

THE NUTRITION FOUNDATION



# The Chemical Senses and Nutrition

A MONOGRAPH EDITED BY  
Morley R. Kare  
Owen Maller

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**THE CHEMICAL SENSES  
AND NUTRITION**

## THE NUTRITION FOUNDATION

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# THE CHEMICAL SENSES AND NUTRITION

*Edited by*

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# Contents

List of Contributors	xiii
List of Participants	xvi
Foreword	xvii
Preface	xix

## PALATABILITY AND INGESTION

### *Chapter 1*

#### Gastropod Mollusks as Model Systems for the Study of Integrative Mechanisms Controlling Feeding Behavior

DAVID M. SENSEMAN

Experimental Advantages of Gastropods	5
Black Box "B"	8
Black Box "A"	12
Black Box "SAT"	14
Black Box "L"	16
Black Box "F"	17
The Significance of Gastropod Neurobiology	20
References	21
Discussion	22

### *Chapter 2*

#### External Influences on the Feeding of Carnivores

ROGER A. MUGFORD

Introduction	25
Characteristics of Ingestive Behavior	26
Social Factors Affecting Ingestive Behavior	31
Effects of Prior Experience upon Food Selection and Intake	33
Olfactory Influences over Ingestive Behavior	38
References	45
Discussion	48

*Chapter 3*

## Nutritional States, Food Odors, and Olfactory Function

JEANNE PAGER

Coding Related Variability	55
Variability Related to Internal State	60
References	65
Discussion	67

## SENSORY QUALITY AND INGESTION

*Chapter 4*Intensity and Hedonic Functions for  
Chemosensory Stimuli

HOWARD R. MOSKOWITZ

Introduction	71
Psychophysical Measurement Methods	72
Intensity Measurement in the Chemical Senses	74
Pleasantness (Hedonic) Measurement in the Chemical Senses	75
Problems with Simple Systems	78
The Approach of the Present Paper	78
Discussion	92
An Overview	96
References	97
Discussion	99

*Chapter 5*Influence of Internal Factors on the Perceived Intensity  
and Pleasantness of Gustatory and Olfactory Stimuli

GEORGE D. MOWER, ROBERT G. MAIR, AND TRYGG ENGEN

Method	104
Results	107
Discussion	115
Summary	117
References	118
Discussion	118

*Chapter 6*Sensory–Neuroendocrine Reflexes and  
Their Anticipatory and Optimizing  
Role on Metabolism

STYLIANOS NICOLAIDIS

Oroglycemic Responses	124
Early Insulin and Glucagon Release during Ingestion	126

Preabsorptive Metabolic Changes	129
Metabolic Consequences of the Suppression of Orogastrointestinal Information	132
Neurophysiological Mechanism of Sensory Metabolic Anticipatory Responses	135
References	138
Discussion	140

*Chapter 7*

Taste Stimuli and Pancreatic Functions

MICHAEL NAIM AND MORLEY R. KARE

Text	145
References	160
Discussion	162

NUTRITIVE STATE

*Chapter 8*

Nutritional State/Taste Interactions in Food Intake:  
Behavioral and Physiological Evidence for  
Gastric/Taste Modulation

K. N. SHARMA, H. L. JACOBS, V. GOPAL, AND S. DUA-SHARMA

Introduction	167
Energy Balance—Input/Output Variables	168
Taste and Energy Deficit—Behavior Analysis	170
Energy Deficit—Gastric Modulation of Taste	176
Summary	184
References	185
Discussion	187

*Chapter 9*

Influence of Protein Nutrition on the Olfactory Bulb

HANS FISHER

Text	189
References	198
Discussion	199

*Chapter 10*

The Role of Vitamins and Minerals in Taste

STANLEY N. GERSHOFF

Text	201
References	209
Discussion	210



*Chapter 11***The Control of Food Intake: When and How Are Amino Acids Involved?****Q. R. ROGERS AND P. M. B. LEUNG**

