

Re: There is no association between combined oral hormonal contraceptives and depression: a Swedish register-based cohort study

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Dear Sirs,

We found the above recent article produced a most diverse and engaging discussion based within the present day pandemic of mental health issues.

The aforementioned Swedish population based study was at odds with its Nordic neighbour Denmark where the opposite effect of oral hormonal contraceptives upon depression was found [1]. As intimated by the authors, the confounders are endless, but what sprung to our minds was that Nordic countries are famous for two specific cultural items, diet and sauna bathing.

To illustrate the first of these two potential confounders, the Norwegian (MoBa) study in pregnancy, examining the dietary intake of over 50000 mother baby pairs linked to pregnancy outcomes, demonstrated a significant decrease in pre-eclampsia and preterm birth in women who consumed greater amounts of both

pre and pro biotics [2]. Furthermore, recent data shows a potential reduction in the gut microbiome diversity amongst some hormonal contraception users that may explain the heterogeneity in psychiatry and increased anxiety scores [3].

The second potential confounder is Sauna bathing or hyperthermic exposure. Sauna bathing has also been linked to an improvement in both physical and mental well-being status across all genders and ages [4]. Anecdotally, there appears to be an increased incidence and use of saunas in Sweden in comparison to Denmark.

Perhaps these two common unique Nordic cultural factors are contributory confounders for the result of the findings. If so, should we be counselling our patients to examine lifestyle issues to avoid any potentially negative impact of hormonal contraceptives upon their wellbeing?

We would be most interested to hear the view of the authors but congratulate the group upon their work and perseverance to publish.

Disclosure of interest

The authors declare that they have no conflict of interest

References

- [1] Hyland P, Shevlin M, Elklit A, et al. Social, familial and psychological risk factors for mood and anxiety disorders in childhood and early adulthood: a birth cohort study using the Danish Registry System. *Social Psychiatry and Psychiatric Epidemiology* 2016; 51(3): 331-8. doi: 10.1007/s00127-016-1171-1
- [2] Magnus P, Irgens L, Haug K, et al. Cohort profile: The Norwegian Mother and Child Cohort Study (MoBa). *International Journal of Epidemiology* 2006; 35(5): 1146-50. doi: 10.1093/ije/dyw029
- [3] Hayes C, Peters B, Foster J. Microbes and mental health: Can the microbiome help explain clinical heterogeneity in psychiatry? *Frontiers in Neuroendocrinology* 2020; 58: 100849. doi: 10.1016/j.yfrne.2020.100849
- [4] Patrick R, Johnson T. Sauna use as a lifestyle practice to extend healthspan. *Experimental Gerontology* 2021; 154: 111509. doi: 10.1016/j.exger.2021.111509