Coordinated studies of large populations exposed to computed tomography (CT) scans in childhood or adolescence have shown increased rates of leukemia, brain cancer, and most other cancers.[1, 2]

CT scans undertaken shortly before cancer diagnosis are usually part of that diagnostic process (reverse causation (RC) exposures).

Exclusion and lag periods are used to reduce the effect of RC CT scan exposures (Exclusion means person has zero dose).

Finite mixture models are used to provide an evidence-based exclusion or lag period.

The classifier is the interval time at which the posterior probability of being classified in the earlier, or RC class.

The 99th percentile classifier is optimal and exclusion period greater than or equal to 8.7 months. See where the lines cross in figure 2. The 99th percentile classifier argues for an exclusion period greater than or equal to 18.9 months. See where the early distribution line approximates a probability of < 0.01 in figure 2.

