

## Taste Sensitivity to Phenylthiourea and Menstruation \*

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### Introduction

It was suggested that the cyclical changes in the hormonal balance, which is associated to menstruation, could modify the taste sensitivity to phenylthiourea (Hoyme, 1955). Presently it is accepted that taste dimorphism is determined by a main pair of genes, but Hoyme has argued that the taste thresholds for phenylthiourea could be influenced by hormonal changes. This situation has been confirmed by recent investigation (Kaplan et al., 1963) using a different technique.

The purpose of the present paper is to report data on the investigation of taste thresholds for phenylthiourea among women tested both during the menstrual and the non-menstrual periods.

### Material and method

A sample including 100 females was investigated by mean of the Harris & Kalmus' (1949) technique. Each woman was tested twice: during the menstruation and 15 days before or after this period. Among fifty females the first test was conducted during the menstruation (sub-sample M) and among fifty females the first test was conducted before the menstrual period (sub-sample NM).

### Results and conclusion

Table 1 and Fig. 1 shows the distribution of the differences between the taste thresholds determined at the non-menstrual and the menstrual periods. Since the higher numbers of the serial phenylthiourea solutions mean greater dilutions, the positive differences indicate an increased sensitivity at the non-menstrual period. Results presented in Fig. 1 cannot support Hoyme's suggestion. Therefore, the cyclical changes of involution and hyperplasia which are known to occur in the

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thyroid in relation to menstrual cycle is not likely to influence taste sensitivity to phenylthiourea.

As it can be seen in Table 1, the sub-sample M shows a higher frequency of positive values than the sub-sample NM. This situation may perhaps be explained by learning influences as found by Harris and Kalmus (1949) in repetition experiments. Table 2 and Fig. 2 show the distribution of the differences between the taste thresh-

**Tab. 1. Distribution of the differences between the taste thresholds at the non-menstrual and menstrual periods**

Difference	Sub-samples		Total
	M	NM	
-3	1	1	2
-2	4	6	10
-1	6	14	20
0	21	18	39
+1	12	8	20
+2	5	3	8
+3	1	0	1
Total	50	50	100

**Tab. 2. Distribution of the differences between the taste thresholds determined at the 2nd and the 1st test**

Difference	Sub-samples		Total
	M	NM	
-3	1	0	1
-2	4	3	7
-1	6	8	14
0	21	18	39
+1	12	14	26
+2	5	6	11
+3	1	1	2
Total	50	50	100

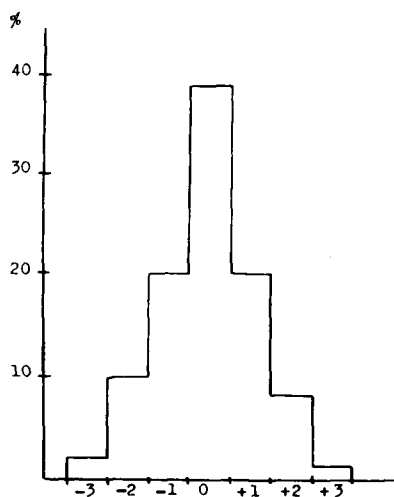


Fig. 1. Histogram of the distribution of the differences between the taste thresholds at the menstrual and nonmenstrual periods among 100 females

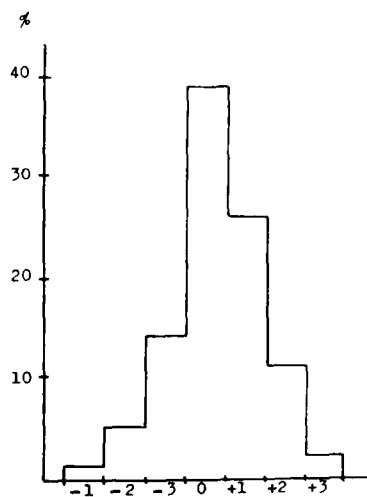


Fig. 2. Histogram of the distribution of the difference between the taste thresholds determined at the 2nd and the 1st test among 100 females

olds determined at the 2nd and the 1st test. In spite of a slight excess of subjects who can taste higher thresholds in the second test, as compared with those who can only taste lower thresholds, the distribution of the differences remains symmetrical around the expected zero value, as expected from casual deviations. It is possible that in the present investigation the learning effect could be real but not significant because of the smallness of the sample.

### Summary

Taste thresholds for phenylthiourea were measured among 100 females, during the menstruation and in non-menstrual period.

The results cannot support any influence of menstruation on taste threshold for phenylthiourea.

### References

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### RIASSUNTO

È stata calcolata la soglia del gusto per la feniltiourea in 100 donne in periodo mestruale e non-mestruale. I risultati non sembrano comprovare l'esistenza di una qualsiasi influenza delle mestruazioni sulla soglia del gusto per la feniltiourea.

### RÉSUMÉ

Le seuil du goût pour la phénylthiourée a été calculé chez 100 femmes, soit en période menstruelle, soit en période non-menstruelle, mais les résultats ne semblent soutenir aucunement l'existence d'une influence des menstruations sur le seuil du goût pour la phénylthiourée.

### ZUSAMMENFASSUNG

Bei 100 Frauen wurde vor und nach der Menstruation die Geschmacksschwelle für Phenylthiourea geprüft. Die Ergebnisse scheinen nicht zu beweisen, dass die Menstruation irgendeinen Einfluss auf die Geschmacksschwelle für Phenylthiourea hat.