

Prediction of Vitamin A Stores in Young Children Provides Insights into the Adequacy of Current Dietary Reference Intakes. JL Ford. Online Supplementary Materials

Supplemental WinSAAM Deck

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A SAAM31      FCR SIMULATED FOR 4 POPULATIONS
C=COMMENT CARD
CC PARAMETERS
CC P(1)=GENERAL PARAMETER
CC K(I)=LINEAR PARAMETER
H PAR
  P(1)      6.508580E-03  0.000000E+00  1.000000E+01
  K(81)     2.807695E-02  0.000000E+00  1.000000E+01
  K(82)     1.194703E-03  0.000000E+00  1.000000E+01
  K(83)     2.082691E-03  0.000000E+00  1.000000E+02
  K(84)     2.299949E-03  0.000000E+00  1.000000E+02
  K(85)     2.137499E-03  0.000000E+00  1.000000E+02
CC DATA
H DAT
CC EXPONENTIAL FUNCTION FCR=A^(-X*AGE)+B
CC A=K(81); X=P(1); AGE=T
CC B=K(I) AND "B" IS INDEPENDENT FOR EACH POPULATION
CC XG(I)=TIME-DEPENDENT FUNCTION
CC      AGE          FCR          FRACTIONAL SD
C MEXICO
101G(1)          FSD=0.05
XG(1)=K(81)*EXP(-P(1)*T)+K(82)
      0          0.03
      791        0.00135
      1764       0.0012
C PHILIPPINES
102G(2)          FSD=0.05
XG(2)=K(81)*EXP(-P(1)*T)+K(83)
      0          0.03
      426        0.00384
C GUATEMALA
104G(4)          FSD=0.05
XG(4)=K(81)*EXP(-P(1)*T)+K(85)
      0          0.03
      1521       0.00214
C BANGLADESH
103G(3)          FSD=0.05
XG(3)=K(81)*EXP(-P(1)*T)+K(84)
      0          0.03
      365        0.00492
CC FCR SIMULATIONS FOR EACH POPULATION
CC DUE TO EXTENSIVE SIMULATIONS, ONLY SIMULATE FOR 1 POPULATION AT A
CC TIME
CC MEXICO
101G(1)
      0
2          1          1825
CC E.G., TO SIMULATE ONLY FOR MEXICO, "Y" INDICATES EVERYTHING

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CC FOLLOWING IS EXCLUDED

Y

CC PHILIPPINES

102G(2)

0

2 1

1825

CC GUATEMALA

103G(3)

0

2 1

1825

CC BANGLADESH

104G(4)

0

2 1

1825

Supplemental Table 1. Reported VA intakes by age for children in Bangladesh, the Philippines, Guatemala, and Mexico¹

		Bangladeshi	Filipino	Guatemalan	Mexican
Age		Reported VA intake (µmol RAE/d)			
Breastmilk (100%, 0-6 mo)					
0-1 mo	1 d [§]	0.1022			
	2 d [§]	0.2720			
	3 d [§]	0.5108			
	4-15 d [▲]	0.4275 ^a	0.7327 ^b	1.6219 ^c	0.5909 ^d
	15-30 d [▲]				0.8594 ^d
1-3 mo [▲]	30-75 d	1.0300 ^a		1.3211 ^c	1.1000 ^d
	75-91 d				
3-6 mo [▲]	91-183 d			0.4675 ^b	
6-7 mo [▲]	183-213 d	0.7800 ^a	0.9075 [†]	0.9216 ^{c*}	1.3444
7-9 mo [▲]	213-274 d				
9-10 mo [▲]	274-304 d	1.0054 ^a	0.916 [†]	1.84 [*]	
10 mo-1 y [▲]	304-365 d			1.535 [*]	
Food sources (100%, 1-5y)					
12-15 mo	365-456 d	0.7904	1.2821 [‡]	2.3907 [*]	1.3444
15-18 mo	456-548 d		0.806	2.5865 [*]	
18 mo-2 y	548-730 d				
2-3 y	730-1095 d	0.729	1.274	1.8935	1.5052
3-4 y	1095-1460 d		0.974	2.6713	1.4196
4-5 y	1460-1865 d		1.6818		

¹ Shown are vitamin A (VA) intakes reported in the literature for each country by age group.

[§] Colostrum VA concentration from days 1-3 [(49), unpublished results, Veronica Lopez-Teros, Universidad de Sonora, Mexico]

[▲] Common References used (6,32,38,39)

^a Exclusively breastfed for the first year (33)

^b Exclusively breastfed for the first 6 mo (39,42).

[†] Breastmilk provided 52% of total VA intake from 6-12 mo and [‡] 37% from 12-15 mo [estimated from (39,42)].

^c Exclusively breastfed for the first 7 mo (39).

^{*} Breastmilk contributed ~60% to total VA intake from 7-12 mo and 30% from 12-18 mo (50).

[•] Entirely from foods plus fortified sugar provided 1 µmol retinol/d from 1-3 y (46).

^d Exclusively breastfed for the first 6 mo; then, intake was entirely from foods from 6 mo-5 y (14).

For Guatemalan and Filipino children, we also considered periodic consumption of VA from micronutrient powders (41,46). All countries received VA supplementation under different regimes (see Methods section).