

# La Globalización del Estado Nutricional

V Congreso de Pediatría Ambulatoria  
Sociedad Argentina de Pediatría  
*noviembre, 2010*

Dra Norma Piazza  
norma.piazza@gmail.com

# Sistema de Vigilancia de los Factores de Riesgo de Conducta

Behavioral Risk Factor Surveillance System  
(BRFSS)

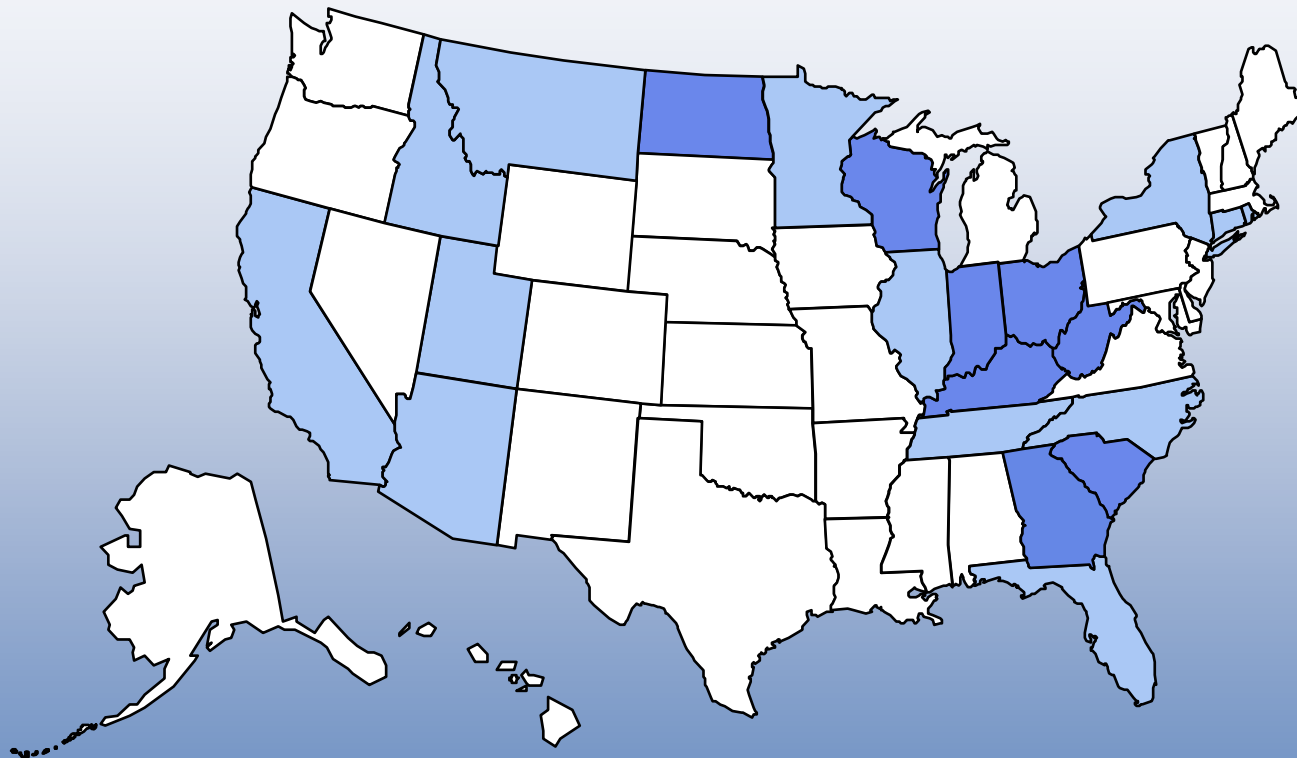
CDC Estados Unidos

<http://aps.nccd.cdc.gov/brfss>

# Obesity Trends\* Among U.S. Adults

BRFSS, 1985

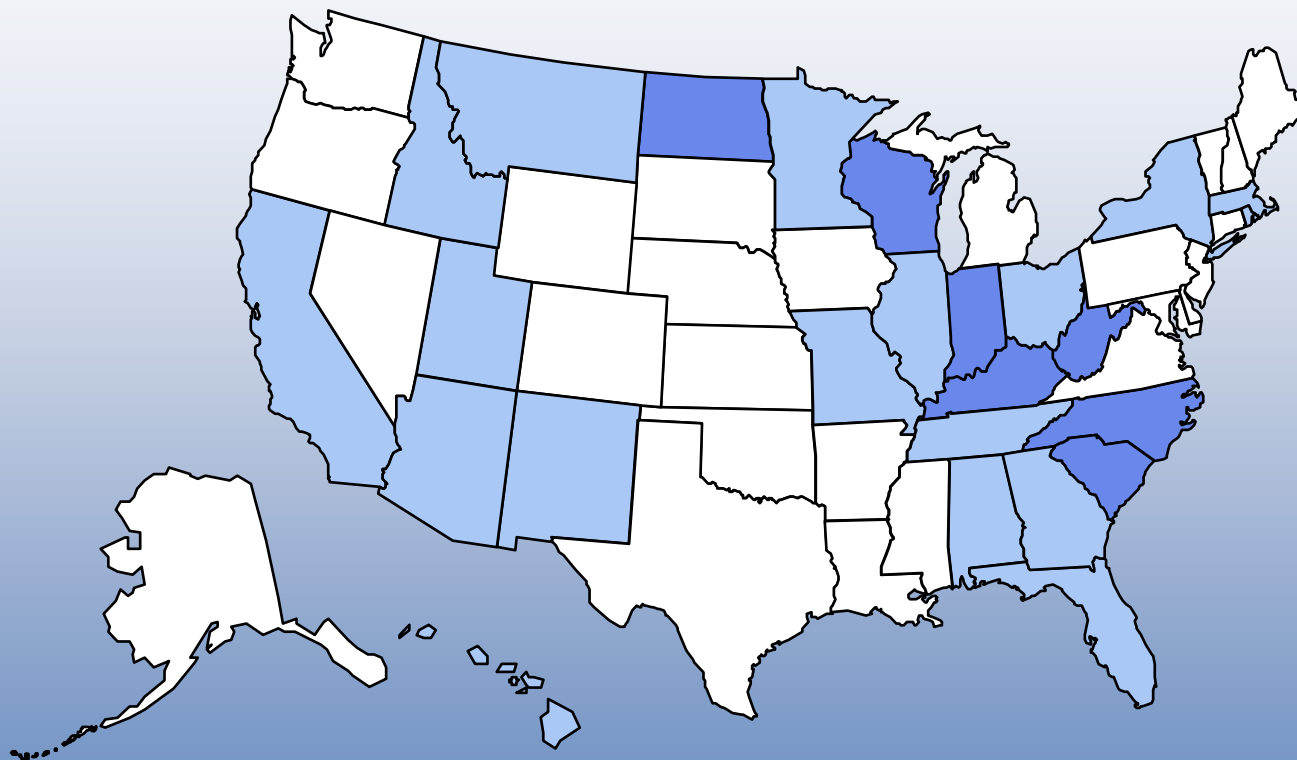
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1986

