

UNITED REPUBLIC OF TANZANIA (THE)
Last Updated: 2007-12-13

Level	Date	Location and sample descriptor	Sex	Age (years)	Sample size	Prevalence of xerophthalmia (%)							Serum / plasma retinol concentration (µmol/l)			Reference	Notes			
						Current XN	Previous XN	X1B	X2	X3A	X3B	XS	Prevalence (%)				Mean	SD	General	Line
													<0.35	<0.70	< 1.05					
N	2004 -2005	National: Women: Total	F	15.00-49.99	5772		2.70										5221	*	1	
		Women by age	F	15.00-19.99	906		2.40												2	
		Women by age	F	20.00-24.99	1624		2.40												3	
		Women by age	F	25.00-29.99	1391		2.10												4	
		Women by age	F	30.00-34.99	98		2.60												5	
		Women by age	F	35.00-49.99	853		4.80												6	
		Women by area: Urban	F	15.00-49.99	1277		1.60												7	
		Women by area: Rural	F	15.00-49.99	4496		3.00												8	
		Women by zone: Central	F	15.00-49.99	473		2.50												9	
		Women by zone: Eastern	F	15.00-49.99	766		0.40												10	
		Women by zone: Lake	F	15.00-49.99	1126		2.20												11	
		Women by zone: Northern	F	15.00-49.99	774		2.80												12	
		Women by zone: Southern	F	15.00-49.99	503		3.00												13	
		Women by zone: Southern highlands	F	15.00-49.99	844		2.10												14	
		Women by zone: Western	F	15.00-49.99	1143		5.10												15	
		Women by region: Arusha	F	15.00-49.99	205		4.40												16	
		Women by region: Dar es Salaam	F	15.00-49.99	369		0.80												17	
		Women by region: Dodoma	F	15.00-49.99	277		2.60												18	
		Women by region: Iringa	F	15.00-49.99	216		3.90												19	
		Women by region: Kagera	F	15.00-49.99	351		0.00												20	
		Women by region: Kigoma	F	15.00-49.99	282		2.80												21	
		Women by region: Kilimanjaro	F	15.00-49.99	145		1.70												22	
		Women by region: Lindi	F	15.00-49.99	117		1.20												23	
		Women by region: Manyara	F	15.00-49.99	173		4.60												24	
		Women by region: Mara	F	15.00-49.99	229		5.90												25	
		Women by region: Mbeya	F	15.00-49.99	425		1.80												26	
		Women by region: Morogoro	F	15.00-49.99	253		0.00												27	
		Women by region: Mtwara	F	15.00-49.99	201		2.90												28	
		Women by region: Mwanza	F	15.00-49.99	546		2.00												29	
		Women by region: Pemba north	F	15.00-49.99	27		2.60												30	
		Women by region: Pemba south	F	15.00-49.99	24		2.80												31	
		Women by region: Pwani	F	15.00-49.99	144		0.00												32	
		Women by region: Rukwa	F	15.00-49.99	203		0.80												33	
		Women by region: Ruvuma	F	15.00-49.99	185		4.30												34	
		Women by region: Shinyanga	F	15.00-49.99	550		4.40												35	
		Women by region: Singida	F	15.00-49.99	196		2.40												36	
		Women by region: Tabora	F	15.00-49.99	311		8.50												37	
		Women by region: Tanga	F	15.00-49.99	250		0.90												38	

