

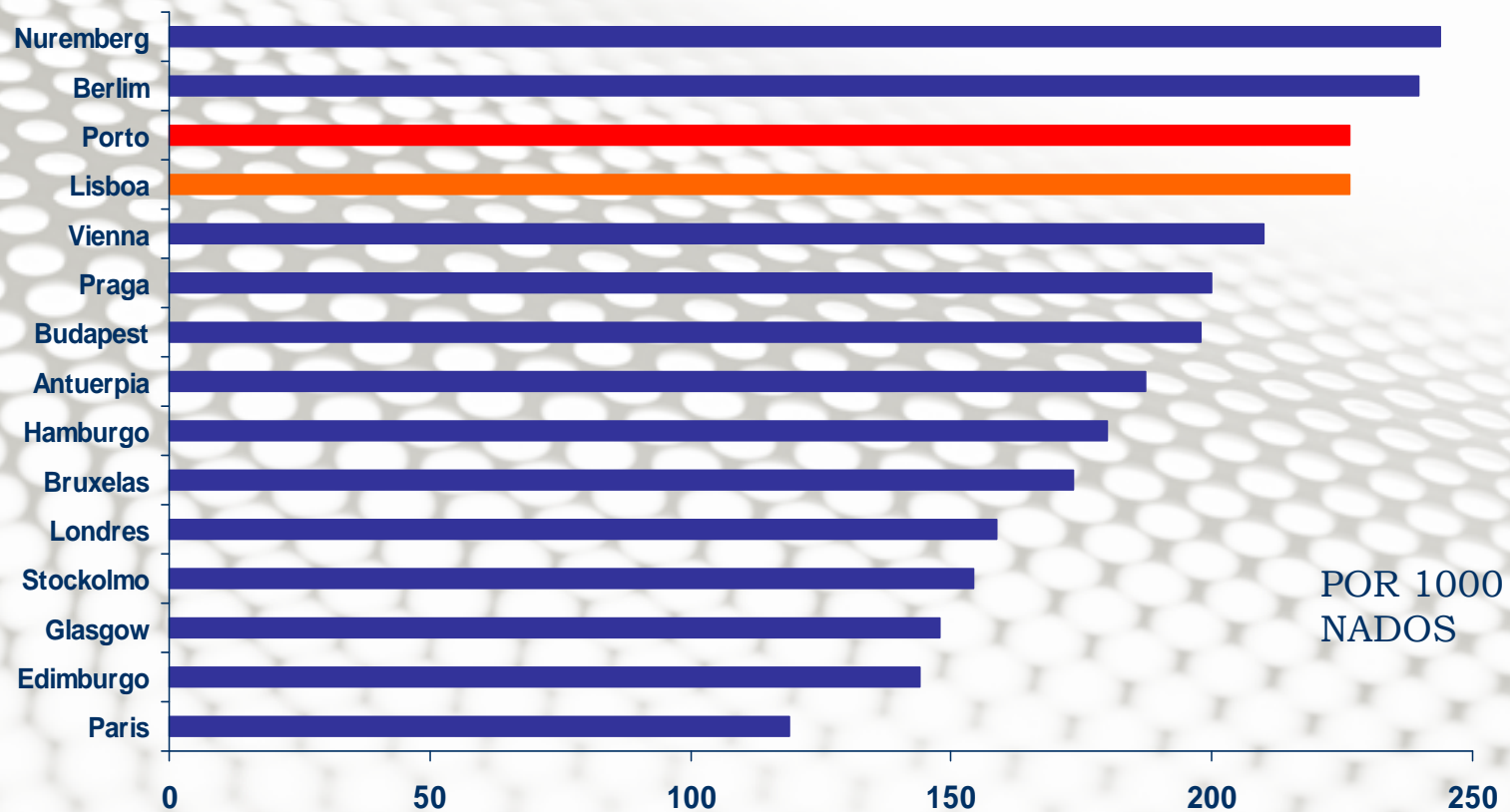


Henrique Barros





Mortalidade infantil de 0-1 anno das cidades europeias 1893-97



Ricardo Jorge - Demographia e Hygiene da Cidade do Porto, 1899

SOME MATHEMATICAL DEVELOPMENTS

ON THE

EPIDEMIC THEORY FORMULATED

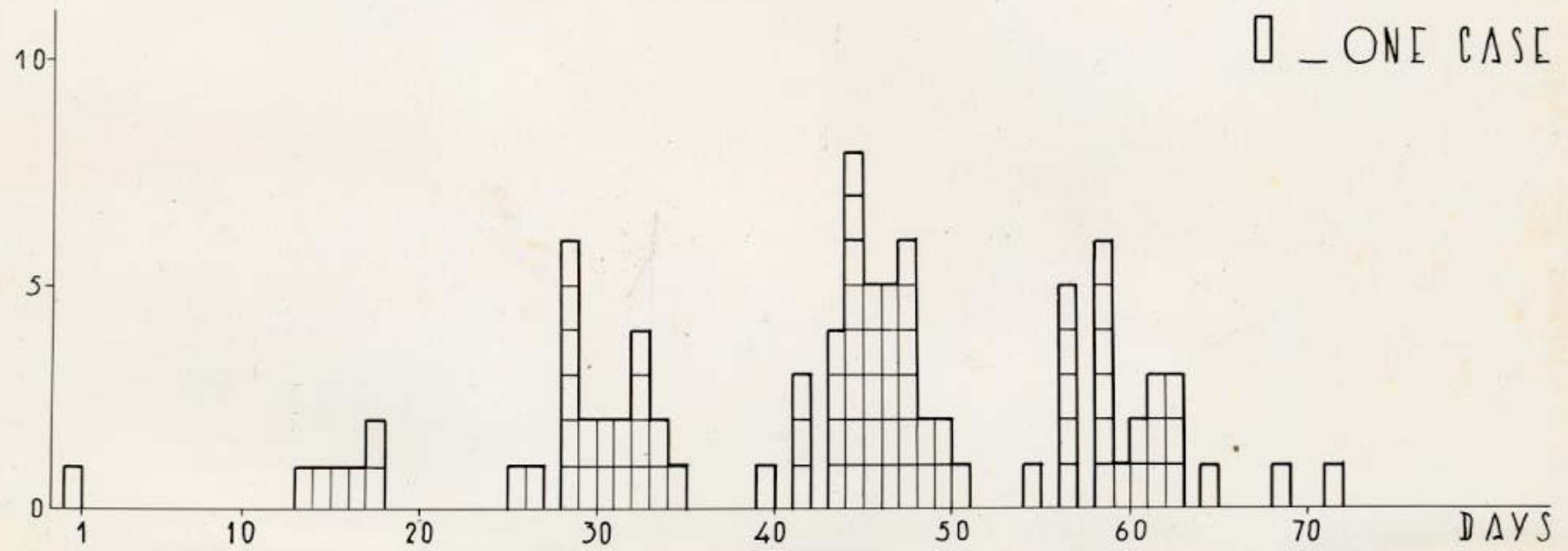
BY

REED AND FROST.

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JOHNS HOPKINS SCHOOL OF HYGIENE AND PUBLIC HEALTH

CHICKEN-POX EPIDEMIC



[Reprinted from HUMAN BIOLOGY, SEPTEMBER, 1952, Vol. 24, No. 3]



SOME MATHEMATICAL DEVELOPMENTS ON THE
EPIDEMIC THEORY FORMULATED BY
REED AND FROST *

BY JOAQUIM DE OLIVEIRA COSTA MAIA
University of Porto, Portugal

INTRODUCTION

DR. LOWELL J. REED and the late Dr. Wade Hampton Frost jointly developed a mathematical theory of epidemics, which was later further expanded by Reed. None of their work has been published, but some of it has been utilized in the teaching of the departments of Biostatistics and Epidemiology of The Johns Hopkins School of Hygiene and Public Health, especially in the course given jointly by these departments (Biostatistics 9-Epidemiology 2). Of the work done by Reed and Frost, only that portion which is presented in this course is available to the writer; he is unacquainted with any further extensions which they may have developed. As presented, the theory applies only to simple situations as illustrated by an outbreak of measles in a closed group. It offers a reasonably good explanation of the course of such epidemics as well as of the mass behaviour of measles in the population of Baltimore.

