

**BHUTAN**
**Last Updated: 2007-07-17**

Level	Date	Region and sample descriptor	Sex	Age (years)	Sample size	Haemoglobin (g/L)						Mean	SD	Method	Reference	Notes			
						Proportion (%) of population with haemoglobin below:										General	Line		
						70	100	110	115	120	130								
N	2002	Women: Total	F	16.00-NS	NS	1.2				54.8			B	5150	*	1			
		Men: Total	M	NS	NS	0.3					27.6							2	
		Children: Total	B	0.50- 5.07	NS	6.8		80.6											3
		Women by age	F	16.00- 20.99	NS						59.2								
		Women by age	F	21.00- 25.99	NS						53.8								
		Women by age	F	26.00- 30.99	NS						51.2								
		Women by age	F	31.00- 35.99	NS						51.5								
		Women by age	F	36.00- 45.99	NS						64.0								
		Women by age	F	46.00-NS	NS						65.4								
		Women by zone: South	F	16.00-NS	NS	0.8					60.4								4
		Women by zone: West	F	16.00-NS	NS	2.2					56.3								5
		Women by zone: East	F	16.00-NS	NS	0.8					52.6								6
		Women by zone: Urban	F	16.00-NS	NS	0.6					47.0								7
		Women by zone: Central	F	16.00-NS	NS	1.4					57.8								8
		Men by zone: South	M	16.00-NS	NS	0.6						27.3							9
		Men by zone: West	M	16.00-NS	NS	0.6						33.1							10
		Men by zone: East	M	16.00-NS	NS	0.3						29.8							11
		Men by zone: Urban	M	16.00-NS	NS	0.0						14.6							12
		Men by zone: Central	M	16.00-NS	NS	0.0						33.3							13
		Children by sex	F	0.50- 5.07	NS				79.9										
		Children by sex	M	0.50- 5.07	NS				81.4										
		Children by age	B	0.50- 0.99	NS				89.5										
		Children by age	B	1.00- 1.99	NS				88.7										
		Children by age	B	2.00- 2.99	NS				76.8										
		Children by age	B	3.00- 5.07	NS				64.3										
		Children by zone: South	B	0.50- 5.07	NS	3.6			74.4										14
		Children by zone: West	B	0.50- 5.07	NS	13.7			83.2										15
		Children by zone: East	B	0.50- 5.07	NS	5.8			85.8										16
Children by zone: Urban	B	0.50- 5.07	NS	3.9			77.3								17				
Children by zone: Central	B	0.50- 5.07	NS	6.9			82.5								18				
R	1985	Three zones: PW: Total	F	NS	561				60.0		104	18	A	4603	*	19			
		Three zones: Pre-SAC: Total	B	NS	550	4.0			58.0		105	17				20			
		Three zones: SAC	B	NS	266					36.0	123	11				21			
		Three zones: PW by gestational age: 1st trimester	F	NS	28	3.6			35.7										
		Three zones: PW by gestational age: 2nd trimester	F	NS	154	5.2			59.7										

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						Proportion (%) of population with haemoglobin below:										General	Line
						70	100	110	115	120	130						
R	1985	Three zones: PW by gestational age: 3rd trimester PW by zone: 1 PW by zone: 2 PW by zone: 3 Pre-SAC by zone: 1 Pre-SAC by zone: 2 Pre-SAC by zone: 3	F F F F B B B	NS NS NS NS NS NS NS	368 190 174 197 156 190 204	4.1    11.0 1.0 0.5	       	60.2 50.0 78.0 53.0 63.0 62.0 52.0	       	       	       	       	       	4603			

## NOTES

### BHUTAN

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**Reference No:** 5150

**General Notes:** *Survey in four zones (East, Central, West, South) and one urban area; sampling: multistage stratified sampling; sampling unit household with a child 6-60 months old; total of 1800 households included; women are mothers and men are fathers of children; total of 1800 household included; adjustment for altitude, altitude range 180-2650 m.*

**Line note 1** Median Hb: 118 g/L; disaggregated data by district and gewog.

**Line note 2** Median Hb: 138 g/L; disaggregated data by district and gewog.

**Line note 3** Median Hb: 96 g/L; disaggregated data by district and gewog.

**Line note 4** Median Hb: 116 g/L.

**Line note 5** Median Hb: 117 g/L.

**Line note 6** Median Hb: 118 g/L.

**Line note 7** Median Hb: 120 g/L.

**Line note 8** Median Hb: 117 g/L.

**Line note 9** Median Hb: 137 g/L.

**Line note 10** Median Hb: 137 g/L.

**Line note 11** Median Hb: 138 g/L.

**Line note 12** Median Hb: 146 g/L.

**Line note 13** Median Hb: 134 g/L.

**Line note 14** Median Hb: 101 g/L.

**Line note 15** Median Hb: 93 g/L.

**Line note 16** Median Hb: 94 g/L.

**Line note 17** Median Hb: 99 g/L.

**Line note 18** Median Hb: 95 g/L.

**Reference No:** 4603

**General Notes:** *Facility based study (district hospitals, basic health units, subposts, primary and secondary schools, crèches) in three zones taken from the western and southern regions (zone 1: Districts of Thimphu, Punakha, Wangdi, Paro and Haa; zone 2: Districts of Gaylegphug and Chirang; zone 3: Districts of Tashigang and Mongar); sampling: at each centre on the day of examination all subjects (PW, preschool and school children) were included provided they agreed to give a blood sample; values for other Hb cut-off levels; adjustment for altitude.*

**Line note 19** Disaggregated data by district, parity.

**Line note 20** Disaggregated data by district.

**Line note 21** Disaggregated data by zone.

## REFERENCES

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- Reference 4603** Sood SK, Sharma S. Occurrence and causes of nutritional anaemia in Bhutan. New Delhi, University College of Medical Sciences, Department of Pathology, 1985.
- Reference 5150** Royal Government of Bhutan- Ministry of Health and Education. Anemia among men, women and children in Bhutan: How big is the problem?. Bhutan, Ministry of Health and Education, 2003.

## ADDITIONAL REFERENCES

### BHUTAN

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- Reference 123 Ministry of Health. Bhutan country paper. Report to the FAO/WHO International Conference on Nutrition; 1992 Dec; Rome, Italy. Rome, Food and Agriculture Organization/World Health Organization Joint Secretariat, 1992.
- Reference 785 Public Health Division, Nutrition Programme. National nutrition manual: policies, programs and protocols. Thimphu, Ministry of Health and Education, Public Health Division, Department of Health, 2003.
- Reference 1011 Sood et al. Reports from Ministry of Social Services. Ministry of Social Services [Bhutan], .
- Reference 2632 Directorate of Health Services [Bhutan]. Report on the National Nutrition Survey. Bhutan, 1989.