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0521592569 - Tinnitus Retraining Therapy: Implementing the Neurophysiological Model

Pawel J. Jastreboff and Jonathan W. P. Hazell

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## Tinnitus Retraining Therapy Implementing the Neurophysiological Model

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Tinnitus and oversensitivity to sound are common, and hitherto incurable, distressing conditions that affect about 17% of the population. Pawel Jastreboff's identification of the mechanisms by which tinnitus and decreased sound tolerance occur has led to a new and effective treatment called Tinnitus retraining therapy (TRT). Audiologists, ENT specialists, psychologists and counsellors around the world currently practice this technique, with success rates of around 80%.

TRT, the treatment developed by the authors from the model, has already proved to be the most effective and most widely practiced tinnitus treatment worldwide. This book presents a definitive description and justification for the Jastreboff neurophysiological model of tinnitus, outlining the essentials of TRT, reviewing the research literature supporting its claims and providing an expert critique of other current therapeutic practices.

**Pawel Jastreboff** is Professor and Director of the Tinnitus and Hyperacusis Center in the Department of Otolaryngology at Emory School of Medicine, Atlanta, USA. He is the author of the neurophysiological model of tinnitus and developer of tinnitus retraining therapy.

**Jonathan Hazell** is Honorary Consultant Surgeon at the University College London Hospitals and Director of the Tinnitus and Hyperacusis Centre in London. He was the first to apply Pawel Jastreboff's neurophysiological model of tinnitus to clinical practice.

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# Tinnitus Retraining Therapy

Implementing the Neurophysiological Model

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**To our wives Margaret and Rena, whose continuous encouragement, criticism and contributions have made this book a reality.**

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## Preface

A number of books written in the past on the subject of tinnitus were aimed at readers who had an advanced knowledge of physiology of the auditory system. They were often difficult to understand, even for professionals from other medical fields, and frequently for audiologists as well. They were much too complex for the average patient, who searched the professional literature to find answers and possible solutions to their problems. Most of these books had chapters written by different authors, who each present their own approach to tinnitus. We believe that there is a need for a book focused at presenting a specific tinnitus treatment in a coherent and yet critical way.

Accordingly, this book does not cover all the different theories and managements of tinnitus, but it does present a singular and novel approach, tinnitus retraining therapy (TRT), against a background of other treatments without attempting to describe them in detail. Chapter 1 provides the reader with definitions of tinnitus and decreased sound tolerance. Chapter 2 describes the neurophysiological model of tinnitus, which forms the theoretical basis for TRT, and Ch. 3 presents TRT and specific aspects of the TRT protocol. Chapter 4 discusses the outcome of TRT in clinical practice. Chapter 5 introduces possibilities for tinnitus prevention and Ch. 6 presents a critical overview of the approaches presently used to treat tinnitus, pointing out their strengths and limitations. Finally, Ch. 7 summarizes the book and presents our conclusions.

At the end of the 1980s, P. J. Jastreboff introduced the neurophysiological model of tinnitus (first published in 1990 (Jastreboff, 1990)), and a basic version of its clinical implementation, presently known as TRT. The model and its clinical implementation were based on scientific studies on the development of an animal model of tinnitus (Jastreboff *et al.*, 1988), experiments on the mechanisms of tinnitus (Jastreboff & Sasaki, 1986, 1994), as well as detailed study of the literature. The ideas were first presented to Jonathan Hazell and Jacqui Sheldrake in 1988, who made TRT the focal point of their joint clinical work with tinnitus patients, and they were first to implement it in clinical practice. Immediately, it became evident



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that patients were improving much more rapidly than with a program of “partial masking” and coping strategies, that had been employed previously. TRT has been further refined by the authors during the following years, both in the USA and the UK, and undergoes continuous modifications aimed at shortening the time needed for treatment and enhancing its effectiveness.

The neurophysiological model of tinnitus, on the one hand, has been rigorously tested by its constant exposure to professionals and patients, and to our knowledge the model has never been challenged. TRT, on the other hand, like many other new treatments, has been vigorously attacked and questioned. The important message is that the model appears very robust, while TRT, like other treatments, is continuously evolving and improving with time. Many professionals around the world now use TRT, finding the best way of implementing it in different medical systems and cultures to provide best help to tinnitus and hyperacusis sufferers.

We have attempted to present the neurophysiological model in a clear way, but the principles on which it is based and its mechanisms are complex and their understanding requires knowledge from various areas of neuroscience. As a good understanding of the model is crucial for optimal implementation of TRT and achieving control of tinnitus, a special effort has been made to provide explanation for various concepts of neuroscience, mechanisms and processes involved in the model. Furthermore, we have illustrated these concepts with diagrams and parables from everyday life to facilitate their comprehension. Nevertheless, the readers may need to supplement this text with additional readings, suggested in the references, depending on their level of knowledge of neuroscience and audiology.

There are few, if any, health sciences or medical methods that can be learned from a book alone. TRT is no exception, and we know from our own teaching of the subject during TRT courses that the proper use of TRT only comes from a combination of a full understanding of the theory followed by significant practical experience of its use with patients. Reading this book will not enable you to practice TRT. Rather we hope that it will enthuse professionals to learn more about TRT and encourage patients to seek TRT as a primary treatment for their tinnitus and hyperacusis.

Throughout the book, we attempt to write each chapter so that it can be read independently from the others. At the beginning of each chapter, there is a short summary of information contained in the chapter, together with a list of main conclusions. Through the text, extra comments and descriptions of more complex issues are presented in footnotes. To ease comprehension and facilitate browsing through the book, highlights of the text are presented on the margins with a shaded background. Finally, the Glossary provides the definition of terms used in the text and a list of abbreviations.

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