WHERE NEXT FOR PREVENTION OF CHRONIC DISEASE?

Steven Allender, PhD

NHMRC/ Heart Foundation Career Development Fellow

NHMRC Centre of Research Excellence for Policy Research in Obesity and Food Systems

Professor of Population Health

Co-Director, WHO Collaborating Centre for Obesity Prevention

Quail Oration 22nd October 2013

WHO Collaborating Centre for Obesity Prevention

the CO-OPS collaboration of COMMUNITY-BASED obesity prevention sites

DEAKIN UNIVERSITY AUSTRALIA Worldly

OUTLINE

- ***<u>The problem</u>***
- The causes
- Possible solutions
- Current work
- Future directions

WHO CAUSES OF NCD FRAMEWORK

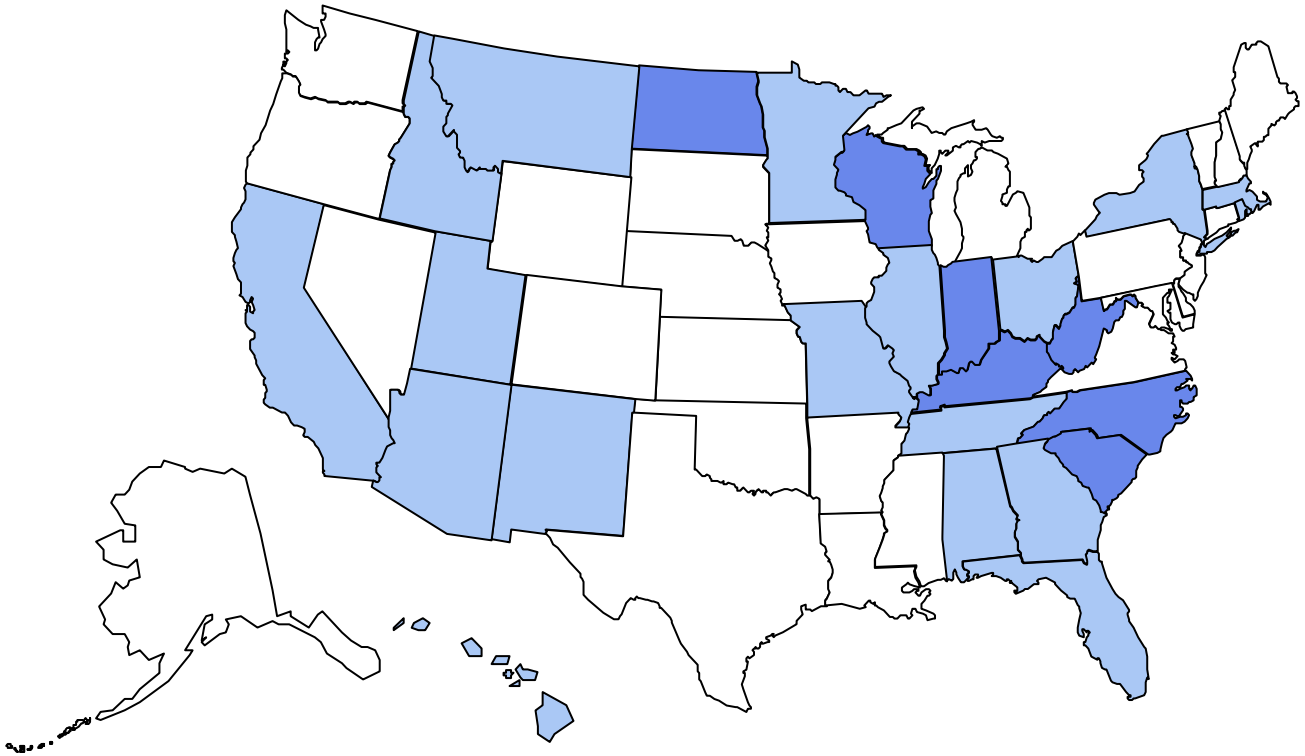
UNDERLYING SOCIOECONOMIC, CULTURAL, POLITICAL AND ENVIRONMENTAL DETERMINANTS	COMMON MODIFIABLE RISK FACTORS	INTERMEDIATE RISK FACTORS	MAIN CHRONIC DISEASES
Globalization	Unhealthy diet	Raised blood pressure	Heart disease
Urbanization	Physical inactivity	Raised blood glucose	Stroke
Population ageing	Tobacco use	Abnormal blood lipids	Cancer
	NON-MODIFIABLE RISK FACTORS	Overweight/obesity	Chronic respiratory diseases
	Age		Diabetes
	Heredity		

As we look to the future and where childhood obesity will be in 20 years... it is every bit as threatening to us as is the terrorist threat we face today.

Vice Admiral Richard Carmona
U.S. Surgeon General

OBESITY TRENDS* AMONG U.S. ADULTS
BRFSS, 1986-NOW

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



No Data | <10% | 10%–14%

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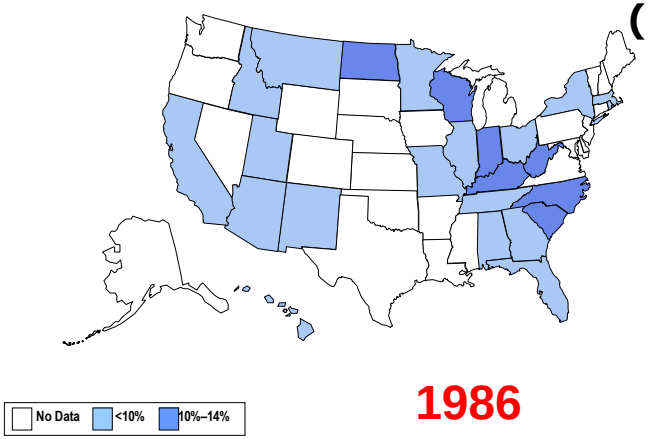

1986

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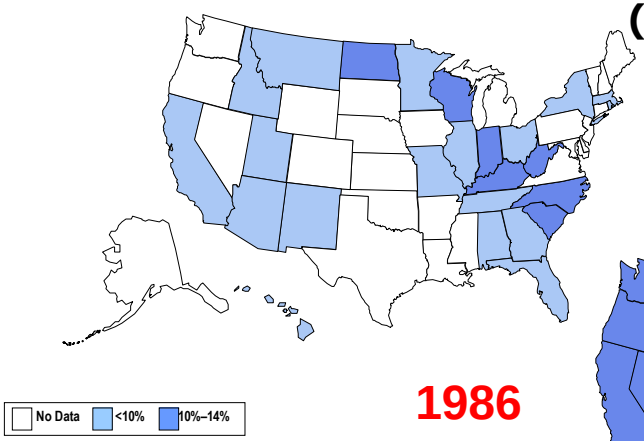
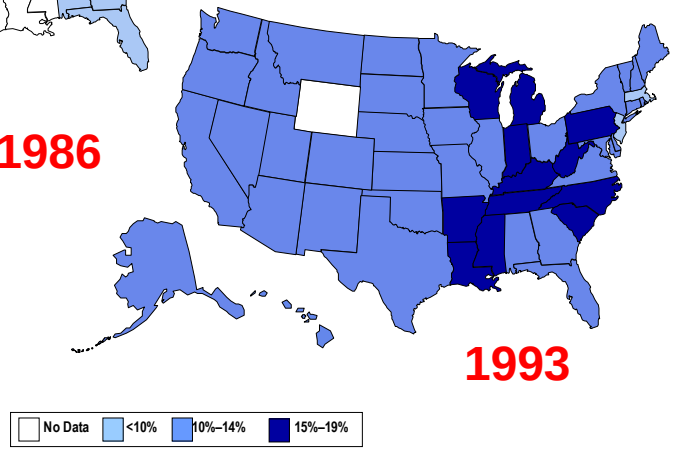


1986



1993

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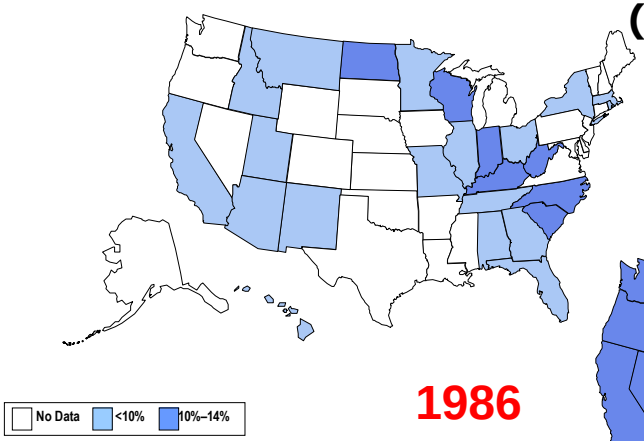

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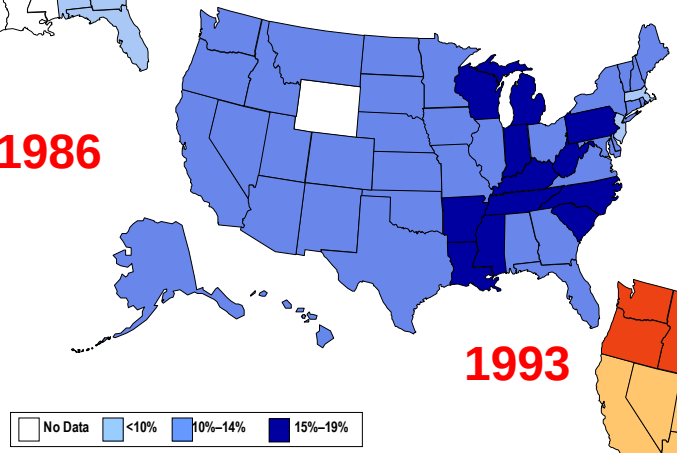
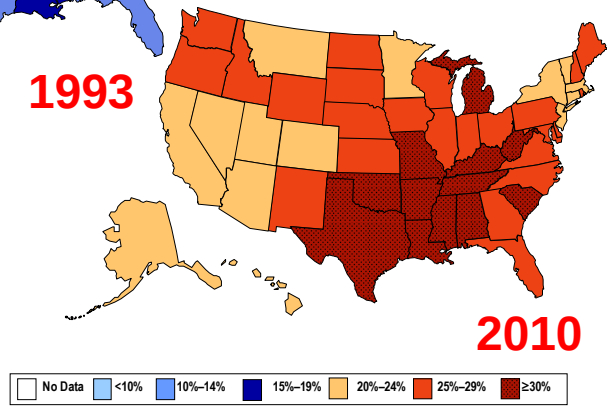


1993



2010

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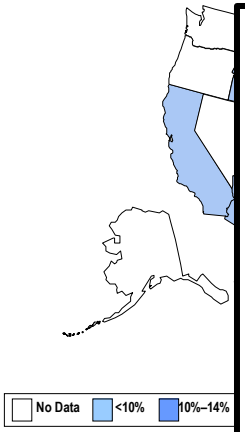

