Correspondence

Methane excretion in man

SIR,—McKay *et al*¹ in a recent report have published new data about methane production in 'various clinical and control populations'. After reviewing the Methods section in this paper – as well as in previous papers by McKay *et al* and Tadesse *et al*,²⁻⁵ I believe that some comments should be made.

According to the authors, the gas chromatograph used in Edinburgh was equipped with a Katharometer (Thermal conductivity) detector which did not detect methane concentrations below 0.09 $\mu\text{mol/l}$ (2 ppm). Their description is one of a rather insensitive system in which air methane concentration is represented by a peak reaching less than 1% of full scale deflection of the recorder.¹ The commonly used gas chromatographs for methane detection are equipped with a flame ionisation detector.⁶⁻¹⁰

In our system,¹⁰ methane concentration of 2 ppm produces a peak of about 40% full scale deflection of the recorder. Such a sensitivity enables accurate measurement of concentrations less than 0.5 ppm (10% of full scale).

The group from Edinburgh adopted a definition of methane producers which is different from the 'traditional' one suggested by Bond *et al*.⁷ A methane producer – as accepted by most investigators – is a subject whose breath methane exceeds 1 ppm above ambient air concentration. According to McKay *et al*¹⁻³ a methane producer should have at least 0.09 $\mu\text{mol/l}$ (2 ppm) above air concentration.

How should we define a subject producing 3.5 ppm methane (with ambient air concentration of 2.0 ppm)? In Edinburgh he will be considered as a non-producer, whereas in Minneapolis, London, or Tel-Aviv he will be recorded as a producer. This situation renders the results from Edinburgh rather incomparable with those published by others.

It is noteworthy that even with their strict criteria McKay *et al*¹ have presented the highest percentage of methane producers documented in literature in a control population – 54% of 142 controls (in their previous reports – 60.7% of 56 and 43% of 30), compared with 33.6%, 41%, 44%, 40%, 42.3%, and 50.3% in Minneapolis,⁷ Toronto,¹¹ Oslo,⁸ London,¹² Barcelona⁹ and Tel-Aviv,¹⁰ respectively.

Y PELED

Department of Gastroenterology,
Ichilov Hospital,
6 Weizman Street,
Tel-Aviv 64239,
Israel

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Reply

SIR,—Thank you for letting us see Dr Peled's letter. We accept that our method is less sensitive than the flame ionisation method, as indeed we have shown. Our method has the merit of simultaneously measuring the concentration of hydrogen and methane. The limit of sensitivity of our method for methane analysis is 2 ppm (0.09 $\mu\text{mol/l}$) and for this concentration upwards we can measure breath methane with a precision coefficient of variation of 7%. We have also compared our method with a flame ionisation detector system and the results were comparable at and above a concentration of 2 ppm.