mal in the first four hours after delivery of the infant; the level declines thereafter and at 24 hours is the same as or a little higher than that seen in late pregnancy and at the onset of labour. The level of F.D.P. is even higher in 50% of women with twin births. We have not made any observations later than 24 hours after delivery.

Recent findings⁴ regarding the haemagglutination inhibition assay have shown that the assay can be considerably simplified by the substitution of human for sheep red cells. A uniform level of protein for dilution of samples and standards should be used throughout the assay to achieve reliable results. We have largely abandoned the use of the microtitre (or similar) system, since we found that it introduces a consistent error, as it tends to produce less than doubling dilutions, resulting in fallaciously low readings. In addition, the currently used assay which involves red cell agglutination (rather than a settling pattern of cells) is easier to read in a plate with larger wells. We have been able to adapt the method to the AutoAnalyzer with similar and even more reproducible results, allowing more certain detection of small differences between samples. Rechecking our previous results on the AutoAnalyzer has confirmed the results mentioned above.—We are, etc.,

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Pituitary Dwarfism and Size of Gonads

SIR,—In clinical descriptions of pituitary dwarfism little attention is given to the size of the genitalia.¹ The only reference to small genitalia is made by Brasel *et al.*, who, in their review of 75 patients with pituitary insufficiency beginning in childhood note that in some of the male subjects the external genitalia were small for their age.² No specific mention is made of the gonads.

The possibility that pituitary growth hormone (H.G.H.) plays a role in the growth of the gonads was tested by carrying out measurements of the latter in patients with H.G.H. deficiency. Since this is impossible in girls, only boys were included in the study. The study included 22 children belonging to four groups of pituitary dwarfism: (a) hereditary isolated H.G.H. deficiency; (b) sporadic isolated H.G.H. deficiency; (c) biologically inactive IR-H.G.H.³; and (d) idiopathic pituitary insufficiency including H.G.H. The testicular volumes, estimated by calliper and by orchidometer,^{4,5} of these children is presented in the Figure. It is evident that, with

the exception of two subjects which had previously been given some treatment, in all the

● Isolated HGH deficiency, hereditary. ▲ Isolated HGH deficiency, sporadic. × Biologically inactive IR-HGH, hereditary. ○ Idiopathic pituitary insufficiency including H.G.H.

subjects the testes were small as compared to norms for our population, even before puberty. It is noteworthy that the testicular underdevelopment is most prominent in those individuals with an isolated lack or biologically inactive H.G.H. These findings strongly suggest that H.G.H. plays an active role in the growth and development of the gonads, with no relation to puberty.

A complete report, including longitudinal growth of the testes in children with pituitary insufficiency and their penile size, will be published elsewhere.—We are, etc.,

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Formaldehyde Sterilization for Dialysers

SIR,—We wish to stress the importance of achieving an adequate concentration of formaldehyde when this agent is used for the sterilization of haemodialysis equipment.

At one time we were extremely concerned by the frequency and severity of pyrexial reactions in patients undergoing regular dialysis treatment at the London Hospital. Blood cultures were repeatedly sterile. Methods of sterilization then in use were thoroughly reviewed. The Kiil dialysers had been sterilized for 24 hours with a solution prepared in the hospital pharmacy and labelled "2% formaldehyde." Samples of fluid from the dialysate compartment of each dialyser were collected for bacterial culture and colony count after 14 hours' dialysis, and the results are shown in the first column of the Table. One patient was dialysed with a Minicoil dialyser sterilized by gamma-irradiation, and experienced no pyrexial reactions. It therefore seemed probable that the reactions were caused by inadequate sterilization of the Kiil dialysers, and formaldehyde sterilization was temporarily abandoned in favour of 3% acetic acid. No

further reactions occurred and sterilization was shown to be satisfactory (columns 2 and 3 of the Table).

At this point it became apparent that, in error, the Kiil dialysers had been sterilized for three months with 2% formalin. Since 100% formalin is a solution of 34–40% of the gas formaldehyde in water, 2% formalin contains only 0.8% formaldehyde, which has dubious bactericidal properties.¹ When 2% formaldehyde was used again for sterilization there was a significant fall, 100-fold or greater, in the dialysate colony counts (column 4 of the Table), and no further pyrexial reactions occurred.

We recommend, therefore, that if formaldehyde is used in the sterilization of Kiil dialysers its concentration should be not less than 2%.—We are, etc.,

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Colony Counts (per ml.) of Dialysate Collected from Dialysers after 14 Hours' Dialysis

Patient	Method of Dialysis and Sterilization			
	Kiil Sterilized by 0.8% Formaldehyde	Minicoil Sterilized by Gamma-irradiation	Kiil Sterilized by 3.0% Acetic Acid	Kiil Sterilized by 2% Formaldehyde
I	5×10^8 <i>E. coli</i> 1×10^{10} <i>Pseudomonas pyogenes</i>	No growth	1×10^5 <i>E. coli</i>	2×10^5 <i>E. coli</i> 1×10^6 <i>Pseudomonas pyogenes</i>
II	1×10^{10} <i>E. coli</i> 8×10^{10} <i>Pseudomonas pyogenes</i>	No growth	—	1×10^5 <i>E. coli</i>
III	3×10^9 <i>E. coli</i> 2×10^{10} <i>Pseudomonas pyogenes</i>	No growth	—	2×10^7 <i>E. coli</i> 2×10^7 <i>Acinetobacter</i>
IV	8×10^{11} <i>E. coli</i> 6×10^{11} <i>Pseudomonas pyogenes</i>	—	3×10^4 <i>Staph. spp.</i>	No growth