



# Obesity and Health Systems sustainability



**World Health Organization**

REGIONAL OFFICE FOR

**Europe**



**Organisation mondiale de la Santé**

BUREAU RÉGIONAL DE L'

**Europe**



**Weltgesundheitsorganisation**

REGIONALBÜRO FÜR

**Europa**

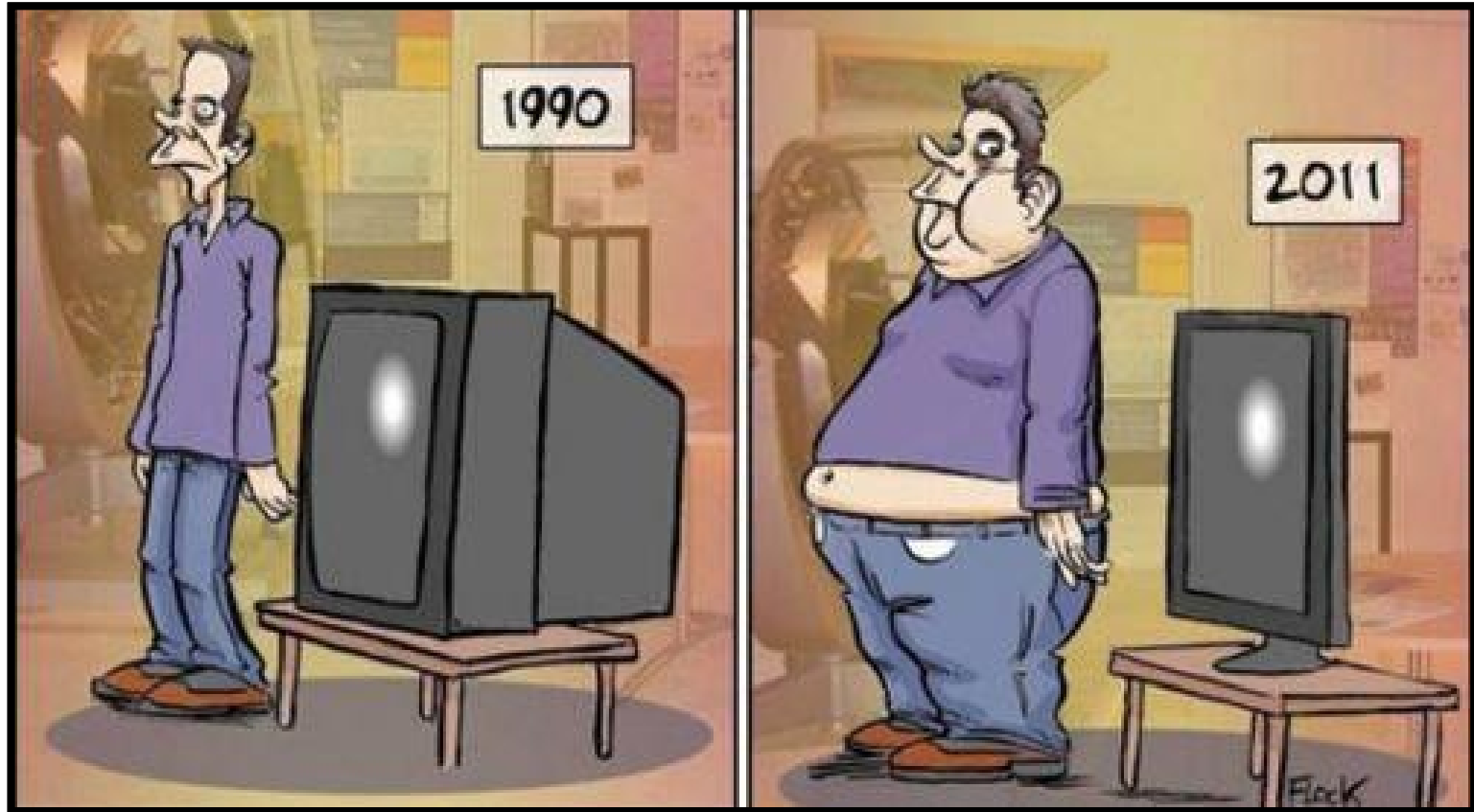


**Всемирная организация здравоохранения**

**Европейское** региональное бюро

**Dr João Breda & Agis Tsouros**  
WHO Regional Office for Europe

**We have changed a lot!!!!**



# Global burden of disease - comparison

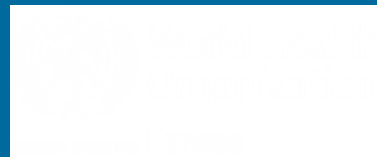
1990 Mean rank (95% UI)

1.2 (1-3)	1 Childhood underweight
2.2 (1-3)	2 Dietary risks
2.7 (1-5)	3 Household air pollution
3.9 (3-5)	4 Smoking
5.0 (4-6)	5 High blood pressure
6.0 (4-6)	6 Suboptimal breastfeeding
7.0 (6-8)	7 Ambient PM pollution
7.9 (7-9)	8 Alcohol use
10.1 (9-12)	9 High fasting plasma glucose
10.4 (9-13)	10 Occupational risks
11.2 (9-13)	11 High body-mass index

2010 Mean rank (95% UI)

1 Dietary risks	1.0 (1-1)	30% (26 to 33)
2 High blood pressure	2.1 (2-3)	27% (19 to 34)
3 Smoking	2.9 (2-3)	4% (-5 to 11)
4 Household air pollution	4.4 (4-7)	-37% (-44 to -29)
5 Alcohol use	5.3 (4-7)	32% (17 to 47)
6 High body-mass index	5.9 (4-8)	82% (71 to 95)
7 High fasting plasma glucose	6.6 (5-8)	58% (43 to 73)
8 Childhood underweight	8.5 (6-11)	-61% (-66 to -55)
9 Ambient PM pollution	8.7 (7-10)	-7% (-13 to 0)
10 Physical inactivity	10.0 (8-12)	No estimates
11 Occupational risks	10.8 (9-12)	12% (-2 to 30)
13 Suboptimal breastfeeding	12.7 (11-14)	-57% (-63 to -51)

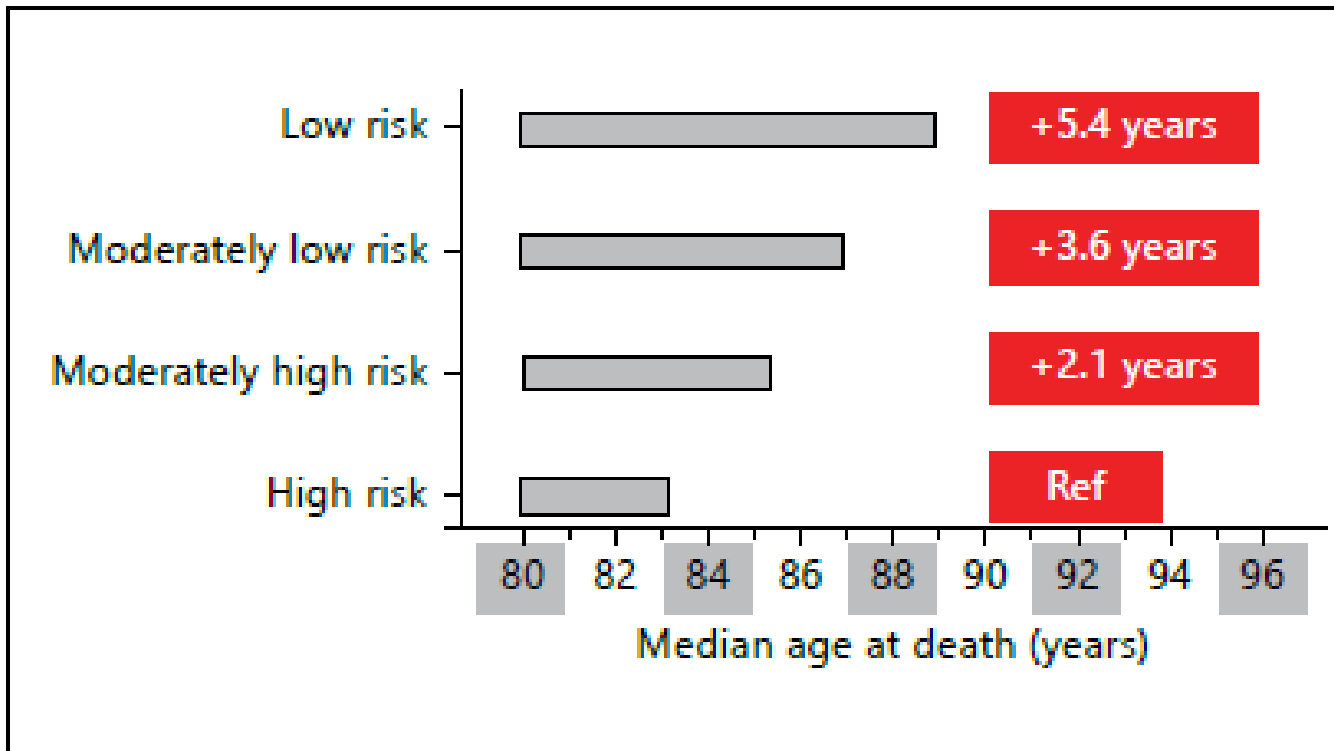
Median % change (95% UI)



# Lifestyle Factors Related to Mortality and Survival: A Mini-Review

D. Rizzuto<sup>a</sup> L. Fratiglioni<sup>a,b</sup>

<sup>a</sup>Aging Research Center (ARC), Department of Neurobiology, Care Sciences and Society, Karolinska Institutet and Stockholm University, and <sup>b</sup>Stockholm Gerontology Research Center, Stockholm, Sweden



## WHO European Childhood Obesity Surveillance Initiative 2008: weight, height and body mass index in 6–9-year-old children

T. M. A. Wijnhoven<sup>1</sup>, J. M. A. van Raaij<sup>2,3</sup>, A. Spinelli<sup>4</sup>, A. I. Rito<sup>5</sup>, R. Hovengen<sup>6</sup>, M. Kunesova<sup>7</sup>, G. Starc<sup>8</sup>, H. Rutter<sup>9\*</sup>, A. Sjöberg<sup>10,11</sup>, A. Petrauskienė<sup>12</sup>, U. O'Dwyer<sup>13</sup>, S. Petrova<sup>14</sup>, V. Farrugia Sant'Angelo<sup>15</sup>, M. Wauters<sup>16</sup>, A. Yngve<sup>17†</sup>, I.-M. Rubana<sup>18†</sup> and J. Breda<sup>1</sup>

<sup>1</sup>Noncommunicable Diseases and Health Promotion, World Health Organization Regional Office for Europe, Copenhagen Ø, Denmark; <sup>2</sup>Centre for Nutrition and Health, National Institute for Public Health and the Environment, Bilthoven, the Netherlands; <sup>3</sup>Division of Human Nutrition, Wageningen University, Wageningen, the Netherlands; <sup>4</sup>National Centre for Epidemiology, Surveillance and Health Promotion, National Institute of Health, Rome, Italy; <sup>5</sup>Food and Nutrition Department, National Institute of Health Dr. Ricardo Jorge IP, Lisbon, Portugal; <sup>6</sup>Department of Health Statistics, National Institute of Public Health, Oslo, Norway; <sup>7</sup>Obesity Unit, Institute of Endocrinology, Prague, Czech Republic; <sup>8</sup>Faculty of Sport, University of Ljubljana, Ljubljana, Slovenia; <sup>9</sup>National Obesity Observatory, Oxford, UK; <sup>10</sup>Department of Public Health and Community Medicine, Public Health Epidemiology Unit, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden; <sup>11</sup>Department of Food and Nutrition, and Sport Science, University of Gothenburg, Gothenburg, Sweden; <sup>12</sup>Academy of Medicine, Faculty of Public Health, Lithuanian University of Health Sciences, Kaunas, Lithuania; <sup>13</sup>Department of Health and Children, Dublin, Ireland; <sup>14</sup>Department of Food and Nutrition, National Centre of Public Health and Analysis, Sofia, Bulgaria; <sup>15</sup>Primary Health Care Department, Floriana, Malta; <sup>16</sup>Flemish Agency for Care and Health, Flemish Ministry of Welfare, Public Health and Family, Brussels, Belgium; <sup>17</sup>Department of Biosciences and Nutrition, Karolinska Institute, Huddinge, Sweden; <sup>18</sup>Public Health Agency, Riga, Latvia

Received 3 February 2012; revised 8 July 2012; accepted 17 July 2012

### What is already known about this subject

- Overweight and obesity prevalence estimates among children based on International Obesity Task Force definitions are substantially lower than estimates based on World Health Organization definitions.
- Presence of a north–south gradient with the highest level of overweight found in southern European countries.
- Intercountry comparisons of overweight and obesity in primary-school children in Europe based on measured data lack a similar data collection protocol.

### What this study adds

- Unique dataset on overweight and obesity based on measured weights and heights in 6–9-year-old children from 12 European countries using a harmonized surveillance methodology.
- Because of the use of a consistent data collection protocol, it is possible to perform valid multiple comparisons between countries.
- It demonstrates wide variations in overweight and obesity prevalence estimates among primary-school children between European countries and regions.

