# ALCOHOL CONSUMPTION DURING LACTATION: EFFECTS ON MOTHER AND CHILD

Imanol Mendizabal Larrea

Faculty of Psychology EHU/UPV

Universidad del País Vasco · Euskal Herriko Unibertsitatea

PSIKOLOGIA FAKULTATEA · FACULTAD DE PSICOLOGIA

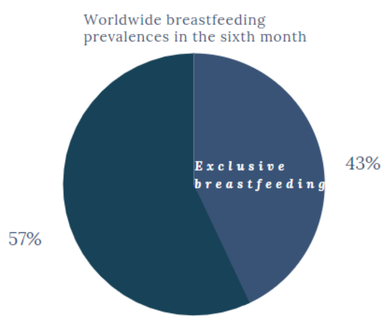
## Abstract

The effects of alcohol consumption during lactation have not been established as widely as during pregnancy. Consequently, this lack of information makes mothers unaware of the risks that alcohol intake might have both on them and their developing infant. The aim of this review is to summarize the scientifically demonstrated adverse effects of alcohol consumption during lactation both on mother and child. In spite of the fact that the available data in this field is scarce and contradictory, there is evidence that alcohol intake during lactation is harmful for mothers' lactational performance and their infants' development, behaviour and preference to alcohol after being exposed to it.

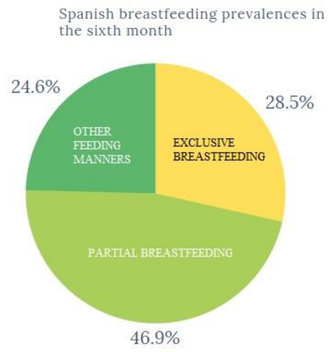
**Key words**: lactation, breastfeeding, maternal alcohol intake, alcohol's adverse effects.

## Justification

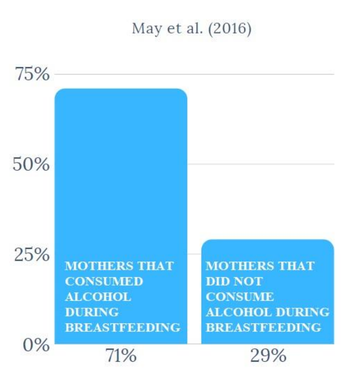
Although breastfeeding has been accepted as the best and safest method so as to protect infants' development, health and growth (Giglia & Binns, 2006), the analyzed prevalences are below the professional advice of exclusively breastfeeding until 6 months postpartum and partially breastfeeding until 2 years after birth (May et al., 2016).

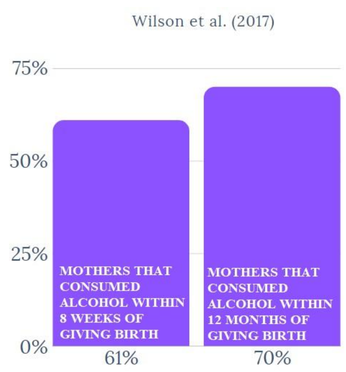



(Aeped.es, 2016)




Moreover, although there are strict recommendations for pregnant women about alcohol consumption during pregnancy, unawareness about alcohol's adverse effects during lactation makes mothers consume higher amounts of alcohol during this period (May et al., 2016). Not only is there a lack of recommendations for lactating women about alcohol consumption, but alcohol has also been traditionally believed to be a galactagogue, beneficial for breastfeeding (Mennella, 1998).

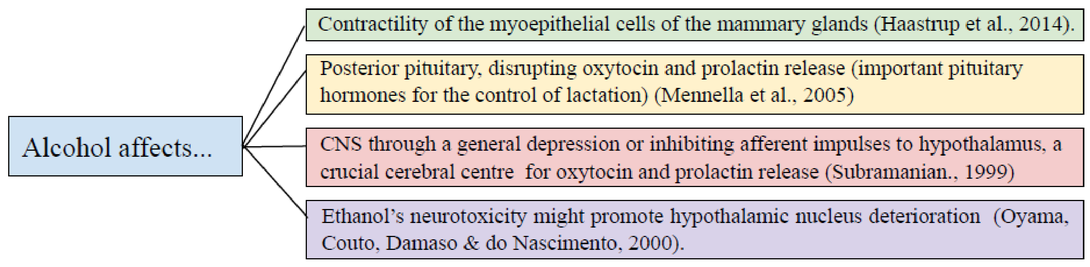



Consequently, taking this lack of information about alcohol's effects during lactation into account, the primary aim of this literature review is to assemble data from a wide variety of studies in order to clarify the scientifically concluded harmful effects of alcohol in terms of the breastfeeding mother and the breastfed child.