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													<0.35	<0.70	< 1.05					
N	2004 -2005	Women by region: Town west	F	15.00-49.99	59		1.80												39	
		Women by region: Zanzibar north	F	15.00-49.99	21		3.60												40	
		Women by region: Zanzibar south	F	15.00-49.99	13		1.50												41	
L	2003P	<i>Ilongero division: PW</i>	F	18.00-45.99	81								0.0	26.0					*	
L	2003	Lake zone: Pre-SAC	B	0.50-4.99	895	1.60		3.20											42	
		Lake zone: Women	B	NS	895	4.33														
L	2002 -2003	<i>Ifakara: Infants by group: High-dose</i>	B	0.08-0.16	390										0.67	0.19			*	
		<i>Ifakara: Infants by group: Low-dose</i>	B	0.08-0.16	390										0.67	0.18				
L	2001	Misungwi district: All: Total	B	2.00-42.99	1214	12.50													*	
		Misungwi district: All: Total	B	2.00-42.99	1211			0.60				0.90								
		Misungwi district: Pre-SAC	B	2.00-5.99	461	11.70														
		Misungwi district: Pre-SAC	B	2.00-5.99	460			0.70				0.40								
		Misungwi district: SAC	B	6.00-15.99	562	9.10														
		Misungwi district: SAC	B	6.00-15.99	560			0.50				1.40								
		Misungwi district: PW	B	15.00-40.99	65	21.50		0.00				0.00								
L	1999	Mpwapwa and Kongwa districts: PW: Total	F	NS	242										54.0				*	
		PW by group: Placebo	F	NS	126										1.00	0.33				
		PW by group: Supplementation	F	NS	116										1.04	0.36				
LR	1998	Magu district: SAC	B	7.00-19.99	1386	5.27		0.58										*		
D	1997 -1998	Handeni and Korogwe districts: Pre-SAC	B	0.00-4.99	1035			0.00		0.00	0.00							*		
		Handeni and Korogwe districts: SAC	B	NS	617			0.00		0.00	0.00									
N	1997	National: Pre-SAC: Total	B	0.50-5.99	853								4.3	24.2				*		
		Pre-SAC by region: Morogoro	B	0.50-5.99	54								16.7	40.8						
		Pre-SAC by region: Kigoma	B	0.50-5.99	74								8.1	33.8						
		Pre-SAC by region: Kilimanjaro	B	0.50-5.99	120								3.3	19.1						
		Pre-SAC by region: Iringa	B	0.50-5.99	97								0.0	20.6						
		Pre-SAC by region: Coast	B	0.50-5.99	93								8.6	55.9						
		Pre-SAC by region: Morogoro	B	0.50-5.99	107								2.8	13.1						
		Pre-SAC by region: Kigoma	B	0.50-5.99	87								1.1	16.0						

