

Table S2. Detailed characteristics of included studies with estimates of measures of risk

Study	Description	Population	Country	Dose type (exposure description)	type	organ specific	lag	Dose	Health outcome	Sex	Original units	Units of measure	Effect	95% CI Lower	95% CI Upper
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		0-1 mGy	IHD mortality (ref)		RR	RR	1.00	1	1
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		>1-25 mGy	IHD mortality		RR	RR	1.20	1.0	1.3
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		>25-150 mG	IHD mortality		RR	RR	1.30	1.1	1.5
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		>150 mGy	IHD mortality		RR	RR	1.30	1.1	1.6
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		Overall	IHD mortality		ERR/Gy	ERR/Sv	0.28	-0.45	1.1
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		<500 mGy	IHD mortality		ERR/Gy	ERR/Sv	0.26	-0.48	1.1
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		<400 mGy	IHD mortality		ERR/Gy	ERR/Sv	0.38	-0.37	1.3
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		<300 mGy	IHD mortality		ERR/Gy	ERR/Sv	0.54	-0.24	1.5
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		<200 mGy	IHD mortality		ERR/Gy	ERR/Sv	0.84	0.00	1.9
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from external ionizing external	external	Lung		<100 mGy	IHD mortality		ERR/Gy	ERR/Sv	2.60	0.20	5.5
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from internal uranium internal	internal	Lung		0 mGy	IHD mortality (ref)		RR	RR	1.00	1.00	1.0
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from internal uranium internal	internal	Lung		>0-0.1 mGy	IHD mortality		RR	RR	1.00	0.94	1.1
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from internal uranium internal	internal	Lung		>0.1-1 mGy	IHD mortality		RR	RR	0.99	0.89	1.1
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from internal uranium internal	internal	Lung		>1 mGy	IHD mortality		RR	RR	1.40	0.76	2.3
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from internal uranium internal	internal	Lung		Overall	IHD mortality		ERR/Gy	ERR/Sv	0.019	-0.077	0.26
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from internal uranium internal	internal	Lung		<10 mGy	IHD mortality		ERR/Gy	ERR/Sv	0.15	-0.076	0.44
Anderson 2021	Uranium enrichment workers, cohort study,	Uranium enrichment workers	United States	Lung absorbed dose from internal uranium internal	internal	Lung		<1 mGy	IHD mortality		ERR/Gy	ERR/Sv	0.21	-0.18	0.66
Atkinson 2004	United Kingdom Atomic Energy Authority (U Atomic Energy Authority	United Kingdom Atomic Energy Authority	United Kingdom	All UKAEA workforce	external	whole body		Overall	IHD mortality		SMR	SMR	0.82	0.79	0.85
Atkinson 2004	United Kingdom Atomic Energy Authority (U Atomic Energy Authority Non-radiation workers	United Kingdom Atomic Energy Authority Non-radiation workers	United Kingdom	Non-radiation workers in the UKAEA	external	whole body		Overall	IHD mortality		SMR	SMR	0.81	0.77	0.86
Atkinson 2004	United Kingdom Atomic Energy Authority (U Atomic Energy Authority radiation workers	United Kingdom Atomic Energy Authority radiation workers	United Kingdom	Radiation workers in the UKAEA	external	whole body		Overall	IHD mortality		SMR	SMR	0.82	0.78	0.86
Atkinson 2004	United Kingdom Atomic Energy Authority (U Atomic Energy Authority internally monitored workers	United Kingdom Atomic Energy Authority internally monitored workers	United Kingdom	Internally monitored workers in the UKAEA	external	whole body		Overall	IHD mortality		SMR	SMR	0.82	0.76	0.89
Atkinson 2004	United Kingdom Atomic Energy Authority (U Atomic Energy Authority Radiation workers compared to non-radiation workers	United Kingdom Atomic Energy Authority Radiation workers compared to non-radiation workers	United Kingdom	Radiation workers compared to non-radiation workers	external	whole body		Overall	IHD mortality		RR	RR	0.99	0.91	1.07
Atkinson 2004	United Kingdom Atomic Energy Authority (U Atomic Energy Authority Internally monitored workers compared to non-radiation workers	United Kingdom Atomic Energy Authority Internally monitored workers compared to non-radiation workers	United Kingdom	Internally monitored workers compared to non-radiation workers	external	whole body		Overall	IHD mortality		RR	RR	0.94	0.85	1.05
