

FILE NAME: Talc (TALC)

DATE: 2016

DOC#: TALC132

DOCUMENT DESCRIPTION: NHS Report - Talc and Ovarian Cancer-
What the Most Recent Evidence Shows

Talc and ovarian cancer: what the most recent evidence shows

Behind the Headlines

Tuesday March 8 2016



Talc can get into the upper genital tract

"Talc is linked to ovarian cancer," the Mail Online reports. That is the finding of a recent study looking at whether talcum powder can increase the risk of ovarian cancer – an association made newsworthy by a high-profile court case in the US.

Researchers studied more than 2,000 women with ovarian cancer and a similar-sized control group who were free of disease. Overall, they found a 33% increase in the risk of ovarian cancer with genital talc use.

When subdividing the groups by frequency of talc use and use of hormone replacement therapy, the link strengthened.

However, caution must be taken in interpreting these risk estimates as they are based on much smaller sample sizes and may be unreliable.

By design, the study is not able to prove cause and effect. It appears people were asked about talc use after their cancer diagnosis, which may introduce recall bias.

It also can't determine whether the use of talc or ovarian cancer occurred first. Various unmeasured health and lifestyle factors may also be involved in any link.

The International Agency for Research on Cancer has classified genital talc as a possible cancer-causing agent (carcinogen).

To date, there have been mixed findings from research in the area. Further research in the form of good-quality prospective studies would be required to confirm this.

Most gynaecologists recommend using plain, unperfumed soaps to wash the area around the vagina (the vulva) gently every day, as opposed to talc or perfumed soaps, gels and antiseptics.

Read more about [vagina health](#).

Where did the story come from?

The study was carried out by researchers from Brigham and Women's Hospital in the US, and was funded by the US National Institutes of Health, the Department of Defense Congressionally Directed Medical Research Programs, and the Department of Obstetrics and Gynecology.

It was published in the [peer-reviewed](#) journal *Epidemiology* on an [open access](#) basis, so it is [free to read online](#).

The study is actually from 2015, but has hit the headlines now because of a high-profile court case in the US, where talc manufacturer Johnson and Johnson has been ordered to pay \$72m to the family of a woman who died from ovarian cancer. The family alleged her ovarian cancer was caused by her use of talcum powder.

There are reports the company is planning to appeal against the decision, and it maintains there is no evidence to support the allegation.

The Mail Online's reporting of the study was accurate and outlined the inherent limitations of the research.

What kind of research was this?

This [case-control study](#) aimed to investigate the association between talc use and ovarian cancer, comparing women diagnosed with cancer with healthy controls.

There are said to have been a number of studies that have investigated this link before, but none were able to prove a link. This study is still only able to find a link, and cannot provide conclusive findings.

It seems to have questioned women about their talc use after they were diagnosed with cancer, which may have introduced [recall bias](#) – women with ovarian cancer may be more likely to remember using talc. Other unmeasured health and lifestyle factors ([confounders](#)) may also be influencing the link.

What did the research involve?

This study used participants involved in the [Nurses' Health Study](#), an ongoing [cohort study](#).

Data was collected in three phases:

- 1992-97
- 1998-2002
- 2003-08

This study combines the data from all three phases.

Cases diagnosed with ovarian cancer were identified through tumour boards – the US version of NHS multidisciplinary teams – and medical records.

Controls were identified through random digit dialling, driver licence lists, and town resident lists. Matching of cases and controls was by five-year age groups and region of residence.

Interviews were conducted to identify potential ovarian risk factors that occurred more than one year before diagnosis for cases. Controls were also interviewed.

Participants were asked whether they used talcum powder on the genital or rectal area, sanitary products, underwear, or other areas "regularly" or "at least monthly".

Information was also gathered on the type of powder used, when they started using talc, years used, and the number of times talc is applied each month. Lifetime

exposure was calculated. Partners' talc use and condom and diaphragm use was also recorded

Family history of ovarian or premenopausal breast cancer, use of hormone replacement therapy, and dietary intake (from a food frequency questionnaire) were also recorded

Statistical analyses were performed to draw associations and adjust for confounding variables.

What were the basic results?

The use of genital talc was associated with a 33% increased risk of ovarian cancer (odds ratio [OR] 1.33, 95% confidence interval [CI] 1.16 to 1.52) after adjustment for age, study centre, and phase.

Women who used talc were more likely to be:

- older
- heavier
- asthma sufferers
- regular painkiller (analgesic) users

The researchers further divided the groups into their menopausal status, use of hormone therapy, and frequency of use. Findings appeared to show risk increased with increasing use of talc, either by frequency of use each month or years of application.

Premenopausal women, and postmenopausal women using hormone therapy, who had more than 24 years of talc use were at the highest risk of ovarian cancer (OR 2.33, 95% CI [1.32 to 4.12] and OR 2.57, 95% CI [1.51 to 4.36] respectively).

How did the researchers interpret the results?

The researchers concluded that, "Risk for ovarian cancer from genital talc use may vary by histologic subtype, menopausal status at diagnosis, [hormone therapy] use, weight and smoking "

They suggest the link may involve a combination of hormone activity and the immune system giving an inflammatory response to talc.

Conclusion

This case-control study aimed to investigate the association between talc use and ovarian cancer. The researchers found a significant link between genital talc use and ovarian cancer – an increase in risk of a third, compared with no use.

However, the study has important limitations and is not able to prove direct cause and effect. Although this was a case-control study that made use of data collected as part of an ongoing cohort study, talc use only seems to have been assessed after cancer diagnosis.

The study says that, "subjects were personally interviewed about potential ovarian cancer risk factors that occurred more than one year before diagnosis"

There is therefore a possibility that women recalled their talc use inaccurately, leading to misclassification of use. The study also cannot determine whether the use of talc or ovarian cancer occurred first.

Additionally, while the researchers attempted to control for various confounders that may be influencing the link, it is possible these were not fully accounted for, and other health and lifestyle factors may have been missed.

Another note of caution: the researchers found even higher cancer risk with higher frequency of talc use and use of hormone therapy

However, these analyses were based on much smaller sample sizes. For example, the 2.33 risk increase for premenopausal women using talc for more than 24 years involved just 41 cases and 21 controls.

When subdividing the overall study sample into smaller groups based on different characteristics, the resulting risk estimates are more likely to be inaccurate. The most reliable figure in this study is the overall 33% risk increase that has used the full study sample, simply assessing past talc use or not.

That being said, the study's findings are in line with other reliable sources – the International Agency for Research on Cancer has classified genital talc as a possible carcinogen.

So far, there have been mixed results from other studies assessing the link. Further research in the form of good-quality prospective studies would be required to confirm this.

It is plausible that talc could work its way up into the upper genital tract and have some type of biological impact. A [recent review by the American Cancer Society](#) recommended that women use cornstarch-based cosmetic products instead.

Analysis by Bazian. Edited by NHS Choices. Follow NHS Choices on Twitter. Join the Healthy Evidence forum.

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Links to the headlines

[Talc 'IS linked to ovarian cancer': Risk of disease is ONE THIRD higher for women who use talcum powder on their genitals, experts warn.](#) Mail Online, March 4 2016

Links to the science

Cramer DW, Vitonis AF, KL Terry, et al [The association between talc use and ovarian cancer: a retrospective case-control study in two US states](#) Epidemiology. Published online December 17 2015

Healthy Evidence forum



Cause of depression?

I recently returned home from a 10 day break in the sun, and on going to turn...

8 replies



Postherpetic Neuralgia