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						Current XN	Previous XN	X1B	X2	X3A	X3B	XS	Prevalence (%)				Mean	SD	General	Line
													<0.35	<0.70	< 1.05					
N	1997	Pre-SAC by region: Kilimanjaro	B	0.50-5.99	63								3.2	23.8			5738			
		Pre-SAC by region: Iringa	B	0.50-5.99	87								1.1	11.4						
		Pre-SAC by region: Coast	B	0.50-5.99	71								4.2	16.9						
L	1995	Mpwapwa district: SAC	B	6.00-11.99	841			0.48									1568	*		
		Mpwapwa district: SAC by group: Placebo	B	6.00-11.99	382									20.6	57.6					
		Mpwapwa district: SAC by group: Supplementation	B	6.00-11.99	392									21.4	56.9					
D	1993	10 districts: Pre-SAC: Total	B	NS-4.99	6577	0.11		0.01	0.04	0.00	0.03	0.22					49	*		
		Pre-SAC by district: Igunga	B	NS-4.99	904	0.10		0.00	0.10	0.10	0.00	0.00								
		Pre-SAC by district: Iramba	B	NS-4.99	799	0.00		0.00	0.10	0.00	0.00	0.00								
		Pre-SAC by district: Kasulu	B	NS-4.99	74	0.00		0.00	0.00	0.00	0.10	0.10								
		Pre-SAC by district: Kibondo	B	NS-4.99	898	0.00		0.00	0.00	0.00	0.10	0.10								
		Pre-SAC by district: Kiliwa	B	NS-4.99	679	0.30		0.10	0.10	0.00	0.10	0.30								
		Pre-SAC by district: Lindi	B	NS-4.99	483	0.40		0.00	0.00	0.20	0.00	0.40								
		Pre-SAC by district: Liwale	B	NS-4.99	623	0.20		0.00	0.00	0.00	0.00	0.50								
		Pre-SAC by district: Nachingwea	B	NS-4.99	602	0.20		0.00	0.00	0.00	0.00	0.80								
		Pre-SAC by district: Nzega	B	NS-4.99	825	0.00		0.00	0.00	0.00	0.00	0.10								
Pre-SAC by district: Singida	B	NS-4.99	690	0.00		0.00	0.00	0.00	0.00	0.10										
DR	1992P	Singida district: Pre-SAC: Total	B	0.00-5.99	226								14.6	60.2			5740	*		
		Pre-SAC by division: Ilongero	B	0.00-5.99	97								12.4	59.8						
		Pre-SAC by division: Ihanja	B	0.00-5.99	129								16.3	60.5						
LR	1991	Ilongero and Ihanja division: Pre-SAC: Total	B	0.50-5.99	146								22.0	53.0			4198	*		
		Pre-SAC by division: Ilongero	B	0.50-5.99	75									0.49	0.28					
		Pre-SAC by division: Ihanja	B	0.50-5.99	71									0.68	0.32					
S	1986	Tabora region: Pre-SAC/SAC: Total	B	0.00-10.99	3177			0.60				0.03					8a	*	44	
		Pre-SAC/SAC by sex	F	0.00-10.99	1522			0.39				0.00								45
		Pre-SAC/SAC by sex	M	0.00-10.99	1655			0.79				0.06								46
S	1985	Tabora region: Pre-SAC/SAC: Total	B	0.00-10.99	5266			0.21				0.06					8b	*	47	
		Pre-SAC/SAC by sex	F	0.00-10.99	2501			0.00				0.04								48
		Pre-SAC/SAC by sex	M	0.00-10.99	2765			0.40				0.07								49
S	1983 -1985	Mbeya, Iringa and Kagera regions: Pre-SAC: Total	B	0.00-5.99	12980			0.10								2071	*	50		
		Pre-SAC by age	B	0.00-0.99	2285			0.00												51

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						Current XN	Previous XN	X1B	X2	X3A	X3B	XS	Prevalence (%)				Mean	SD	General	Line			
													<0.35	<0.70	< 1.05								
S	1983 -1985	Pre-SAC by age	B	1.00-1.99	2985			0.03										2071		52			
		Pre-SAC by age	B	2.00-2.99	3037			0.07													53		
		Pre-SAC by age	B	3.00-3.99	2611			0.04														54	
		Pre-SAC by age	B	4.00-5.99	1942			0.46														55	
		Pre-SAC by region: Iringa (dry season)	B	0.00-5.99	1331			0.23	0.00													56	
		Pre-SAC by region: Iringa (wet season)	B	0.00-5.99	5975			0.07	0.12														57
		Pre-SAC by region: Kagera	B	0.00-5.99	4437			0.11	0.00														58
		Pre-SAC by region: Mbeya	B	0.00-5.99	188			0.00	0.00														59

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Reference No: 5221

General notes: *Two-stage cluster sampling using 2002 census. Survey included 10 312 households. Sample includes women who gave birth in the 5 years preceding the survey. Previous XN is XN during previous pregnancy, for women with two or more live births in the five-years period, data refer to the most recent birth. Women's age is age at time of delivery.*

