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Supporting Information

Supplementary results

**This appendix was part of the submitted manuscript and has been peer reviewed.
It is posted as supplied by the authors.**

Appendix to: Marsland MJ, Thomson TN, O'Brien HM, et al. Evidence of infections with Japanese encephalitis virus and related flaviviruses after a Japanese encephalitis outbreak in an immunologically naïve population, Victoria, 2022: a cross-sectional serosurvey. *Med J Aust* 2024; doi: 10.5694/mja2.52344.

Table 1. Japanese encephalitis virus IgG seroprevalence by residential local government area

Residential local government area	Number (proportion)
Total	27/813 (3%)
Ovens Murray region	
Rural City of Wangaratta	7/207 (3%)
City of Wodonga	5/190 (3%)
Shire Indigo	2/103 (2%)
Alpine Shire	0/13
Shire of Towong	0/5
Goulburn Valley region	
Shire of Moira	6/108 (6%)
City of Greater Shepparton	1/73 (1%)
Rural City of Benalla	0/4
Shire of Mansfield	0/2
Shire of Mitchell	0/1
Shire of Strathbogie	0/1
Loddon Mallee region	
Rural City of Mildura	3/29 (10%)
Shire of Campaspe	2/25 (8%)
City of Greater Bendigo	0/4
Rural City of Swan Hill	0/1
Other Victoria	
Shire of East Gippsland	0/1
Shire of Baw Baw	0/1
City of Merri-bek	0/1
New South Wales	
Federation Council	1/17 (6%)
City of Albury	0/12
Berrigan Shire	0/8
Greater Hume Shire	0/3
Wentworth Shire	0/3
City of Broken Hill	0/1

Table 2. Univariable prevalence odds ratios of risk factors for Japanese encephalitis virus IgG seropositivity (*N* = 813)

Exposure	Seropositive	Seronegative	Prevalence odds ratio (95% CI)
Occupation			
Abattoir or meat worker	0	7 (1%)	0.0 (0.0–16)
Animal shooter or hunter	1 (4%)	19 (2%)	1.6 (0.0–11)
Council worker (environmental health officer or outdoor staff)	0	11 (1%)	0.0 (0.0–10)
Animal transport driver	1 (4%)	8 (1%)	3.7 (0.1–30)
Pig farmer or worker	0	6 (1%)	0.0 (0.0–19)
Pest controller	1 (4%)	7 (1%)	4.3 (0.1–35)
Other type of farmer	7 (26%)	124 (16%)	1.9 (0.7–4.7)
Laboratory worker	0	8 (1%)	0.0 (0.0–14)
Veterinarian	1 (4%)	1 (< 1%)	30 (0.4–2400)
Vet technician or nurse	0	3 (< 1%)	0.0 (0.0–38)
Wildlife or zoo worker	0	3 (< 1%)	0.0 (0.0–38)
Other outdoor occupation	1 (4%)	47 (6%)	0.6 (0.0–3.9)
Water exposure*			
Dams or lakes	14 (52%)	403 (51%)	1.0 (0.4–2.4)
Public or private pools	10 (37%)	314 (40%)	0.9 (0.4–2.1)
Irrigation systems	10 (37%)	242 (31%)	1.3 (0.5–3.1)
Wetlands	9 (33%)	271 (34%)	1.0 (0.4–2.3)
Rivers or creeks	19 (70%)	540 (69%)	1.1 (0.4–2.9)
Activities and locations†			
Piggery‡	2 (7%)	29 (4%)	2.0 (0.2–8.9)
Abattoir	1 (4%)	15 (2%)	2.0 (0.1–14)
Agricultural show	4 (15%)	69 (9%)	1.8 (0.4–5.5)
Farm	14 (52%)	368 (47%)	1.2 (0.5–2.9)
States or National Parks	10 (37%)	368 (47%)	0.7 (0.3–1.6)
Camping	7 (26%)	285 (36%)	0.6 (0.2–1.5)
Fishing (fresh water)	6 (22%)	199 (25%)	0.8 (0.3–2.2)
Hunting	2 (7%)	36 (5%)	1.7 (0.2–7.1)
Bush walking or hiking	12 (44%)	353 (45%)	1.0 (0.4–2.3)
Water sports or boating	4 (15%)	182 (23%)	0.6 (0.1–1.7)
Gardening or horticulture	20 (74%)	611 (78%)	0.8 (0.3–2.3)
Picnicking	7 (26%)	254 (32%)	0.7 (0.3–1.8)
Outdoor sports	6 (22%)	259 (33%)	0.6 (0.2–1.5)
Animal exposure§			
Mosquitoes	20 (74%)	669 (85%)	0.5 (0.2–1.4)
Birds	13 (48%)	408 (52%)	0.9 (0.4–2.0)
Domestic pigs	0	10 (1%)	0.0 (0.0–11)
Feral pigs	2 (7%)	3 (< 1%)	21 (1.7–190)
Horses	2 (7%)	113 (14%)	0.5 (0.1–2.0)
Bats	0	41 (5%)	0.0 (0.0–2.6)
Protective measures			
Using mosquito repellent when outdoors	21 (78%)	613 (78%)	1.0 (0.4–3.0)
Using mosquito repellent when mosquitoes about	22 (81%)	693 (88%)	0.6 (0.2–2.1)
Wearing protective clothes outside in summer	25 (93%)	623 (79%)	3.3 (0.8–29)
Using mosquito preventing devices	15 (56%)	533 (68%)	0.6 (0.3–1.4)
Presence of insect screens at home	26 (96%)	776 (99%)	0.3 (0.0–15)

