How Many Grays to Get to the Malfunction of an Insulin Pump?

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They were attached together by rubber bands with a dosimeter and set to identical program modes.

Medtronic (models 523 and 630g) were monitored.

The three insulin pumps received a total of 8,612 mRem throughout the 34 repetitive CT scans.

For this reason, the insulin pump was primed but developed a sustained darkened screen; therefore, it was removed from the experiment for the remainder of exposure over a short period of time.

The Animas (old) pump experienced a “Prime” alarm during radiation exposure.

Lack of exposure notifications related to radiation exposure or repetitive use of a demonstration model insulin pump.

The Animas pump experienced a “Prime” alarm during radiation exposure.

Therefore, the amount of radiation the insulin pumps received was a significant exposure over a short period of time.

The ANIMAS (old) pump experienced a “Prime” alarm during radiation exposure.

For research purposes, the insulin pump was primed but developed a sustained darkened screen; therefore, it was removed from the experiment for the remainder of consecutive radiation exposure. Given the age of the Animas (old) pump, it is possible that the “prime” alarm was reflective of pump age and not truly related to radiation exposure. It cannot be determined if the alarm and darkened screen were related to radiation exposure or repetitive use of the demonstration model insulin pump.

Based on this novel research, it seems that there were no proven radiation induced effects on the new insulin pump functions and abilities.

Future research on insulin pumps receiving radiation exposure needs to be undertaken to truly understand if radiation exposure affects insulin pump function.

CONCLUSIONS:

Table 1. Preregistered Modes of InSulin Pumps

Table 2. CT Scan Radiation Exposure Raw Data Collection

Table 3. Dosimetry Results Showing Total Cumulative Radiation Received