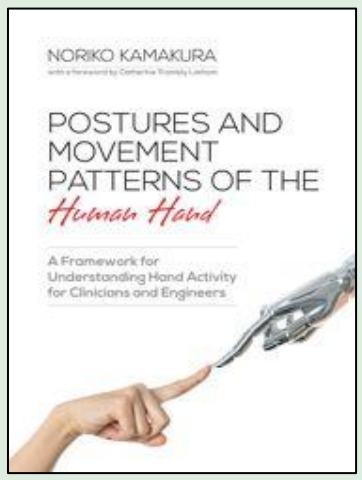
[BOOK REVIEW]



TITLE OF THE BOOK

Postures and Movement Patterns of the Human Hand. A Framework for Understanding Hand Activity for Clinicians and Engineers

INFORMATION ON THE AUTHOR AND FOREWORD WRITER

Author: Noriko Kamakura
Foreword by Catherine A. Trombly Latham
This book was authored by Niriko Kamakura (September 29, 1939 – June 16, 2023) a practitioner, academic leader and researcher in occupational therapy. Kamakura was professor emerita of occupational therapy at Hiroshima and at the International University of Health and Welfare in Japan.
Catherine Trombly Latham (Sc.D., OT, FAOTA) professor emerita, college of Rehabilitation Sciences: Sargent College, Boston University, present the foreword and describes the book as a gift to rehabilitation researchers and practitioners.

INFORMATION ON THE BOOK

Postures and movement patterns of the human hand was first published in 2022 by Brown Wlaker Press / Universal Publishers, Inc., Irvine, Boca Raton, United State of America, and is available as a paperback (ISBN: 978 – 1 – 59942 – 630 – 3) or e-book (ISBN: 978 – 1 – 59942 – 631 – 0). It costs R650 and spans 103 pages with many useful and informative figures.

HOW TO CITE THIS REVIEW

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Postures and Movement Patterns of the Human Hand. *A Framework for Understanding Hand Activity for Clinicians and Engineers*

THE REVIEW

In the preface Kamakura reflected on the research she conducted from the 1970s to the 1980s investigating postures and movements of the human hand. This research was focused on the question: "*How do people use their hands*?". The research team gave healthy subjects tasks to do and recorded and analysed what they did. This work culminated in the "XYZ notation" used to better understand hand movements. The results were published, but mostly in Japanese with one notable study in English [1].

In 2019 Kamakura took up the project again and as a result the book offers a groundbreaking and disciplined approach to understanding the full range of hand movements, far beyond the commonly studied hand grips. The book is structured across seven chapters. The first two chapters address how we use our hands and provides a history of investigations on hand postures and movements. Chapters three and four explore the classification of hand postures. The remaining three chapters depict the "XYZ notation" for recording in hand movement as well as the patterns of in-hand movement, concluding with a framework for understanding hand activity. This book delves into the intricate and often overlooked aspects of hand function, including non-prehensile postures and thumb and finger movements, providing a comprehensive framework for analysing the diverse activities of the human hand. Non-prehensile function is defined on page 43 to be: "*All static use of the hand other than prehension. This applies to the static hand whether or not it is in contact with an external object*".

Drawing on the thousands of observations done earlier, the author reviewed a century's worth of research, highlighting the disproportionate focus on grips and the lack of attention to other vital hand movements. By introducing distinct taxonomies for prehension, non-prehensile postures, and thumb-finger movements—encoded through a unique "XYZ notation"—the book offers a systematic methodology for conceptualising and studying hand function. This framework not only enhances the understanding of ordinary hand activity but also paves the way for more precise observations in fields such as occupational therapy, prosthetics, robotics, and biomedical engineering.

What sets this book apart is its meticulous attention to detail and its capacity to present complex, everyday hand functions in a way that is both accessible and valuable for professionals in diverse fields. Whether for designing artificial hands or improving rehabilitation strategies for hand disabilities, this work provides readers with the tools to analyse and appreciate the full spectrum of hand activity.

REFERENCE

1. Kamakura N et al. Patterns of Static Prehension in Normal Hands. The American Journal of Occupational Therapy. 1980 [accessed 2024 Dec 10];34(7):437–445. /ajot/article/34/7/437/227/Patterns-of-Static-Prehension-in-Normal-Hands. https://doi.org/10.5014/AJOT.34.7.437