ORIGINAL RESEARCH

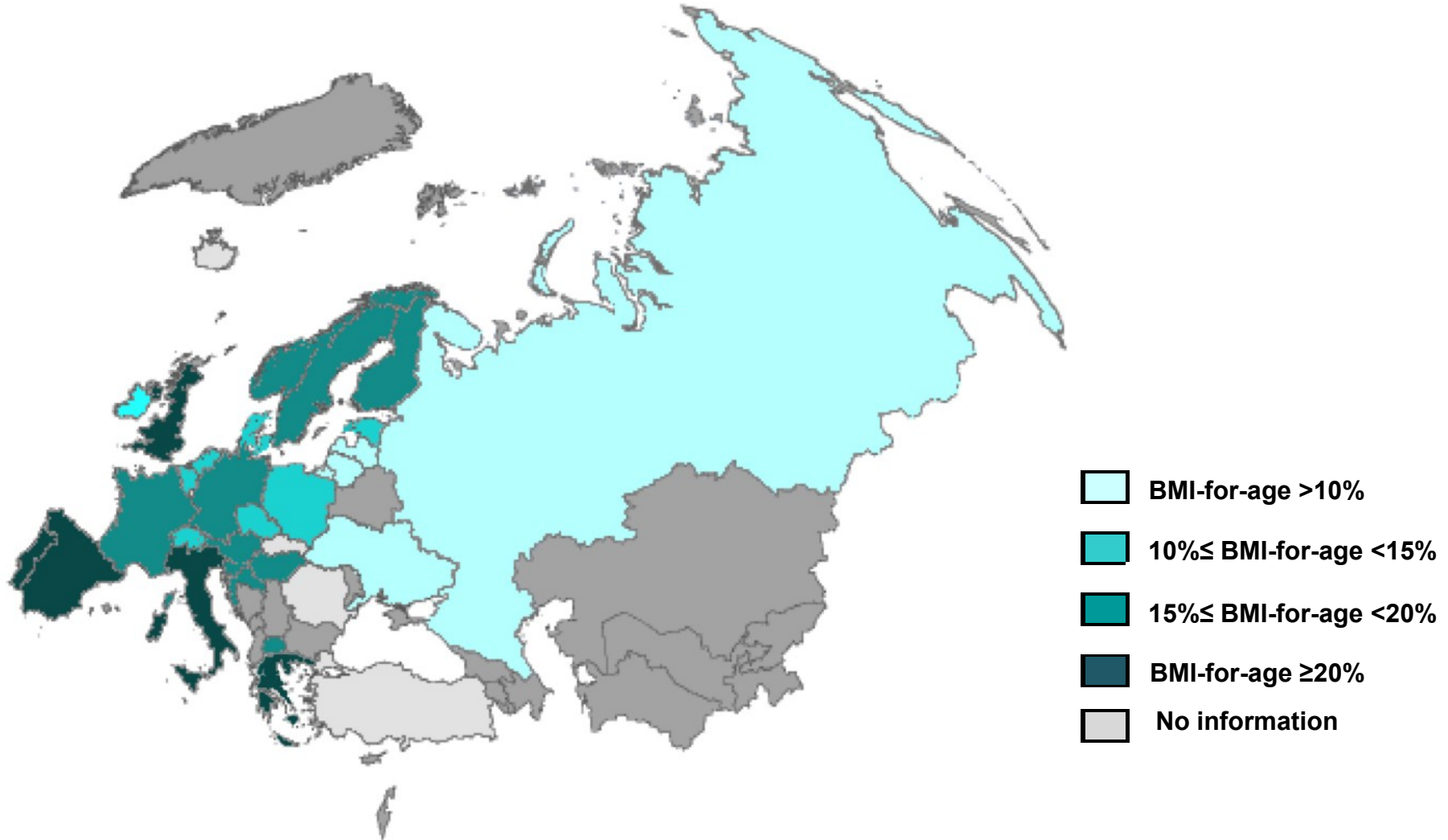
## WHO COSI, round (2010):

**1 in every 3 children aged 6–9 years was overweight or obese**

The prevalence of overweight (including obesity) ranged from 24% to 57% among boys and from 21% to 50% among girls. Simultaneously, 9–31% of boys and 6–21% of girls were obese

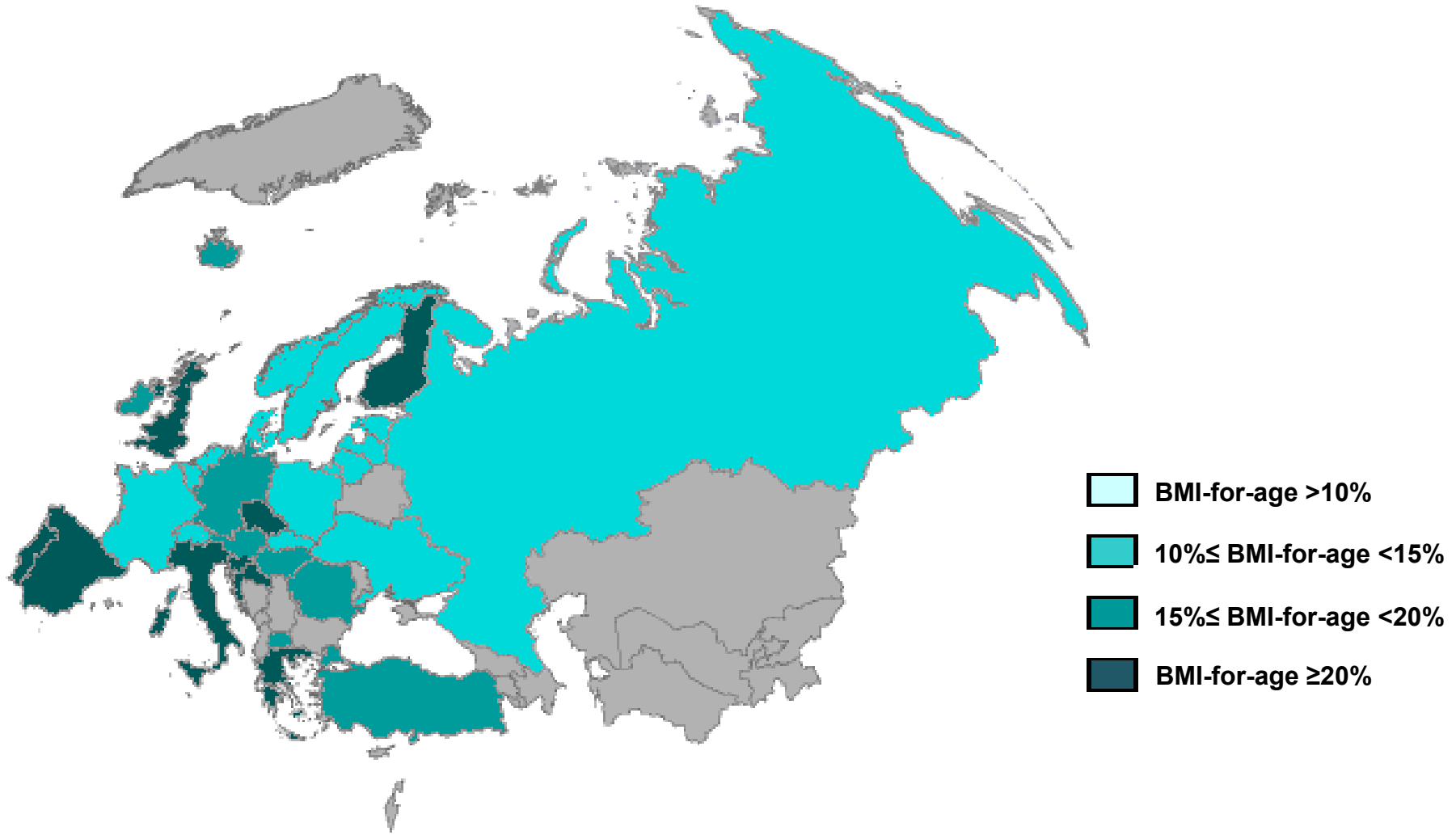
**1/4 in 2008 to 1/3 in 2010**

# Prevalence of overweight (BMI-for-age +1SD) among European adolescents (11, 13 and 15 years old boys and girls) in 2002



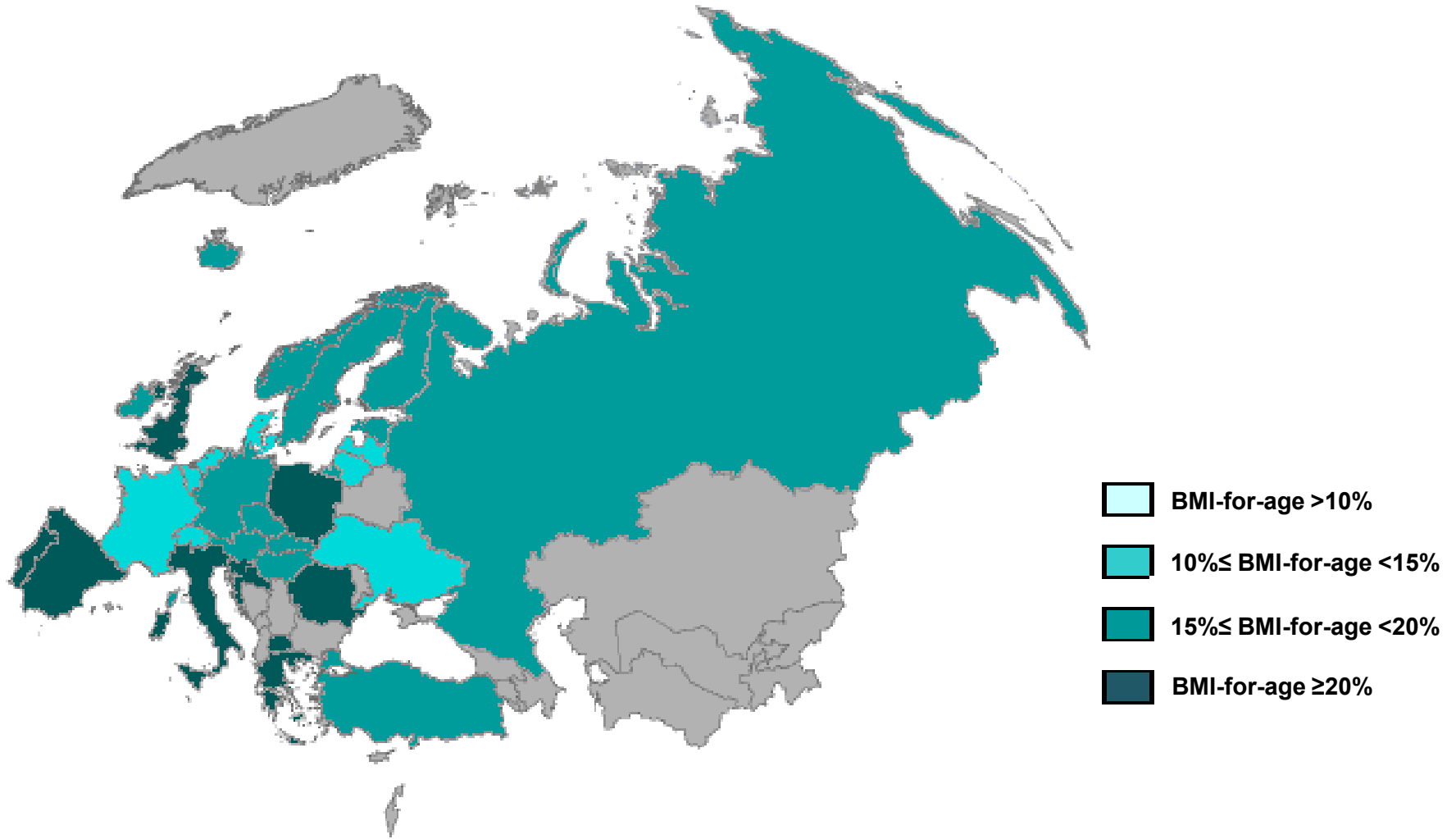
Source: HBSC Survey 2002. Data for 32 Member States  
of the WHO European Region in 2002

# Prevalence of overweight (BMI -for-age +1SD) among European adolescents (11, 13 and 15 years old boys and girls) in 2006



Source: HBSC Survey 2006. Data for 32 Member States of the WHO European Region in 2006

# Prevalence of overweight (BMI -for-age +1SD) among European adolescents (11, 13 and 15 years old boys and girls) in 2010



Source: HBSC Survey 2010. Data for 32 Member States of the WHO European Region in 2010





**hbsc**

**HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN**  
WORLD HEALTH ORGANIZATION COLLABORATIVE CROSS-NATIONAL STUDY

