Presentación a Comisión Asesora Ministerial para Analizar Propuestas para Gravar con Impuestos otros Alimentos con alto Contenido de Azúcar, Distintos a las Bebidas

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PAUTA DE PRESENTACIÓN

- Diagnóstico
  - Los azúcares
  - Efecto en salud
    - Balance energético
    - Secreción de insulina
    - Control apetito
    - Otros efectos
  - Recomendaciones de ingesta
  - Ingesta
  - Contenido en algunos alimentos
- Pertinencia del instrumento tributario
- Otras propuestas para enfrentar el problema
- Experiencia comparada
- Necesidad de estudios

LOS AZÚCARES

Table 1 The major dietary carbohydrates

Class (DP[a])	*Subgroup*	*Principal components*
Sugars (1–2)	Monosaccharides	Glucose, fructose, galactose
	Disaccharides	Sucrose, lactose, maltose, trehalose
	Polyols (sugar alcohols)	Sorbitol, mannitol, lactitol, xylitol, erythritol, isomalt, maltitol
Oligosaccharides (3–9) (short-chain carbohydrates)	Malto-oligosaccharides (α-glucans)	Maltodextrins
	Non-α-glucan oligosaccharides	Raffinose, stachyose, fructo and galacto oligosaccharides, polydextrose, inulin
Polysaccharides (⩾10)	Starch (α-glucans)	Amylose, amylopectin, modified starches
	Non-starch polysaccharides (NSPs)	Cellulose, hemicellulose, pectin, arabinoxylans, β-glucan, glucomannans, plant gums and mucilages, hydrocolloids

[a]Degree of polymerization or number of monomeric (single sugar) units. Based on Food and Agriculture Organization/World Health Organization 'Carbohydrates in Human Nutrition' report (1998), and Cummings *et al.* (1997).

- **Glucosa y fructosa**: miel, frutas, jarabe de maíz
- **Sacarosa**: frutas, verduras, caña de azúcar y remolacha
- **Lactosa**: lácteos
- **Maltosa**: germen de trigo y cebada
- **Trealosa**: levadura, hongos (escasa en pan y miel)

La naturaleza de la matriz de alimentos influye en los efectos nutricionales de los alimentos que contienen azúcar

WHO/FAO update. Eur J Clin Nutr 2007:61(S1):S5

LOS AZÚCARES

- Azúcares totales
- Azúcares libres
  - Mono y disacáridos agregados a los alimentos por el productor, cocinero o consumidor + azúcares presentes naturalmente en miel, jarabes y jugos de fruta
  - Lo mismo que “azúcares extrínsecos no lácteos”
  - *Diferente a concepto “tradicional”: todos los mono y disacáridos presentes en la comida (incluida la lactosa)*
- Azúcares agregados
  - Azúcares agregados durante el procesamiento o la preparación
  - Miel, jugo de fruta, jarabe, caramelo, lactosa, sacarosa, etc
- Azúcares extrínsecos e intrínsecos
  - Intrínsecos: incorporados dentro de la estructura celular, forman parte integral de estructuras del alimento (acompañadas por otros nutrientes)
  - Extrínsecos: no ubicados en la estructura celular (ej. en jugo) + agregadas durante el procesamiento + lactosa
  - Azúcares extrínsecos no lácteos: jugos de frutas, miel, azúcares agregados