CI = confidence interval (CI).

* Lived or worked in close proximity (within 5km) since 1 December 2021.

† Visited location or participated in activity since 1 December 2021.

‡ Lived or worked in close proximity (within 5km) since 1 December 2021; fifty participants who answered “unsure” were excluded from prevalence odds ratio calculations.

§ Had exposure or close contact since 1 December 2021.

Table 3. Univariable prevalence odds ratios for risk factors for Murray Valley encephalitis virus antibody seropositivity (*N* = 760)

Exposure variable	Seropositive	Seronegative	Prevalence odds ratio (95% CI)
Occupation			
Abattoir or meat worker	0	7 (1%)	0.0 (0.0–18)
Animal shooter or hunter	1 (4%)	17 (2%)	1.9 (0.0–13)
Council worker (Environmental Health Officer or outdoor staff)	0	8 (1%)	0.0 (0.0–16)
Animal transport driver	2 (9%)	7 (1%)	9.9 (0.9–56)
Pig farmer or worker	0	5 (1%)	0.0 (0.0–26)
Pest controller	0	8 (1%)	0.0 (0.0–16)
Other type of farmer	6 (26%)	121 (16%)	1.8 (0.6–4.9)
Laboratory worker	0	7 (1%)	0.0 (0.0–18)
Veterinarian	1 (4%)	1 (0%)	33.5 (0.4–2600)
Vet technician or nurse	0	3 (0%)	0.0 (0.0–43)
Wildlife or zoo worker	1 (4%)	2 (0%)	16.7 (0.3–330)
Other outdoor occupation	1 (4%)	41 (6%)	0.8 (0.0–5.0)
Water exposure*			
Dams or lakes	13 (57%)	373 (51%)	1.3 (0.5–3.3)
Public or private pools	11 (48%)	289 (39%)	1.4 (0.6–3.6)
Irrigation systems	14 (61%)	215 (29%)	3.8 (1.5–10)
Wetlands	11 (48%)	249 (34%)	1.8 (0.7–4.5)
Rivers or creeks	16 (70%)	502 (68%)	1.1 (0.4–3.1)
Activities and locations†			
Piggery‡	1 (4%)	30 (4%)	1.0 (0.0–6.7)
Abattoir	1 (4%)	15 (2%)	2.2 (0.1–16)
Agricultural show	2 (9%)	61 (8%)	1.1 (0.1–4.5)
Farm	12 (52%)	344 (47%)	1.3 (0.5–3.2)
States or National Parks	8 (35%)	339 (46%)	0.6 (0.2–1.6)
Camping	5 (22%)	268 (36%)	0.5 (0.1–1.4)
Fishing (fresh water)	3 (13%)	192 (26%)	0.4 (0.1–1.5)
Hunting	3 (13%)	32 (4%)	3.3 (0.6–12)
Bush walking or hiking	11 (48%)	329 (45%)	1.1 (0.5–2.9)
Water sports or boating	2 (9%)	169 (23%)	0.3 (0.0–1.3)
Gardening or horticulture	18 (78%)	571 (77%)	1.1 (0.4–3.7)
Picnicking	8 (35%)	236 (32%)	1.1 (0.4–2.9)
Outdoor sports	3 (13%)	241 (33%)	0.3 (0.1–1.1)
Animal exposure§			
Mosquitoes	19 (83%)	620 (84%)	0.9 (0.3–3.7)
Birds	12 (52%)	384 (52%)	1.0 (0.4–2.5)
Domestic pigs	0	9 (1%)	0.0 (0.0–14)
Feral pigs	0	5 (1%)	0.0 (0.0–26)
Horses	3 (13%)	106 (14%)	0.9 (0.2–3.1)
Bats	2 (9%)	38 (5%)	1.8 (0.2–7.6)
Protective factors			
Using mosquito repellent when outdoors	15 (65%)	575 (78%)	0.5 (0.2–1.5)
Using mosquito repellent when mosquitoes about	16 (70%)	650 (88%)	0.3 (0.1–0.9)
Wearing protective clothes outside in summer	19 (83%)	587 (80%)	1.2 (0.4–5.0)
Using mosquito preventing devices	12 (52%)	500 (68%)	0.5 (0.2–1.3)
Presence of insect screens at home	22 (96%)	728 (99%)	0.3 (0.0–13)

CI = confidence interval (CI).

