WHEN ALCOHOL AFFECTS THE SMILE: UNDERSTANDING THE ORAL AND DENTAL EFFECTS OF FOETAL ALCOHOL SPECTRUM DISORDER

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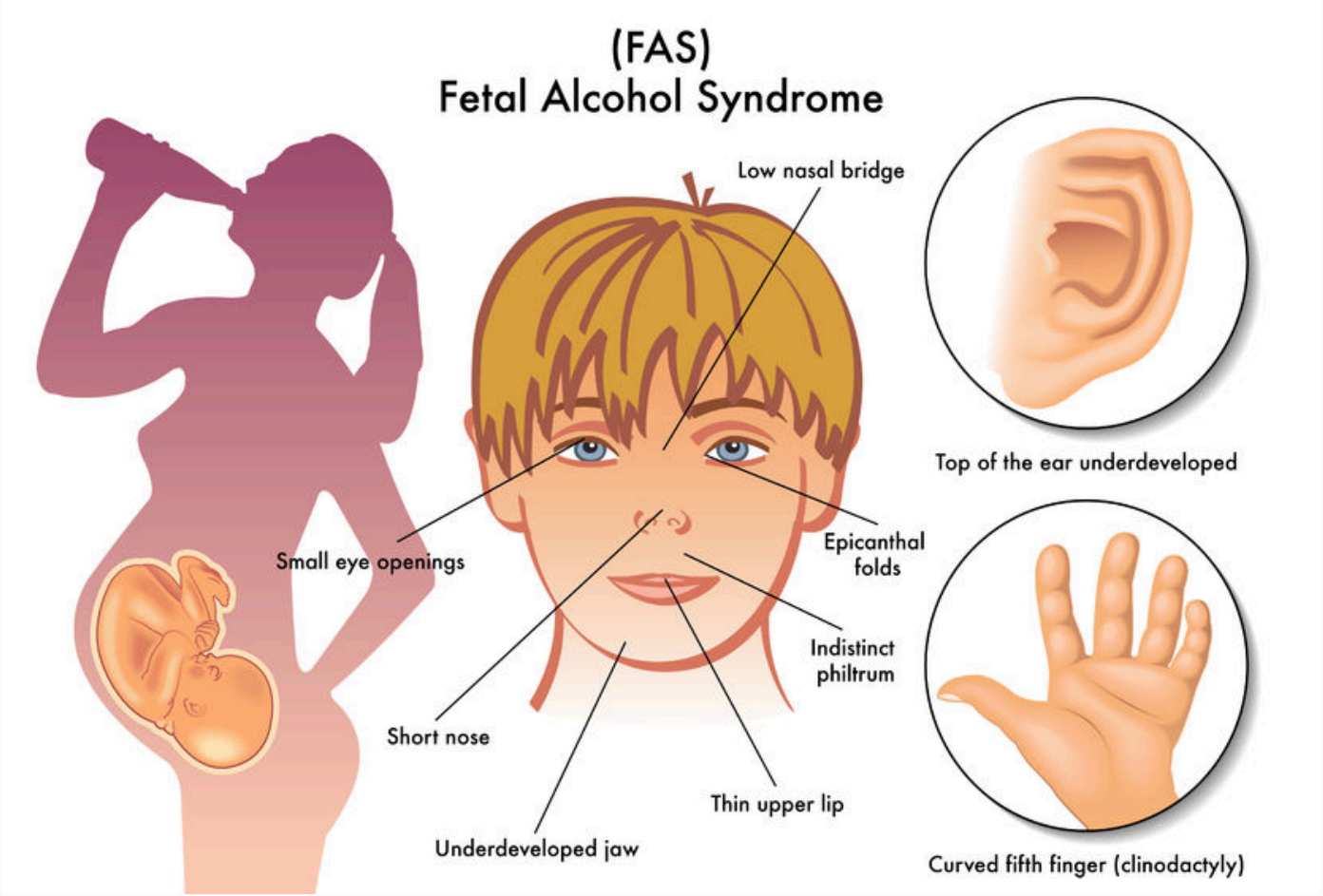

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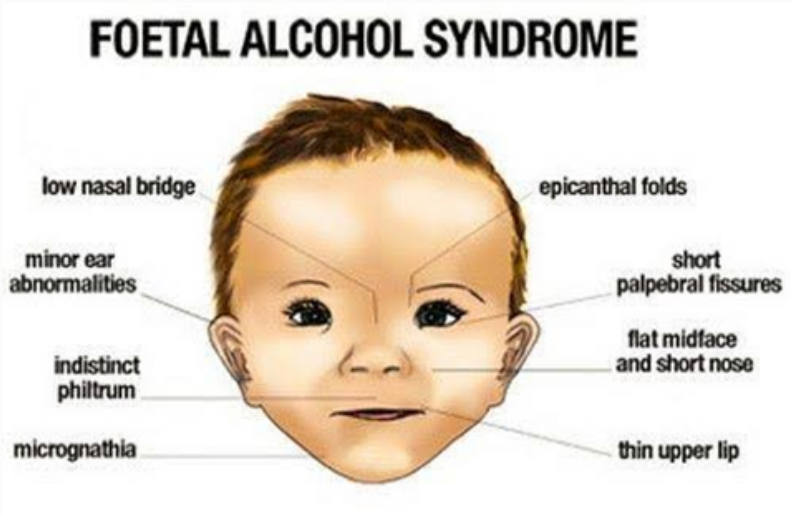
When we think about the effects of alcohol during pregnancy, we often focus on brain development, growth and behaviour. However, prenatal alcohol exposure can also affect the development of the face, jaws, teeth and oral structures.

