

pregnancies in the 1,267 VIP programme girls (17%), and 168 among the 1,567 control group girls (11%) (chi-squared 20.8, $P = 0.000044$). There were 97 and 67 births respectively (chi-squared 14.7, $P = 0.00044$), and 113 and 101 terminations respectively (chi-squared 6.1, $P = 0.013$). The relative risk of pregnancy in VIP programme girls, adjusted for the variables mentioned above, was 1.36 ($P = 0.0031$).

Although in recent years the teenage pregnancy rate has been dropping, conception still occurred in 4,160 girls under the age of 16 in England and Wales in 2014.¹ Various health promotion programmes have tried to reduce this rate still further.

The simulator is a sophisticated life-like baby doll that replicates the sleeping and feeding patterns of a real baby. The rationale is that girls will find the simulated reality of life with a baby sufficiently intrusive into their social life and personal freedom that it will deter them from risking conception.

Quite why exposure to an infant simulator appears to increase the risk of teen pregnancy is unclear. The authors quote other studies where the investigators speculate that some girls believe that caring for a real baby would be easier than caring for the simulator, and that others may have enjoyed the attention they received while caring for the simulator.

DR CHRIS BARCLAY

Brinkman SA, Johnson SE, Codde JP et al. Efficacy of infant simulator programmes to prevent teenage pregnancy: a school-based cluster randomised controlled trial in Western Australia. *Lancet* 2016. DOI: [http://dx.doi.org/10.1016/S0140-6736\(16\)30384-1](http://dx.doi.org/10.1016/S0140-6736(16)30384-1)

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1 www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/conceptionandfertilityrates/bulletins/conceptionstatistics/2014#main-points

Cardiovascular disease

Will a cup of tea a day keep the cardiologist away?

Moderate tea consumption was associated with a slower progression of coronary artery calcium and lower incidence of major cardiovascular events, a study published in the *American Journal of Medicine* has found. Regular coffee consumption had neither protective nor adverse effects.

The tea and coffee drinking habits of 6,508 participants in the Multi-Ethnic Study of Atherosclerosis were analysed. Intake of each drink was classified as never, occasional (< 1 cup/day), and regular (≥ 1 cup/day). A coronary artery calcium progression ratio was derived and data analysed for any association between beverage intake and incident cardiovascular events.

The study participants were followed up for a median of 5.3 years for coronary artery calcium and 11.1 years for cardiovascular events.

Those who regularly drank tea (≥ 1 cup/day) had a slower progression of coronary artery calcium compared with never drinkers after multivariable adjustment. This correlated with a statistically significant lower incidence of cardiovascular events for ≥ 1 cup/day drinkers: hazard ratio HR 0.71 (95% CI: 0.53-0.95).

With respect to coffee, compared with never coffee drinkers, regular coffee intake (≥ 1 cup/day) was not statistically associated with coronary artery calcium progression or cardiovascular events: HR 0.97 (95% CI: 0.78-1.20).

The authors conclude that moderate tea drinkers had slower progression of

coronary artery calcium and reduced risk for cardiovascular events but that these findings did not apply to coffee. However, no harmful effect was found from moderate coffee intake.

It would appear that more research is required to try to understand the potentially protective nature of moderate tea consumption.

DR PETER SAVILL

Miller PE, Zhao D, Frazier-Wood AC et al. Associations of coffee, tea, and caffeine intake with coronary artery calcification and cardiovascular events. *Am J Med* 2016 Sep 15. pii: S0002-9343(16)30925-1. doi: 10.1016/j.amjmed.2016.08.038.

Sexual health

Saliva may be a vehicle for gonorrhoea transmission

Almost half of men who have sex with men (MSM) with positive cultures for gonorrhoea from the pharynx also had positive saliva samples, in a study from Australia, suggesting that saliva may act as a vehicle for transmission of the infection.

MSM who attended Melbourne Sexual Health Centre, between October 2014 and March 2015 were screened for pharyngeal gonorrhoea using a throat swab for cultures. A total of 33 MSM with positive cultures were treated and on the day of treatment, two further throat swabs were taken, one for culture and a second for NAAT testing. A saliva sample was also requested for culture and NAAT testing.

Median age of the MSM recruited was 27 years. Of the 33 who tested positive on the throat culture at baseline, 61% (95% CI: 42-77%) had positive pharyngeal swabs, by culture, by day 7 and 42% (95% CI: 26-61%) had positive swabs by day 14.

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Furthermore, 31 of the 33 men, 94% (95% CI: 80-99%) had positive swabs by NAAT by day 14. Only 18% (95% CI: 7-36%) had positive saliva samples by NAAT within 14 days.

Pharyngeal swabs were significantly more likely to be culture positive than saliva specimens. Out of the 14 men who were culture positive on the day of treatment, 6, 43%, (95% CI: 18-71%) also had positive saliva samples. All 31 men who had NAAT positive pharynx samples also had positive saliva samples.

This study demonstrated that almost half of the patients with positive cultures for gonorrhoea from the throat also had positive saliva samples by culture.

The persistence of salivary gonorrhoea on culture and NAAT 14 days after the initial culture also suggests saliva contains viable culture-positive gonorrhoea so direct contact between penis and pharynx does not have to occur for gonorrhoea transmission to take place.

This also suggests saliva used for

oral-anal sex would contain viable gonorrhoea.

Although only conducted on a small number of MSM in Australia, it seems for this sample at least, that saliva appears to be a plausible carrier of gonorrhoea infection in some people.

Another study, of 1,312 MSM, who attended the Melbourne Sexual Health Centre, suggests that using saliva as a lubricant for anal sex might be a risk factor for rectal gonorrhoea.¹

Rectal gonorrhoea was significantly associated with using the partner's saliva as a lubricant for anal sex; odds ratio (OR) 2.48 (95% CI: 1.20-5.10). Rectal gonorrhoea was also strongly associated with pharyngeal gonorrhoea, adjusted OR 17.31 (95% CI: 6.29-47.63).

The adjusted OR of having rectal gonorrhoea was 2.17 times higher among those who used their partner's saliva as a lubricant compared with those who did not, after adjusting for age, condom use for receptive anal intercourse, pharyngeal gonorrhoea positivity and HIV status.

The population attributable fraction

(PAF) of rectal gonorrhoea associated with using saliva for anal sex was 48.9% (95% CI: 7.9-71.7%). The adjusted PAF was 41.4% (95% CI: -4.1 to 67.0%) after adjusting for age, condom use for receptive anal intercourse, pharyngeal gonorrhoea positivity and HIV status.

Almost 40% of all gonorrhoea infections might have been prevented if men had not used their partner's saliva for anal sex.

DR RICHARD MA

Chow EPF, Lee D, Tabrizi SN. Detection of *Neisseria gonorrhoeae* in the pharynx and saliva: implications for gonorrhoea transmission. *Sex Transm Infect* 2015;0:1-3. doi:10.1136/sextrans-2015-052399

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¹ Chow EPF, Cornelisse VJ, Read TRH et al. Saliva use as a lubricant for anal sex is a risk factor for rectal gonorrhoea among men who have sex with men, a new public health message: a cross-sectional survey. *Sex Transm Infect* 2016;0:1-5. doi:10.1136/sextrans-2015-052502

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