WHO/FAO update. Eur J Clin Nutr 2007:61(S1):S5

EFECTO EN SALUD *balance energético*

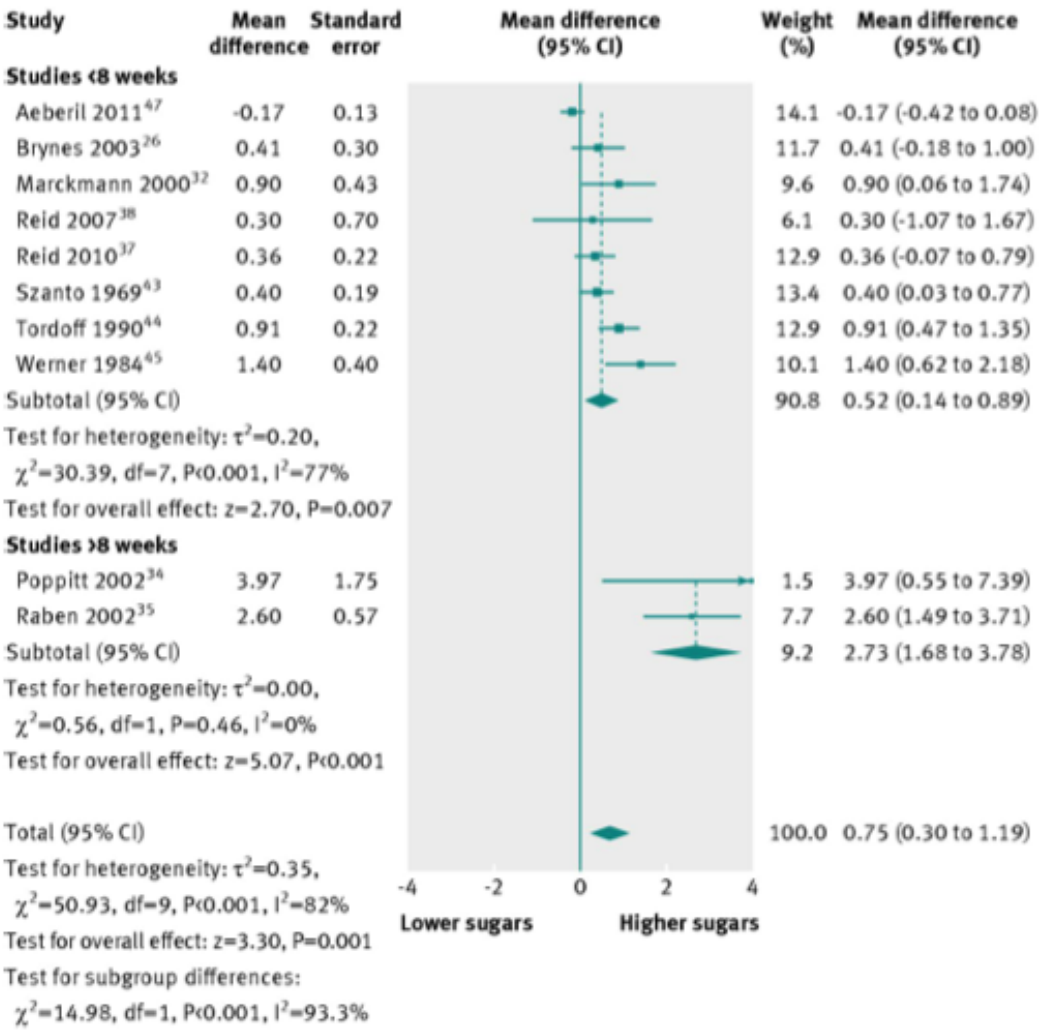
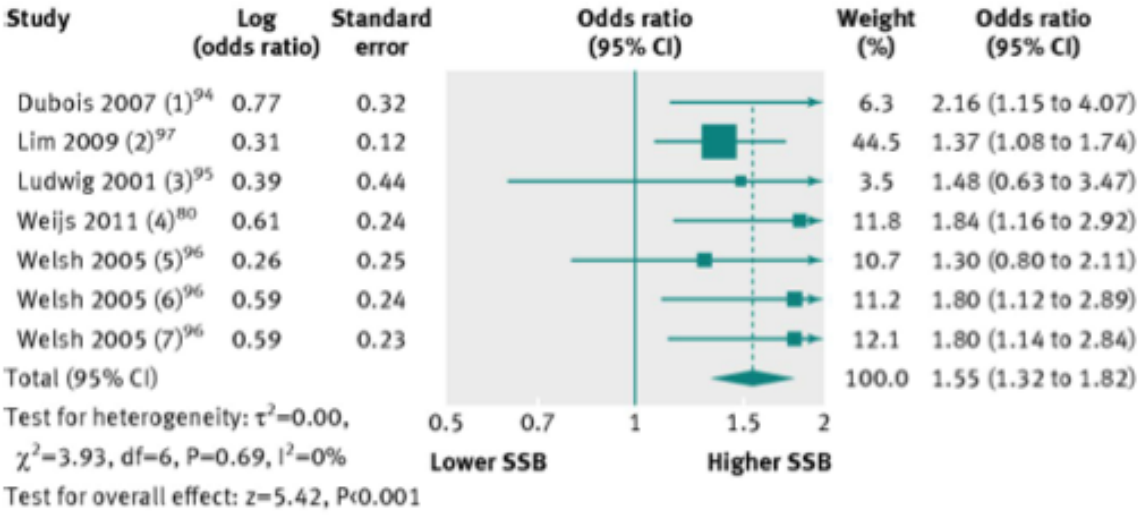


Fig 4 Effect of increasing free sugars on measures of body fatness in adults. Pooled effects for difference in body weight (kg) shown for studies comparing increased intake (higher sugars) with usual intake (lower sugars). Overall effect shows increased body weight after intervention in the higher sugars groups. Data are expressed as weighted mean difference (95% confidence interval), using generic inverse variance models with random effects

Te Morenga y cols. BMJ 2012;346:e7492

EFECTO EN SALUD *balance energético*



(1) OR for incident obesity in frequent versus infrequent consumers of SSB between meals

(2) OR for incident overweight per daily serve SSB (8 oz)

(3) OR for incident obesity per daily serve SSB

(4) OR for incident overweight per approximate daily serve SSB (5% energy from beverage sugar)

(5) OR for incident overweight in normal weight children who consumed >1 serve/d SSB versus <1 serve SSB/d

(6) OR for remaining overweight in overweight children who consumed >1 serve/d SSB versus <1 serve SSB/d

(7) OR for incident overweight in children at risk of overweight who consumed >1 serve/d SSB versus <1 serve SSB/d

Fig 7 Association between free sugars intakes and measures of body fatness in children. Pooled estimates for odd ratios for incident overweight or obesity in children consuming one or more servings of sugar sweetened beverages per day at baseline compared with children who consumed none or very little at baseline. Overall estimate shows higher odds of overweight or obesity at follow-up in those who consumed one or more servings of sugar sweetened beverages at baseline. Data are expressed as odds ratio (95% confidence interval), using generic inverse variance models with random effects

