Is Obesity a Pandemic or a Panic-demic?

CCGL9043 OBESITY: BEYOND A HEALTH ISSUE

LECTURE 12

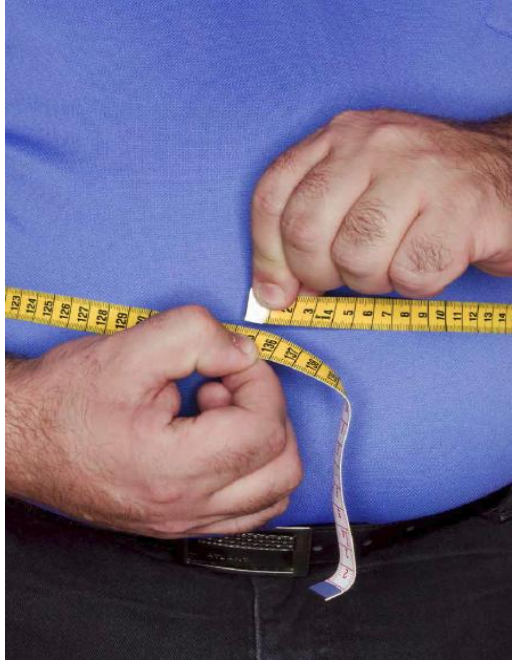
ACTIONS & ATTITUDES TOWARDS FATNESS

For the first time in history, there are more overweight/obese than underweight person worldwide

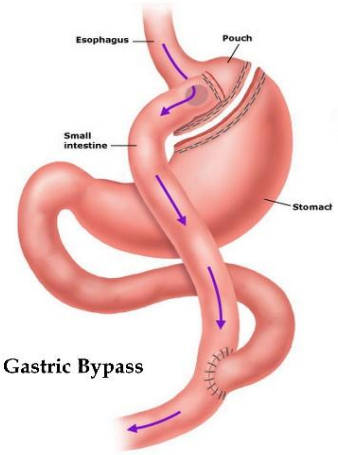
That means in many countries (particularly the developed countries)
overweight and obese are the majority.

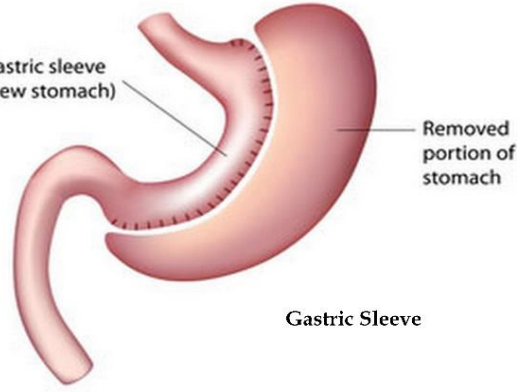
Would this sway public view and lessen the social stereotyping ?

What are the economic impacts? Need measures to cope?



The Economics of Obesity



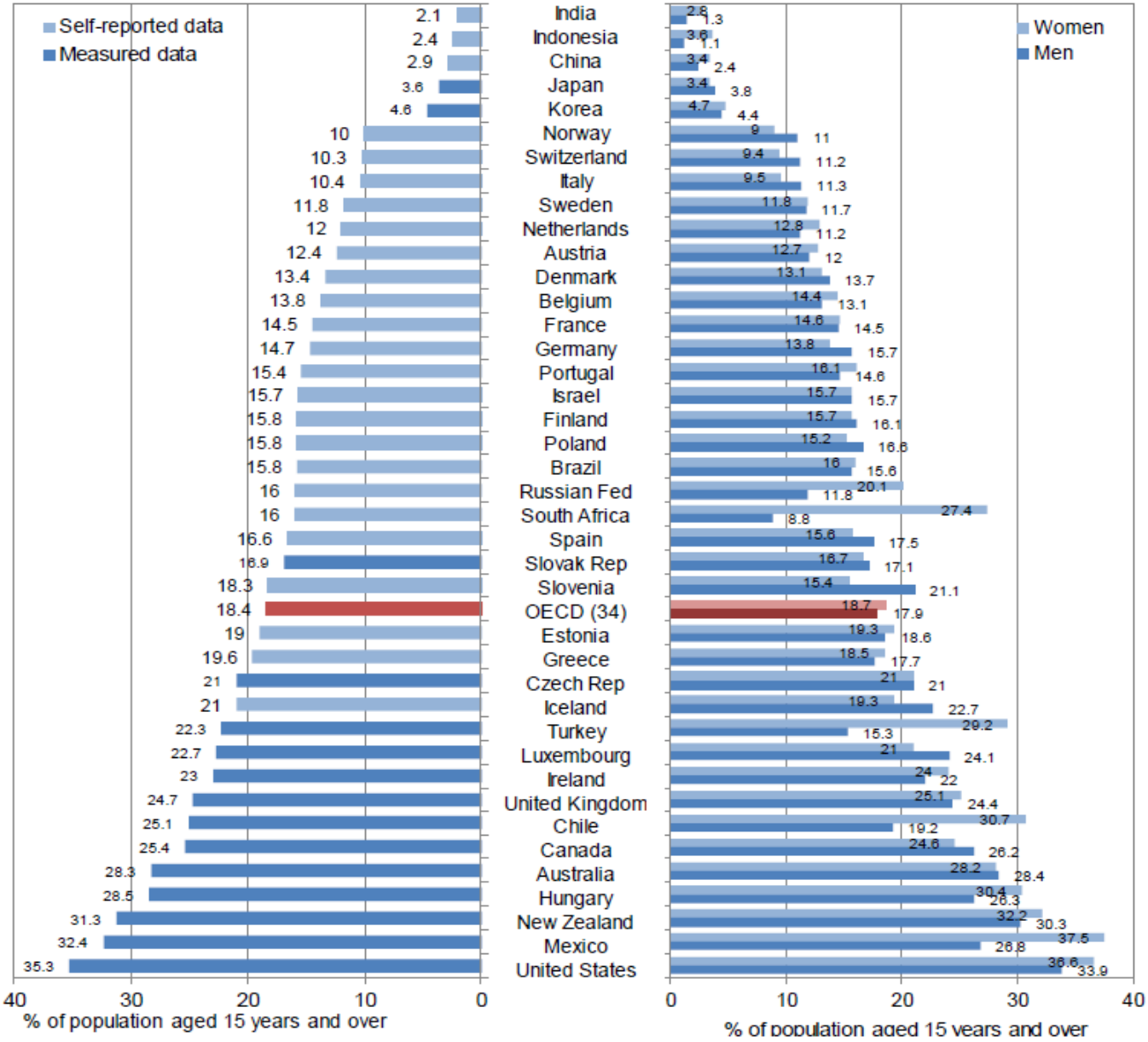


Does obesity cost MORE to the society?

Is prevention a money-saver?

What are the feasible preventive methods?

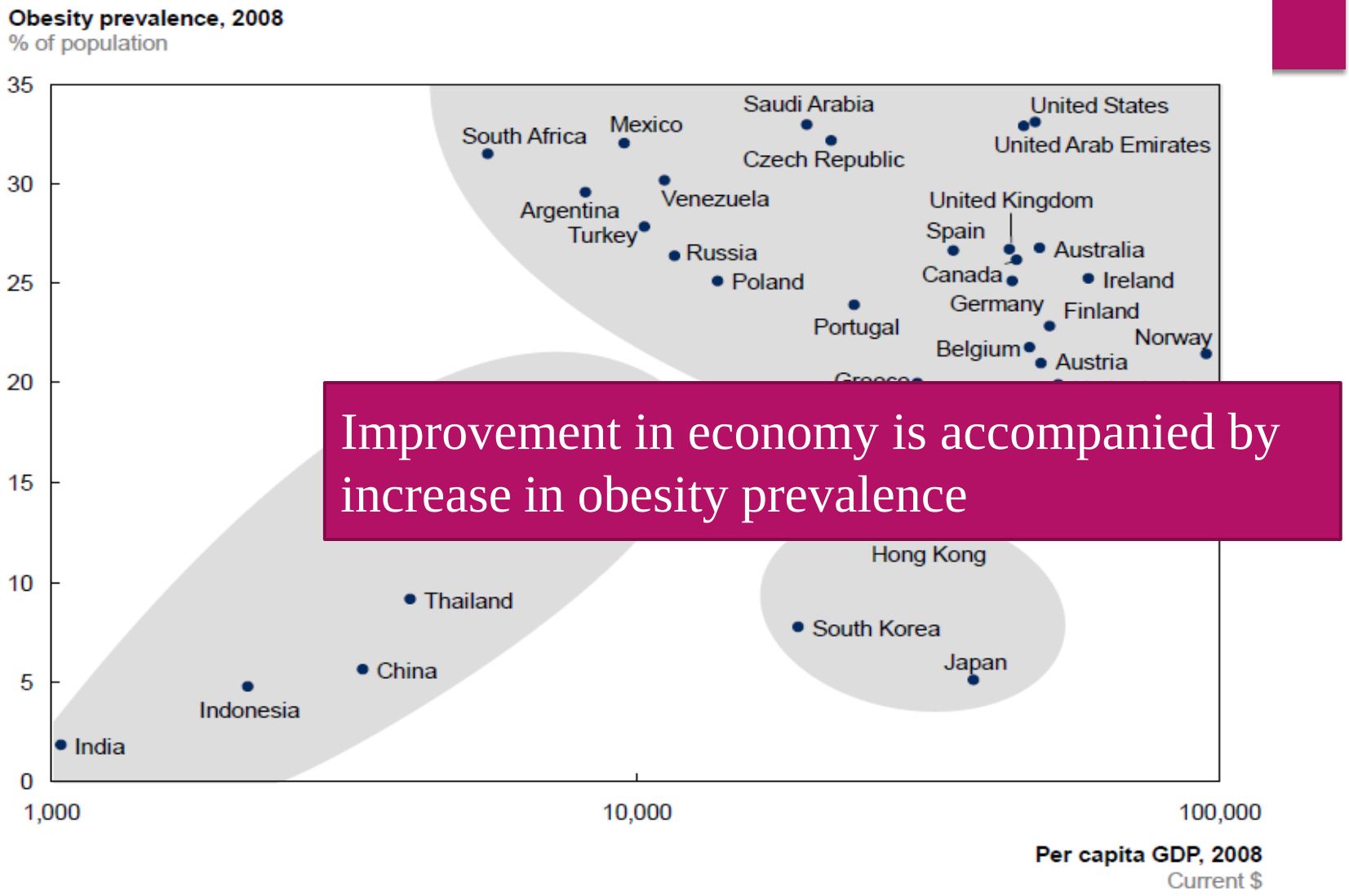
Figure 1. Obesity among adults, 2012 or nearest year



OECD: Organisation for Economic Co-operation and Development

http://www.oecd.org/els/health-systems/Obesity-Update-2014.pdf

With a few exceptions—up to a certain income threshold—obesity prevalence rises with income



Improvement in economy is accompanied by increase in obesity prevalence

SOURCE: OECD statistics; World Bank GDP statistics; McKinsey Global Institute analysis

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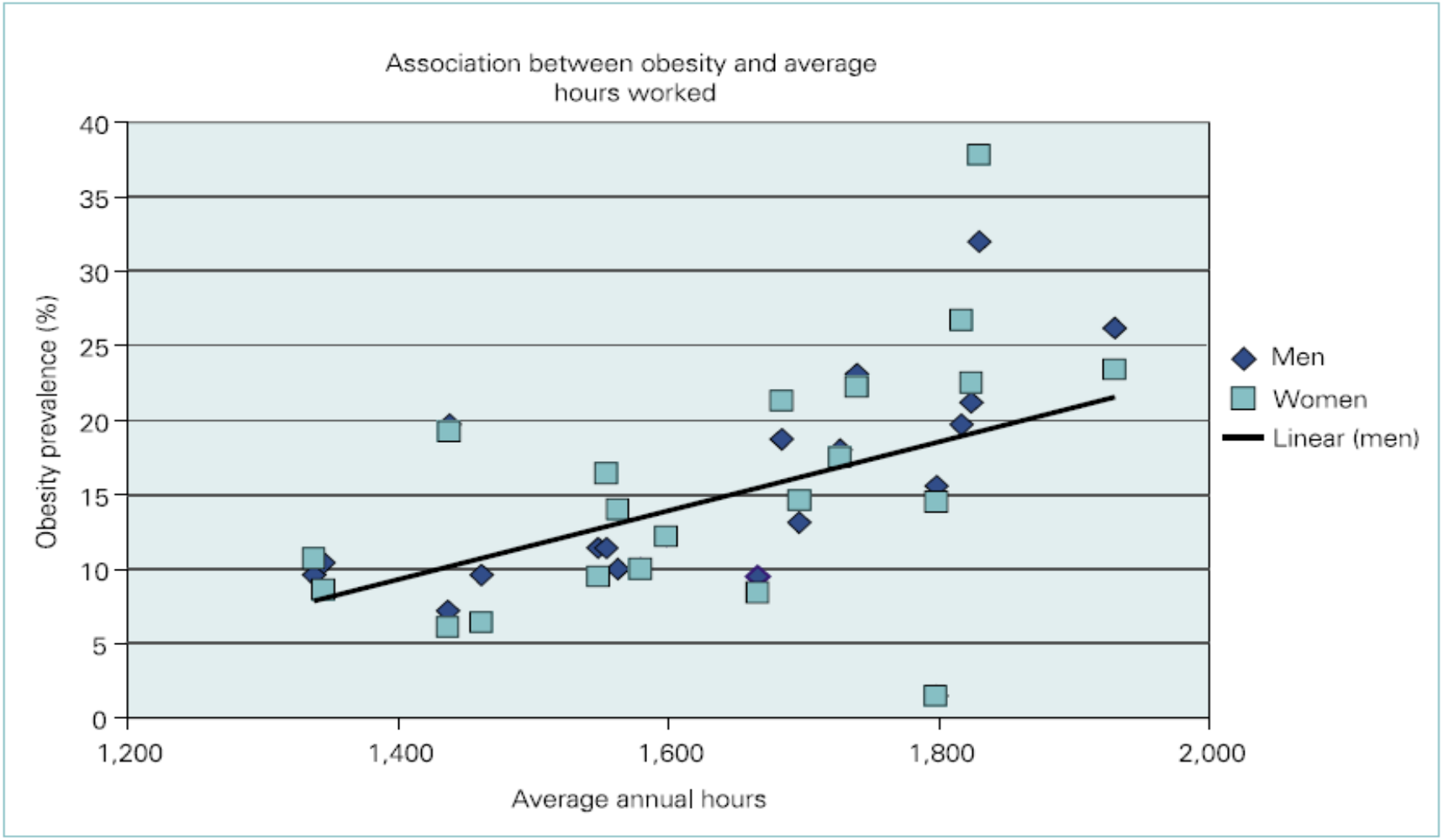
Figure 3.5: Association between obesity and average hours worked (data taken from across 21 countries of the Organisation for Economic Co-operation and Development[11])

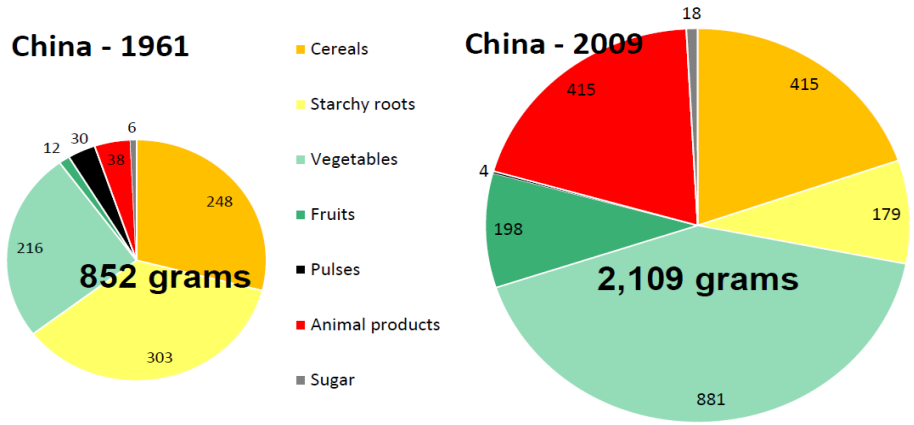


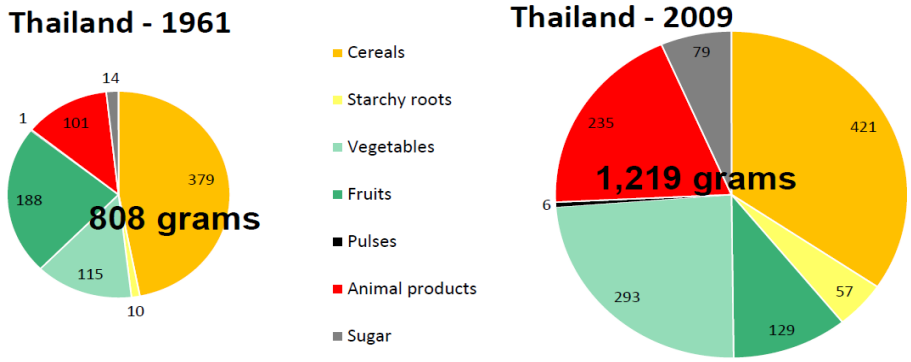
Source: IOTF[63]

Foresight. *Tackling Obesities: Future Choices – Project Report.* 2nd Edition. Foresight Government Office for Science, UK, 2007

Figure 2.15 Food plates for China, Thailand, India, Egypt, and Peru, g/cap/day, 1961 and 2009

Eastern Asia





Southern Asia

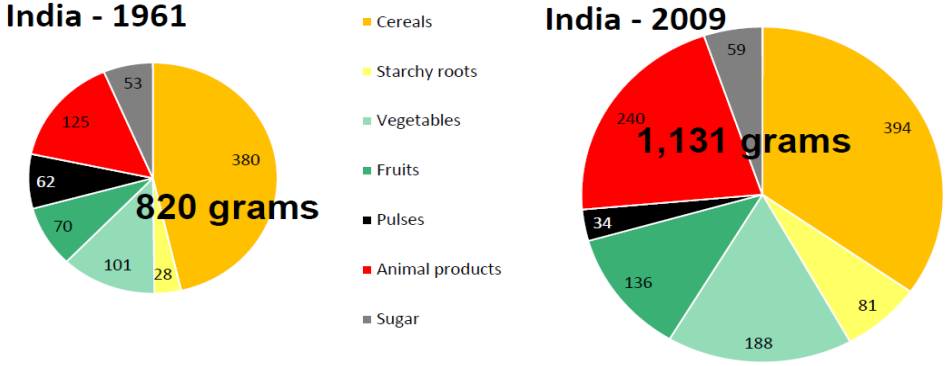
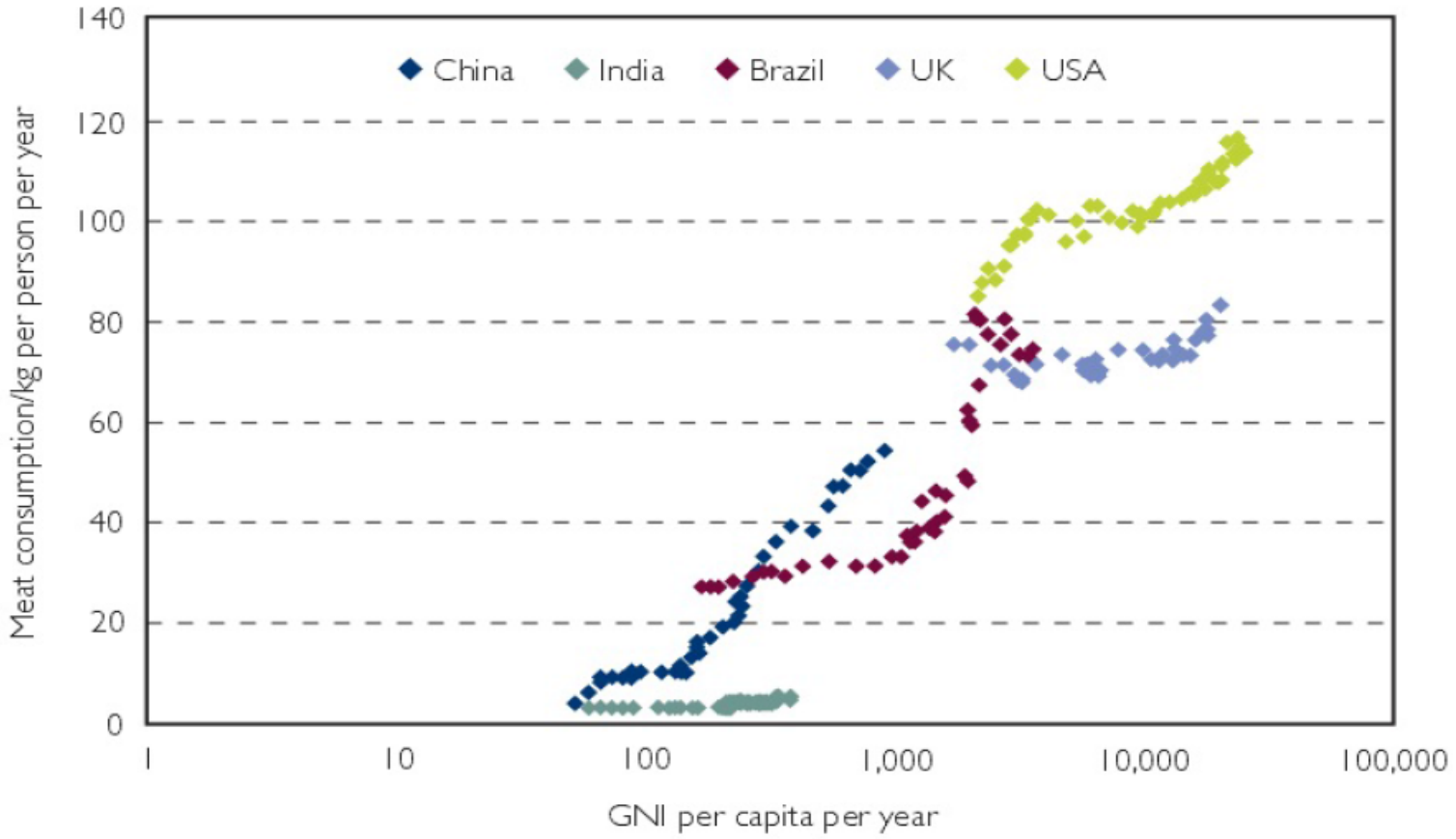


Figure 2.23 Changing consumption of meat in relation to gross national income in Brazil, China, India, UK and US, 1961 to 2007



Source: Government Office for Science (2011b). Original sources: FAOSTAT; World Bank.