# Nutrition, PA and Obesity

International highlights from the HBSC 2009/2010  
International Report

**Health behaviors: all worsen**

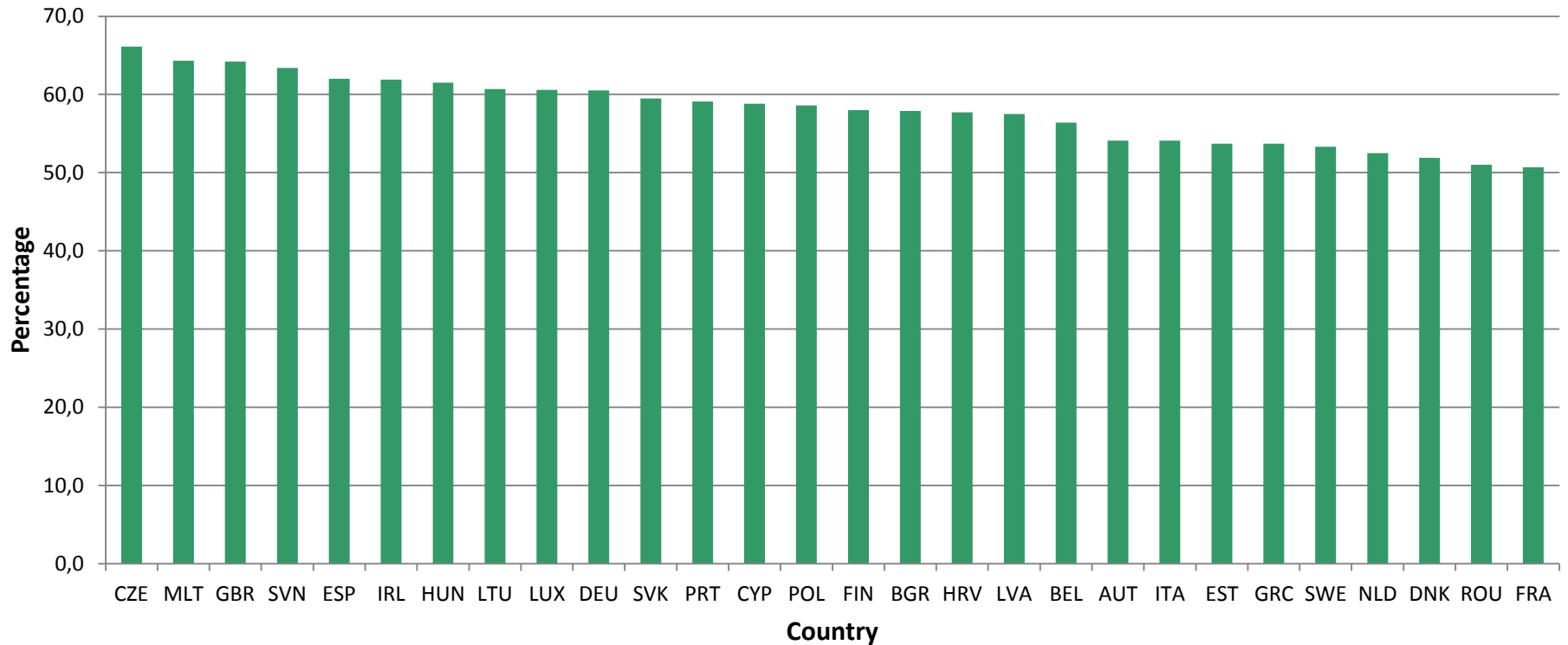
**Overweight and obesity: all increase**

**Breakfast: decreases in both boys and girls**

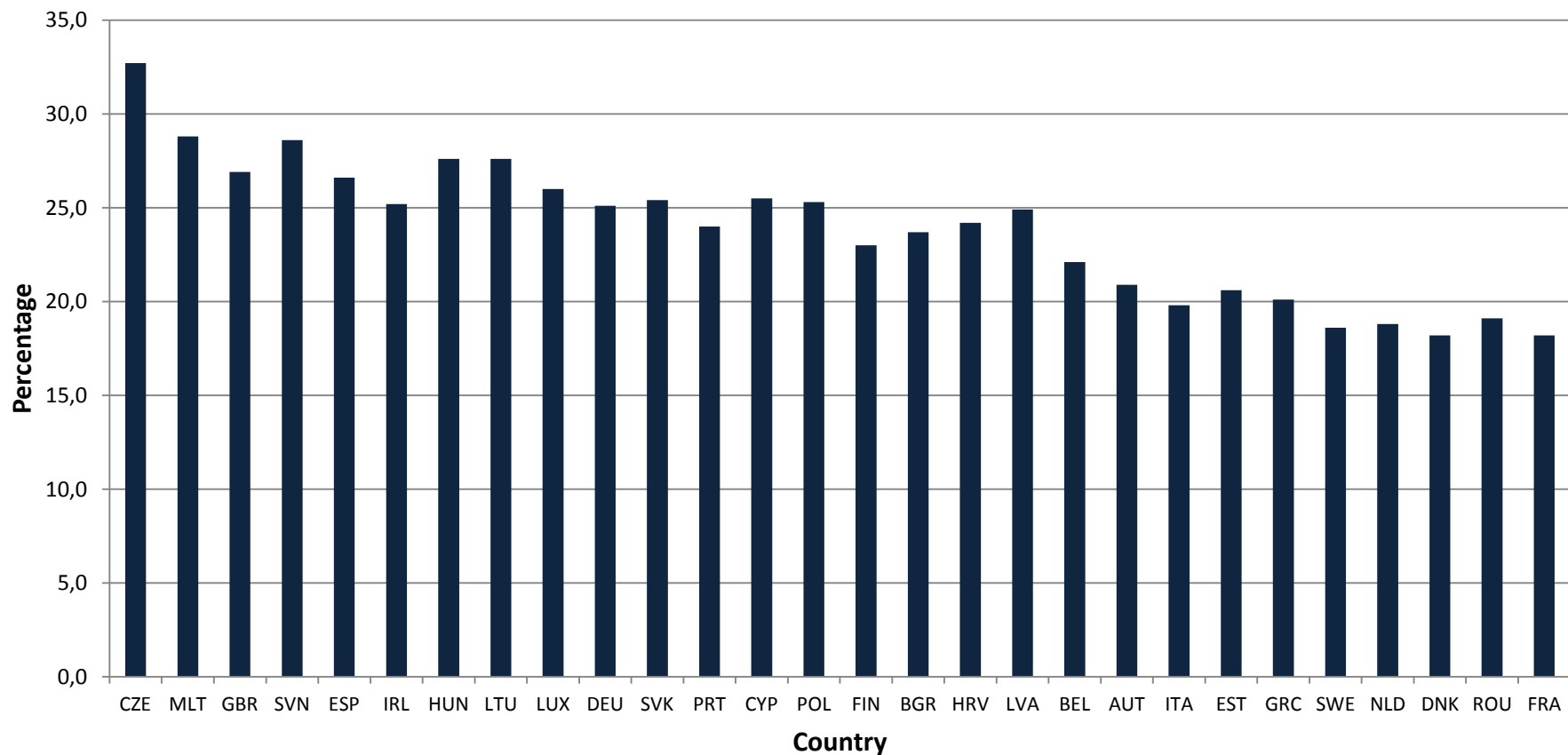
**Fruit: decreases in both boys and girls**

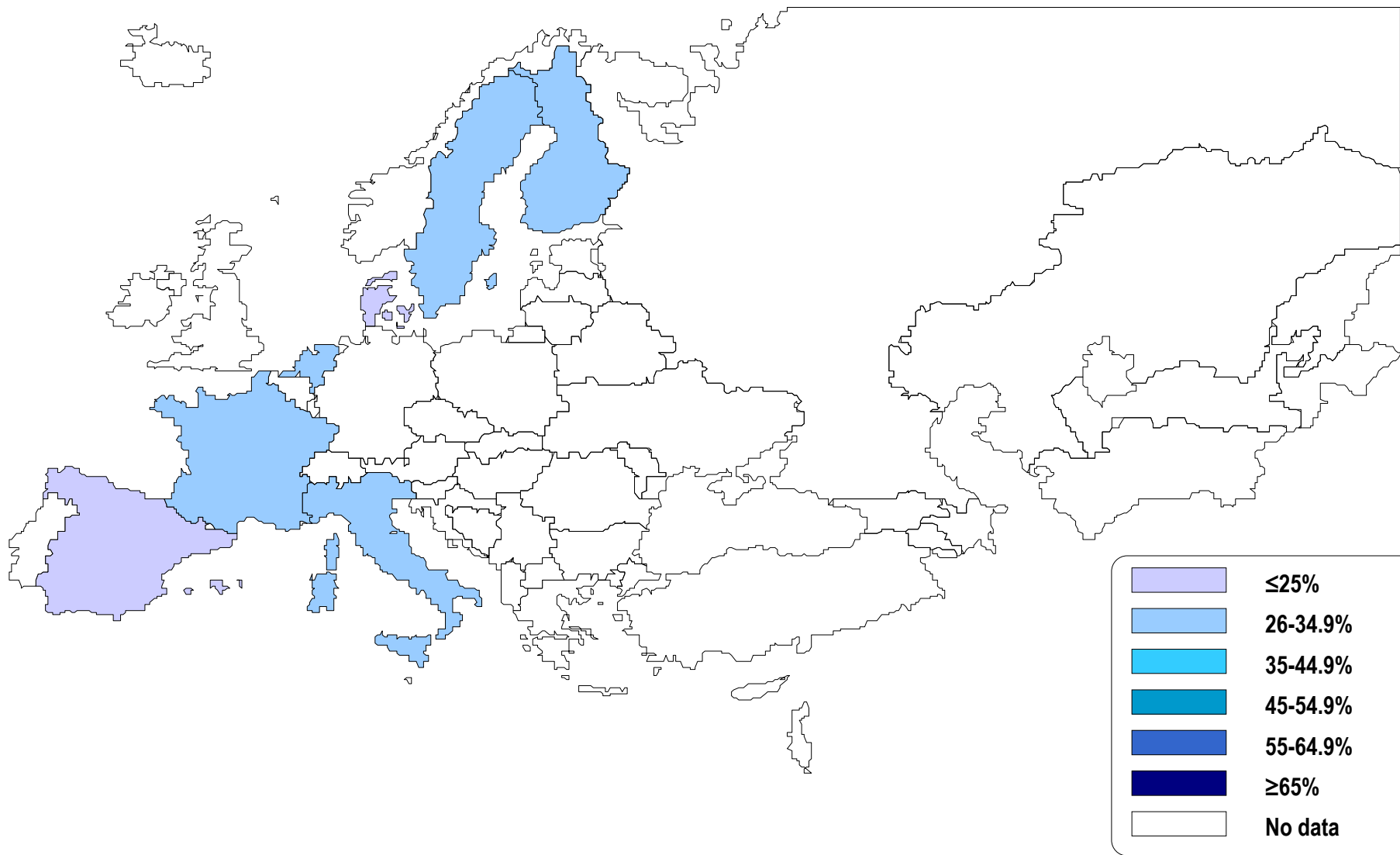
**Physical activity: decreases in both boys and girls**

# Prevalence of overweight (%) (BMI $\geq 25.0$ kg/m<sup>2</sup>) among adults in the EU based on WHO 2008 estimates



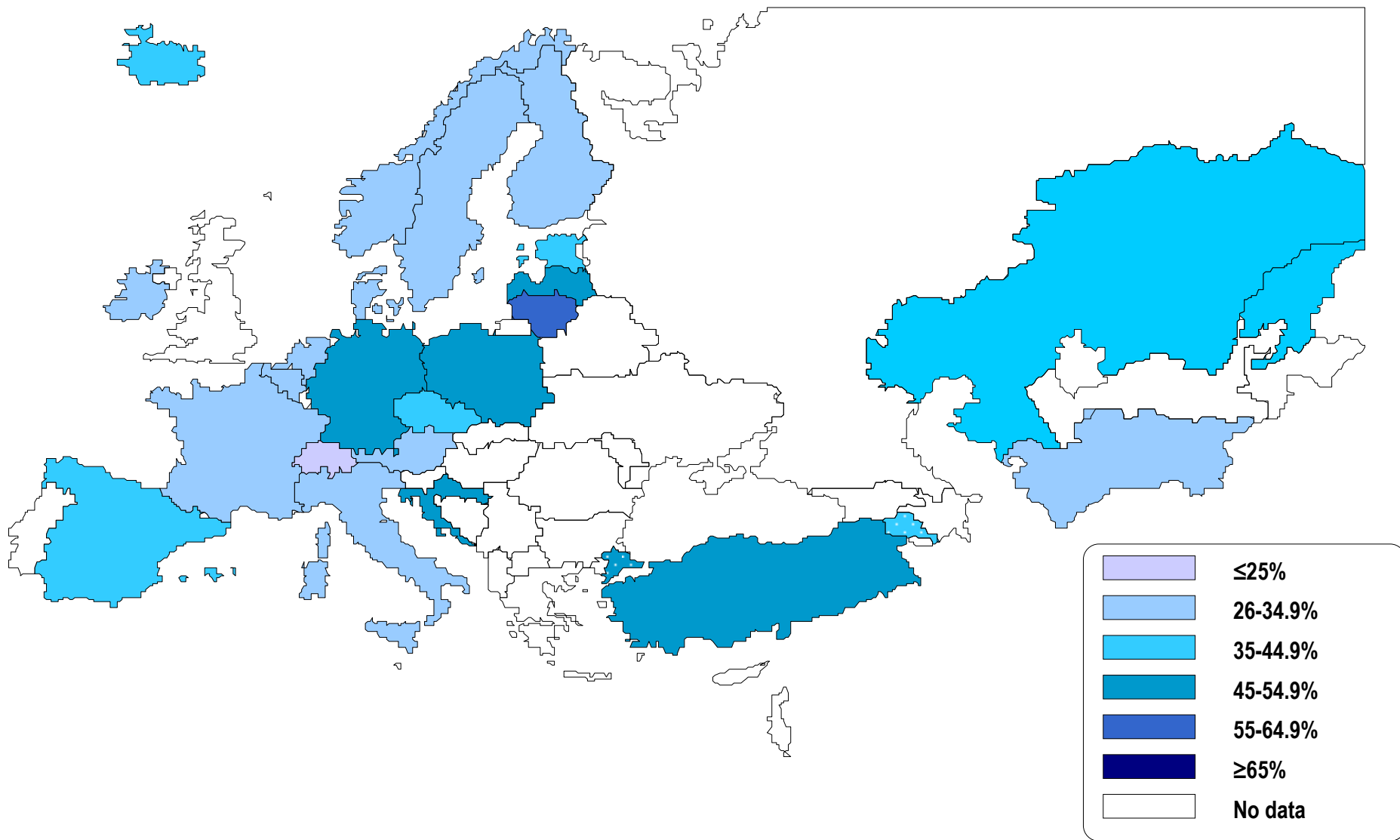
# Prevalence of obesity (%) (BMI $\geq 30.0$ kg/m<sup>2</sup>) among adults in the EU based on WHO 2008 estimates