A brief summary will now be given of the Reed-Frost theory upon which this paper is based. The basic reasoning is as follows:

In a closed population of size N , within which people intermingle fairly uniformly, it is plausible to assume that, in a certain period of time t , every individual will have with other individuals about the same number of contacts exceeding a given degree of intimacy. If the degree of intimacy be postulated to be sufficient for a patient with a certain contagious disease to transmit the disease to a susceptible person, this number of contacts, K , will be the average number of contacts adequate for transmissions of the disease (or, simply, adequate contacts) per

* This paper has been excerpted by the editor from the dissertation presented by Dr. Maia for the degree of Doctor of Public Health at Johns Hopkins University.

JOAQUIM DE OLIVEIRA

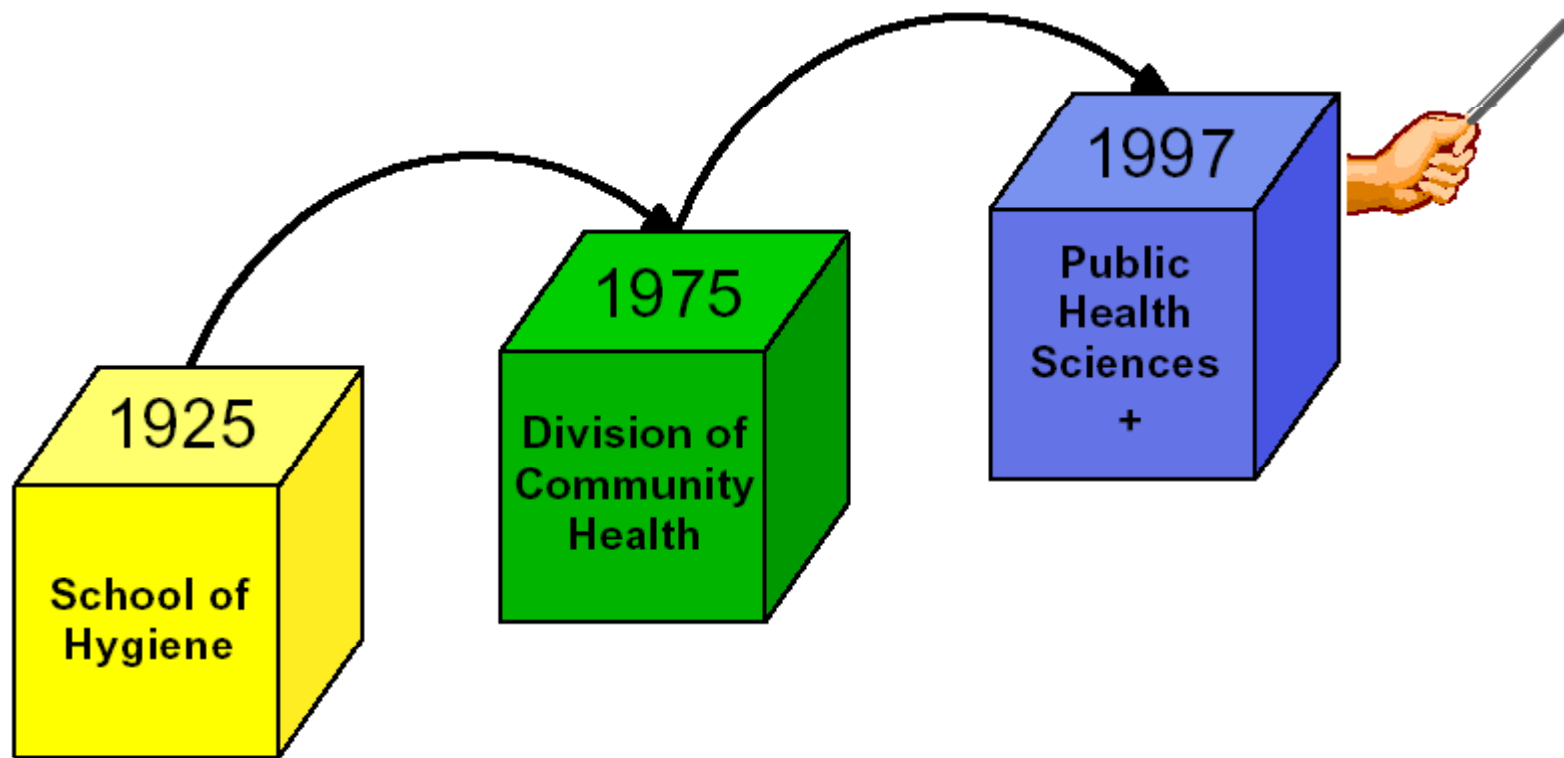
FACULDADE DE MEDICINA

Alguns aspectos de epidemiologia,
profilaxia e combate da "tinea capitis"

DISSERTAÇÃO DE DOUTORAMENTO APRESENTADA
À FACULDADE DE MEDICINA DA UNIVERSIDADE
DO PORTO.

PORTO, 1953