Azizova 2015	Mayak workers, IHD and mortality	Mayak nuclear workers	Russia	Internal alpha radiation to the liver	internal	Liver		0-0.025	IHD incidence		RR	RR	1		
Azizova 2015	Mayak workers, IHD and mortality	Mayak nuclear workers	Russia	Internal alpha radiation to the liver	internal	Liver		0.025-0.05	IHD incidence		RR	RR	1.03	0.92	1.16
Azizova 2015	Mayak workers, IHD and mortality	Mayak nuclear workers	Russia	Internal alpha radiation to the liver	internal	Liver		0.05-0.1	IHD incidence		RR	RR	1.06	0.94	1.2
Azizova 2015	Mayak workers, IHD and mortality	Mayak nuclear workers	Russia	Internal alpha radiation to the liver	internal	Liver		0.1-0.25	IHD incidence		RR	RR	1.11	0.98	1.26
Azizova 2015	Mayak workers, IHD and mortality	Mayak nuclear workers	Russia	Internal alpha radiation to the liver	internal	Liver		0.25-0.50	IHD incidence		RR	RR	1.18	0.99	1.38
Azizova 2015	Mayak workers, IHD and mortality	Mayak nuclear workers	Russia	Internal alpha radiation to the liver	internal	Liver		0.50-1.00	IHD incidence		RR	RR	1.23	0.98	1.53
Azizova 2015	Mayak workers, IHD and mortality	Mayak nuclear workers	Russia	Internal alpha radiation to the liver	internal	Liver		>1.00	IHD incidence		RR	RR	1.37	1.08	1.74
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	0-0.05Sv	IHD mortality (ref)		RR	RR	1		
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	0.05-0.10Sv	IHD mortality		RR	RR	0.93	0.8	1.09
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	0.10-0.15Sv	IHD mortality		RR	RR	1.03	0.87	1.21
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	0.15-0.20Sv	IHD mortality		RR	RR	0.88	0.73	1.06
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	0.20-0.30Sv	IHD mortality		RR	RR	0.92	0.78	1.07
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	0.30-0.50Sv	IHD mortality		RR	RR	0.91	0.79	1.05

Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	0.50-0.75Sv	IHD mortality	RR	RR	0.98	0.84	1.15
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	0.75-1.00Sv	IHD mortality	RR	RR	0.98	0.82	1.17
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	1-2Sv	IHD mortality	RR	RR	1.05	0.91	1.2
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	2-3Sv	IHD mortality	RR	RR	1.2	1	1.43
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	whole body	10 years	3+Sv	IHD mortality	RR	RR	1.01	0.75	1.36
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative External Gamma-Ray Dose	external	whole body	10 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	0.06	0.01	0.13
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative External Gamma-Ray Dose	external	whole body	10 years	<2 Sv	IHD mortality	ERR/Sv	ERR/Sv	0.04	-0.04	0.14
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative External Gamma-Ray Dose	external	whole body	10 years	<1 Sv	IHD mortality	ERR/Sv	ERR/Sv	-0.03	-0.19	0.14
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative External Gamma-Ray Dose	external	whole body	10 years	<0.5 Sv	IHD mortality	ERR/Sv	ERR/Sv	-0.26	-0.56	0.09
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative External Gamma-Ray Dose	external	whole body	10 years	<0.3 Sv	IHD mortality	ERR/Sv	ERR/Sv	-0.42	-0.97	0.2
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	<0.002 Gy	IHD mortality (ref)	RR	RR	1		
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.002-0.005	IHD mortality	RR	RR	0.54	0.35	0.82
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.005-0.010	IHD mortality	RR	RR	0.99	0.71	1.38
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.010-0.020	IHD mortality	RR	RR	0.9	0.65	1.24
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.020-0.050	IHD mortality	RR	RR	1	0.74	1.37
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.050-0.100	IHD mortality	RR	RR	0.89	0.63	1.24
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.100-0.150	IHD mortality	RR	RR	0.87	0.59	1.27
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.150-0.200	IHD mortality	RR	RR	0.89	0.58	1.35
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.200-0.300	IHD mortality	RR	RR	1.07	0.72	1.59
