcomes, including damage to the umbilical cord structure, miscarriage, increased risk for ectopic pregnancy, low birth-weight, preterm birth and increased infant mortality.

Also of concern, are the harmful effects of **second-hand smoke** on newborns, which include higher rates of respiratory and ear infections, sudden infant death syndrome, behavioural dysfunction and cognitive impairment.

Nicotine Replacement Therapy (gum, lozenge, or patch), combined with counselling, results in higher quit rates during pregnancy.

## Conclusion

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Substance use in pregnancy remains a significant public health problem, which can lead to several harmful maternal and neonatal outcomes. Management of Substance Use Disorders in pregnancy requires a multi-disciplinary approach, involving all health professionals (General Practitioners, Obstetrician/Gynaecologist, Psychiatrist, Psychologist, Nurse etc.).

**MHM**