Note: Horizontal axis is logarithmic because marginal increases in meat consumption decline as income rises.

Keats & Wiggins. Future Diets: Implications for agriculture and food price. Overseas Development Institute 2014

Obesity in developed countries come from the deprived

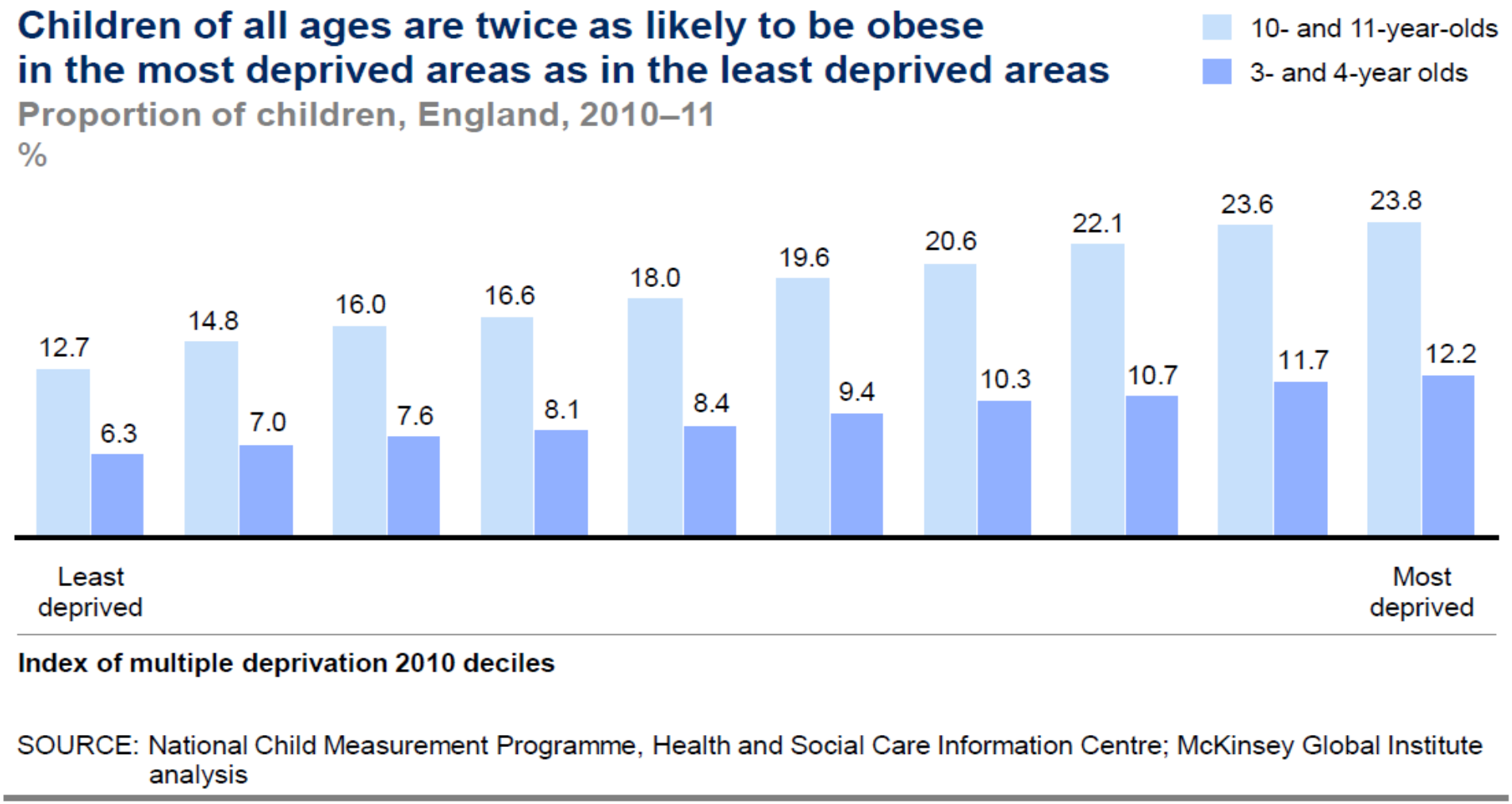


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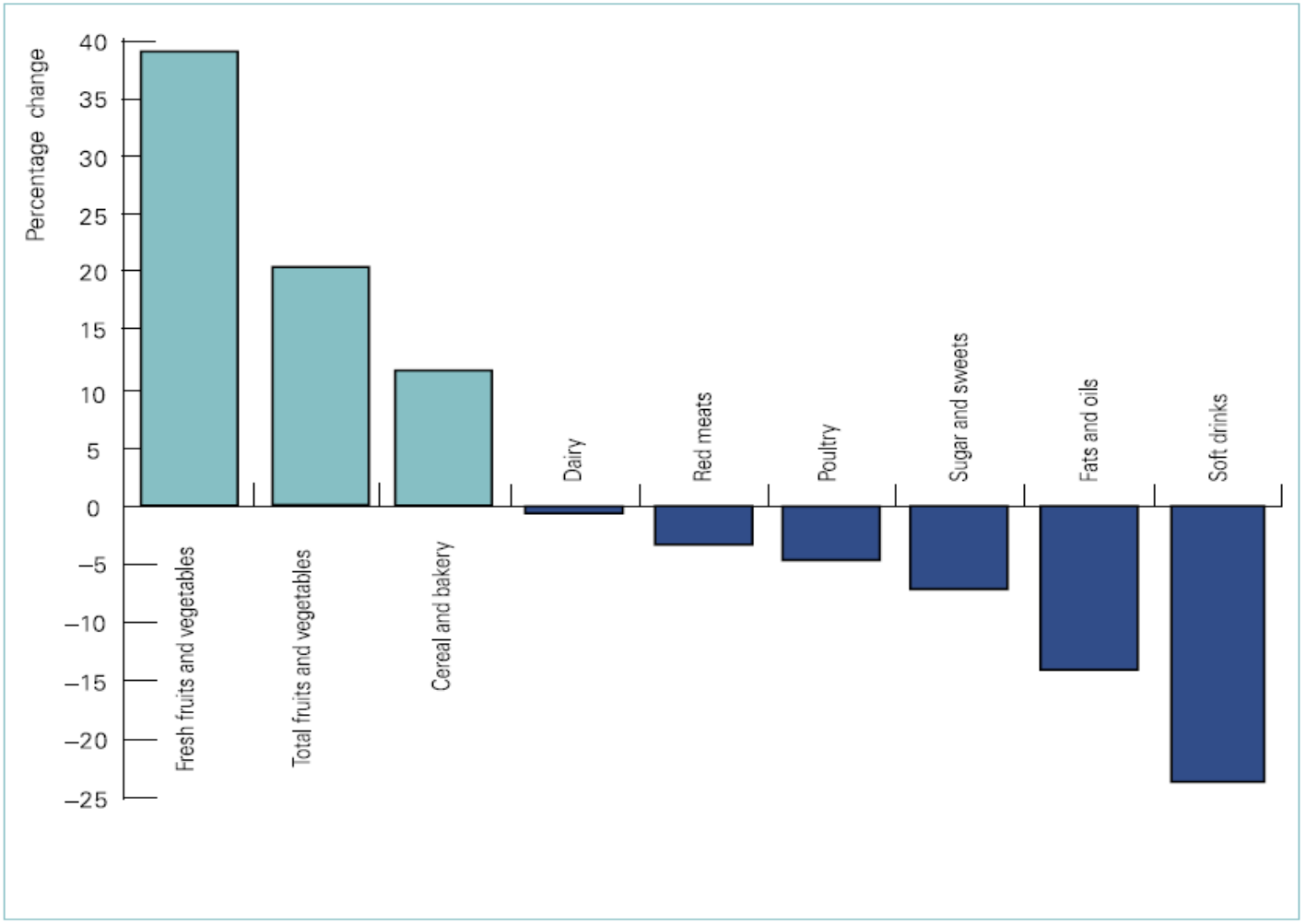
Figure 3.3: Price changes differentially affecting dietary components (US data).[11] Changes in food process, 1985-2000 (real dollars).



Source: Institute of Agriculture and Trade Policy.[61]

Foresight. *Tackling Obesities: Future Choices – Project Report.* 2nd Edition. Foresight Government Office for Science, UK, 2007

Is obesity a burden?

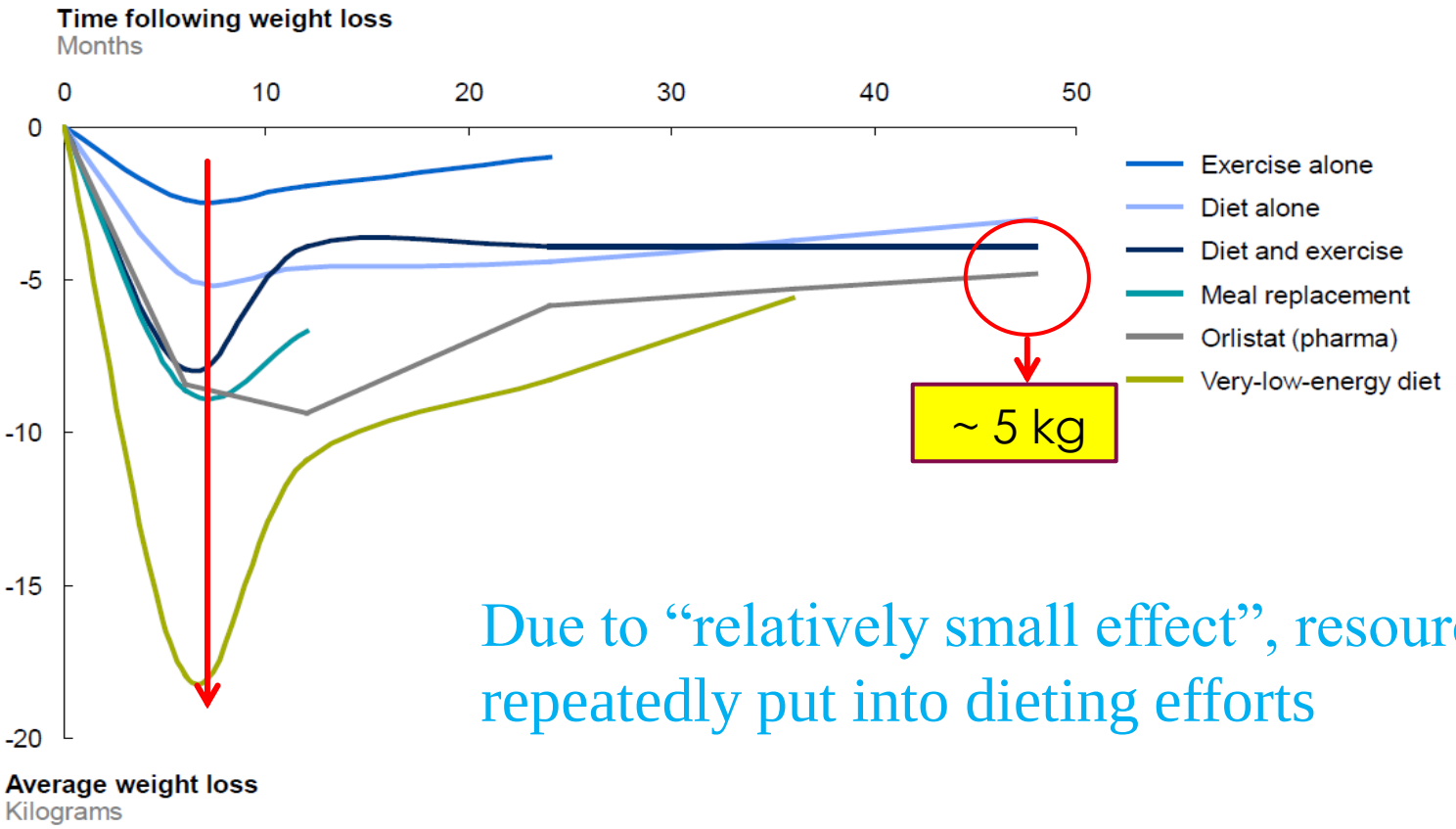
Individual level

- Compared with individuals of normal weight, obese adults (BMI $\geq$ 30 kg/m^2) have 38% more visits to primary care physicians.[1]
- Obese individuals average 48% more inpatient days per year.
- Bear higher medical cost, insurance premium and or income loss.
- Incur at least 25% higher health care expenditures.[2]
- This may extend to family members.

1. Thompson et al. Obesity Res 9: 210-218, 2001
2.Withrow & Alter. Obesity Rev 12:131-141, 2011

Traditional targeted interventions struggle to sustain their impact, with weight regain ranging from 30 to 70 percent of the original loss

Average weight loss according to different strategies—a meta-study of clinical trials



Due to "relatively small effect", resources are repeatedly put into dieting efforts

SOURCE: Marion Franz et al., "Weight-loss outcomes: A systematic review and meta-analysis of weight-loss clinical trials with a minimum 1-year follow-up," *Journal of the American Dietetic Association*, volume 107, number 10, October 2007; D. Foxcroft, "Orlistat for the treatment of obesity: Cost utility model," *Obesity Reviews*, volume 6, number 4, November 2005; O. O'Meara et al., "A rapid and systematic review of the clinical effectiveness and cost-effectiveness of orlistat in the management of obesity," *Health Technology Assessment*, volume 5, number 18, February 2001; J. Torgerson et al., "XENical in the prevention of diabetes in obese subjects (XENDOS) study: A randomized study of orlistat as an adjunct to lifestyle changes for the prevention of type 2 diabetes in obese patients," *Diabetes Care*, volume 27, number 1, January 2004; McKinsey Global Institute analysis

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The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JUNE 17, 2004 VOL. 350 NO. 25

Absence of an Effect of Liposuction on Insulin Action and Risk Factors for Coronary Heart Disease

Samuel Klein, M.D., Luigi Fontana, M.D.,
Bruce W. Patters

Liposuction may produce cosmetic effects on the appearance; the method does not appear to correct metabolic abnormalities.

BACKGROUND

Liposuction has been proposed as a potent
tions of obesity. We evaluated the effect o
metabolic risk factors for coronary heart dis

METHODS

We evaluated the insulin sensitivity of liver,
a euglycemic–hyperinsulinemic clamp proc
as levels of inflammatory mediators and oth
15 obese women before and 10 to 12 weeks
women had normal glucose tolerance (mean [±SD] body-mass index, 35.1±2.4), and seven had type 2 diabetes (body-mass index, 39.9±5.6).

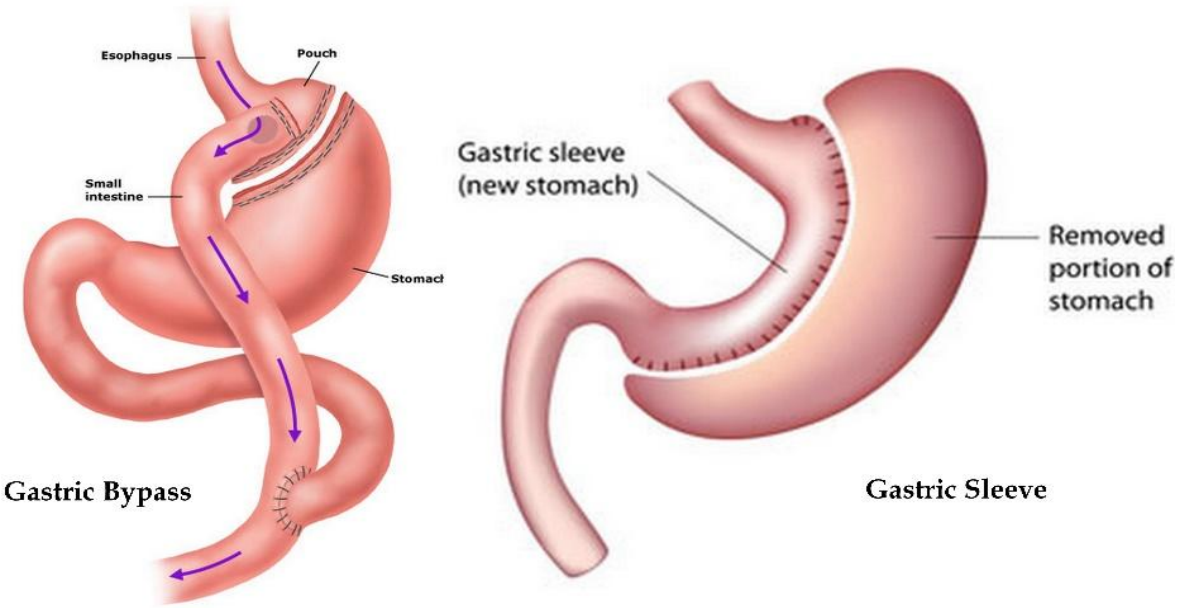
RESULTS

Liposuction decreased the volume of subcutaneous abdominal adipose tissue by 44 percent in the subjects with normal glucose tolerance and 28 percent in those with diabetes; those with normal oral glucose tolerance lost 9.1±3.7 kg of fat (18±3 percent decrease in total fat, P=0.002), and those with type 2 diabetes lost 10.5±3.3 kg of fat (19±2 percent decrease in total fat, P<0.001). Liposuction did not significantly alter the insulin sensitivity of muscle, liver, or adipose tissue (assessed by the stimulation of glucose disposal, the suppression of glucose production, and the suppression of lipolysis, respectively); did not significantly alter plasma concentrations of C-reactive protein, interleukin-6, tumor necrosis factor α, and adiponectin; and did not significantly affect other risk factors for coronary heart disease (blood pressure and plasma glucose, insulin, and lipid concentrations) in either group.

CONCLUSIONS

Abdominal liposuction does not significantly improve obesity-associated metabolic abnormalities. Decreasing adipose tissue mass alone will not achieve the metabolic benefits of weight loss.