Te Morenga y cols. BMJ 2012;346:e7492

EFECTO EN SALUD *balance energético*

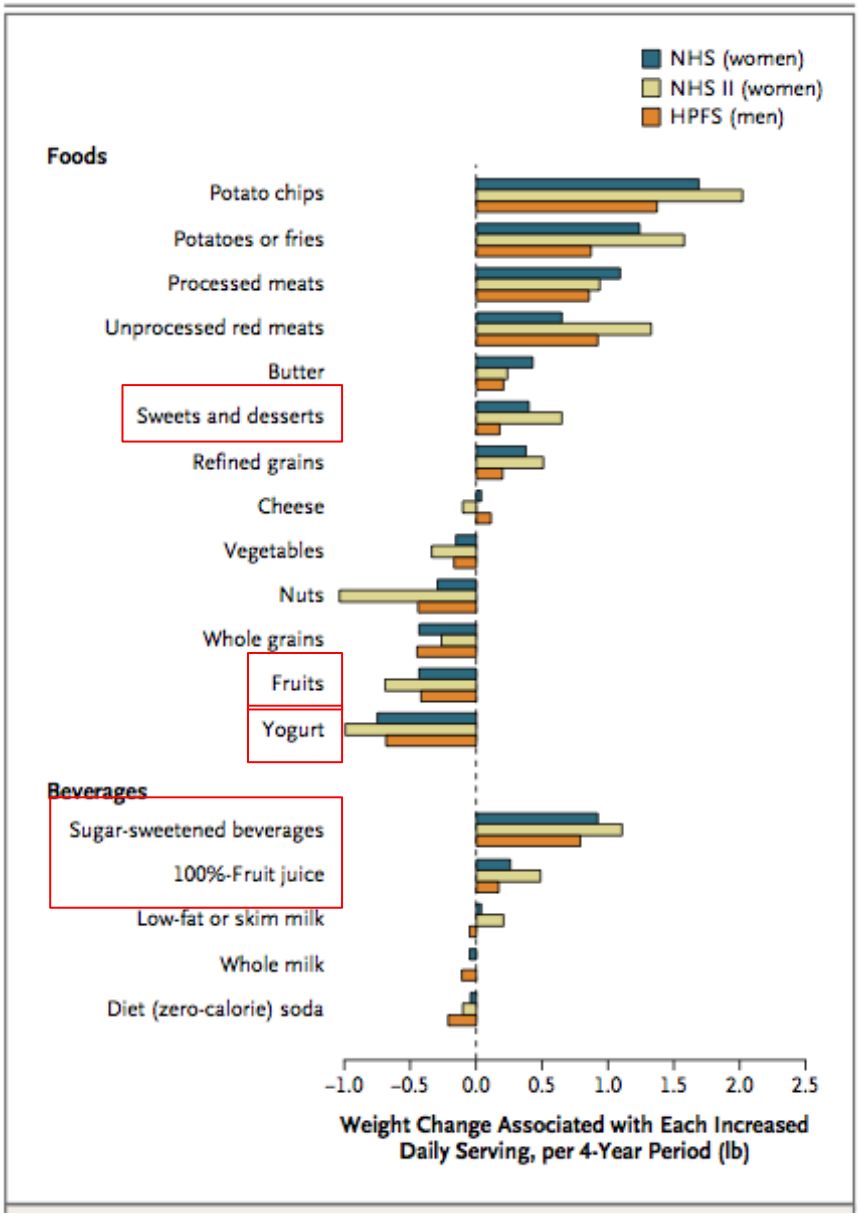
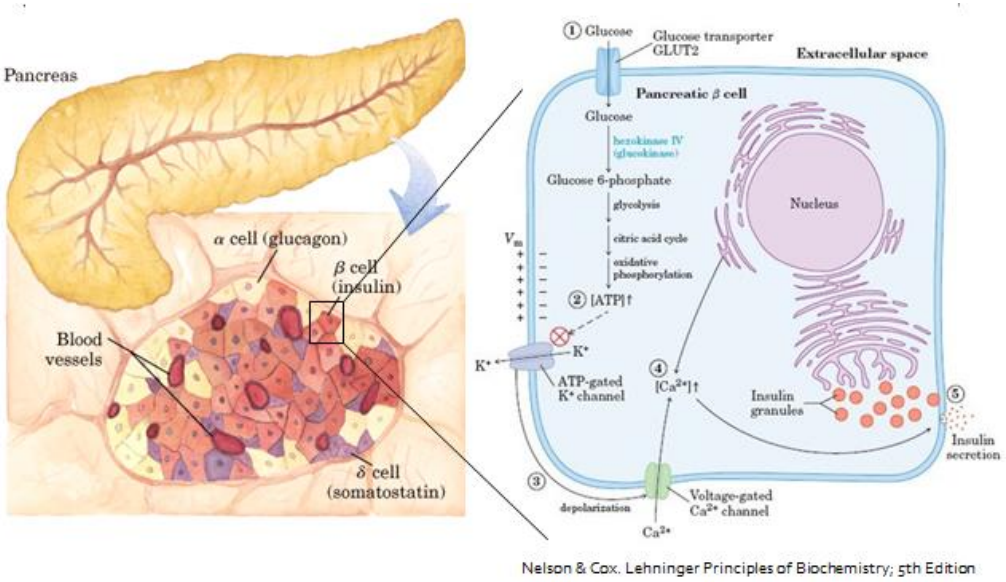


Figure 1. Relationships between Changes in Food and Beverage Consumption and Weight Changes Every 4 Years, According to Study Cohort.

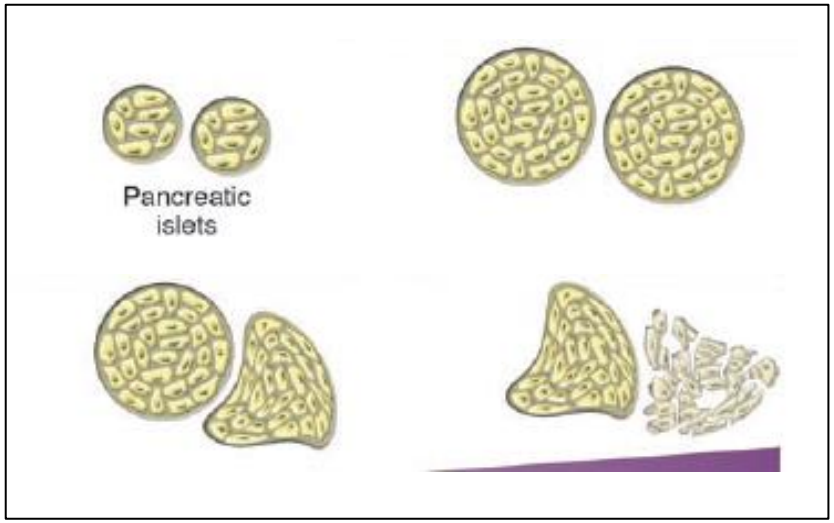
Study participants included 50,422 women in the Nurses' Health Study (NHS), followed for 20 years (1986 to 2006); 47,898 women in the Nurses' Health Study II (NHS II), followed for 12 years (1991 to 2003); and 22,557 men in the Health Professionals Follow-up Study (HPFS), followed for 20 years (1986 to 2006). Weight changes are reported for each increase in the daily serving of the food or beverage; decreased intake would be associated with the inverse weight changes. There was little evidence of a significant interaction between diet and physical activity ($P>0.10$ for the interaction in each cohort). All weight changes were adjusted simultaneously for age, baseline body-mass index, sleep duration, and changes in smoking status, physical activity, television watching, alcohol use, and all of the dietary factors shown. The P value is less than 0.001 for all dietary factors with the exception of butter in the NHS II, cheese in the NHS and NHS II, low-fat or skim milk in the NHS and HPFS, diet soda in the NHS, and whole-fat milk in all three cohorts.