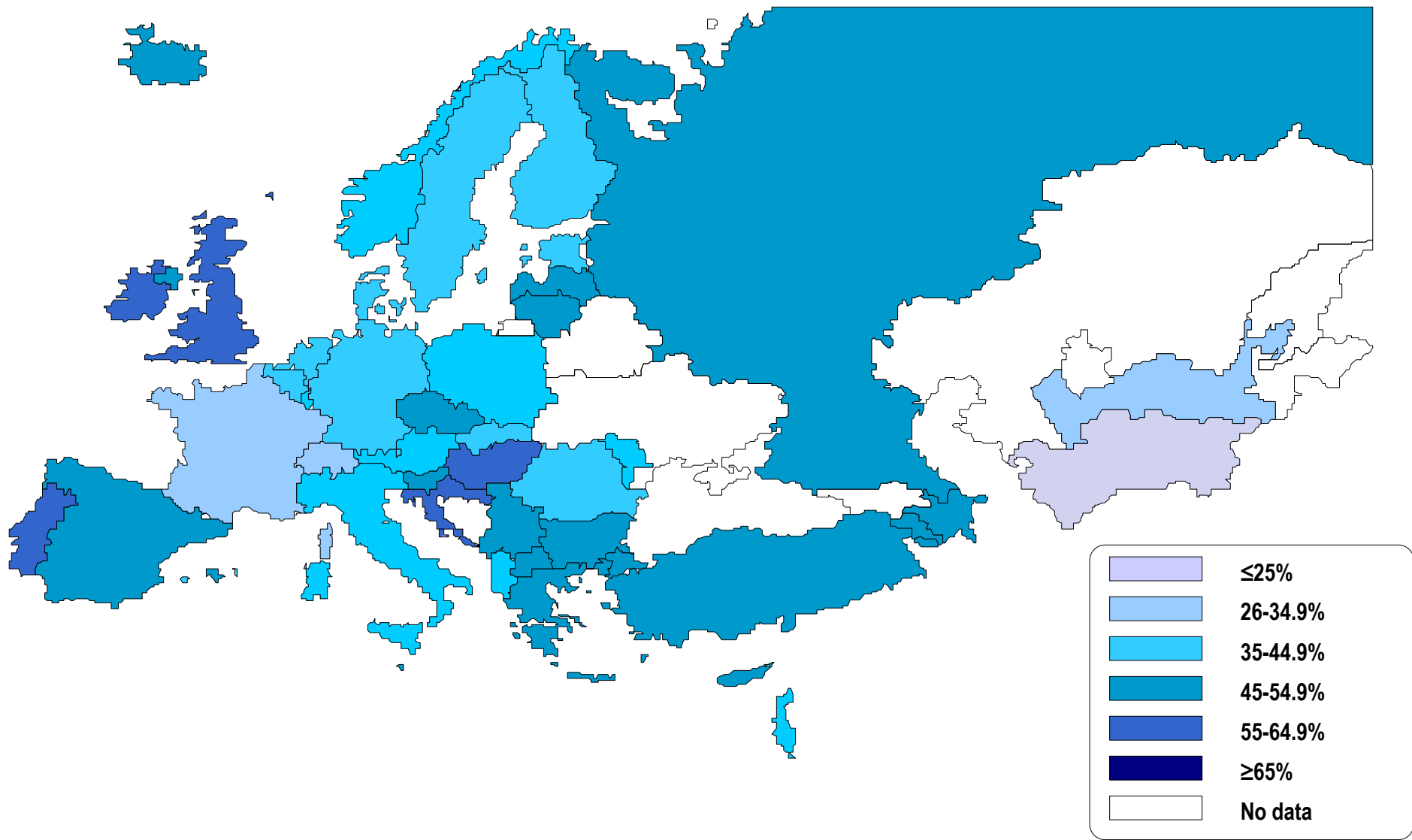
Prevalence of overweight (BMI  $\geq 25$  kg/m<sup>2</sup>)  
among adult females, 1980-1989

Source: WHO Regional Office for Europe, 2013



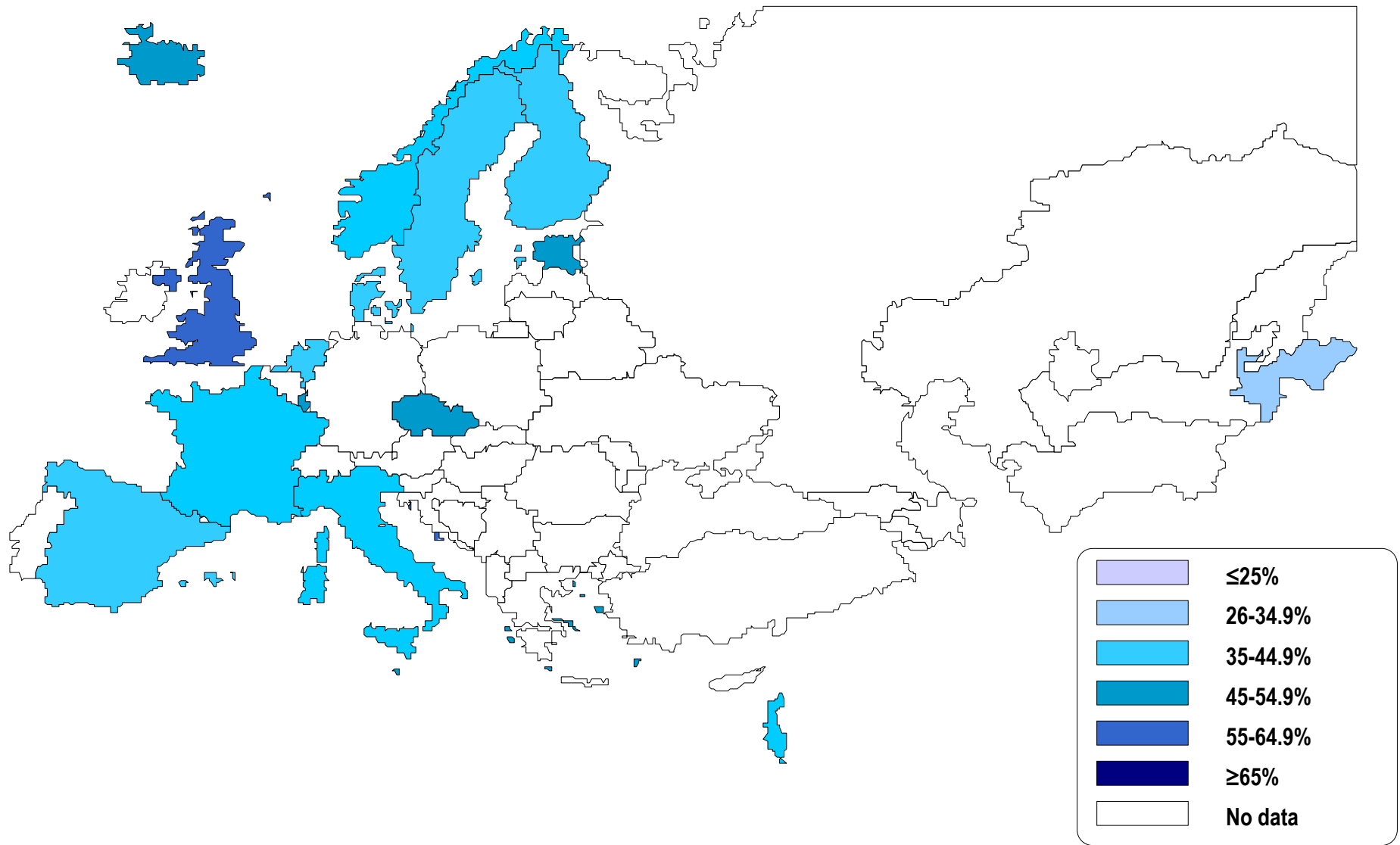
Prevalence of overweight (BMI  $\geq 25$  kg/m<sup>2</sup>)  
among adult females, 1990-1999

Source: WHO Regional Office for Europe, 2013



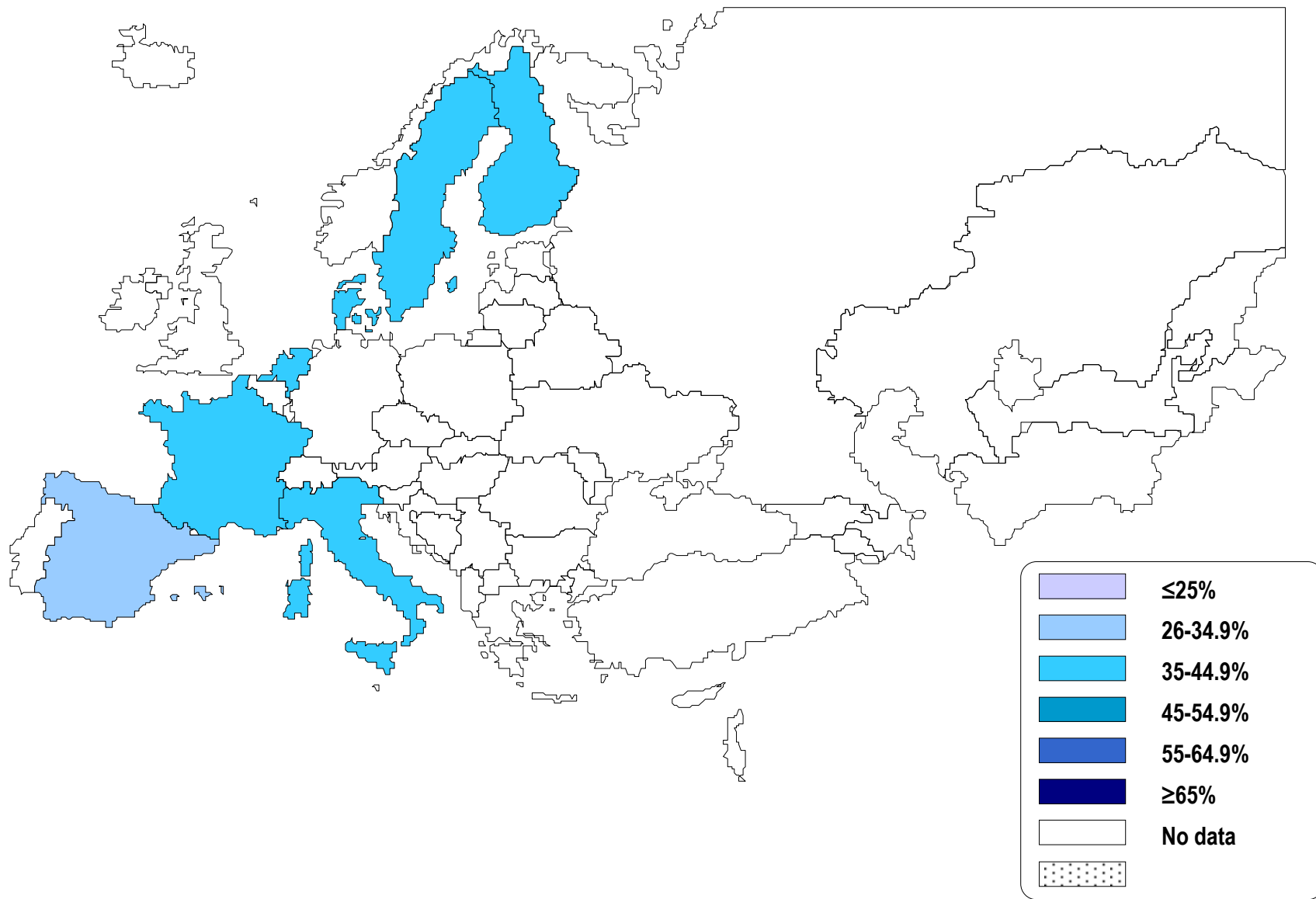
**Prevalence of overweight (BMI  $\geq 25$  kg/m<sup>2</sup>)  
among adult females, 2000-2009**

Source: WHO Regional Office for Europe, 2013



Prevalence of overweight (BMI  $\geq 25$  kg/m<sup>2</sup>)  
among adult females, from 2010

