ZINC METABOLISM IN CONNECTIVE TISSUE DISEASES

Thesis
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PEDIATRICS

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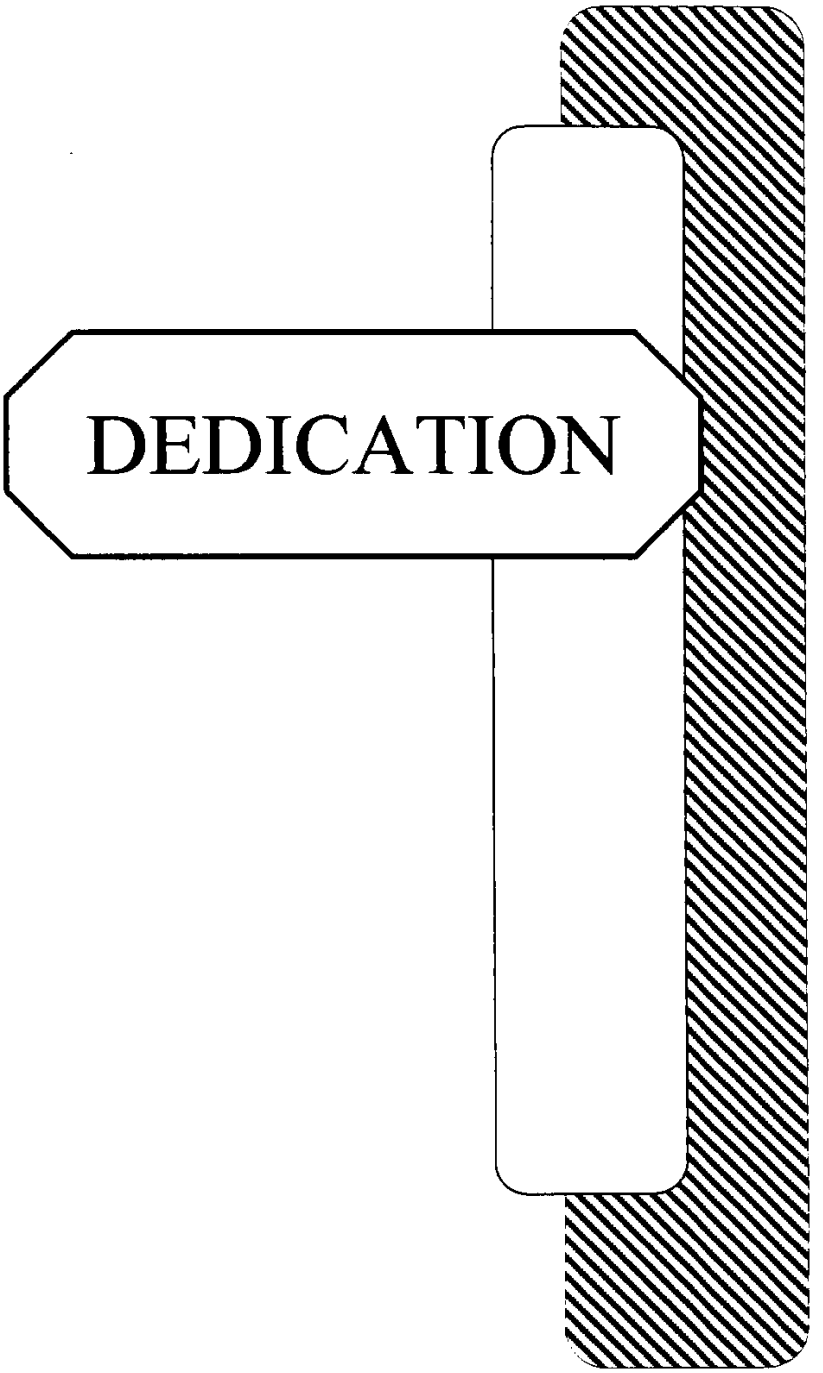