## Mother, lactation and alcohol consumption

Alcohol enters breast milk by passive diffusion nearly in the same concentration as in maternal blood, peaking after 30-60 minutes of alcohol intake (Haastrup et al., 2014). Thus, due to the dynamic equilibrium between plasma and breast milk, as long as maternal blood contains alcohol, milk will contain too (Mennella, 2001). Consequently, alcohol has been found to have an inhibitory effect on lactational performance and the duration of breastfeeding (Giglia & Binns, 2006), through several mechanisms that have been hypothesized:




## Breastfed infant and effects of alcohol exposure

Breastfeeding is acknowledged as the best method of infant nutrition, due to its developmental, economic, health and psychological benefits. Regarding the psychological profits, breastfeeding is advantageous for the mother and the child, due to the pleasant physical and psychological connection that it is developed between them, as well as being positively correlated to infants' mental and psychomotor development and IQ levels (Salone et al., 2013).

However, when the breastfed infant is exposed to alcohol through breast milk, several adverse effects are observed. Thus, these are the principal areas that have been related to adverse effects on the infant due to maternal alcohol intake during lactation:

| Developmental abnormalities | Alcohol preference | Behavioural disturbances |
|---|---|---|
| •**Reduced abstract reasoning ability** at 6 to 7 years after birth (Gibson & Porter, 2018).<br>•**Lower weigth and IQ average levels** at seven years (May et al., 2016).<br>•Infant's **decreased psychomotor development** at one year postpartum (Little et al., 1989).<br>•**Slower weight, attained size and linear growth** from 1 to 57 months (Backstrand, Goodman, Allen & Pelto, 2004). | •Neonatal exposure to different flavours modifies **infant's responsiveness to that flavour** (Mennella & Beauchamp, 1996)<br>•**Different responses to ethanol scented toys**, with increased levels of these objects mouthing (Mennella & Beauchamp, 1998)<br>•**Increased infants' suckling activity** during the first minutes after maternal alcohol intake (Mennella & Beauchamp, 1991)<br>•**Higher alcohol-flavoured milk consumption** outside the breastfeeding context (Mennella, 1997). | •**Alterations in infant sleep,** disposing infants to sleep faster but for shorter periods, referable to **less active sleeping time**, with less active wakefulness and sleeping compensation 20,5 hours after alcohol exposure (Mennella & Gerrish, 1998).<br>•**Behavioural states' stability alterations**, with a larger number of state changes, more time crying and longer periods of fussiness (Schuetze et al., 2002).<br>•**Altered mother-infant interactions**, with increased levels of non contingency and dyadic conflict (Schuetze et al., 2002) |

## Conclusions

Once these results have been introduced, it is clear that there is no scientific evidence about the positive effects of alcohol during lactation. On the contrary, alcohol has been found to negatively affect the lactational performance of the mothers, as well as disrupting infants' development, growth, sleeping and feeding behaviours, mother-infant interactions and infant s' alcohol preference after being exposed to it. Consequently, the main conclusions of this literature review can be divided in two ideas:

1) Taking into account the unawareness of mothers in terms of the risks of alcohol intake during lactation, as well as the myths about the galactagogue quality of alcohol, **interventions and educational support for mothers and doctors are crucial in order to promote a secure alcohol intake**.

2) **More research is needed in order to rise an agreement about the harmful effects of alcohol during lactation**, both on mother's lactational performance and different areas of the infant.

## References

Aeped.es. (2016). *Lactancia materna en cifras: tasas de inicio y duración de la lactancia en España y en otros países | Asociación Española de Pediatría*. [online] Available at:https://www.aeped.es/comite-lactancia-materna/documentos/lactancia-materna-en-cifras-tasas-inicio-y-duracion-lactancia-en-espana-y- [Accessed 7 May 2019].