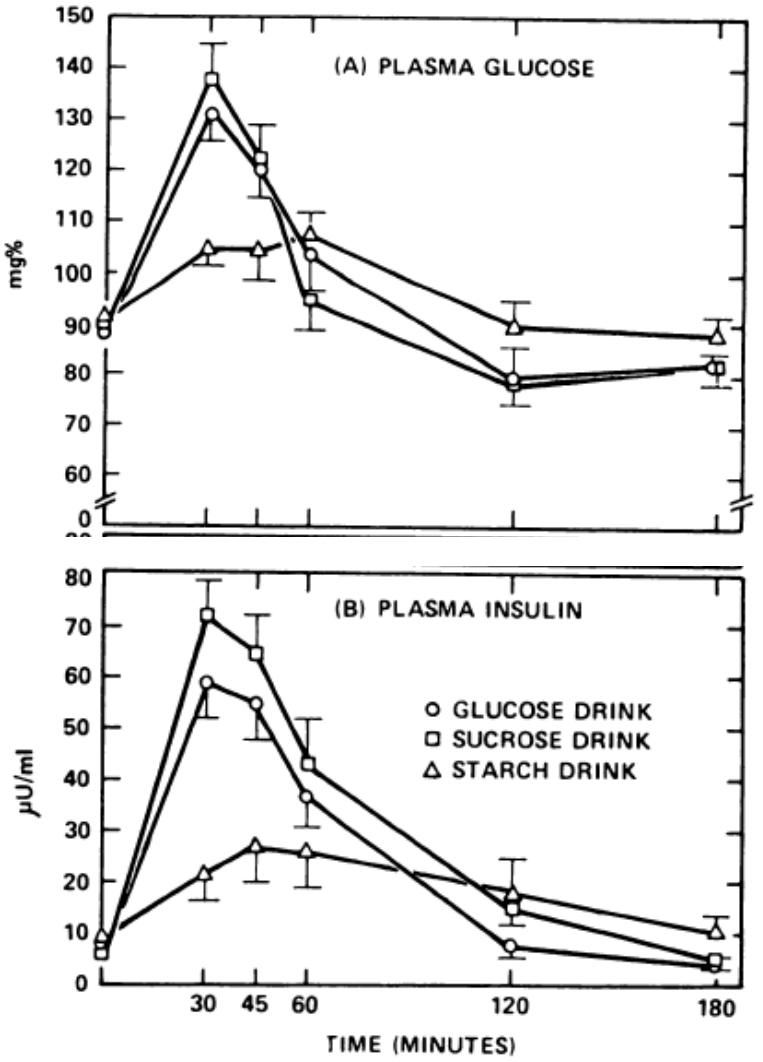
Mozaffarian y cols. NEJM 2011;364:2392

EFECTO EN SALUD *secreción insulina*



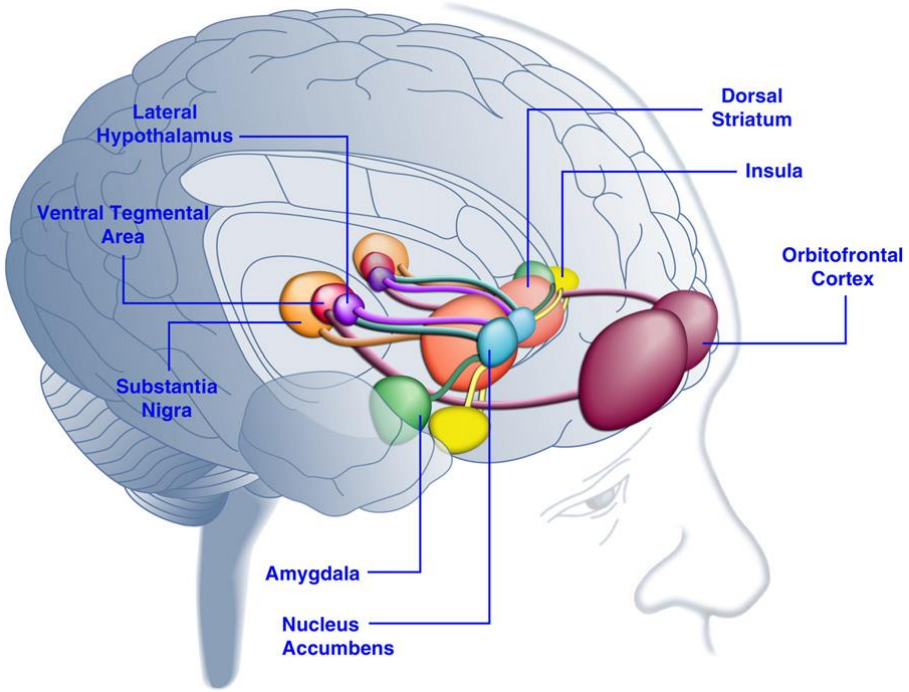
Nelson & Cox. Lehninger Principles of Biochemistry; 5th Edition

