

**Table S1, Supplement 1.** Unconditional associations between risk factors of interest, and whether X-ray tube operators touched the X-ray tube with hands only were summarized for 1193 exposures from 262 studies on 98 horses by 45 workers

		Relative frequency	aOR <sup>a</sup>	95% CI	P
<b>Hands only on tube</b>		0.96 (1142/1193)			
<b>Worker</b>					
	DVMs	0.96 (596/621)	Reference category		0.48
<b>(n=1193)</b>	VTs	0.91 (234/256)	0.59	0.14-2.5	0.48
	DVM/VT students	0.99 (312/316)	Non-estimable		0.29
<b>Sedation</b>					
	No	0.95 (501/528)	Reference category		
<b>(n=1185)</b>	Yes	0.96 (633/657)	0.73	0.3-1.75	0.48
<b>Study</b>					
	Lower extremity	0.96 (920/957)	Reference category		
<b>(n=1193)</b>	Upper extremity	0.93 (143/153)	0.25	0.13-0.5	<b>&lt;0.001</b>
	Body	0.95 (79/83)	0.54	0.22-1.3	0.17
<b>Concern</b>					
	I	0.93 (544/582)	Reference category		
<b>(n=1150)</b>	II	0.97 (347/359)	0.96	0.33-2.77	0.93
	III	0.995 (208/209)	28.6	0.27-2978	0.16
<b>Knowledge</b>					
	I	0.92 (132/144)	Reference category		
<b>(n=1150)</b>	II	0.95 (423/446)	0.23	0.03-2.06	0.19
	III	0.97 (544/560)	1.57	0.12-20.8	0.73
<b>Location</b>					
	In clinic	0.92 (462/501)	Reference category		
<b>(n=1193)</b>	Field	0.98 (680/692)	1.31	0.38-4.45	0.67

CI, confidence interval; DVM, Doctor of Veterinary Medicine; OR, odds ratio; P, P-value; VT, veterinary technician and technologist.

<sup>a</sup> Calculated using logistic regression adjusted for repeated measures within individual workers and adjusted for practice (p<0.05).

**Table S2, Supplement 1.** Unconditional associations between risk factors of interest, and whether or not thyroid shields were used summarized for 1293 exposures from 265 studies on 101 horses by 62 workers

		Relative			
		frequency	aOR <sup>a</sup>	95% CI	P
<b>Use of thyroid shield</b>		0.87 (2584/2969)			
<b>Task</b>		<b>&lt;0.001</b>			
	Cassette holder	0.91 (1014/1114)	Reference category		
<b>(n=2969)</b>	X-ray tube operator	0.87 (1122/1293)	0.52	0.4-0.67	<b>&lt;0.001</b>
	Horse restrainer	0.8 (448/562)	0.35	0.26-0.48	<b>&lt;0.001</b>
<b>Worker</b>		<b>0.04</b>			
	DVMs	0.82 (1049/1272)	Reference category		
<b>(n=2969)</b>	VTs	0.86 (588/682)	0.78	0.29-2.11	0.63
	DVM/VT students	0.93 (947/1015)	2.86	1.16-7.1	<b>0.02</b>
<b>Sedation</b>	No	0.78 (962/1235)	Reference category		
<b>(n=2945)</b>	Yes	0.93 (1598/1710)	2.57	1.95-3.37	<b>&lt;0.001</b>
<b>Study</b>		<b>&lt;0.001</b>			
	Lower extremity	0.86 (1994/2307)	Reference category		
<b>(n=2969)</b>	Upper extremity	0.85 (374/438)	0.68	0.54-0.86	<b>0.001</b>
	Body	0.96 (216/224)	3.98	1.77-8.97	<b>0.001</b>
<b>Concern</b>		<b>0.04</b>			
	I	0.92 (1207/1314)	Reference category		
<b>(n=2895)</b>	II	0.84 (872/1042)	0.8	0.35-1.83	0.6
	III	0.8 (432/539)	5.21	1.08-25.1	<b>0.04</b>
<b>Knowledge</b>		0.41			
	I	0.94 (346/369)	Reference category		
<b>(n=2895)</b>	II	0.85 (1128/1321)	0.96	0.34-2.69	0.94
	III	0.86 (1037/1205)	0.62	0.21-1.79	0.38

<b>Location</b>	In clinic	0.8 (1020/1274)	Reference category		
<b>(n=2584)</b>	Field	0.92 (1564/1695)	10.7	1.39-82.6	<b>0.02</b>

CI, confidence interval; DVM, Doctor of Veterinary Medicine; OR, odds ratio; P, P-value; VT, veterinary technician and technologist.

<sup>a</sup> Calculated using logistic regression adjusted for repeated measures within individual workers and adjusted for practice (P=0.51).

**Table S3, Supplement 1.** Unconditional associations between risk factors of interest, and whether or not protective gloves were used summarized for 1293 exposures from 265 studies on 101 horses by 62 workers

		Relative frequency	aOR <sup>a</sup>	95% CI	P
<b>Use of protective gloves</b>		0.21 (611/2969)			
<b>Task</b>					<b>&lt;0.001</b>
<b>(n=3151)</b>	Cassette holder	0.54 (606/1114)	Reference category		
	X-ray tube operator	0.01 (5/1293)	0.001	0.0001-0.005	<b>&lt;0.001</b>
	Horse restrainer	0 (0/562)	Non-estimable		<b>&lt;0.001</b>
<b>Worker</b>					<b>0.02</b>
<b>(n=2969)</b>	DVMs	0.13 (160/1272)	Reference category		
	VTs	0.2 (140/682)	5.23	1.69-16.2	<b>0.004</b>
	DVM/VT students	0.31 (311/1015)	1.73	0.78-3.84	0.18
<b>Sedation</b>					
<b>(n=2945)</b>	No	0.19 (232/1235)	Reference category		
	Yes	0.22 (371/1710)	0.73	0.61-1.05	0.11
<b>Study</b>					
<b>(n=2969)</b>	Lower extremity	0.19 (434/2307)	Reference category		0.11
	Upper extremity	0.28 (123/438)	1.27	1-1.62	<b>0.046</b>
	Body	0.24 (54/224)	1.17	0.79-1.73	0.43
<b>Concern</b>					<b>0.20</b>
<b>(n=2895)</b>	I	0.23 (309/1314)	Reference category		
	II	0.19 (198/1042)	0.68	0.29-1.55	0.36
	III	0.18 (100/539)	0.34	0.1-1.17	0.09
<b>Knowledge</b>					<b>0.20</b>
<b>(n=2895)</b>	I	0.32 (117/369)	Reference category		
	II	0.22 (285/1321)	0.53	0.21-1.3	0.17
	III	0.17 (205/1205)	0.4	0.15-1.09	0.07
<b>Location</b>					
	In clinic	0.04 (51/1274)	Reference category		

<b>(n=2969)</b>	Field	0.33 (560/1695)	1.36	0.87-2.12	0.18
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<sup>a</sup> Calculated using logistic regression adjusted for repeated measures within individual workers and adjusted for practice (P<0.001).