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.300-0.500	IHD mortality	RR	RR	0.72	0.46	1.11
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	0.500-1.000	IHD mortality	RR	RR	0.96	0.62	1.49
Azizova 2018	Plutonium, Mayak only	Mayak nuclear workers-Plutonium	Russia	Cumulative internal alpha-radiation dose	internal	Liver	10 years	1.000+ Gy	IHD mortality	RR	RR	1	0.63	1.6
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative internal liver dose from plutoni	internal	Liver	10 years	Overall	IHD mortality	ERR/Gy	ERR/Sv	0		0.2
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative internal liver dose from plutoni	internal	Liver	10 years	<1 Gy	IHD mortality	ERR/Gy	ERR/Sv	-0.12	-0.49	0.35
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative internal liver dose from plutoni	internal	Liver	10 years	<0.5 Gy	IHD mortality	ERR/Gy	ERR/Sv	-0.57	-1.13	0.16
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative internal liver dose from plutoni	internal	Liver	10 years	<0.3 Gy	IHD mortality	ERR/Gy	ERR/Sv	-0.13	-1.18	1.19
Azizova 2018	Mayak workers only	Mayak nuclear workers	Russia	Cumulative internal liver dose from plutoni	internal	Liver	10 years	<0.1 Gy	IHD mortality	ERR/Gy	ERR/Sv	-1.18	-4.14	2.66
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	0,1-0,2	IHD mortality	Men RR	RR	0.98	0.83	1.15
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	0,2-0,5	IHD mortality	Men RR	RR	0.93	0.8	1.08
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	0,5-0,75	IHD mortality	Men RR	RR	0.89	0.73	1.09
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	0,75-1,0	IHD mortality	Men RR	RR	1.02	0.81	1.27
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	1,0-1,5	IHD mortality	Men RR	RR	1.16	0.95	1.41
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	1,5-2,0	IHD mortality	Men RR	RR	1.02	0.79	1.32
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	2,0-3,0	IHD mortality	Men RR	RR	1.09	0.82	1.42
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	>=3,0	IHD mortality	Men RR	RR	0.92	0.46	1.68
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	0,1-0,2	IHD mortality	Womer RR	RR	1.06	0.81	1.39
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	0,2-0,5	IHD mortality	Womer RR	RR	0.93	0.71	1.22
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	0,5-0,75	IHD mortality	Womer RR	RR	1.11	0.77	1.58
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	0,75-1,0	IHD mortality	Womer RR	RR	0.9	0.55	1.4
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	1,0-1,5	IHD mortality	Womer RR	RR	1.08	0.69	1.63
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	1,5-2,0	IHD mortality	Womer RR	RR	1.16	0.65	1.97

Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	2.0-3.0	IHD mortality	Womer RR	RR	1.25	0.63	2.3	
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	>=3.0	IHD mortality	Womer RR	RR	3.64	0.56	13.63	
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	Overall	IHD mortality	ERR/Gy	ERR/Sv	0.07	-0.02	0.18	
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	Overall	IHD mortality	Men	ERR/Gy	ERR/Sv	0.06	-0.04	0.18
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	5 years	Overall	IHD mortality	Men	ERR/Gy	ERR/Sv	0.06	-0.03	0.18
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	20 years	Overall	IHD mortality	Men	ERR/Gy	ERR/Sv	0.05	-0.05	0.17
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	30 years	Overall	IHD mortality	Men	ERR/Gy	ERR/Sv	0.04	-0.06	0.17
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Liver absorbed neutron dose		Liver	10 years	Overall	IHD mortality	Men	ERR/Gy	ERR/Sv	-2.44	-18.75	29.11
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Liver absorbed gamma and neutron dose	external	Liver	10 years	Overall	IHD mortality	Men	ERR/Gy	ERR/Sv	0.06	-0.03	0.18
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	10 years	Overall	IHD mortality	Womer	ERR/Gy	ERR/Sv	0.14	-0.07	0.45
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	5 years	Overall	IHD mortality	Womer	ERR/Gy	ERR/Sv	0.14	-0.07	0.44
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose	external	Liver	20 years	Overall	IHD mortality	Womer	ERR/Gy	ERR/Sv	0.13	-0.08	0.43
