**S2 File: formula to calculate the cumulative BM dose**

Note: We sum when we have a complete radiological history (i.e.no missing in any of the examination variables) or when data on only one of the examinations was missing. To calculate the contribution to the cumulative dose from each examination we used the following formula (here presented for thorax x-ray):

Note:

=total numbers of thorax x-ray

We repeated the same formula for each type of examination. This formula is for scenario 2, scenarios 1 and 3 have been calculated via substituting the “Mean dose between Age at first-age at last” with “Dose at age at first” and “Dose at age at last”, respectively.