What Are the Food Intake Responses of Animals to Dietary Protein and Amino Acids?	213
What Are the Metabolites Mediating the Effect of Amino Acids on Food Intake?	220
Where Is the Receptor System Mediating the Effect of Dietary Amino Acids on the Control of Food Intake?	227
What Is the Mechanism of the Behavioral Responses of Animals Fed Disproportionate Quantities of Amino Acids?	237
What Senses Are Important and/or Essential in the Response of Animals to Amino Acids?	239
References	246
Discussion	248

**PERCEPTION AND EXPERIENCE***Chapter 12***The Ontogeny, Evolution, and Stimulus Control of Feeding in Humans and Reptiles****GORDON M. BURGHARDT**

Introduction	253
The Influence of Color on Odor Recognition	254
Snakes and Digestion	259
Prey Recognition in Neonate Snakes	261
Ontogenetic Changes in Prey Preferences	265
Visual Cues and Prey Selection in Snakes	266
The Evolution of Feeding Behavior	268
Conclusion	271
References	272
Discussion	274

*Chapter 13***Conditioned Responses to Food Odor and Taste in Rats and Wild Predators****JOHN GARCIA AND LINDA P. BRETT**

Taste and Odor Cues in Food Regulation	277
Taste and Odor Cues in Pain Avoidance	280
Taste and Odor Cues in Predatory Behavior	282
References	288
Discussion	289

*Chapter 14*  
**The Development of Flavor Preferences in Humans:  
 A Review**

GARY K. BEAUCHAMP AND OWEN MALLER

Experience and Food Preferences	292
The Role of Experience in Taste Preferences	296
The Role of Experience in Olfactory Preferences	302
Conclusions	305
References	308
Discussion	310

FLAVOR RECOGNITION

*Chapter 15*  
**Food Preference Ratings of Congenitally  
 Anosmic Humans**

RICHARD L. DOTY

Subjects	316
Food Preference Surveys	317
Survey Administration Procedures	318
Reliability of the Food Preference Surveys	318
Correlation of Food Preference Data with Results from Similar Preference Inventories	319
Major Findings of Present Surveys	319
Discussion of Survey Results	322
References	323
Discussion	324

*Chapter 16*  
**Sweet Taste Sensitivity in Japanese Macaques**  
 MASAYASU SATO, YASUTAKE HIJI, HIROSUMI ITO,  
 AND TOSHIKI IMOTO

Chorda Tympani Nerve Responses in Japanese Macaques to Various Sweeteners Including Aspartame and Stevioside	328
Ingestive Responses in Japanese Macaques to Various Sweeteners	332
Interaction of Protein Extracted from Monkey Tongue Epithelium with Sweeteners	336
Conclusions	339
References	340
Discussion	341

*Chapter 17*

A Framework for the Mechanisms of Action of  
Special Taste Substances:  
The Example of Monosodium Glutamate

ROBERT H. CAGAN

Taste Effects of Monosodium Glutamate	344
MSG as a Flavor Enhancer	346
Possible Sites of Action of Monosodium Glutamate	349
Summary	354
References	355
Discussion	359

## DYSFUNCTIONS

*Chapter 18*

## Disordered Oral Sensation and Appetite

VERNON J. BRIGHTMAN

Introduction	363
Literature Review	364
Study Population	367
Ingestive Behavior of Patients with Disordered Oral Sensation	372
Conclusions	376
References	377
Discussion	378

*Chapter 19*

Changes in Taste Sensation in Cancer Patients:  
Correlation with Caloric Intake

WILLIAM D. DEWYS

Text	381
References	388
Discussion	389

*Chapter 20*

## Palatability and Oral Factors and Their Role in Obesity

HENRY A. JORDAN AND THERESA A. SPIEGEL

Text	393
References	407
Discussion	407

## OVERVIEW

*Chapter 21*

## The Role of the Chemical Senses in Nutrition

SAMUEL LEPKOVSKY

Introduction	413
Hunger, Appetite, and Urges for Food in Animals	414
Hunger, Appetite, and Urges for Food in Human Beings	415
Food-Seeking Behavior	415
Recognition of Food: The Chemical Senses	415
Selection of the Needed Dietary Nutrients	416
Eating: Gastrointestinal Tract	417
Satiety	419
Monotony: Flagging Appetite	420
The Role of Flavor in Human Beings	421
Deprivation of Sensory Stimuli and the Taste of Food in Man	423
When Is a Sensory Stimulus a Flavor? The Onion	424
References	425
Discussion	427