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Cumulative external gamma dose		Liver	30 years	Overall	IHD mortality	Womer	ERR/Gy	ERR/Sv	0.13	-0.08	0.45
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Liver absorbed neutron dose		Liver	10 years	Overall	IHD mortality	Womer	ERR/Gy	ERR/Sv	-6.78		147.4
Azizova 2022	Mayak workers only	Mayak nuclear workers	Russia	Liver absorbed gamma and neutron dose		Liver	10 years	Overall	IHD mortality	Womer	ERR/Gy	ERR/Sv	0.14	-0.07	0.45
Boice 2022a	Los Alamos national lab workers, 1943-2002	Los Alamos national laboratory workers	United States	Any radiation exposure	external	Heart	10 years	Overall	IHD mortality	SMR	SMR	0.6	0.58	0.63	
Boice 2022a	Los Alamos national lab workers, 1943-2002	Los Alamos national laboratory workers	United States	Cumulative total absorbed dose	Total (external + internal)	Heart	10 years	<5 mGy	IHD mortality	HR	HR	1			
Boice 2022a	Los Alamos national lab workers, 1943-2002	Los Alamos national laboratory workers	United States	Cumulative total absorbed dose	Total (external + internal)	Heart	10 years	5 - <50 mGy	IHD mortality	HR	HR	0.96	0.87	1.07	
Boice 2022a	Los Alamos national lab workers, 1943-2002	Los Alamos national laboratory workers	United States	Cumulative total absorbed dose	Total (external + internal)	Heart	10 years	50 - <100 mGy	IHD mortality	HR	HR	1.11	0.87	1.41	
Boice 2022a	Los Alamos national lab workers, 1943-2002	Los Alamos national laboratory workers	United States	Cumulative total absorbed dose	Total (external + internal)	Heart	10 years	>100 mGy	IHD mortality	HR	HR	0.91	0.7	1.17	
Boice 2022a	Los Alamos national lab workers, 1943-2002	Los Alamos national laboratory workers	United States	Cumulative total absorbed dose	Total (external + internal)	Heart	10 years	100 mGy	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	0.94	0.85	1.04	
Boice 2022a	Los Alamos national lab workers, 1943-2002	Los Alamos national laboratory workers	United States	Cumulative total absorbed dose	Total (external + internal)	Heart	10 years	Overall	IHD mortality	ERR @ 100 ERR/Sv	ERR @ 100 ERR/Sv	-0.6	-1.6	0.4	
Boice 2022b	Medical radiation workers	Medical radiation workers	United States	Cumulative external gamma radiation	external	whole body	10 years	Overall	IHD mortality	SMR	SMR	0.53	0.51	0.56	
Boice 2022b	Medical radiation workers	Medical radiation workers	United States	Cumulative external gamma radiation	external	Heart	10 years	Overall	IHD mortality	ERR/100n	ERR/Sv	-1	-2.7	0.6	
Boice 2022b	Medical radiation workers	Medical radiation workers	United States	Cumulative external gamma radiation	external	Heart	10 years	Overall	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	0.9	0.77	1.06	
Boice 2022b	Medical radiation workers	Medical radiation workers	United States	Cumulative external gamma radiation	external	Heart	10 years	<5	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	1			
Boice 2022b	Medical radiation workers	Medical radiation workers	United States	Cumulative external gamma radiation	external	Heart	10 years	5-<10	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	1.22	1.04	1.43	
Boice 2022b	Medical radiation workers	Medical radiation workers	United States	Cumulative external gamma radiation	external	Heart	10 years	10-<25	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	1.14	0.96	1.35	
Boice 2022b	Medical radiation workers	Medical radiation workers	United States	Cumulative external gamma radiation	external	Heart	10 years	25-<50	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	1.13	0.89	1.44	
Boice 2022b	Medical radiation workers	Medical radiation workers	United States	Cumulative external gamma radiation	external	Heart	10 years	50-<100	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	1.29	0.96	1.72	
Boice 2022b	Medical radiation workers	Medical radiation workers	United States	Cumulative external gamma radiation	external	Heart	10 years	>100	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	0.96	0.63	1.43	
Boice 2022c	Nuclear power plant workers in US	Nuclear power plant workers	United States	Cumulative external gamma radiation	external	Heart	10 years	Overall	IHD mortality	SMR	SMR	0.8	0.78	0.82	
