

Section A: Assessing maternal alcohol use

The timing, frequency and quantity of prenatal alcohol exposure (PAE) are linked to the pattern and severity of fetal outcomes, but may not be available or reliable. (4, 18-21) In addition, both maternal and fetal characteristics are associated with variability in alcohol-related outcomes. Brain growth and development occur throughout pregnancy hence **adverse cognitive, behavioural and neurodevelopmental outcomes may result from exposure at any time during pregnancy and may occur in the absence of facial anomalies or structural central nervous system abnormalities.** (22)

It is likely that multiple mechanisms are involved in damage to the brain from PAE and **no 'safe' threshold for alcohol consumption during pregnancy has been established.** (23) Although there is limited evidence associating low levels of prenatal alcohol exposure with risks to human fetal development, (24) the Australian Guide to Reduce Health Risks for Drinking Alcohol(10) states that maternal alcohol consumption can harm the developing fetus and recommends that *for women who are pregnant or planning a pregnancy, not drinking is the safest option.* (10)

The level of risk to the fetus from prenatal alcohol exposure is highest when there is high, frequent maternal alcohol intake. The level of risk for the fetus is likely to be low if a woman has consumed only small amounts of alcohol (such as one or two drinks per week) before she knew she was pregnant or during pregnancy. (10)

A diagnosis of FASD is not appropriate where there is *confirmed absence* of prenatal alcohol exposure, but a diagnosis of FASD with three sentinel facial features can be made when prenatal alcohol exposure is unknown (see Table 1). (3)

Assessment of prenatal alcohol exposure requires clinical judgement and careful evaluation of a range of information that may provide confirmation of maternal alcohol use and allow quantification of intake.

Evidence of confirmed prenatal alcohol exposure may include:

- Information reported by the birth mother about her alcohol consumption during the index pregnancy, ideally using a validated tool;
- Reports by others, including a relative, partner, household or community member who had direct observation of drinking during the index pregnancy; or
- Documentation in child protection, medical, legal or other records of maternal alcohol consumption, alcohol-related disorders, and problems directly related to drinking during the index pregnancy, including alcohol-related injury and intoxication.

Assessing the reliability of evidence:

- If recalled information from different informants is in direct conflict (confirmed absence and confirmed presence) and reliable information on exposure is not available, alcohol exposure should be recorded as unknown. (4)

- The reliability of information on prenatal alcohol exposure may reflect the timing of pregnancy awareness.
- A history of alcohol dependence *without evidence of consumption during the index pregnancy is not sufficient to indicate confirmed exposure* but should raise suspicion of risk. (3, 4)

Alcohol Use Disorders Identification Test - Consumption (AUDIT-C)

When detailed information on maternal alcohol use is available, consumption during pregnancy should be assessed using the AUDIT-C questions(25) as included on the *Australian FASD Diagnostic Assessment Form* (Appendix A1) and reproduced in Table 2.

The AUDIT-C questions provide a standardised method for the assessment of maternal alcohol use and are based on a validated sex-specific version of the instrument.(26, 27) The use of a sex-specific threshold of *5 or more drinks on one occasion for question 3 of the AUDIT-C* reflects known levels of maternal alcohol consumption associated with increased risk of FASD and other harms.(10, 28, 29) Five or more drinks on an occasion (consumption of 50+ g of alcohol) is sometimes referred to as a binge.(29)

Derivation of the AUDIT-C score, although not essential for diagnosis, allows the clinician to categorise the **level of fetal risk associated with maternal drinking**.

Information on the definition of a standard drink for different types of alcoholic drinks should be provided prior to using the AUDIT-C. Appendix B shows standard drink sizes for commonly consumed drinks. A complete guide is available at:

<https://beta.health.gov.au/health-topics/alcohol/about-alcohol/standard-drinks-guide>

Some guiding principles for taking an alcohol history in pregnancy:

A non-judgemental approach is important when taking a history of alcohol consumption in pregnancy.

Some factors to consider:

- A pregnancy may be unplanned and not confirmed for some time, during which time alcohol may have been consumed.
- A woman may have made lifestyle changes once the pregnancy was confirmed, including reducing or stopping alcohol consumption.
- A woman may be unaware that not drinking during pregnancy is the 'safest' option and may have been given incorrect advice by other health professionals.
- Women may be more likely to drink if their partner and household members also drink and this may be explored.