*Chapter 22*

## Socioeconomic Factors in Fat and Sugar Consumption

S. M. CANTOR AND M. B. CANTOR

The Problem	429
Social and Cultural Factors	430
Consumption Data: Change and Significance	432
Industrialization of the Food System	436
Food Decision-Making	438
Nutrition and the Chemical Senses	440
Consumption Marketing	442
References	443
Discussion	444

*Chapter 23*The Nimrod Connection: Myth and Science  
in the Hunting Model

TIMOTHY PERPER AND CARMEL SCHRIRE

Text	447
References	458

## SUMMATION

*Chapter 24*

## Concluding Comments

C. PFAFFMANN, V. G. DETHIER, AND D. M. HEGSTED

Text

463

Index

477

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## Foreword

It was a decade ago that the cooperation between the Monell Chemical Senses Center and The Nutrition Foundation resulted in the development of a monograph on the chemical senses, which has become a standard reference work for those in this field. Since the appearance of that work, an increased awareness has developed among the medical profession of the importance of understanding these specialized senses and the psychological and behavioral phenomena to which they are related or which are influenced or governed by these senses. This past decade has seen much progress in understanding the basic physiology, molecular biology, and biochemistry of the chemical senses. Accordingly, The Nutrition Foundation and The Monell Chemical Senses Center have again joined in sponsoring a current examination of the field and of the decade of progress against the complex background of considerations of the functions of and reactions to the chemical senses.

In order to accomplish this expeditiously and to produce an authoritative, current review, this effort was planned in two stages. First, there was a workshop of scientists engaged actively in advancing knowledge in this field for the purpose of providing an opportunity to freely exchange information and experiences and to critically examine the views of individual workers. Second, following these exchanges, the prepared manuscripts were modified and edited for prompt publication. Therefore, this volume reflects the beneficial exchange that occurred in the workshop and provides a particularly well-considered update of the subject of the chemical senses in relation to nutrition.

The conference and the publication of this monograph were supported jointly by The Nutrition Foundation and The Monell Chemical Senses Center, and assisted by a grant from the National Institutes of Health (National Institute for Dental Research 1 R13 DE 04533).

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the conference and the preparation of this book is gratefully acknowledged. In the desire for rapid publication, there has been limited opportunity, particularly for the foreign contributors, for proof correction. The discussions have been condensed. The editors assume responsibility for any changes in these sections.

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# Preface

Ten years after the appearance of the first book on the chemical senses and nutrition, additional research data justified a second volume. These papers constitute an overview by leading scientists in the field of the growing understanding of the role of the chemical senses in nutrition.

It is extremely important to be aware of the involvement of the phenomena of taste and smell in many aspects of human behavior. It is, however, critically important to the entire field of nutrition to be able to identify and evaluate olfactory and gustatory interactions. Taste and smell are the two senses that basically control a vast number of human reactions. One or another of these senses may reach a high level of acuity among animal species. A vast array of materials and environments is identifiable by a combination of taste and smell factors.

The world is currently facing a burgeoning population, a problem with which we have thus far not been able to cope successfully; population stabilization has been effective in only a very few nations. Thus, while the world continues to advance in its technology, its educational systems, and other social objectives, it has not yet been possible to establish "universal family planning." In former times, when the world's population was relatively small, the increase in numbers was hardly perceptible. One result of the rapid growth in modern times has been the obvious pressures of people upon environment. Through neglect, mismanagement, and other forces, a vast array of disruptive factors has been brought to bear on our natural environment. These include floods, droughts, earthquakes, forest fires, erosion, and the full complement of those phenomena that have taken great toll of the world's resources. Moreover, under continuing pressure, man's inroads into forests, fuel, minerals, and other reserves steadily increase the growing threat to our environment.

Obviously, if we are unable to provide the essential foods for all the world's population, there will be a gradual erosion of the social scene.