Skull: Porotic Changes

Porotic changes are spongy holes that appear in the normally dense bone in the top of the skull and the orbits. They are linked to iron-deficiency anemia. Rather than a sign of inadequate amounts of iron in the diet, this type of anemia can be indicative of poor absorption of iron, or heavy iron losses from the body. Diets low in protein can result in poor iron absorption.

The porotic changes seen in Indian Knoll community members were considered mild, suggesting that the changes would not have had an ill effect on the health of the Indian Knoll people. Changes seen in the skulls of the Hardin Village community members, however, were severe. These changes very likely impacted their health.

The number and percentages of skulls found with porotic changes is shown in Tables 1a and 1b.

Procedure

1. Review and graph the data.
2. Analyze the data for what it reveals about the health of each community.
3. Use the information on this page and what you have learned from the data to answer the questions listed.

Questions

Write your answers on a separate sheet of paper.

1. What do you notice about the distribution of porotic changes in the skulls of the skeletons?
2. In what age groups were porotic skull changes most prevalent?
3. In which community were the porotic skull changes severe enough to impact the overall health of community members?
4. What conclusions could you draw from this data and the information you have been given?
5. Write down any other observations you have about this data set.

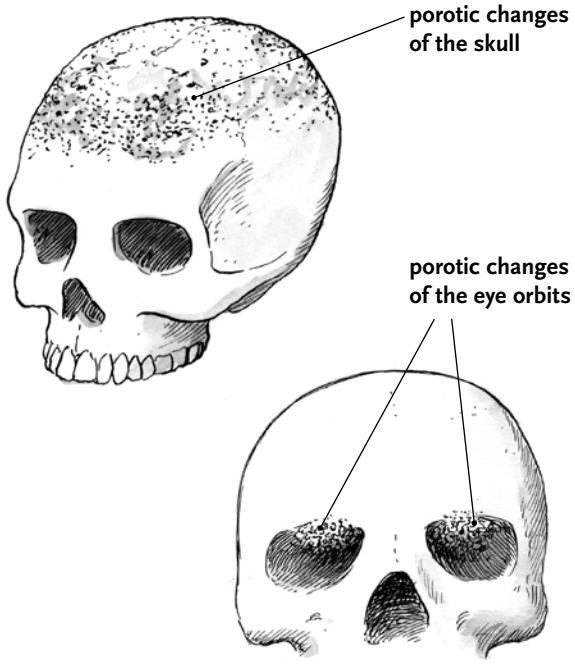

Table 1a: Porotic Changes in Children

	Indian Knoll			Hardin Village		
	Children			Children		
Ages	#w	#w/o	% with	#w	#w/o	% with
0–5	3	94	3.1	12	95	11.2
6–11	2	11	15.4	1	21	4.5
12–16	8	7	53.3	1	22	4.3

Table 1b: Porotic Changes in Adults

	Indian Knoll						Hardin Village					
	Males			Females			Males			Females		
Ages	#w	#w/o	% with	#w	#w/o	% with	#w	#w/o	% with	#w	#w/o	% with
17–29	13	13	50.0	15	13	53.6	2	25	7.4	1	25	3.9
30–39	10	9	52.6	4	6	40.0	0	19	0	3	11	21.4
40+	19	27	41.3	16	14	53.3	1	20	4.8	3	30	9.1