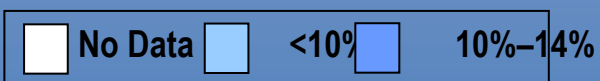
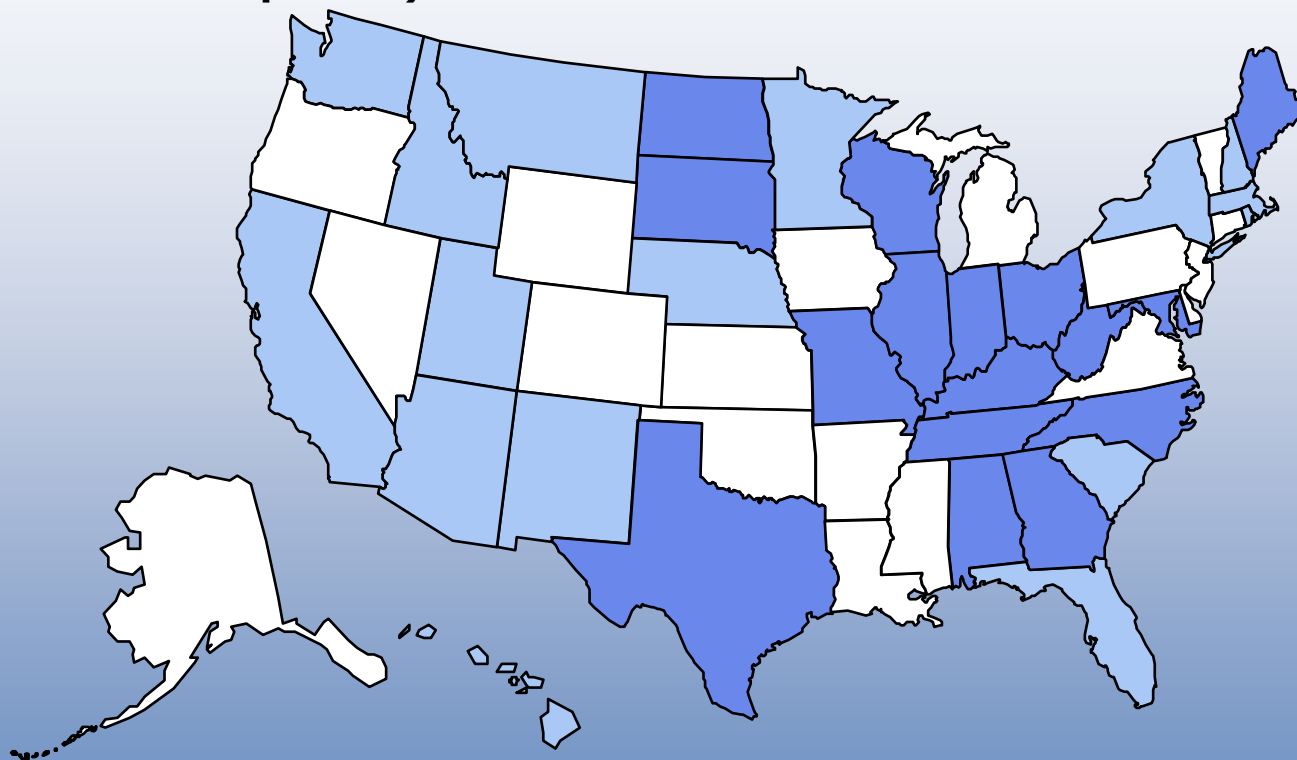
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1987

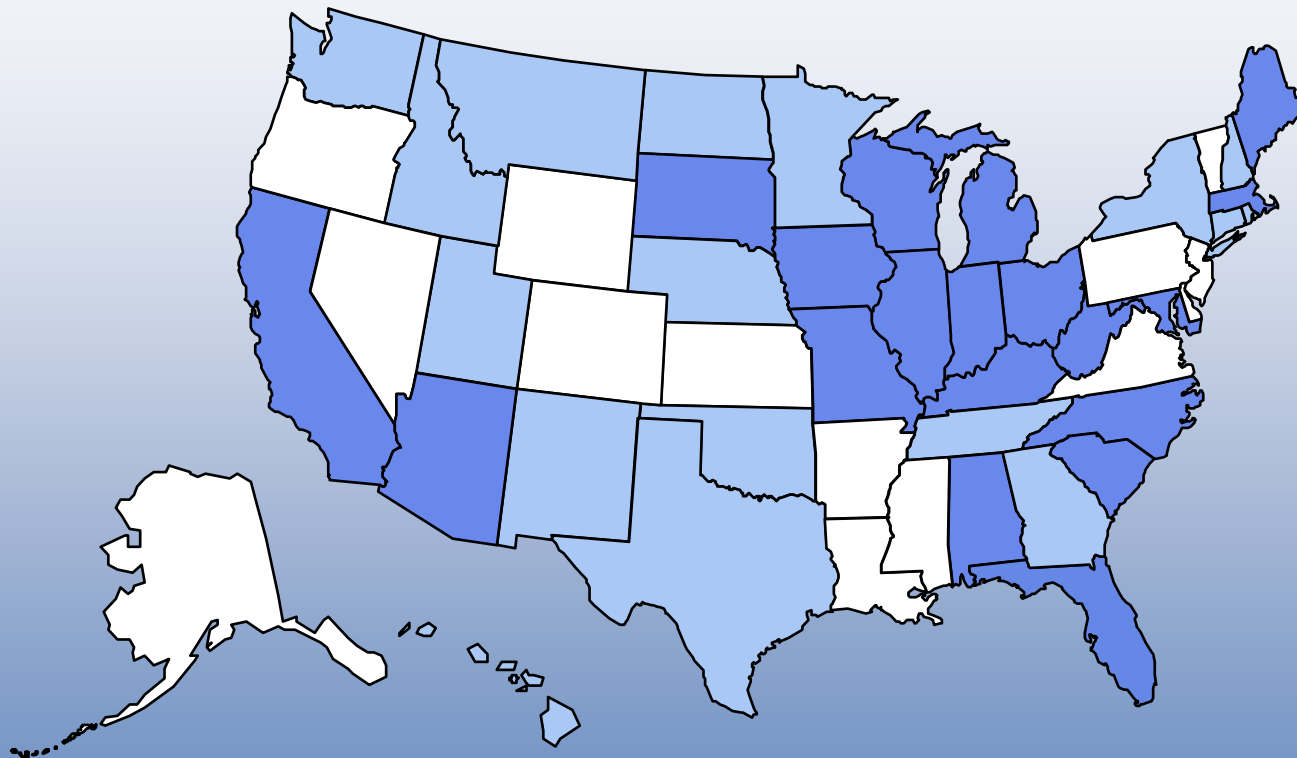
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1988

