

CONTENTS

1. Introduction	9
1.1. Perinatal distress	10
1.2. Late consequences of perinatal distress	12
1.3. Incidence of perinatal morbidity.	13
1.4. Recent measures for decreasing the danger of perinatal distress and of its consequences	16
1.5. Aim and design of the study	19
1.6. Brain development — the relevance of the animal model to human problems	20
1.7. Pyritinol, pharmacological and clinical review	22
2. Experiments in Rats	26
2.1. Nutritional distress in developing rats — experimental procedure	27
2.2. Body, brain and muscle growth	28
2.3. Behaviour	31
2.4. Learning ability	35
2.5. CNS excitability	38
2.6. Biochemical and metabolic studies	42
2.7. Pyritinol treatment in adult rats protein-malnourished in early life	47
2.8. Discussion and conclusions	48
3. Clinical Study (perinatological part)	52
3.1. Principles of selecting newborns for the study	54
3.2. General characteristics of the treated and control group	56
3.3. Prenatal history of both groups	58
3.4. Intranatal conditions of both groups	61
3.5. Postnatal conditions of both groups	65
3.6. Clinical disorders of the newborns during the intensive care period	69
3.7. Biochemical disturbances of the newborns	74
3.8. Essential treatment of both groups	77
3.9. Schedule of pyritinol treatment	80

4. Clinical Study (neurological part)	81
4.1. Principles of neurological evaluation	83
4.2. Neurological evaluation of both groups in the 1st trimenon	84
4.3. Neurological evaluation of both groups in the 2nd trimenon	87
4.4. Neurological evaluation of both groups in the 3rd trimenon	89
4.5. Neurological evaluation of both groups at the end of the 1st year.	91
4.6. Final results in both groups	92
4.7. Rehabilitation and other therapy in both groups	95
4.8. Case histories of six high-risk infants from both groups	96
4.9. Children with brain damage in whom pyritinol therapy was started at a higher age	99
4.10. Discussion of clinical results	103
5. General Discussion and Conclusions	108
6. Summary (English, German, Spanish)	112
7. References	118