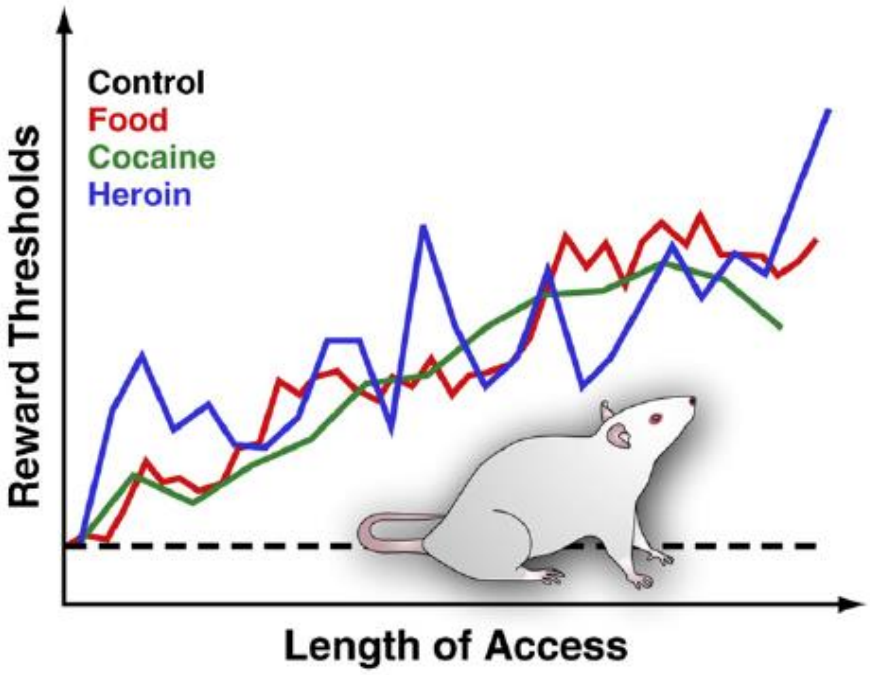




Reaven. AJCN 1979;32:2568

EFECTO EN SALUD *control apetito*





Kenny PJ. Neuron 2011;69:664

Levine y cols. AJCN 2003;78:834S

RECOMENDACIONES DE INGESTA

Ranges of population nutrient intake goals

Dietary factor	Goal (% of total energy, unless otherwise stated)
Total fat	15–30%
Saturated fatty acids	<10%
Polyunsaturated fatty acids (PUFAs)	6–10%
n-6 Polyunsaturated fatty acids (PUFAs)	5–8%
n-3 Polyunsaturated fatty acids (PUFAs)	1–2%
Trans fatty acids	<1%
Monounsaturated fatty acids (MUFAs)	By difference[a]
Total carbohydrate	55–75%[b]
Free sugars[c]	<10%
Protein	10–15%[d]
Cholesterol	<300 mg per day
Sodium chloride (sodium)[e]	<5 g per day (<2 g per day)
Fruits and vegetables	⩾400 g per day
Total dietary fibre	From foods[f]
Non-starch polysaccharides (NSP)	From foods[f]

[a] This is calculated as: total fat – (saturated fatty acids + polyunsaturated fatty acids + trans fatty acids).
[b] The percentage of total energy available after taking into account that consumed as protein and fat, hence the wide range.
[c] The term "free sugars" refers to all monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups and fruit juices.

Healthy diet

Fact sheet N°394
September 2014

Key facts

- A healthy diet helps protect against malnutrition in all its forms, as well as noncommunicable diseases (NCDs), including obesity, diabetes, heart disease, stroke and cancer.
- Unhealthy diet and lack of physical activity are leading global risks to health.
- Healthy dietary practices start early in life – breastfeeding may have longer-term benefits, like reducing the risk of overweight and obesity in childhood and adolescence.
- Energy intake (calories) should balance energy expenditure. Evidence indicates that total fat should not exceed 30% of total energy intake to avoid unhealthy weight gain (1, 2, 3), with a shift in fat consumption away from saturated fats to unsaturated fats (3), and towards the elimination of industrial trans fats (4).
- Limiting intake of free sugars to less than 10% of total energy (2, 5) is part of a healthy diet. A further reduction to less than 5% of total energy (6) is suggested for additional health benefits.
- Keeping salt intake to less than 5 g per day helps prevent hypertension and reduces the risk of heart disease and stroke in adult population (7).
- WHO Member States have agreed to reduce the global population's intake of salt by 30% and halt the rise in diabetes and obesity by 2025.

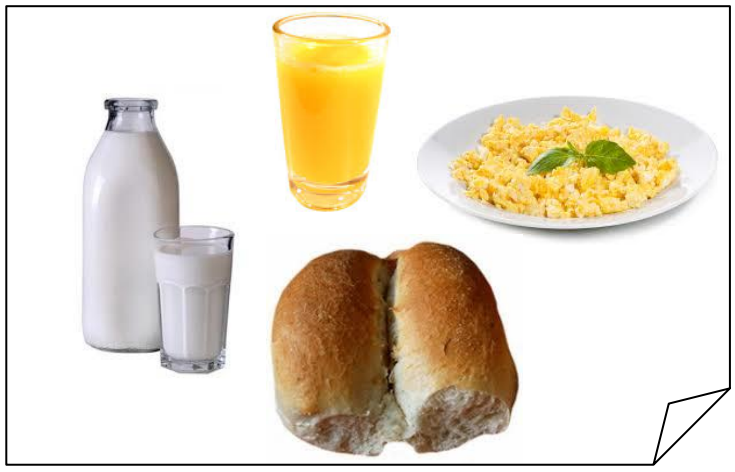
WHO/FAO 2003. Diet, Nutrition and the Prevention of chronic diseases
http://www.who.int/mediacentre/factsheets/fs394/en/

