

RESULTS

Table 2.: Showing the means of systolic and diastolic mercury sphygmomanometric blood pressure values by age and sex (boys=b & girls=g). Significance of the difference between both sexes is noted according to the results of "t" tests.

Age in Years	Number		Systolic pressure			Diastolic pressure		
	b	g	b	g	significance	b	g	significance
6	81	51	97.1 + 12.3	95.5 + 11.4	non significant	56.3 + 11.1	54.3 + 9.6	non significant
7	129	122	101.2 + 11.9	103.4 + 12.0	non significant	56.1 + 10.5	58.2 + 10.5	non significant
8	98	82	105.5 + 11.4	109.2 + 12.4	significant	62.6 + 11.6	63.5 + 11.3	non significant
9	97	77	110.7 + 8.7	112.3 + 11.2	non significant	65.9 + 8.5	66.4 + 9.9	non significant
10	63	66	111.6 + 9.5	112.4 + 13.1	non significant	64.0 + 10.3	66.2 + 10.7	non significant
11	82	75	111.3 + 12.0	116.5 + 13.4	significant	65.9 + 11.2	66.1 + 9.9	non significant

Table 3: Showing the distribution characteristics of systolic mercury sphygmomanometric blood pressure of primary school children by age.

Age in years	Number of children	Mean	S.D.	Percentiles							First centile	100th centile
				5th	10th	25th	50th	75th	90th	95th		
6	132	96.5	11.9	78	80	90	95	102	110	113	70	130
7	251	102.2	12.0	85	90	95	100	110	117	122	70	138
8	180	107.2	12.0	88	90	100	108	115	120	125	85	137
9	174	111.4	9.9	94	100	103	112	119	123	127	83	135
10	129	112.0	11.5	90	90	107	110	120	125	130	87	138
11	157	113.8	12.9	90	97	105	113	121	132	135	87	142

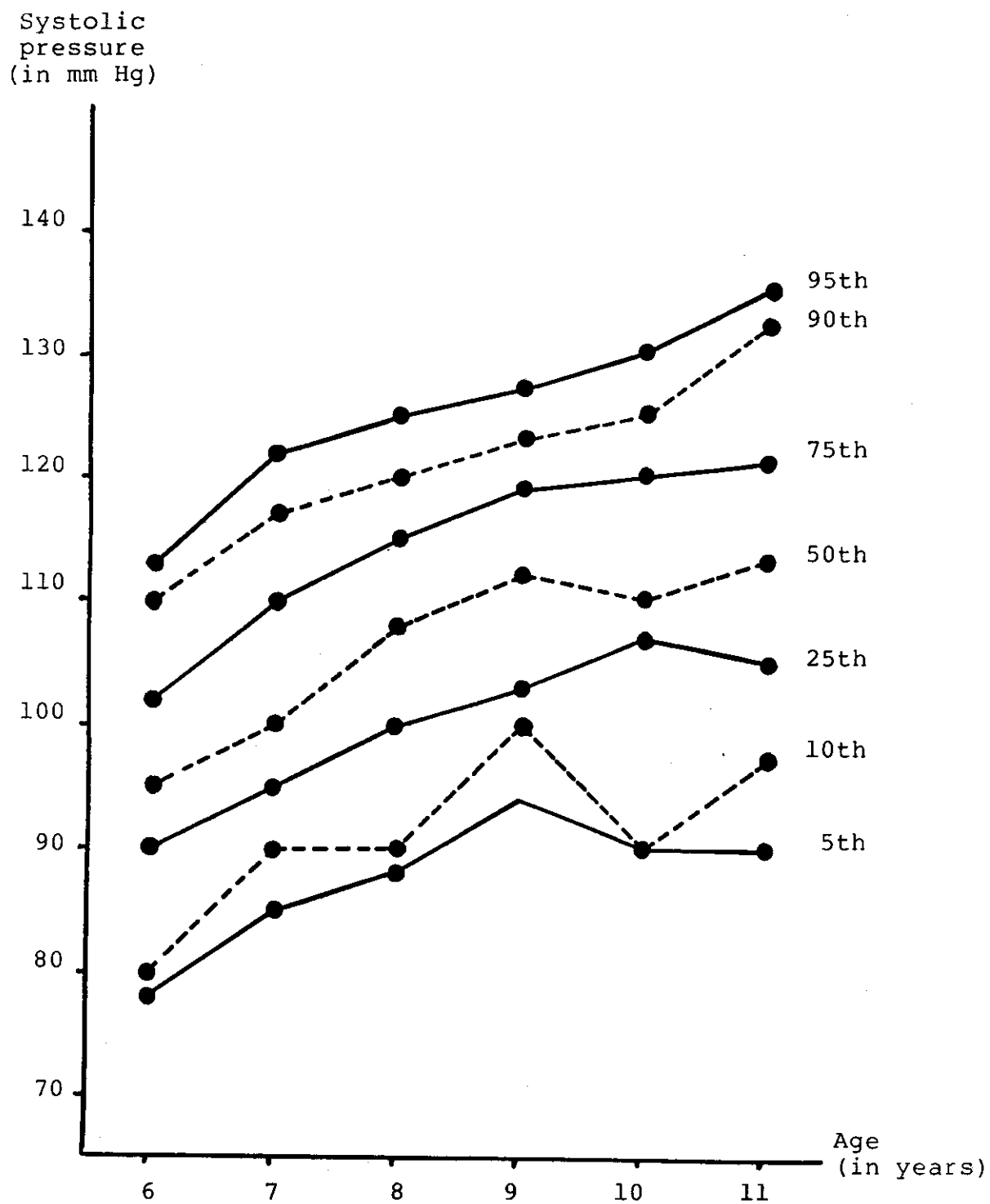


Figure 3. Percentiles of systolic mercury sphygmomanometric blood pressure measurement by age in boys and girls pooled together.

Table 4: Showing the distribution characteristics of diastolic mercury sphygmomanometric blood pressures of primary school children by age.

Age in years	Number of children	Mean	S.D.	Percentiles							First centile	100th centile
				5th	10th	25th	50th	75th	90th	95th		
6	132	55.5	10.6	40	40	50	55	60	69	75	40	83
7	251	57.2	10.5	40	45	50	57	63	71	77	40	82
8	180	63.0	11.5	45	48	55	65	70	78	80	43	88
9	174	66.1	9.2	51	55	60	65	70	80	80	48	88
10	129	65.7	10.6	50	50	57	63	73	78	82	45	88
11	157	66.0	10.6	50	52	60	65	75	80	82	45	87