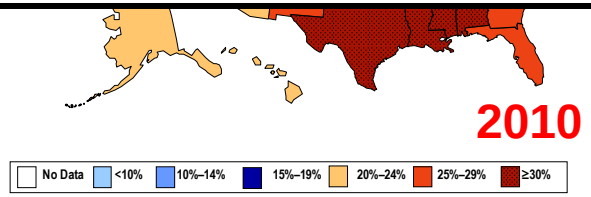

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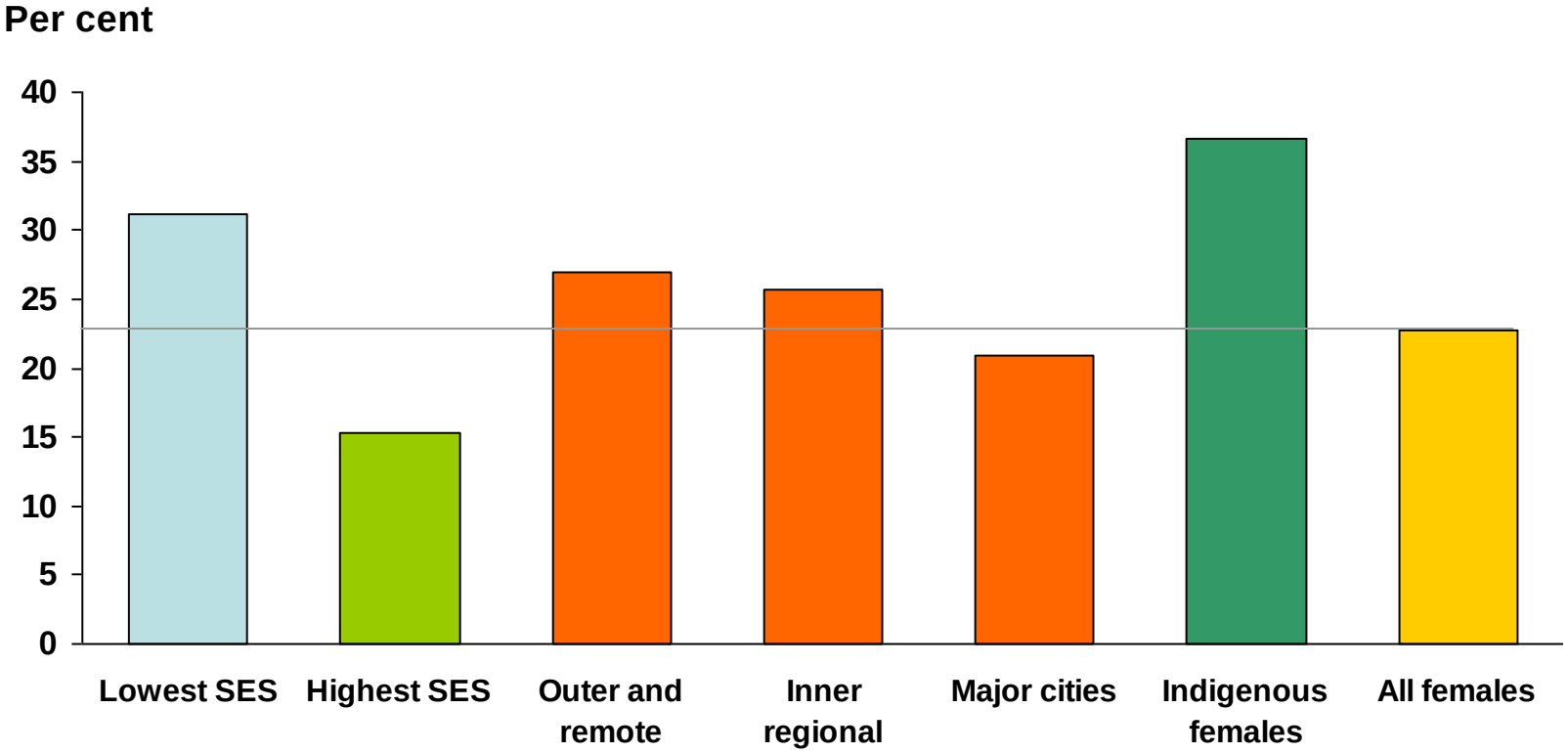
AUSTRALIA - OVERWEIGHT OR OBESE

	Males	Females
Overweight	42%	31%
Obese	25%	24%
Overweight or obese	67%	55%

Measured data, NHS 2007–08

COMPARISONS FOR OBESE FEMALES



Prevention of cardiovascular diseases, diabetes and chronic kidney disease (AHIW 2009, Cat. no. PHE 118)

OUTLINE

- The problem
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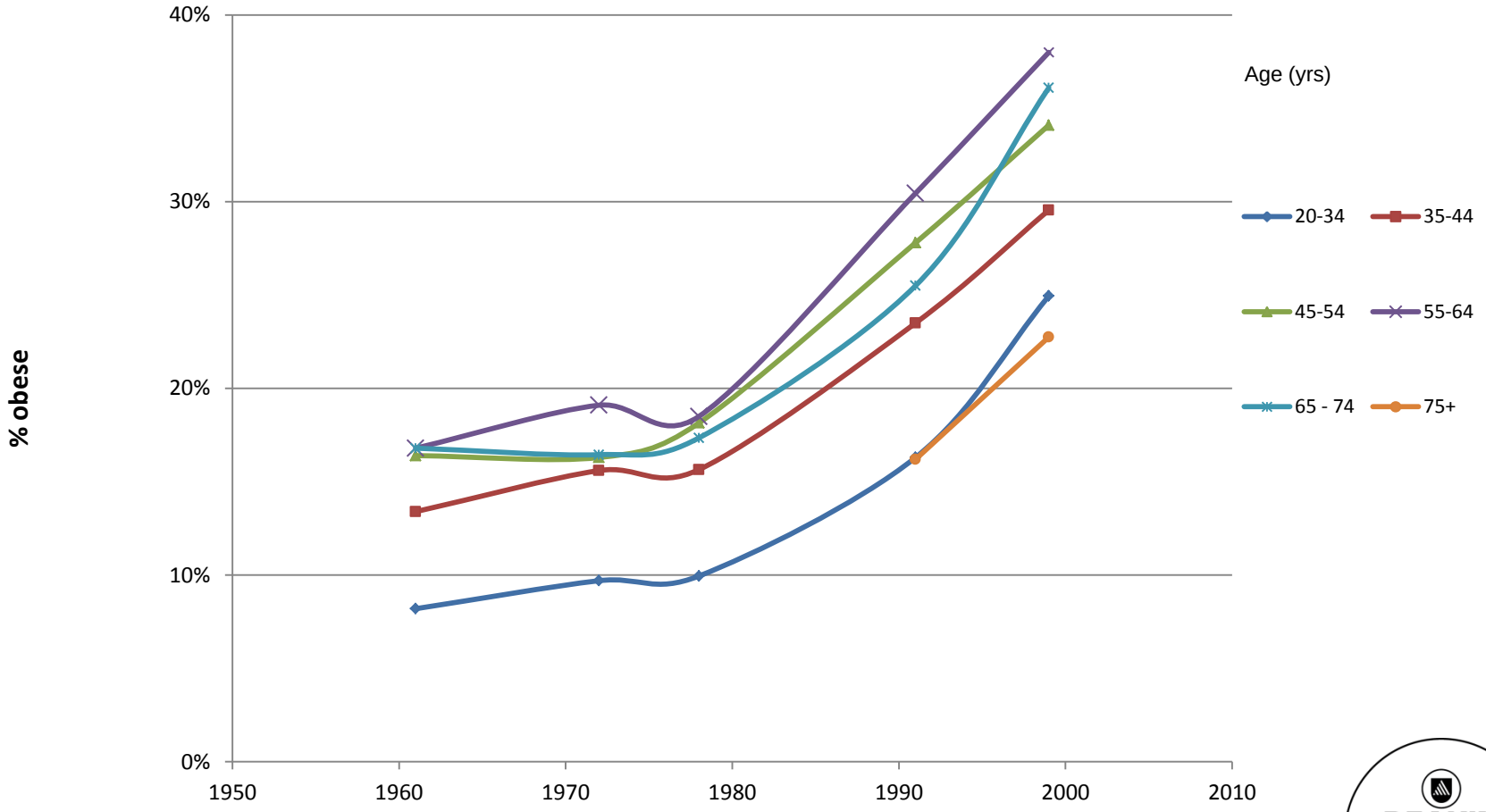
OBESITY INCREASE BY AGE GROUP



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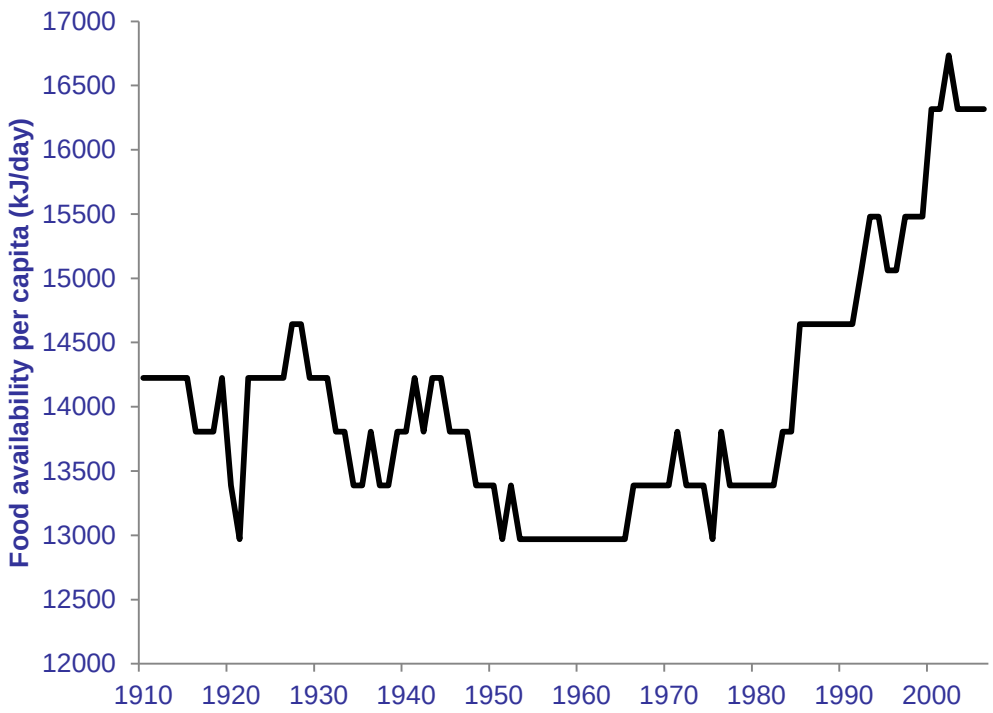
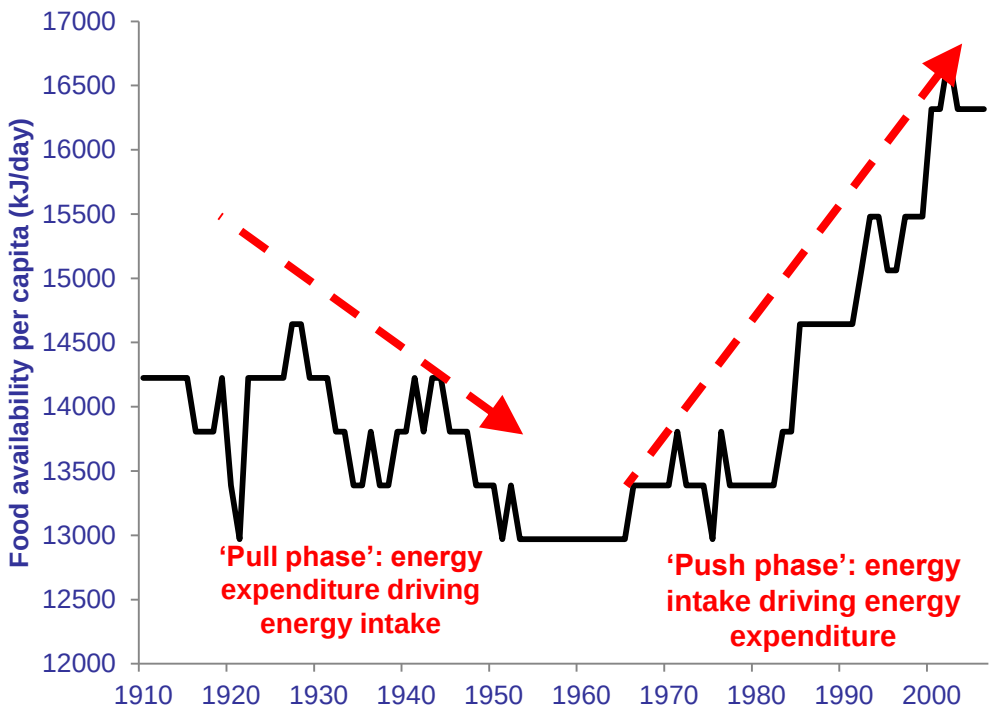
ENERGY BALANCE FLIPPING POINT