"Making Health Within Reach of Eeveryone"




***Public health is ultimately a question of
what kind of society we wish to live in.***

Swedish National Health Plan, 2004



Efforts to protect and promote people's health do not occur by chance. They are the result of organized community-based activities that are informed by the cutting-edge science which defines public health practice.

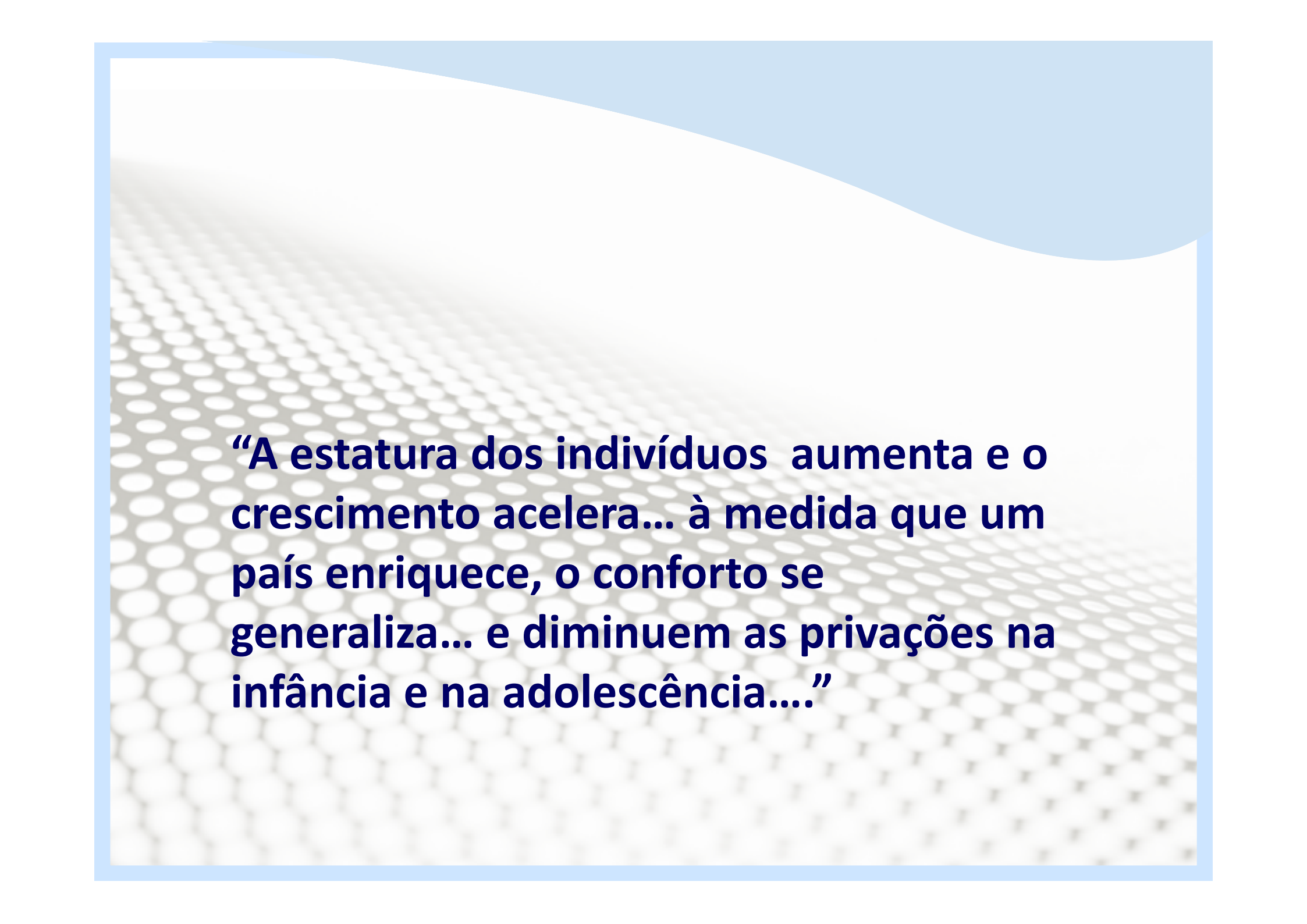
Unlike other health professions, comprises practitioners who are drawn from a broad array of disciplines — medicine, business, epidemiology, law, biology, economics, among others — and are involved in a diverse set of activities. They work to protect the environment; identify sources of illness in population groups; control disease outbreaks caused by killer microbes; evaluate the economic impacts of changing demographics; develop media campaigns to promote healthy behavior; and produce health policy legislation. Childhood nutrition, work-related hypertension, pesticide exposures, hospital mergers, and AIDS education are but a few examples of public health's work which cuts across all economic and social strata.