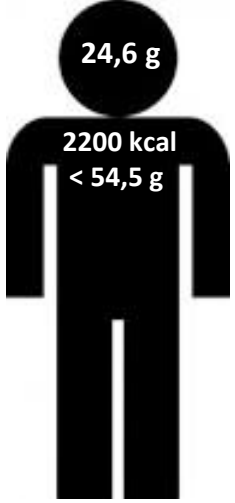
INGESTA

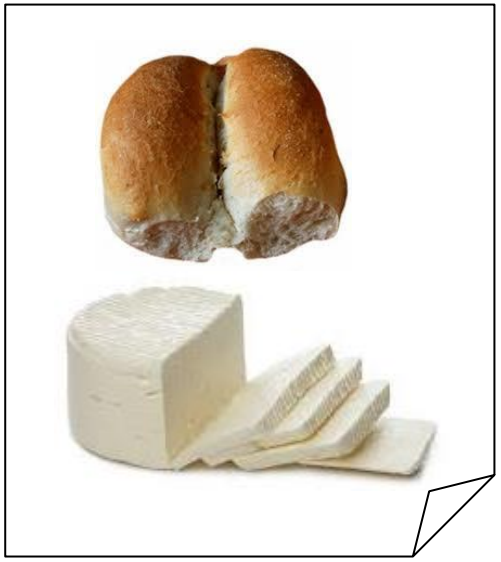
- Mediana global= 77 g/día
  - 88 g/día para hombres 16% (14%)
  - 65 g/día para mujeres 14% (13%)
  - 14 a 18 años: 121 g/día

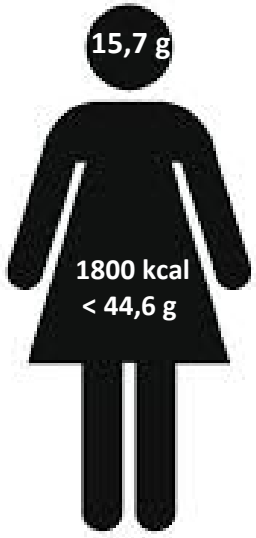
- 88% derivados de golosinas, caramelos, masticables, masas dulces, snack dulces, helados)