Note 1	XN prevalence adjusted for daytime visual problems: 0.90%
Note 2	XN prevalence adjusted for daytime visual problems: 0.50%
Note 3	XN prevalence adjusted for daytime visual problems: 0.90%
Note 4	XN prevalence adjusted for daytime visual problems: 0.80%
Note 5	XN prevalence adjusted for daytime visual problems: 0.80%
Note 6	XN prevalence adjusted for daytime visual problems: 1.40%
Note 7	XN prevalence adjusted for daytime visual problems: 0.50%
Note 8	XN prevalence adjusted for daytime visual problems: 1.00%
Note 9	XN prevalence adjusted for daytime visual problems: 1.60%
Note 10	XN prevalence adjusted for daytime visual problems: 0.00%
Note 11	XN prevalence adjusted for daytime visual problems: 1.10%
Note 12	XN prevalence adjusted for daytime visual problems: 0.90%
Note 13	XN prevalence adjusted for daytime visual problems: 1.40%
Note 14	XN prevalence adjusted for daytime visual problems: 0.90%
Note 15	XN prevalence adjusted for daytime visual problems: 0.80%
Note 16	XN prevalence adjusted for daytime visual problems: 1.20%
Note 17	XN prevalence adjusted for daytime visual problems: 0.00%
Note 18	XN prevalence adjusted for daytime visual problems: 1.60%
Note 19	XN prevalence adjusted for daytime visual problems: 2.20%
Note 20	XN prevalence adjusted for daytime visual problems: 0.00%
Note 21	XN prevalence adjusted for daytime visual problems: 0.40%
Note 22	XN prevalence adjusted for daytime visual problems: 0.00%
Note 23	XN prevalence adjusted for daytime visual problems: 0.00%
Note 24	XN prevalence adjusted for daytime visual problems: 1.80%
Note 25	XN prevalence adjusted for daytime visual problems: 1.50%
Note 26	XN prevalence adjusted for daytime visual problems: 0.40%
Note 27	XN prevalence adjusted for daytime visual problems: 0.00%
Note 28	XN prevalence adjusted for daytime visual problems: 1.00%
Note 29	XN prevalence adjusted for daytime visual problems: 1.70%
Note 30	XN prevalence adjusted for daytime visual problems: 0.00%
Note 31	XN prevalence adjusted for daytime visual problems: 0.00%
Note 32	XN prevalence adjusted for daytime visual problems: 0.00%
Note 33	XN prevalence adjusted for daytime visual problems: 0.40%
Note 34	XN prevalence adjusted for daytime visual problems: 2.60%
Note 35	XN prevalence adjusted for daytime visual problems: 0.70%
Note 36	XN prevalence adjusted for daytime visual problems: 1.50%

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Note 37 XN prevalence adjusted for daytime visual problems: 1.30%

Note 38 XN prevalence adjusted for daytime visual problems: 0.50%

Note 39 XN prevalence adjusted for daytime visual problems: 0.50%

Note 40 XN prevalence adjusted for daytime visual problems: 2.30%

Note 41 XN prevalence adjusted for daytime visual problems: 0.00%

Reference No: 4060

General notes: *Sample comprised of pregnant women (third trimester) from 3 villages in Ilongero division, Singida rural district.*

Reference No: 5102

General notes: *Baseline values of VAS intervention study. Two-stage PPS cluster sampling. Households randomly selected from 14 Area Development Programs located within six districts of the Shinyanga and Tabora regions in the Lake Zone of Tanzania. Women are the mothers of the children. Night blindness assessed by asking mothers whether they or their child had difficulty seeing at dusk/night time.*

Note 42 Sample size for X1B: 900

Reference No: 5807

General notes: *Baseline data of randomized double-blind trial to compare safety and efficacy of vitamin A supplementation. Infants of mothers who brought their children to one of two health clinics in the study area for immunization within 7 days of birth.*

Reference No: 4203

General notes: *Study conducted in Misungwi district in rural Mwanza region where vitamin A deficiency is known to be prevalent, but there is no word for XN in the local language. Subjects recruited from 8 primary schools and health centers selected because they were inland, away from Lake Victoria. Village leaders and health center staff encouraged the poor and malnourished to attend clinics, therefore results may not reflect general population in this area. All pregnant women were in their last trimester. All women breast-feeding had an infant of less than 6 months. XN defined as those with a problem seeing in low levels of light but no problem seeing during the day. Serum retinol measured in subsample of subjects as part of case-control study (subjects with XN matched to subjects without a problem seeing both during day and in low levels of light). Serum retinol concentrations not reported here.*