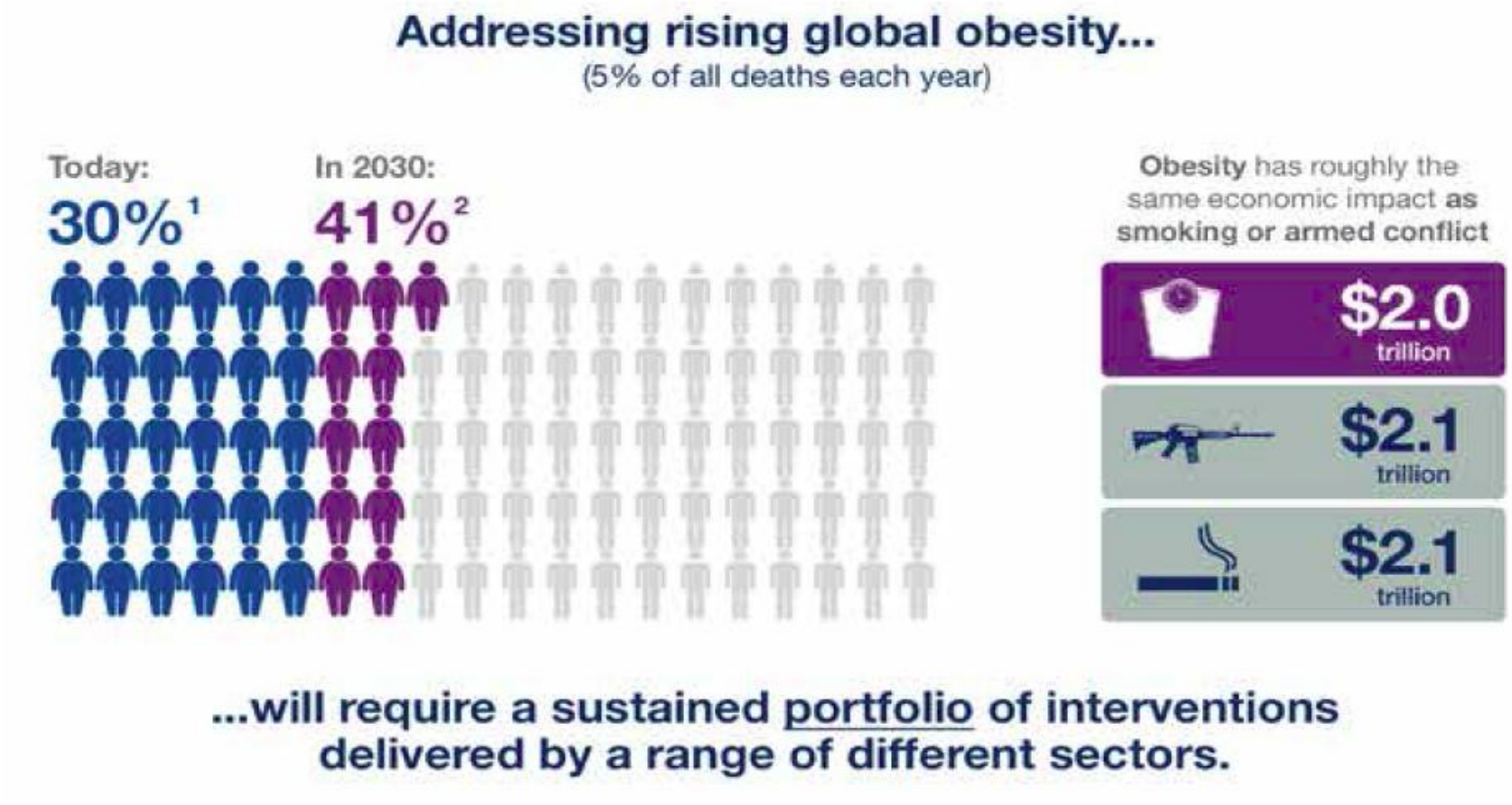
Klein et al. *NEJM* 350: 2549-2557, 2004



Bariatric surgery

- only for morbidly obese individuals
- does improve health (low blood gluocse, induce weight lost [10-30%])
- Some may experience regain weight, depression, vitamin / mineral deficiency, alcohol abuse, anorexia, etc

Societal economic impacts



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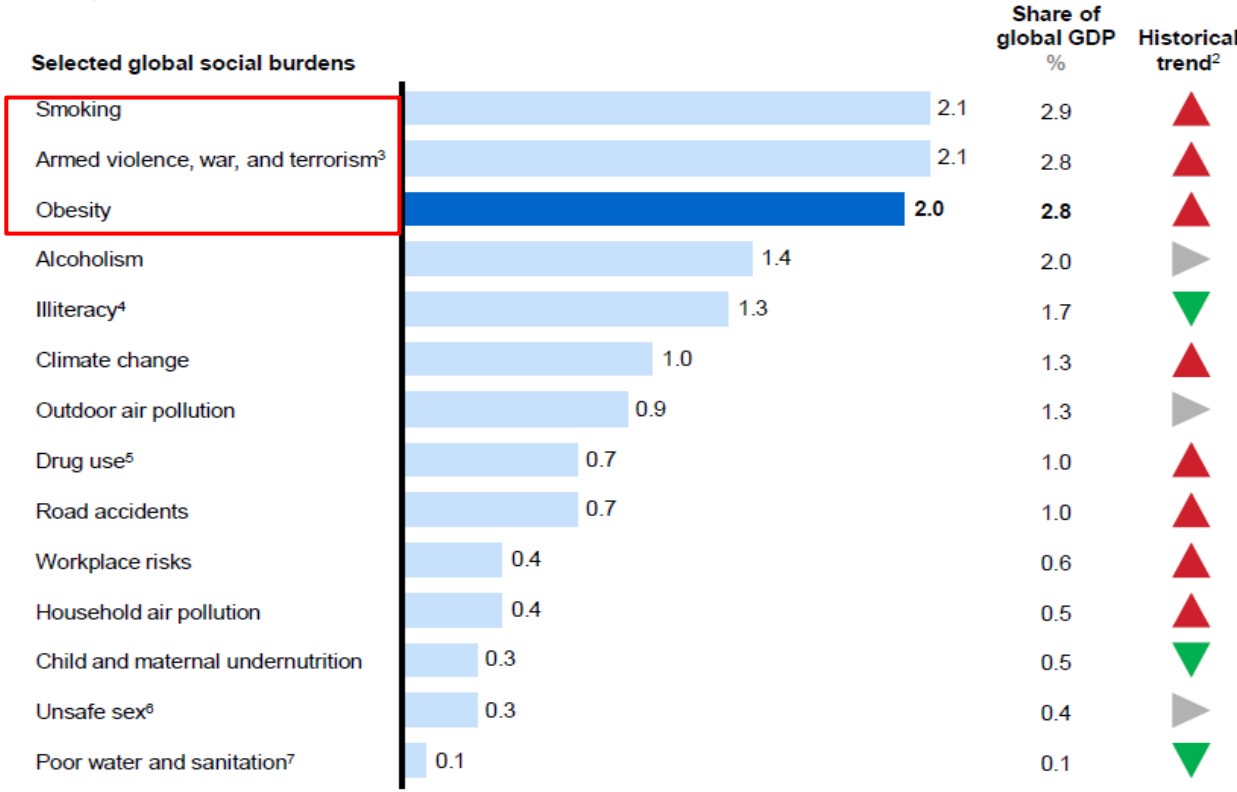
Obesity is one of the top three global social burdens generated by human beings

Estimated annual global direct economic impact and investment to mitigate selected global burdens, 2012[1]

GDP, $ trillion



1 Based on 2010 disability-adjusted life years (DALY) data from the Global Burden of Disease database and 2012 economic indicators from the World Bank; excluding associated revenue or taxes; including lost productivity due to disability and death, direct cost, e.g., for health care, and direct investment to mitigate; GDP data on purchasing power parity basis.
2 Based on historical development between 1990 and 2010 of total global DALYs lost (Global Burden of Disease).
3 Includes military budget.
4 Includes functional illiteracy.
5 Includes associated crime and imprisonment.
6 Includes sexually transmitted diseases. Excludes unwanted pregnancies.
7 Excludes lost time to access clean water source.

SOURCE: Literature review; World Health Organization Global Burden of Disease database; McKinsey Global Institute analysis

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Society level

Relative ranking of major social burdens by country

	France	Japan	Indo-nesia	China	Nigeria	Brazil	Morocco	South Africa	Mexico	United States	United Kingdom
Smoking	1	1	1	2	11	5	4	7	5	3	1
Obesity	2	3	8	9	13	3	2	4	1	2	2
Armed violence, war, and terrorism	3	6	9	3	7	1	1	3	4	1	3
Alcoholism	4	4	10	6	5	2	11	2	3	5	5
Illiteracy	5	2	7	8	10	7	7	9	6	4	4
Climate change	6	7	2	4	4	4	3	6	2	8	8
Outdoor air pollution	7	5	6	1	9	12	8	12	8	7	7
Road accidents	8	9	5	7	3	6	9	10	7	9	9
Drug use	9	8	12	11	14	8	6	8	9	6	6
Workplace risks	10	10	11	10	12	9	10	13	11	10	10
Unsafe sex	11	13	13	13	2	11	12	1	13	11	12
Child and maternal undernutrition	12	11	3	12	1	10	5	5	10	13	11
Poor water and sanitation	13	12	14	14	8	14	14	14	14	12	13
Household air pollution	14	14	4	5	6	13	13	11	12	14	14

SOURCE: Literature review; World Health Organization Global Burden of Disease database; McKinsey Global Institute analysis

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Climate Change & Obesity

Compared with a normal population distribution of BMI, a population with 40% obese requires 19% more food energy for its total energy expenditure.[1]

- Food consumption
- BMI ↑
- Fuel use for transportation ↑
- Greenhouse gas ↑

This perspective places the burden and more stigmatization on the overweight and obese individuals.[2]

1. Edwards, P., & Roberts, I. (2009). Population adiposity and climate change. *International Journal of Epidemiology*, *38*(4), 1137-1140.
2. Breda, J. (2010, November). Climate change and obesity. In *20th ECOG Congress, Brussels* (pp. 17-20).

Personal carbon trading: a potential "stealth intervention" for obesity reduction?

- Allocate every individual an **equal number of tradable energy units per year**.

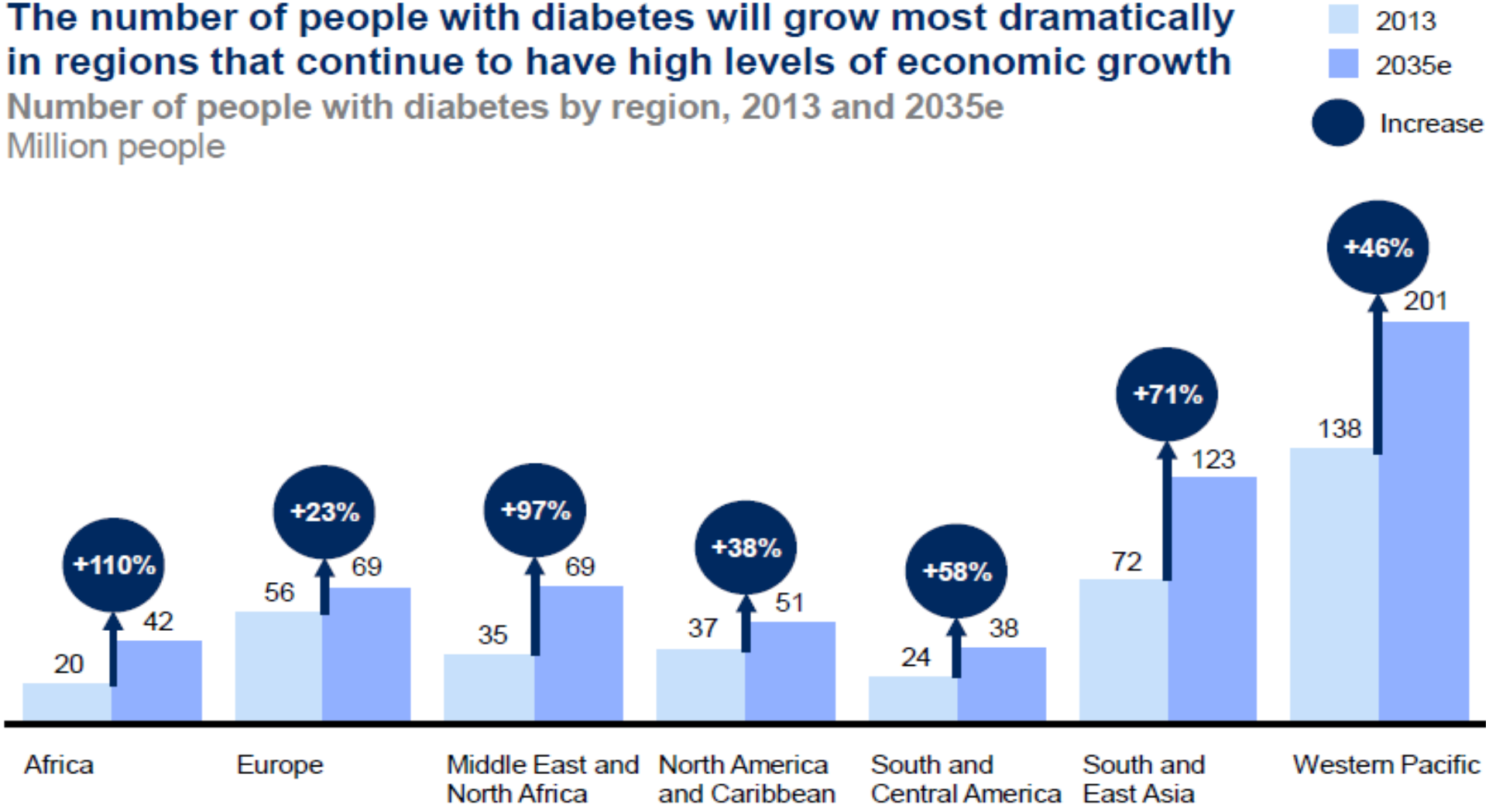
- Individuals who are left with carbon credits are then able to sell these back into the marketplace, thereby gaining a financial **benefit**. Those who overuse their quota pay a penalty for extra energy use.

Will this create even more stigmatization?

The number of people with diabetes will grow most dramatically in regions that continue to have high levels of economic growth

Number of people with diabetes by region, 2013 and 2035e

Million people



SOURCE: International Diabetes Federation; McKinsey Global Institute analysis

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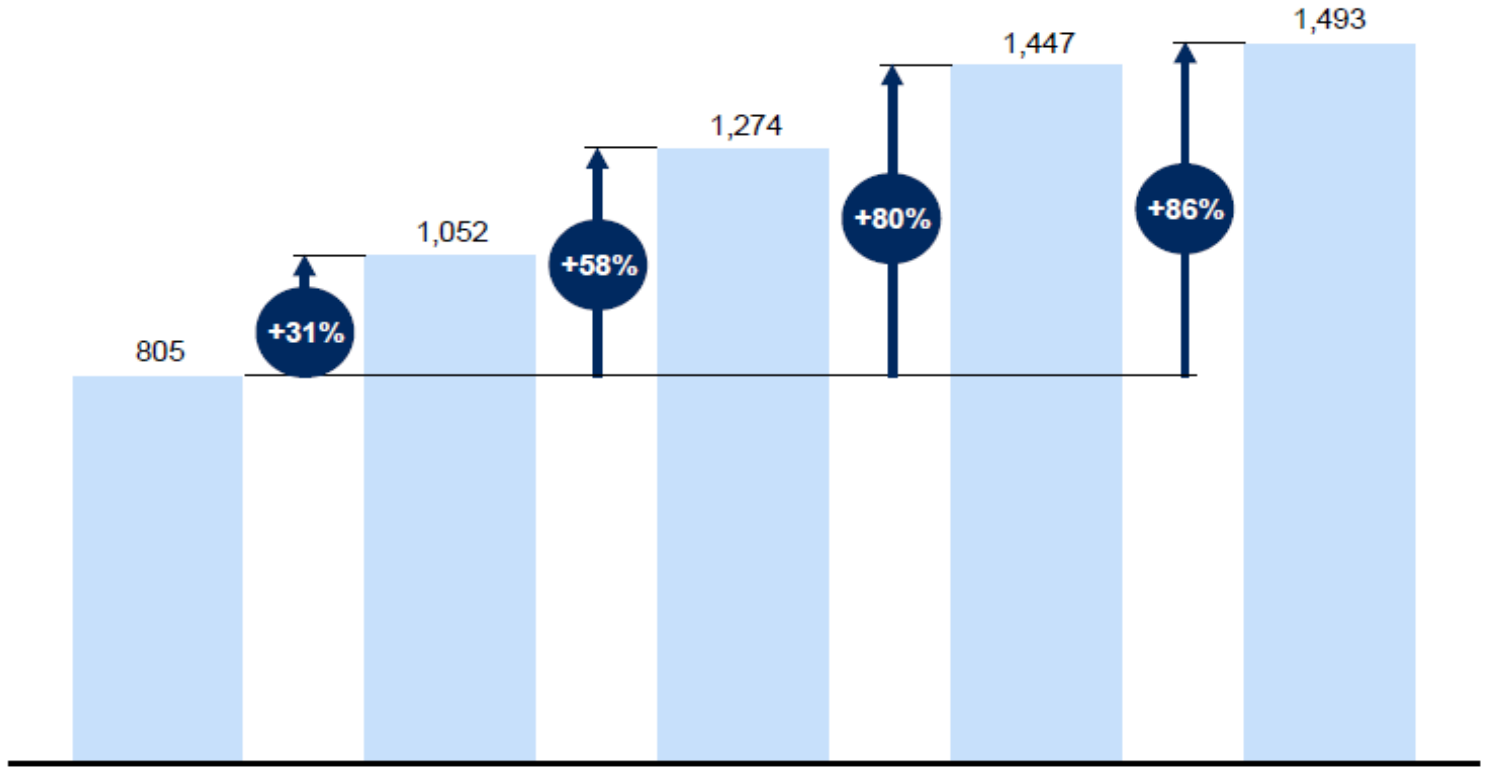
Associated medical costs rise as BMI increases

UK medical costs by BMI group, 2012[1]

£ per capita



1 Includes primary care, general practitioner prescriptions, hospitalization, accident and emergency, and outpatient care. 2003 values taken from Tigbe et al. (2013) adjusted using 2012/13 Fédération Internationale de Médecine du Sport and Health Examination Survey data on per capita UK costs in each category.

SOURCE: W. W. Tigbe, A. H. Briggs, and M. E. J. Lean, "A patient-centred approach to estimate total annual healthcare cost by body mass index in the UK Counterweight programme," *International Journal of Obesity*, August 2013; Fédération Internationale de Médecine du Sport and Health Examination Survey, 2012/13; McKinsey Global Institute analysis

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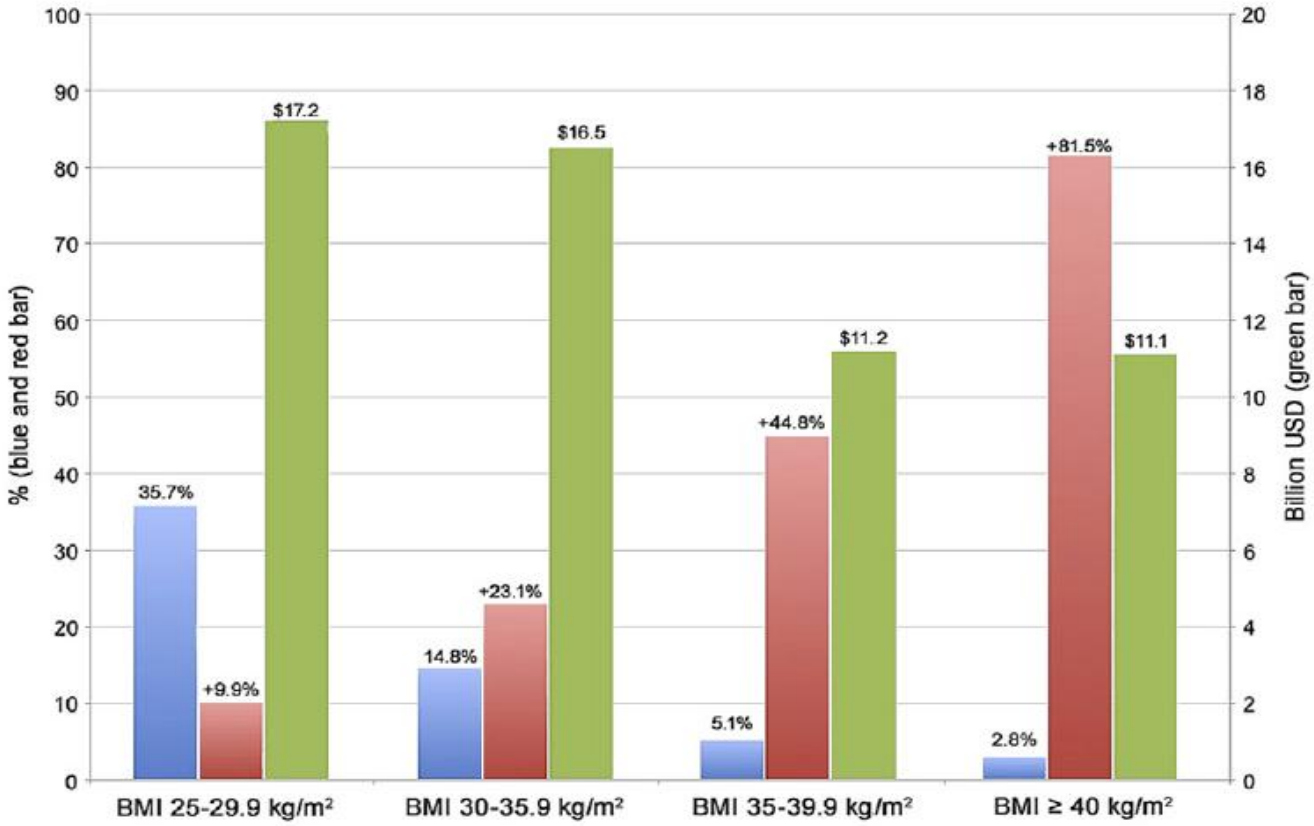


Fig. 2. Prevalence (blue bar), percentage increase in per capita expenditures (compared to BMI 18.5–24.9 kg/m^2; red bar), and aggregate expenditures (in 2000 USD; green bar) (based on data from[36]). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

Projecting cost attributable to elevated BMI in United Kingdom

Table 2.2: Calculating future costs of elevated BMI (£ billion/year)[1]

	2007	2015	2025	2050
Total NHS costs of diabetes	2.0	2.2	2.6	3.5
Total NHS costs of coronary heart disease	3.9	4.7	5.5	6.1
Total NHS costs of stroke	4.7	5.2	5.6	5.5
Total NHS costs of other related diseases	6.8	7.4	7.8	7.8
Total cost (all related diseases)	17.4	19.5	21.5	22.9
NHS cost increase above current, due to elevated BMI (overweight and obesity)	–	2.1	4.1	5.5
NHS costs attributable to elevated BMI (overweight and obesity)	4.2	6.3	8.3	9.7
NHS costs attributable to obesity alone (see Table 4 in Modelling Future Trends) [1]	2.3	3.9	5.3	7.1
Wider total costs of overweight and obesity, taken at 7x direct costs (figures include rounding effects)	15.8	27	37.2	49.9
Projected percentage of NHS cost @ £70 billion	6.0%	9.1%	11.9%	13.9%