- Food energy increase more than enough to explain the increase in weight in the US
- Increasing food waste parallel to the increase in food supply per capita

ENERGY BALANCE FLIPPING POINT



- Food energy increase more than enough to explain the increase in weight in the US
- Increasing food waste parallel to the increase in food supply per capita
- *A simple approach to obesity*

BOTTOM LINE

The only plausible explanation for the simultaneous , global increase in obesity is that has been driven by the changes in the global food supply (price, product, placement, promotion)

BOTTOM LINE

Th[redacted]r
th[redacted]e
in [redacted]by

su[redacted]t,
promotion)

OUTLINE

- The problem
- The causes
- ***Possible solutions***
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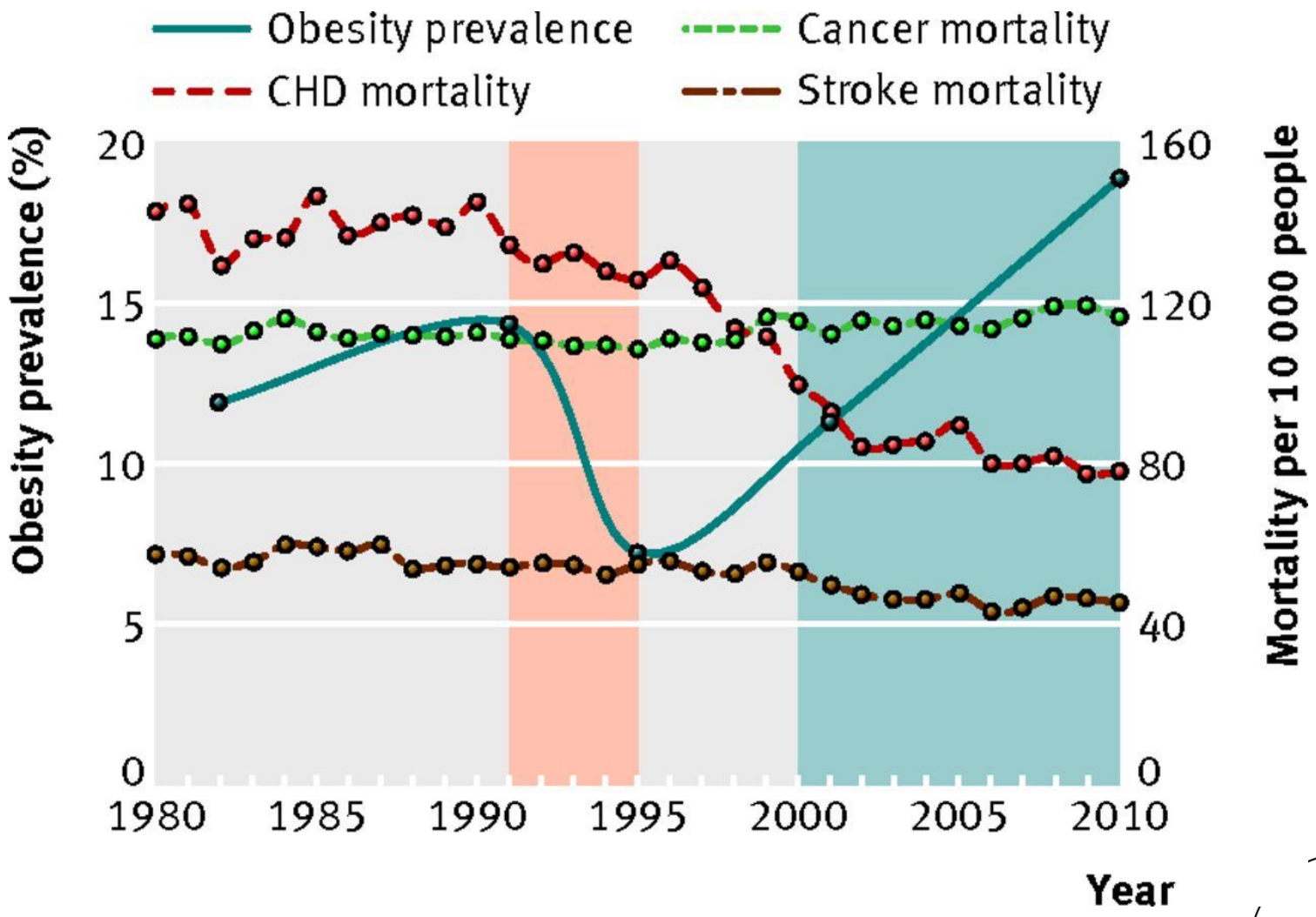
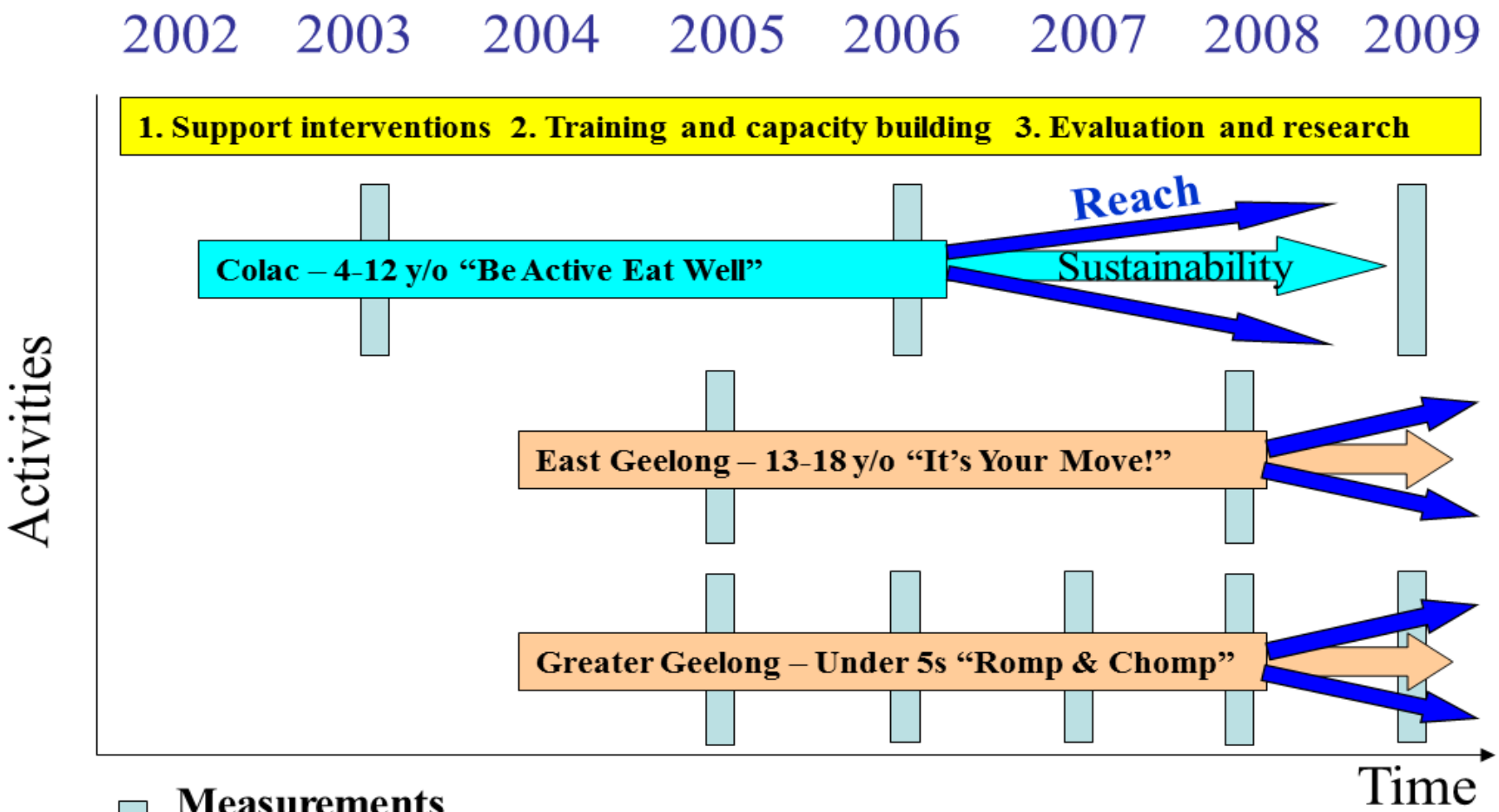
Fig 4 Obesity prevalence and coronary heart disease, cancer and stroke mortality in Cuba (1980-2010).



