

Association for Child and Adolescent Mental Health

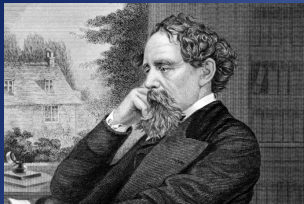
London. October 18th 2019

“FASD : Culture, Context and the Need for Collaboration.”

Dr. Sarah Brown

Dr Chris Steer

1



The Pickwick Papers/Chapter 33

Charles Dickens. C. 1832

**'Report Of The Committee of the Brick Lane Branch of the United Grand Junction
Ebenezer Temperance Association**

*'Your committee have pursued their grateful labours during the past month , and have the
unspeakable pleasure of reporting the following additional cases of converts to
Temperance'*

*'Betsy Martin, widow, one child, and one eye. Goes out charing and washing, by the day;
never had more than one eye, but knows her mother drank bottled stout, and shouldn't
wonder if that caused it (immense cheering). Thinks it not impossible that if she had always
abstained from spirits she might have had two eyes by this time (tremendous applause).
Used, at every place she went to, to have eighteen-pence a day, a pint of porter, and a
glass of spirits; but since she became a member of the Brick Lane Branch, has always
demanded three-and-sixpence (the announcement of this most interesting fact was
received with deafening enthusiasm).'*

2



HM Prison Liverpool 1899.

Sullivan WC. A note on the influence of maternal inebriety on the offspring. J Ment. Sci. 1899; 45: 489-503.

“The intoxicants consumed were in the form of beer, whisky, and rum; as a rule the patients drank any sort of liquor they could get.”

Mortality of Infants of Female Inebriates. – Amongst the 100 women of our series, twenty were able to give details of female relatives also of drunken habits, who had had children. Of these 120 female inebriates were born 600 children, of whom 265 (44.2 per cent.) lived over two years; 335 (55.8 per cent.) died under two years, or were dead-born.

“..... of the children comprised in our series, 219 lived beyond infancy, and of these nine, or 4.1 per cent., became epileptic.”

“.....this primary influence of alcohol is due in part to the permanent effects of the poison on the maternal organism, inducing a transmissible degenerate condition; in part to a direct toxic action on the embryo, owing to continued excesses during pregnancy and lactation.”

3

Fetal Alcohol Syndrome & Fetal Alcohol Spectrum Disorders - The Modern Era.

•Lemoine P et al. 1968.

“Les enfants des parents alcooliques : anomalies observees a propos de 127 cas” (Quest Medical. 25.476-482)

-Described abnormal physical and behavioural patterns in the offspring of women who drank heavily in pregnancy.



Paul Lemoine (1917-2006) later reflected – “the 127 cases of a modest paediatrician from Brittany did not create any interest, whereas 8 American cases became immediately convincing !” (also notes Jacqueline Rouquette’s earlier unpublished thesis from Paris in 1957)

4



Jones K.L and Smith D.W. 1973

"Recognition of the Fetal Alcohol Syndrome in Early Infancy"
(Lancet 2. 999-1001)



The first of three papers describing a typical pattern of facial dysmorphism, growth restriction and developmental delay in 8 children. The first clinicians to utilise **"Fetal Alcohol Syndrome / FAS"**



Dave:- "So Ken, what do you think of this?"*

Ken:- "Not much Dave"

Dave:- " This is the most important thing I have ever seen!"*



5



FIG 1—Infant with facial features of fetal alcohol syndrome. Note short upturned nose, absent philtrum, and thin upper lip.

"Alcohol and the fetus in the West of Scotland"
Beattie J, Day R, Cockburn F and Garg R A "
BMJ. 1983. 2nd July. 287.17-20

- 40 cases of FAS between 1971-1981

"Further prospective research is urgently needed to define the origins and extent of the problem the problem of the fetal alcohol syndrome in the UK so that appropriate resources can be allocated for education, intervention and prevention"

6

Subsequently...