* Lived or worked in close proximity (within 5km) since 1 December 2021.

† Visited location or participated in activity since 1 December 2021.

‡ Lived or worked in close proximity (within 5km) since 1 December 2021; forty-five participants who answered “unsure” were excluded from prevalence odds ratio calculations.

§ Had exposure or close contact since 1 December 2021.

Table 4. Univariable prevalence odds ratios for risk factors for West Nile virus Kunjin subtype antibody seropositivity (*N* = 761)

Exposure variable	Seropositive	Seronegative	Prevalence odds ratio (95% CI)
Occupation			
Abattoir or meat worker	0	7 (1%)	0.0 (0.0–17)
Animal shooter or hunter	1 (4%)	17 (2%)	1.8 (0.0–12)
Council worker (Environmental Health Officer or outdoor staff)	0	8 (1%)	0.0 (0.0–14)
Animal transport driver	2 (8%)	7 (1%)	9.1 (0.9–51)
Pig farmer or worker	0	5 (1%)	0.0 (0.0–23)
Pest controller	1 (4%)	7 (1%)	4.3 (0.1–36)
Other type of farmer	6 (24%)	121 (16%)	1.6 (0.5–4.3)
Laboratory worker	0	7 (1%)	0.0 (0.0–17)
Veterinarian	1 (4%)	1 (0%)	31 (0.4–2400)
Vet technician or nurse	0	3 (0%)	0.0 (0.0–39)
Wildlife or zoo worker	0	3 (0%)	0.0 (0.0–39)
Other outdoor occupation	0	42 (6%)	0.0 (0.0–2.6)
Water exposure*			
Dams or lakes	15 (60%)	372 (51%)	1.5 (0.6–3.7)
Public or private pools	10 (40%)	291 (40%)	1.0 (0.4–2.5)
Irrigation systems	6 (24%)	223 (30%)	0.7 (0.2–1.9)
Wetlands	12 (48%)	248 (34%)	1.8 (0.7–4.4)
Rivers or creeks	17 (68%)	501 (68%)	1.0 (0.4–2.7)
Activities and locations†			
Piggery‡	2 (8%)	29 (4%)	2.1 (0.2–9.1)
Abattoir	1 (4%)	15 (2%)	2.0 (0.1–14)
Agricultural show	2 (8%)	61 (8%)	1.0 (0.1–4.1)
Farm	11 (44%)	346 (47%)	0.9 (0.4–2.1)
States or National Parks	7 (28%)	340 (46%)	0.5 (0.2–1.2)
Camping	6 (24%)	267 (36%)	0.6 (0.2–1.5)
Fishing (fresh water)	5 (20%)	190 (26%)	0.7 (0.2–2.0)
Hunting	1 (4%)	34 (5%)	0.9 (0.0–5.6)
Bush walking or hiking	8 (32%)	332 (45%)	0.6 (0.2–1.4)
Water sports or boating	2 (8%)	169 (23%)	0.3 (0.0–1.2)
Gardening or horticulture	18 (72%)	572 (78%)	0.7 (0.3–2.1)
Picnicking	3 (12%)	241 (33%)	0.3 (0.1–1.0)
Outdoor sports	4 (16%)	240 (33%)	0.4 (0.1–1.2)
Animal exposure§			
Mosquitoes	22 (88%)	618 (84%)	1.4 (0.4–7.4)
Birds	18 (72%)	379 (52%)	2.4 (1.0–6.9)
Domestic pigs	0	9 (1%)	0.0 (0.0–13)
Feral pigs	1 (4%)	4 (1%)	7.6 (0.6–80)
Horses	3 (12%)	106 (14%)	0.8 (0.2–2.8)
Bats	1 (4%)	39 (5%)	0.7 (0.0–4.8)
Protective factors			
Using mosquito repellent when outdoors	20 (80%)	571 (78%)	1.2 (0.4–4.0)
Using mosquito repellent when mosquitoes about	22 (88%)	645 (88%)	1.0 (0.3–5.5)
Wearing protective clothes outside in summer	22 (88%)	585 (80%)	1.9 (0.6–10)
Using mosquito preventing devices	16 (64%)	496 (67%)	0.9 (0.4–2.2)
Presence of insect screens at home	25 (100%)	726 (99%)	-

CI = confidence interval (CI).

* Lived or worked in close proximity (within 5km) since 1 December 2021.

† Visited location or participated in activity since 1 December 2021.

‡ Lived or worked in close proximity (within 5km) since 1 December 2021; forty-five participants who answered “unsure” were excluded from prevalence odds ratio calculations.

§ Had exposure or close contact since 1 December 2021.