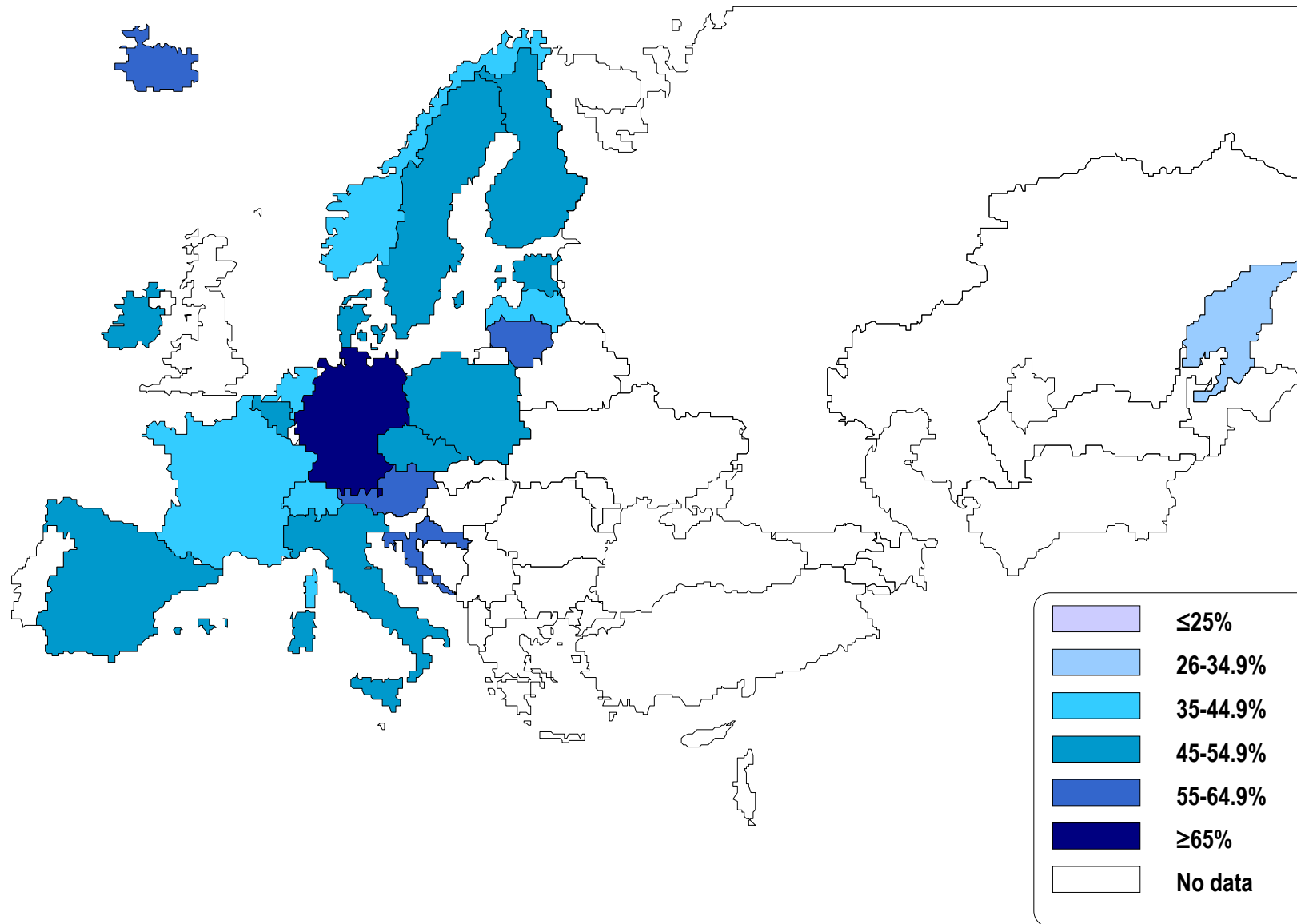
Source: WHO Regional Office for Europe, 2013



**Prevalence of overweight (BMI  $\geq 25$  kg/m<sup>2</sup>)  
among adult males, 1980-1989**

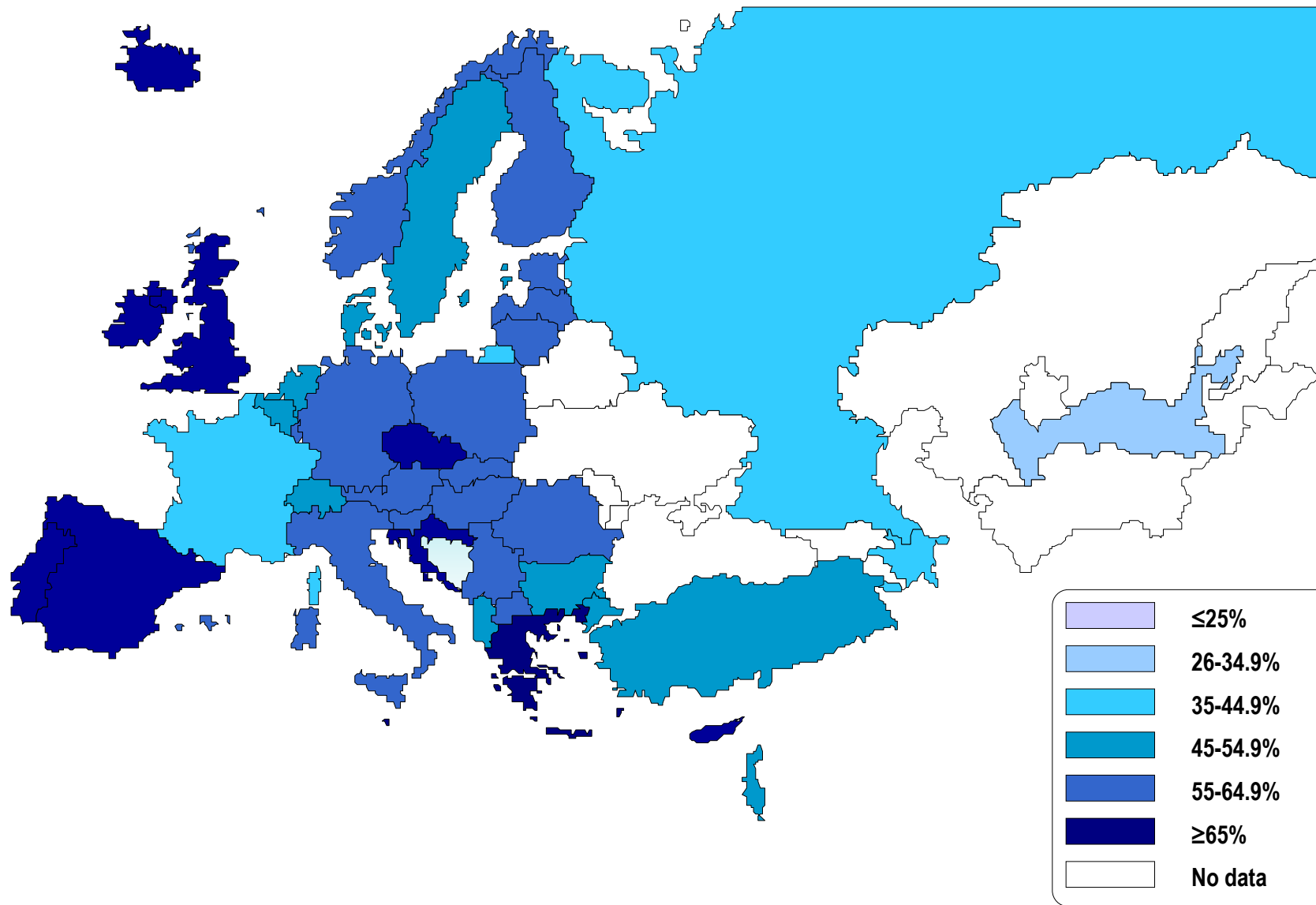
Source: WHO Regional Office for Europe, 2013





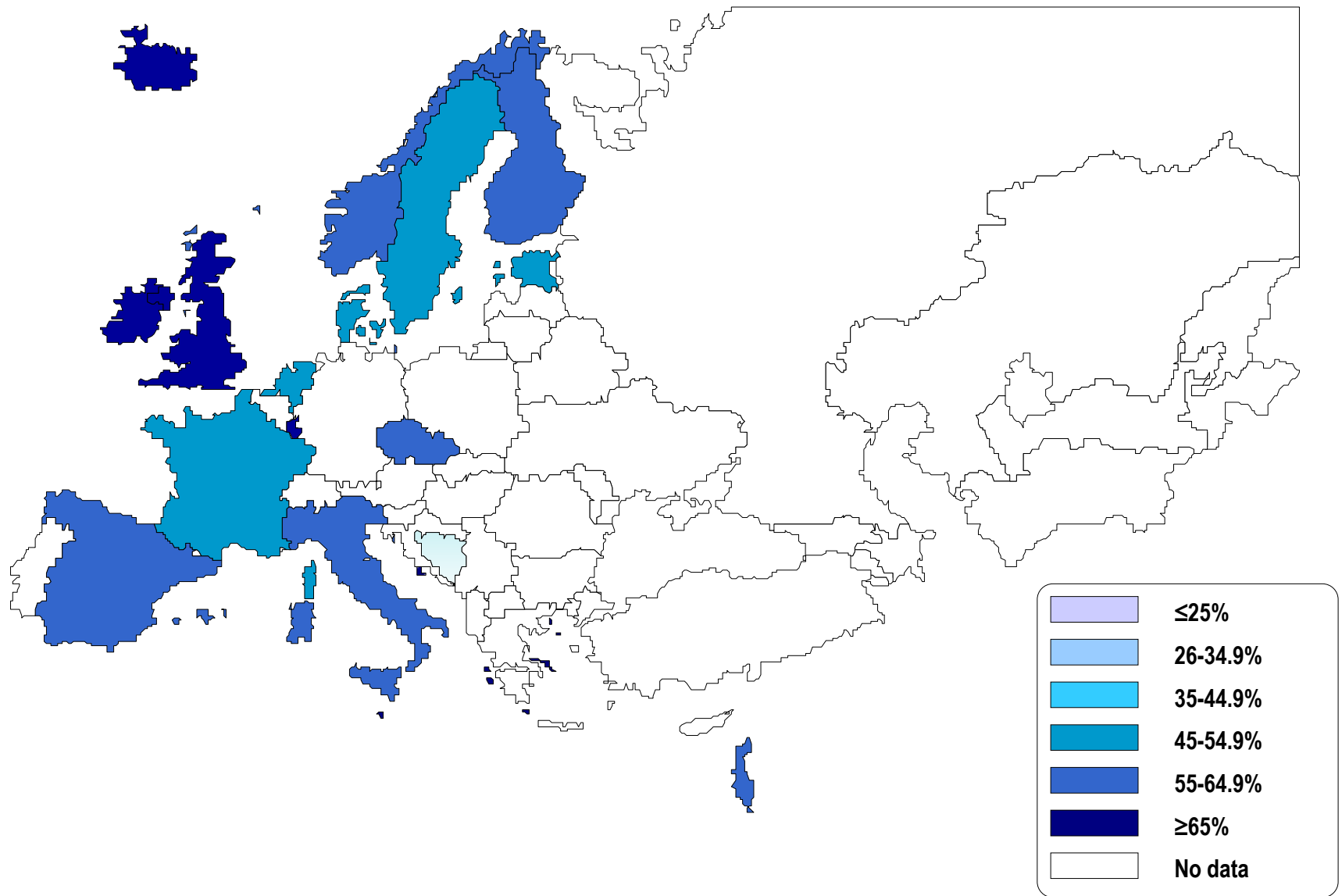
**Prevalence of overweight (BMI  $\geq 25$  kg/m<sup>2</sup>)  
among adult males, 1990-1999**

Source: WHO Regional Office for Europe, 2013



**Prevalence of overweight (BMI  $\geq 25$  kg/m<sup>2</sup>)  
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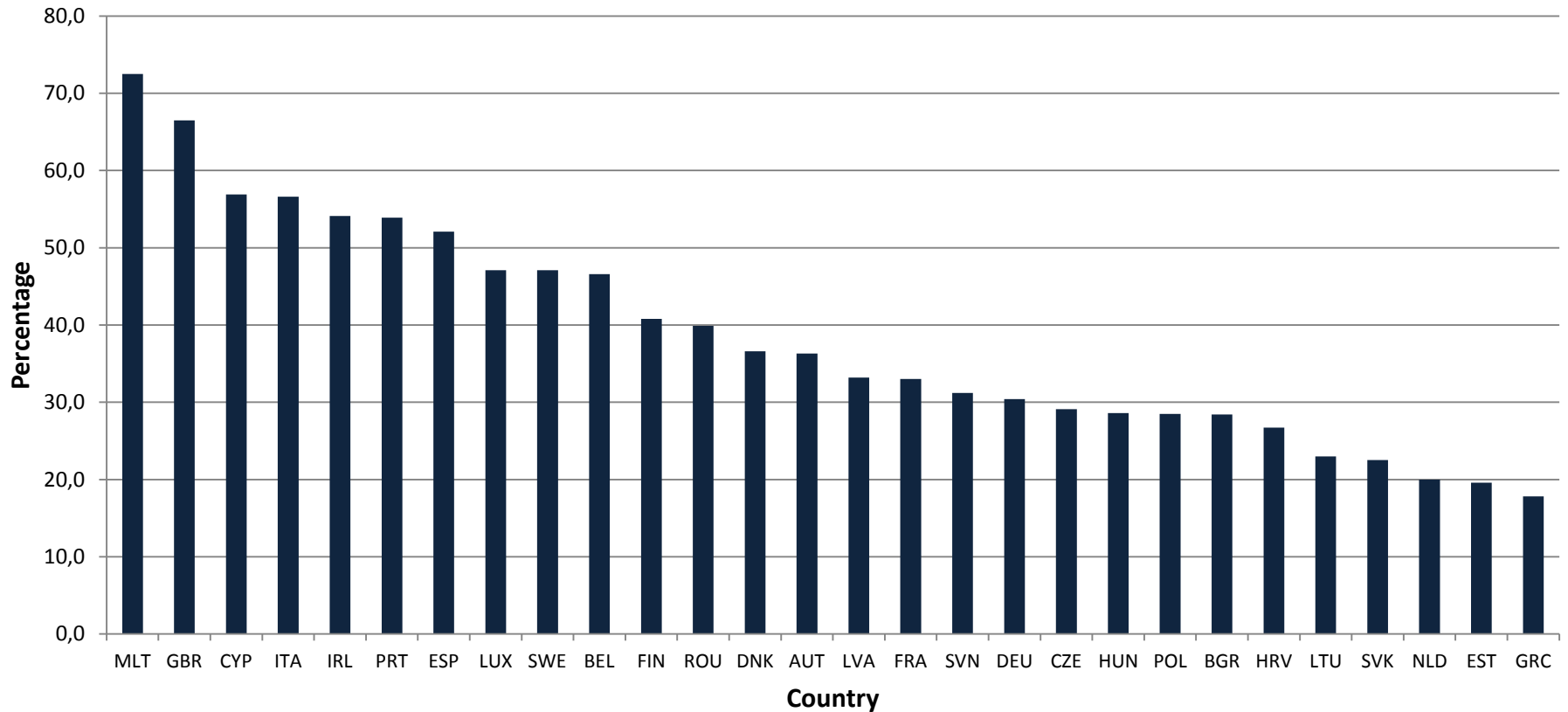
Source: WHO Regional Office for Europe, 2013