Reference No: 3916

General notes: *Facility based study (hospitals and health centres). Baseline values for randomized effectiveness trial of micronutrient-fortified dietary supplement. PW between 12 and 34 weeks gestation recruited from prenatal clinics in hospitals and health centers of Mpwapwa and Kongwa districts. Women with hemoglobin concentration less than 80 g/L excluded. Same survey reported in reference No. 78.*

Reference No: 4204

General notes: *Sample comprised of all children present on the day of survey from 3 government primary schools (Sagani, Nyashimo and Mwamayombo) in Magu rural district, Mwanza region.*

Reference No: 5219

General notes: *Two-stage stratified PPS cluster sampling. Baseline data of intervention study. Survey conducted in Handeni and Korogwe districts (divisions included: Sindeni, Mzundu, Mazingara and Mombo).*

Note 43 Sample size obtained from reference No. 1611.

Reference No: 5738

General notes: *Sampling: Tanzania mainland was divided into 10 agro-ecological zones and from each zone 1 region selected by simple random sampling. One village randomly selected in each region. Serum retinol concentrations converted from $\mu\text{g/dl}$ to $\mu\text{mol/L}$.*

Reference No: 1568

General notes: *Facility-based study (6 rural primary schools) conducted in Mpwapwa district, Maasai Steppe (central plateau). Baseline values for randomized effectiveness trial for micronutrient-fortified beverage. Children with hemoglobin concentration less than 70 g/L or evidence of serious chronic disease excluded from study. Children found to have ocular signs of xerophthalmia excluded from further study.*

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Reference No: 49

General notes: *Multi-stage PPS cluster sampling. 10 districts included.*

Reference No: 5740

General notes: *Comprised of pre-SAC randomly selected from 10 rural villages in the district of Singida, Singida region. Baseline data. Serum retinol concentrations converted from µg/dL to µmol/L.*

Reference No: 4198

General notes: *Sample comprised of pre-SAC from 5 villages randomly selected in Ilongero and Ihanja divisions in Singida rural district. In Ilongero division a horticulture and nutrition education intervention had been carried out starting 5 years before the present study. Ihanja division used as a control area.*

Reference No: 8a

General notes: *A follow-up survey from the survey conducted in March 1985 (reference No. 8b). Survey carried out in 2 administrative units (wards) where xerophthalmia was found to be a problem of public health significance in certain villages. In each case the whole ward (3-5 villages) examined.*

Note 44 Combined prevalence (X3A, X3B): 0.00%

Note 45 Combined prevalence (X3A, X3B): 0.00%

Note 46 Combined prevalence (X3A, X3B): 0.00%

Reference No: 8b

General notes: *Sample comprised of children selected in 15 villages in Tabora region. Tabora urban district and the vast and scarcely populated woodlands in the southern part of the region excluded. Summary data reported in reference No. 195.*

Note 47 Combined prevalence (X3A, X3B): 0.02%

Note 48 Combined prevalence (X3A, X3B): 0.00%

Note 49 Combined prevalence (X3A, X3B): 0.04%

Reference No: 2071

General notes: *Sample comprised of pre-SAC from Mbeya, Iringa and Kagera regions. Same survey reported in reference No. 8.*

Note 50 Combined prevalence (X2, X3): 0.08%

Note 51 Combined prevalence (X2, X3): 0.13%

Note 52 Combined prevalence (X2, X3): 0.13%

Note 53 Combined prevalence (X2, X3): 0.10%

Note 54 Combined prevalence (X2, X3): 0.00%

Note 55 Combined prevalence (X2, X3): 0.00%

Note 56 Data include the districts of Iringa rural and Njombe. Data collected November 1984 (dry season). Combined prevalence (X3A, X3B): 0.00%

Note 57 Data include the districts of Iringa rural, Mufindi, Njombe and Ludewa. Data collected March-June 1984 (wet season). Combined prevalence (X3A, X3B): 0.03%

Note 58 Data include the districts of Biharamulo and Ngara. Data collected July 1985. Combined prevalence (X3A, X3B): 0.00%

Note 59 Data collected November 1983. Combined prevalence (X3A, X3B): 0.00%

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