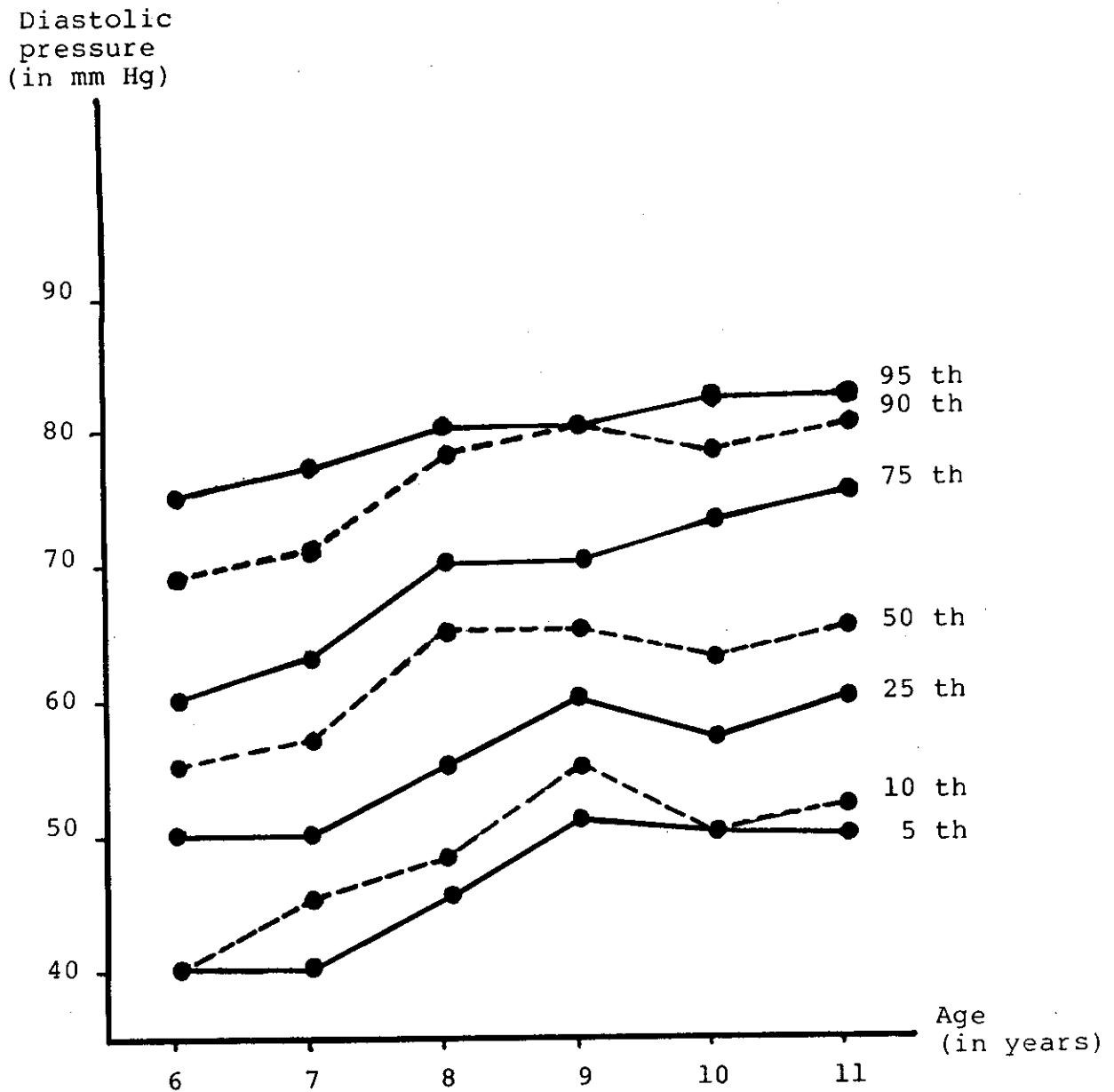


Figure 4. Percentiles of diastolic mercury sphygmomanometric blood pressure measurement by age in boys and girls pooled together.

Table 5: Showing the means and percentile values of systolic blood pressure in Egyptian (E) children between 6-11 years of age compared to those of the Americans (A) in the same age group.

Age	Percentiles																Means	
	5th		10th		25th		50th		75th		90th		95th					
	E	A	E	A	E	A	E	A	E	A	E	A	E	A	E	A		
6	78	83	80	85	90	89	95	95	102	100	110	108	113	112	96.5	95.4		
7	85	82	90	85	95	88	100	94	110	100	117	105	122	109	102.2	94.6		
8	88	83	90	85	100	91	108	96	115	101	120	107	125	114	107.2	96.3		
9	94	85	100	87	103	92	112	97	119	102	123	107	127	111	111.4	97.2		
10	90	85	90	87	107	93	110	98	120	104	125	111	130	116	112.0	98.6		
11	90	86	97	89	105	94	113	100	121	107	132	114	135	117	113.8	101.0		

Table 6: Showing the means and percentile values of diastolic blood pressure in Egyptian (E) children between 6-11 years of age compared to those of the Americans (A) in the same age group.

AGE	Percentiles																		Means	
	5th		10th		25th		50th		75th		90th		95th							
	E	A	E	A	E	A	E	A	E	A	E	A	E	A	E	A	E	A		
6	40	47	40	48	50	53	55	58	60	64	69	68	75	72	55.5	58.6				
7	40	46	45	50	50	54	57	58	63	63	71	67	77	69	57.2	58.2				
8	45	48	48	51	55	55	65	60	70	64	78	67	80	70	63.0	59.4				
9	51	50	55	52	60	56	65	61	70	65	80	69	80	72	66.1	60.7				
10	50	49	50	51	57	56	63	61	73	66	78	71	82	75	65.7	61.3				
11	50	50	52	54	60	58	65	63	75	68	80	74	82	76	66.0	63.0				

Table 7: Systolic, diastolic and mean blood pressures (mean $\pm$ 1 S.D.) by height and age in primary school children.

A G E	Height											
	110-119 cm			120-129 cm			130-139 cm			140-149 cm		
	Sys- n	Dias- tolic	Mean blood pres- sure	Sys- n	Dias- tolic	Mean blood pres- sure	Sys- n	Dias- tolic	Mean blood pres- sure	Sys- n	Dias- tolic	Mean blood pres- sure
6	94.8 $\pm$ 86	54.5 $\pm$	67.9 $\pm$	100.6 $\pm$ 35	58.8 $\pm$	72.7 $\pm$						
7	10.5 99.4 $\pm$ 108	9.6 55.7 $\pm$	9.3 70 $\pm$	14.2 103.5 $\pm$ 107	11.4 58.5 $\pm$	12 73.5 $\pm$						
8	10.9 98.4 $\pm$ 17	9.4 54.6 $\pm$	9 69.2 $\pm$	11.6 105.2 $\pm$ 93	11.5 60 $\pm$	11 75.1 $\pm$						
9	9.6 9.6 $\pm$	9.2 9.2 $\pm$	7.2 7.2 $\pm$	12.2 107.2 $\pm$ 40	10.8 62.1 $\pm$ 7	10.6 77.1 $\pm$ 6.6	110.6 $\pm$ 60	68.5 $\pm$	82.6 $\pm$	111.6 $\pm$ 16	66.6 $\pm$	81.6 $\pm$
10							113.3 $\pm$ 112	68.2 $\pm$	83.2 $\pm$	113.7 $\pm$ 42	68 $\pm$	83.2 $\pm$
							10.4 $\pm$ 57	9.2 $\pm$	8.6 $\pm$	8.3 $\pm$ 15	6.4 $\pm$	6 $\pm$
11							110.9 $\pm$ 49	63.2 $\pm$	79.1 $\pm$	113.7 $\pm$ 32	68 $\pm$	83.2 $\pm$
							10.1 $\pm$	10 $\pm$	9 $\pm$	114.9 $\pm$ 66	65.9 $\pm$	82.2 $\pm$
12							108.8 $\pm$ 28	63.4 $\pm$	78.5 $\pm$	118.7 $\pm$ 12	69.2 $\pm$	86.6 $\pm$
							10.4 $\pm$	11.8 $\pm$	10.2 $\pm$	15.3 $\pm$ 13.6	9.5 $\pm$	12.3 $\pm$
										109.2 $\pm$ 10.3	63.5 $\pm$	78.7 $\pm$