Some questions to begin history taking:

- Was the pregnancy planned or unplanned?
- When did the birth mother realise that she was pregnant?
- Did the birth mother modify her drinking behaviour on confirmation of pregnancy?
- Were there any special occasions (e.g. a wedding) during pregnancy when alcohol was consumed at a high level?

Evidence of maternal alcohol use in the three months prior to and during pregnancy should be assessed, including any special occasions when a large amount of alcohol may have been consumed. The definition of a standard drink should be explained prior to administering the AUDIT-C (Q1-3), using the Standard Drinks Guide (Appendix B).



Table 2 Reported alcohol use, including AUDIT-C Questions

Alcohol use in early pregnancy (if available)

Was the pregnancy planned or unplanned? Planned Unplanned Unknown

When did the birth mother realise that she was pregnant? _____ (weeks) Unknown

Did the birth mother drink alcohol before the pregnancy was confirmed? Yes No Unknown

Did the birth mother modify her drinking behaviour on confirmation of pregnancy? Yes No Unknown
If Yes please specify:

During which trimesters was alcohol consumed? (tick one or more) None 1st 2nd 3rd Unknown

AUDIT-C questions

Source of reported information on alcohol use: Birth mother Other (please specify)

1. How often did the birth mother have a drink containing alcohol during this pregnancy?

Unknown	Never	Monthly	2-4 times	2-3 times	4 or more times
	[skip Q2+Q3]	or less	a month	a week	a week
<input type="checkbox"/>	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

2. How many standard drinks did the birth mother have on a typical day when she was drinking during this pregnancy?

Unknown	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
<input type="checkbox"/>	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

3. How often did the birth mother have 5 or more standard drinks on one occasion during this pregnancy?

Unknown	Never	Less than	Monthly	Weekly	Daily or
		monthly			almost daily
<input type="checkbox"/>	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

AUDIT-C score this pregnancy: (Q1+Q2+Q3)=_____ Scores= 0=no exposure 1-4= confirmed exposure 5+= confirmed high-risk exposure

Assessing prenatal alcohol exposure: Summary

Assessment of prenatal alcohol exposure requires clinical judgement and careful evaluation of a range of information that may provide confirmation of maternal alcohol use and quantification of intake.

Evidence of exposure can be evaluated to estimate the overall level of risk using the following broad risk categories:

- i. **No exposure** (confirmed absence), no risk of FASD;
- ii. **Unknown exposure** (alcohol use is unknown);
- iii. **Confirmed exposure** (AUDIT-C score =1-4; or confirmed use, but exposure less than high risk level for FASD; or confirmed use, but not known if exposed at a high risk level for FASD); and
- iv. **Confirmed-high risk exposure** (AUDIT-C score = 5+; confirmed use, exposure at high risk level for FASD).

Confirmed high risk exposures for FASD can be considered to include, at any time during pregnancy:

- i. An AUDIT-C score of **5 or more**
- ii. Reported consumption of **5 or more standard drinks on one occasion** (e.g. AUDIT-C question 3)
- iii. Other reliable evidence of high consumption

Other prenatal and post-natal exposures

Neurodevelopment impairment observed among individuals being assessed for FASD may be associated with exposures other than alcohol. It is important to determine whether any observed impairments can be explained by other causes or events (e.g. prenatal complications, genetic factors including chromosomal abnormalities, head injuries, early life trauma (including social and emotional abuse), problems with vision or hearing, or substance abuse by the patient).

All relevant prenatal and postnatal exposures or events, including prenatal exposure to prescription and non-prescription drugs, should be documented during the diagnostic assessment, and evaluated based on their likely influence. Other exposures should be considered when determining the appropriate diagnosis and management plan.

There may not be a single explanation for the observed neurodevelopmental impairment, and it is important that the diagnostic assessment process considers the effects of other adverse prenatal and postnatal exposures. (3)

In addition to vision and hearing testing, other clinically indicated investigations may include chromosome microarray analysis and Fragile X testing, and other tests such as full blood count, ferritin, vitamin B₁₂, metabolic screen, creatinine kinase, lead, and thyroid function.