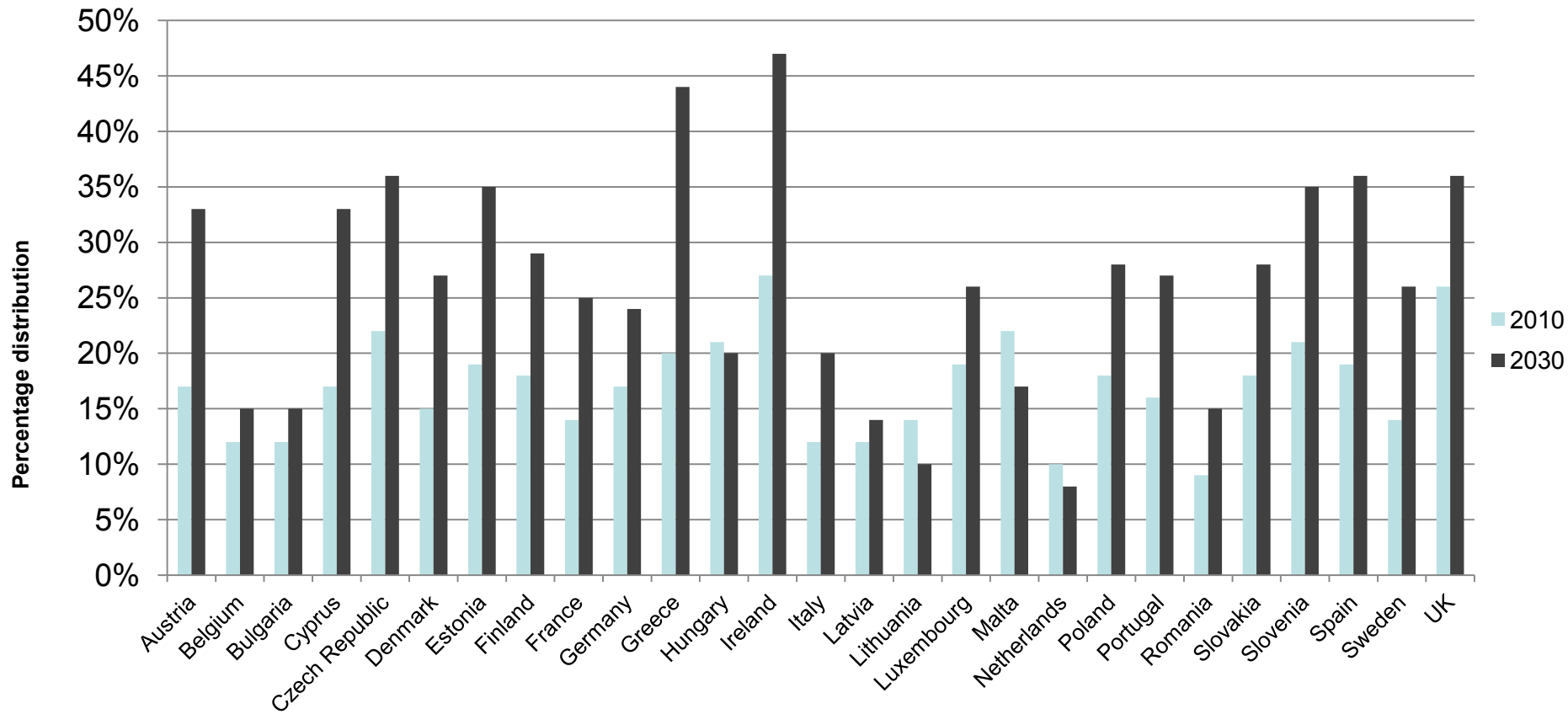
**Prevalence of overweight (BMI  $\geq 25$  kg/m<sup>2</sup>)  
among adult males, from 2010**

Source: WHO Regional Office for Europe, 2013

# Physical inactivity – WHO estimates 2008

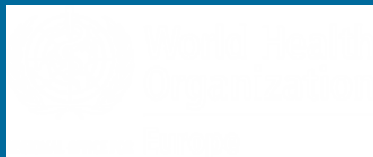
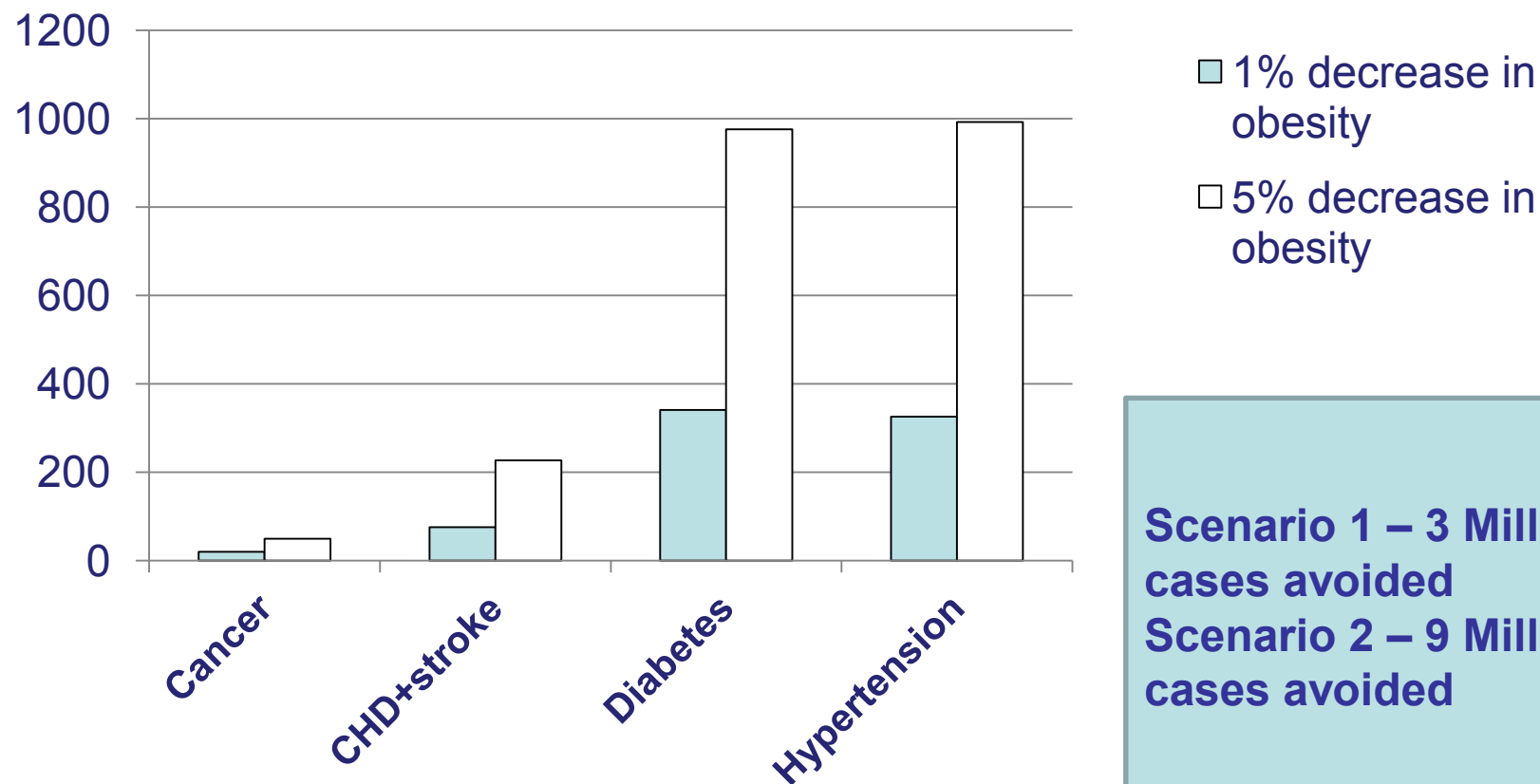


# The European obese model: the shape of things to come

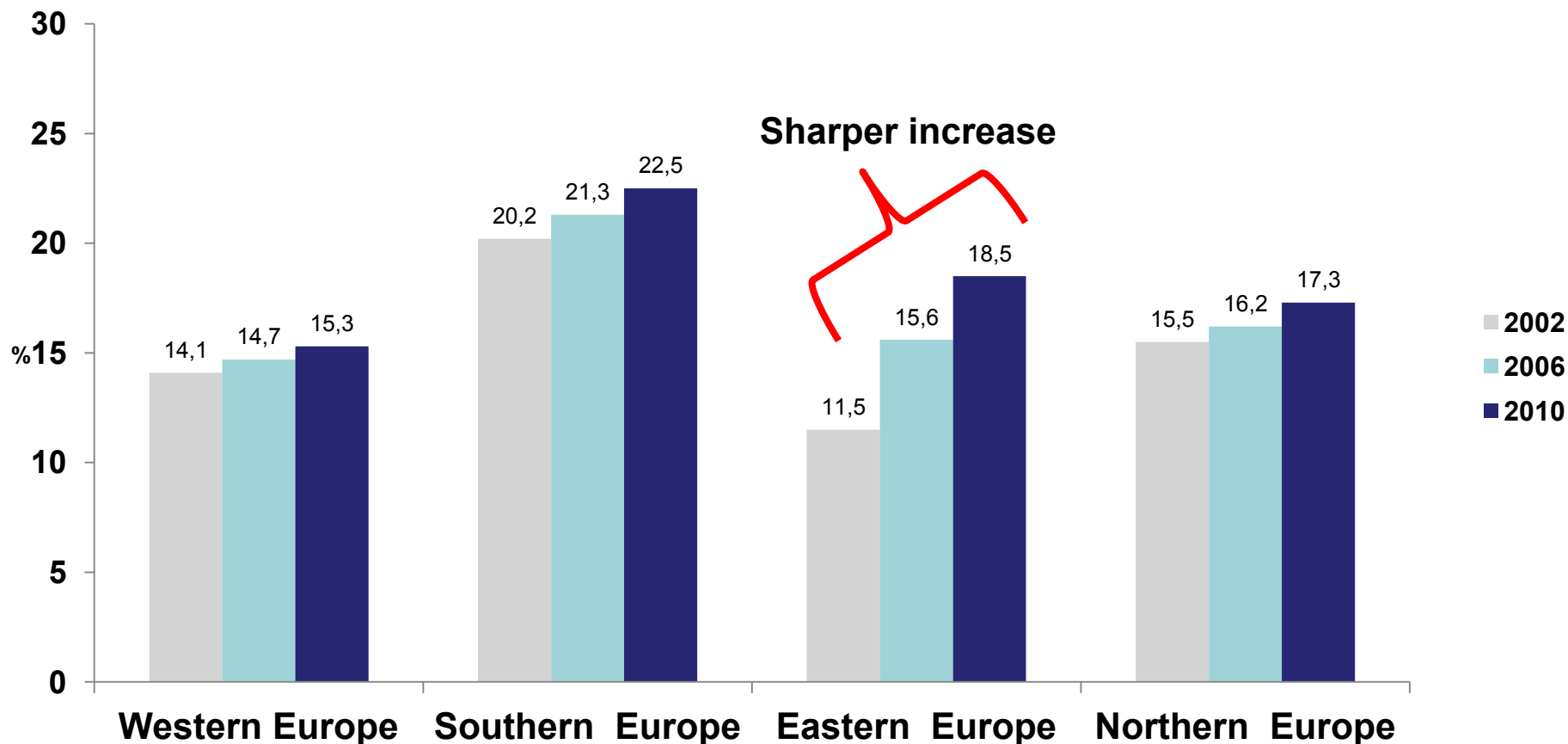


# Prevalence gains per 100,000 of the EU population in 2030 based on 2 scenarios

WHO Modelling obesity Project 2013 together with UK Health Forum – NOPA II



# Adolescents - overweight (including obesity) prevalence in youth according to “sub-region”



Overweight prevalence distribution according to geographical region in 32 countries within WHO European Region, considering both boys and girls with 11, 13, 15 (Source: HBSC) – *unpublished, please do not quote*

# Obesity and inequalities

Curr Obes Rep (2014) 3:1–15

DOI 10.1007/s13679-013-0087-2

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ETIOLOGY OF OBESITY (MS WESTERTERP-PLANTENGA, SECTION EDITOR)

## Social Inequalities in Obesity Persist in the Nordic Region Despite Its Relative Affluence and Equity

Maria Magnusson • Thorkild I. A. Sørensen • Steingerdur Olafsdottir •  
Susanna Lehtinen-Jacks • Turid Lingaas Holmen •  
Berit Lilienthal Heitmann • Lauren Lissner

### THE PARADOXAL LINK BETWEEN FOOD INSECURITY AND OBESITY IN PORTUGUESE ADULTS

*M J. Gregório<sup>1</sup>, P. Graça<sup>1,2</sup>, C A. Santos<sup>2</sup>, S. Gomes<sup>2</sup>, P J. Nogueira<sup>2,3</sup>*

<sup>1</sup>Faculty of Nutrition and Food Sciences of University of Porto, Porto, Portugal