Boice 2022c	Nuclear power plant workers in US	Nuclear power plant workers	United States	Cumulative external gamma radiation	external	Heart	10 years	Overall	IHD mortality	ERR/100n	ERR/Sv	-0.01	-0.6	0.4	
Boice 2022c	Nuclear power plant workers in US	Nuclear power plant workers	United States	Cumulative external gamma radiation	external	Heart	10 years	Overall	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	0.99	0.94	1.04	
Boice 2022c	Nuclear power plant workers in US	Nuclear power plant workers	United States	Cumulative external gamma radiation	external	Heart	10 years	<25	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	1			
Boice 2022c	Nuclear power plant workers in US	Nuclear power plant workers	United States	Cumulative external gamma radiation	external	Heart	10 years	25-<50	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	1.02	0.95	1.1	
Boice 2022c	Nuclear power plant workers in US	Nuclear power plant workers	United States	Cumulative external gamma radiation	external	Heart	10 years	50-<100	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	1.01	0.93	1.11	
Boice 2022c	Nuclear power plant workers in US	Nuclear power plant workers	United States	Cumulative external gamma radiation	external	Heart	10 years	100-<250	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	1	0.89	1.12	
Boice 2022c	Nuclear power plant workers in US	Nuclear power plant workers	United States	Cumulative external gamma radiation	external	Heart	10 years	>=250	IHD mortality	HR @ 100 HR @ 100 r	HR @ 100 HR @ 100 r	0.95	0.75	1.2	
Bouet 2018	French uranium miller cohort, n=1291	Uranium miller cohort	France	Overall cohort (any dose) compared to national background	No dosimetry reported	whole body		Overall	IHD mortality	SMR	SMR	0.96	0.71	1.27	
Bouet 2018	French uranium miller cohort, n=1291	Uranium miller cohort	France	Overall cohort (any dose) compared to local background	No dosimetry reported	whole body		>0 mSv	IHD mortality	SMR	SMR	1.15	0.85	1.52	

Bouet 2018	French uranium miller cohort, n=1291	Uranium miller cohort	France	Cumulative exposure dose - manufacturing No dosimetry rep whole body					>0 mSv	IHD mortality	SMR	SMR	1.45	0.96	2.11
Bouet 2018	French uranium miller cohort, n=1291	Uranium miller cohort	France	Cumulative exposure dose - manufacturing No dosimetry rep whole body					>0 mSv	IHD mortality	SMR	SMR	1.74	1.15	2.53
Bouet 2018	French uranium miller cohort, n=1291	Uranium miller cohort	France	Cumulative exposure - maintenance unit c No dosimetry rep whole body					>0 mSv	IHD mortality	SMR	SMR	0.73	0.32	1.45
Bouet 2018	French uranium miller cohort, n=1291	Uranium miller cohort	France	Cumulative exposure - maintenance unit c No dosimetry rep whole body					>0 mSv	IHD mortality	SMR	SMR	0.88	0.38	1.74
Bouet 2018	French uranium miller cohort, n=1291	Uranium miller cohort	France	Cumulative exposure - other units compar No dosimetry rep whole body					>0 mSv	IHD mortality	SMR	SMR	0.65	0.34	1.1
Bouet 2018	French uranium miller cohort, n=1291	Uranium miller cohort	France	Cumulative exposure - other units compar No dosimetry rep whole body					>0 mSv	IHD mortality	SMR	SMR	0.77	0.41	1.32
Cha 2020	Diagnostic radiation workers in South Korea	Diagnostic radiation workers	South Korea	Cumulative heart dose	external	Heart	10 years	Overall		IHD mortality	ERR/100 r	ERR/Sv	12.2	-7.1	47.3
Catholic nuns radiologic technologists															
Doody 2000	Catholic nuns (Radiologic technologists), n= (compared to US female technologists)		United States	Cumulative radiation dose - nuns compar external		whole body		Overall		IHD mortality	SMR	SMR	1.2	1.1	1.4
Catholic nuns radiologic technologists															
Doody 2000	Catholic nuns (Radiologic technologists), n= (compared to US females overall)		United States	Cumulative radiation dose - nuns compar external		whole body		Overall		IHD mortality	SMR	SMR	0.8	0.7	0.97
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Restricting cumulative dose range on line external		whole body	10 years	Overall		IHD mortality	ERR/Sv	ERR/Sv	0.17	0.002	0.36