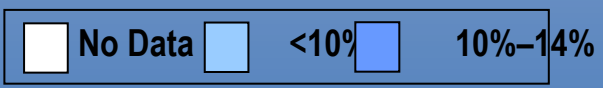
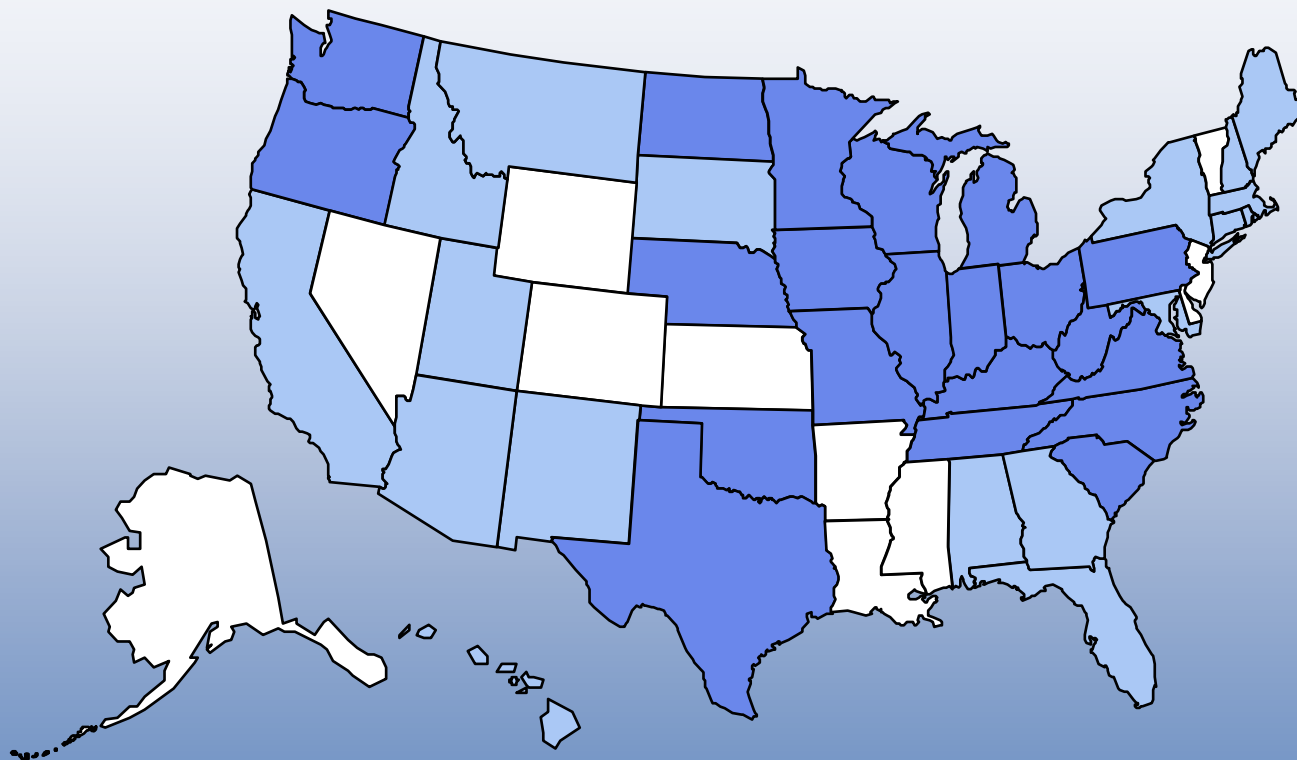
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# Obesity Trends\* Among U.S. Adults

BRFSS, 1989

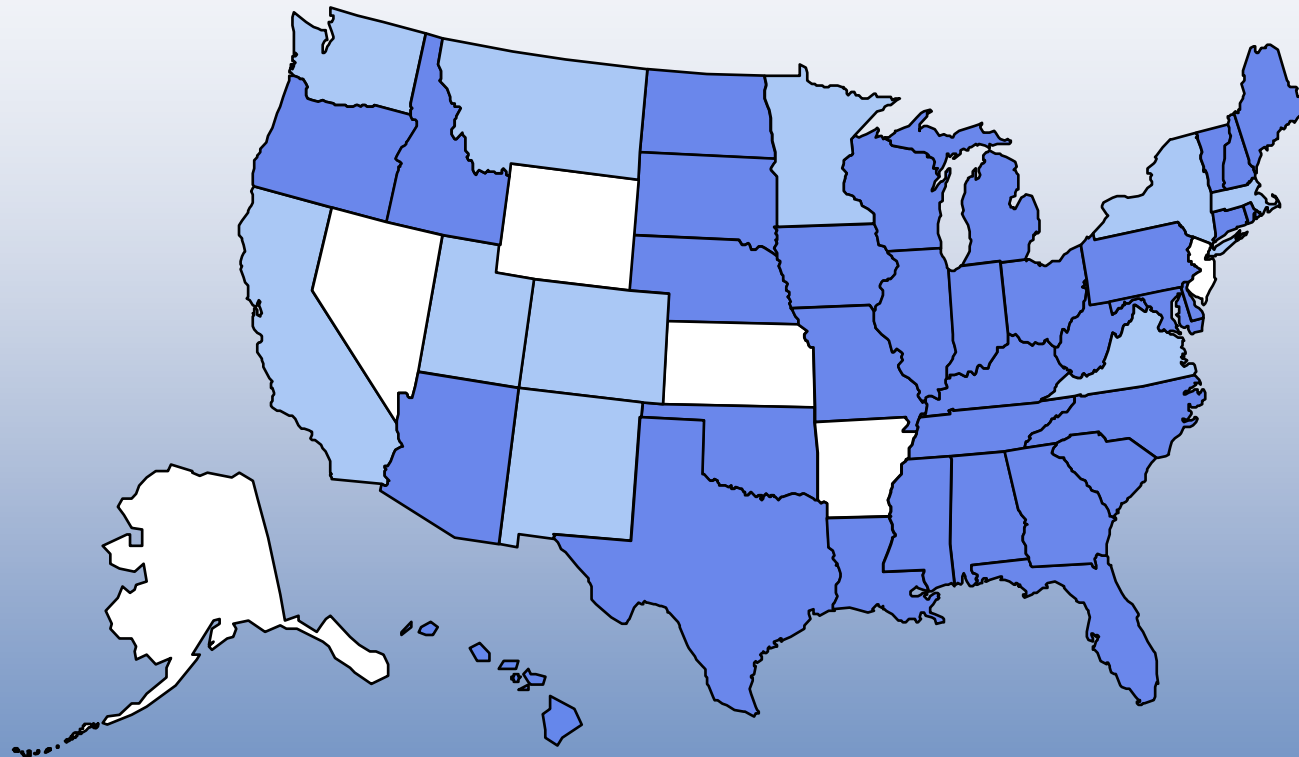
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BRFSS, 1990

