clearance for this study, and Dr K. Gibson (I.C.I.) for synthetic P.G.I_2 and to Dr B. Furr (I.C.I.) for P.G.I_2 antiserum.

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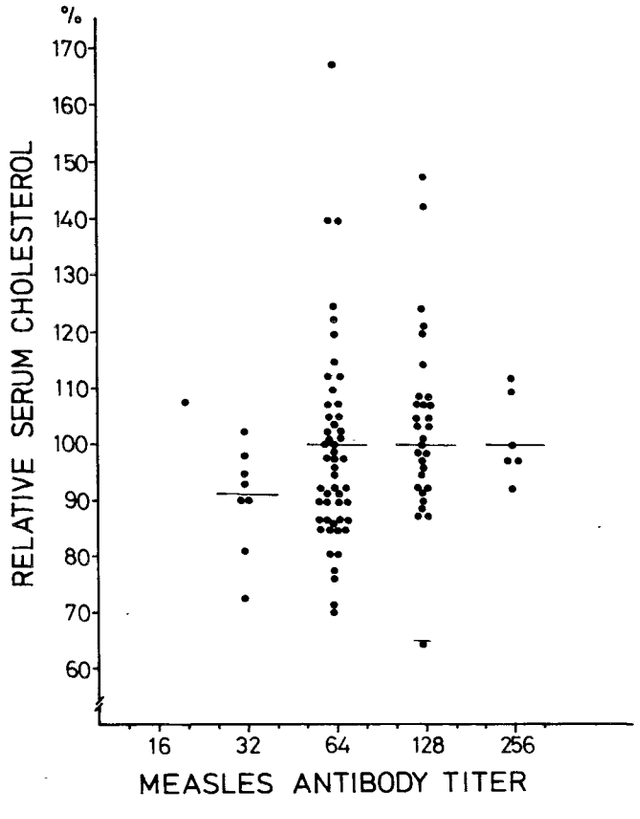
EFFECT OF MEASLES AND MEASLES VACCINE ON SERUM-CHOLESTEROL

SIR,—Dr Mathews and Dr Feery reported[1] that immunisation with influenza vaccine seemed to be followed by an increase in serum-total-cholesterol and by a decrease in H.D.L.-cholesterol. They suggested that immunisation with viral antigens or natural virus infections might contribute to variation in lipid levels.

We have measured serum-total-cholesterol in 97 children (average age 2 years) before and 6 weeks after measles vaccination ('Rimevax', R.I.T., Belgium) and in serial serum samples of 27 measles patients (average age 4 years). Children were fed ad libitum. Antibody titres were assayed by hæmagglutination inhibition[2] and serum-cholesterol was measured with the method of Leppänen.[3] Samples from the same child were measured in the same series.

The mean serum-cholesterol before and after the vaccination were 5·9±1·2 (S.D.) mmol/l and 5·8±1·0 mmol/l, respectively. No sign of heavy hypertriglyceridæmia was detected in serum after standing overnight at 4°C. As indicated in the figure five children showed exceptionally high relative increase (≥40%) of serum-cholesterol after vaccination, although the absolute values remained within normal limits. No correlations were observed between the initial cholesterol values or changes in cholesterol values and measles antibody responses. After 8 and 10 months the relative increase of serum-cholesterol was still recorded in two children.

1. Mathews, J. D., Feery, B. J. *Lancet*, 1978, ii, 1212.
2. Panelius, M., Salmi, A., Halonen, P. E., Kivalo, E., Rinne, U. K., Penttinen, K. *Acta neurol. scand.* 1973, **49**, 85.
3. Leppänen, V. *Scand. J. clin. Lab. Invest.* 1956, **8**, 201.



Relative serum-cholesterol and measles-antibody titres in 97 children 6 weeks after measles vaccination.

Serum-cholesterol is expressed as % of value before vaccination.

SERUM-CHOLESTEROL AFTER NATURAL MEASLES

Days after onset	No.	Serum-cholesterol (mean±S.D.) (mmol/l)
1–7	27	4·0±0·95
8–19	22	5·6±1·5
20–59	20	5·4±1·0
60–99	14	5·1±0·9
100–160	17	5·3±1·2

After natural measles infection the mean serum-cholesterol was low in the specimens collected 1–7 days after the onset of symptoms (see table).

Cholesterol levels were about 40% higher in the specimens collected 8–19 days after the onset of the disease and remained at this normal level during the observation period of more than 3 months. Our data show that natural measles decreases serum-cholesterol values in the acute phase of the disease. This accords with the observations of Lees et al.,[4] who showed that experimental infection with sandfly virus infection decreased serum-cholesterol values for at least 10 days. Whether the same kind of decrease of cholesterol level occurs also after measles vaccination and, possibly, after other virus vaccinations needs to be clarified. Our observations support the view presented by Mathews and Feery that natural virus infection or immunisation with viral antigen induces changes in serum-lipid levels in man.

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GUM CHEWING AT CRICKET

SIR,—The *Observer* of Jan. 28 reported details of the injury to the Australian batsman Darling on the first day of the fifth test match in Adelaide. Darling was hit under the heart by an ordinary ball from Willis, collapsed, choked on his chewing-gum, and somehow swallowed his tongue. When the crisis of choking was over, the injury to Darling was found not to be serious.

Over the past two to three summers whilst watching first-class cricket, I have noticed an increasing number of players chewing. On the second day of the Trent Bridge test match, at the beginning of the New Zealand innings, an urgent signal was sent to the England dressing-room, and eventually the twelfth man brought out a packet of chewing-gum which was quickly distributed among several players. During the two New Zealand innings, most England players were chewing and some replenished their gum, returning the tell-tale silver paper to their pockets. Subsequent inquiry revealed that chewing gum whilst playing first-class cricket is a common habit.

Chewing-gum, inspired whilst playing cricket or other sports, may become lodged in one of the bronchi and cause wheezing or infection. If it gets stuck in the trachea, asphyxia and sudden death may ensue. The cricketer will be at greatest risk when he takes a sudden inspiration—as when hit in the abdomen or chest whilst batting (as in Darling's case) or when reaching for a high catch.

I am unaware of any catastrophe resulting from the use of gum by cricketers, but it is fortunate that skilled attention was immediately available for Darling—it will not be at most cricket matches. It would be prudent for cricketers to abandon this

4. Lees, R. S., Fisser, R. H., Beisel, W. R., Bartelloni, P. J. *Metabolism*, 1972, **21**, 825.