Franco M et al. BMJ 2013;346:bmj.f1515

SENTINEL SITE FOR OBESITY PREVENTION, BARWON-SW



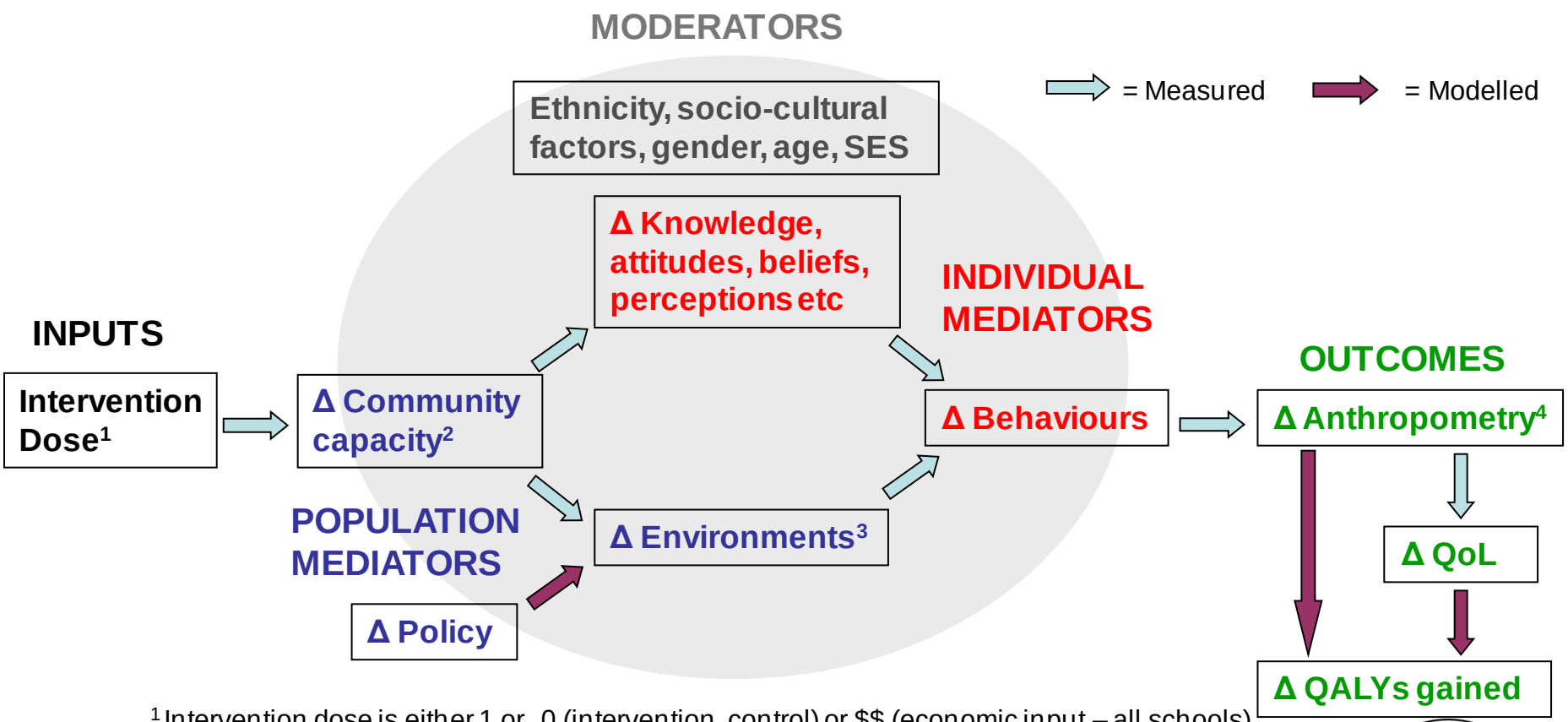
Measurements

Components: Anthropometry, behaviours, environments

Intervention groups: Impact of interventions, sustainability, population reach

Regional sample: Comparison sample with intervention population, monitoring trends.

LOGIC MODEL FOR INTERVENTIONS



[1] Intervention dose is either 1 or 0 (intervention, control) or $$ (economic input – all schools)
[2] Capacity is leadership, skills/knowledge, structures, resources
[3] Relevant environments are schools, homes, neighbourhoods, churches
[4] Weight, BMI, BMI-z, waist, waist:height, %fat, prevalence of o/w+obesity

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Under 5s – Romp n Chomp

Relative reduction of *1.8 and 2.7 %-*points over 3 years ($p<0.05$)

Low budget ($100k over 3y) for 12,000 children

Changes in behaviours and environments

State prevalence ↓ing

De Silva-Sanigorski Am J Clin Nutr 2010

Primary School - Be Active Eat Well

Reduction of ~1kg, 3cm waist over 3y

Greater effect in lower SES children

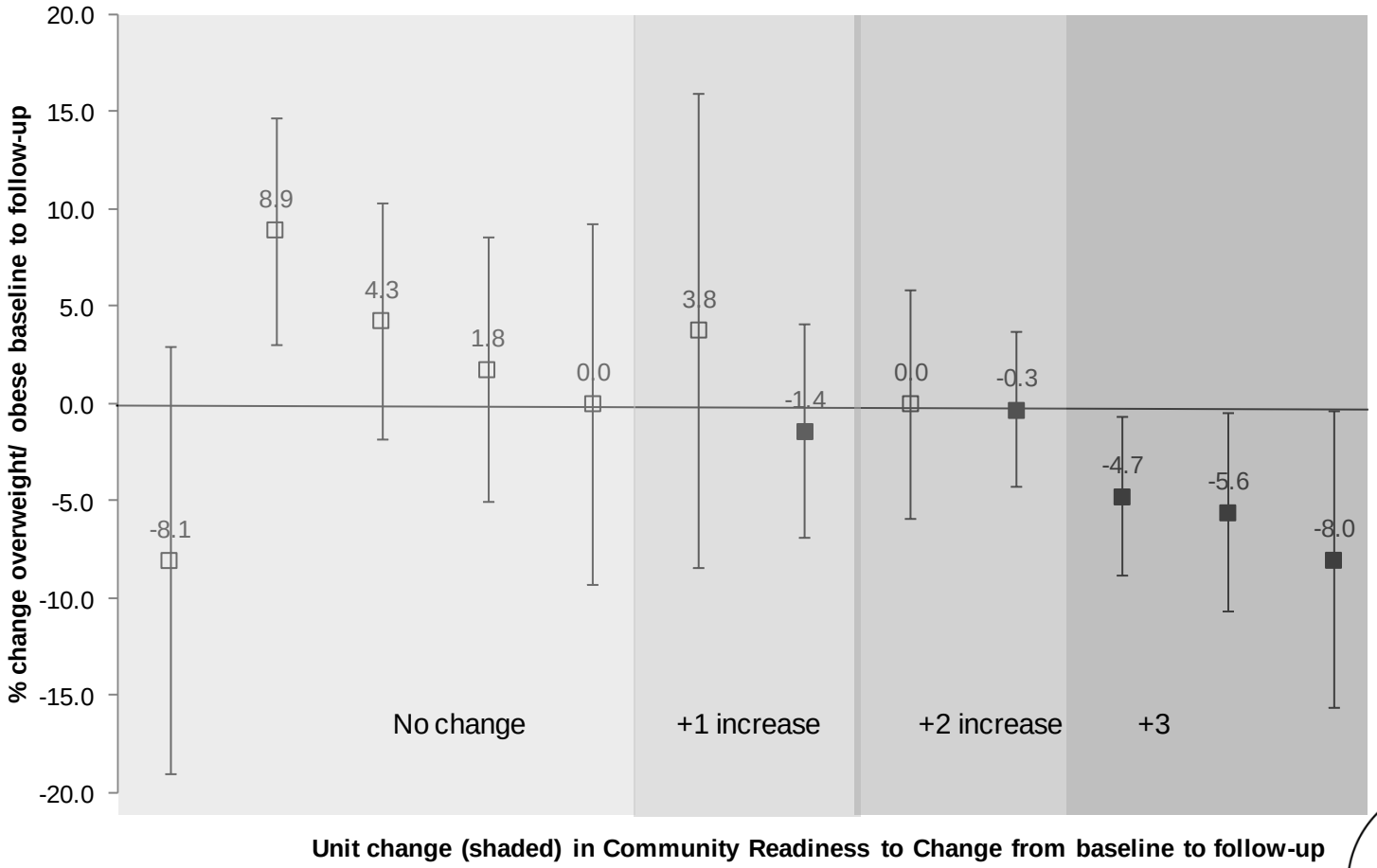
No differences in 'safety measures' eg self-esteem, dieting under-weight, etc

Sustainability currently being evaluated

Sanigorski et al Int J Obesity 2008

- 5.8 %-points lower relative prevalence over 3 years
- Changes in community capacity
- Changes in school envs
- *Few significant changes in behaviours seen*

COMMUNITY CAPACITY AND OBESITY PREVENTION



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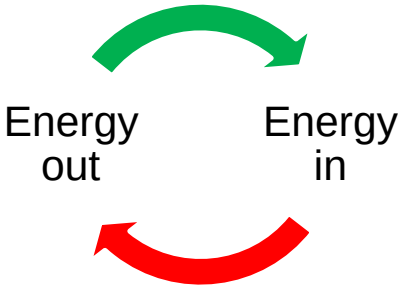
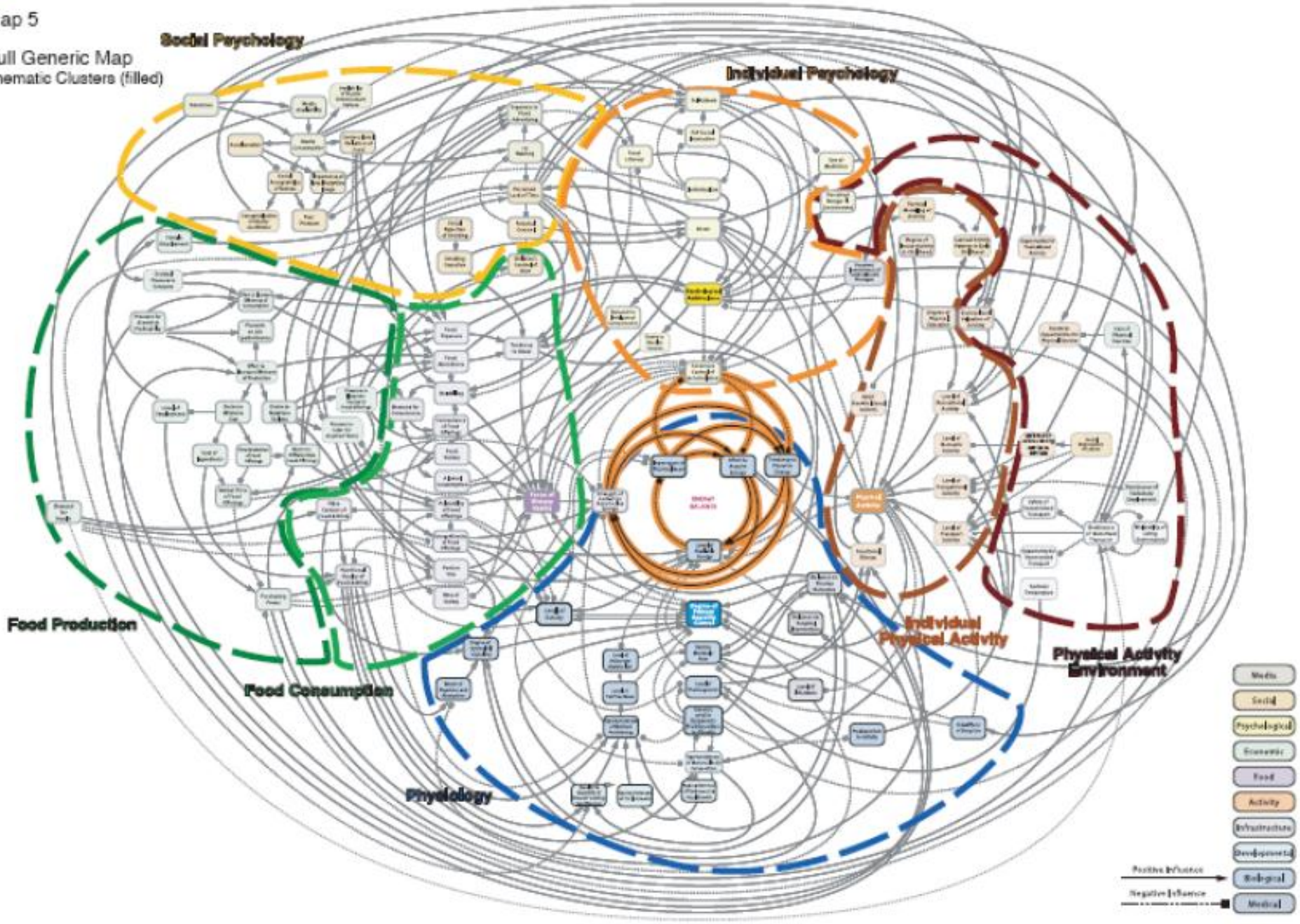
OBESITY IS SIMPLE

Positive energy balance
More energy is taken in than is spent, causing an excess of energy which is converted into fat