Streissguth A.P and O'Malley K 2000 (*Seminars in Clinical Neuropsychiatry* 5(3):177-90) introduce the umbrella term **"Fetal Alcohol Spectrum Disorder (FASD)"**

"FASD" acknowledges that around one in ten children and young people damaged by pregnancy alcohol exposure has typical facial features of FAS, but the rest don't, whilst still demonstrating evidence of brain and organ damage ; they are all within a **"SPECTRUM"**.

This population on assessment show a range of physical, mental, behavioural and/or learning difficulties with life long implications and very variable prognosis and frequent "secondary disabilities" .

7

FASD DIAGNOSTIC SYSTEMS * (!):

- Centres for Disease Control (CDC) ; Bertrand et al. 2005
- Institute of Medicine - *Revised* (IOM) ; Hoyme et al. 2016 (previously 1996/2005)
- Four Digit Code; Astley 2006 (original 2000)
- DSM 5 ("Neurodevelopmental disorder associated with prenatal alcohol exposure.") APA 2013
- Canadian (Revised) ; Cook et al. 2016 (original 2005)

(* See BMA Board of Science "Alcohol and Pregnancy. Preventing and managing Fetal Alcohol Spectrum Disorders. "February 2016 ; **Now SIGN Guideline 2019 supports - Canadian Guideline**)

8

SIGN 156

Children and young people exposed prenatally to alcohol

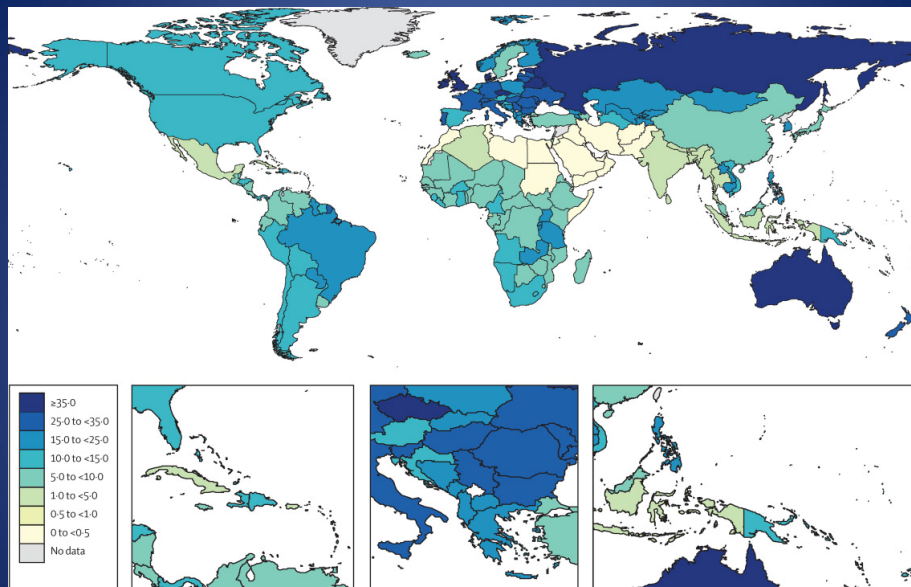
A national clinical guideline

January 2019

Descriptor Categories:- (n.b. growth criteria no longer applied)

- FASD 'with sentinel facial features'
- FASD 'without sentinel facial features'
- 'At Risk for FASD'

9



Global prevalence (%) of alcohol use (*any amount*) during pregnancy among the general population in 2012
Popova S et al. Lancet. Global Health 2017. 5 (3) . e 290-99