What consolidates the collection of disciplines that constitute public health and binds together its practitioners is an emphasis on the health of populations and an overriding commitment to health promotion and disease prevention.

Public health research is undertaken at population level, in contrast to laboratory (cellular, subcellular...) or clinical (individual) health research

(EUPHA)



“A estatura dos indivíduos aumenta e o crescimento acelera... à medida que um país enriquece, o conforto se generaliza... e diminuem as privações na infância e na adolescência...”

“A estatura dos indivíduos aumenta e o crescimento acelera... à medida que um país enriquece, o conforto se generaliza... e diminuem as privações na infância e na adolescência...”

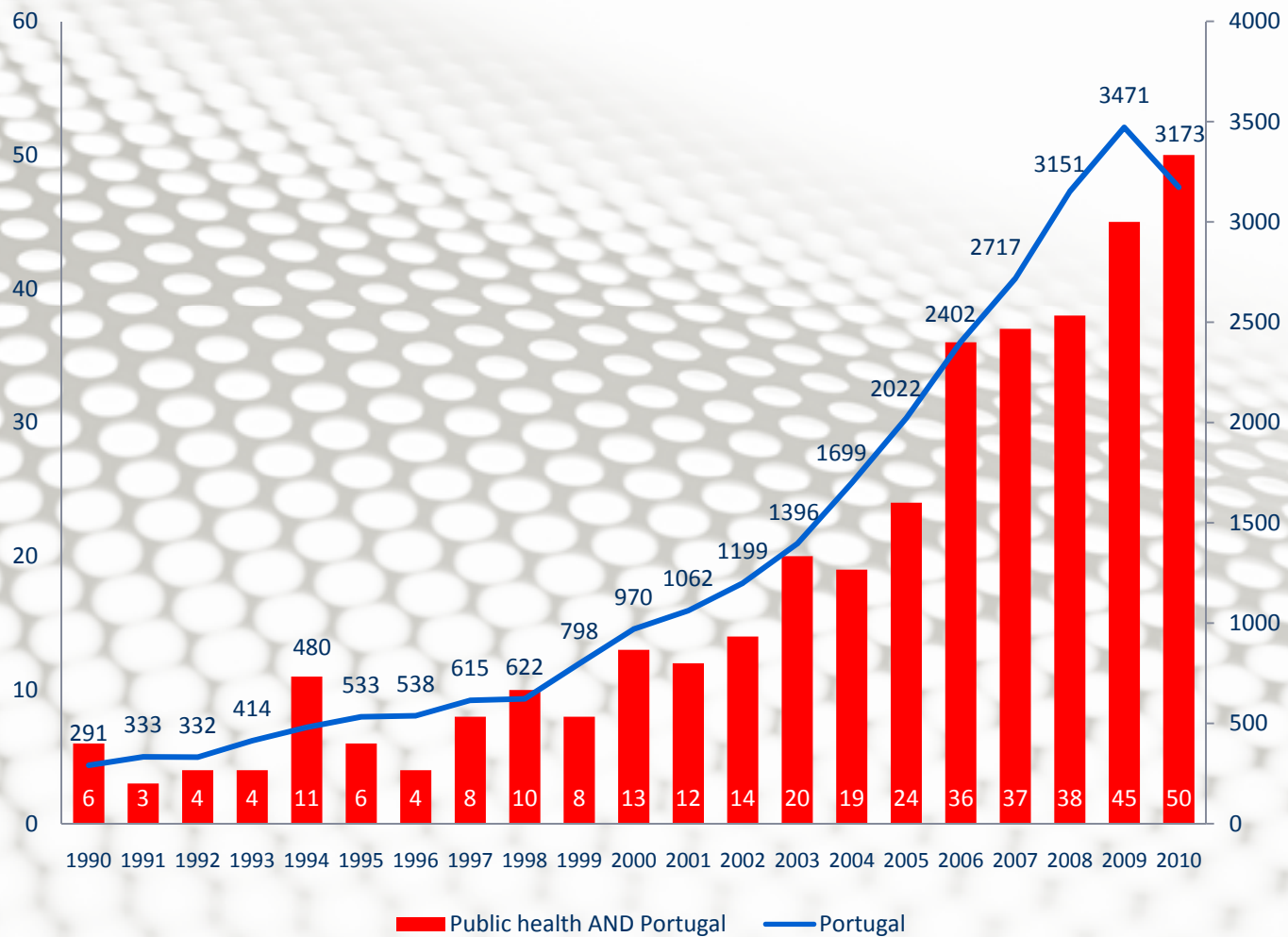
René Villermé 1829

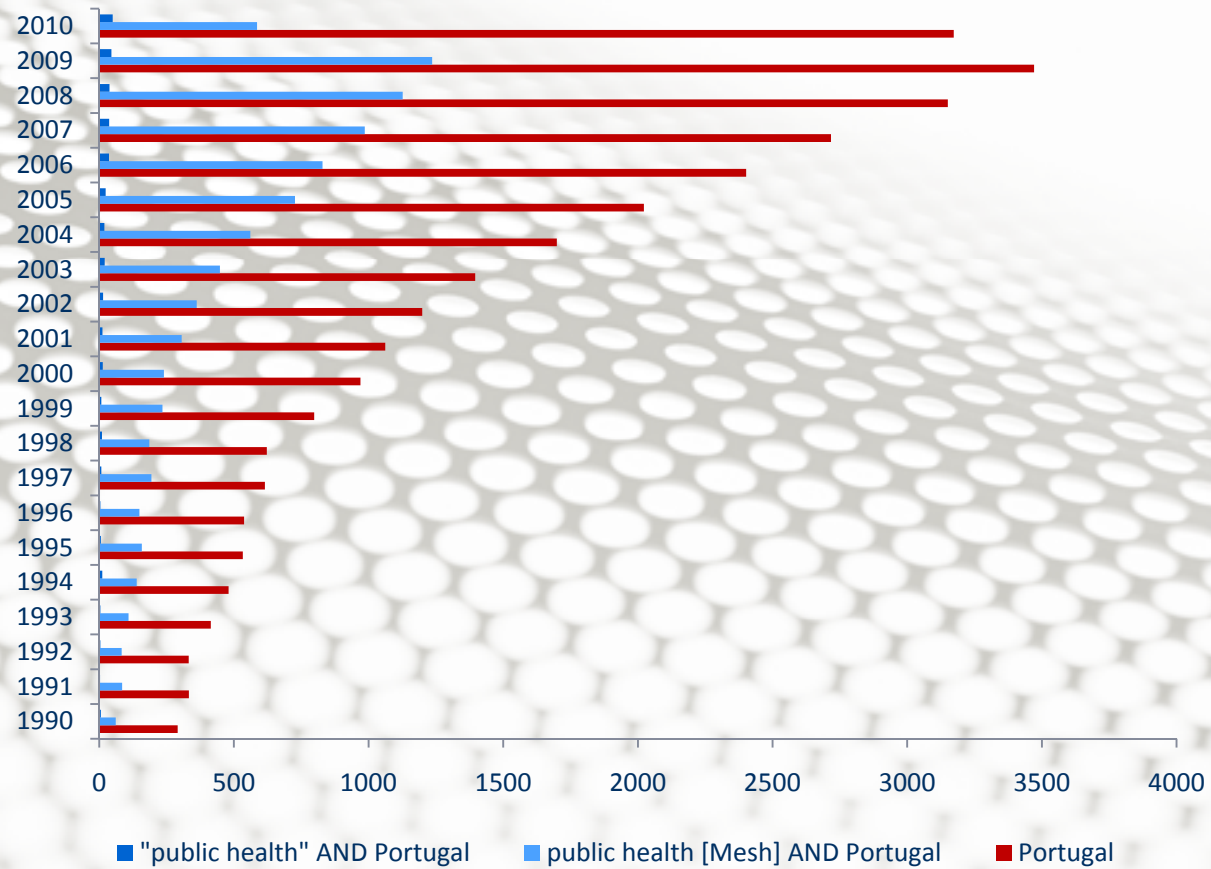
‘...recent progress has shown a) that the health of the adult is dependent upon the health of the child.....[and]....b) that the health of the child is dependent upon the health of the infant and its mother.

