# PUBLIC SUBMISSION

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## General Comment

CTs are generally the biggest source of radiation. The dose of a scan did not decrease that much in recent decades. Vendors made improvements, but physicians preferred to use them to further improve image quality rather than decrease dose. Just now we're starting to see some 10-20% reductions in dose per exam. Which is basically worthless if the number of exams increases exponentially.

In the part of their paper, titled: "The LNT Hypothesis is Not Biologically Plausible" they rant about how it doesn't make sense for radiations to be producing much damage, given that each cell undergoes 2x105 mutations per day, compared to the estimated 100 mutations per year that the natural radiation generates; therefore, they conclude, it's obvious that the body knows how to fix such mutations. Which might be partially true (haven't re-checked their numbers). However, if you get a CT you're triggering at least a thousand mutations per cell istantaneously. It wouldn't surprise me if a cell reacted in a completely different way to phenomena that happen on completely different time-scales. That might explain why people living in areas with high background radiation do not show any excess cancer incidence while medical radiations might still be dangerous.

Furthermore, what really bothers me is the number of procedures that a patient is going to undertake in his life. A 30 mSv CT isn't going to be that problematic, we can all agree. But... 20 of those, plus a couple of

scintigraphies, some coronographies, two or three PET scans and the always underestimated interventional radiology... And you're left with a total dose of 1,000 mSv or more! And... it's not that far-fetched. There's a non-trivial fraction of patients who regularly undergo similar amounts of exams!

In addition, the petitioners are arguing for a change that would automatically minimize America's concerns to regulate so as to minimize Fukushima and other such exposures, which might mount to major areas of reasonable regulatory action.

The proposed change is not even worthy of being considered.

The petitioners are propagandists, not scientists, in their approach. The existing standard needs to be retained, or at least, retained unless and until an undeniable and clear preponderance of the evidence indicates that the existing standard definitely should be replaced by some specific alternative. The authors have fallen very far short of having presented a serious reason for even so much as just considering to replace the existing standard.