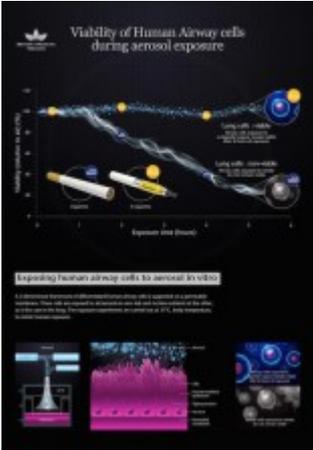


# Cigarette smoke wreaks havoc on lung cells

By Gil Ross — July 15, 2015



[1]A new study published in [Toxicology in Vitro](#) [2] found that while

cigarette smoke damaged tissue with a dose-response effect -at six hours of exposure, only 12 percent of the cells remained alive - six hours of cellular exposure to e-cigarette vapor left the lung tissue unaffected.

The researchers from British American Tobacco, working with MatTek Corp., were led by Dr. Louise Neilson, and they had two main goals: first, to determine the level of cytotoxicity from exposure to e-cigarette vapor; second, to evaluate their test methodology for possible use in the regulatory framework of assessing toxicity of aerosol emissions *in vitro*, i.e. in a lab test rather than in clinical studies (on people). According to the authors, there are currently no standards for the assessment of aerosol emissions *in vitro*. Thus, there is a need to develop such biological techniques for aerosol analysis, rigorous enough and reproducible/reliable enough to pass muster at agencies such as the FDA.

The study used MatTek's EpiAirway tissue model, a 3-D reconstruction of human airways, with the presence of cultured human tracheo-bronchial tissue cells, and exposed this system to various irritants via the smoking robot technology, VITROCELL. Control studies confirmed the harmful effect of known irritants. When cigarette smoke was applied, massive damage, nearly complete, was observed to the cells and tissues evaluated. E-cigarette vapor from 2 NJOY products regular and menthol-flavored had the same effect on the cells as did plain air: nothing, no cellular abnormalities were produced.

The authors conclude, Further studies will need to be conducted to compare between different commercially available products, formats, and formulations, but our data suggest that e-cigarette aerosols have significantly less impact than cigarette smoke over the duration of a 6 h exposure *in vitro* using organotypic tissue constructs.

Way back in 2013, Dr. Igor Burstyn of Drexel published [Peering Through the Mist](#), [3] which analyzed e-cigarette vapor and [found nothing in it](#) [4] at levels of concern: vaper or bystander.

Around that time, Tom Farley testified before the City Counsel that we have no idea what s in e-cigarettes, so we should ban or restrict them and I testified immediately after him noted, bad actors aside, that science does know what s in them.

Sadly, I doubt this new study s confirmation of the lack of harm from vapor will reverse that course, and smokers trying to quit will pay the price.

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**Links**

[1] <http://acsh.org/wp-content/uploads/2015/07/ECigVaporHarmless.jpg>

[2] <http://www.sciencedirect.com/science/article/pii/S0887233315001228>

[3] <http://publichealth.drexel.edu/~media/Files/publichealth/ms08.pdf>

[4] <http://acsh.org/2013/08/new-study-finds-no-health-concerns-in-e-cig-vapor/>