Foetal Alcohol Spectrum Disorder (FASD) describes a range of lifelong effects associated with alcohol exposure before birth. The most recognisable and severe presentation is Foetal Alcohol Syndrome (FAS), which may include characteristic facial features, growth restriction and neurological or developmental difficulties. During National Oral Health Month, it is important to recognise that oral health is part of a child's overall health and development.

How can alcohol affect facial and dental development?
The face, jaws and teeth undergo complex stages of development during pregnancy. Alcohol exposure during this period can interfere with normal embryonic development, including processes involved in the formation of craniofacial and dental structures. Research has identified associations between prenatal alcohol exposure and a range of dental, orthodontic and craniofacial findings.



What oral and dental features may be seen?
FASD occurs on a spectrum, so not every child will present with the same features, and an individual dental finding does not confirm FASD.

1. Altered tooth development
Prenatal alcohol exposure may interfere with normal tooth development. Studies have reported developmental enamel defects and other abnormalities affecting tooth structure and formation. Enamel defects may increase susceptibility to oral disease and create additional preventive and restorative treatment needs.

2. Increased dental caries risk
Children affected by FASD may have increased oral-health needs, including a greater burden of dental caries.However, oral-health outcomes are influenced by many factors, including diet, oral hygiene, caregiver support, access to dental care and neurodevelopmental challenges.
For this reason, prevention should remain central to oral healthcare for children with FASD**.**

3. Malocclusion and altered jaw development

FASD may be associated with differences in maxillary and mandibular development, facial proportions and occlusal relationships. Certain malocclusions may occur, although there is no single "FASD bite”. Altered jaw and dental development may affect chewing, speech, oral function and aesthetics, making early assessment important.

4. Craniofacial characteristics

Some children with FAS may present with characteristic facial features.including:

- shortened palpebral fissures;
- a smooth or flattened philtrum;
- a thin upper vermilion;
- midfacial or maxillary hypoplasia; and

Facial appearance alone should never be used to diagnose FASD. Diagnosis requires appropriate multidisciplinary assessment and consideration of developmental, medical and prenatal history.

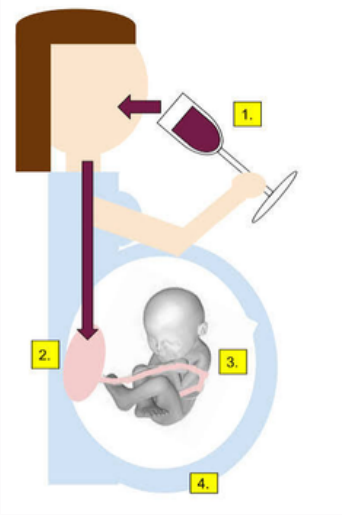
5. Gingival and periodontal concerns

Some research has identified increased gingival or periodontal concerns among individuals with prenatal alcohol exposure or FASD. These findings should be interpreted carefully because oral health is influenced by behavioural, developmental, dietary and social factors.
Dental care should therefore be individualised rather than based solely on the diagnosis of FASD.



Why should dental professionals be aware of FASD?

Dental professionals regularly observe a child's facial development, dentition, oral hygiene and oral function. This provides an opportunity to recognise potential concerns and contribute to early intervention.



A child may present with:

- developmental enamel defects;
- increased caries experience;
- altered tooth development;
- malocclusion;
- unusual facial or jaw development;
- difficulty maintaining oral hygiene; or
- challenges with dental treatment and cooperation.

None of these findings individually confirms FASD. The dental professional's role is therefore not to diagnose outside their scope, but to recognise, prevent, manage and refer when appropriate.

Prevention starts before birth

FASD is preventable. Alcohol can cross the placenta and affect the developing foetus. Current evidence supports the message that there is no known safe amount, type or time for alcohol consumption during pregnancy.

Prevention should be approached without judgement and supported through:

- accessible health education;
- appropriate antenatal care;
- early identification of alcohol-use concerns;
- access to support and intervention; and
- non-judgemental healthcare services.

Healthcare professionals can play an important role by creating an environment where women feel safe to disclose alcohol use and seek support.

Caring for children affected by FASD

1. **Preventive care:** Regular examinations, professional preventive care, fluoride where appropriate, dietary counselling and effective oral-hygiene instruction can reduce preventable oral disease.
2. **Clear communication:** Instructions may need to be simplified, repeated and reinforced using visual or practical demonstrations.
3. **Family and caregiver involvement:** Parents and caregivers play an important role in establishing oral-hygiene routines, supervising toothbrushing where necessary and maintaining preventive appointments.
4. **Multidisciplinary care:** Where appropriate, dental care should form part of a broader healthcare and developmental support plan.

Looking beyond the smile

A child's oral health can tell us much more than whether they brush their teeth. The mouth is connected to growth, nutrition, development, communication and overall wellbeing. For children affected by prenatal alcohol exposure, dental professionals have an opportunity to recognise potential oral manifestations, prevent avoidable disease and support families.

This National Oral Health Month, let us move beyond asking:
"Does this child have healthy teeth?"

And ask:

"What can we do to support this child's overall health, development and quality of life?"

Greater awareness can support earlier recognition, appropriate preventive care and timely referral. For parents and caregivers, early and consistent dental care can help reduce avoidable oral disease. Because oral health is not simply about the teeth we see - it is part of the health of the person behind the smile.



References

1. Blanck-Lubarsch, M., Dirksen, D., Feldmann, R. and Hohoff, A. (2023) ‘A systematic review: facial, dental and orthodontic findings and orofacial diagnostics in patients with FASD’, Frontiers in Pediatrics, 11, 1169570. doi:10.3389/fped.2023.1169570.
2. Naidoo, S. (2004) ‘A review of foetal alcohol syndrome and the role of the oral health care worker’, South African Dental Journal, 59(4), pp. 158–161.