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

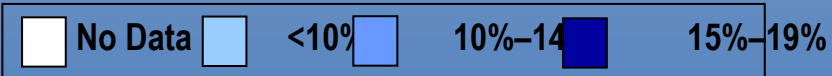
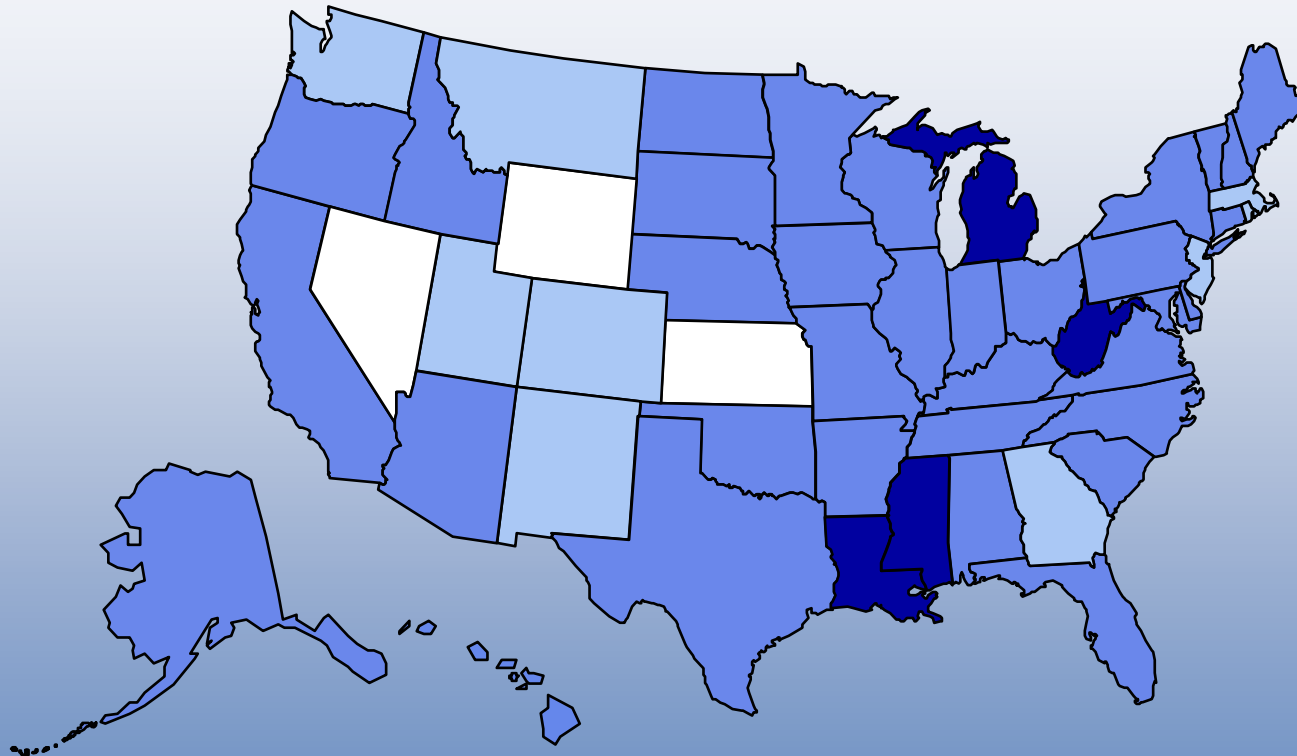




# Obesity Trends\* Among U.S. Adults

BRFSS, 1991

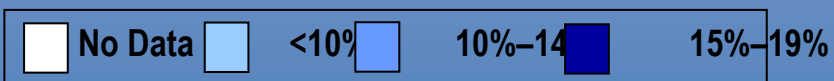
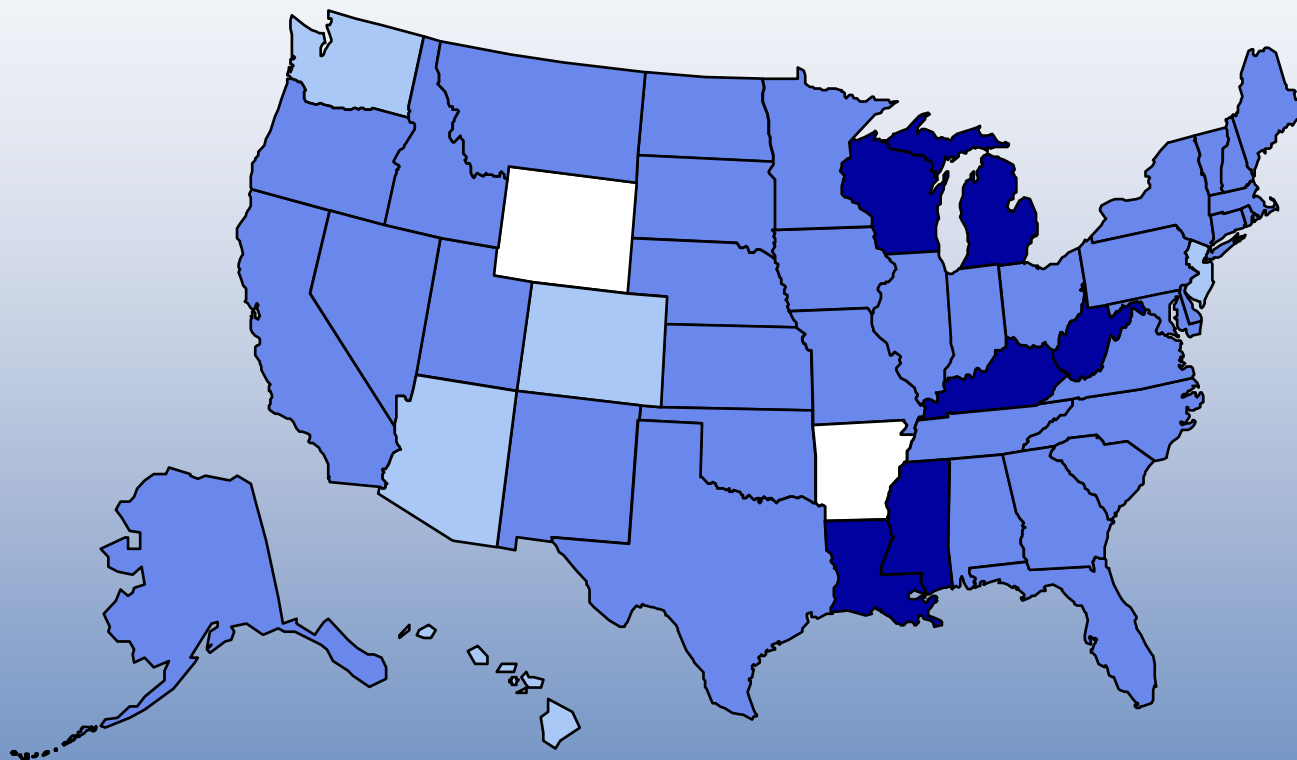
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1992