Backstrand, J. R., Goodman, A. H., Allen, L. H., & Pelto, G. H. (2004). Pulque intake during pregnancy and lactation in rural Mexico: alcohol and child growth from 1 to 57 months. *European Journal of Clinical Nutrition*, *58*, 1626-1634. doi:10.1038/sj.ejcn.1602019

Gibson, L., & Porter, M. (2018). Drinking or smoking while breastfeeding and later cognition in children. *Pediatrics*, *142*, e20174266. doi:10.1542/peds.2017-4266

Giglia, R. & Binns, C. W. (2006). Alcohol and lactation: a systematic review. *Nutrition & Dietetics*, *63*, 103-116. doi:10.1111/j.1747-0080.2006.00056.x

Haastrup, M. B., Pottegårt, A., & Damkier, P. (2014). Alcohol and breastfeeding. *Basic & Clinical Pharmacology & Toxicology, 114*, 168-173. doi:10.1111/bcpt.12149

Little, R. E., Anderson, K. W., Ervin, C. H., Worthington-Roberts, B., & Clarren, S. K. (1989). Maternal alcohol use during breast-feeding and infant mental and motor development at one year. *New England Journal of Medicine*, *321*, 425-430. doi:10.1056/NEJM198908173210703

May, P. A., Hasken, J. M., Blankenship, J., Marais, A. S., Joubert, B., Cloete, M., … & Doms, C. (2016). Breastfeeding and maternal alcohol use. Prevalence and effects on child outcomes and fetal alcohol spectrum disorders. *Reproductive Toxicology, 63*, 13-21. doi:10.1016/j.reprotox.2016.05.002

Mennella, J. A. (1997). Infants' suckling responses to the flavor of alcohol in mothers' milk. *Alcoholism: Clinical and Experimental Research, 21*, 581-585. doi:10.1111/j.1530-0277.1997.tb03806.x

Mennella, J. A. (1998). Short-term effects of maternal alcohol consumption on lactational performance. *Alcoholism: Clinical and Experimental Research, 22*, 1389-1392. doi:10.1111/j.1530-0277.1998.tb03924.x

Mennella, J. A. (2001). Alcohol's effect on lactation. *Alcohol Research & Health*, *25*(3), 230-234.

Mennella, J. A., & Beauchamp, G. K. (1991). The transfer of alcohol to human milk. Effects on flavor and the infant's behavior. *New England Journal of Medicine, 325*, 981-985. doi:10.1056/nejm199110033251401

Mennella, J. A., & Beauchamp, G. K. (1996). The human infants' response to vanilla flavors in mother's milk and formula. *Infant Behavior and Development, 19*, 13-19. doi:10.1016/s0163-6383(96)90040-5

Mennella, J. A., & Beauchamp, G. K. (1998). Infants' exploration of scented toys: effects of prior experiences. *Chemical Senses, 23*, 11-17. doi:10.1093/chemse/23.1.11

Mennella, J. A. & Gerrish, C. J. (1998). Effects of exposure to alcohol in mother's milk on infant sleep. *Pediatrics, 101*, e2-e2. doi:10.1542/peds.101.5.e2

Mennella, J. A., Pepino, M. Y., & Teff. K. L. (2005). Acute alcohol consumption disrupts the hormonal milieu of lactating women. *The Journal of Clinical Endocrinology & Metabolism, 90*, 1979-1985. doi:10.1210/jc.2004-1593

Oyama, L. M., Couto, R. C., Dâmaso, A. R., & do Nascimento, C. O. (2000). Ethanol intake during lactation II. Effects on pups' liver and brain metabolism. *Alcohol*, *21*, 201-206. doi:10.1016/S0741-8329(00)00074-4

Salone, L. R., Vann Jr, W. F., & Dee, D. L. (2013). Breastfeeding: an overview of oral and general health benefits. *The Journal of the American Dental Association*, *144*, 143-151. doi:10.14219/jada.archive.2013.0093

Schuetze, P., Eiden, R. D. & Chan, A. W. (2002). The effects of alcohol in breast milk on infant behavioral state and mother-infant feeding interactions. *Infancy, 3*, 349-363. doi:10.1207/s15327078in0303_4

Subramanian, M. G. (1999). Alcohol inhibits suckling-induced oxytocin release in the lactating rat. *Alcohol, 19*, 51-55. doi:10.1016/S0741-8329(99)00017-8

Wilson, J., Tay, R. Y., McCormack, C., Allsop, S., Najman, J., Burns, L., … & Hutchinson, D. (2017). Alcohol consumption by breastfeeding mothers: frequency, correlates and infant outcomes. *Drug and Alcohol Review, 36*, 667-676. doi:10.1111/dar.12473