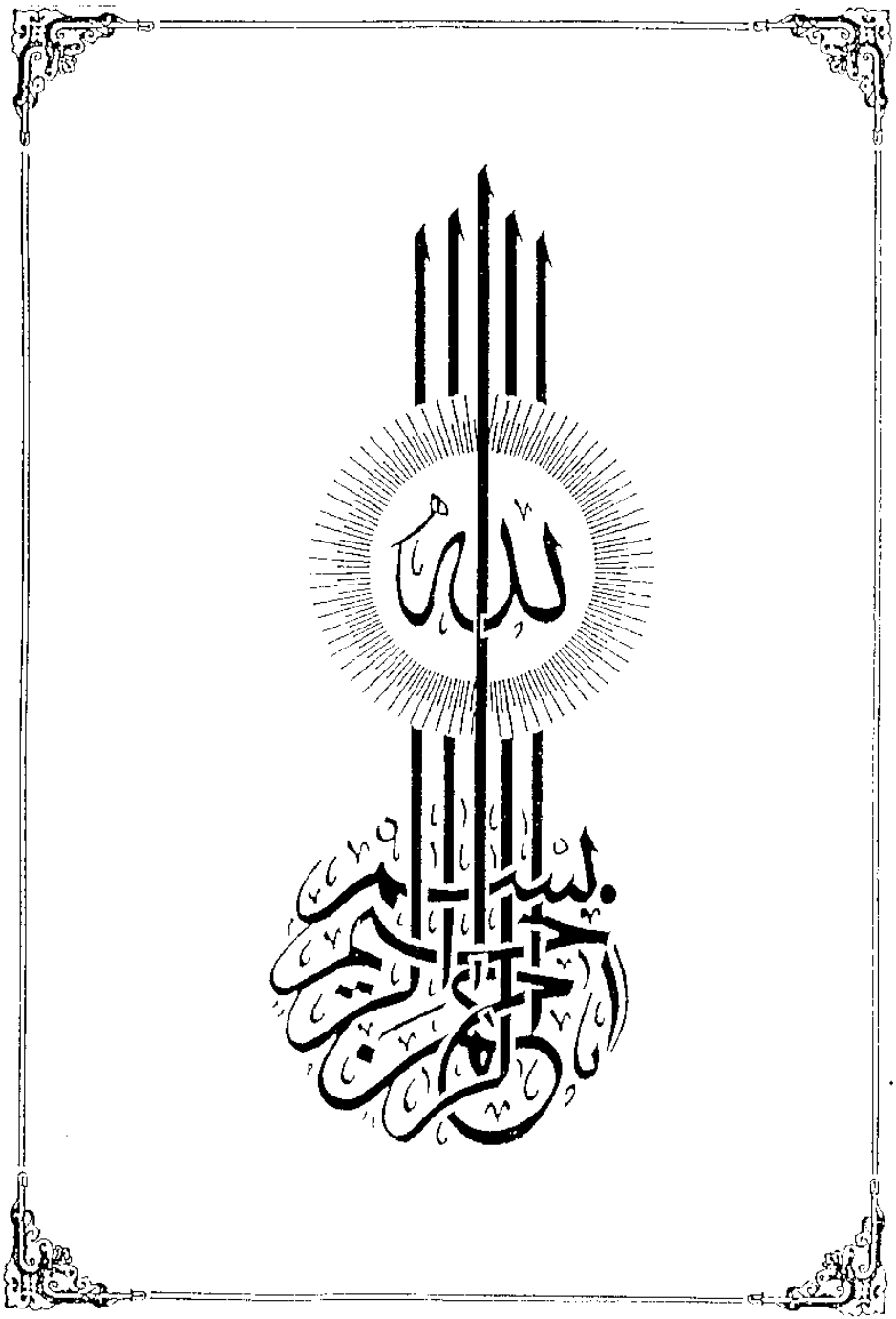

DEDICATED TO MY PARENTS

AND MY

HUSBAND

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Shereen Saad El-Sayed.

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List of Abbreviations

AECA:	Anti endothelial cell antibody
AIDS:	Acquired immunodeficiency syndrome
APS:	Antiphospholipid syndrome
ARDS:	Adult respiratory distress syndrome
AS:	Ankylosing spondylitis
CNS:	Central nervous system
Cr. Clearance:	Creatinine clearance
CRIP:	Cystein-rich intestinal protein
CTD:	Connective tissue diseases
EAR:	Estimated average requirements
FSH:	Follicle-stimulating hormone
GIT:	Gastrointestinal tract
HDL:	High density lipoproteins
IgA:	Immunoglobulin A
IgG:	Immunoglobulin G
IL-1:	Interleukin-1
IGM:	Immunoglobulin M
KP:	Klepsiella-pneumoniae
LH:	Leutinizing hormone

LHRH:	Leutinizing hormone releasing hormone
LRNT:	Lower reference nutrient intake
MCTD:	Mixed connective tissue disease
Mg/dl:	Milligram per deci-liter
NS:	Non-significant
O_2:	Oxygen
PEM:	Protein energy malnutrition
RA:	Rheumatoid arthritis
RDA:	Recommended dietary allowance
RNI:	Reference nutrient intake
SD:	Standard deviation
SIRS:	Systemic inflammatory response syndrome
SLE:	Systemic lupus erythematosus
TNF:	Tumour necrosis factor
UK:	United Kingdom
USA:	United states of America
µg/dl:	Micro-gram per deci-liter
VDRL:	Venereal disease and research laboratory test
Zn:	Zinc

