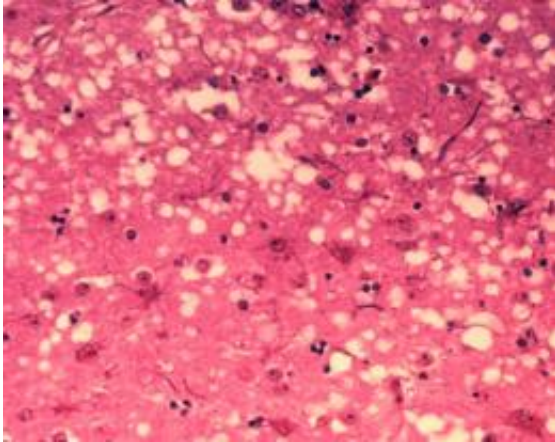


# Fertility and prion disease

August 8 2019, by David Bradley

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This micrograph of brain tissue reveals the cytoarchitectural histopathologic changes found in bovine spongiform encephalopathy. Image: Wikipedia

A high degree of uncertainty surrounds the issue of the prion disease risk associated with fertility drugs derived from urine, gonadotropins.

Writing in the *International Journal of Risk Assessment and Management*, a team from Canada hopes to address this issue. At the time of writing, the transmission of prion disease via this route is entirely theoretical as there have been no reported cases of incidence.

Neil Cashman of the Department of Neurology at the University of British Columbia, and colleagues at the University of Ottawa, Health Canada, the University of British Columbia, and at Bristol University in the UK, write that the international panel of experts ultimately concludes that the risk is very low although the use of bovine serum instead of

urine lowers this small risk by 1200 times.

The team points out that Creutzfeldt-Jakob disease (CJD) is a human neurodegenerative disorder that is currently incurable and invariably fatal. CJD is a [prion](#) disease transmitted by errant proteins and is closely related to bovine spongiform encephalopathy (commonly known as [mad cow disease](#)), scrapie in sheep, and a range of other diseases that affect the mammalian brain and all of which have a specific prion associated with their development. Fundamentally, [prion diseases](#) are thought to be caused by the misfolding of an otherwise benign and ubiquitous protein in cells into a distinct pathological form that essentially self-replicates by inducing the benign form to transform into the pathological conformation.

The team concludes that "While a formal assessment of the likelihood of prion disease transmission through the use of urine-derived fertility drugs is impossible due to a current lack of relevant scientific data." Nevertheless, now that the theoretical possibility of prion transmission has been raised in this context, scientists and healthcare workers in the area of fertility treatment must be vigilant for any cases that might arise.

**More information:** Prion disease risk uncertainties associated with urine-derived and recombinant fertility drugs', Int. J. Risk Assessment and Management, [DOI: 10.1504/IJRAM.2019.101292](https://doi.org/10.1504/IJRAM.2019.101292)

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