<sup>2</sup>Directorate-General of Health, Lisbon, Portugal

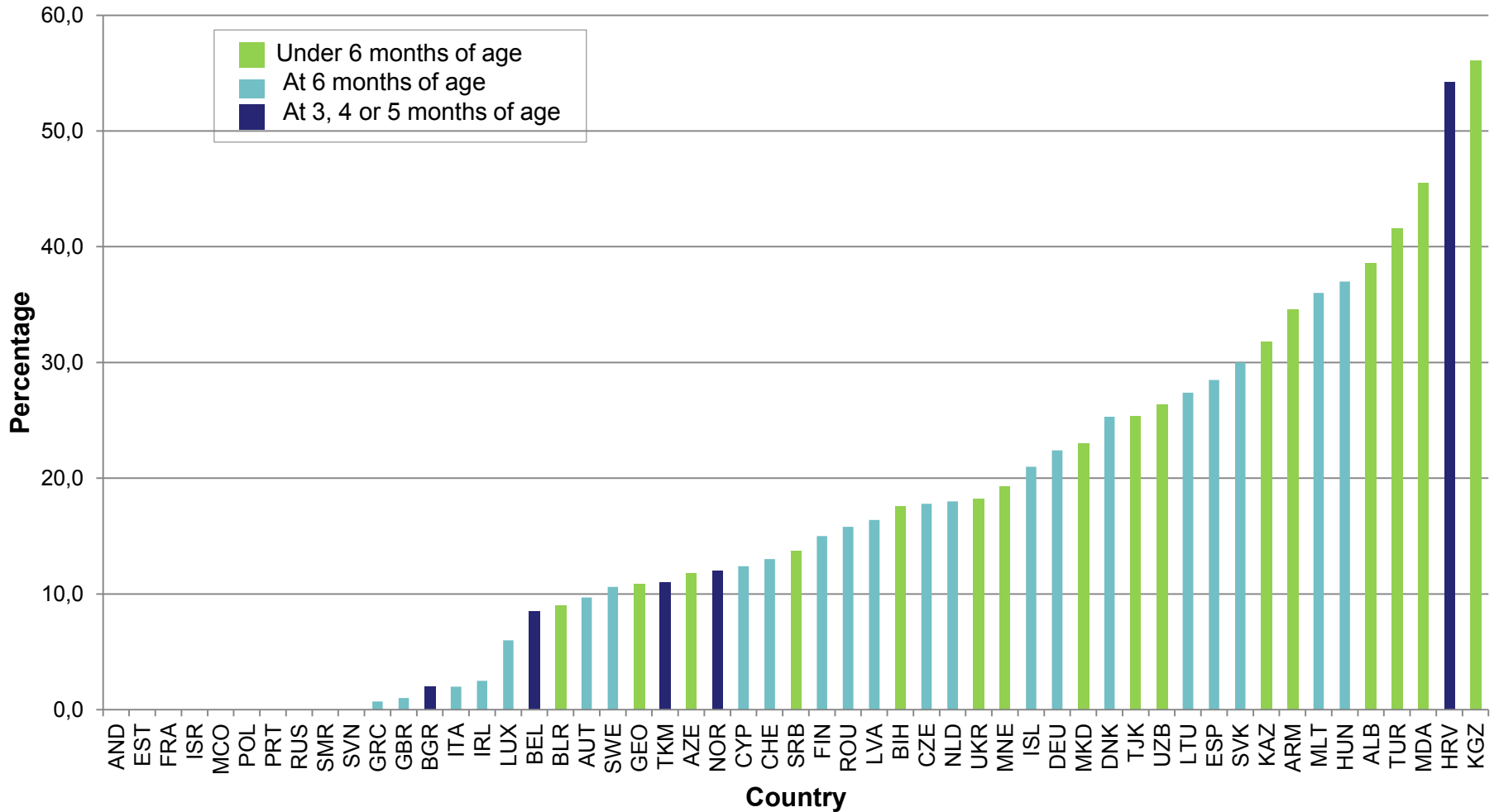
<sup>3</sup>Institute of Preventive Medicine - Faculty of Medicine – University of Lisbon, Lisbon, Portugal

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Ann Nutr Metab 2013;63(suppl 1):1–1960



# Prevalence of exclusive breastfeeding (%) under or at 6 months of age from individual country-based surveys, various years





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Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

**SciVerse ScienceDirect**

journal homepage: [www.elsevier.com/locate/nmcd](http://www.elsevier.com/locate/nmcd)

**Nutrition,  
Metabolism &  
Cardiovascular Diseases**

# Complementary feeding and non communicable diseases: Current knowledge and future research needs

E.M.E. Poskitt <sup>a,\*</sup>, J. Breda <sup>b</sup>

## RESEARCH

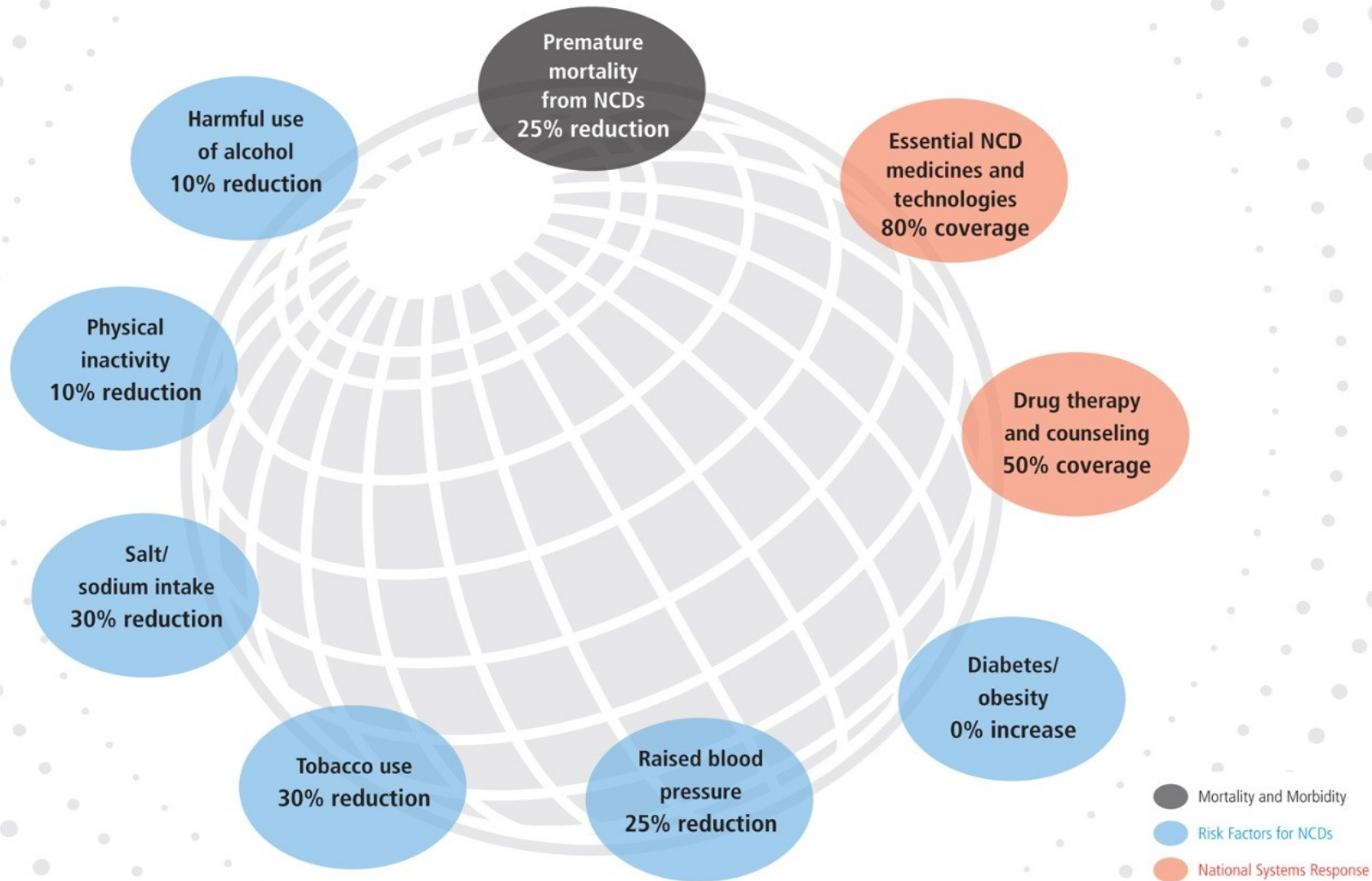
# Cardiovascular disease risk in healthy children and its association with body mass index: systematic review and meta-analysis

 OPEN ACCESS

Claire Friedemann *DPhil student*, Carl Heneghan *reader in evidence based medicine*, Kamal Mahtani *NIHR academic clinical lecturer*, Matthew Thompson *general practitioner and senior clinical scientist*, Rafael Perera *head of statistics*, Alison M Ward *director of postgraduate studies*

University of Oxford, Department of Primary Care Health Sciences, New Radcliffe House, Radcliffe Observatory Quarter, Oxford OX2 6GG, UK

# Set of 9 voluntary global NCD targets for 2025

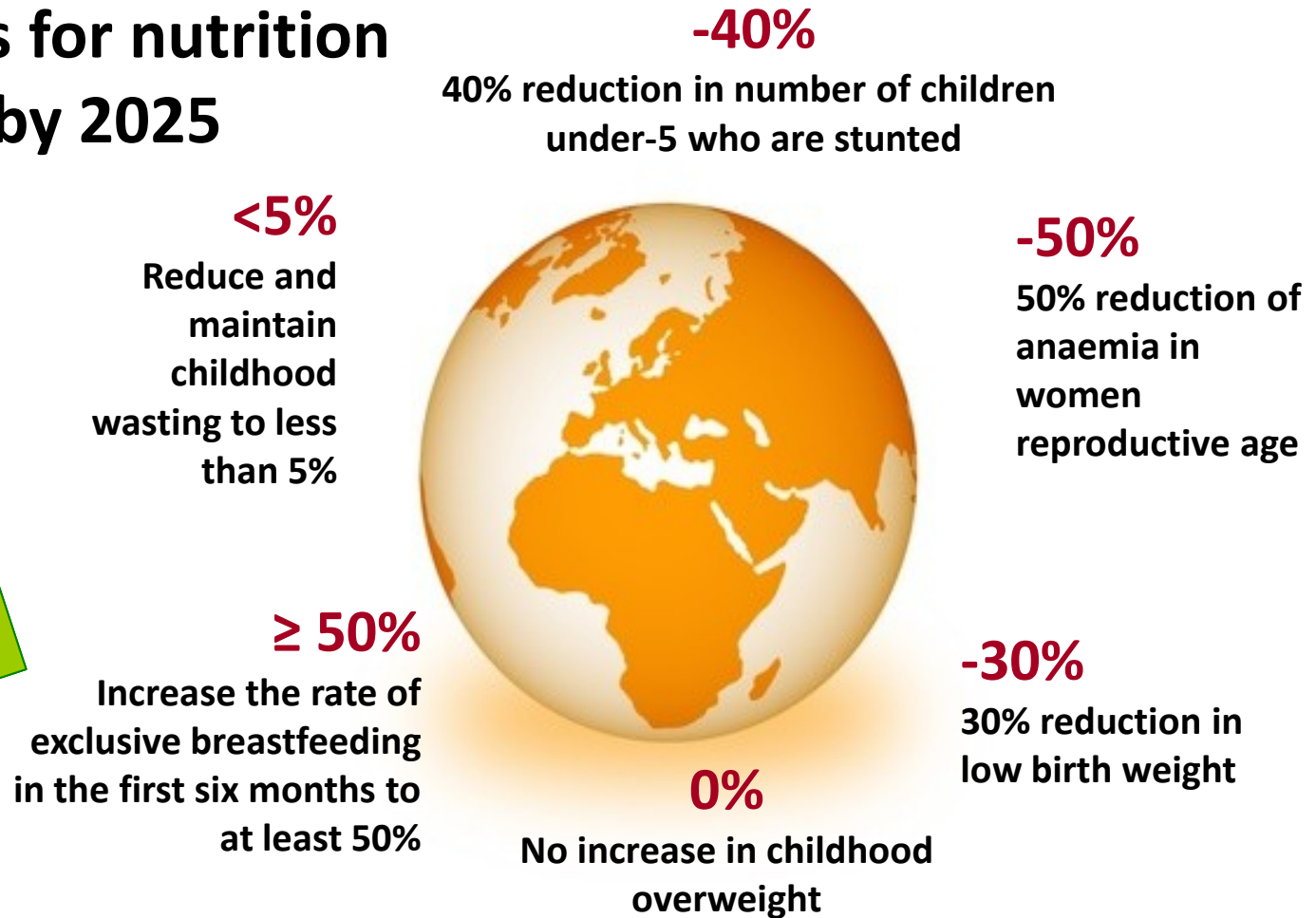


# How can we support national efforts?

## WHO provides upstream policy advice to set national targets

### 6 global targets for nutrition to be attained by 2025

WHO  
Comprehensive  
implementation  
plan on  
maternal, infant  
and young  
child nutrition  
2012-2025



# Health 2020

## Strategic objectives

1. Improving health for all and reducing health inequalities
2. Improving leadership and participatory governance for health