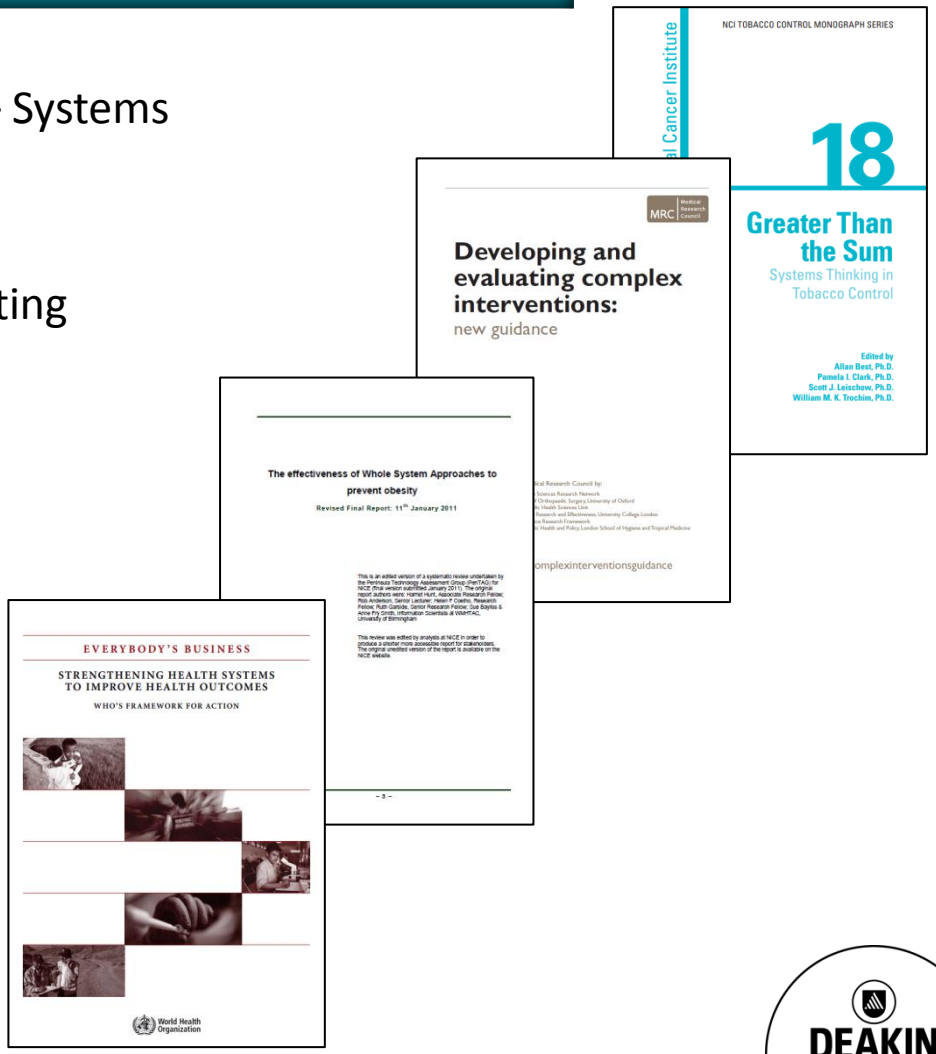
Map 5

Full Generic Map
Thematic Clusters (filled)



SYSTEMS IN POPULATION HEALTH

- ISIS report – Greater Than The Sum – Systems Thinking in Tobacco Control
- MRC report – Developing and Evaluating Complex Interventions
- NICE report – The Effectiveness of Whole System Approaches to Prevent Obesity
- WHO report – Strengthening Health Systems to Improve Health Outcomes



SO WHAT'S A SYSTEM THEN?

A system is an interconnected set of elements that is coherently organized in a way that achieves something. (Meadows 2008)

[A system] perspective stresses the importance, among other things, of linkages, relationships, feedback loops and interactions among the system's parts. (Hawe 2009)

SO WHAT'S A SYSTEM THEN?

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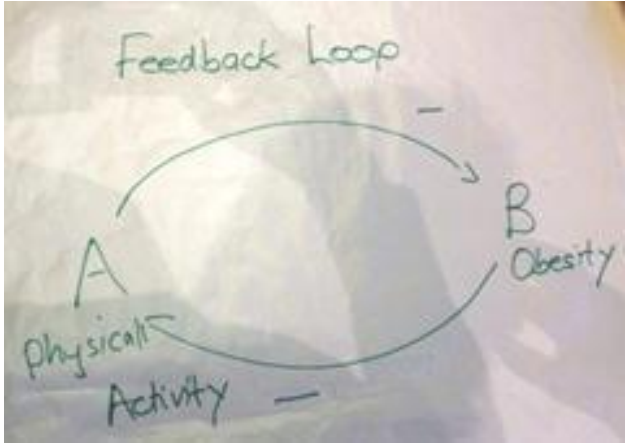

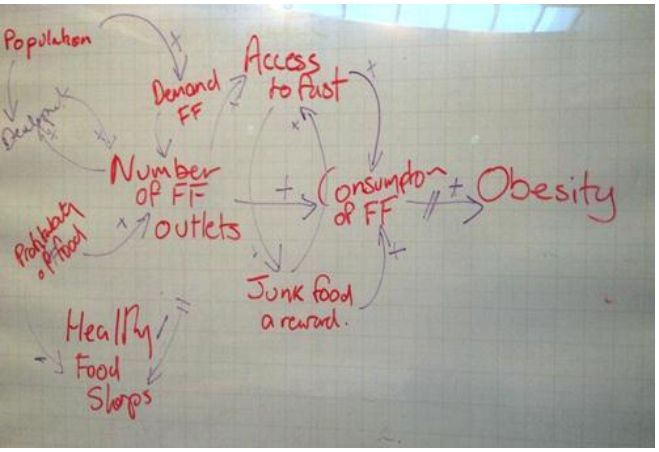

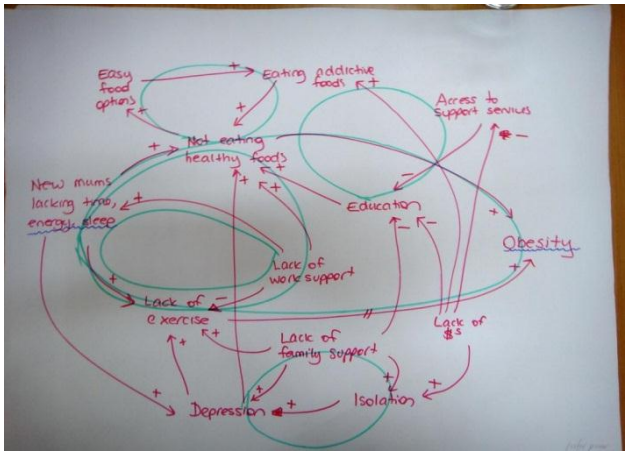

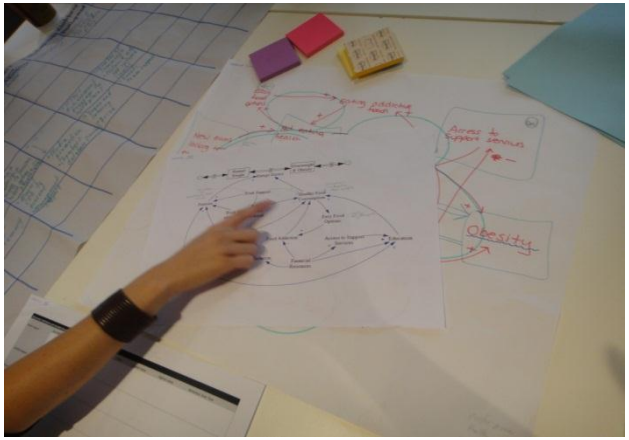

y Prevention

AUSTRALIA INVESTING IN OBESITY PREVENTION

- $870m investment over 6y
- Key objective tackling overweight and obesity,
  - Healthy eating PA programs for adults and children
    - Less than Australia spends on 2 statins every year
  - Still a big boost for prevention
- Victoria is taking a 'systems-based' approach
  - Prevention Community Model
  - 12 Prevention Areas (cluster RCT design)
  - Whole state ± 'systems activation'