Foresight. *Tackling Obesities: Future Choices – Project Report.* 2nd Edition. Foresight Government Office for Science, UK, 2007

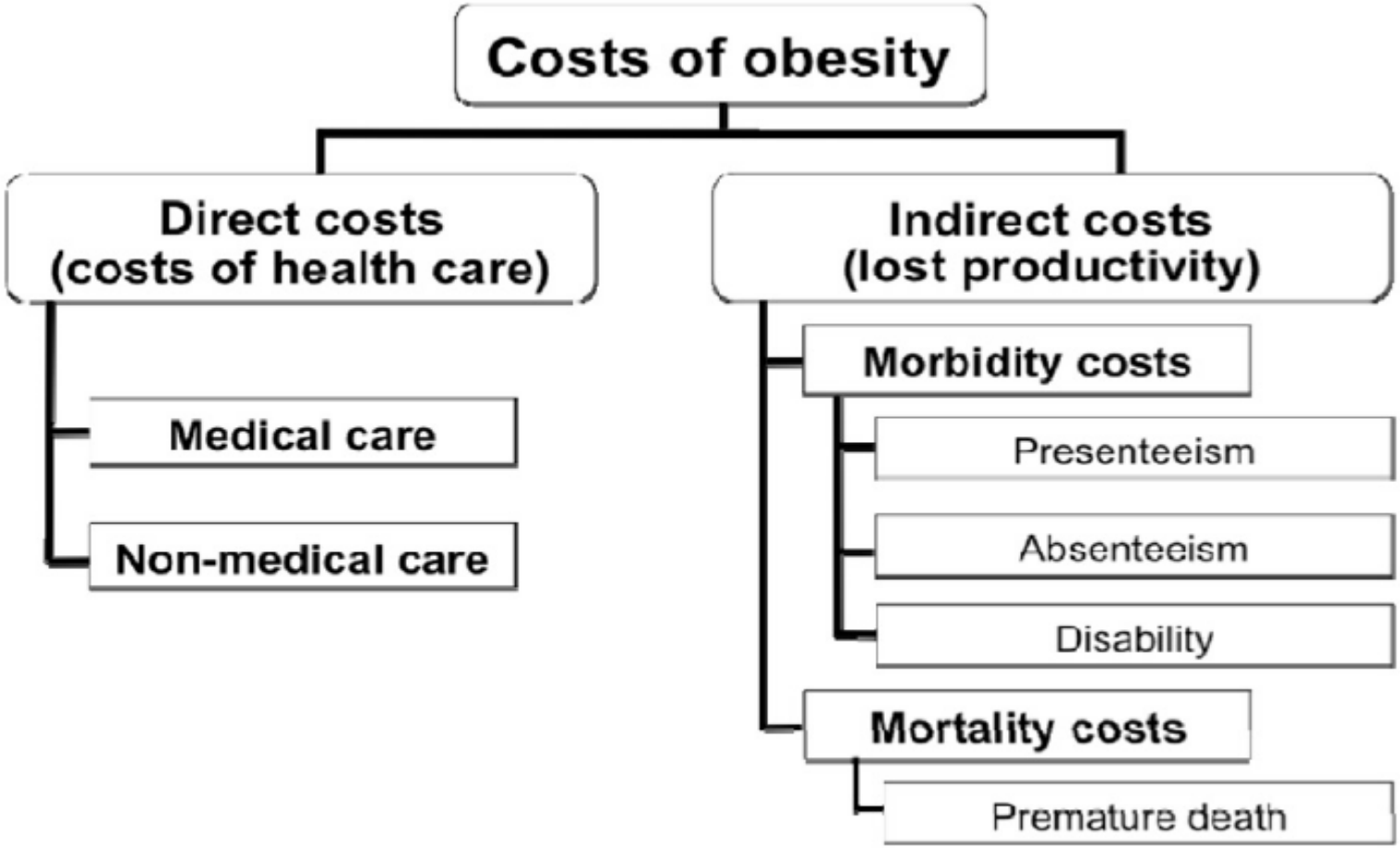


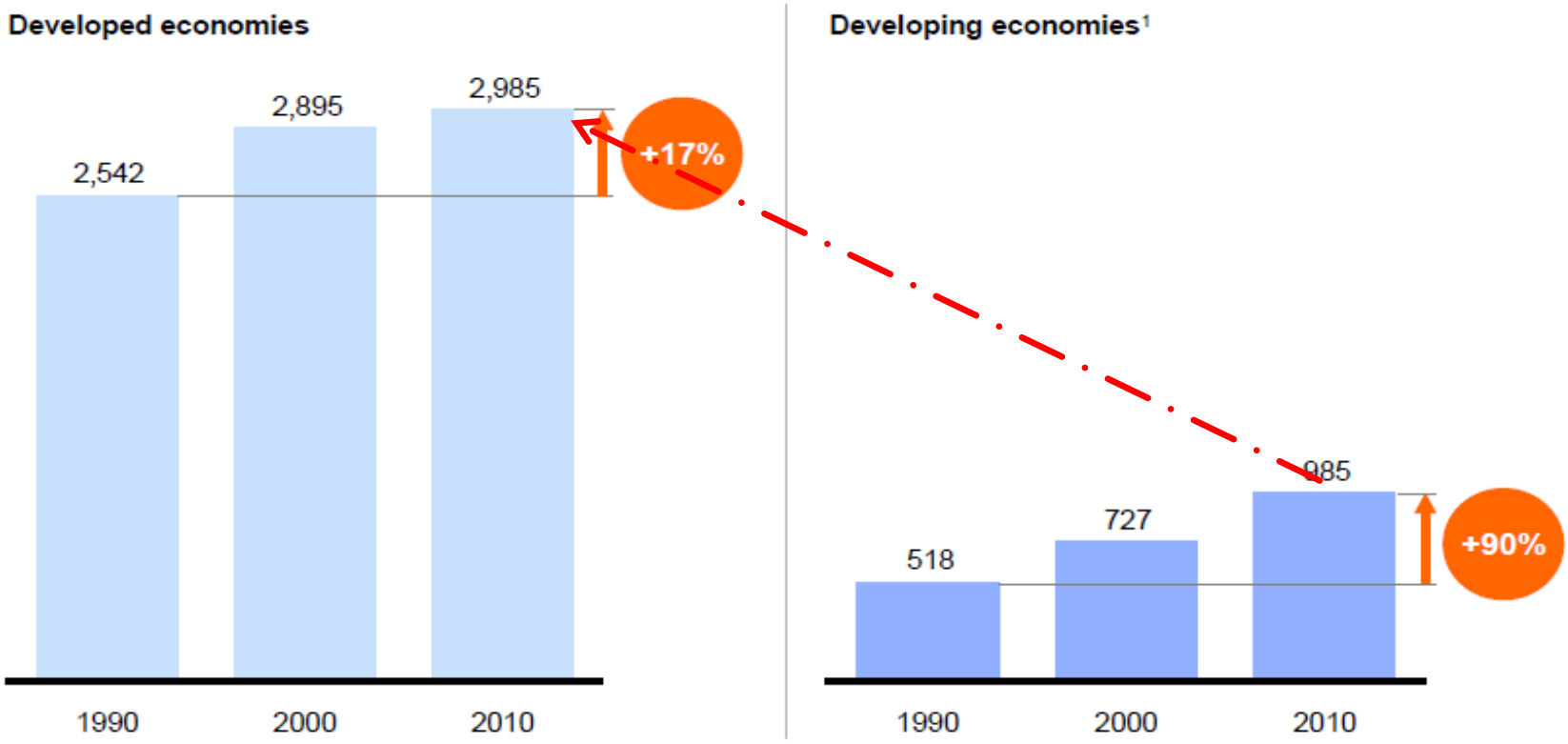
Fig. 1. Cost categories regularly considered in economic research on obesity.

Lehnert et al. *Best Pract & Res Clin Endocrinol Metab* 27:105-115, 2013

From 1990 to 2010, growth in obesity-related lost DALYs slowed in developed economies but almost doubled in developing economies

Obesity health burden

DALYs lost per 100,000 people



1 Definition of developing economies based on World Bank categorization of low- and middle-income countries, with per capita gross national income of less than $12,615.

SOURCE: World Health Organization Global Burden of Disease database; McKinsey Global Institute analysis

DALY: disability-adjusted life years is a measure of overall disease burden. It is expressed in terms of the number lost due to ill-health, disability or early death.

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Warning to developing countries

If they do not want to follow the foot steps of most developed countries, these countries need to act fast and have *effective intervention strategy* in place to slow the pace of obesity prevalence.

Cost effectiveness of obesity intervention

As the etiology of overweight and obesity is multifactorial, and therefore no single solution. Intervention needs to be multi-dimensional. But whatever type of intervention it may be, the ultimate IMPACT will be on BODY WEIGHT of an individual and the population at large.

From an economic standpoint, the most cost effective methods should be deployed with highest priority.

Exhibit 13

Intervention groups and descriptions [*inclusive of 74 different types of interventions*]

1. Active transport

Facilitating and encouraging walking, cycling, and public transport, which engender more physical activity

2. Health-care payors

Providing incentives or support to encourage healthy behavior. These can include general financial incentives, such as premium rebates or reward points, or more targeted facilitating incentives such as free gym membership. Payors can also deliver other interventions such as parental and weight-management programs

3. Healthy meals

Improving the health quality of meals in controlled settings such as schools and workplaces

4. High-calorie food and drink availability

Reducing the ready availability of high-calorie foods to help control impulse consumption, including removing vending machines from schools and workplaces, high-calorie foods from supermarket checkouts, and fast-food retailers from locations outside schools

10. Price promotions

Restricting promotional activity in high-calorie impulse foods to decrease consumption

11. Public-health campaigns

Delivering a public-health campaign through multiple media outlets to promote healthy eating and physical activity habits

12. Reformulation

Incrementally reducing calories in food products to drive subconscious reduction in consumption

13. School curriculum

Introducing additional hours of physical education and healthy nutrition in school curricula to encourage healthier habits

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5. Labeling

Providing calorie and other nutritional labeling so that consumers can understand the content of their food. Labels can be plain text or "engaging"—an easy-to-interpret assessment of the health of the product (e.g., traffic lights)

6. Media restrictions

Restricting high-calorie food advertising to reduce exposure to marketing that is proven to promote consumption

7. Parental education

Empowering and educating parents to promote a healthier lifestyle for their children through regular parental guidance sessions

(not behavioral)

8. Pharmaceuticals *

Intervening with drugs to reverse obesity rapidly in cases where it is creating immediate health risks

9. Portion control

Encouraging appropriate consumption through incremental (i.e., 1 to 5 percent) reductions in portion sizes and designing packaging to better delineate portion size to help consumers moderate their consumption

14. Subsidies, taxes, and prices

Changing agricultural policy or regulatory policy to adjust consumer prices and the supply of select food and/or beverage categories

(not behavioral)

15. Surgery *

Scaling up delivery of bariatric surgery to reduce stomach capacity and deliver immediate change in food consumption

16. Urban environment

Making changes to physical activity and food access to facilitate and encourage healthy habits, such as increasing the walkability of cities and green space, and improving access to grocery stores

17. Weight-management programs

Educating and empowering individuals to change key weight behavior through counseling, physical activity programs, and education

18. Workplace wellness

Offering programs and engaging employees to encourage healthy behavior, for example through financial and non-financial incentives, team competitions, and the provision of education and self-management tools such as personal tracking devices

* Could be classified as advancements in science and technology

Conscious versus subconscious levers in interventions

Conscious levers:
Setting personal goals, exercise-tracking waistbands, financial incentives, etc.

Subconscious levers:
Color coding food labels for easy understanding, easy accessible options effect to change behavior such as gym at /near work place; making portion size of unhealthy food smaller, realigning social norms and behavior, etc.

Cooperation from food industry and media are essential to effect positive changes and this in turn needs policy and regulatory changes from the government side.

Examples

- Putting warning on food label as in cigarette package?
- Reformulation means adding cost to food industries.
- Restrict advertisement of certain food products.
- Policy/regulation need to apply uniformly and tax break could be an incentive.

Cabrera Escobar et al. BMC Public Health 2013, 13:1072
http://www.biomedcentral.com/1471-2458/13/1072

BMC Public Health

RESEARCH ARTICLE Open Access

Evidence that a tax on sugar sweetened beverages reduces the obesity rate: a meta-analysis

Maria A Cabrera Escobar[1], J Lennert Veerman[2], Stephen M Tollman[1,3], Melanie Y Bertram[1] and Karen J Hofman[1,3*]

Abstract

Background: Excess intake of sugar sweetened beverages (SSBs) has been shown to result in weight gain. To address the growing epidemic of obesity, one option is to combine programmes that target individual behaviour change with a fiscal policy such as excise tax on SSBs. This study evaluates the literature on SSB taxes or price increases, and their potential impact on consumption levels, obesity, overweight and body mass index (BMI). The possibility of switching to alternative drinks is also considered.

Methods: The following databases were used: Pubmed/Medline, The Cochrane Database of Systematic Reviews, Google Scholar, Econlit, National Bureau of Economics Research (NBER), Research Papers in Economics (RePEc). Articles published between January 2000 and January 2013, which reported changes in diet or BMI, overweight and/or obesity due to a tax on, or price change of, SSBs were included.

Results: Nine articles met the criteria for the meta-analysis. Six were from the USA and one each from Mexico, Brazil and France. All showed negative own-price elasticity, which means that higher prices are associated with a lower demand for SSBs. Pooled own price-elasticity was −1.299 (95% CI: -1.089 - -1.509). Four articles reported cross-price elasticities, three from the USA and one from Mexico; higher prices for SSBs were associated with an increased demand for alternative beverages such as fruit juice (0.388, 95% CI: 0.009 – 0.767) and milk (0.129, 95% CI: -0.085 – 0.342), and a reduced demand for diet drinks (−0.423, 95% CI: -0.628 - -1.219). Six articles from the USA showed that a higher price could also lead to a decrease in BMI, and decrease the prevalence of overweight and obesity.

Conclusions: Taxing SSBs may reduce obesity. Future research should estimate price elasticities in low- and middle-income countries and identify potential health gains and the wider impact on jobs, monetary savings to the health sector, implementation costs and government revenue. Context-specific cost-effectiveness studies would allow policy makers to weigh these factors.

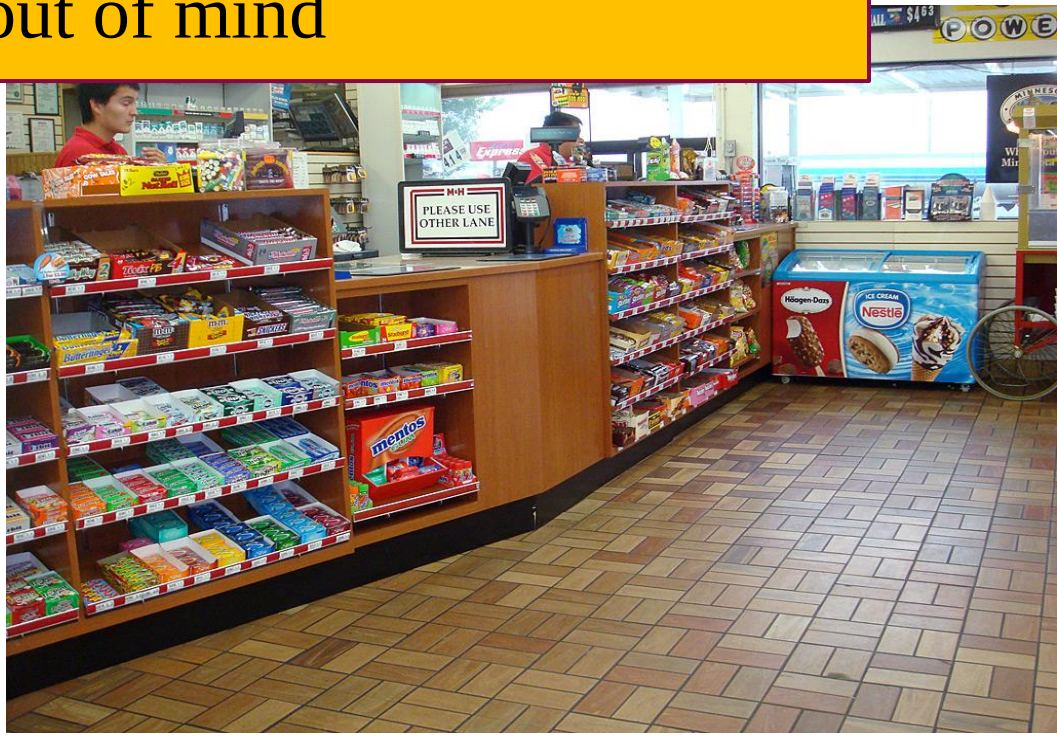
Keywords: Obesity, Fiscal policy, Tax, Non-communicable diseases (NCDs), High income countries, Middle income countries, Sugar Sweetened Beverages (SSBs), Elasticity, Demand, Price

But, the magnitude of BMI decrease is pretty small!

Retail shelf space

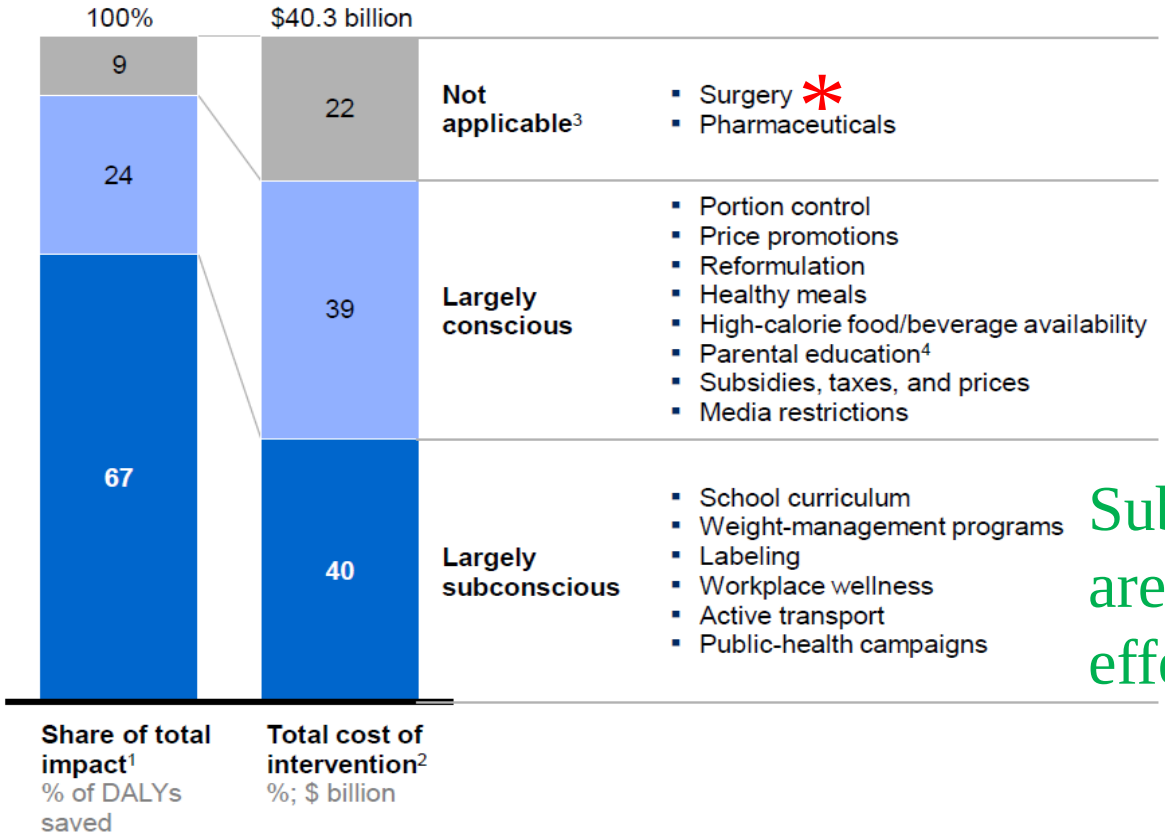
Move them to less accessible location of the store
Out of sight out of mind

Steep cost to be near the cashier



The highest-impact levers do not rely on individual willpower to change, but restructure the choices in our environment

Impact and cost of obesity interventions, by behavioral-change mechanism, United Kingdom, full lifetime 2014 population



Subconscious levers are the most cost effective

1 Includes only non-overlapping levers in each category. Where two levers overlapped, such as plain and engaging labeling or gastric banding and bariatric surgery, the higher-impact lever was chosen.
2 Impact and cost over lifetime of 2014 population; uses UK-specific cost-effectiveness calculated using GDP and World Health Organization methodology.
3 Surgery and pharmaceuticals do not rely on behavioral change.
4 Parental education works by conscious mechanisms on parents but subconscious mechanisms on children who are the main target.

NOTE: We do not include health-care payors because this intervention is not relevant in the United Kingdom context. There were insufficient data to quantify urban-environment interventions. Numbers may not sum due to rounding.

SOURCE: Literature review; expert interviews; McKinsey Global Institute analysis

With scientific advances, personal genomics could be obtained at a relatively low cost. And gene therapy may not be too far away. Will this become a solution to the obesity epidemic?

