Study: Late fall may be best time of year to try to conceive

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First-of-its-kind study accounts for when couples are most likely to start trying to conceive, finding couples conceive quicker in late fall and early winter, especially in southern states.

In the US, birthdays peak in early September, but in Northern states—and Scandinavia—the peak comes earlier, in the summer or even spring. Although many factors likely go into the popularity of birthday months (a spike in November is popularly attributed to Valentine's Day), seasons themselves may play a role in how easy it is to conceive, according to a new Boston University School of Public Health (BUSPH) study.

The first-of-its-kind study, published in the journal *Human Reproduction*, finds that, although couples in North America and Denmark are most likely to start trying in September, it's in late November and early December that they have the best chances of conceiving, especially at lower latitudes.

"There are a lot of studies out there that look at seasonal patterns in births, but these studies don't take into account when couples start trying, how long they take to conceive, or how long their pregnancies last," says study lead author Dr. Amelia Wesselink, postdoctoral associate in epidemiology at BUSPH. "After accounting for seasonal patterns in when couples start trying to conceive, we found a decline in fecundability in the late spring and a peak in the late fall," she says. ("Fecundability" refers to the odds of conceiving within one menstrual cycle.) "Interestingly, the association was stronger among couples living at lower latitudes."

The North Americans were more likely than Danes to begin trying to conceive in the fall (possibly in the hopes of giving birth when work is less busy in the summer, Wesselink says, which may be more important in the U.S. than Scandinavia).

But, after taking those patterns into account, season affected fecundability for North Americans by 16 percent, while Danes got only an 8% seasonal boost in the fall and dip in the spring. In southern U.S.

states, the seasonal variation was even stronger, at 45%, with a peak in quick conceptions in late November. Meanwhile, the relationship between season and fecundability turned out to be about the same in Denmark and in northern states and Canada.

The study used data on 14,331 pregnancy-planning women who had been trying to conceive for no more than six months, including 5,827 U.S. and Canadian participants in the BUSPH-based Pregnancy Study Online (PRESTO) and 8,504 Danish participants in the Snart Gravid and Snart Foraeldre studies based at Aarhus University in Denmark. These studies follow women with detailed surveys every two months until they either conceive or have tried to conceive for 12 menstrual cycles, gathering data on everything from intercourse frequency and menstruation, to smoking and diet, to education and income.

The findings did not significantly change after controlling for seasonally-varying factors, including intercourse frequency, sugar-sweetened beverage intake, smoking, and medication use.

"Although this study cannot identify the reasons for seasonal variation in fertility, we are interested in exploring several hypotheses on seasonally-varying factors and how they affect fertility, including meteorological variables such as temperature and humidity, vitamin D exposure, and environmental exposures such as air pollution," Wesselink says.

More information: Amelia K Wesselink et al, Seasonal patterns in fecundability in North America and Denmark: a preconception cohort study, *Human Reproduction* (2019). DOI: 10.1093/humrep/dez265

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