10

Global prevalence of alcohol consumption in pregnancy Popova et al 2017

► Top 5 countries % consumption

- Ireland 60.4
- Belarus 46.6
- Denmark 45.8
- UK 41.3
- Russia 36.5

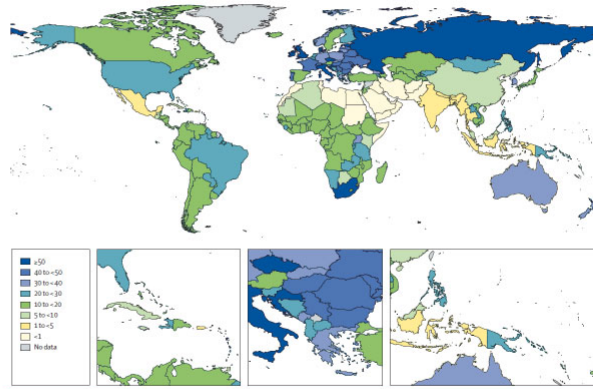
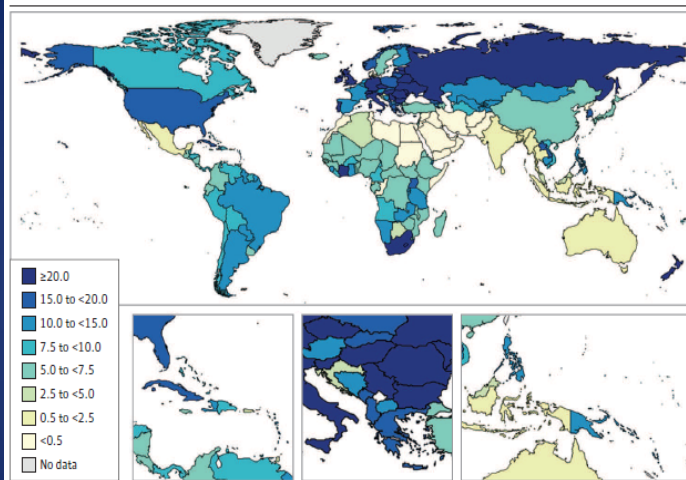


Figure 2: Global prevalence (%) of alcohol use (any amount) during pregnancy among the general population in 2012

11

Figure 1. Global Prevalence of Fetal Alcohol Spectrum Disorder Among Children and Youth in the General Population in 2012



Data are expressed as number per 1000 population.

Lange S. et al. JAMA Pediatrics 2017. 171 (10) 948-956

UK PREVALENCE of FASD 20-50/1000 POPULATION (2-5%)
SIGN GUIDELINE 156 (2019) - 32.4 per 1,000 (95% CI 20.0 to 49.0) (- 3.2%)
THE ACTUAL FIGURE may be higher – see biomarker studies

12

Strategies to reduce Alcohol Harm in Scotland over the last Decade

2009

Changing Scotland's Relationship with Alcohol:
A Framework for Action

2018

e.g.

- PH awareness campaigns
- Price (MUP)
- Marketing
- Availability
- ABI's
- Preconceptual care

IMPROVING
SCOTLAND'S
HEALTH

**Alcohol Framework 2018:
Preventing Harm**
next steps on changing our relationship with alcohol

Scottish Government
Responsible not to drink
gov.scot

13

LOW-RISK DRINKING GUIDELINES

Men & women should not regularly
drink more than 14 units per week

**MAXIMUM
14 UNITS
PER WEEK**

14 UNITS IS THE EQUIVALENT OF

6 PINTS OF BEER
(4% abv, 568ml)

OR

6 GLASSES OF WINE
(13% abv, 175ml)

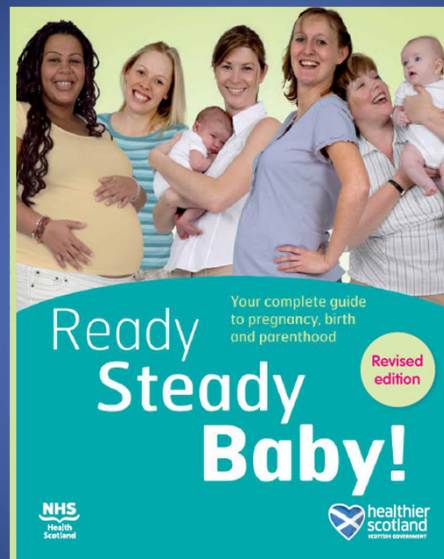
OR

7 DOUBLE MEASURES OF SPIRITS
(40% abv, 50ml)

It's recommended that you spread your drinking over at least 3 days to keep the risks from alcohol low.
If you are **pregnant** or think you could become **pregnant**, the safest approach is not to drink alcohol at all.

For the risks & info visit count14.scot

14



15

Stopping drinking when pregnant

For lots of women, stopping drinking when pregnant can be difficult - sometimes harder than they thought. The social pressure to have a drink can also be huge and can make it harder to say no.