'...recent progress has shown a) that the health of the adult is dependent upon the health of the child.....[and]....b) that the health of the child is dependent upon the health of the infant and its mother.'

George Newman

1914, CMO Board of Education





Click to **LOOK INSIDE!**

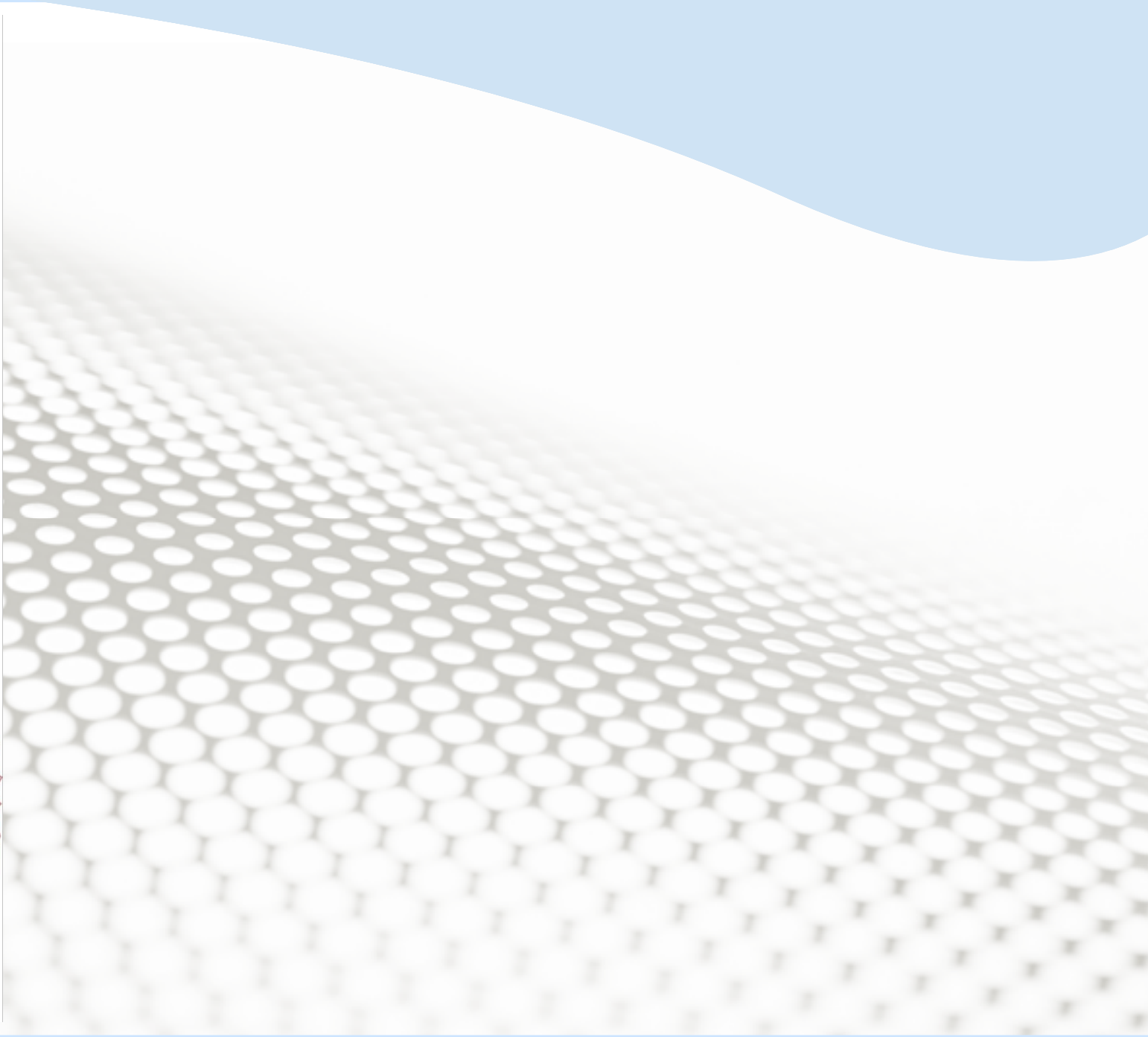
Richard H. Thaler
Cass R. Sunstein

Nudge



Improving Decisions
About Health, Wealth,
and Happiness

EPIPORTO





VII. FRUTOS	FREQUÊNCIA MÉDIA								QUANTIDADE				Sazonal	
	Nunca ou <1 mês	1-3 por mês	1 por sem	2-4 por sem	5-6 por sem	1 por dia	2-3 por dia	4-5 por dia	6+ por dia	Porção Média	Menor	Igual		Maior
58. Maça, pêra	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	uma média	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
59. Laranja, Tangerinas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 média;2 médias	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
60. Banana	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	uma média	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
61. Kiwi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	um médio	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
62. Morangos	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 chávena	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
63. Cerejas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 chávena	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
64. Pêssego, Ameixa	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 médio;3 médios	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
65. Melão, Melancia	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 fatia média = 150g	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
