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BRIEF COMMUNICATION

INOSITOL CONTENT OF HUMAN SEMEN

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Mann (1951, 1954) showed that meso-inositol constituted a major component of the seminal vesicle secretion. Hartree (1957) found that in the seminal plasma of man, pig and rabbit inositol existed mainly in the free form, but a substantial percentage of the total inositol was in a combined form in that of cattle, horse and sheep. The function of meso-inositol in the secretions of the male reproductive tract is obscure. In contrast to fructose, it does not appear to influence the motility or respiration of spermatozoa, nor does it influence fructolysis. Mann (1954) has suggested that it may play a part in the maintenance of the osmotic pressure in the seminal vesicle secretion. Hartree (1957) has postulated that it may be an intermediate in the conversion of glucose to fructose; a formation of inositol from glucose has indeed recently been reported in rat seminal vesicle and prostrate slices by Imai (1964).

Through the co-operation of Dr H. A. Davidson it has been possible to examine the meso-inositol concentration in the semen of twenty subjects attending a clinic of the Family Planning Association. The samples were deproteinized with 0·3 N-NaOH and 5 % $ZnSO_4$ within 5 hr of ejaculation and estimated for free inositol by the microbiological assay method of Campling & Nixon (1955). At the same time the fructose concentration was determined by the method of Bacon & Bell (1948).

The concentrations of inositol and fructose are shown in Table 1, together with data upon which the fertility of the specimen was assessed by Dr Davidson. The range of values obtained for fructose is in agreement with that found by Harvey (1948) and bore no relationship to the inositol concentrations. The sperm count and the overall assessment of the fertility of the specimen were similarly unrelated to the inositol concentration.

The results presented here indicate that the concentration of inositol in human semen is variable and exceeds that normally found in other body fluids (e.g. that in blood by a factor of approximately 100) and does not correlate with the clinical evaluation of the fertility of the specimen.

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TABLE 1

INOSITOL AND FRUCTOSE CONCENTRATIONS IN HUMAN SEMEN SPECIMENS APPRAISED FOR FERTILITY

Spec. No.	*Last coitus (days)*	*Vol. ejaculate (ml)*	*Sperm count (10^6/ml)*	*Structure abnormality*		*Basic motility (% fully active after 3 hr)*	*Fructose (mg/100 ml)*	*Fructose ejaculated (mg)*	*Free inositol (mg/100 ml)*	*Free inositol ejaculated (mg)*	*Assessed fertility*
				*H** (%)	*M&T** (%)						
9017	4	5·3	0	—	—	—	279	14·8	78	4·1	Subfertile
9061	6	6·5	0·3	—	—	—	519	33·7	50	3·2	Subfertile
9070	7	4·4	34	35	7	20	265	11·7	56	2·5	Subfertile
9079	4	3·0	4·5	32	20	10	360	10·8	51	1·5	Subfertile
9018	8	3·0	30	10	6	20	233	7·0	60	1·8	Borderline
9058	13	2·0	35	27	14	25	28	0·6	150	3·0	Borderline
9060	3	5·2	26	23	11	30	308	16·0	70	3·6	Borderline
9077	7	6·4	25	14	14	20	141	9·0	26	1·6	Borderline
1997	9	5·4	328	3	14	40	333	18·0	88	4·7	Fertile
1998	6	4·2	66	23	15	33	230	9·7	51	2·1	Fertile
9059	12	7·5	124	8	10	33	161	12·1	97	7.3	Fertile
R1	—	2·3	180	15	14	40	381	8·8	84	1·9	Fertile
9071	5	4·0	200	6	4	40	286	11·4	51	2·0	Fertile
R2	2	3·1	236	8	12	50	216	6·7	50	1·5	Fertile
9073	14	6·1	148	15	9	40	188	11·5	46	2·8	Fertile
9075	4	5·2	136	14	7	30	275	14·3	32	1·6	Fertile
9076	7	1·2	600	10	6	40	155	1·9	36	0·4	Fertile
9078	8	5·6	180	20	6	42	144	8·1	104	5·8	Fertile
9080	5	3·7	88	17	12	33	276	10·2	65	2·4	Fertile
9081	7	3·2	70	17	11	50	344	11·0	39	1·2	Fertile
Mean							256	11·4	64	2·7	

* H, M & T refer to head, middle and tail of the sperm.

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