With the right support and a bit of planning, you can do it. Talking to your midwife is the first step towards getting the right support for you and your baby.

Support your partner

Dads and partners can support a healthy, alcohol-free pregnancy by:

- not drinking alcohol around their partner
- trying activities that don't involve alcohol - you could go swimming or get outdoors and go for a walk
- trying non-alcoholic drinks, such as smoothies and flavoured and fizzy water.

If you need help and support, [visit Scotland's Service Directory](#).

Request a different language or format



Source: NHS Health Scotland

Last updated:
07 August 2019

16

Scottish Government supported Strategies targeting Pregnancy alcohol exposure and harm

Awareness Raising and Training:-

- ❑ On Line FASD e-Learning modules (NES 2013/2019) – upgrade due
- ❑ Outreach Clinician Training from Winnipeg Manitoba (2013/16/19)
- ❑ National FASD Clinician’s Forum (2015, et seq.- biannual)
- ❑ National FASD Care Pathway (2016, Dr. Patricia Jackson et al.)
- ❑ SIGN Guideline 156 (2019 Drs. Patricia Jackson, Helen Mactier, Jennifer Shields, Sarah Brown et al.)

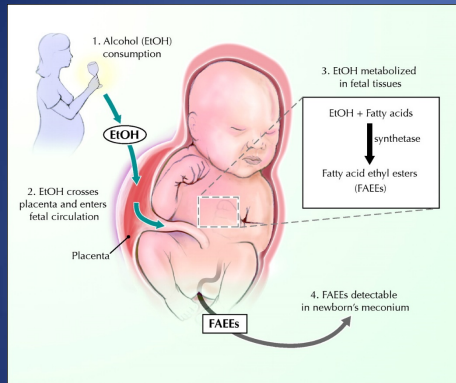
17

Other Measures:-

- ❑ **Awareness Raising / Liaison** – education, social work, third sector, preconceptual health care (“Ready Steady Baby” initiative), police and justice community.
- ❑ **Research:-**
 - i. Scottish Paediatric Surveillance Unit Enhanced Passive FAS Surveillance Study of FAS in under sixes (2010-2014) 41 cases in 60 months (Neil McIntosh, Forrester Cockburn, John McClure, Maggie Watts) ; - subsequent liaison with BPSU Surveillance team.
 - ii. Alcohol Biomarker Study (Meconium Alcohol Ester)
(Abernethy et al. 2017/18)
 - iii. Fetal Alcohol Assessment and Support Team: NHS Ayrshire & Arran. Prospective Study of Multidisciplinary FASD Assessment 2016-2018 Clinical Leads: Dr Sarah Brown & Dr Jennifer Shileds. Team now undertaking awareness road shows.

18

Pregnancy alcohol exposure and Meconium Alcohol “Biomarkers”



Fatty Acid Ethyl Esters, - “FAEE’s” (and Ethyl Glucuronide levels)
Reflect Fetal Alcohol Exposure from around 20 weeks
to term

19

Determining the pattern and prevalence of alcohol consumption in pregnancy by measuring biomarkers in meconium

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ABSTRACT

Objective To investigate the feasibility of determining the pattern and prevalence of alcohol consumption in pregnancy by measuring ethanol biomarkers in meconium.

Design Population-based observational study.

Setting Inner-city maternity unit in Scotland, UK.

Population Random sample of singleton infants delivered after 36 completed weeks' gestation.

Methods Fatty acid ethyl esters (FAEEs) and ethyl glucuronide (EtG) in meconium were measured by liquid chromatography-mass spectrometry. Samples were frozen at -20°C before analysis. Results were compared anonymously with demographic data including maternal age, parity, smoking, ethnicity and postcode and with infant gestation, birth weight and head circumference. Written informed consent was obtained from all subjects.

