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CYCLOTRONS AND POSITRON EMITTING RADIOPHARMACEUTICALS

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INTRODUCTION

Positron Emission Tomography is at the present time in a growth phase with an increasing number of clinical facilities showing interest in the use of PET in routine practice. The consequences of this fact, not only for the technology of PET but also for cyclotron application and radiopharmaceutical production, necessitate a review of what is possible given today's state-of-the-art.

MASTER

We are now approaching the end of the first decade in which we witnessed the maturing of the three essential components of the PET methodology: radiotracers, positron emission tomographs and tracer kinetic models. As a result, from 1976 to the present, the number of centers acquiring the instrumentation and core team of scientists applying PET to problems in the health sciences has grown exponentially. In the U.S. in 1979, the National Institutes of Health funded the establishment of several regional centers and embarked on a large PET program of its own. All of this was based on the assumption that PET would be able to test a number of important scientific hypotheses in the living human body, that it will provide the means of quantitatively describing disease as well as normal function at the molecular level, and that its use would provide guidance in disease therapy. That PET is already making a contribution in choosing the treatment of certain disease (for example epilepsy, stroke, heart disease) has been recently recognized by the establishment

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