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METHODOLOGY: DEVELOPMENTS AND TRENDS

by

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Laboratory methods currently used in diagnosis of endocrinological disturbances can be classified in following way:

1. Screening methods:

- (a) direct estimation of the hormone itself, e.g. TSH, T₄, or its metabolites, e.g. 17-KS, 17-OHCS, VMA
- (b) estimation of the concentration of substances controlled by the hormone, e.g. glucose, cholesterol, calcium
- (c) measurement of the capacity of transport proteins, e.g. resin T₃ uptake.

2. Definitive methods used for more or less exact estimation of the hormone, e.g. T₄, T₃ TSH, cortisol etc., or its precursor, e.g. 17-alfa-progesterone, or its degradation products, e.g. pregnanediol, pregnanetriol, pregnanetriolon.

3. Stimulation tests used for dynamic evaluation of the function of endocrine glands and their regulatory mechanisms, e.g. TRH-, LHRH-test, insulin induced hypoglycaemia etc. The methods of the 2nd and the 3rd group, based mainly on the RIA, fluorometry, gas-liquid chromatography and mass spectrography now play the most important role in routine endocrinological diagnosis.

New techniques based, for example, on the hormone receptors estimation are still being introduced in laboratory practice.

All the above-mentioned methods, usually expensive and complicated, can preferably be used in the diagnosis of carefully selected cases.

There is, however, an increasing trend to develop the first group of tests which should be simple in their performance and relatively cheap. In this way it will be possible to carry out on a large scale, a programme of endocrinological prophylactic mass investigations especially of newborns e.g. for hypothyroidism. The wide-scale implementation of this programme will allow very early detection of disturbances of endocrinological functions and give a chance to compensate them by proper treatment introduced as early as possible. In this way the negative social consequences of the disturbances may be eliminated.

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