The New York Times | http://nyti.ms/1LQTwho

The Opinion Pages | OP-ED CONTRIBUTOR

Angelina Jolie Pitt: Diary of a Surgery

By ANGELINA JOLIE PITT MARCH 24, 2015

LOS ANGELES — TWO years ago I wrote about my choice to have a preventive double mastectomy. A simple blood test had revealed that I carried a mutation in the BRCA1 gene. It gave me an estimated 87 percent risk of breast cancer and a 50 percent risk of ovarian cancer. I lost my mother, grandmother and aunt to cancer.

I wanted other women at risk to know about the options. I promised to follow up with any information that could be useful, including about my next preventive surgery, the removal of my ovaries and fallopian tubes.

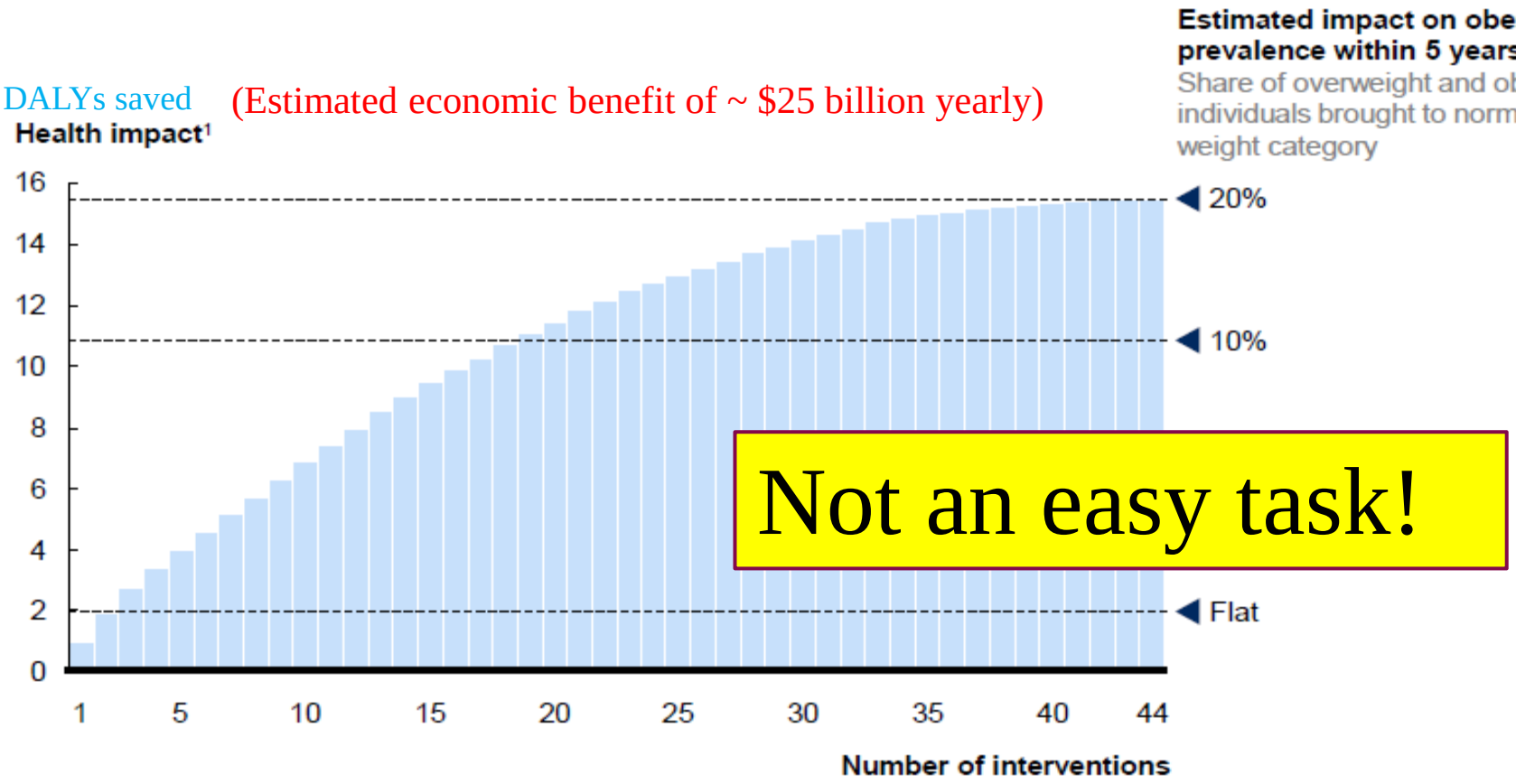
I had been planning this for some time. It is a less complex surgery than the mastectomy, but its effects are more severe. It puts a woman into forced menopause. So I was readying myself physically and emotionally, discussing options with doctors, researching alternative medicine, and mapping my hormones for estrogen or progesterone replacement. But I felt I still had months to make the date.

Then two weeks ago I got a call from my doctor with blood-test results. "Your CA-125 is normal," he said. I breathed a sigh of relief. That test measures the amount of the protein CA-125 in the blood, and is used to monitor ovarian cancer. I have it every year because of my family history.

But that wasn't all. He went on. "There are a number of inflammatory markers that are elevated, and taken together they could be a sign of early cancer." I took a pause. "CA-125 has a 50 to 75 percent chance of missing ovarian cancer at early stages," he said. He wanted me to see the surgeon immediately to check my ovaries.

MGI quantified the maximum potential of 60 percent of the interventions identified, which together could bring 20 percent of overweight and obese individuals into a normal weight category

Million DALYs saved (Estimated economic benefit of ~ $25 billion yearly)



1 Impact is captured as million DALYs saved over full lifetime of 2014 UK population, taking into account health benefits accrued later in life.

SOURCE: Literature review; expert interviews; McKinsey Global Institute analysis

Overcoming Obesity: An initial economic analysis
McKinsey Global Institute 2014

Health and Economic Burden of Obesity in Brazil

Ketevan Rtveladze[1]*, Tim Marsh[1], Laura Webber[1], Fanny Kilpi[1], David Levy[2], Wolney Conde[3], Klim McPherson[4], Martin Brown[1]

1 Micro Health Simulations, London, United Kingdom, **2** Georgetown University, Washington, D. C., United States of America, **3** University of Sao Paulo, Sao Paulo, Brazil, **4** New College, Oxford, United Kingdom

Abstract

Introduction: Higher and lower-middle income countries are increasingly affected by obesity. Obesity-related diseases are placing a substantial health and economic burden on Brazil. Our aim is to measure the future consequences of these trends on the associated disease burden and health care costs.

Method: A previously developed micro-simulation model is used to project the extent of obesity, obesity-related diseases and associated healthcare costs to 2050. In total, thirteen diseases were considered: coronary heart disease, stroke, hypertension, diabetes, osteoarthritis, and eight cancers. We simulated three hypothetical intervention scenarios: no intervention, 1% and 5% reduction in body mass index (BMI).

Results: In 2010, nearly 57% of the Brazilian male population was overweight or obese (BMI $\geq$25 kg/m^2), but the model projects rates as high as 95% by 2050. A slightly less pessimistic picture is predicted for females, increasing from 43% in 2010 to 52% in 2050. Coronary heart disease, stroke, hypertension, cancers, osteoarthritis and diabetes prevalence cases are projected to at least double by 2050, reaching nearly 34,000 cases of hypertension by 2050 (per 100,000). 1% and 5% reduction in mean BMI will save over 800 prevalence cases and nearly 3,000 cases of hypertension by 2050 respectively (per 100,000). The health care costs will double from 2010 ($5.8 billion) in 2050 alone ($10.1 billion). Over 40 years costs will reach $330 billion. However, with effective interventions the costs can be reduced to $302 billion by 1% and to $273 billion by 5% reduction in mean BMI across the population.

Conclusion: Obesity rates are rapidly increasing creating a high burden of disease and associated costs. However, an effective intervention to decrease obesity by just 1% will substantially reduce obesity burden and will have a significant effect on health care expenditure.

Rtveladze et al. *PL0S ONE* 8(7):e68785, 2013

Impact of obesity on disability is far larger than its impact on mortality

If subconscious approach is the most cost effective way, this should start at early age.

THE FINAL REFLECTIVE MEMO

To what extent you would assign responsibility to each of the 5 categories to effect a success in obesity prevention? (Note: total must add up to 100%)

	Percentage
Government policy, regulations, infrastructure, city plan, education campaign, etc	_____%
Food Industry moral obligation, good citizen, work with government, etc	_____%
Science and Technology understanding obesity, drug and biotechnology development of treatment, etc	_____%
Society employer creating environment and encourage physical activity, education campaigns, health for every size, etc.	
Individual will power, know control, etc.	

Reflection must include but is not limited to this final lecture

Total: 100%

Explain your responsibility allocation.

OBESITY IS THE GOVERNMENT'S BUSINESS

TUESDAY, FEBRUARY 7, 2012

With 33% of adults and 17% of children obese, the U.S. is facing an obesity epidemic. A major risk factor for expensive, chronic conditions like heart disease, diabetes, and cancer, it costs our health care system nearly $150 billion a year.

Should government intervene, or is this a matter of individual rights and personal responsibility?

FOR
Dr. Pamela Peeke
WebMD Chief Lifestyle Expert

FOR
Dr. David Satcher
Former Surgeon General of the United States

AGAINST
John Stossel
FOX Business News Anchor & Commentator

AGAINST
Paul Campos
Author *The Obesity Myth* & Law Professor, University of Colorado

MODERATOR
John Donvan
Author and correspondent for ABC News.

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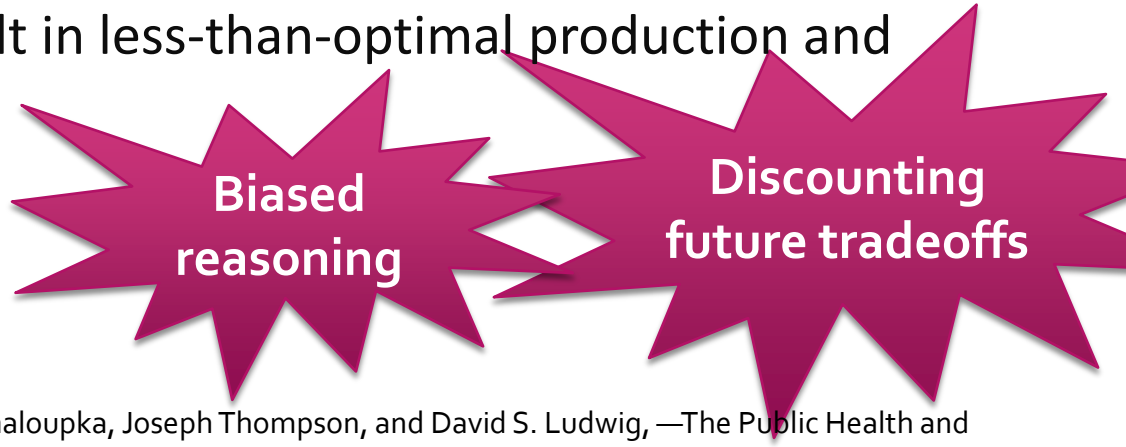
"Market Failures"

- A recent *New England Journal of Medicine article argues that:*

  "Many persons do not fully appreciate the links between consumption of these beverages and health consequences, they make consumption decisions with **imperfect information**... A second failure results from **time-inconsistent preferences**..."

- Government intervention in a market is warranted when there are **"market failures"** that result in less-than-optimal production and consumption.



Kelly D. Brownell, Thomas Farley, Walter Willett, Barry Popkin, Frank Chaloupka, Joseph Thompson, and David S. Ludwig, —The Public Health and Economic Benefits of Taxing Sugar-sweetened Beverages,‖ *New England Journal of Medicine 361, 16* (2009): 1601.

HYPERBOLIC DISCOUNTING

- Let V be the lifetime utility one obtains if rati… made every day, and if lifespan is sufficiently long…
- Today's decision of an individual to to choo… $u(a_0) + \beta V(a_0)$. Future utilities will be discounted by β…
- In equilibrium, if life is long enough, then $V = \max u(a_0) + \beta V$… one will solve the same problem again by choosing a_1.
- Suppose one is fully aware of the fact that overconsumption of food is bad for future health. Then, a person will choose an action today that takes into account of the potential future negative effect.
- However, if one's time preference exhibits *hyperbolic discounting* : Then, his problem becomes $V = \max u(a_0) + \phi\beta V(a_0)$, where $0 < \phi < 1$.
- Consequently, he will value the benefit from the immediate action relatively more by discounting the future benefits more disproportionally by ϕ.
- Tomorrow comes, he will repeat the decision process. Then, it results in suboptimal consumption everyday. Yet it is still behaviorally rational according to his time preference!

Extracted from guest lecture

The Victim-blaming Approach

Executive Summary

Across the nation there has been a rapid increase in the number of persons who are overweight or obese. This report is intended to describe the impact of overweight and obesity in Arkansas in terms of the extent of the problem as well as the long term consequences to the overall health and economic burden for Arkansans. Information on the burden of overweight and obesity in Arkansas is compiled and published every four years for use by program managers, Obesity Task Force members, policy makers, researchers, and other interested parties. The purpose of this information is to provide data to assist in determining what and where interventions are nee
Department of Health
to produce this report
obesity in Arkansas.

"For many years our country put **money and energy** into treating disease and illness rather than dealing with avoiding disease through healthier lifestyles. We have staggering rates of heart attacks, high blood pressure and strokes **simply because people opt not to take care of themselves**" (State of Arkansas "Letter," 2006)

State of Arkansas. Letter from the Governor.
The Burden of Overweight and Obesity in Arkansas 2007-2008
http://www.healthy.arkansas.gov/programsServices/epidemiology/ChronicDisease/Documents/publications/ObesityBurden2008.pdf&sa=U&ved=0ahUKEwir7__pk6vMAhVFJaYKHZukCscQFggRMAY&client=internal-uds-cse&usg=AFQjCNFE1fgcpgYog7vo1YerBRcnhE-omA

What Happened?

Extracted from case study presentation

The Telegraph

Home Video News World Sport Finance Comment Culture Travel Life

Politics Election 2015 Investigations Obits Education Science Earth Weather

Conservatives | Liberal Democrats | Labour | Political Parties | Scottish Politics | Local Electio

HOME » NEWS » POLITICS » DAVID CAMERON

Obese people could have benefits taken away if they refuse treatment

David Cameron says taxpayers should no longer "fund the benefits" of obese people drug and alcohol addicts who refuse to accept the treatment that could help them get back into employment

8K 529 0 5 8K Email

David Cameron, the Prime Minister Photo: Heathcliff O'Malley/The Telegraph

By Peter Dominiczak, Political Editor
6:40PM GMT 13 Feb 2015

BBC Sign in News Sport Weather Shop Earth

NEWS

Home Video World Asia UK Enterta

UK England N. Ireland Scotland Wales Election

Obese could lose benefits if they refuse treatment - PM

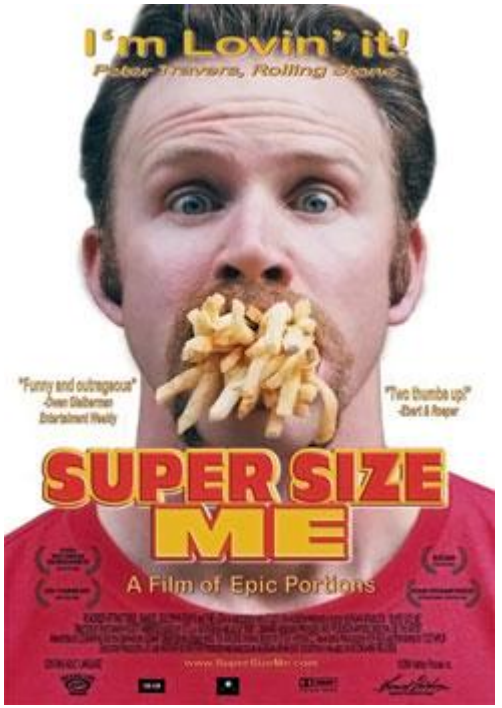
14 February 2015 | UK

"we can no longer let fat people stuff their porky faces with fast food and feed their children burgers in front of the TV, **because the rest of us are picking up the bill**."

http://www.theguardian.com/lifeandstyle/2010/apr/18/obesity-nutrition-weight-diversity

Liability under Law: The Pelman v. McDonald's case

- An obese consumer sued McDonald's on the grounds of **misinformation**, for encouragement to buy **larger meals** without stressing the side-effects.
- The judge dismissed the case because it was impossible to demonstrate McDonald's **exclusive liability**.
- The underlying principle was that people had to accept **personal responsibility** for their actions.



Adams, R. (2005). Fast food, obesity, and tort reform: an examination of industry responsibility for public health. *Business and Society Review*, *110*(3), 297-320.

Law Protection against Weight Discrimination

- Illegal by law in some states in the U.S. (e.g., Washington, D.C.; the state of Michigan; Madison, Wisconsin; and the California cities of San Francisco and Santa Cruz)
- The Equal Employment Opportunities Commission (EEOC): When a person is 100 lb (or 100%) "overweight," they are good candidates for meeting the legal definition of **disability**.
- Some U.S. Courts: No protection unless the fat person is *perceived to have **an impairment** that causes the weight*.

EU court says obesity can be disability

By Lachlan Carmichael, Sören Billing | AFP – Thu, Dec 18, 2014

The EU court ruled that "**no general principle of EU law** prohibits, in itself, the discrimination on grounds of obesity", but obesity can be considered a "disability" if it ***hinders an overweight person's performance at work***.

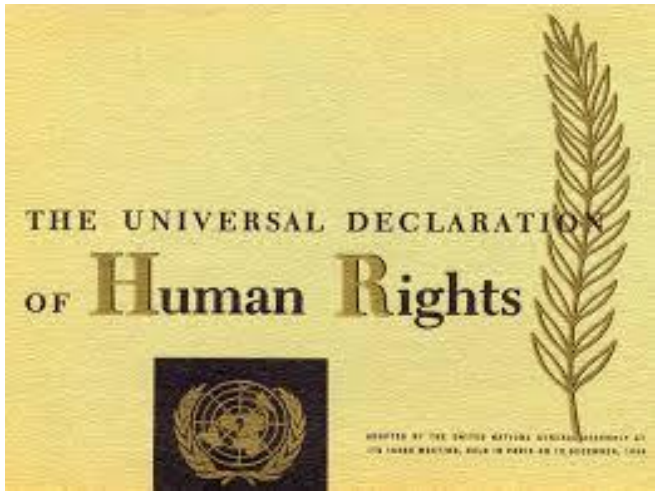
Employer: Kaltoft's obesity could never constitute a disability because it was **self-inflicted**.

Lawyer who represented Kaltoft: "A person who is dismissed if they are not competent, capable and available for the position has not been subjected to discrimination…" It was only discrimination if "the person ***can perform his job but may be in need of some help to do it***" he said.

https://uk.news.yahoo.com/eu-court-says-obesity-disability-131503755.html#tRoS4M2

The Human Right to Be Fat?

- The **weight-centered** health paradigm is contributing directly to a broad range of **human rights abuses**.



The Universal Declaration of Human Rights
http://www.un.org/en/universal-declaration-human-rights/index.html
https://www.youtube.com/watch?v=hTlrSYbCbHE

Violating the Human Right to Be Fat

- ARICLE 5: "No one shall be subjected to torture or to **cruel, inhuman, or degrading** treatment or punishment."
  - **Harassment, prejudice, and discrimination** based on body size are degrading and cruel.

- ARTICLE 8: "Everyone has the right to **an effective remedy** by the competent national tribunals for acts violating the fundamental rights granted him by the constitution or **by law**."
  - Lack of **anti-discrimination legislation** that provides fat people recognition before the law

Lily O'Hara & Jane Gregg (2012): Human Rights Casualties from the "war on Obesity: Why Focusing on Body Weight Is Inconsistent with a Human Rights Approach to Health, Fat Studies, 1:1, 32-46.