ENCA 2010, tendencia de consumo




24,6 g
2200 kcal
< 54,5 g



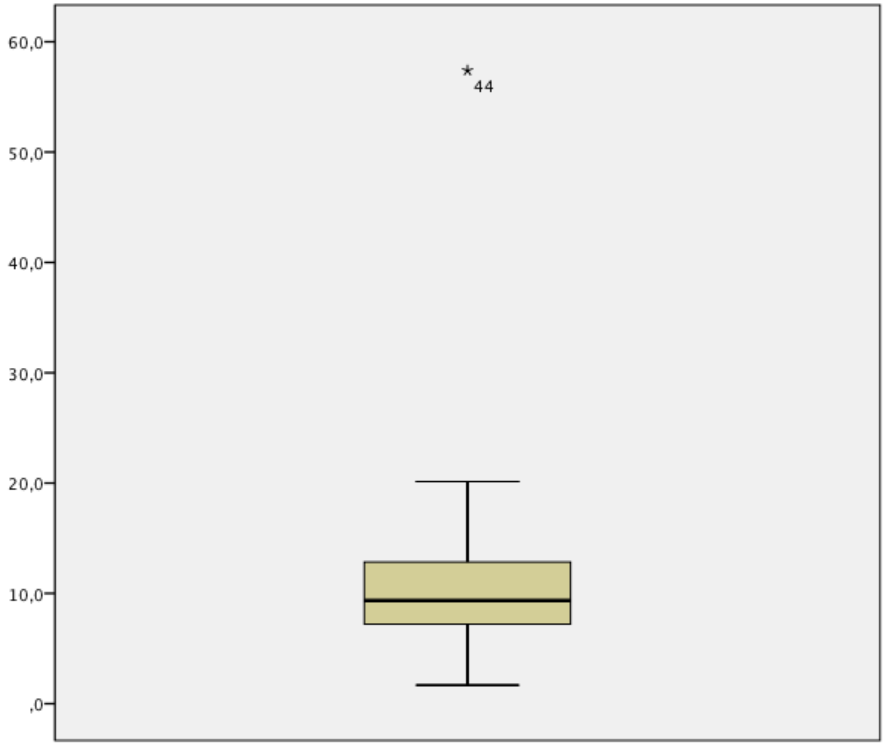

15,7 g
1800 kcal
< 44,6 g


1,9 g
1500 kcal
< 29,3 g

CONTENIDO EN ALGUNOS ALIMENTOS

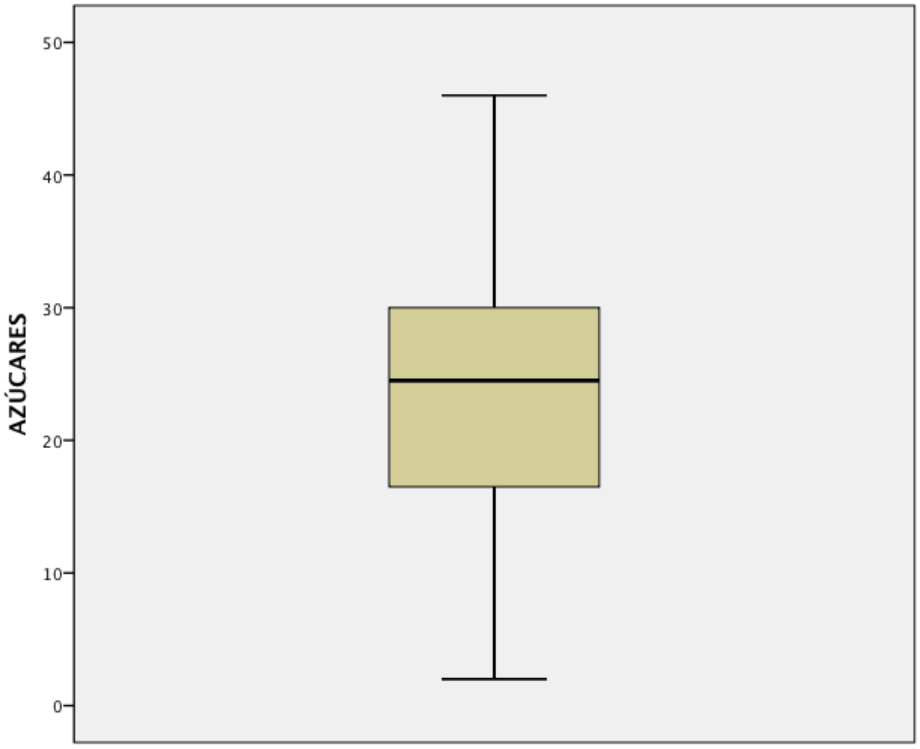
Contenido de azúcares en 100 g de fruta (N=43)

Fuente USDA



Contenido de azúcares en 100 g de cereales de desayuno (N=60)

Declaración envases (junio 2014)



PERTINENCIA INSTRUMENTO TRIBUTARIO

Los precios influyen en la decisión de compra

Epstein y cols. Am J Clin Nutr 2012;95(4):789

Chronic Diseases: Chronic Diseases and Development 3

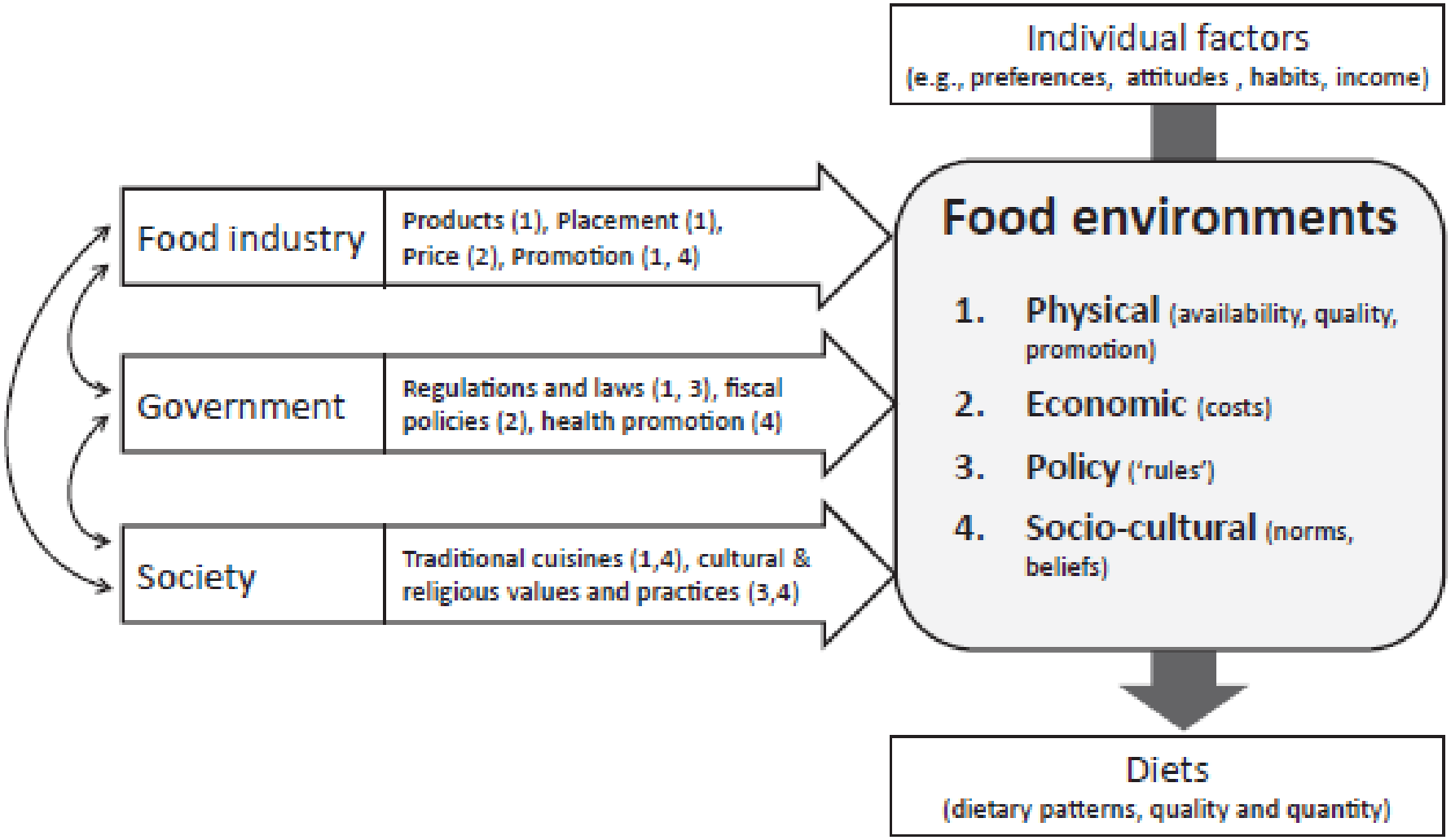
Tackling of unhealthy diets, physical inactivity, and obesity: health effects and cost-effectiveness

Cecchini y cols. Lancet 2010;376:1775

The Real Cost of Food
Can Taxes and Subsidies Improve Public Health?

