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Ernst Grote

**The CNS Control
of Glucose Metabolism**

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With 95 Figures

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Foreword

In the clinic at Giessen during the last few years there has been an extensive programme of research into the various aspects of lesions of the diencephalon and brain stem and the associated autonomic and metabolic disturbances. As a continuation of this research programme Ernst Grote has investigated the central neuronal and hormonal factors acting on the peripheral regulation of glucose metabolism and their diverse inter-relationships. This research was made possible not only by the availability of well-documented clinical and experimental material with primary and secondary lesions of the hypothalamus and brain stem, but also by the advances in clinical endocrinology and the development of radio-immuno-assays.

By continuous systematic investigation of the basic values and their reaction to stress-tests, as well as to trauma and operation, he has elucidated the basic facts of the central and peripheral mechanisms which are concerned in the regulation of glucose, and also their disturbances.

Of particular significance are his descriptions and interpretations of the characteristic hypothalamic syndromes, as combinations of hyperglycaemia, hyperinsulinaemia and hyperglucagonaemia; different syndromes are produced by lesions at various levels of the brain stem and in central brain death. From this starting point it was possible to develop a rational treatment of this hormonal dysregulation by means of somatostatin.

This work represents the first basic investigation into the central control of glucose metabolism. It has contributed important knowledge about the control of central neuronal and hormonal regulation and dysregulation in the region of the hypothalamus and brain stem. In addition, he has created the prerequisites for future research in the field of energy metabolism.

Giessen, April 1981

HANS WERNER PIA

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