Results 235 samples of meconium were analysed (70% of eligible babies). Only four (1%) of mothers declined to participate. FAEEs were detected in all, including four samples below the limit of quantification (10 ng/g). 98 (42%) samples had FAEE concentrations >600 ng/g. EtG was detectable in 93 (40%) samples; in 35 (15%) EtG concentration was >30 ng/g. No mother reported heavy alcohol consumption in pregnancy. FAEE concentration correlated with EtG (Pearson's coefficient: $p < 0.001$). There was no association between either biomarker and maternal age, parity, smoking, ethnicity or postcode, or infant gestation, birth weight or head circumference.

Conclusion Measurement of ethanol biomarkers in meconium is a feasible tool for determining the pattern and prevalence of alcohol consumption in pregnancy. Data suggest that at least 15% of pregnant women in the west of Scotland are consuming significant quantities of alcohol during latter pregnancy.

What is already known on this topic?

- Alcohol use in pregnancy is commonly under-reported and direct measurement of alcohol metabolites in mothers is difficult due to its rapid metabolism.
- Biomarkers of alcohol can be measured in meconium to assess continuing alcohol use in pregnancy.

What this study adds?

- Confirms under-reporting of alcohol use in pregnancy.
- Measurement of ethanol biomarkers in meconium is a feasible tool for determining the pattern and prevalence of alcohol consumption in pregnancy.

households (22% vs 13%).^{1,2} Ethanol is teratogenic and the current UK government recommendations are for complete abstinence from alcohol consumption during pregnancy.³ Despite this advice, some women drink heavily before they realise they are pregnant, and others continue to drink through their pregnancy.⁴ Prenatal alcohol exposure (PAE) may lead to miscarriage, premature birth and increased perinatal morbidity and mortality.^{5,6} Fetal alcohol spectrum disorder (FASD) describes a continuum of difficulties with learning, development, attention, social relationships and impulsive behaviour. At the severe end of the spectrum, fetal alcohol syndrome (FAS) is characterised by intra-

© 2017 The Author(s). Child: First Neonatal Unit first published as 10.1136/archdischild-2016-311088 on 4 July 2017. Downloaded from http://chil.bmj.com/ on 10 July 2017.

Recent
Scottish
Meconium
Biomarker
Study.
Published
2018.

20

Abernethy C. et al. 2018 Princess Royal Maternity Hospital.
Glasgow. (Inner City, Northern and Eastern Suburbs of Glasgow)

- N = 235 mother and babies
- **Analysis of Fetal Meconium Fatty Acid Ethyl Esters and Ethyl Glucuronide**

Results

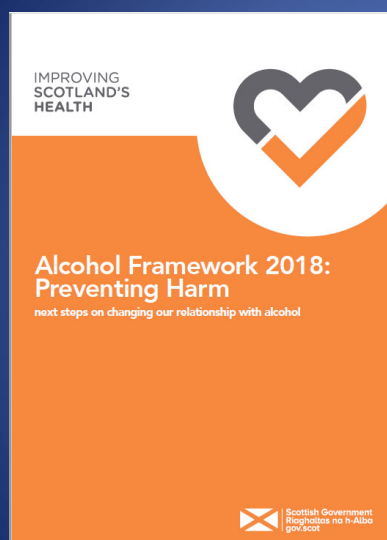
- Data suggests 40% of pregnancies in this study population were exposed to alcohol.
- Significant & potentially harmful* quantities in 15%
- No association between biomarkers and age, ethnicity, parity, postcode, smoking status, birth weight or head circumference

= 1 in 7 pregnancies

(* >2 drinks (3.5 units) per day or binge drinking of >5 (8.75 units) drinks per occasion)



21



ACTION 18: we will continue to prevent and reduce the harm caused by alcohol consumption in pregnancy through increased awareness of the risks, increased awareness of, and improved diagnosis and support for, Fetal Alcohol Spectrum Disorder.

22

Scottish Government P.S. September 2018

Delivering for Today, Investing for Tomorrow

The Government's Programme
for Scotland 2018-19

"IMPROVING OUR POPULATION HEALTH" :

"We will also increase our support for children and families affected by Fetal Alcohol Spectrum Disorder (FASD). Over the next year, we will work to set up a third sector hub that will focus on both preventing instances of FASD arising in the first place and supporting families following diagnosis."

Launched Spring 2019.



23



24