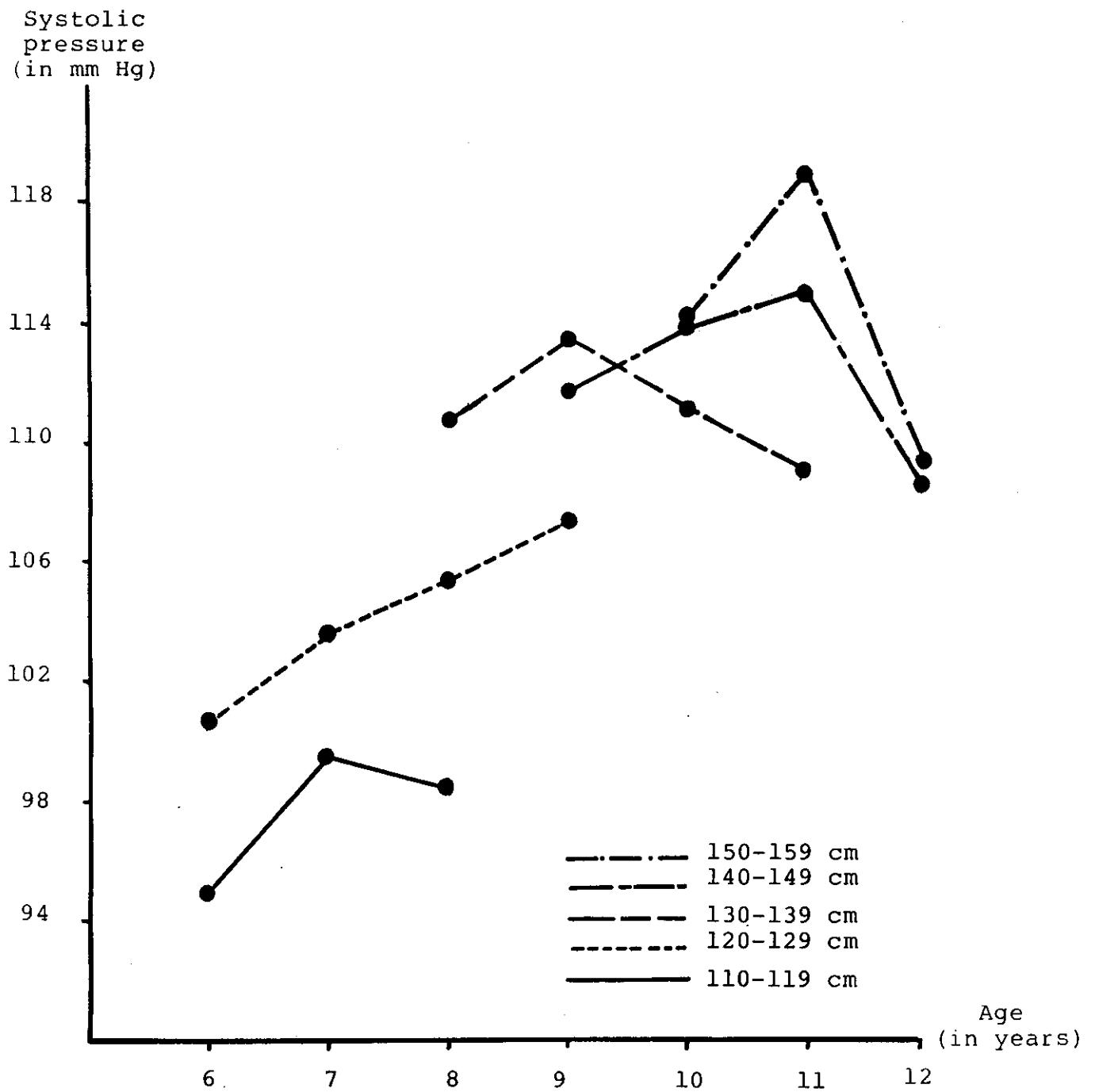


Figure 5. Systolic blood pressure by age for each 10 cm height interval.

