and an alternative appropriate normal ranges had to be defined. Thus, the range of 0.87–1.10 was arbitrarily selected by inspections as the best euthyroid ETR range. By using this euthyroid range, the ETR values gave 97.1% accuracy in diagnosing hypothyroid, euthyroid and hyperthyroid subjects. Similarly, the euthyroid T₄ range giving maximum discrimination between hypothyroid, euthyroid and hyperthyroid subjects was 4–13 μg/100 ml. The diagnostic accuracy was 91.6% in this range, because of including the patients with abnormal TBG capacities in euthyroid group. The results indicated that ETR values were the useful indicator of thyroid function and that it was possible to find out the patients with abnormal TBG capacities, by means of determining T₄ simultaneously.

**Serum Reverse-Triiodothyronine (r-T₃) Level in the Aged**

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Serum level of triiodothyronine was reported to be decreased in some aged people. In order to elucidate the metabolism of thyroidal hormones, serum r-T₃, T₃, T₄ and TSH levels were measured in both adult and aged people.

Materials and Methods: Serum r-T₃, T₃, T₄ and TSH were measured in 16 aged extrathyroidal patients, from 66y.o. to 91 y.o. (Group-II) and 9 normal subjects, from 27 y.o. to 48 y.o. (Group-I). The r-T₃ was measured with RIA-kit of HYPO-laboratory. TSH and T₃ were determined by RIA-method and T₄ by CPBA-method.

Results: Serum T₄ and T₃ levels in Group-II (T₄: 72±41 ng/ml, T₃: 0.70±0.29 ng/ml) showed lower values than those in Group-I (T₄: 87±11 ng/ml, T₃: 1.41±0.15 ng/ml). On the other hand, serum r-T₃ levels in Group-II (0.58±0.28 ng/ml) were significantly higher than those in Group-I (0.355±0.33 ng/ml). The r-T₃/T₃ ratio in Group-I (0.24±0.04) remained to be constant, while the r-T₃/T₃ ratio in Group-II (1.12±0.89) showed higher value on the average with large variation from case to case. In all patients of Group-I with serum r-T₃ level more than 0.5 ng/ml, the serum T₃ level remained less than 1.0 ng/ml. Ratio of r-T₃/T₄ in Group-I (0.00417±0.00068) were lower than those in Group-II (0.0098±0.004), and T₃/T₄ ratio in Group-I (0.0172±0.077) were higher than those in Group-II (0.0082±0.0058).

Conclusion and comments: Serum T₃ and T₄ levels in the aged patients showed lower values than those in normal adults. On the other hand, serum r-T₃ level in the aged patients was remarkable higher than that in the normal adults. These facts might suggest that the metabolic degradation of T₄ into r-T₃ could be more dominant in the elderly people than control, while, in control, T₄ could be predominantly metabolized in to T₃. The effect of chronic illness in elderly patients upon thyroxine metabolism should be further evaluated.

**Determination of Tissue T₃ and T₄ Concentrations**

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Recently it has been demonstrated that conversion of T₄ to T₃ in the peripheral tissue plays an essential role in the biological effectiveness of thyroid hormone. It is, therefore, important to determine the tissue T₃ and T₄ concentrations for the study on the metabolism and the effects of