66. Diospiro	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 médio	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
67. Figo fresco, Nêsperas, Damascos	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3 médios	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
68. Uvas frescas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 cacho médio	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
69. Frutos conserva: pêssego	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 metades ou rodajas	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

- Pessoas**
- Investigação ▶
- Ensino ▶
- Seminários
- Cursos de Primavera ▶
- APE ▶
- Revista
- Reuniões ▶
- Links

- Alimentação e Saúde**
- Conheça-se
- Novidades**
- Notícias Académicas
- Congressos
- O que há de novo?



Consumos diários

Total de calorias ingeridas por dia (Kcal) 6160

Nutriente	Quantidade ingerida (por dia)	Valores Desejáveis
Proteínas (%Kcal)	21	(18-20)
Hidratos de carbono (%Kcal)	48	(50-55)
Gordura total (%Kcal)	31	(25-30)
Gordura saturada (%Kcal)	8	(10-12)
Gordura Monoinsaturada (%Kcal)	11	(7-10)
Gordura Polinsaturada (%Kcal)	8	(10-12)
Colesterol (mg)	1470	menor que 300 mg
Fibra Alimentar (g)	75	maior que 25 g
Etanol (g)	0	O consumo de etanol prolongado: superior a 15 g para as Mulheres superior a 30 g para os Homens pode prejudicar a sua saúde
Cálcio (mg)	1327	se a idade for 50 ou superior o cálcio deve ser maior que 1200 mg se a idade for inferior a 50 o cálcio deve ser maior que 1000 mg

[Imprimir resultados](#)



epitteen



nascer e crescer no início do milénio



IDEIAS

PESSOAS

LUGARES