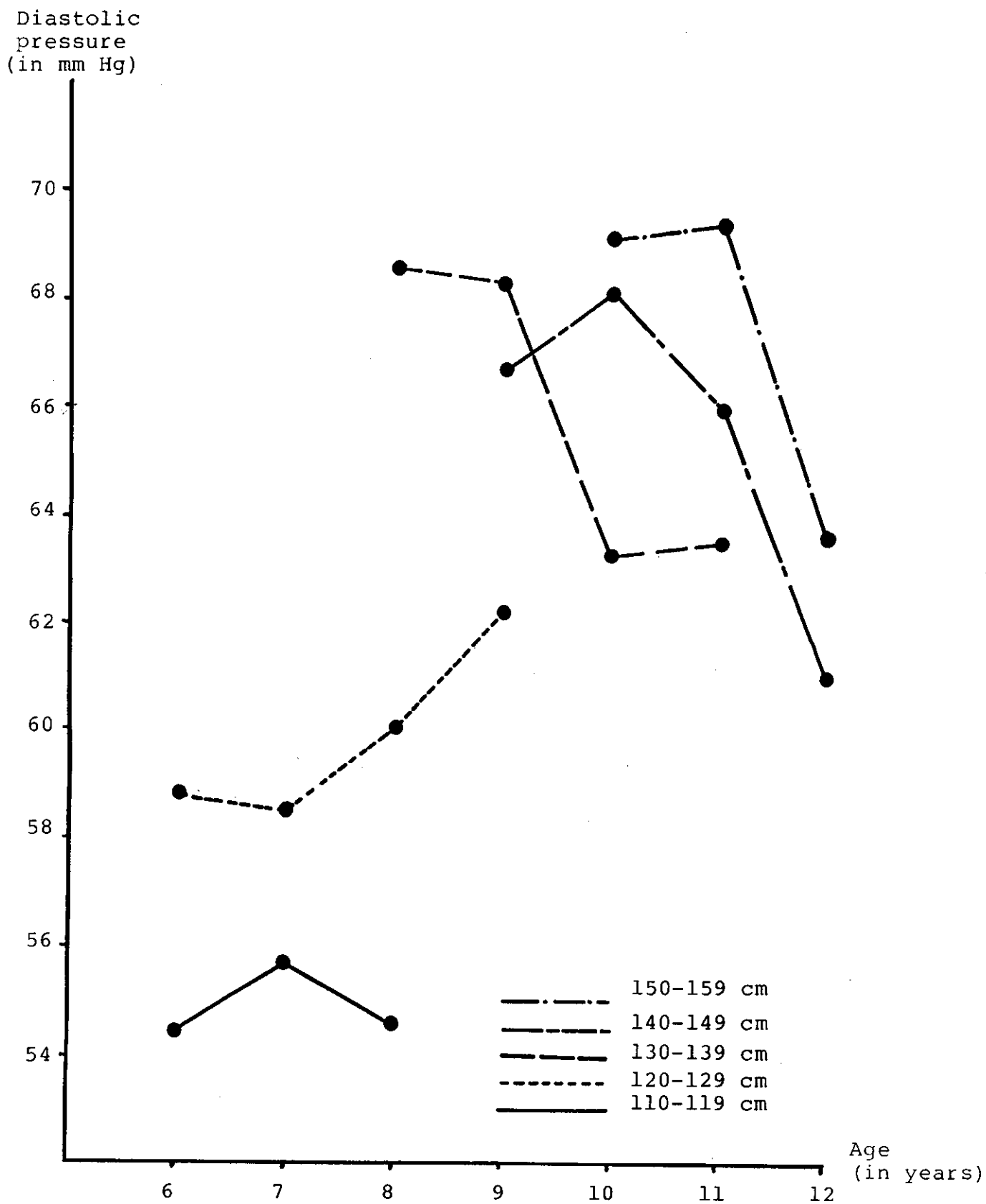


Figure 6. Diastolic blood pressure by age for each 10 cm. height interval

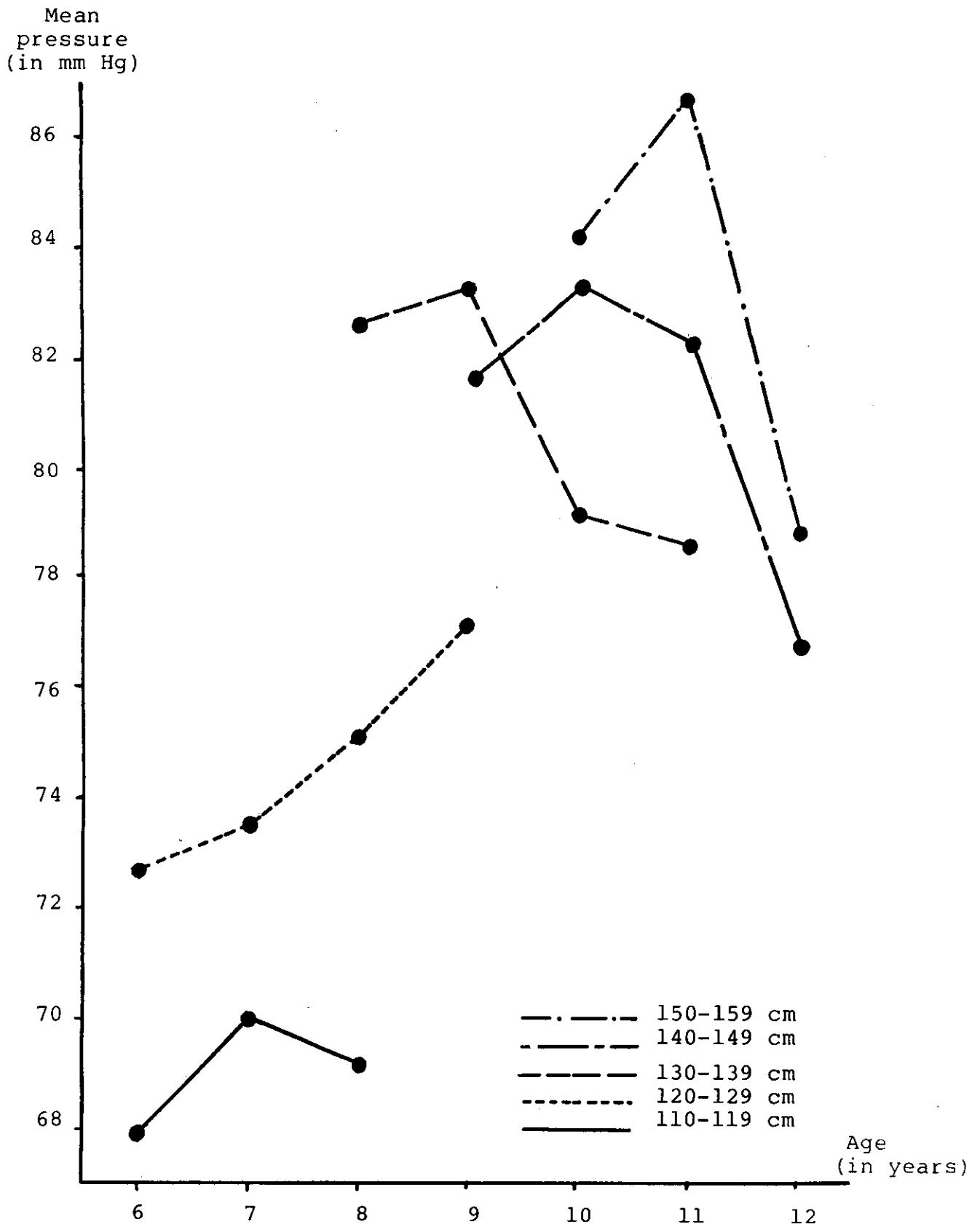


Figure 7. Mean blood pressure ($\frac{\text{systolic} + 2 \text{ diastolic}}{3}$) by age for each 10 cm height interval.

* Figures 5, 6 & 7 show the relationship between the means of systolic, diastolic and mean blood pressures respectively by age for each ten cm. height interval, for primary school children.

Blood pressure in the three figures increases by the increase in height. While age has no specific effect on any of the blood pressures, except in the height group 120-129 cm. in which there is increase of blood pressure by the increase of age. The effect of height is more prominent in the lower height-group curves.

* Figures 8, 9 & 10 show the relationship between the means of systolic, diastolic and mean blood pressures respectively by weight for each ten cm. height interval, for primary school children.

Blood pressure in the three figures increases by the increase in height within the same weight groups. It also increases by the increase in weight within the same height groups, except in the height group 140-149 cm. in which there is decrease of blood pressure by the increase of weight. The effect of weight on systolic pressure is more prominent than it is on other pressures.

Table 8: Systolic, diastolic and mean blood pressures (mean $\pm$ 1 S.D.), by height and by weight in primary school children.

Weight	Height											
	110-119 cm			120-129 cm			130-139 cm			140-149 cm		
	n	Sys-tolic	Dias-tolic	Mean blood pressure	n	Sys-tolic	Dias-tolic	Mean blood pressure	n	Sys-tolic	Dias-tolic	Mean blood pressure
16-18.5 Kg	70	95.1 $\pm$ 9.3	52.3 $\pm$ 8.7	66.6 $\pm$ 8.2								
19-21.5 Kg	126	98.6 $\pm$ 11.4	56.4 $\pm$ 9.7	70.3 $\pm$ 9.3	95	100.9 $\pm$ 10.1	58.3 $\pm$ 9.4	72.5 $\pm$ 9.1				
22-24.5 Kg	33	99.3 $\pm$ 9.6	55.6 $\pm$ 9.5	70.2 $\pm$ 8.6	96	101.9 $\pm$ 10.6	57.9 $\pm$ 11.4	72.6 $\pm$ 10.7				
25-27.5 Kg					72	110.3 $\pm$ 11.6	62 $\pm$ 9.4	78.1 $\pm$ 9.1	95	108.1 $\pm$ 10.1	65 $\pm$ 9.8	79.8 $\pm$ 9.2
28-30.5 Kg									108	110.9 $\pm$ 9.7	63.2 $\pm$ 10.5	79.1 $\pm$ 9.1
31-33.5 Kg									35	113.4 $\pm$ 10.2	69 $\pm$ 8.9	83.8 $\pm$ 8.8
34-36.5 Kg										107.3 $\pm$ 11.6	61.2 $\pm$ 10.5	76.6 $\pm$ 9.8

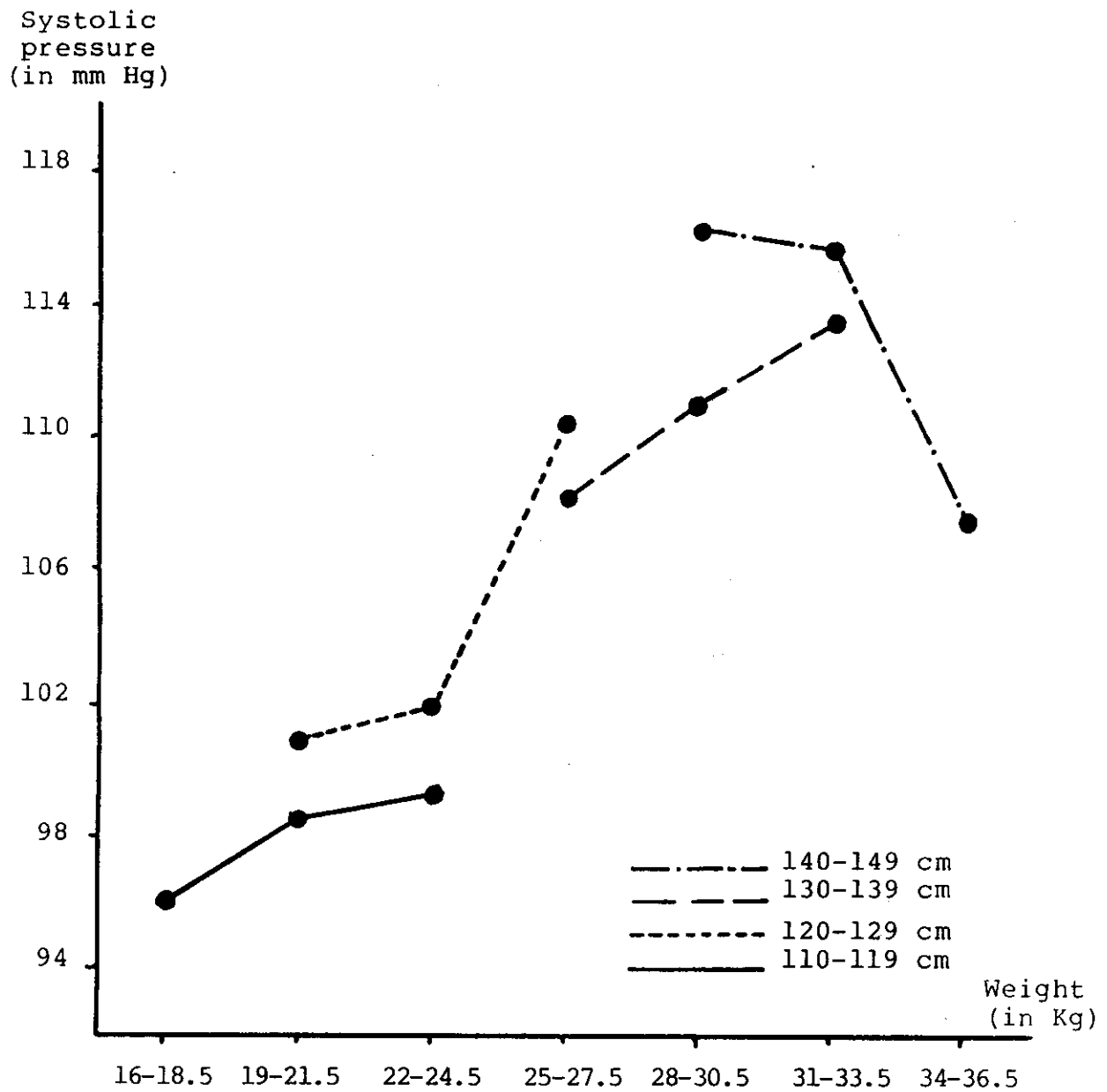


Figure 8. Systolic blood pressure by weight for each 10 cm height interval.