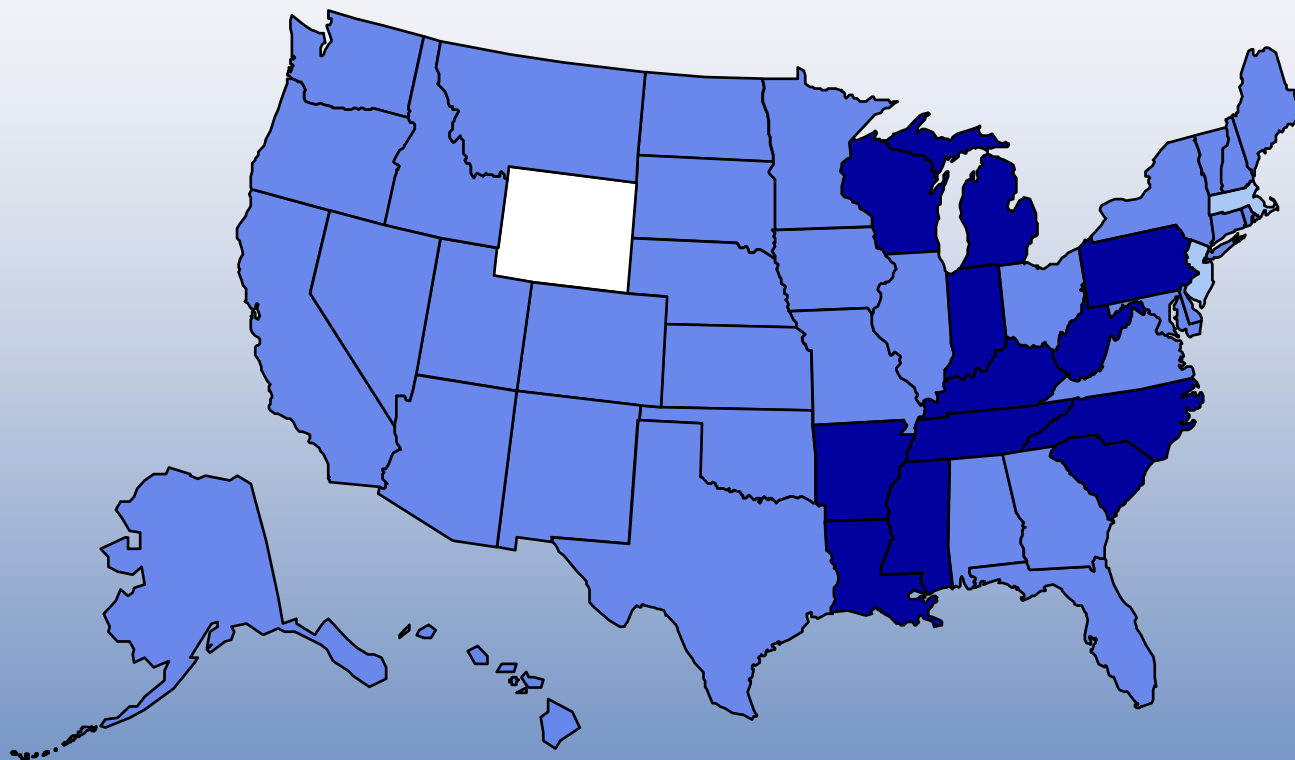
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1993

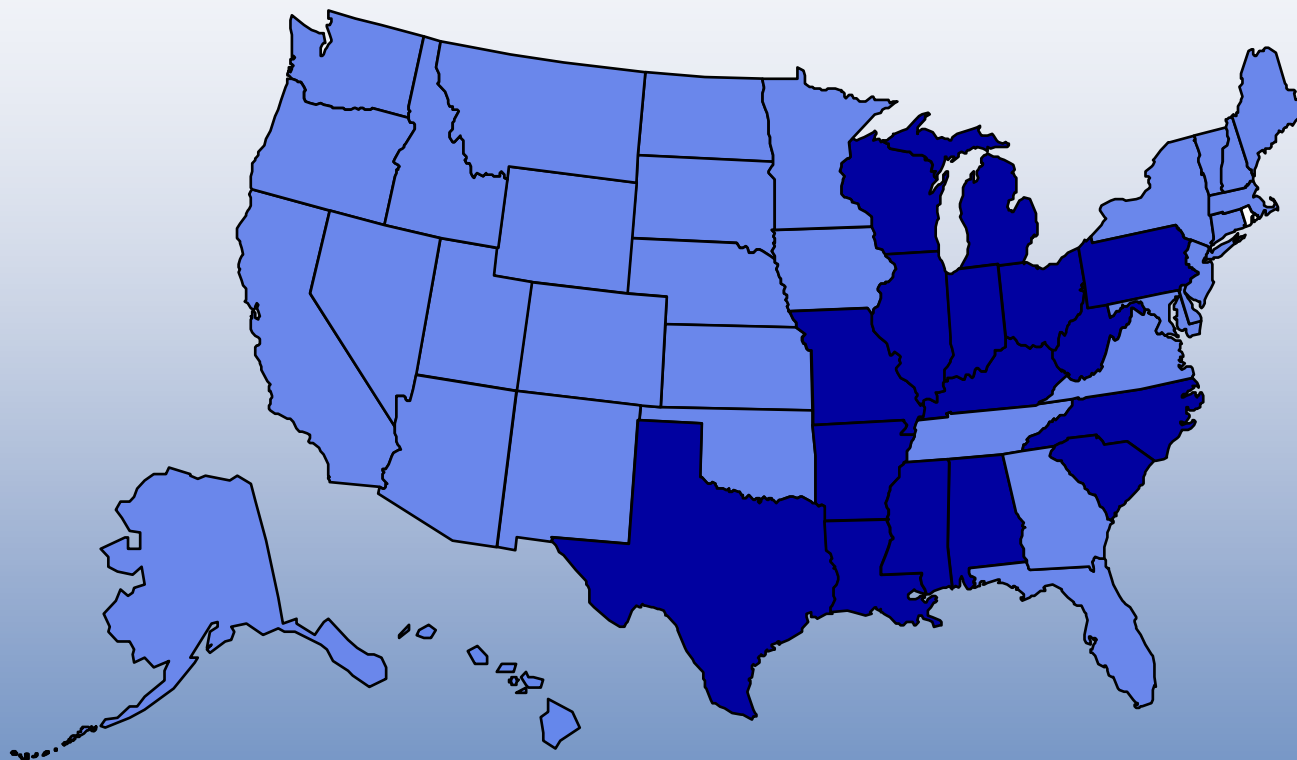
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1994

