

1. Record Nr.	UNISA996213220603316
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Titolo	Vitamins [[electronic resource] ] : their role in the human body // G.F. M. Ball
Pubbl/distr/stampa	Oxford, : Blackwell Science, 2004
ISBN	1-280-21343-4 9786610213436 0-470-79017-2 0-470-77457-6 1-4051-4810-1
Descrizione fisica	1 online resource (450 p.)
Disciplina	612.399 613.2/86 613.286
Soggetti	Vitamins - Physiological effect Vitamins in human nutrition Vitamines en la nutrició humana Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Contents; 8.7 Immunoregulatory properties; 8.11 Toxicity; Further reading; Foreword; Preface; 1 Historical Events Leading to the Establishment of Vitamins; 1.1 Introduction; 1.2 Early studies of nutritionally related diseases; 1.3 Experiments on formulated diets; 1.4 Naming of the vitamins; Further reading; References; 2 Nutritional Aspects of Vitamins; 2.1 Definition and classification of vitamins; 2.2 Nutritional vitamin deficiency; 2.3 Stability and bioavailability of vitamins; 2.4 Vitamin requirements; Further reading; References; 3 Background Physiology and Functional Anatomy 3.1 Movement of solutes across cell membranes and epithelia 3.2 The blood-brain, blood-cerebrospinal fluid and placental barriers; 3.3 Functional anatomy of the small and large intestine, liver and kidney; 3.4 Digestion and absorption; 3.5 Glucose transport; 3.6 Digestion, absorption and transport of dietary fat; 3.7 Neural and endocrine

communication systems; 3.8 Structure of bone and its growth and development; 3.9 Cell proliferation; Further reading; References; 4 Background Biochemistry; 4.1 Major degradation pathways in which B-group vitamins are involved as coenzymes  
4.2 Amino acid utilization  
4.3 Defences against free radicals and other reactive species; 4.4 Haemostasis; 4.5 Atherosclerosis; Further reading; References; 5 Background Immunology; 5.1 General features of the immune system; 5.2 Innate immunity; 5.3 Inflammation; 5.4 Acquired immunity; 5.5 Cytokines; 5.6 Hypersensitivity; 5.7 Immune suppression; 5.8 Neuroendocrine modulation of immune responses; Further reading; References; 6 The Genetic Control of Protein Synthesis and its Regulation by Nuclear Hormone Receptors; 6.1 Functional structure of DNA; 6.2 Role of RNA in protein synthesis  
6.3 Gene expression  
6.4 Mutation and polymorphism; 6.5 Basal transcription; 6.6 Regulated transcription; 6.7 Jun, Fos and the AP-1 complex; 6.8 Nuclear hormone receptors as regulators of protein synthesis; Further reading; References; 7 Vitamin A: Retinoids and Carotenoids; 7.1 Historical overview; 7.2 Chemistry and biological functions; 7.3 Dietary sources; 7.4 Absorption, transport and metabolism; 7.5 Nutritional factors that influence vitamin A status; 7.6 The role of vitamin A in vision; 7.7 Retinoids as regulators of gene expression; 7.8 Effects of vitamin A on the immune system  
7.9 Role of vitamin A in bone metabolism and embryonic development  
7.10 Vitamin A and cancer; 7.11 Vitamin A deficiency and toxicity; Further reading; References; 8 Vitamin D; 8.1 Historical overview; 8.2 Chemistry and biological functions; 8.3 Dietary sources; 8.4 Cutaneous synthesis, intestinal absorption, transport and metabolism; 8.5 Molecular action of the vitamin D hormones; 8.6 Calcium and phosphate homeostasis; 8.8 Effects of vitamin D on insulin secretion; 8.9 Vitamin D-related diseases; 8.10 Therapeutic applications of vitamin D analogues; 8.12 Dietary requirement; Further reading  
References

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### Sommario/riassunto

This single-source reference draws together the current knowledge of the vitamins' biological properties in the context of human nutrition. Vitamins are co-enzymes, antioxidants or precursors of hormones and are therefore involved in a great many biochemical and physiological processes. They play a vital role in the maintenance of health, and there is evidence that dietary sources of vitamins have beneficial effects in the prevention of heart-related diseases, bone diseases and possibly cancer. Following introductory chapters on historical and nutritional aspects of vitamins, th

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