Diastolic
pressure
(in mm Hg)

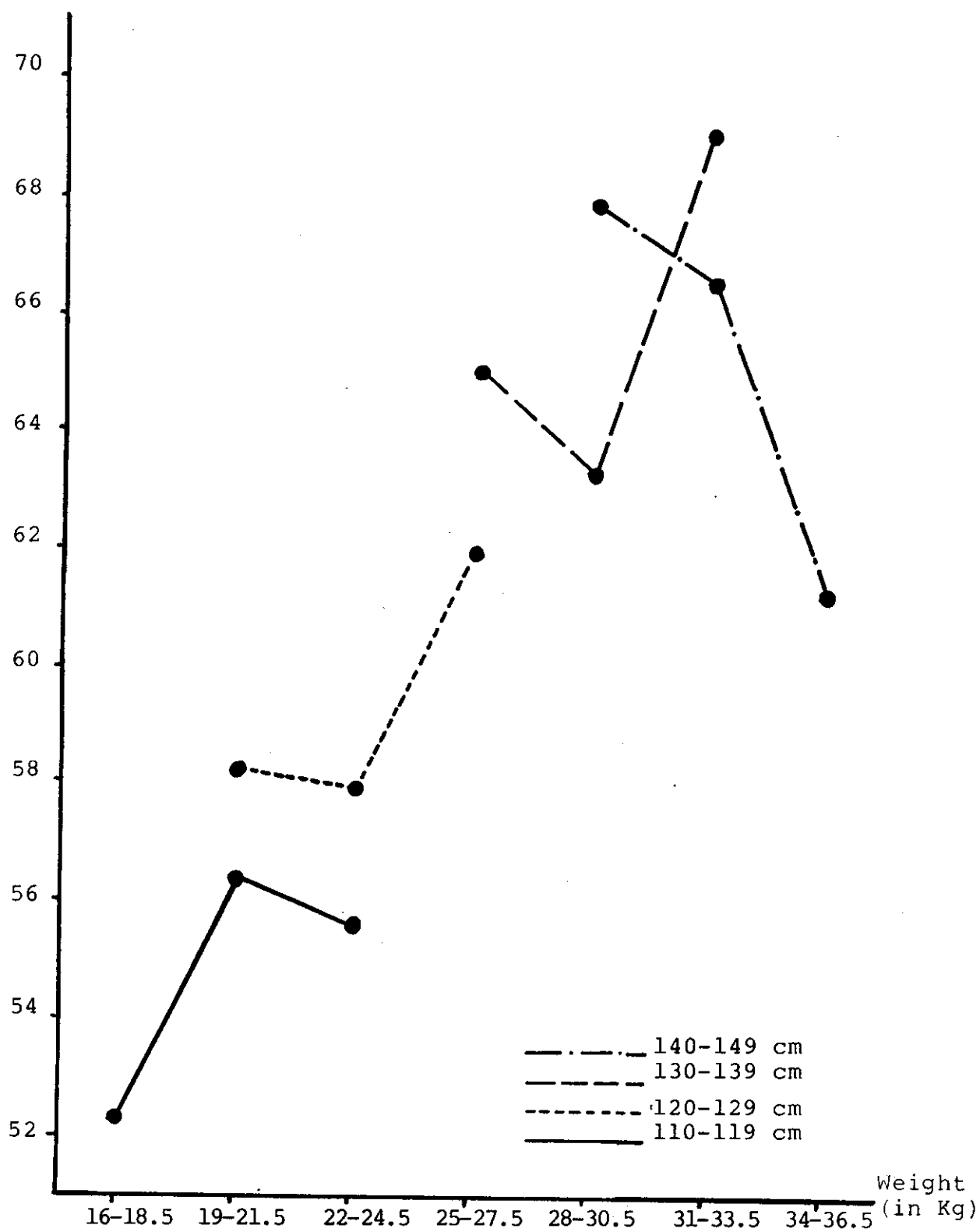


Figure 9. Diastolic blood pressure by weight for each 10 cm height interval.

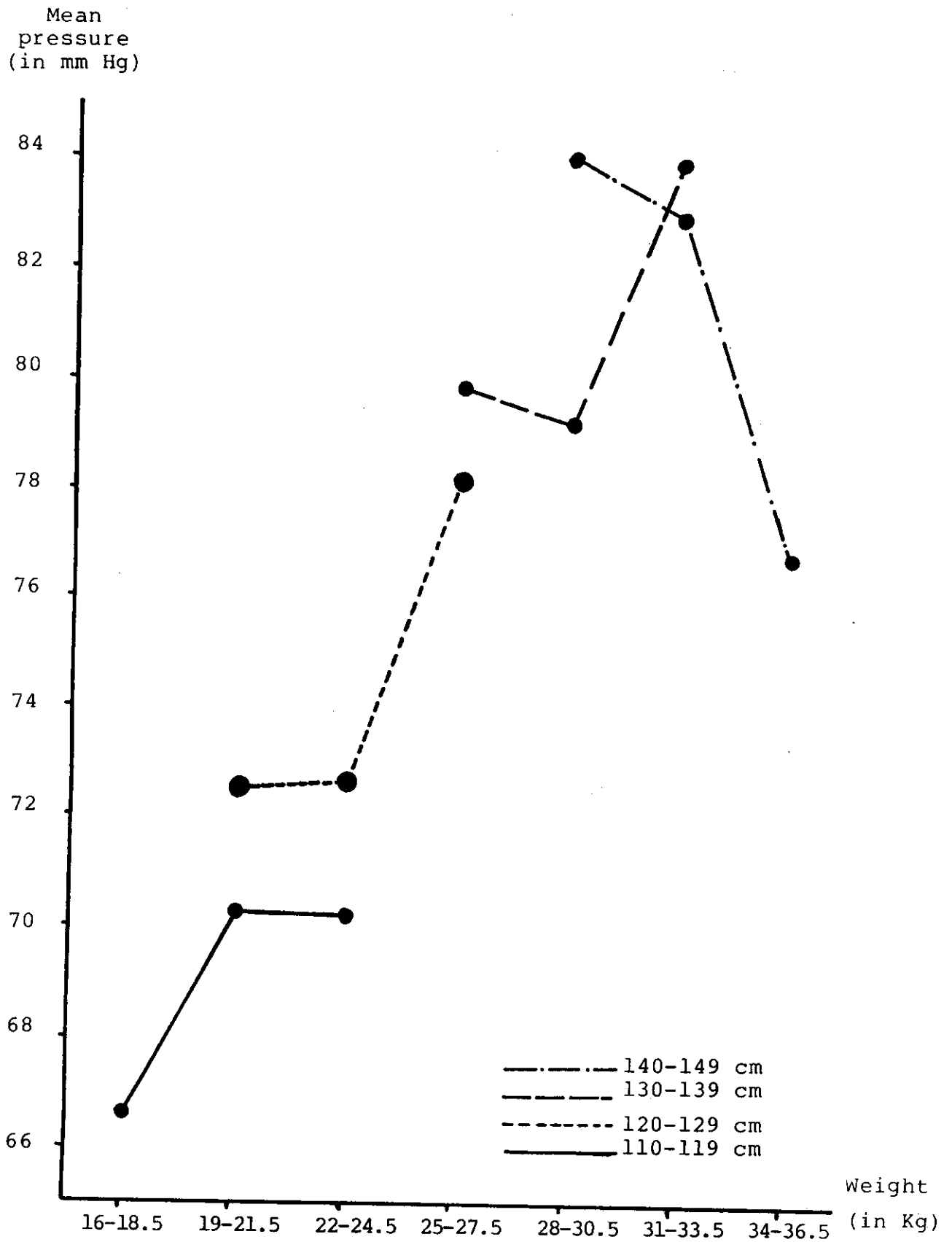


Figure 10. Mean blood pressure ($\frac{\text{systolic} + 2 \text{ diastolic}}{3}$) by weight for each 10 cm height interval.

Table 9: Systolic, Diastolic and mean blood pressures (mean $\pm$ 1 S.D.) by height and ponderosity index in primary school children.

