



Universiteit
Leiden
The Netherlands

Impact and benefits of early hearing screening

Korver, A.M.H.

Citation

Korver, A. M. H. (2010, October 8). *Impact and benefits of early hearing screening*. Retrieved from <https://hdl.handle.net/1887/16023>

Version: Corrected Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/16023>

Note: To cite this publication please use the final published version (if applicable).

IMPACT AND BENEFITS OF EARLY HEARING SCREENING

MARLEEN KORVER

The work reported in this thesis is part of the DECIBEL-study. The research was performed at the department of Pediatrics in cooperation with the department of Oto-rhinolaryngology and the department of Clinical Epidemiology of the Leiden University Medical Center, the Netherlands.

The DECIBEL-study was financially supported by the Willem-Alexander Children's Fund, the Heinsius-Houbolt Fund, the Wieger Wakinoerfund and the department of Oto-rhinolaryngology of the Leiden University Medical Center.

The printing of this thesis was sponsored by: the department of Pediatrics, the department of Oto-rhinolaryngology, Stichting Atze Spoor Fonds, J.E. Jurriaanse Stichting, de Nationale Hoorstichting/Sponsor Bingo Loterij, Atos Medical BV, Beltone, Bernafon, Beter Horen, deciBel Hoortoestellen, EmiD audilogische apparatuur, Entemed, Oticon, Specsavers and Trinitie.

IMPACT AND BENEFITS OF EARLY HEARING SCREENING

PhD Thesis, University of Leiden, The Netherlands

© A.M.H. Korver, Leiden University Medical Center, 2010

All rights reserved. No part of this thesis may be reproduced or transmitted in any form or by any means, without prior permission of the author, or when appropriate, of the publishers of the publications.

LAY-OUT & PRINT BY Koninklijke Van Gorcum, Assen.

IMPACT AND BENEFITS OF EARLY HEARING SCREENING

Proefschrift

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus prof.mr. P.F. van der Heijden,
volgens besluit van het College voor Promoties
te verdedigen op vrijdag 8 oktober 2010
klokke 13.45 uur

door

ANNA MARIA HELENA KORVER

geboren te ECHELD in 1979

PROMOTIECOMMISSIE

PROMOTORES

PROF. DR. H.M. OUDESLUYS-MURPHY

PROF. DR. IR. J.H.M. FRIJNS

PROF. DR. F.W. DEKKER

OVERIGE LEDEN

PROF. DR. P. VAN DIJK (Universitair Medisch Centrum Groningen)

PROF. DR. A.A. KAPTEIN

DR. H.L.M. VAN STRAATEN (Isala Klinieken, Zwolle)

DR. H.P.M. KUNST (Universitair Medisch Centrum St. Radboud, Nijmegen)

The DECIBEL-study, of which most of the studies presented in this thesis are part, was approved by the Medical Ethics Committee of the Leiden University Medical Center. The Dutch Foundation for the Deaf and Hard of Hearing Child (NSDSK) received permission from the youth health care organisations for anonymous analysis of their information on the newborn hearing screening results of the 2003-05 cohort. The privacy committee of the neonatal intensive care unit (NICU) hearing screening program gave permission for anonymous verification of the NICU-graduates.

CONTENTS

CHAPTER 1	INTRODUCTION	6
CHAPTER 2	WHAT CAUSES PERMANENT CHILDHOOD HEARING IMPAIRMENT? ANALYZING THE PROPORTIONS ATTRIBUTED TO THE AETIOLOGY	14
CHAPTER 3	DECIBEL-STUDY: CONGENITAL CYTOMEGALOVIRUS INFECTION IN YOUNG CHILDREN WITH PERMANENT BILATERAL HEARING IMPAIRMENT IN THE NETHERLANDS	30
CHAPTER 4	AWARENESS OF CONGENITAL CYTOMEGALOVIRUS AMONG DOCTORS IN THE NETHERLANDS	42
CHAPTER 5	NATIONAL STUDY ON NEWBORN HEARING SCREENING: PROGRAM SENSITIVITY AND CHARACTERISTICS OF CHILDREN UNIDENTIFIED	52
CHAPTER 6	EARLY HEARING SCREENING PROGRAMS AND EARLY START OF INTERVENTION: HOW EARLY IS EARLY?	66
CHAPTER 7	THE EARLIER THE BETTER? DEVELOPMENTAL OUTCOME AFTER EARLY VERSUS LATER HEARING SCREENING IN THE NATIONAL DECIBEL-STUDY	76
CHAPTER 8	GENERAL DISCUSSION AND CONCLUSION	92
CHAPTER 9	SAMENVATTING VOOR DE NIET MEDISCH ONDERLEGDE LEZER	104
APPENDICES	References	111
	List of abbreviations	121
	The DECIBEL-collaborative study group	125
	Curriculum Vitae	129
	List of publications	133