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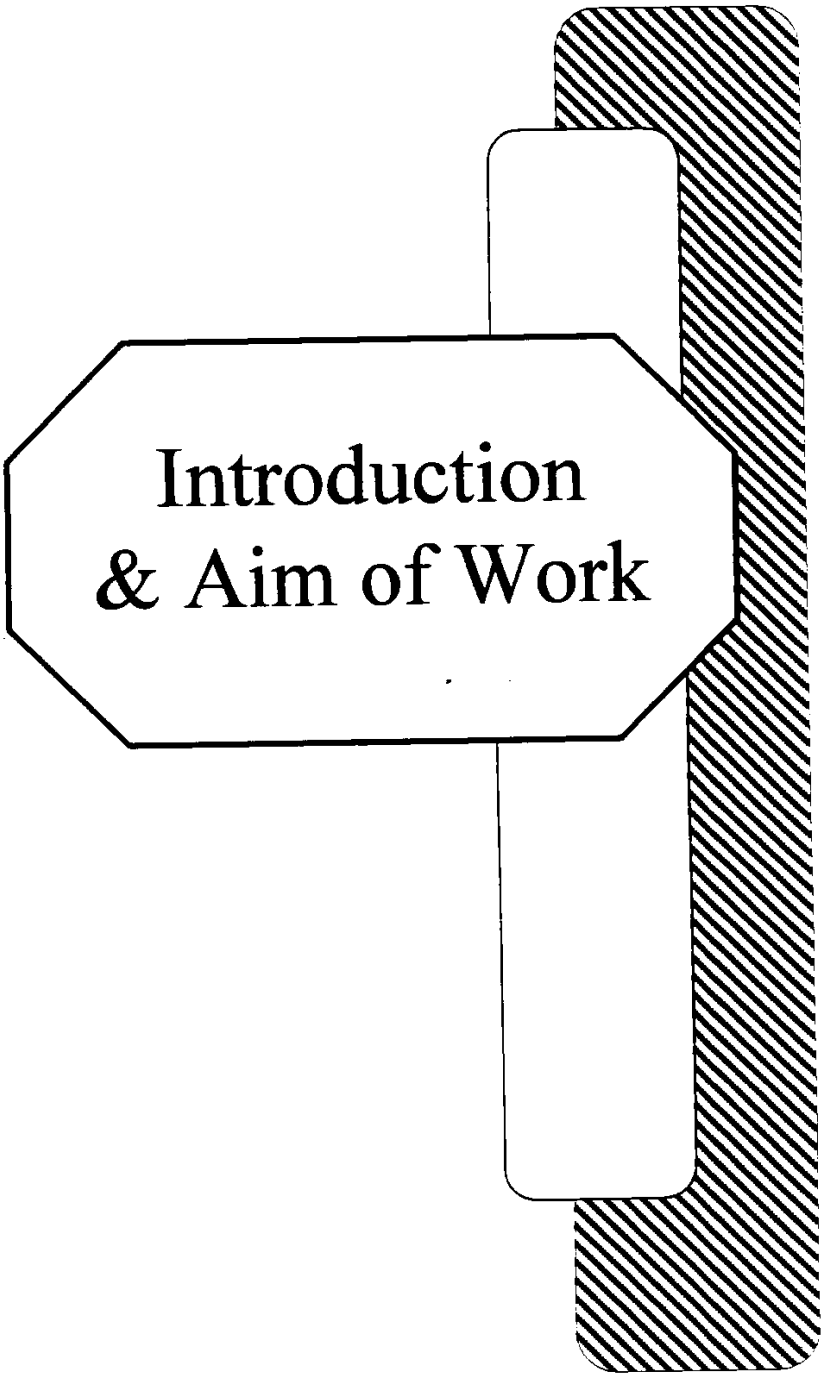

INTRODUCTION AND AIM OF WORK

Zinc is involved in many functions of immune system *(Schlesinger et al., 1993)*, and both zinc deficiency and its excess disturb the function of the immune cells *(Baginiski, 1990)*. Zinc deficiency increases the susceptibility of animals to a number of bacterial, viral and parasitic challenges *(Keen and Gershwin, 1990)*. Also it causes decreased cellular multiplication with decreased number of T and B cells produced during the testing phase as well as during antigenic stimulation. Lymphocyte count is reduced with a significant reduction in the proportion of T helper to T suppressor cells *(Chandra and Chandra, 1986)*.

Zinc participates in the systemic and intracellular control and integration of mechanisms of major metabolic pathways involving protein, carbohydrates, energy, nucleic acids and lipids, haem synthesis, turnover of connective tissue, gene expression, tissue synthesis and embryogenesis *(Aggett, 1994)*.

Rheumatoid arthritis is a chronic inflammatory arthropathy that can affect most joints and has manifestations in many organs other than the locomotor system. Despite progress in the research of its epidemiology and immunogenetics, the etiology of rheumatoid arthritis is still unknown and its treatment is far from satisfactory *(Naveh et al., 1997)*.

Systemic lupus erythematosus is an autoimmune disease characterized by immune dysregulation that results in the production of autoantibodies, generation of circulating

pathological hallmark of SLE is the recurrence of widespread and diverse vascular lesions *(Gleichmann et al., 1982)*.

Trace elements as zinc have been suggested to influence the pathogenesis and therapy of inflammatory joint diseases *(Naveh et al., 1997)*. The purpose of this study is to investigate the metabolic handling of zinc in children suffering from various connective tissue diseases and to correlate zinc status among these patients with disease type and activity.