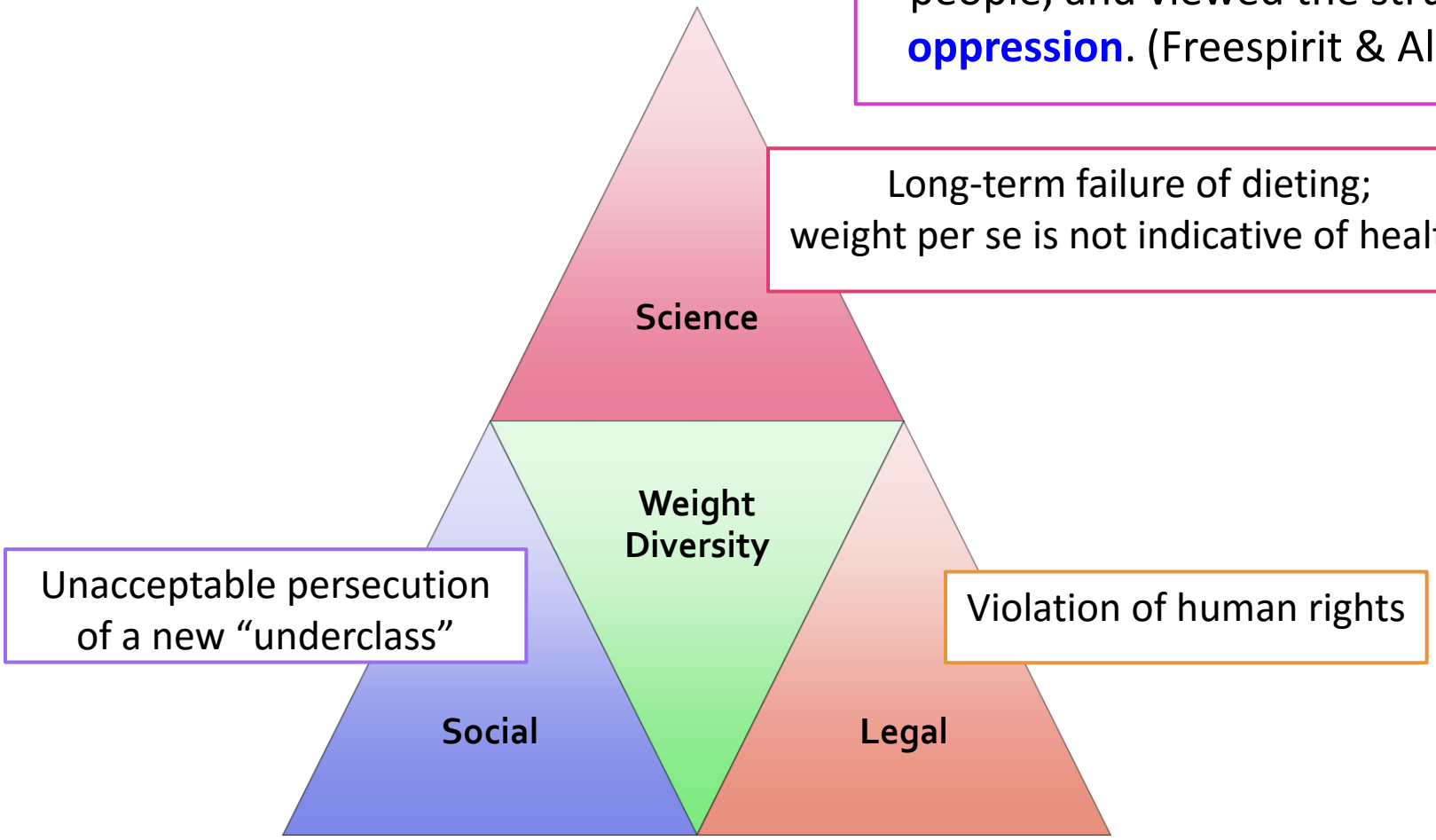
Violating the Human Right to Be Fat

- ARICLE 16: “Men and women of full age, **without any limitation** due to race, nationality, or religion, have the right **to marry and to found a family**.”
  - Fat people are less likely to be chosen as potential marriage partners (Teachman & Mallet, 2005).
  - Fat children have been removed from families because of their body weight (Solovay, 2000).
- ARTICLE 23: (1) Everyone has the right … to **just and favorable conditions** of work and to protection against unemployment.(2) Everyone, without any discrimination, has the right to **equal pay for equal work**.
  - Discrimination against fat people has been demonstrated in **hiring, promotion and remuneration**(Fikkan & Rothblum, 2005).

Lily O’Hara & Jane Gregg (2012): Human Rights Casualties from the “war on Obesity: Why Focusing on Body Weight Is Inconsistent with a Human Rights Approach to Health, Fat Studies, 1:1, 32-46.
Teachman, B.A., & Mallet, R.K. (2005) Measurement of Bias. In Brownell, K.D., Puhl, R., Schwartz, M.B., and Rudd, L. (Eds) Weight Bias: Nature, Consequences and Remedies. New York, NY: The Guilford Press.
Fikkan, J., & Rothblum, E.D. (2005) Weight Bias in Employment. In Brownell, K.D.,Puhl, R. Schwartz, M.B., and Rudd, L. (Eds) Weight Bias: Nature, Consequences and Remedies . New York, NY: The Guilford Press.

Weight Diversity Movement

Fat people are fully deserving of **human respect**, demanded **equal rights** for fat people, and viewed the struggle to **end fat oppression**. (Freespirit & Aldebaran, 1973)



Freespirit.J., & Aldebaran (1973). The Fat Liberation Manifesto, retrieved April 26, 2016, from http://laurenyay.tumblr.com/post/8711705310/fat-liberation-manifesto.

Obesity is a threat to national security (even more so than terrorists)

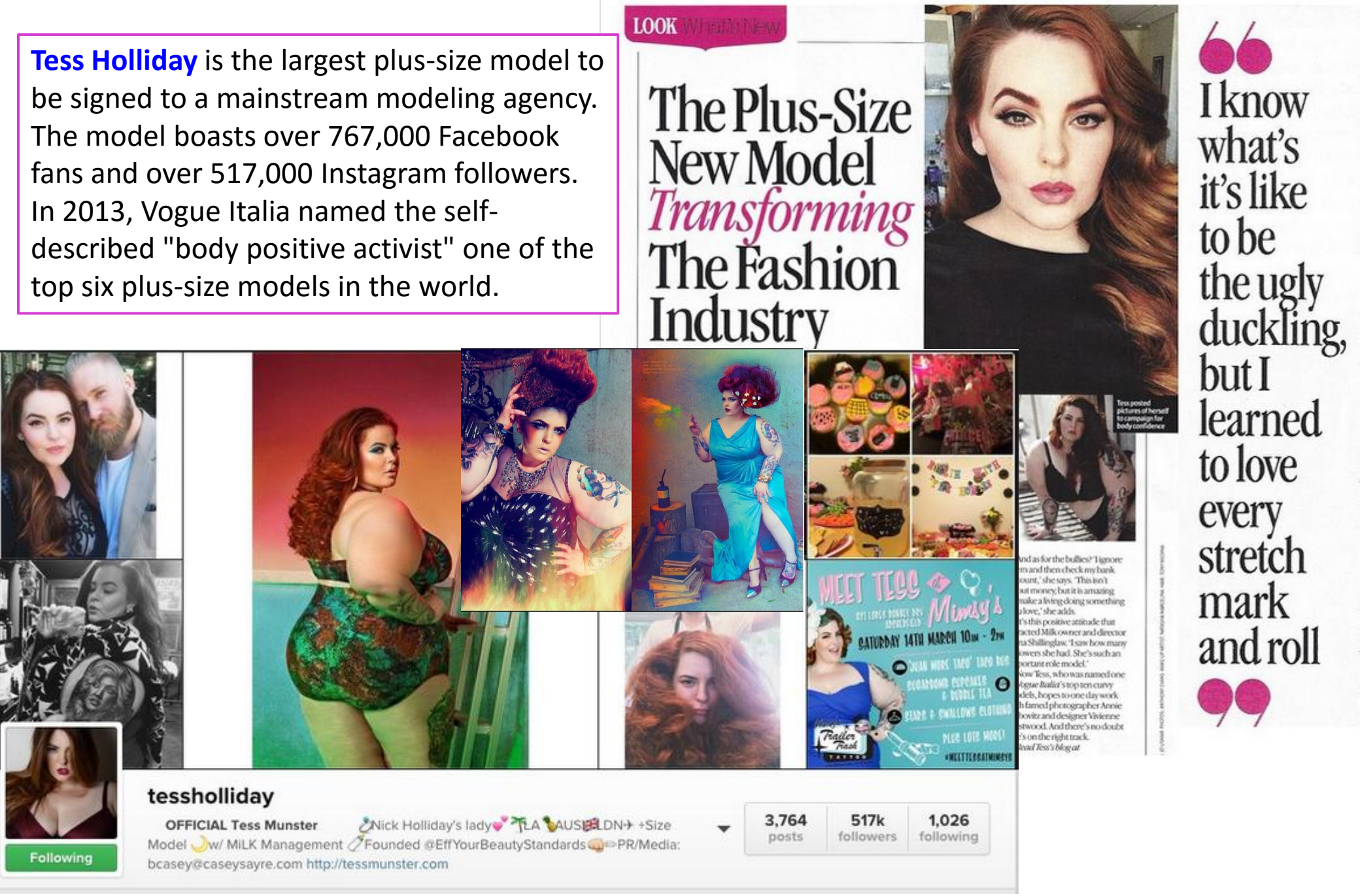
Lecture note from Lesson 7

"Obesity epidemic" poses the greatest threat to the national security of the United States. U.S. Surgeon General Koop has repeatedly called it **the** (Carmona, 2003).

Carmona, R. (2003, November 23). Interview. Morning Edition. [Radio broadcast]. Washington, DC: National Public Radio.

Surgeon General: Healthy & Fit
https://www.youtube.com/watch?v=fvUYWms8P3w

Tess Holliday is the largest plus-size model to be signed to a mainstream modeling agency. The model boasts over 767,000 Facebook fans and over 517,000 Instagram followers. In 2013, Vogue Italia named the self-described "body positive activist" one of the top six plus-size models in the world.



http://uk.businessinsider.com/meet-tess-holliday-plus-size-model-with-tattoos-2015-3

The Fat Acceptance Movement

- A **social movement** seeking to change anti-fat bias in social attitudes.
- Strive for change in **societal, personal and medical attitudes** toward fat people.

First they ignore you. Then they laugh at you. Then they fight you. Then you win. **— Ghandi**

Fat Pride & Fat Acceptance I The Feed
https://www.youtube.com/watch?v=yP9zIW2TTgc

ELSEVIER

Body Image 1 (2004) 213–219

www.elsevier.com/locate/bodyimage

Brief research report

Resisting body dissatisfaction: fat women who endorse fat acceptance☆

Nita Mary McKinley*

Interdisciplinary Arts and Sciences, University of Washington, 1900 Commerce Street, Campus Box 358436, Tacoma, WA 98402-3100, USA

Received 24 September 2003; received in revised form 5 February 2004; accepted 10 February 2004

Abstract

Fat women who endorsed fat acceptance ($N = 128$) were recruited from *Radiance Magazine*. Relationships between objectified body consciousness (OBC), body esteem, and psychological well-being for the mostly European American sample were similar to those found in other samples. OBC was independently related to body esteem when weight dissatisfaction was controlled. Those who endorsed the need for social change in attitudes towards fat people had higher body esteem and self-acceptance, and lower body shame, than those who endorsed personal acceptance of body size only.

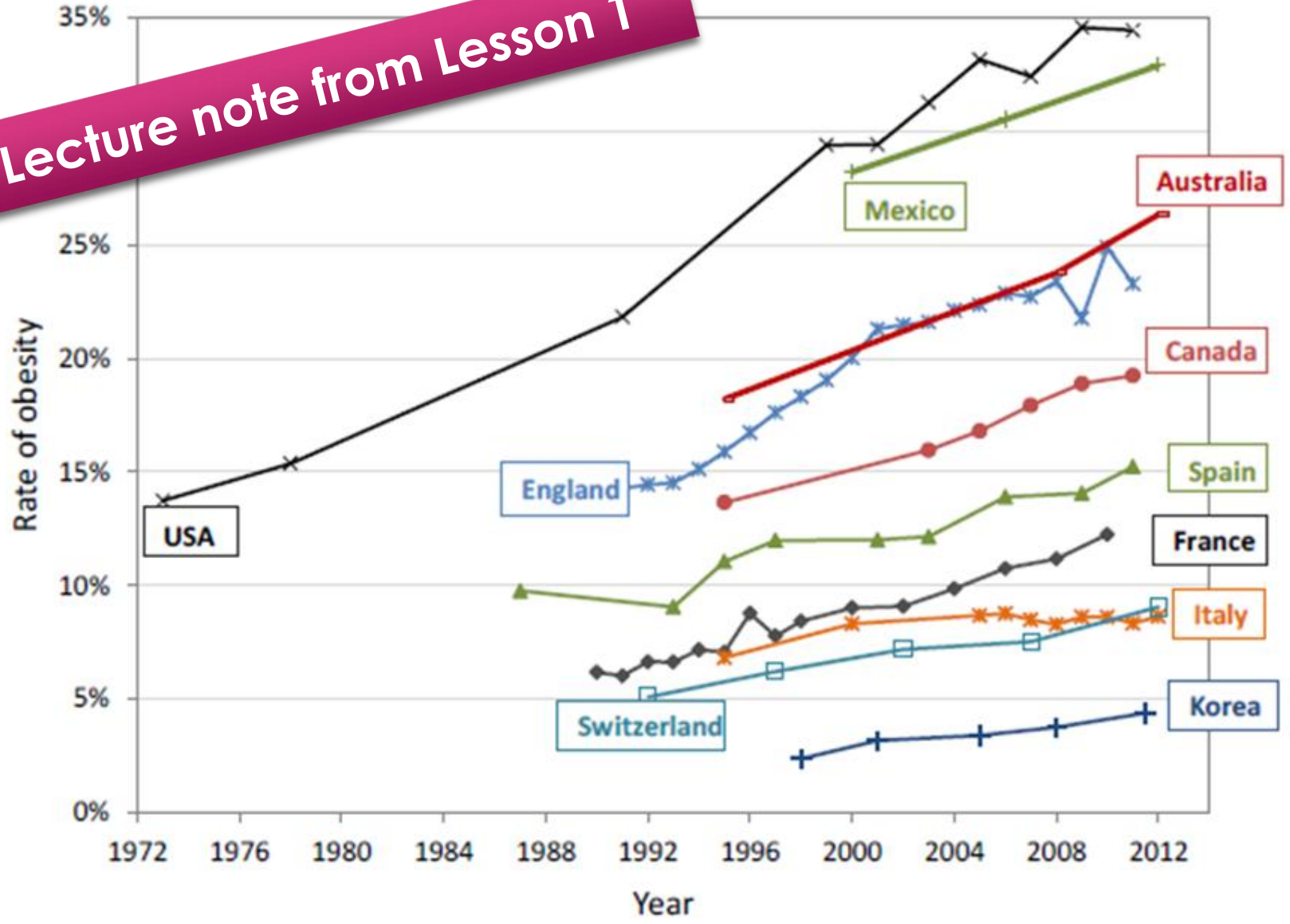
Keywords: Body image; Objectified body consciousness (OBC); Body esteem; Psychological well-being

McKinley, N. M. (2004). Resisting body dissatisfaction: Fat women who endorse fat acceptance. *Body image*, *1*(2), 213-219.

Looking into the future…

Obesity Trend Among Nations

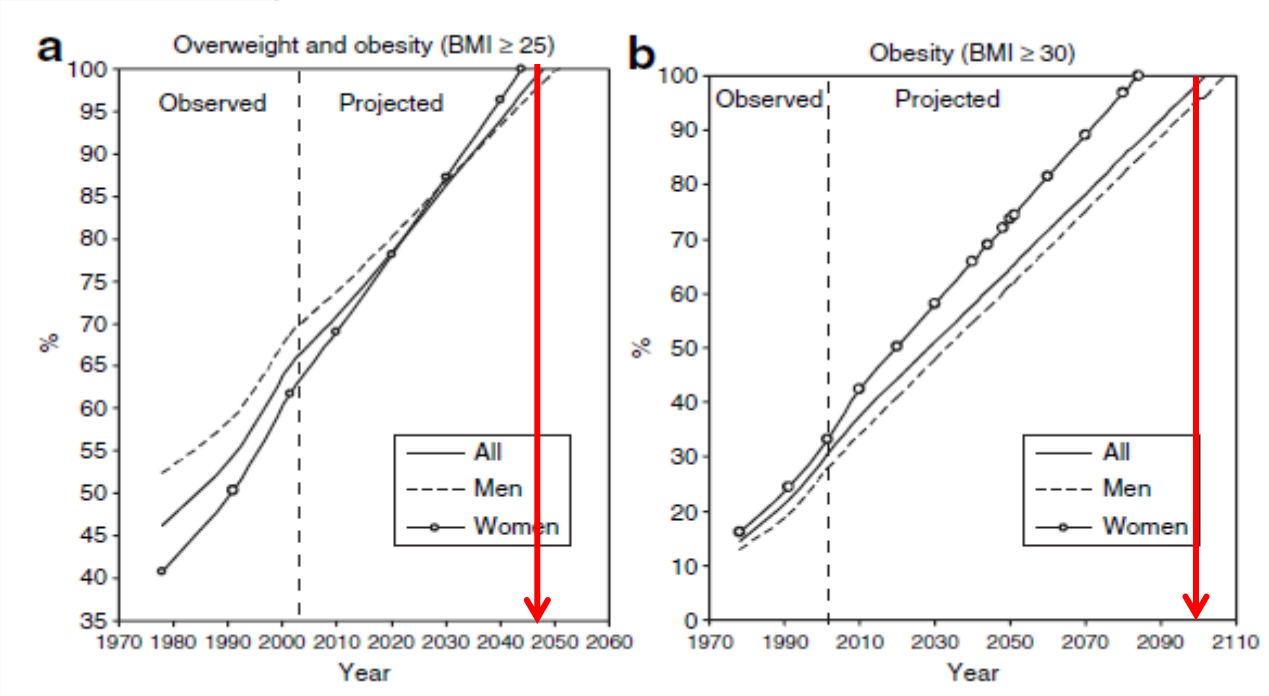
Lecture note from Lesson 1



http://www.oecd.org/els/health-systems/Obesity-Update-2014.pdf

Predicting the Future of Obesity: The U.S.

- By 2030, **86.3%** adults will be overweight or obese; and **51.1%**, obese.



Prevalence of obesity and overweight among US adults: Observed during 1976-2004 and projected.

Wang, Y., Beydoun, M. A., Liang, L., Caballero, B., & Kumanyika, S. K. (2008). Will all Americans become overweight or obese? Estimating the progression and cost of the US obesity epidemic. *Obesity*, *16*(10), 2323-2330.

Predicting the Future of Obesity: UK

- The rates of obesity are estimated to rise, by **2035**, to **47%** and **36%** for adult men and women respectively.

- By **2050**, **60%** males and **50%** females could be obese.

	Age	2004	2025	2050
Boys	6–10	10%	21%	>35%
	11–15	5%	11%	23%
	All under 20	8%	15%	25%
Girls	6–10	10%	14%	20%*
	11–15	11%	22%	35%
	All under 20	10%	15%	25%

Percentage predicted to be obese, by sex and age

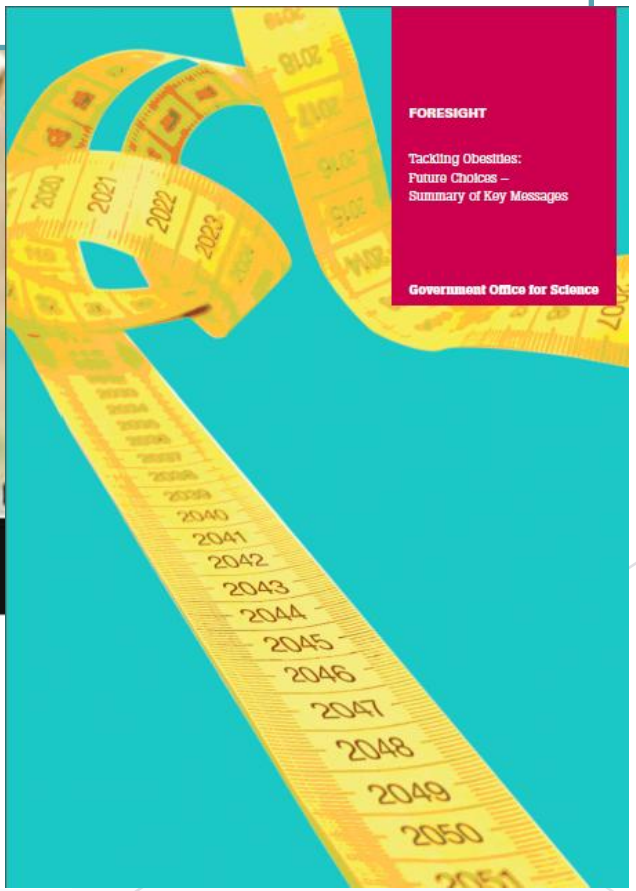
Butland, B., Jebb, S., Kopelman, P., McPherson, K., Thomas, S., Mardell, J., & Parry, V. (2007). Foresight. Tackling obesities: future choices. Project report.

Obesity crisis: Future projections 'underestimated'

13 January 2014 | Health

"We're now seven years on from the Foresight Report. Not only is the obesity situation in the UK not improving, but the doomsday scenario set out in that report **might underestimate the true scale of the problem**."

The report cast doubt over obesity predictions from a study seven years ago

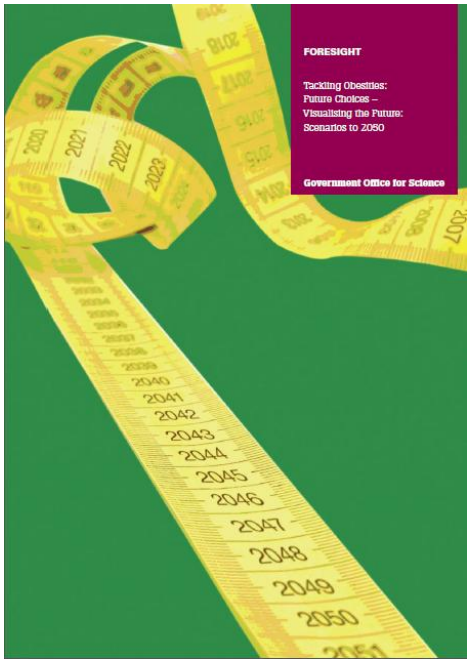


Estimates that half the UK population will be obese by 2050 "underestimate" the problem, a report has claimed.