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Restricting cumulative dose range on line external		whole body	10 years	<500 mSv		IHD mortality	ERR/Sv	ERR/Sv	0.23	0.01	0.47
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Restricting cumulative dose range on line external		whole body	10 years	<400 mSv		IHD mortality	ERR/Sv	ERR/Sv	0.24	-0.1	0.5
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Restricting cumulative dose range on line external		whole body	10 years	<300 mSv		IHD mortality	ERR/Sv	ERR/Sv	0.16	-0.15	0.48
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Restricting cumulative dose range on line external		whole body	10 years	<200 mSv		IHD mortality	ERR/Sv	ERR/Sv	0.01	-0.39	0.44
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Restricting cumulative dose range on line external		whole body	10 years	<150 mSv		IHD mortality	ERR/Sv	ERR/Sv	0.25	-0.27	0.8
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Restricting cumulative dose range on line external		whole body	10 years	<100 mSv		IHD mortality	ERR/Sv	ERR/Sv	-0.56		0.19
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Restricting cumulative dose range on line external		whole body	10 years	<50 mSv		IHD mortality	ERR/Sv	ERR/Sv	-0.7		0.72
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Cumulative radiation dose	external	whole body	5 years	Overall		IHD mortality	ERR/Sv	ERR/Sv	0.1	-0.06	0.26
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Cumulative radiation dose	external	whole body	15 years	Overall		IHD mortality	ERR/Sv	ERR/Sv	0.24	0.04	0.45
Gillies 2017	Nuclear workers in France, UK and US (IN INWORKS Nuclear workers		France, UK, US	Cumulative radiation dose	external	whole body	20 years	Overall		IHD mortality	ERR/Sv	ERR/Sv	0.18	-0.04	0.42
Golden 2022	Mallinckrodt uranium processing workers, n Mallinckrodt uranium workers		United States	Cumulative radiation dose	Total (external + i	whole body		Overall		IHD mortality	Men SMR	SMR	0.92	0.84	1
Golden 2022	Mallinckrodt uranium processing workers, n Mallinckrodt uranium workers		United States	Organ specific radiation dose	Total (external + i	Heart	10 years	<10 mGy		IHD mortality	Men HR	HR	1		
Golden 2022	Mallinckrodt uranium processing workers, n Mallinckrodt uranium workers		United States	Organ specific radiation dose	Total (external + i	Heart	10 years	10-49 mGy		IHD mortality	Men HR	HR	1.4	1.12	1.76
Golden 2022	Mallinckrodt uranium processing workers, n Mallinckrodt uranium workers		United States	Organ specific radiation dose	Total (external + i	Heart	10 years	50-99 mGy		IHD mortality	Men HR	HR	1.15	0.87	1.52
Golden 2022	Mallinckrodt uranium processing workers, n Mallinckrodt uranium workers		United States	Organ specific radiation dose	Total (external + i	Heart	10 years	100-249 mGy		IHD mortality	Men HR	HR	1.8	1.35	2.4
Golden 2022	Mallinckrodt uranium processing workers, n Mallinckrodt uranium workers		United States	Organ specific radiation dose	Total (external + i	Heart	10 years	>250 mGy		IHD mortality	Men HR	HR	1.24	0.74	2.1
Golden 2022	Mallinckrodt uranium processing workers, n Mallinckrodt uranium workers		United States	Organ specific radiation dose	Total (external + i	Heart	10 years	100 mGy		IHD mortality	Men HR @ 100	HR @ 100 r	1.09	0.99	1.2
Golden 2022	Mallinckrodt uranium processing workers, n Mallinckrodt uranium workers		United States	Organ specific radiation dose	Total (external + i	Heart	10 years	Overall		IHD mortality	ERR @ 100	ERR/Sv	1.3	-0.1	2.8
Kreuzer 2013	German WISMUT uranium miners cohort, n WISMUT uranium miners		Germany	Cumulative external gamma radiation	external	whole body	10 years	0 mSv		IHD mortality	RR	RR	1		
Kreuzer 2013	German WISMUT uranium miners cohort, n WISMUT uranium miners		Germany	Cumulative external gamma radiation	external	whole body	10 years	0-50 mSv		IHD mortality	RR	RR	0.97	0.89	1.05
Kreuzer 2013	German WISMUT uranium miners cohort, n WISMUT uranium miners		Germany	Cumulative external gamma radiation	external	whole body	10 years	50-100 mSv		IHD mortality	RR	RR	0.94	0.83	1.05
Kreuzer 2013	German WISMUT uranium miners cohort, n WISMUT uranium miners		Germany	Cumulative external gamma radiation	external	whole body	10 years	100-150 mSv		IHD mortality	RR	RR	1.02	0.86	1.05
