Introductory Remarks

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Saskatoon

It is a pleasure for me to be here in Baden taking part in this conference on such a topical subject and in such pleasing surroundings; I thank Prof. Lechner and the organising committee for inviting me. My introductory comments will be very brief since we have to squeeze into the program an additional presentation.

Advances in computer science and applied mathematics in the last 30 or so years have aided considerably in the development of several new physicochemical scanning and imaging techniques. These include, amongst others, X-ray computerized tomographic (CT) scanning, digital subtraction radiography, heavy ion imaging, ultra sound, proton nuclear magnetic resonance (NMR) imaging and spectroscopy, single photon tomography and positron emission tomography (PET). In this final session of the conference we shall be considering only the latter three because in addition to their utility in clinical diagnosis and in anatomical/morphological studies, they can also be used in in vivo biochemical functional studies such as investigations of carbohydrate metabolism, local blood flow, oxygen consumption, pH measurement, blood brain barrier permeability, receptor pharmacology and neurotransmitter metabolism.

In addition to our improving understanding of disorders such as Parkinson's disease, epilepsy, stroke and Huntington's chorea we will soon be able to add amyotrophic lateral sclerosis, senile dementia, schizophrenia, depression and aging since advances in these conditions seem imminent.

As further developments ensue in instrumental design, tracer modelling, experimental design including interpretation and quantitation, and in radiopharmaceuticals, we can expect additional progress and improved understanding of normal brain processes such as cognition, audition, vision and movement.

We shall be hearing of some of these advances this afternoon.

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