

**GRADE table 2:****Yellow fever vaccination-associated viscerotropic disease in people aged 60 years and over living in endemic areas****Population:** People living in yellow fever endemic areas vaccinated against yellow fever**Intervention:** Yellow fever vaccination  $\geq$  60 years of age**Comparison:** Yellow fever Vaccination < 60 years of age**Outcome:** Yellow fever vaccine-associated viscerotropic disease

Is there evidence that individuals 60 years and older living in yellow fever endemic regions are at greater risk of yellow fever vaccine-associated viscerotropic disease (YF-AVD)?				
			Rating	Adjustment to rating
Quality Assessment	No. of studies/starting rating		1/ observational <sup>5</sup>	2
	Factors decreasing confidence	Limitation in study design	None serious	0
		Inconsistency	None serious	0
		Indirectness	None serious	0
		Imprecision	Serious <sup>6</sup>	-1
		Publication bias	None serious	0
	Factors increasing confidence	Large effect	Not applicable	0
		Dose-response	Not applicable	0
		Antagonistic bias and confounding	Not applicable	0
	Final numerical rating of quality of evidence			1
Summary of Findings	Statement on quality of evidence			Our confidence in the estimate of the effect on the outcome is low.
	Conclusion			The evidence supporting an association between older age and YF-AVF in people living in YF endemic settings is limited. Further research is needed to support the hypothesis.

<sup>5</sup> Only 1 observational study reported a non-significant increase in YF-AVD incidence in people aged over 60 years in YF endemic areas (Martins RdM et al. 2010). Some additional trials have included reports of YF-AVD in people over 60 years, but these are either in people living in non-endemic regions or do not include an age-related analysis (Martin et al.2001, Monath et al.2005; Lawrence et al 2004; Lindsey et al. 2008, Khromava et al.2005, Fitzner et al. 2004; Struchiner et al. 2004; Whittembury et al.2009).

<sup>6</sup> No significant result, wide 95% Confidence Interval (0.57-8.54)

#### Reference List(1-9)

- (1) Fitzner J, Coulibaly D, Kouadio DE, Yavo JC, Loukou YG, Koudou PO, et al. Safety of the yellow fever vaccine during the September 2001 mass vaccination campaign in Abidjan, Ivory Coast, 1. Vaccine 2004 Nov 25;23(2):156-62.\$
- (2) Khromava AY, Eidex RB, Weld LH, Kohl KS, Bradshaw RD, Chen RT, et al. Yellow fever vaccine: an updated assessment of advanced age as a risk factor for serious adverse events. Vaccine 2005 May 9;23(25):3256-63.
- (3) Lawrence GL, Burgess MA, Kass RB. Age-related risk of adverse events following yellow fever vaccination in Australia. Commun Dis Intell 2004;28(2):244-8.
- (4) Lindsey NP, Schroeder BA, Miller ER, Braun MM, Hinckley AF, Marano N, et al. Adverse event reports following yellow fever vaccination, 1. Vaccine 2008 Nov 11;26(48):6077-82.
- (5) Martin M, Weld LH, Tsai TF, Mootrey GT, Chen RT, Niu M, et al. Advanced age a risk factor for illness temporally associated with yellow fever vaccination. Emerg Infect Dis 2001 Nov;7(6):945-51.
- (6) Martins RdM, Maia MdLd, Santos EMD, Cruz RLd, dos Santos PR, Carvalho SMD, et al. Yellow Fever Vaccine Post-marketing Surveillance in Brazil. Procedia in Vaccinology 2010;2(2):178-83.
- (7) Monath TP, Cetron MS, McCarthy K, Nichols R, Archambault WT, Weld L, et al. Yellow fever 17D vaccine safety and immunogenicity in the elderly. Hum Vaccin 2005 Sep;1(5):207-14.
- (8) Struchiner CJ, Luz PM, Dourado I, Sato HK, Aguiar SG, Ribeiro JG, et al. Risk of fatal adverse events associated with 17DD yellow fever vaccine. Epidemiol Infect 2004 Oct;132(5):939-46.
- (9) Whittembury A, Ramirez G, Hernandez H, Roper AM, Waterman S, Ticona M, et al. Viscerotropic disease following yellow fever vaccination in Peru. Vaccine 2009 Oct 9;27(43):5974-81.