Kreuzer 2013	German WISMUT uranium miners cohort, n WISMUT uranium miners		Germany	Cumulative external gamma radiation	external	whole body	10 years	150-200 mSv		IHD mortality	RR	RR	1.01	0.81	1.17
Kreuzer 2013	German WISMUT uranium miners cohort, n WISMUT uranium miners		Germany	Cumulative external gamma radiation	external	whole body	10 years	200-300 mSv		IHD mortality	RR	RR	0.94	0.78	1.1
Kreuzer 2013	German WISMUT uranium miners cohort, n WISMUT uranium miners		Germany	Cumulative external gamma radiation	external	whole body	10 years	300-400 mSv		IHD mortality	RR	RR	1.09	0.85	1.32
Kreuzer 2013	German WISMUT uranium miners cohort, n WISMUT uranium miners		Germany	Cumulative external gamma radiation	external	whole body	10 years	400-909 mSv		IHD mortality	RR	RR	0.86	0.59	1.12

Kreuzer 2013	German WISMUT uranium miners cohort, n=4079	WISMUT uranium miners	Germany	Cumulative external gamma radiation	external	whole body	10 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	-0.03	-0.38	0.32
Kreuzer 2013	German WISMUT uranium miners cohort, n=4079	WISMUT uranium miners	Germany	Cumulative external gamma radiation	external	whole body	5 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	-0.08	-0.42	0.26
Kreuzer 2013	German WISMUT uranium miners cohort, n=4079	WISMUT uranium miners	Germany	Cumulative external gamma radiation	external	whole body	15 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	0.01	-0.36	0.38
Kreuzer 2015	German WISMUT uranium miners, subgroup	WISMUT uranium miners	Germany	Any radiation exposure		whole body		Overall	IHD mortality	SMR	SMR	0.83	0.74	0.92
Kreuzer 2015	German WISMUT uranium miners, subgroup	WISMUT uranium miners	Germany	Radon		whole body		Mean of 8 W	IHD mortality	ERR/100	ERR/100 WL	0.24	-0.85	1.32
Kreuzer 2015	German WISMUT uranium miners, subgroup	WISMUT uranium miners	Germany	External gamma radiation	external	whole body	5 years	Mean of 26 n	IHD mortality	ERR/Sv	ERR/Sv	-0.1	-1.48	1.27
Lane 2010	Eldorado Uranium Workers, n=4079	Eldorado Uranium Workers	Canada	Radon decay products exposure		whole body	5 years	Overall	IHD mortality	ERR/100	ERR/100 WL	-0.01		
Lane 2010	Eldorado Uranium Workers, n=4079	Eldorado Uranium Workers	Canada	Gamma-ray dose	external	whole body	5 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	0.15		
Lane 2010	Eldorado Uranium Workers, n=4079	Eldorado Uranium Workers	Canada	Any radiation exposure (males)		whole body		Overall	IHD mortality	SMR	SMR	0.82	0.77	0.87
Metz-Flamant 2010	French nuclear workers, n=59021	Nuclear workers	France	Cumulative x- and gamma radiation dose	external	whole body	10 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	0.71	-1.2	3.18
Navaranjan 2010	Ontario uranium miners, n=28546	Uranium miners	Canada	Cumulative radiation dose (radon)	external	whole body		Overall	IHD mortality	SMR	SMR	0.91	0.86	0.95
Rage 2018	Jouac uranium miners (French), extended cohort	Uranium miners	France	External gamma radiation dose	external	whole body		overall	IHD mortality	SMR	SMR	0.93	0.79	1.08
Rage 2018	Jouac uranium miners (French), extended cohort	Uranium miners	France	Radon exposure (WLM)		whole body	5 years	overall	IHD mortality	ERR/100	ERR/100 WL	0.09		0.39
Rajaraman 2016	US radiologic technologists, n=90957	Radiological technologists	United States	External radiation exposure (adjusted for confounders)	external	whole body		overall	IHD mortality	HR	HR	1.13	0.88	1.45
Rajaraman 2016	US radiologic technologists, n=90957	Radiological technologists	United States	External radiation exposure (adjusted for confounders)	external	whole body		Overall	IHD mortality	HR	HR	1.03	0.8	1.34
Villeneuve 2007a	Newfoundland fluorspar miners, n=2070	Newfoundland fluorspar miners	Canada	Cumulative exposure to radon progeny	external	whole body	5 years	0 WLM	IHD mortality (ref)	RR	RR	1		
Villeneuve 2007b	Newfoundland fluorspar miners, n=2070	Newfoundland fluorspar miners	Canada	Cumulative exposure to radon progeny	external	whole body	5 years	0-100 WLM	IHD mortality	RR	RR	1.04	0.74	1.45