Pen- dor- sity index	Height												Total										
	110-119 cm				120-129 cm				130-139 cm				140-149 cm				n						
	Sys- tolic	Dias- tolic	Mean blood pres- sure		Sys- tolic	Dias- tolic	Mean blood pres- sure		Sys- tolic	Dias- tolic	Mean blood pres- sure		Sys- tolic	Dias- tolic	Mean blood pres- sure		Sys- tolic	Dias- tolic	Mean blood pres- sure				
10	13	94	53	66.6 + - 3.9	4.2	4	52	102	60.2 + - 12.7	10.9	11.1	49	109.7 + - 8.3	67.2 + - 10.3	9	41	115.3 + - 12	64.6 + - 11	81.5 + - 10.7	162	107.3 + - 12.3	62.9 + - 10.9	77.7 + - 11
11	76	98.5	54.7	69.3 + - 10.2	8.6	8.9	102	102.3 + - 10.8	58.9 + - 9.4	9.2	73.3	102	109.1 + - 10.7	63.1 + - 9.9	9.8	37	114.2 + - 11.5	67.6 + - 9.4	83.1 + - 9	325	104.3 + - 14.5	60 + - 10.3	74.8 + - 10.9
12	82	99.2	56.5	70.8 + - 11	9.9	9.9	83	106.4 + - 11.3	59.6 + - 10.4	10.1	75.2	66	111.7 + - 9.4	64.9 + - 9.5	8.5	42	110.9 + - 12.9	62.2 + - 8.6	78.4 + - 8.9	273	106.3 + - 12.3	60.3 + - 10.4	75.6 + - 10.1
13							33	107.6 + - 12.3	60.8 + - 13.5	10.8	76.4	28	115.7 + - 9.2	69.2 + - 10.4	8.6	23	116.8 + - 10.7	71.4 + - 9.6	86.5 + - 9.4	127	107.2 + - 14.4	61.8 + - 13.1	76.9 + - 12.3

N.B. The total number of cases does not coincide with the actual summation, because of the inclusion of some readings whose heights are less or more than the considered height groups.

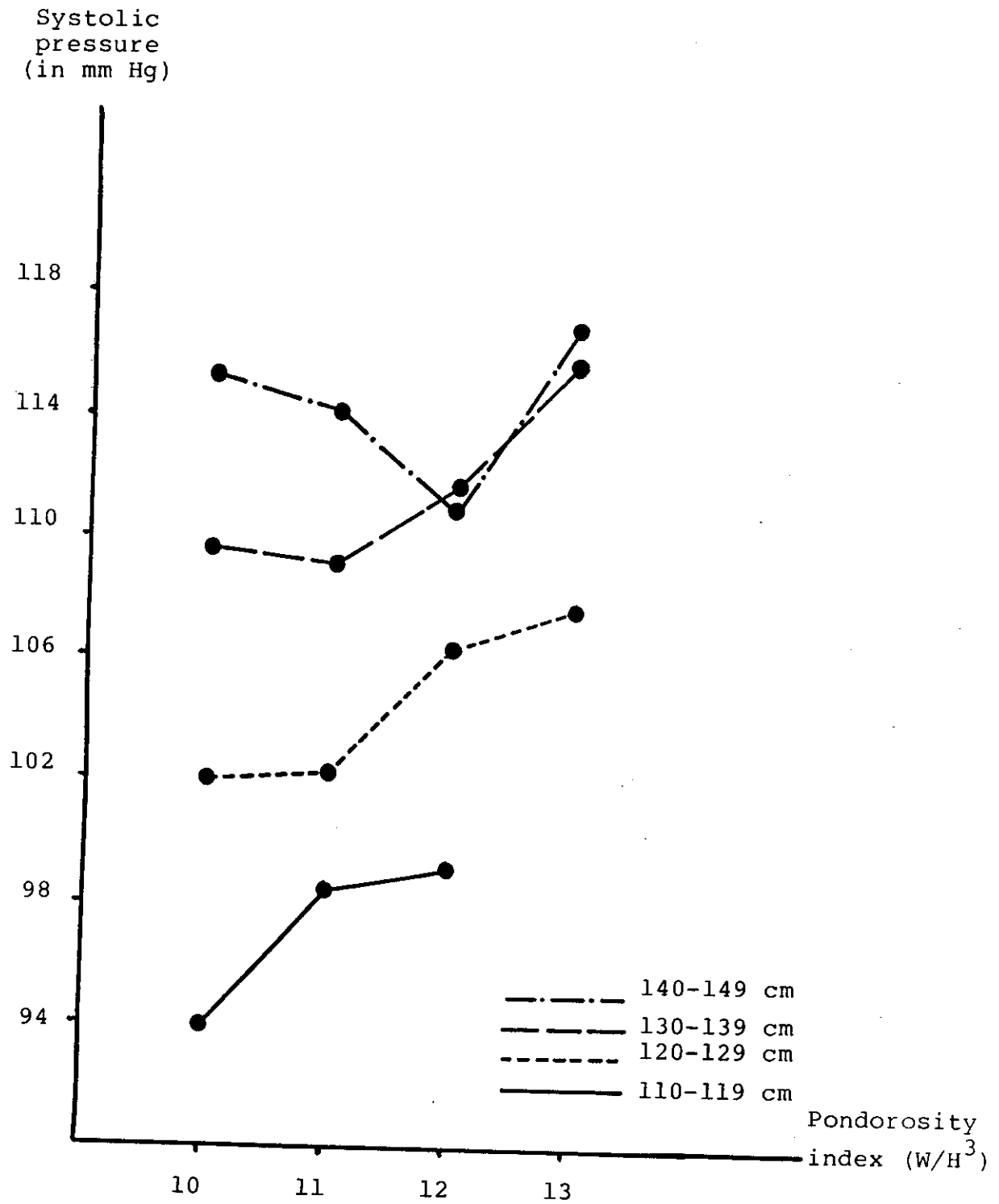


Figure 11. Systolic blood pressure by ponderosity index (weight/height³) for each 10 cm height interval.

Diastolic
pressure
(in mm Hg)

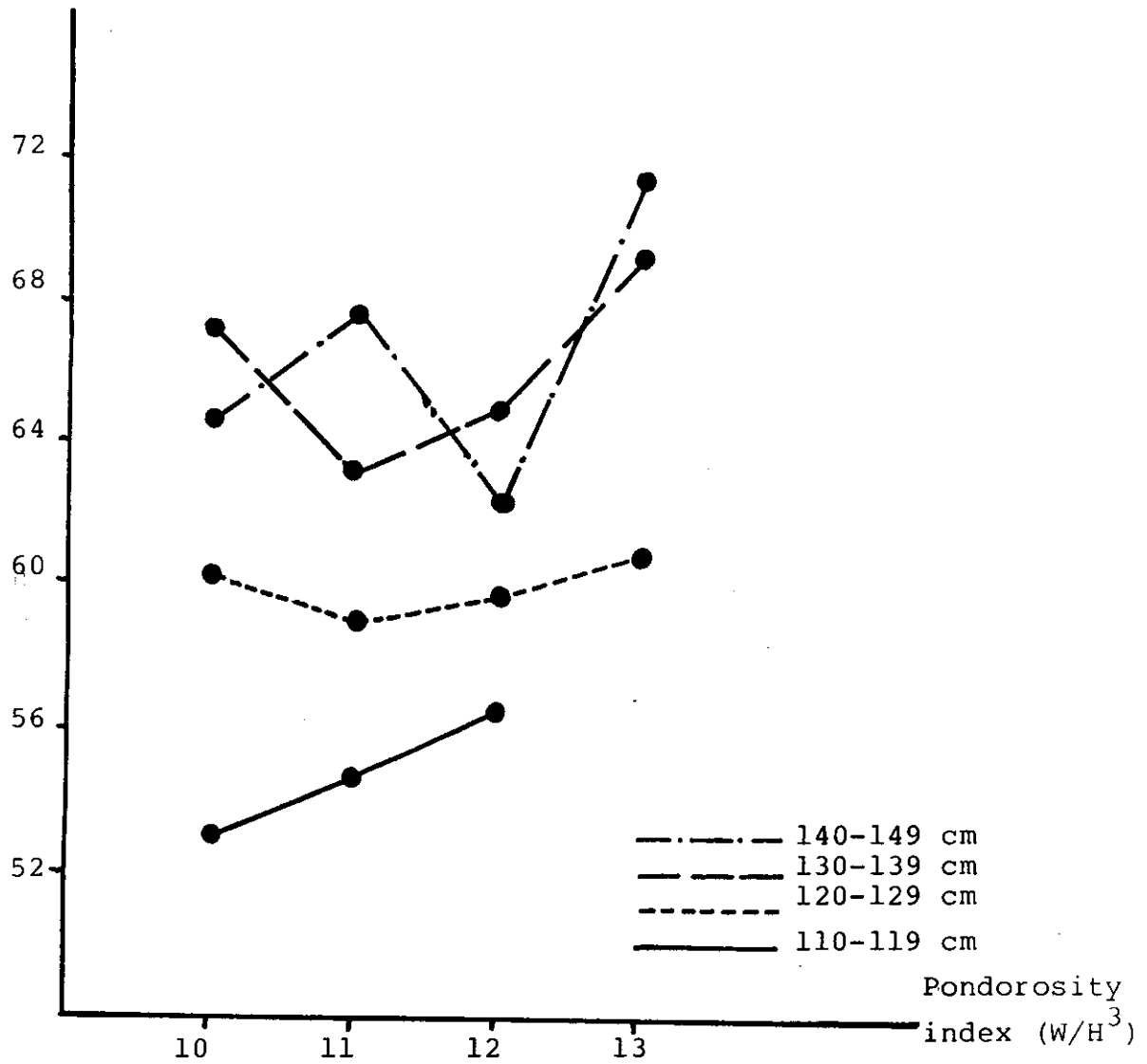


Figure 12. Diastolic blood pressure by ponderosity index (weight/height³) for each 10 cm height interval.