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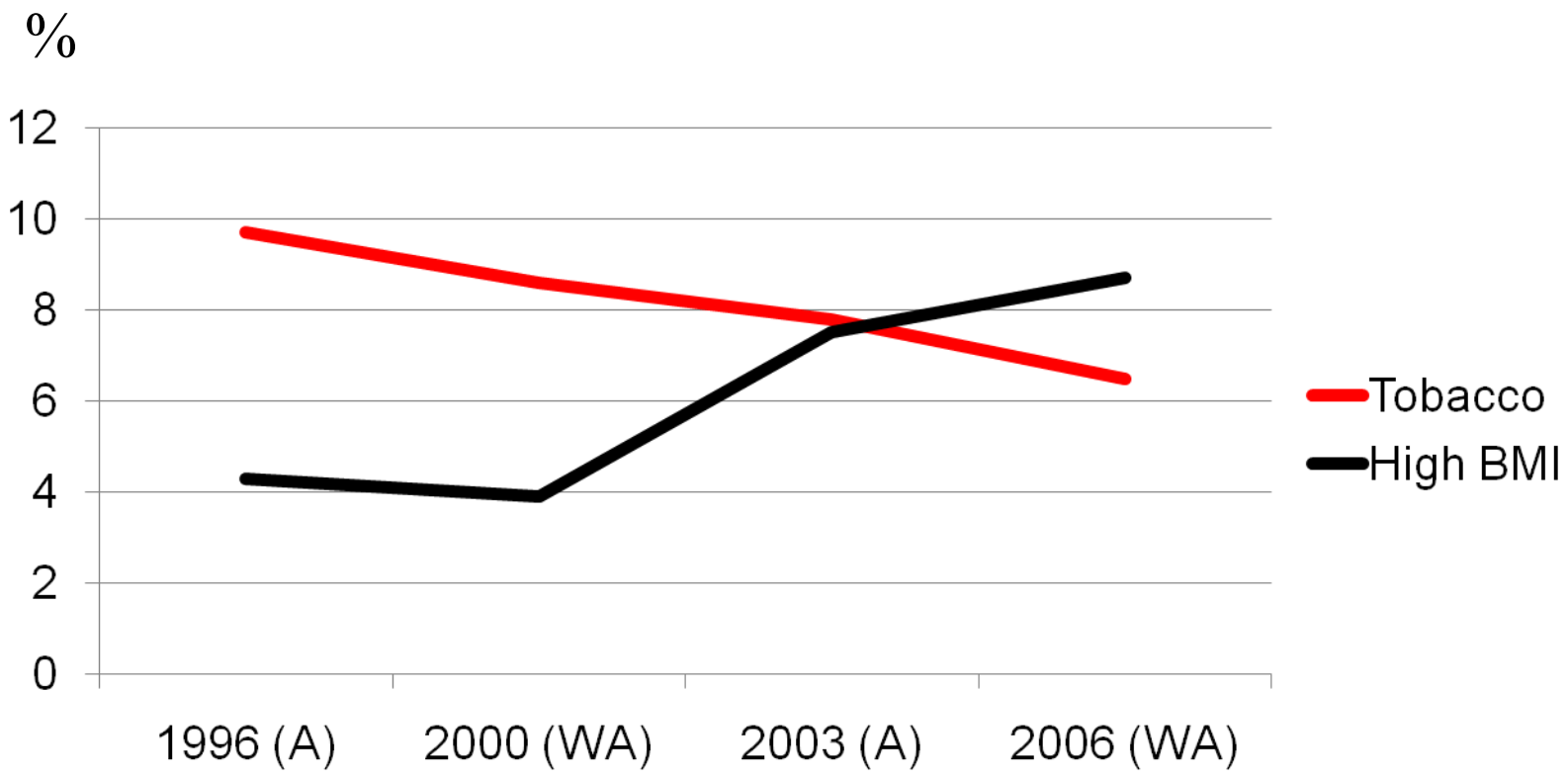
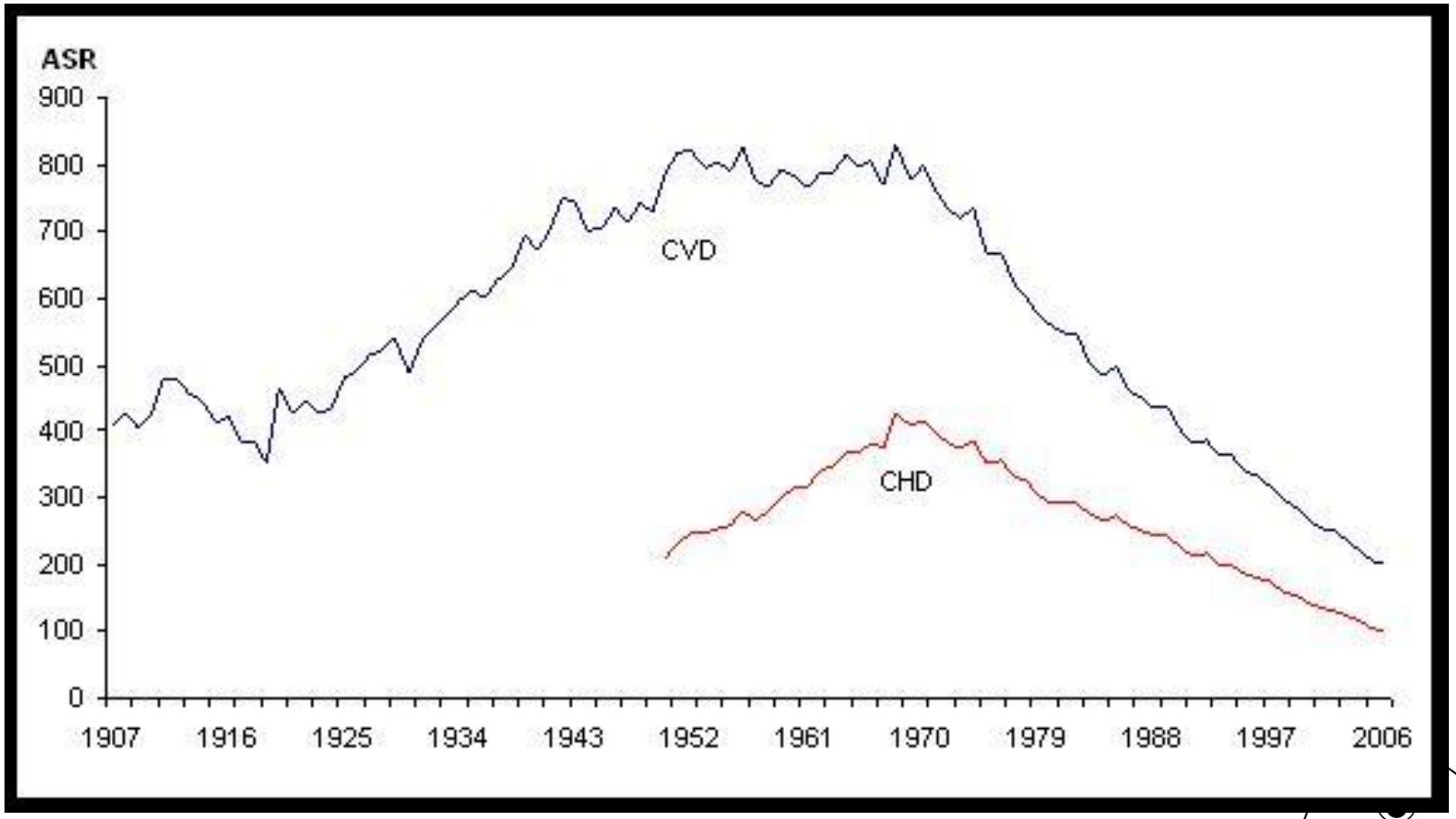
CHANGING RISK FACTOR BURDEN



Hoad et al ANZJPH 2010

LONG-TERM DEATH RATES



Moon et al., AIHW 2011; Allender et al 2011

US TOBACCO CONSUMPTION 1900 TO 2000

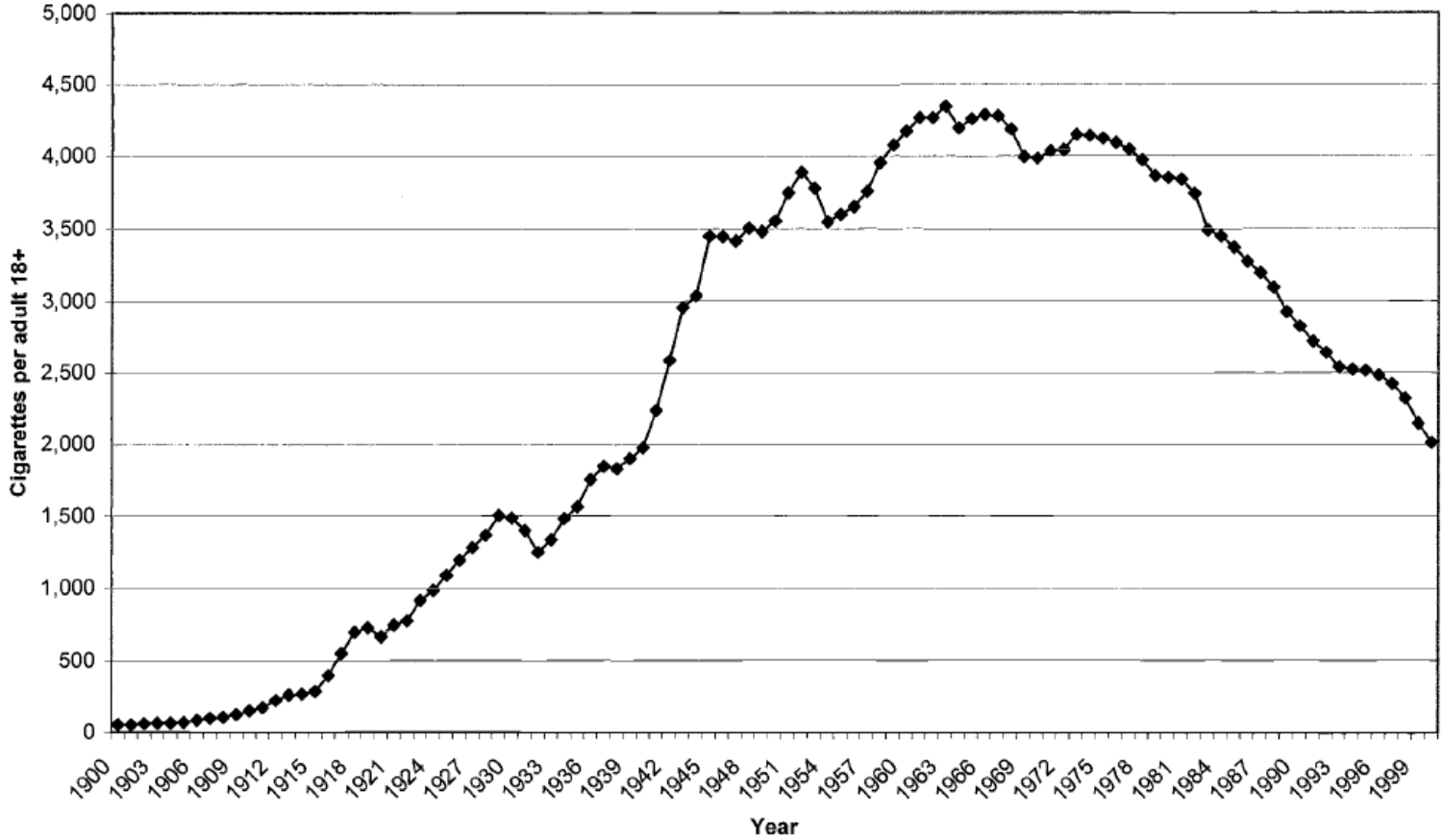
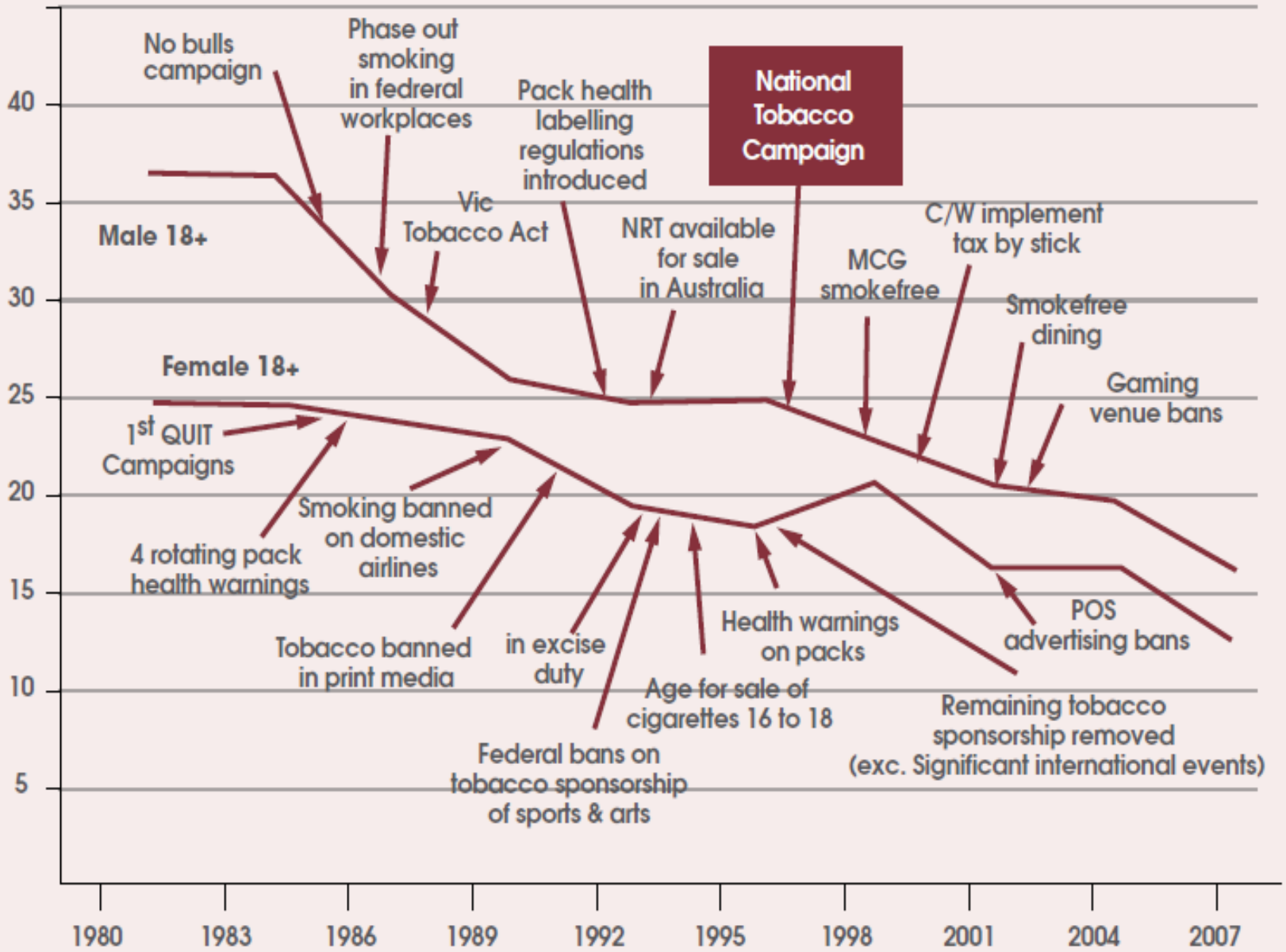


Fig. 9.11 Tobacco consumption, 1900–2000

Sources: United States Department of Agriculture; United States Centers for Disease Control and Prevention.