The National Obesity Forum said Britain was in danger of surpassing the prediction contained in a 2007 report.

http://www.bbc.com/news/health-25708278

Alternative futures for the UK from 2010 to 2050



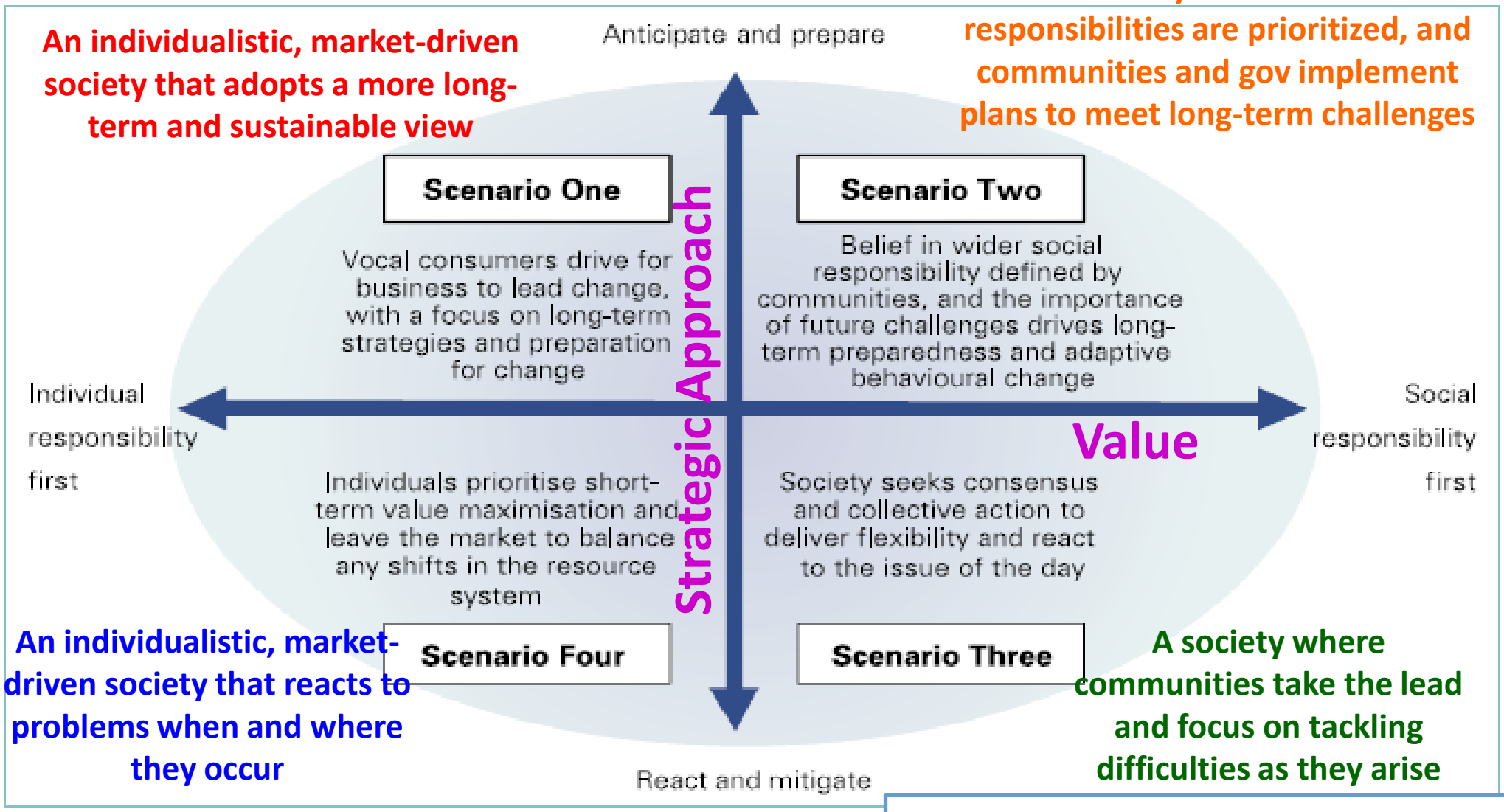
- Project scenarios based on two critical uncertainties identified through analysis of the drivers for change are developed:

- Which of the four scenarios is **the most effective** in slowing down the rise of the current obesity trend?

Go to **www.govote.at** and use the code **71 44 86**

Reducing obesity: visualising the future scenarios to 2050
https://www.gov.uk/government/publications/reducing-obesity-visualising-the-future-scenarios-to-2050
Visualising the Future: Scenarios to 2050
https://youtu.be/baOQBYhvGhk

Figure 6.1: Summary of project scenarios



Visualising the Future: Scenarios to 2050
https://youtu.be/baOQBYhvGhk

Go to **www.govote.at** and use the code **71 44 86**

Figure 6.2: Qualitative assessment of how the trajectory of obesity trends changes in the four scenarios relative to today's trajectory (i.e. assessment in terms of overall population obesity, childhood obesity and socioeconomic differences; each indicator is assessed using a qualitative scale of 0–3[16,25])

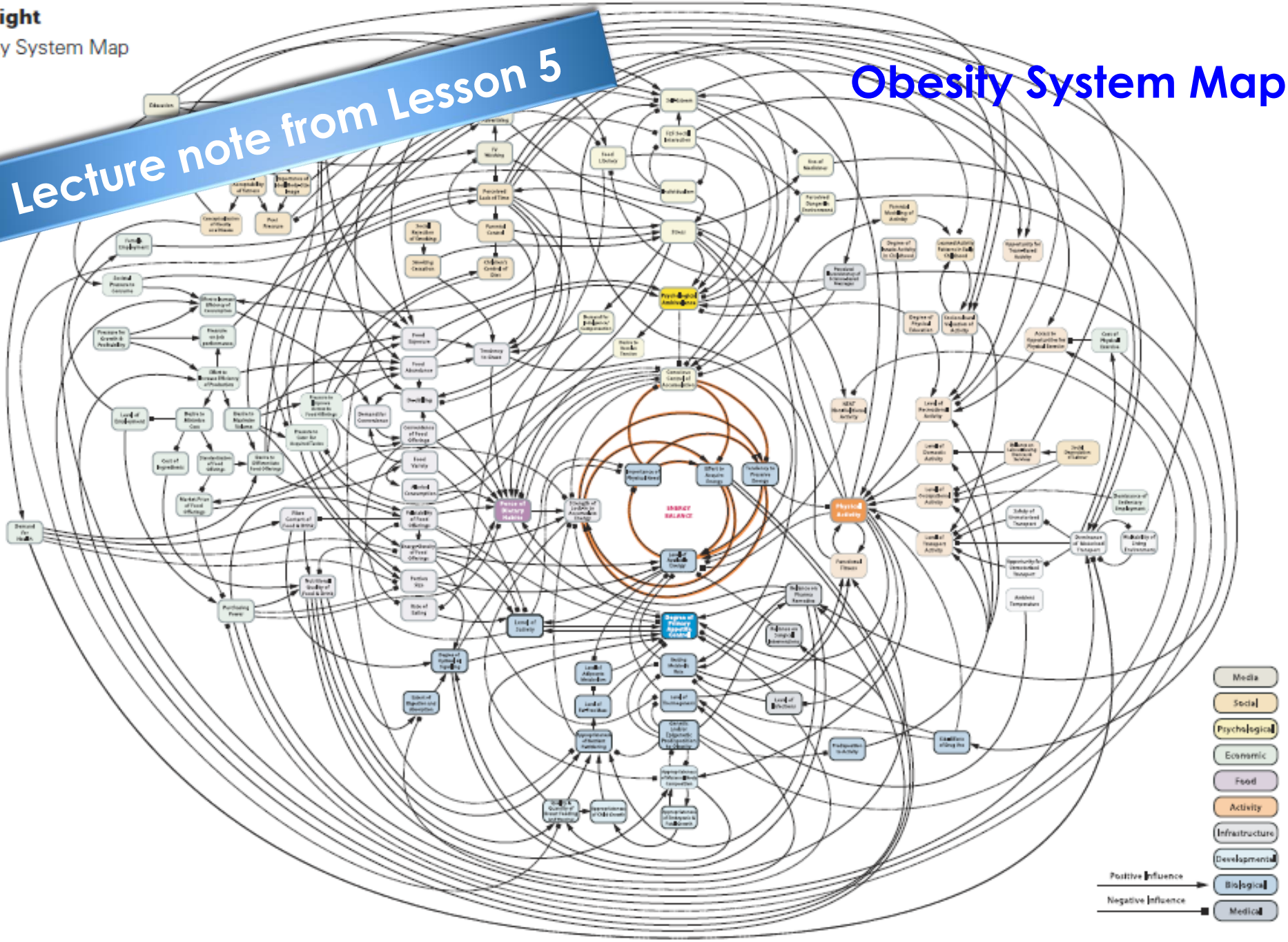
Chipperfield, T., O'Brien, R., Bolderson, T., Eidinow, E., Shafner, l., Butland, B. 2007. *Qualitative Modelling of Policy Options Foresight Tackling Obesities:* Future Choices (http://www.foresight.gov.uk).

Foresight

Obesity System Map

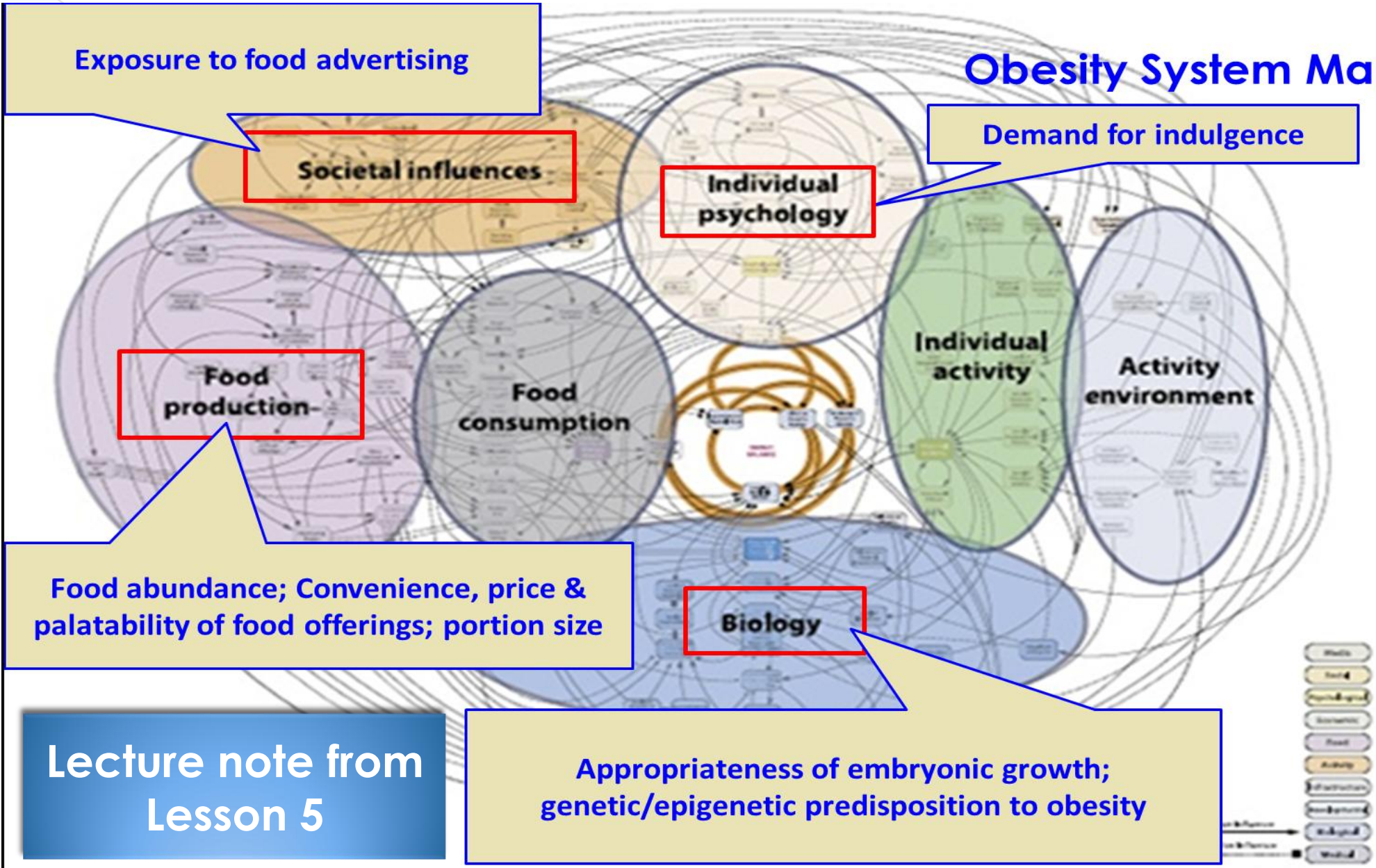
Lecture note from Lesson 5

Obesity System Map



https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296290/obesity-map-full-hi-res.pdf

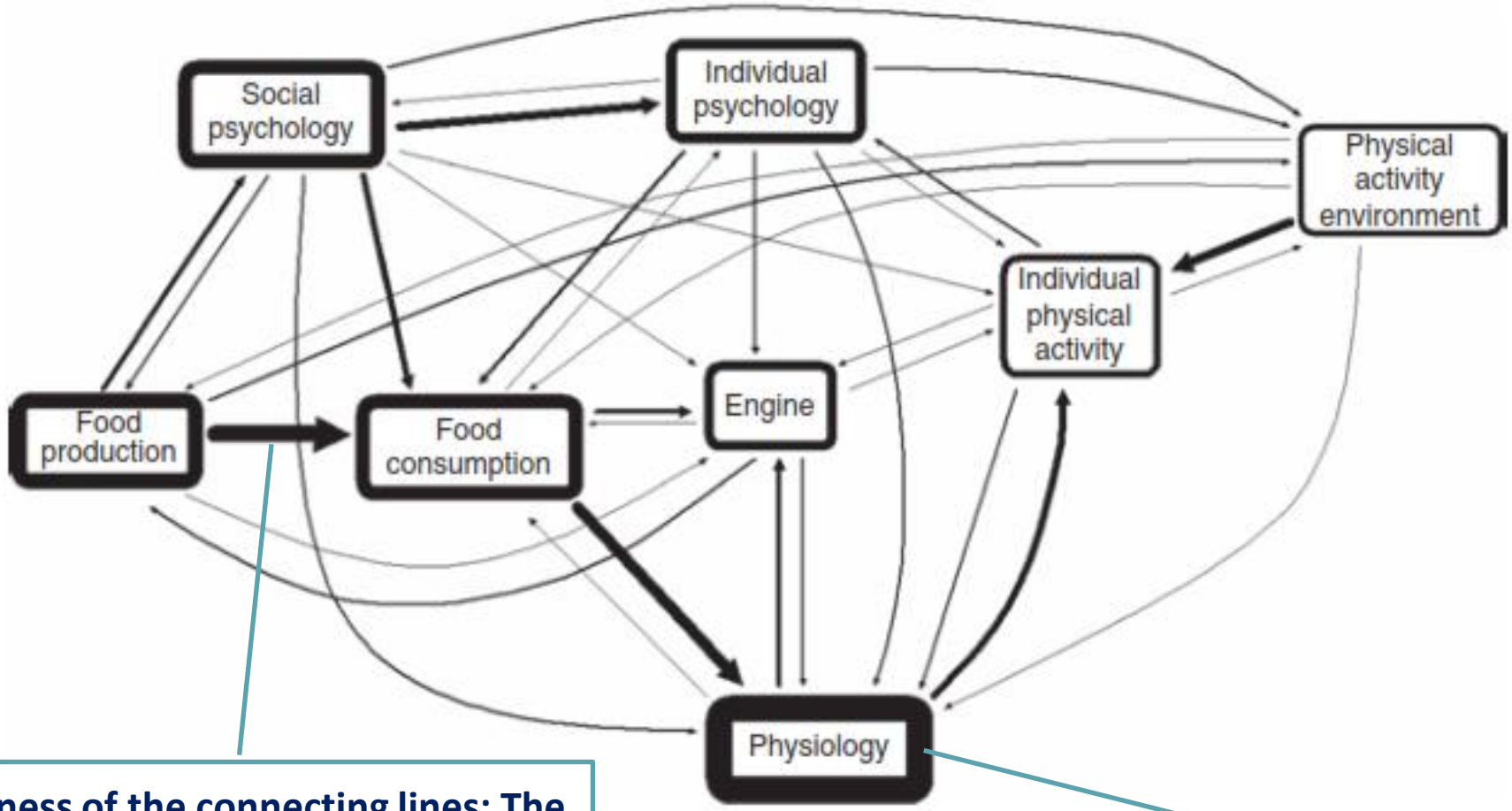
Obesity System Map



Lecture note from Lesson 5

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296290/obesity-map-full-hi-res.pdf

Reduced Foresight map



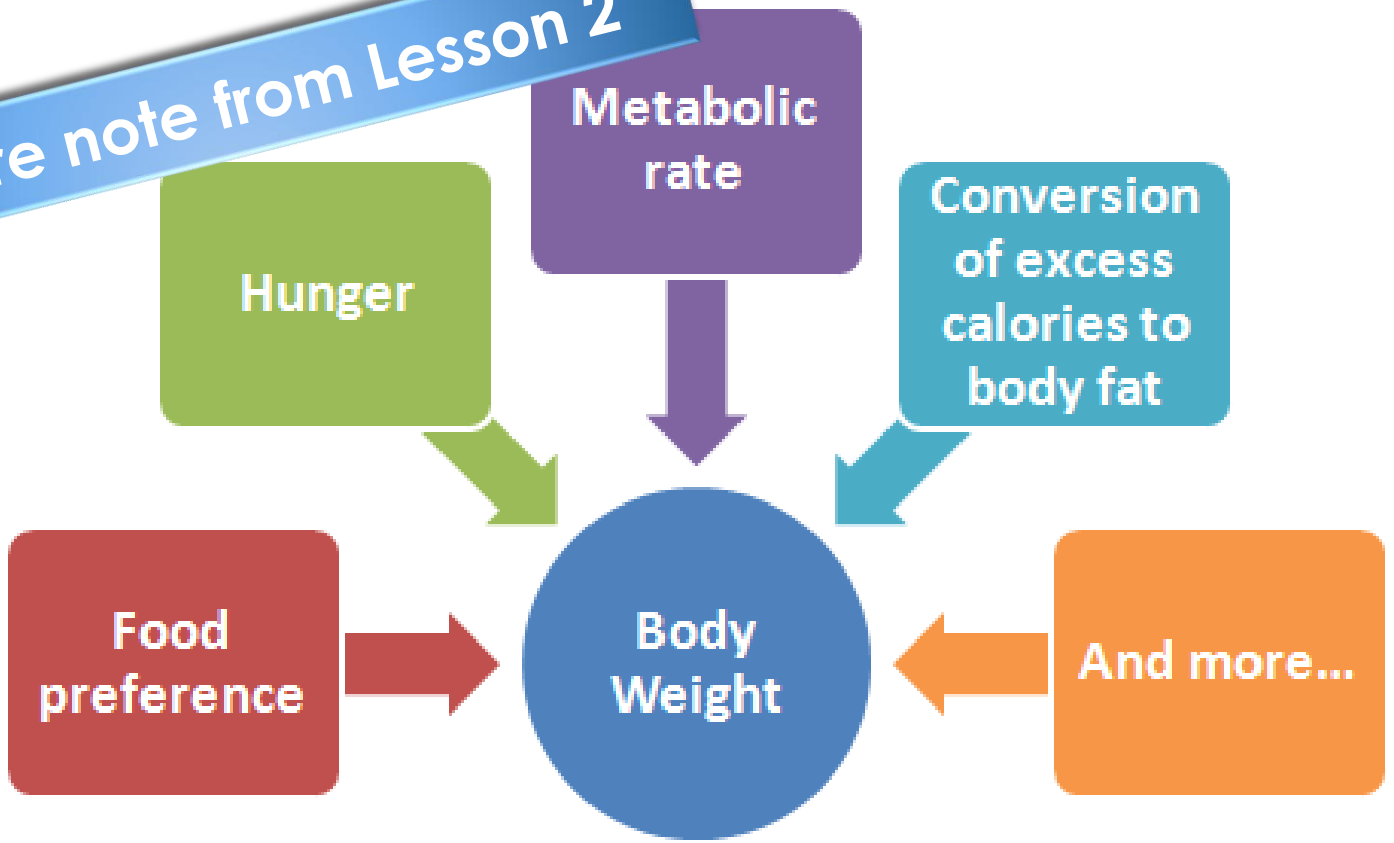
Thickness of the connecting lines: The no. of individual connections between variables in each cluster.

Cluster's border thickness: The no. of connections within a cluster

Finegood, D. T., Merth, T. D., & Rutter, H. (2010). Implications of the foresight obesity system map for solutions to childhood obesity. *Obesity*, *18*(S1), S13-S16.

Genetic effect on body weight

Lecture note from Lesson 2



25 % to 40% of the variability in population body weight can be explained by genes, but still, of the influence can be attributed to the environment (epigenetics).