## Priority areas


**Life-course approach**  
Invest in health through life-course approach and empower citizens



**Strategic objectives**  
Reducing inequalities  
Better governance

WHO European policy framework  
for health and well-being  
**HEALTH 2020**

**Burden of disease**  
Tackle Europe's major disease burdens of noncommunicable and communicable diseases



**Strategic objectives**  
Reducing inequalities  
Better governance

WHO European policy framework  
for health and well-being  
**HEALTH 2020**

**Health systems**  
Strengthen people-centred health systems and public health capacity



**Strategic objectives**  
Reducing inequalities  
Better governance

WHO European policy framework  
for health and well-being  
**HEALTH 2020**

**Resilient communities**  
Create supportive environments and resilient communities



**Strategic objectives**  
Reducing inequalities  
Better governance

WHO European policy framework  
for health and well-being  
**HEALTH 2020**

# HEALTH 2020

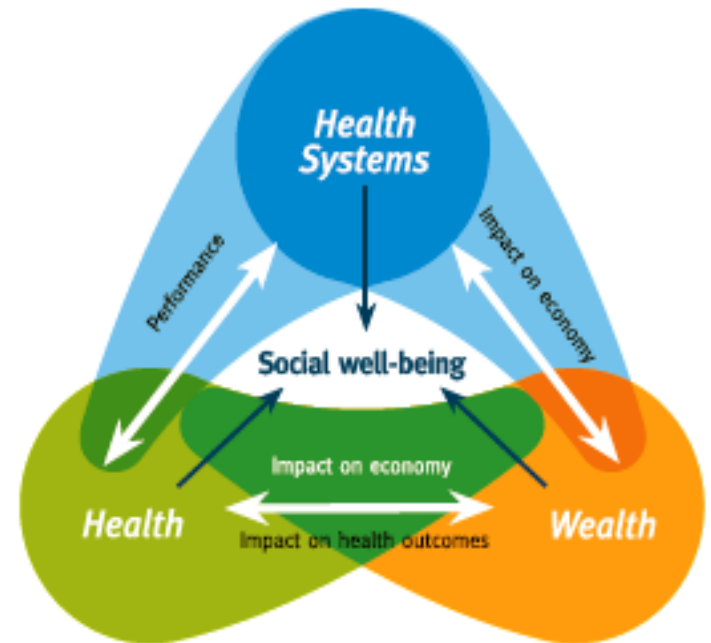


- **Widening health gaps**
- **Life-course approach**
- **Governance**



# Public health in the Tallinn Charter

- Importance of disease prevention, health promotion and health stewardship in other sectors (Art. 5)
- Key pillars are equity and participation (Art. 6)
- Holistic approach to population health, with primary care as a cornerstone (Art. 13)





# Strengthening public health capacities and services

RC 2011: Framework for Action

RC 2012: European Action Plan



- **Public Health is a centrepiece of Health 2020**
- **Articulated in 10 Essential Public Health Operations (EPHOs)**
- **Provides a framework for Member States to improve their PH services and capacities**

# The 10 Essential Public Health Operations (EPHOs) for strengthening Public Health service delivery

**VISION: Sustainable Health & Well-Being**

## CORE EPHOs

### INTELLIGENCE

EPHO 1 + 2

Surveillance

Monitoring

*Informing  
health  
assessments  
preparedness  
and plans*

## SERVICE DELIVERY

EPHO 4  
Health Promotion

EPHO 3  
Health  
Protection

EPHO 5  
Disease  
Prevention

## ENABLER EPHOs

Governance (EPHO6)

PH Workforce  
(EPHO7)

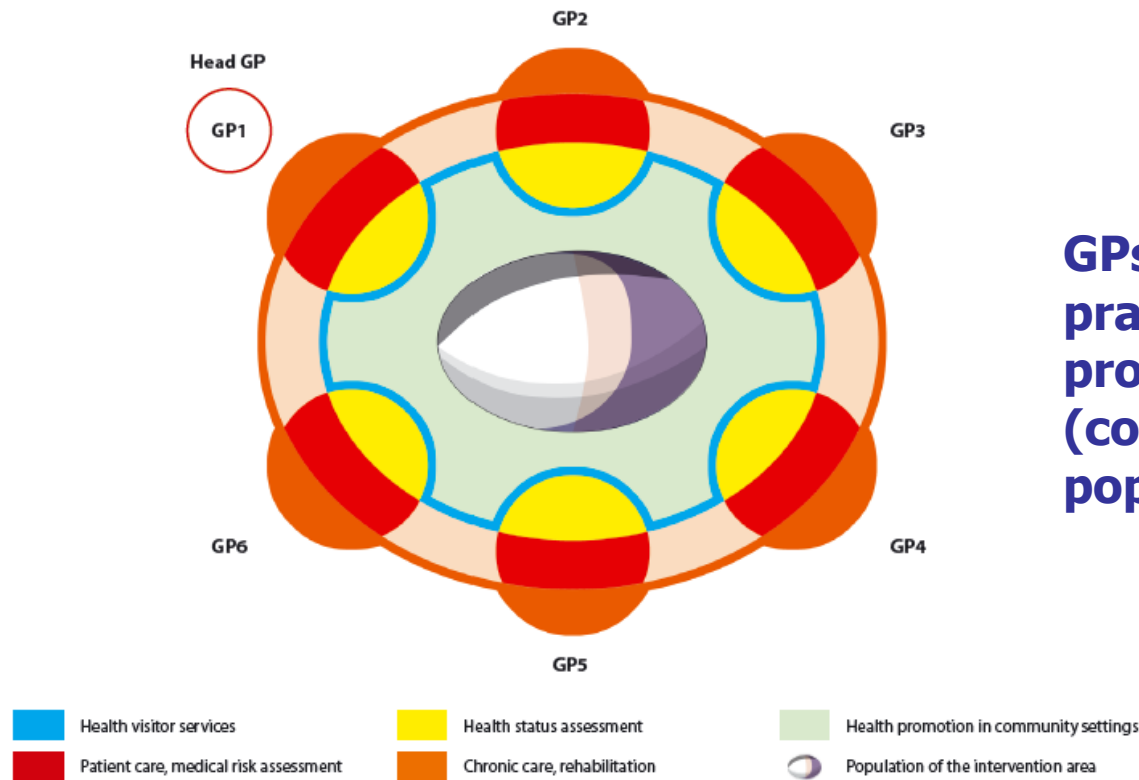
Funding (EPHO 8)

Communication  
(EPHO9)

Research (EPHO 10)



# GP Cluster model – reorienting PHC to Public Health Services



**GPs' cluster: six general practices (circles), which provide a range of services (colours) to the target population (central oval)**

Source: Ádány, Róza, et al. "General practitioners' cluster: a model to reorient primary health care to public health services." *The European Journal of Public Health* 23.4 (2013): 529-530.

# Do we have enough evidence?

*S Garrett, CR Elley, SB Rose, et al*

## **Are physical activity interventions in primary care and the community cost-effective?**

A systematic review of the evidence

*Sue Garrett, C Raina Elley, Sally B Rose, Des O'Dea, Beverley A Lawton and Anthony C Dowell*

## **Effectiveness of exercise-referral schemes to promote physical activity in adults:**

systematic review


*Nefyn H Williams, Maggie Hendry, Barbara France, Ruth Lewis and Clare Wilkinson*

# Do we have enough evidence?

## RESEARCH


Pavey et al.

### Effect of exercise referral schemes in primary care on physical activity and improving health outcomes: systematic review and meta-analysis

 OPEN ACCESS

## RESEARCH

### Effectiveness of physical activity promotion based in primary care: systematic review and meta-analysis of randomised controlled trials

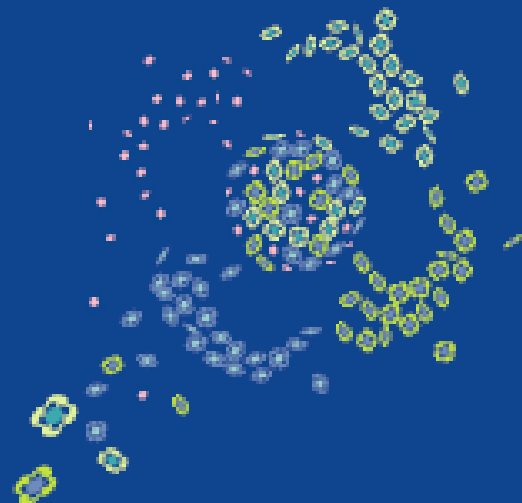
 OPEN ACCESS

*Gillian Orrow academic clinical fellow in general practice, Ann-Louise Kinmonth foundation professor of general practice, Simon Sanderson senior clinical research associate, Stephen Sutton professor of behavioural science*

General Practice and Primary Care Research Unit, Department of Public Health and Primary Care, Institute of Public Health, University of Cambridge, Cambridge CB2 0SR, UK

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Венская декларация о питании и  
неинфекционных заболеваниях в  
контексте политики Здоровье-2020

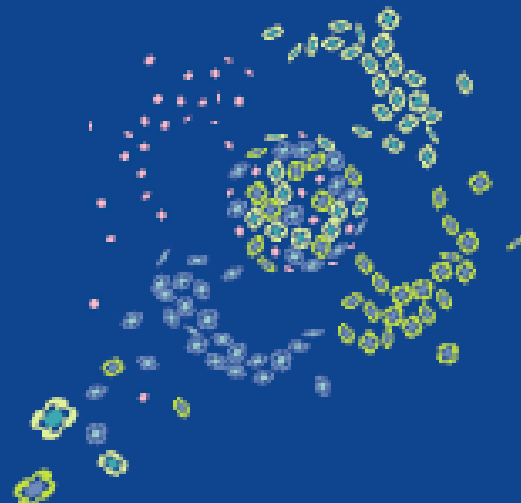


Министерская конференция ВОЗ по вопросам  
питания и неинфекционных заболеваний в  
контексте политики Здоровье-2020

Вена, Австрия  
4-6 июля 2013 г.

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Vienna Declaration on Nutrition  
and Noncommunicable Diseases  
in the Context of Health 2020



WHO Ministerial Conference on Nutrition  
and Noncommunicable Diseases  
in the Context of Health 2020

Vienna, Austria  
4-6 July 2013

# Priority area - Reinforce health systems to promote health and to provide services for NCDs



# Primary care counselling : nutrition and physical activity

	Nutrition counseling in PHC: fully implemented	Physical activity counseling in PHC: fully implemented
Non EU Member States	18%	24%



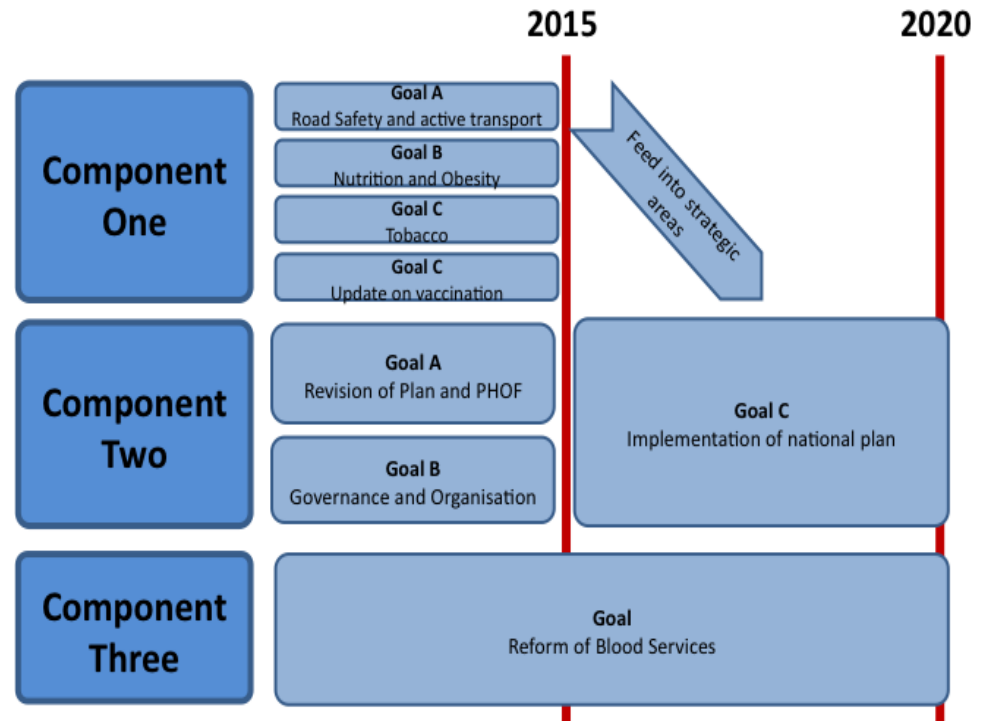
# Nutrition and PA in PHC

## WHO response in and H2020 context

- 50-70% PHC personnel (nurses and physicians without any relevant training in nut and PA) in selected European countries
- Only 1 in 3 countries have fully implemented nutrition counselling schemes and less than 2 in 10 on physical activity
- Primary care counselling of patients at risk - effective ways of changing behaviours
  - 10 times larger DALY gains over the long term than other interventions,
  - 2 to 4 times larger gains in life years with greater savings in health expenditure but complex and costly.

# Public Health Pillar Action Plan

- AP structured around three Components
- Component One includes key interventions to provide rapid health gains and support for more profound strategic reforms
- Nutrition and Obesity is one of the goals of this component
- AP expected to be signed of in the next few days



# Priority area - Support surveillance, monitoring, evaluation and research of the population's nutritional status and behaviours



# Support surveillance, monitoring, evaluation and research of the population's nutritional status and behaviours



# Priority area - Promote the health gains of a healthy diet throughout the life-course, especially for the most vulnerable



# Public health interventions for better NCD Outcomes: health system

- Innovation
- Evidence
- Politics
- Management
- Training and capacity building
- PHC versus PCHC
- Sustainability

# THANK YOU