Milestones in reducing smoking in Australia 1980–2007



Source: The Cancer Council of Victoria 2009

According to repeated nationwide surveys,

More Doctors Smoke CAMELS than any other cigarette!

Doctors in every branch of medicine were asked, "What cigarette do you smoke?" The brand named most was Camel!

You'll enjoy Camels for the same reason so many doctors enjoy them. Camels have mild, cool mildness, pack after pack, and a flavor unmatched by any other cigarette.

Make this sensible test. Smoke only Camels for 30 days and see how well Camels prove your case. Jerry will day not lose thrill as your steady smoke. You'll see how enjoyable a cigarette can be!

THE DOCTORS' CHOICE IS AMERICA'S CHOICE!

For 30 days, test Camels in your "T-Zone" (T for Throat, T for Taste)

HeartStats

The Heart Foundation / Deakin University Australian Heart Disease Statistics Project

- New collaboration between Deakin and the National Heart Foundation of Australia
- To present the most up to date picture of the burden of coronary heart disease and related risk factors in Australia

A platform to extend the use of existing data to provide insights into the burden, prevention and treatment of CHD

Policy process

Problem Analysis & Solution Identification → Scoping & Analysis of Potential Solutions → Priority Setting & Policy Implementation → Policy Impact → Monitoring of Actions & Outcomes

Completed projects

- ACE-Obesity
- ACE-Prevention
- Regulatory Strategies for Obesity Prev.
- OPIC and TROPIC
- Barwon-SW community-based interventions

CRE research program

Stream 1	Stream 2	Stream 3	Stream 4
Economic credentials of policy options	**Policy process analysis**	**Policy impacts & systems changes**	**Monitoring for accountability**
What are the economic credentials of (non-health sector) policy options?	How can evidence-informed policy development & implementation be enhanced and sustained?	What are the impacts of policies on environments & systems?	What progress is being made by public & private sectors in Australia & internationally?

Current related projects

Stream 1	Stream 2	Stream 3	Stream 4
• ACE-Obesity America & other ACE projects • COMnet • ARC Inequalities in Obesity project • ARC Sustainable Food Supply projects • PANAMA	• Pacific food policy projects • Victorian CPM partnership • ARC Sustainable Food Supply projects	• Pacific food policy projects • Victorian CPM partnership	• INFORMAA • Global food monitoring group • WHO Framework for monitoring the private sector

Carter et al., ***NHMRC Centre for Research Excellence in Obesity Policy Research and Food Systems*** 2012 - 2017

CO-OPS Collaboration
enabling best practice to create healthier communities

The CO-OPS Collaboration

www.**co-ops**.net.au

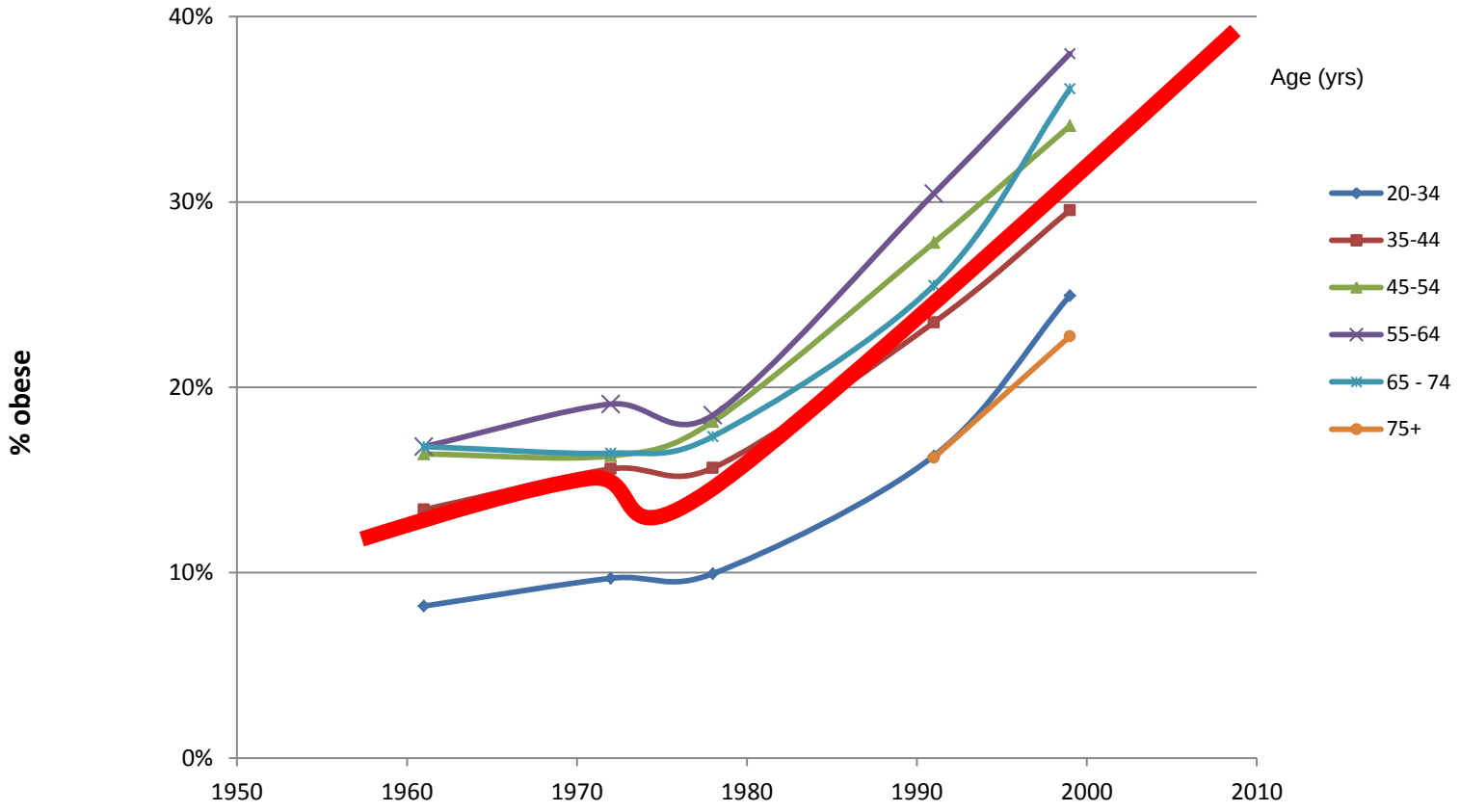
Like @co_ops

- Creating a robust national Knowledge Translation and Exchange (KTE) system
- which **links academic, policy and practice professionals**
- to **ensure best practice** in the promotion of healthy eating, regular physical activity and healthy weight as key factors to help prevent chronic disease

CO-OPS support services

- Online support requests
- Discussion forums
- Resource library
- Evidence summaries
- Case studies
- E-Newsletter
- National workshop
- Professional development
- CO-OPS short courses
- National survey

OBESITY


40%
30%
20%
10%
0%
% obese
1950
1960
1970
1980
1990
2000
2010
Age (yrs)
20-34
35-44
45-54
55-64
65 - 74
75+

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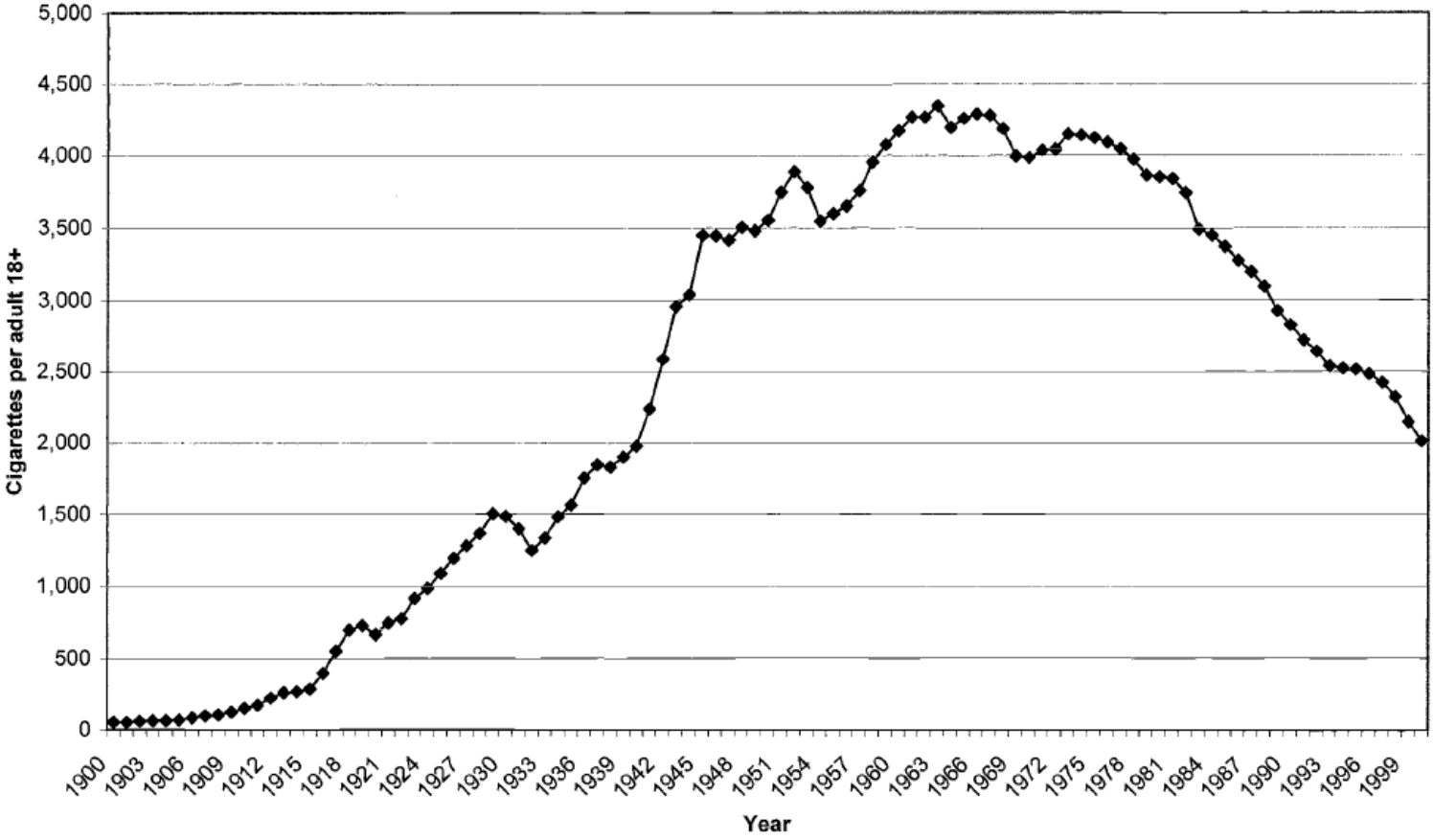