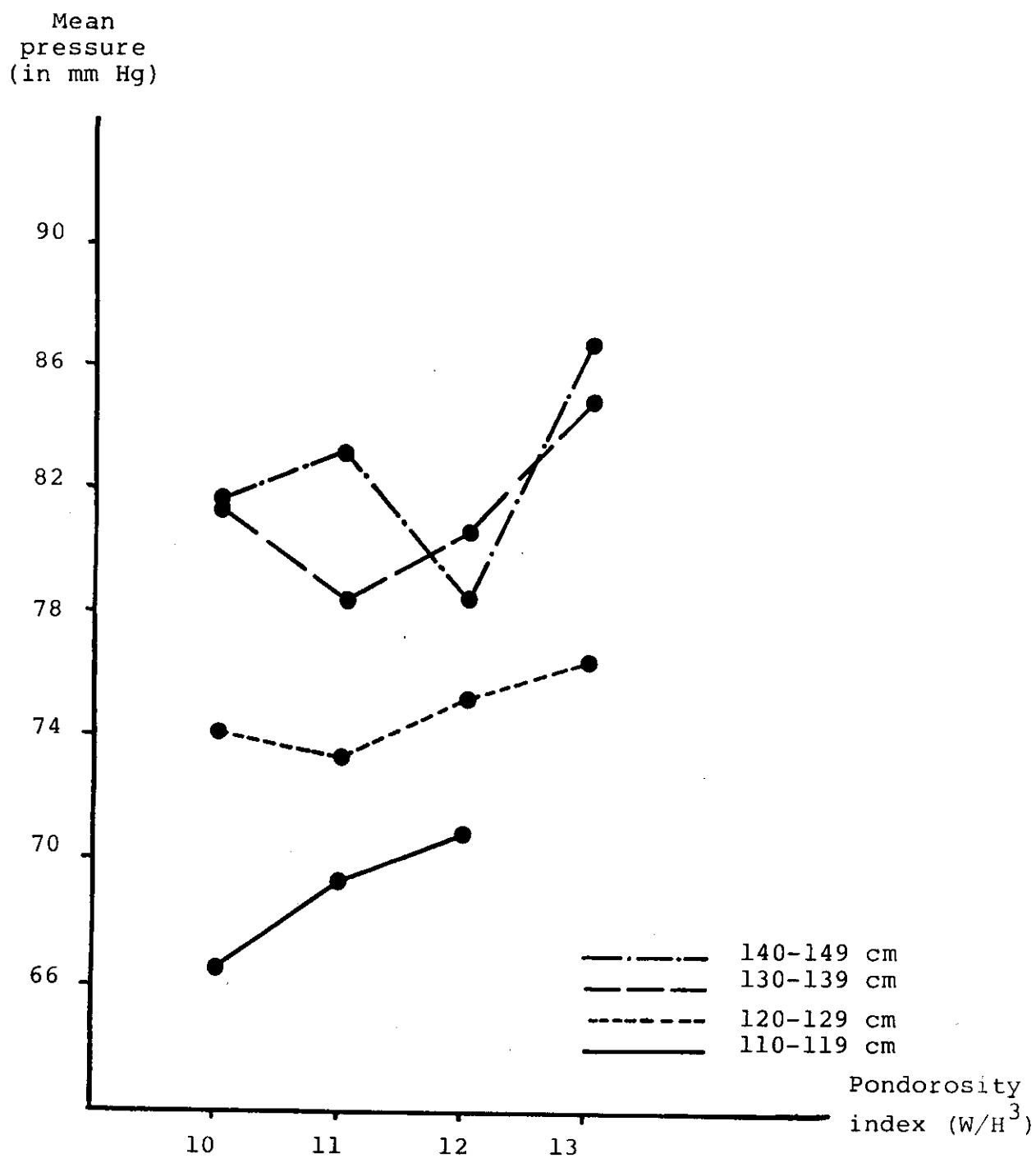


Figure 13. Mean blood pressure ($\frac{\text{systolic} + 2 \text{ diastolic}}{3}$) by ponderosity index (weight/height³) for each 10 cm height interval.

* Figures 11, 12 & 13 show the relationship between the means of systolic, diastolic and mean blood pressures respectively by pondorosity index (P.I.) for each ten cm. height interval, for primary school children.

Blood pressure in the three figures increases by the increase in height, except for cases with P.I. twelve at height 140-149 cm. in the three figures, and also for cases with P.I. ten at the same height group for diastolic pressure only. Blood pressure in the three figures also increases by the increase in P.I. except in the height group 140-149 cm.

* Figures 14, 15 & 16 show the relationship between the means of systolic, diastolic and mean blood pressures and pondorosity index, for primary school children.

Blood pressure in the three figures decreases by the increase of P.I. from ten to eleven, then increases with the increase of P.I. from eleven to thirteen. P.I. is noticed to have more prominent effect on systolic pressure than it has on the other pressures.

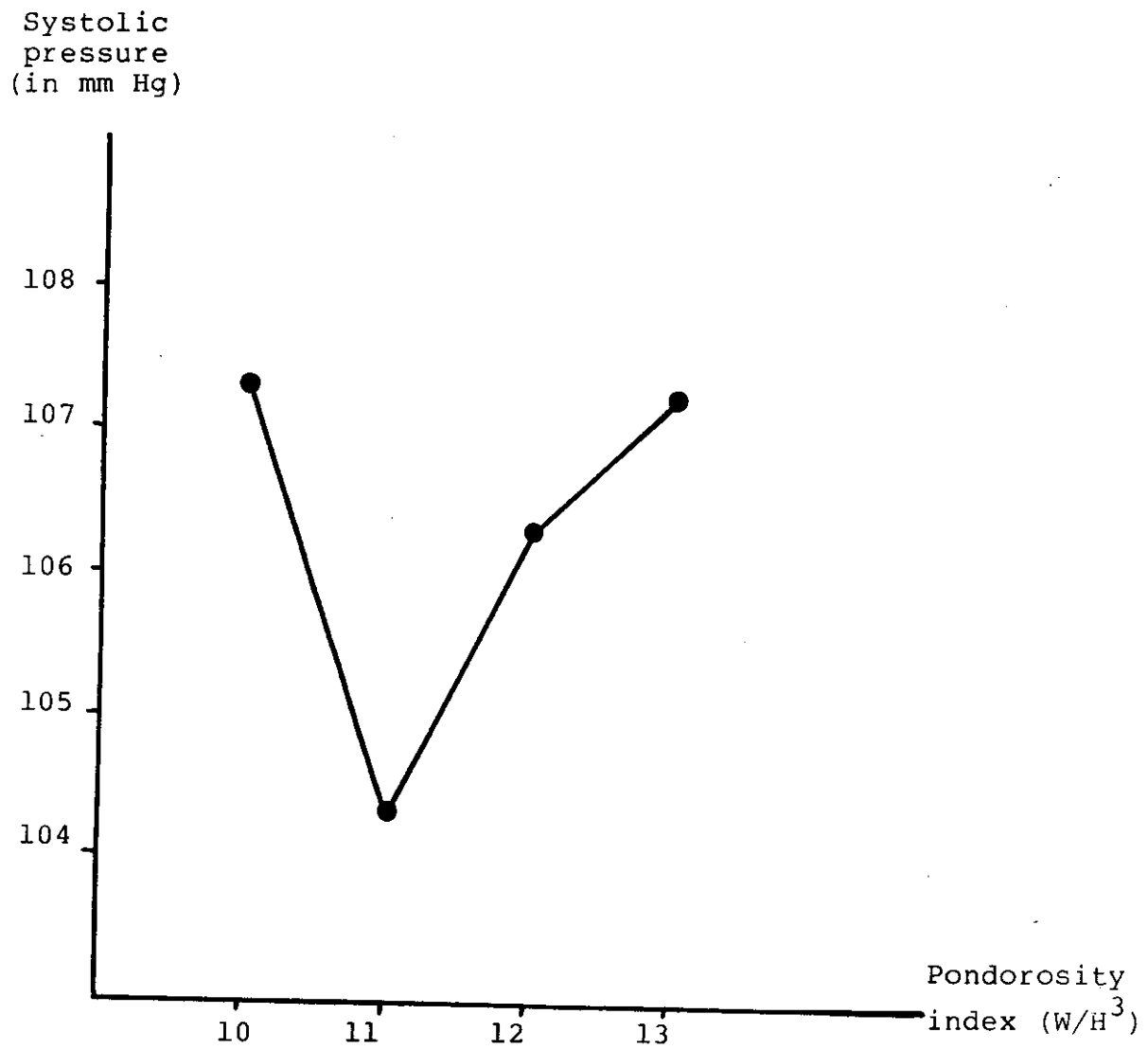


Figure 14. Systolic blood pressure by ponderosity index (weight/height³).