Villeneuve 2007c	Newfoundland fluorspar miners, n=2070	Newfoundland fluorspar miners	Canada	Cumulative exposure to radon progeny	external	whole body	5 years	100-400 WLM	IHD mortality	RR	RR	1.2	0.83	1.75
Villeneuve 2007d	Newfoundland fluorspar miners, n=2070	Newfoundland fluorspar miners	Canada	Cumulative exposure to radon progeny	external	whole body	5 years	400-800 WLM	IHD mortality	RR	RR	1.54	0.98	2.44
Villeneuve 2007e	Newfoundland fluorspar miners, n=2070	Newfoundland fluorspar miners	Canada	Cumulative exposure to radon progeny	external	whole body	5 years	800-1600 WLM	IHD mortality	RR	RR	0.97	0.52	1.81
Villeneuve 2007f	Newfoundland fluorspar miners, n=2070	Newfoundland fluorspar miners	Canada	Cumulative exposure to radon progeny	external	whole body	5 years	>1600 WLM	IHD mortality	RR	RR	1.18	0.67	2.08
Villeneuve 2007g	Newfoundland fluorspar miners, n=2070	Newfoundland fluorspar miners	Canada	Cumulative exposure to radon progeny	external	whole body		Overall	IDH mortality	SMR	SMR	0.86	0.74	0.89
Vrijheid 2007	15-country study of nuclear workers, n=275	15-country study of nuclear workers	Multi-country	External radiation dose	external	colon	10 years	overall	IDH mortality	SMR	SMR	0.69	0.66	0.72
Vrijheid 2007	15-country study of nuclear workers, n=275	15-country study of nuclear workers	Multi-country	External radiation dose	external	colon	10 years	Overall	IDH mortality	ERR/Sv	ERR/Sv	-0.01	-0.59	0.69
Wang 2009	X-ray workers in China, n=27011	X-ray workers	China	External x-ray radiation dose	external	whole body		Overall	IHD mortality	RR	RR	1.4	1.1	1.7
Zablotska, 2013	Port Hope cohort, n=3000	Port Hope Uranium workers	Canada	External radiation dose	external	whole body	5 years	Overall	IHD mortality	SMR	SMR	1.07	0.96	1.19
Zablotska, 2013	Port Hope cohort, n=3000	Port Hope Uranium workers	Canada	RDP exposures		whole body	5 years	Overall	IHD mortality	ERR/100	ERR/100 WL	0.16	-0.05	0.5
Zablotska, 2013	Port Hope cohort, n=3000	Port Hope Uranium workers	Canada	Gamma-ray dose	external	whole body	5 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	0.31	-0.05	0.88
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose category (mSv)	external	whole body	10 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	0.32	0.04	0.61
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose category (mSv)	external	whole body	10 years	10-20 mSv	IHD mortality	ERR by dose	ERR by dose	0.03	-0.04	0.1
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose category (mSv)	external	whole body	10 years	20-50 mSv	IHD mortality	ERR by dose	ERR by dose	-0.04	-0.1	0.02
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose category (mSv)	external	whole body	10 years	50-100 mSv	IHD mortality	ERR by dose	ERR by dose	0.04	-0.04	0.12
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose category (mSv)	external	whole body	10 years	100-200 mSv	IHD mortality	ERR by dose	ERR by dose	0.09	-0.01	0.19
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose category (mSv)	external	whole body	10 years	200-400 mSv	IHD mortality	ERR by dose	ERR by dose	0.18	0.06	0.32
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose category (mSv)	external	whole body	10 years	400+ mSv	IHD mortality	ERR by dose	ERR by dose	0.06	-0.09	0.22
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose range	external	whole body	10 years	<0.4 Sv	IHD mortality	ERR/Sv	ERR/Sv	0.7	0.27	1.16
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose range	external	whole body	10 years	<0.2 Sv	IHD mortality	ERR/Sv	ERR/Sv	0.64	-0.02	1.34
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose range	external	whole body	10 years	<0.1 Sv	IHD mortality	ERR/Sv	ERR/Sv	0.19	-0.89	1.34
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose range	external	whole body	10 years	<0.05 Sv	IHD mortality	ERR/Sv	ERR/Sv	-1.4	-3.36	0.67
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose	external	whole body	15 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	0.4	0.1	0.74
Zhang 2019	National Registry for Radiation Workers (NFRW)	National Registry for Radiation Workers	United Kingdom	Cumulative external dose	external	whole body	20 years	Overall	IHD mortality	ERR/Sv	ERR/Sv	0.37	0.04	0.75

whole body