

1) Effective thyroxine ratio (ETR): 0.86–1.12 (average 0.946 ± 0.05) for 66 normal subjects, 1.12–1.43 (average 1.228 ± 0.07) for 23 cases with hyperthyroidism, 0.69–0.88 (average 0.804 ± 0.06) for 12 cases with hypothyroidism, 0.78–1.17 (average 0.960 ± 0.08) for 56 cases with non toxic goiter, 0.97–1.11 (average 1.065 ± 0.06) for 4 cases with thyroiditis subacuta, 0.80–0.99 (average 0.924 ± 0.06) for 5 cases with nephrosis, 0.93–1.11 (average 1.013 ± 0.04) for 13 cases of pregnant women, 0.90 and 0.96 for 2 cases of estrogen medication enthyroidism.

The test demonstrated that the ratios obtained with hyperthyroid, enthyroid and hypothyroid

persons very slightly overlapped. ETR in normal subjects were differentiated from those with hyperthyroidism and hypothyroidism. ETR was a high degree of correlation with Res-O-Mat free thyroxine index more than T_7 value.

2) The reproducibility with the same sera was satisfiable.

3) ETR varied as the duration of incubation prolonged and it was considered that the incubation at room temperature for 60 min was the most stable and practical.

4) ETR was influenced by temperature. Res-O-Mat Kit doesn't need rinsing of resin and evaporation of alcohol by N_2 gas and requires extremely simple procedure.

Clinical Experience with Res-O-Mat ETR Test

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A clinical trial of the new thyroid function test, Res-O-Mat ETR, was attempted. This new test can simultaneously consider both the total serum T_4 concentration and the binding capacity of TBG.

The ETR ranged from 0.86 to 0.99 in healthy subjects without any thyroid disorders. The group of untreated patients with hyperthyroidism revealed the ETR ranging from 1.09 to 1.44 whereas the ETR ranged from 0.76 to 1.16 for the euthyroid subjects who had been treated with antithyroid drug or surgery for hyperthyroidism. The ETR ranged from 0.68 to 0.83 in both untreated and T_3 administered patients

with hypothyroidism. In the group of pregnant women, the ETR ranged from 0.86 to 1.04 and these value were similar to those of the healthy non-pregnant subjects.

Thus, except for cases of T_3 administration, the ETR was found to well parallel the symptomatologic manifestations of thyroid disorders, even in cases with pregnancy. Furthermore, there were significant correlation between the ETR and conventional thyroid function tests such as BEI, Triosorb and free thyroxine index. These results, therefore, emphasize usefulness of the new test, Res-O-Mat ETR, in the clinical assessment of thyroid function.