Think wild…

Imaginative Accounts of the Future of Obesity in 5 years

If technology can identify **genetic disposition** to obesity for every individual…

- Case 1: Obesity as Individual Responsibility
- Case 2: Obesity as Corporate Responsibility

Case 1: Obesity as Individual Responsibility

- A matter of individual moral failure
- **Scientists**: *Everyone should* be regularly tested for gene mutations.
- **Politicians**: Concerned about the soaring costs of healthcare.
- **The non-obese**: Why pay for other people's obesity related diseases?
- Those **with obese genes** vs. those **without obese genes**
- The **"certified pathologically and incurably obese"**?

Swierstra, T., & Keulartz, J. (2011). Obesity in 2020: Three Scenarios on Techno-socio-ethical Co-evolution. In *Genomics, obesity and the struggle over responsibilities* (pp. 97-112). Springer Netherlands.

Case 2: Obesity as Corporate Responsibility

- Obesity as an individual responsibility: both sociologically naive and politically suspect
- **Obese people**:
  - Started lawsuits against fast food chains and other culprits
  - The costs of trainings and diets had to be paid out of public funds.
- **Corporate actors**: Made coaccountable for weight-problems in the citizenry
- **Restaurants**: Began to cater for different genetic groups
- **The non-obese**: Virtually impossible to acquire fast food

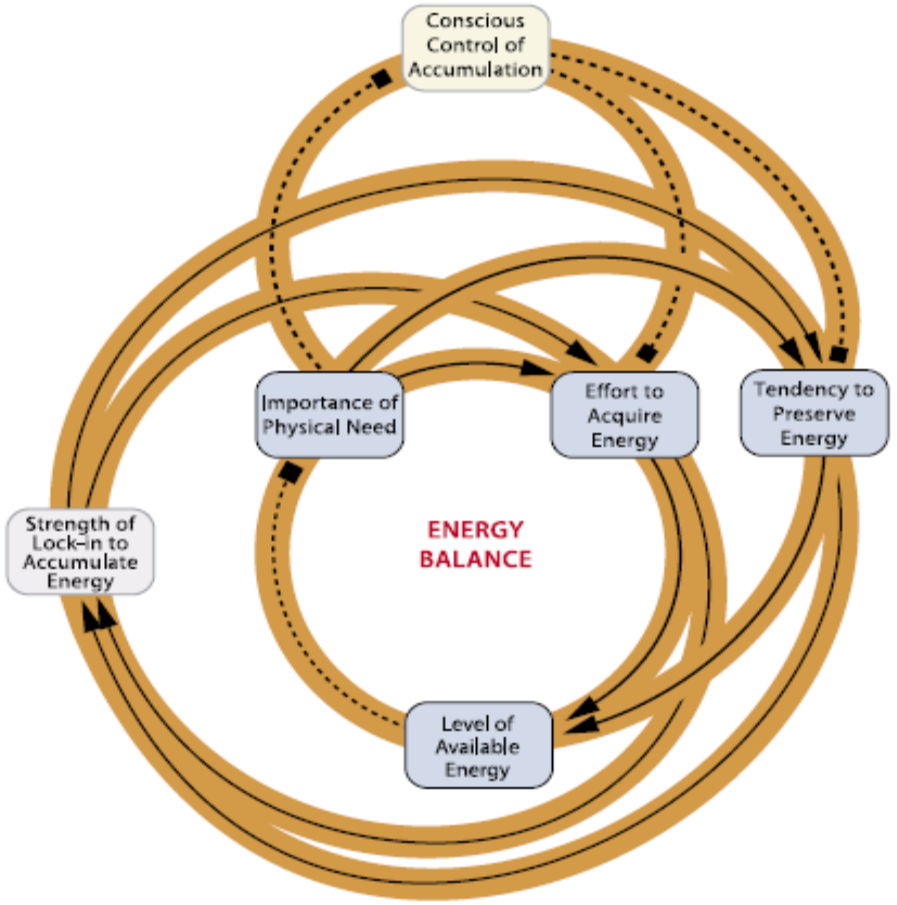
Swierstra, T., & Keulartz, J. (2011). Obesity in 2020: Three Scenarios on Techno-socio-ethical Co-evolution. In *Genomics, obesity and the struggle over responsibilities* (pp. 97-112). Springer Netherlands.

Implications of the Foresight Obesity System Map

- **Individuals still matter**
  - **Capacity** as individuals to act > **Complexity** of our tasks

  → likely to **succeed** at those tasks

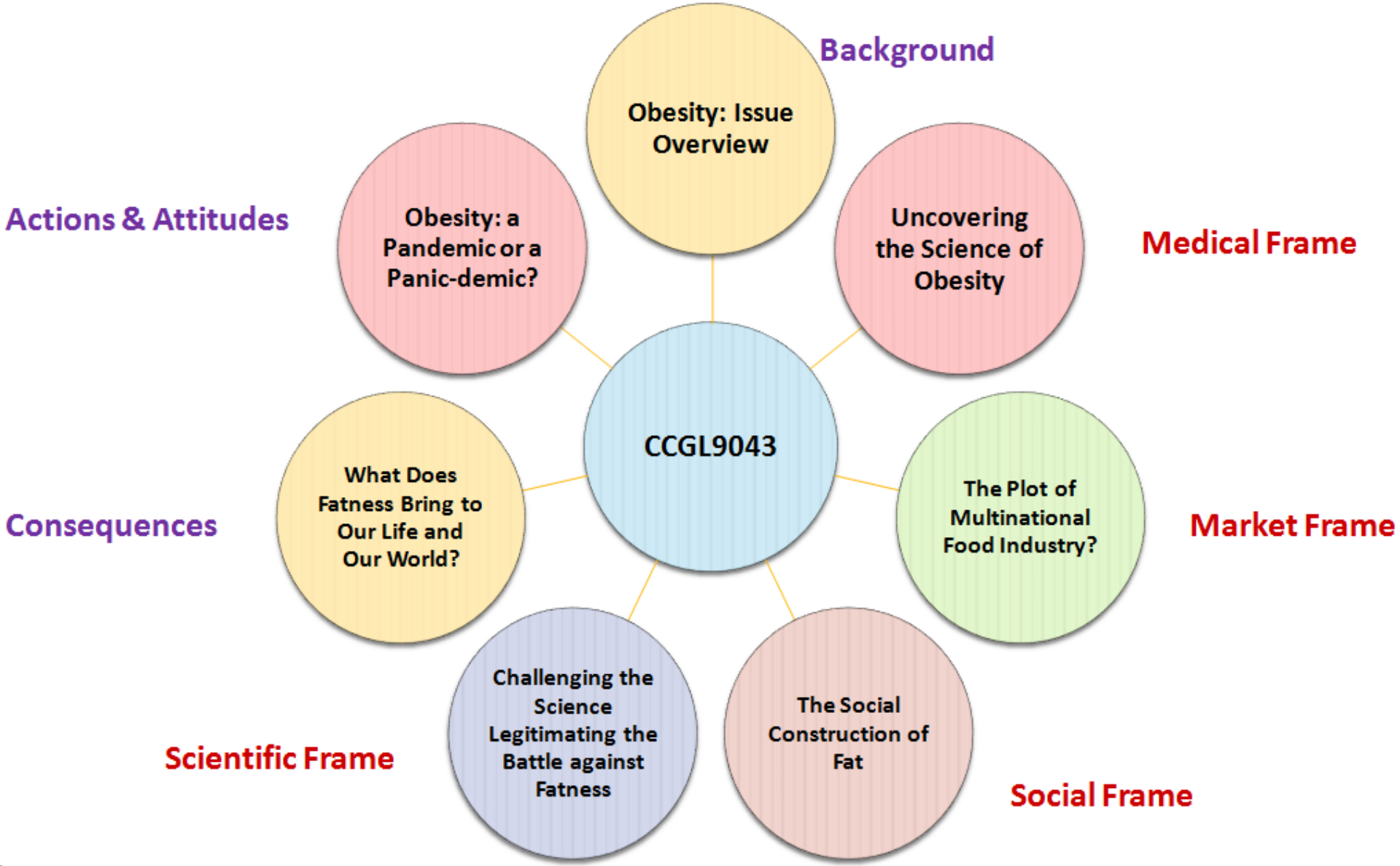
- "**Choice architects**": people who have the responsibility for organizing the context in which people make decisions.



Obesity system map central engine

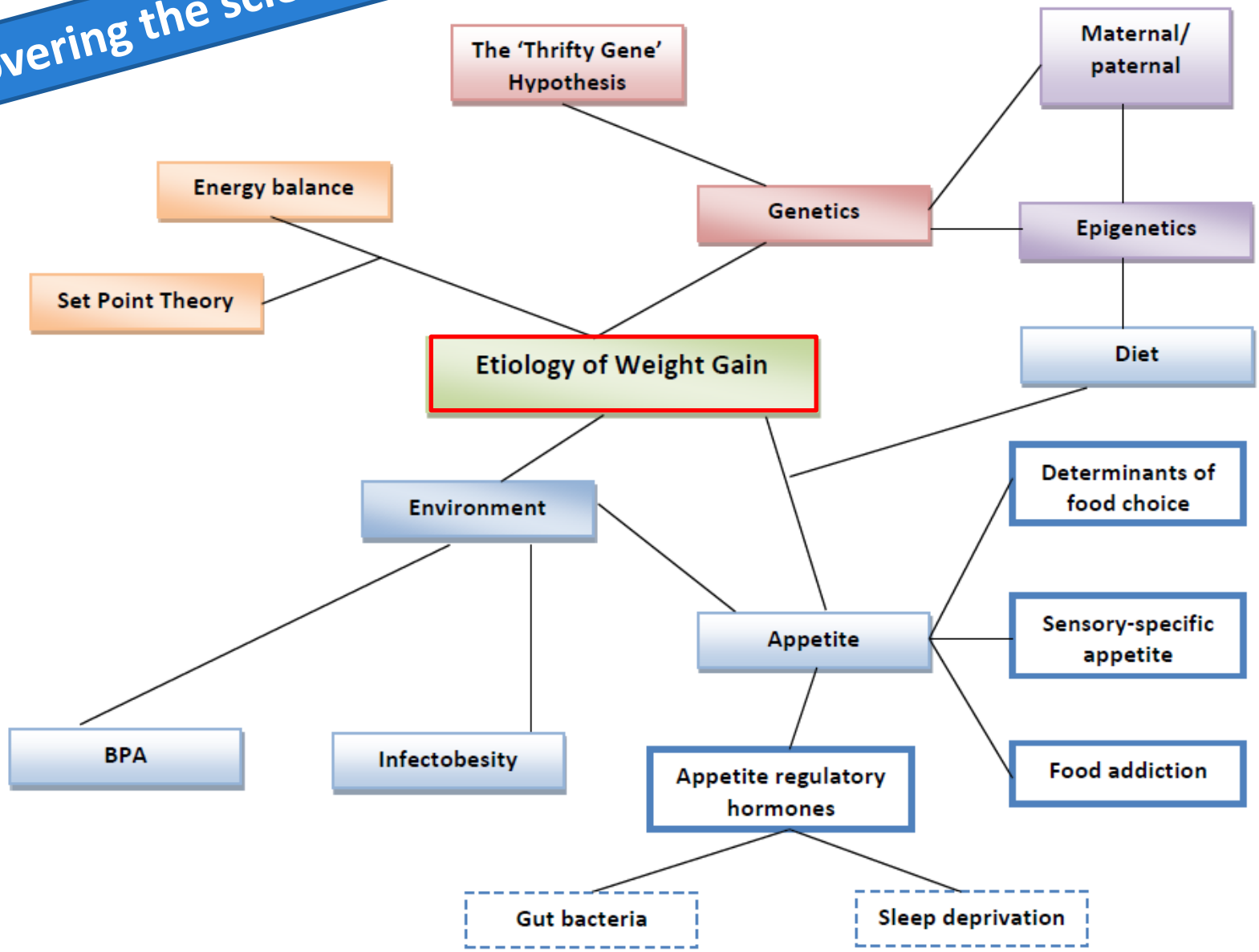
Finegood, D. T., Merth, T. D., & Rutter, H. (2010). Implications of the foresight obesity system map for solutions to childhood obesity. *Obesity*, *18*(S1), S13-S16.

Course Outline

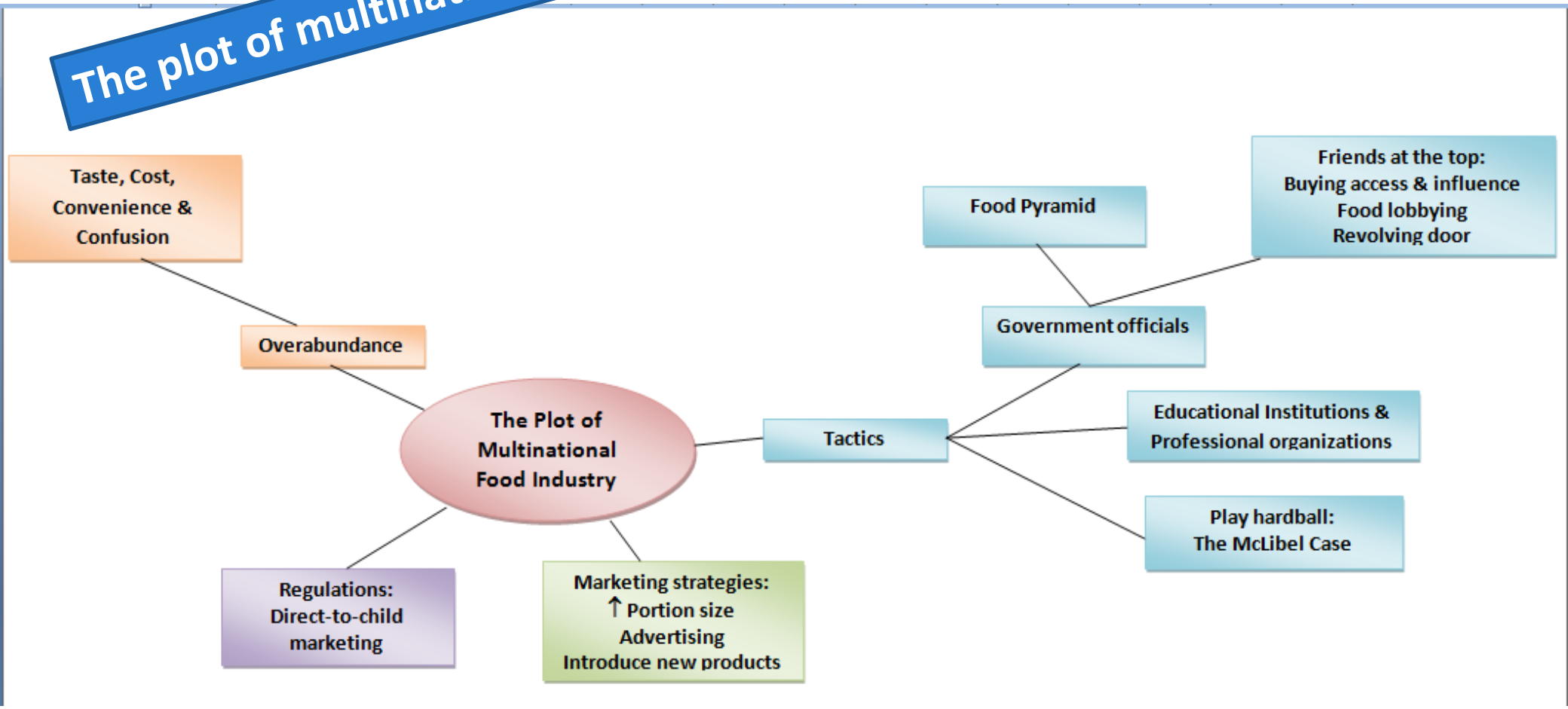


Uncovering the science of obesity

Concept Map



The plot of multinational food industry?



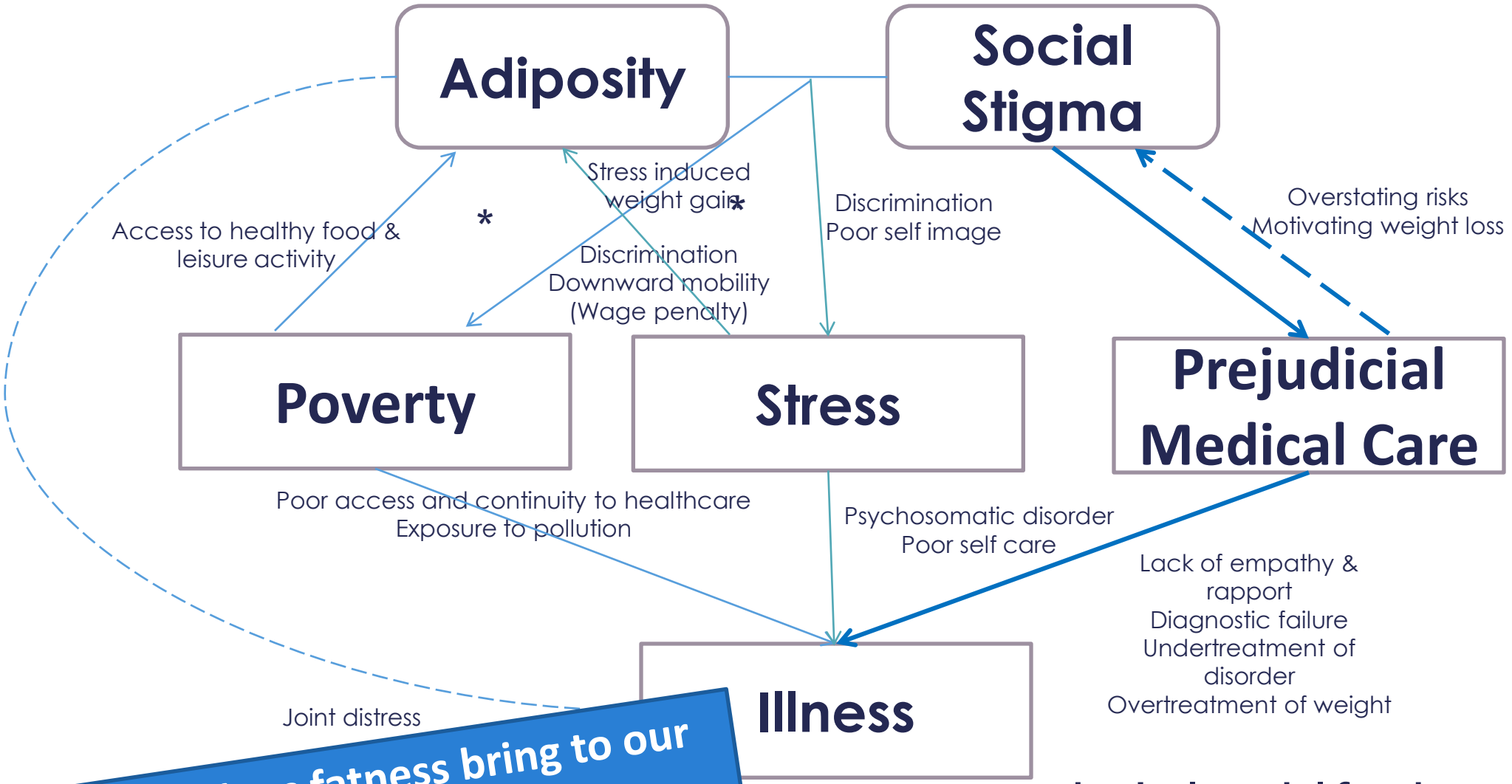
Concept Map

The social construction of fat

Class Poll: How Well Do You Agree with the Followings?

1. Obesity is a disease.
2. A linear correlation exists between body weight and health risk.
3. Obese individuals are usually less healthy due to their accumulated fat.
4. Significant long-term weight-loss is a practical goal, and will improve health.

Challenging the science legitimating the battle against fatness



Hypothetical model for the relationship between SES, adiposity, and adverse health outcomes

Wann, M. (2009). *The fat studies reader*. E. D. Rothblum, & S. Solovay (Eds.). New York Unviersity Press.
Puhl, R. M., & Heuer, C. A. (2010). Obesity stigma: important considerations for public health. *health*, *24*, 252.

Aims

- This course aims to extend students' understanding **beyond the conventional thinking** that fatness is undesirable.

- Through **critical evaluation** of **arguments** presented by the supporters and critics of obesity problematization, and **analysis** of the **causes** and **consequences** of obesity from **multiple perspectives** in a robust and rigorous manner, these enable students to reach a **reasoned position** i the obesity controversy, and make **informed decisions** for taking **actio** in response to obesity at individual, societal and global levels.

Beliefs & Experiences about Obesity

Instructions

There is **no right or wrong answers** to the rating of beliefs about obesity, and the focus is on how much you agree or disagree with each of the statements. Please **do not leave any blank**.

Beliefs & Experiences about Obesity

- Part I: Personal Particulars
- Part II: Beliefs about fat people (7-point scale)
- Part III: Beliefs about obesity (6-point scale)
- Part IV: Beliefs about the causes of obesity (5-point scale)
- Part V: Weight bias experience (Yes/No)

Follow-up Interview

- You are cordially invited to join a follow-up interview (around 15 to 20 minutes) for us to learn more about your view towards obesity. Your help is crucial for guiding our future course development and will be greatly appreciated.

- Each interviewee will receive a **$50 Starbucks coupon** as a token of thanks. If you are willing to participate in the follow-up interview, please put down your contact information and preferred time slots (Late May/Jun/Jul/Aug).

Student Evaluation of Teaching and Learning (**SETL**)