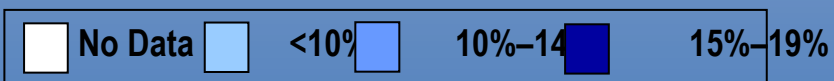
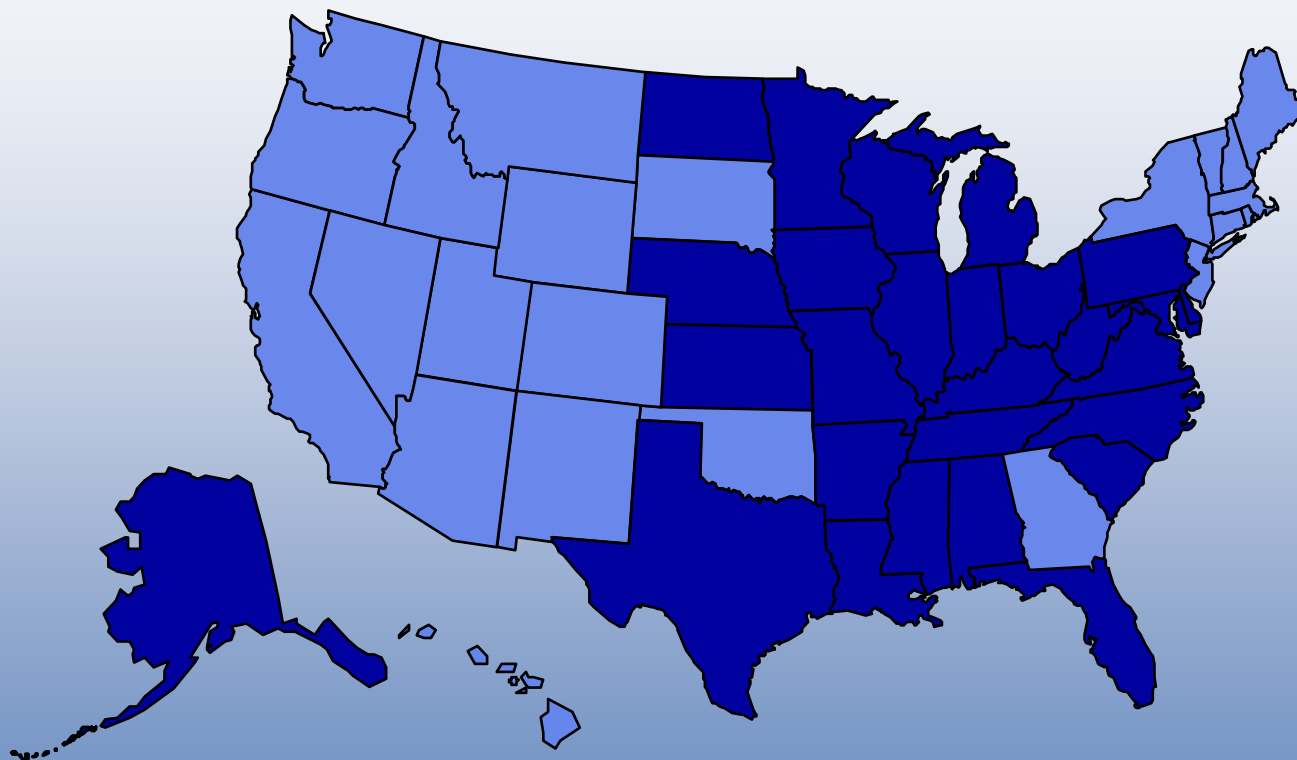
(\*BMI  $\geq 30$ , or ~ 30 lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1995

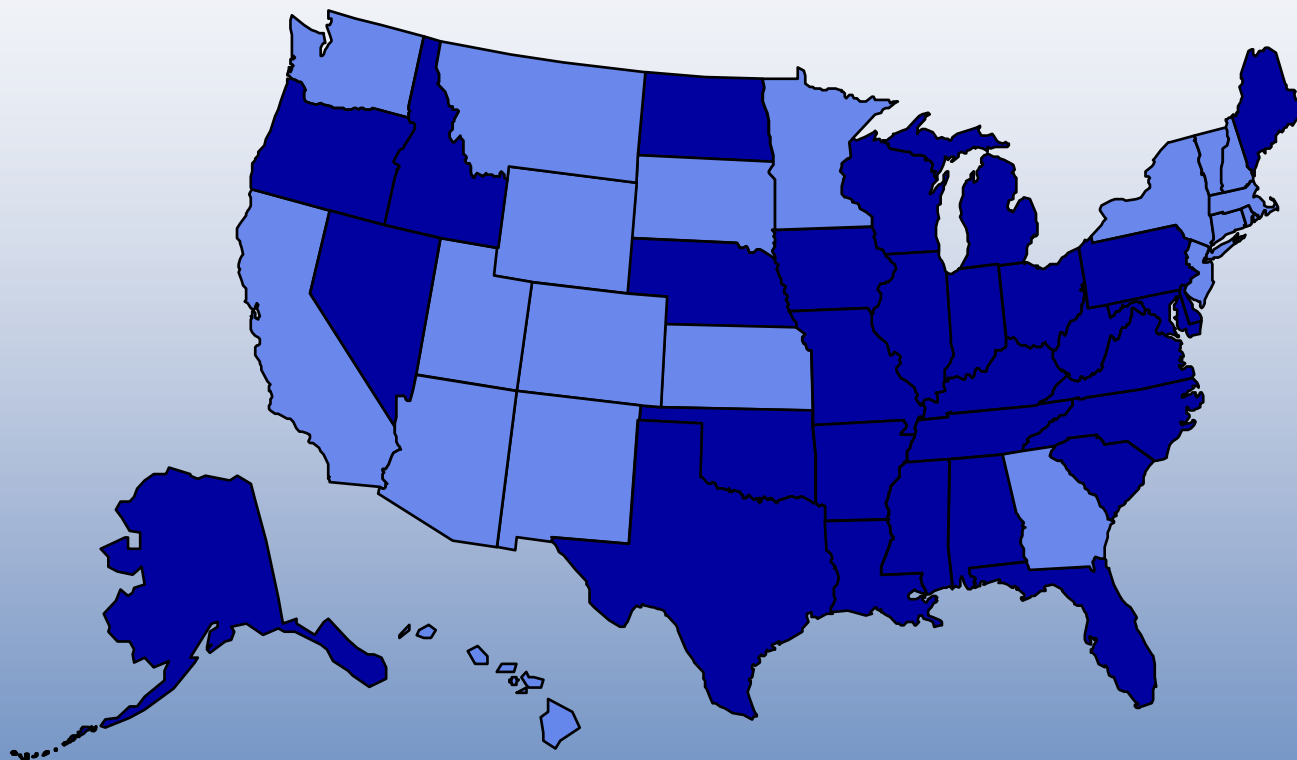
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1996

