Table 1. Fluoride concentration in cord blood and placenta

Group	No. of cases	Average fluoride concen.	
		Cord blood (μg/100 ml)	Placenta (μg/100 g)
Fluorides by tablet	20	41	111
Control	146	17	101
Fluorides from water	6	38	85
Control	9	22	67

fluoride concentration above 50 μg/100 ml, whereas only 3 percent of the control group had a concentration above this level.

This marked difference between the fluoride concentrations of the control and the study groups was not shown in the placentas. However, it is important to note that in neither study group was there any placental concentration of less than 25 μg/100 ml. But in the tablet control group, 7.5 percent contained less than this concentration, and in the fluoridated-water control, 11 percent contained less.

The large difference in the placental fluoride concentration in the two control groups may be explained by considering the amount of fluorides ingested in the normal diet in the two localities.

The role of the placenta in fluoride metabolism remains obscure. Two placentas, one from the tablet control group and one from the tablet study group, were selected at random and analyzed completely by sections for their fluoride content. The results are represented diagrammatically in Fig. 1. In both cases the fluorides were more concentrated in the periphery of the placentas. The reason for this distribution is not apparent at this time but two possible reasons can be offered. (i) Since the calcium content of the placenta is relatively high at the periphery (*8*), the distribution may be merely a chemical manifestation. (ii) The placenta may serve as both a storehouse and a regulator of the fluorides. In an attempt to prevent too much fluoride from entering the fetal blood stream at one time, the placenta pushes it away from the area of most active maternal-fetal exchange. In the periphery, the fluorides are stored and released as needed. Scant proof of this hypothesis may be found in the observation that the difference in the placental fluoride concentration between the study and control groups was not marked in either locality.

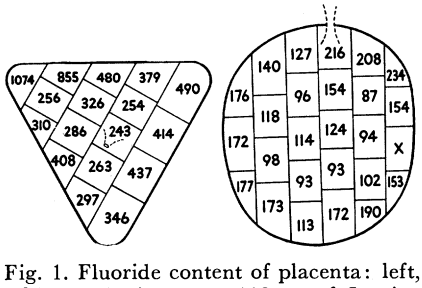

Fig. 1. Fluoride content of placenta: left, tablet study (average, 419 μg of fluorine per 100 g of tissue); right, tablet control (average, 141 μg of fluorine per 100 g).

The results of this study indicate that the fetal blood level can be increased by supplementation either in tablets or in water; however, the importance of this is difficult to assess at the present time because there is no known normal or optimum concentration. Besides an increased fluoride concentration in both the cord blood and the placental tissue of the study cases, no other correlation was demonstrated.

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References and Notes

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26 May 1955

To Calculate Days between Two Dates

G. J. Cox [*Science* **121**, 779 (1955)] has presented a section of a counting house calendar for estimating intervals in days. A useful table for this purpose is found in *The World Almanac and Book of Facts*, which is published annually by the *New York World-Telegram and Sun*, a reference within easy reach of most laboratory workers. The table "Days between two dates" appears on page 412 of the 1955 edition. The arithmetic of the table is obvious.

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7 June 1955

The reference to the development of a calendar of "days elapsed" and "days remaining" by G. J. Cox is of more than passing interest. Such information is desired quickly in many fields of work. In our work we are constantly involved in a variety of problems that are simplified by the use of such a calendar.

However it is strange that so many scientists, engineers, and others are unaware of the simplest calendar of all—the Julian Day calendar—which enables Cox's example to be done by mental arithmetic, subtracting one number from another. For example, the Julian Day number is represented by seven figures and 1 Jan. 1951 is J.D. 2433647. However, usually only the last three or four figures are necessary.

30 Jan. 1955 = J.D. - - - 5138
28 Dec. 1951 = J.D. - - - 4009

Age in days 1129

There is no need to worry about leap year. We use a standard 100-year table showing the Julian Day number for the first day of each month from 1900 to 2000. One of the most widely distributed is the AAVSO Julian Day calendar, which has been produced for many years by the American Association of Variable Star Observers. The AAVSO J.D. calendar for 1955 was printed by the United Scientific Co., for the AAVSO and distributed by both organizations. The American Ephemeris also includes a summary J.D. calendar covering the period A.D. 0 to A.D. 2019 for use where longer periods of time are required. The J.D. calendar deserves a more widespread use, for it eliminates a lot of mental and physical effort, and answers all of Cox's problems.

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Science carries us into zones of speculation, where there is no habitable city for the mind of man.—ROBERT LOUIS STEVENSON.