Mozaffarian y cols. JAMA 2014;312(9):889

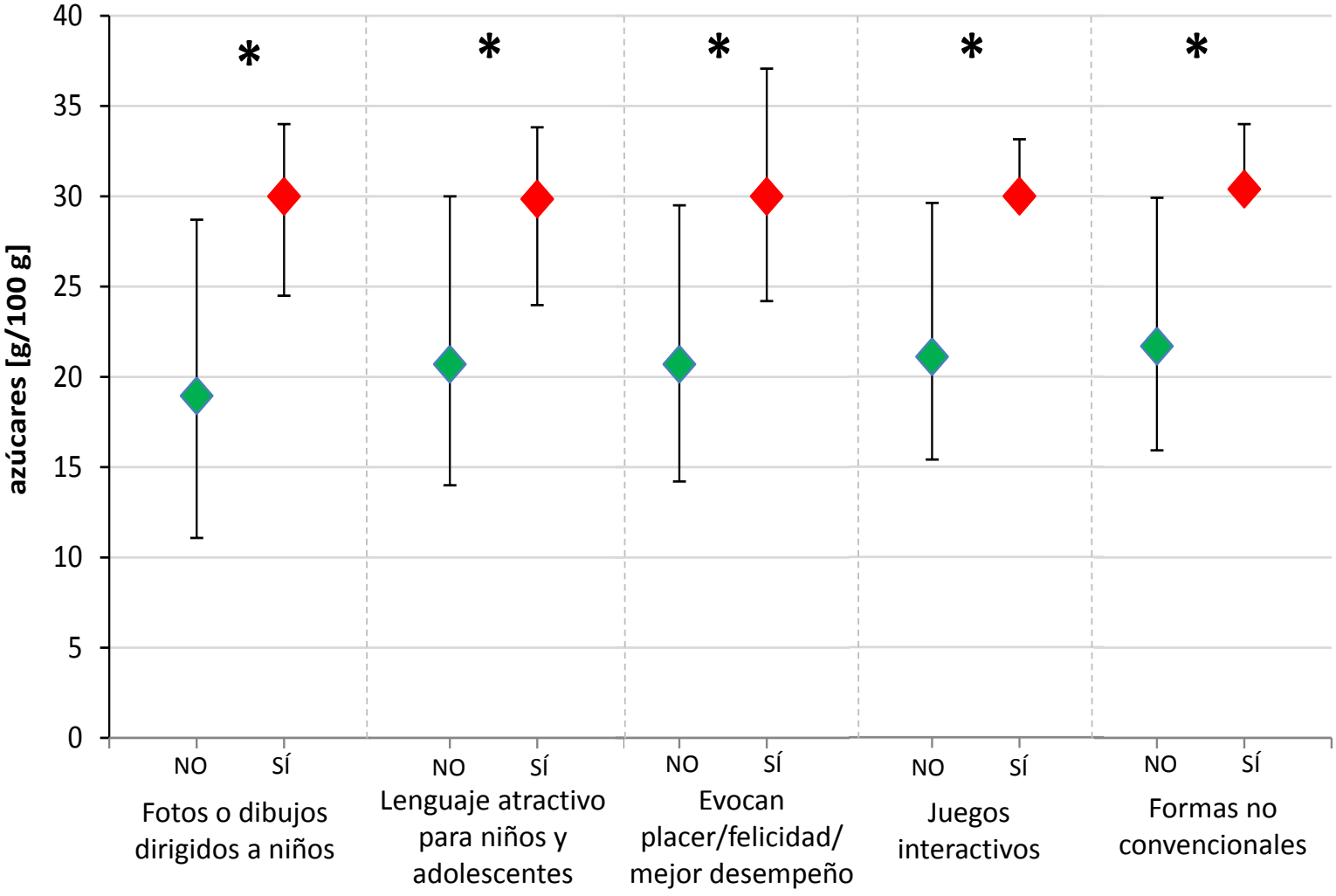
PROPUESTA PARA ENFRENTAR PROBLEMA



Swinburn y cols. Obesity Rev 2013;14(S1):1

Cereales de desayuno

Los productos con presencia de ciertas estrategias publicitarias tienen mayores niveles de azúcares



Mann Withney, p<0,05

EXPERIENCIA COMPARADA

- México: 10% impuesto en bebestibles azucarados y 8% en alimentos no esenciales densamente energéticos
- Primeros 3 meses
  - 10% reducción de las compras en bebestibles
  - 5% en alimentos no esenciales
- Solo corto plazo
- ¿sustitución?

Fuente: Popkin, comunicación personal

CONCLUSIONES

- La ingesta diaria de azúcares debiera ser limitada (<10% de la energía) para evitar efectos nocivos en la salud
- En condiciones actuales esto es un desafío importante
  - Bajas necesidades energéticas
  - Importante contenido de azúcares en productos alimentarios
  - Ambiente alimentario desfavorable en contexto de vulnerabilidad biológica
- Precio afecta en la decisión de compra, por lo que los impuestos deberían disminuir la compra por lo menos en en grupo más vulnerable

NECESIDAD DE ESTUDIOS

- Fracción de riego atribuible
  - Seguimientos longitudinales
- Monitorización de contenido nutricional de alimentos disponibles en mercado
- Influencia del ambiente alimentario en compra e ingesta
  - Publicidad
  - Precio
  - Disponibilidad
  - Etiquetado

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