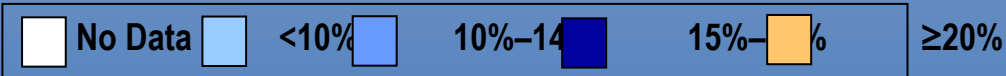
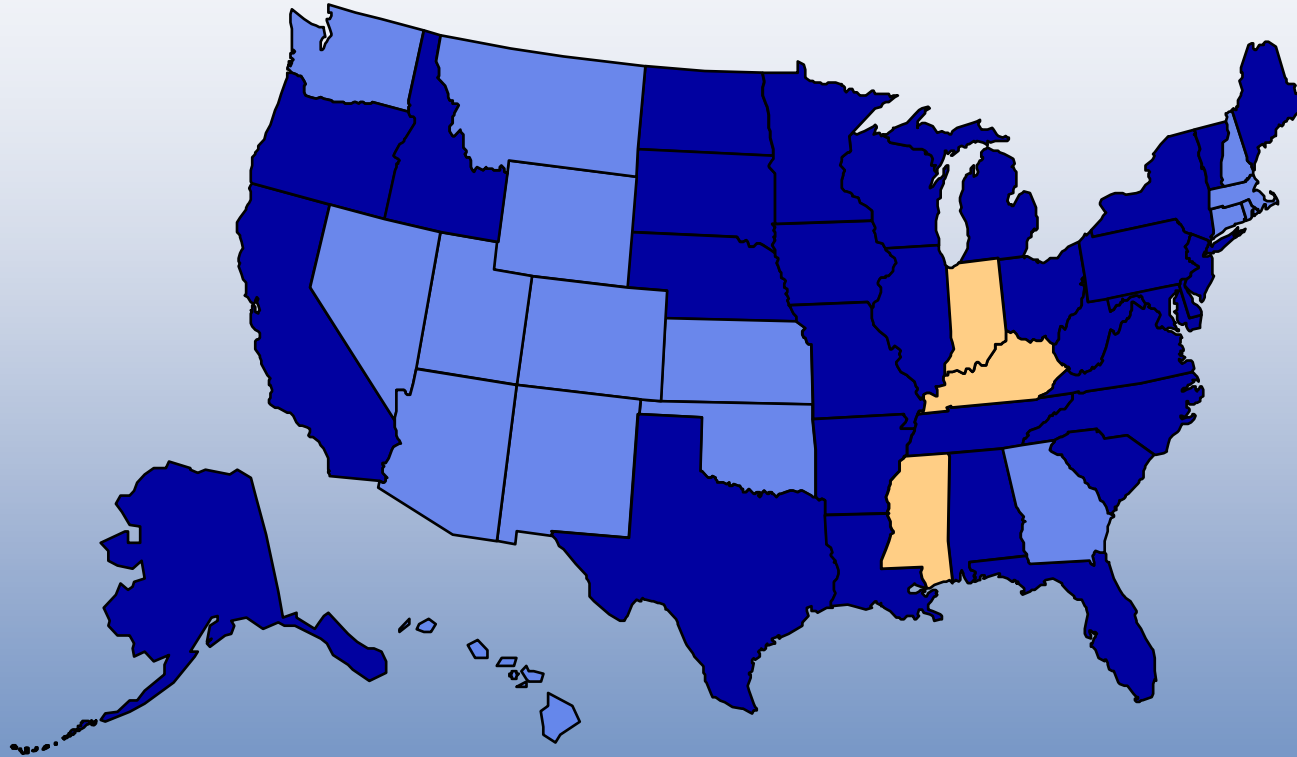
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

**BRFSS, 1997**

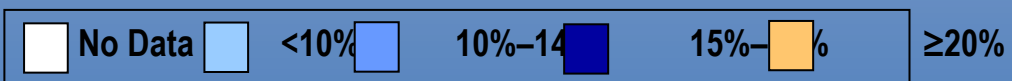
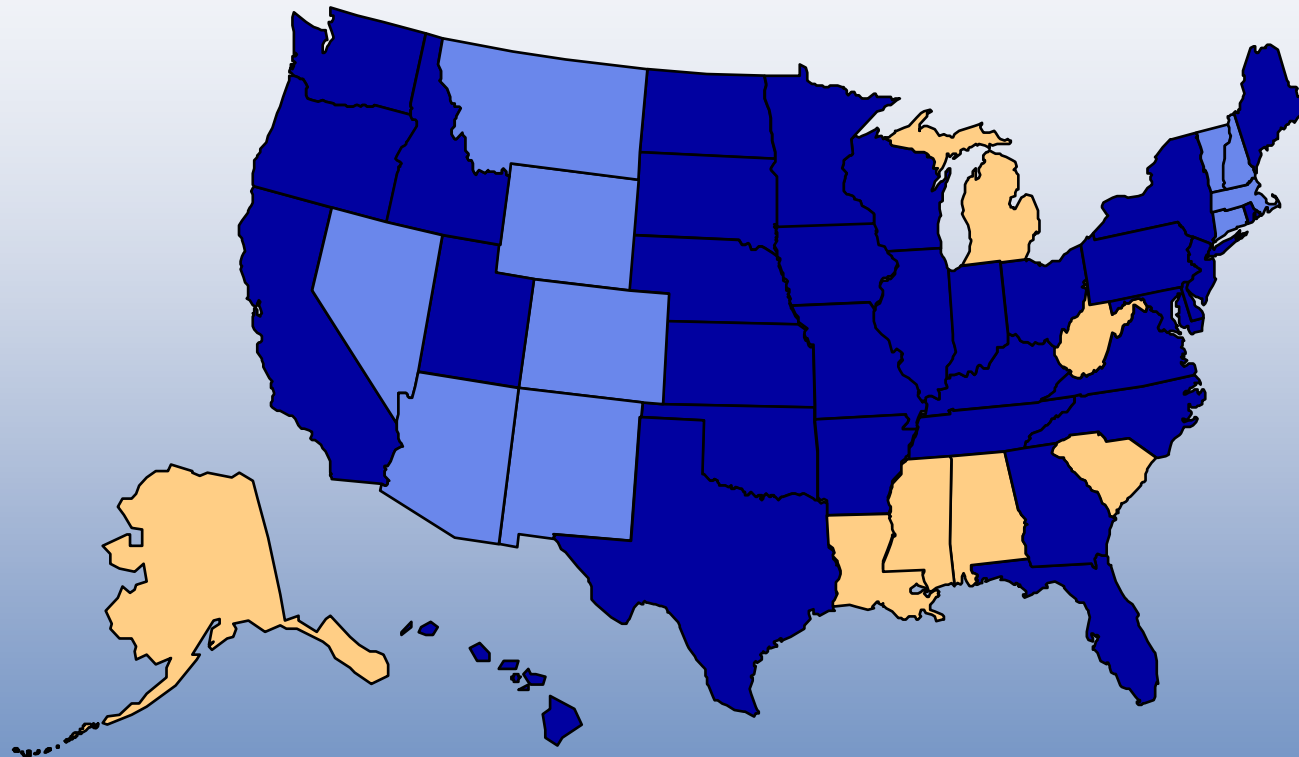
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1998