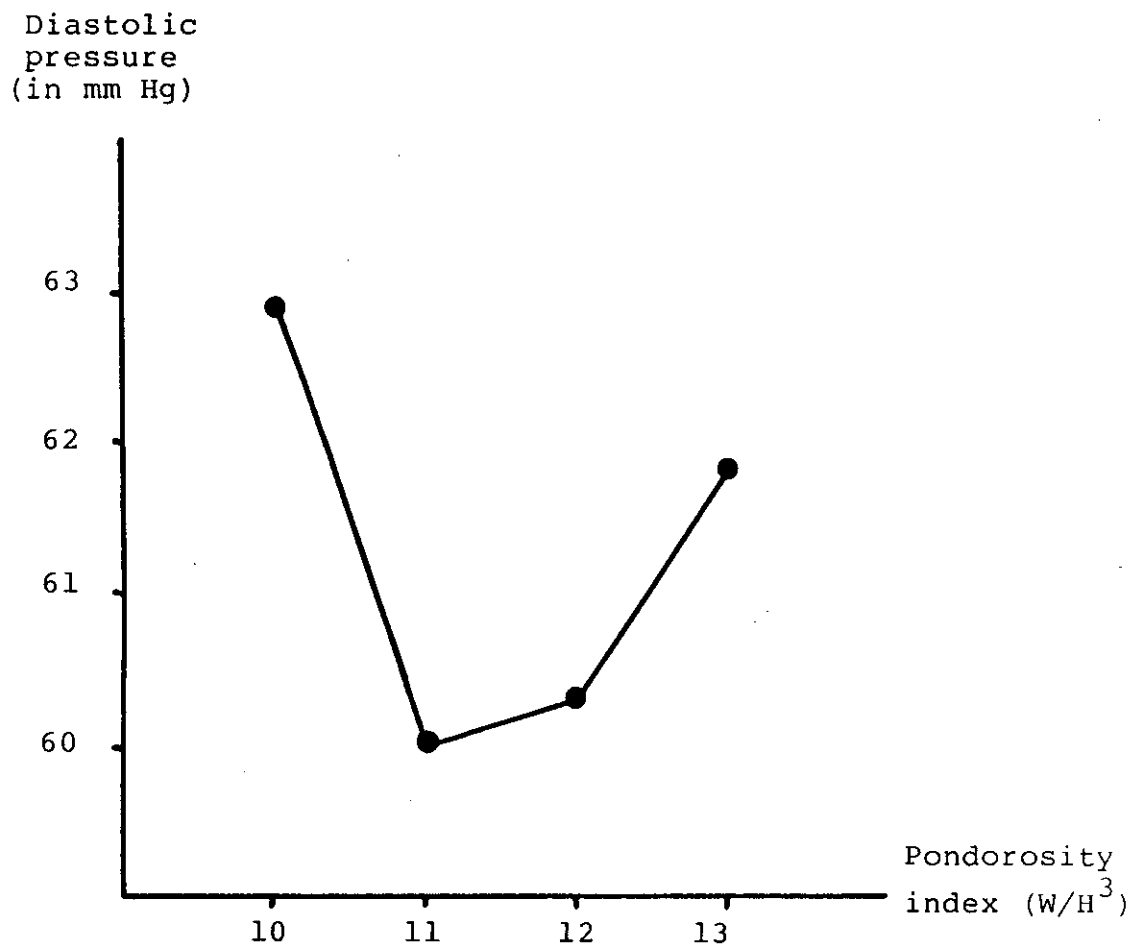


Figure 15. Diastolic blood pressure by ponderosity index (weight/height³).

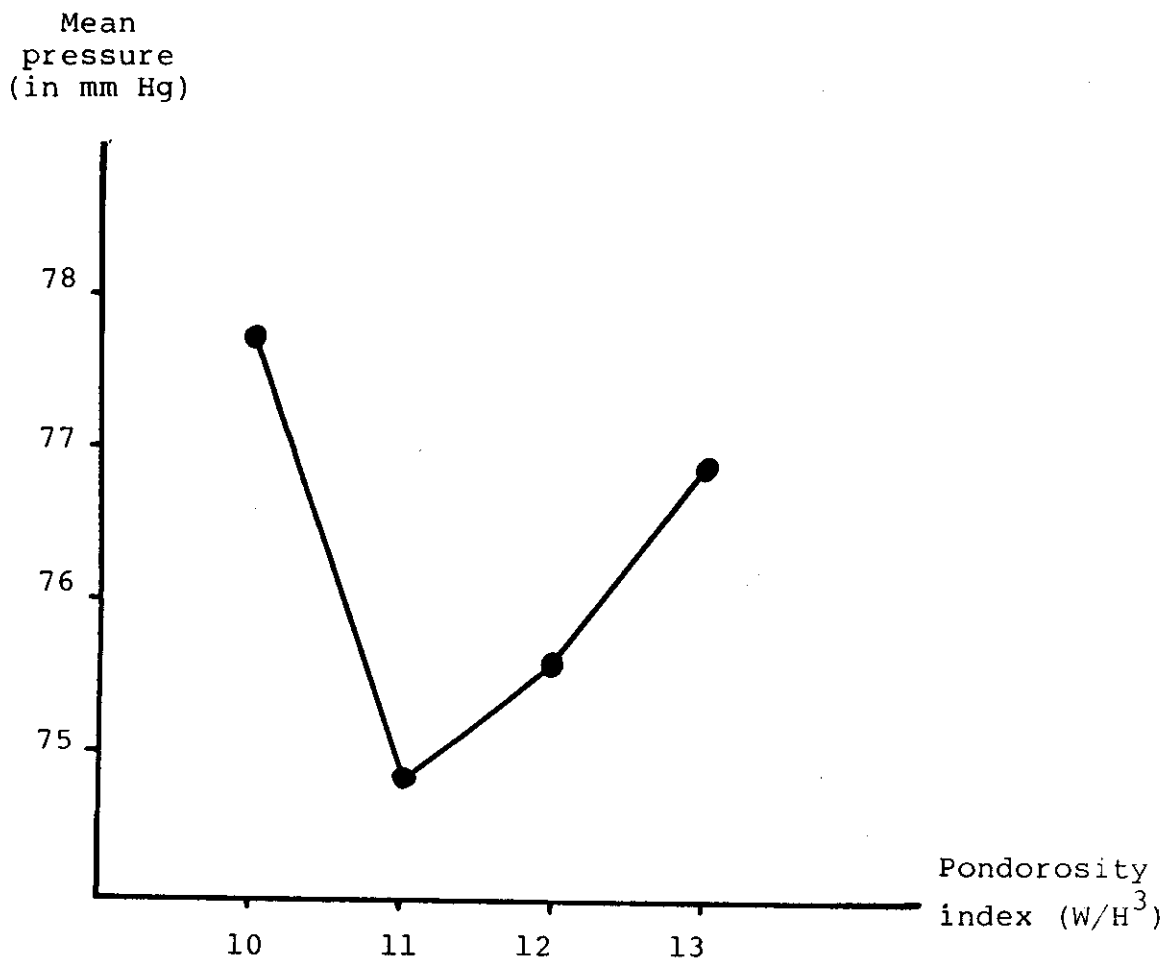


Figure 16. Mean blood pressure ($\frac{\text{systolic} + 2 \text{ diastolic}}{3}$) by ponderosity index (weight/height³).