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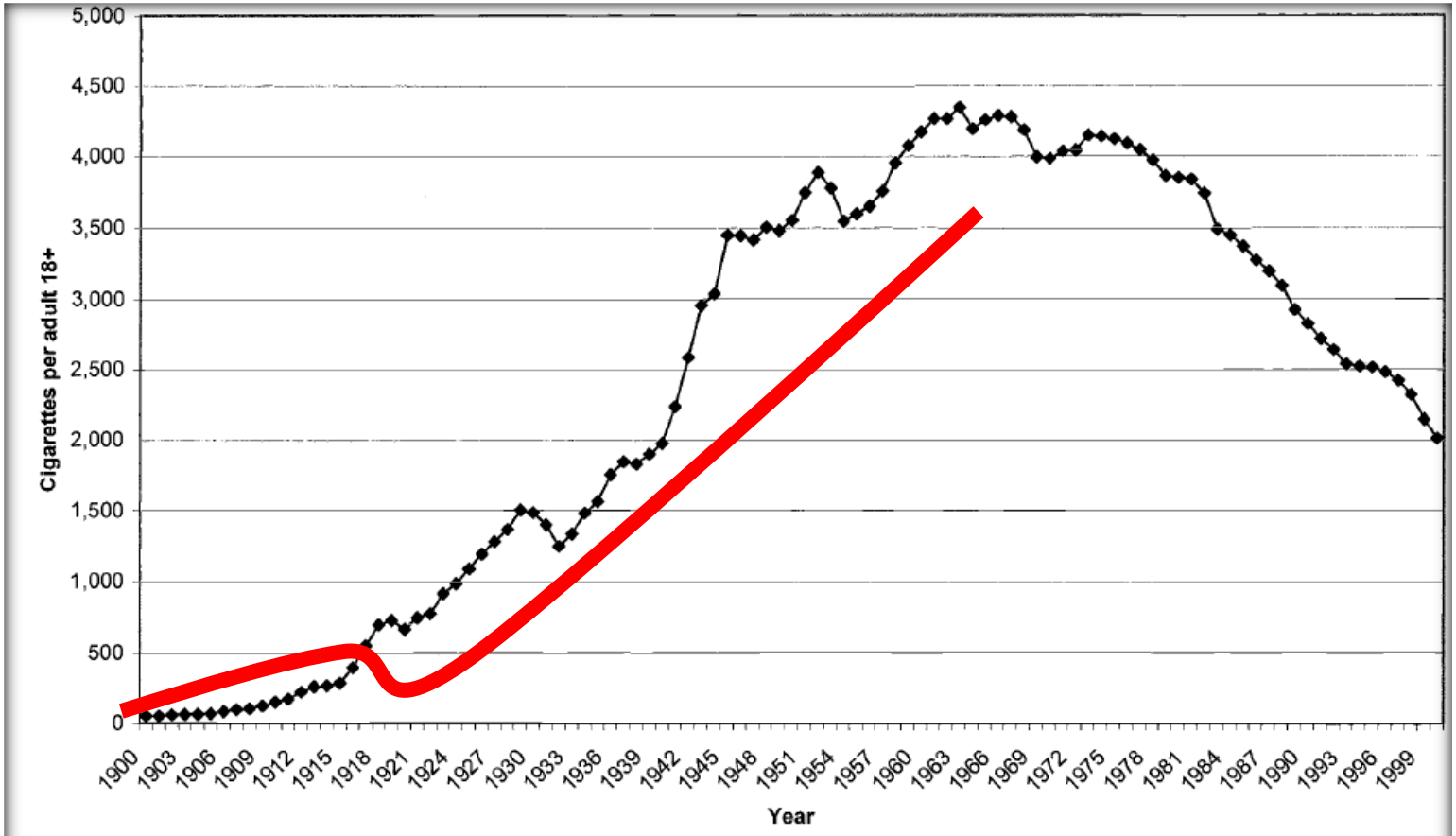
TOBACCO CONSUMPTION AND OBESITY FUTURE?



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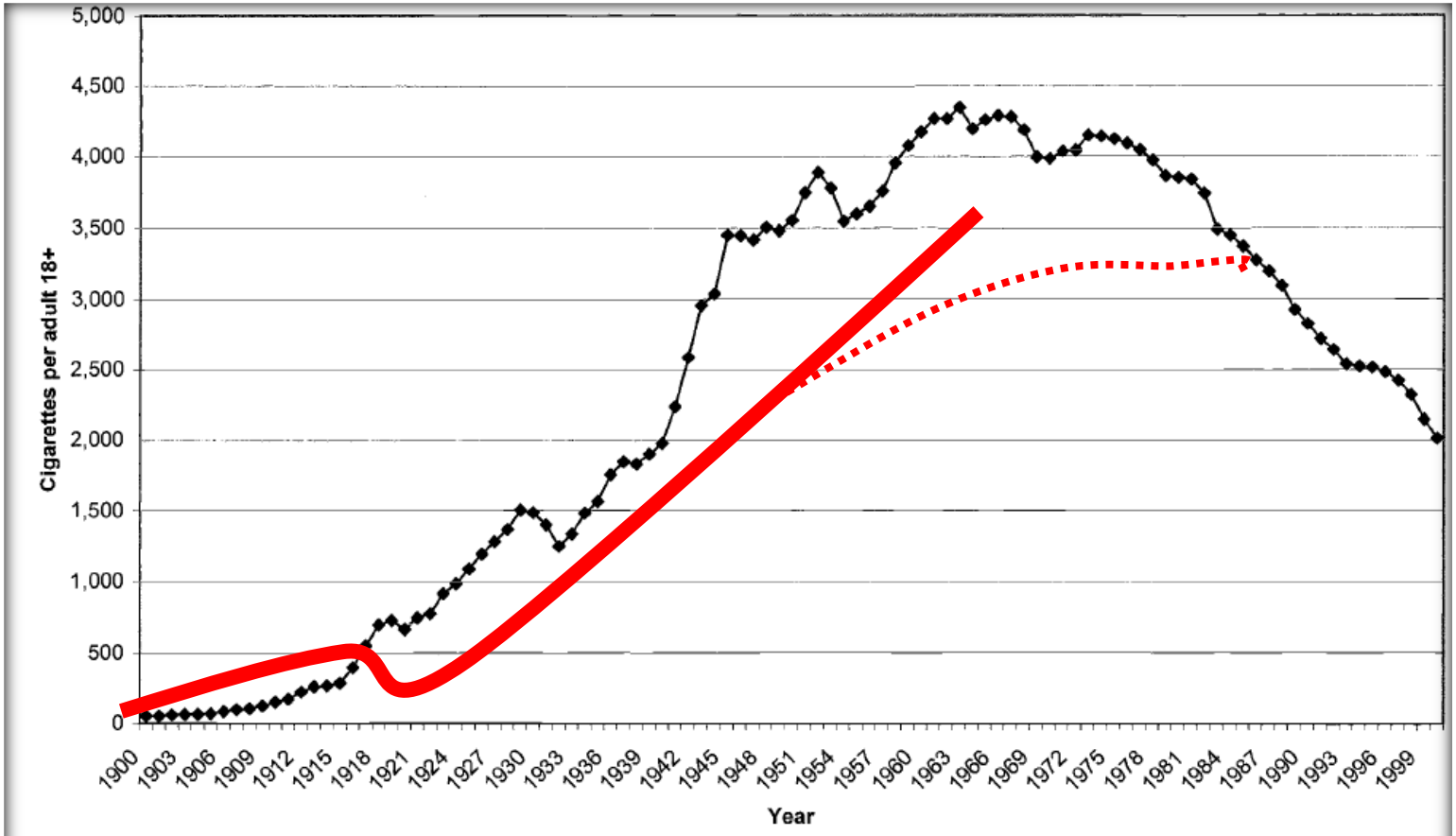

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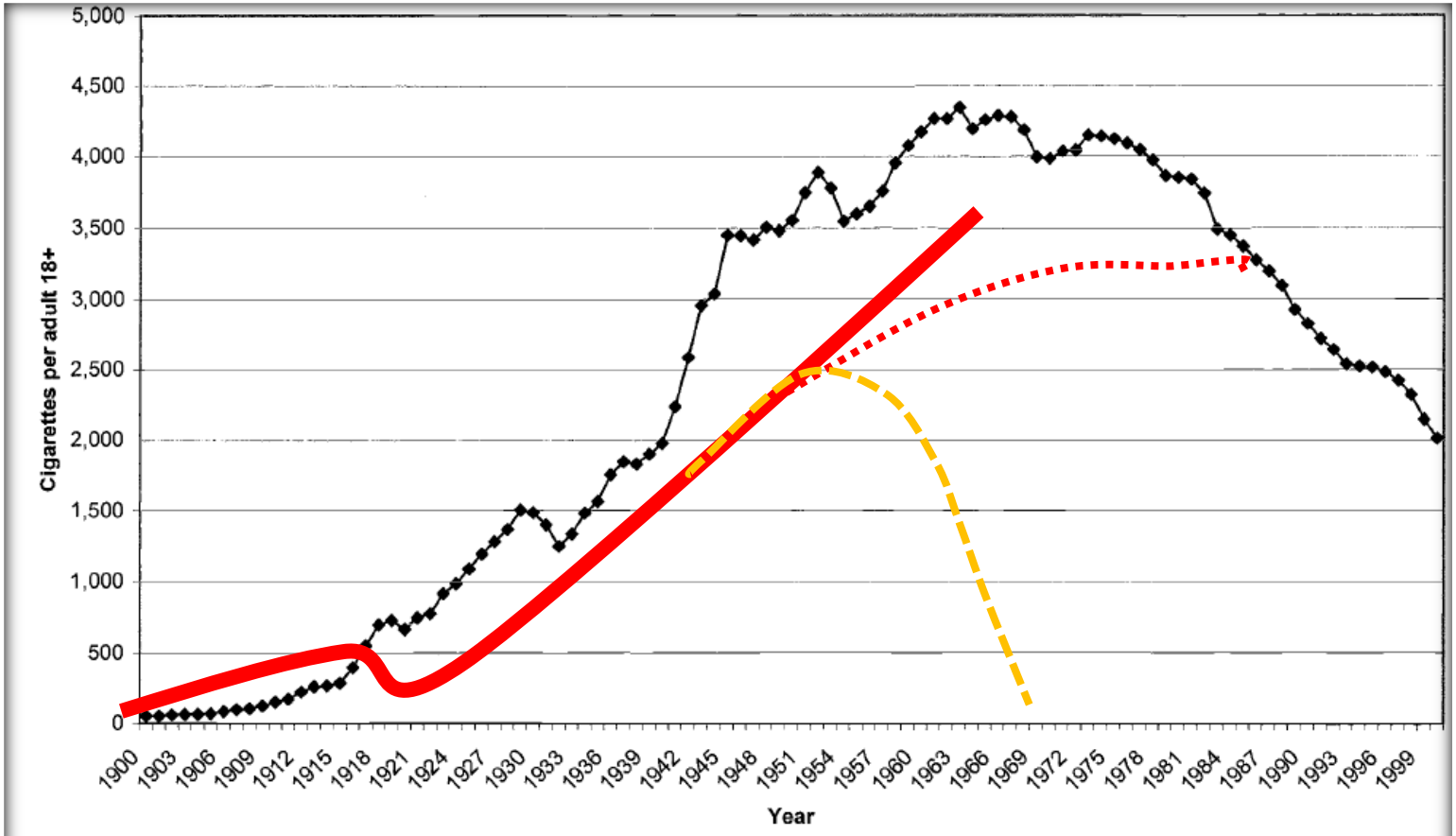

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