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

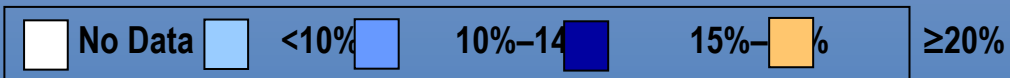
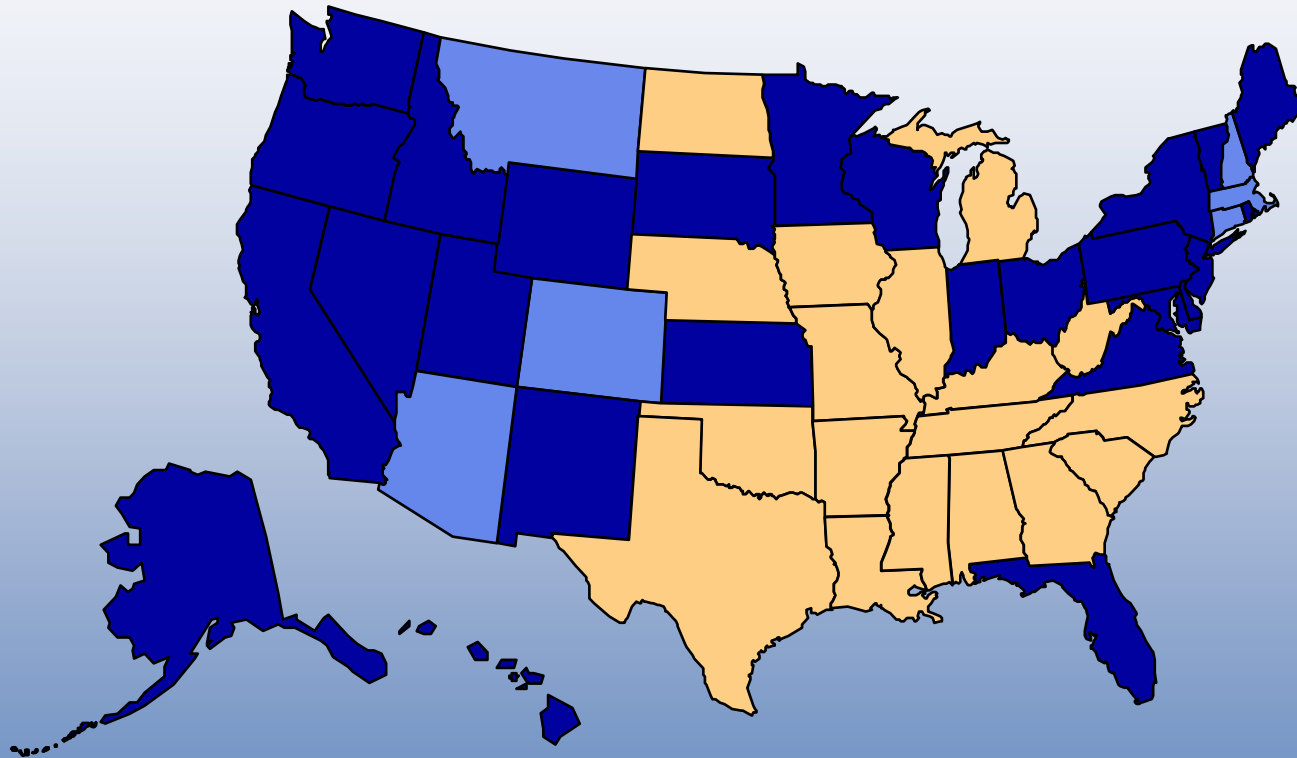




# Obesity Trends\* Among U.S. Adults

## BRFSS, 1999

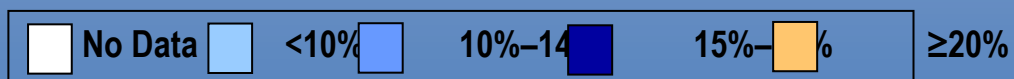
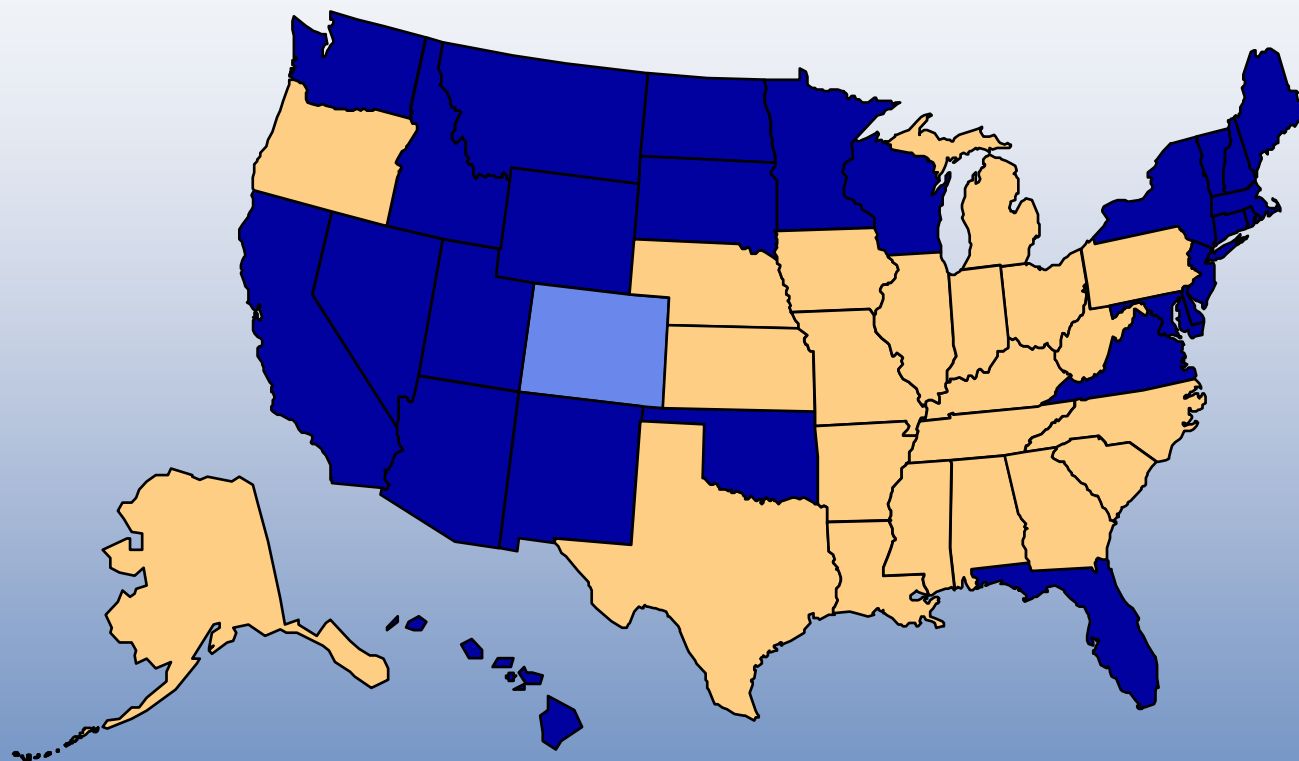
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 2000

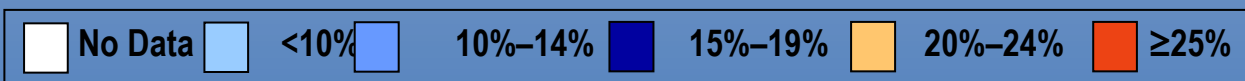
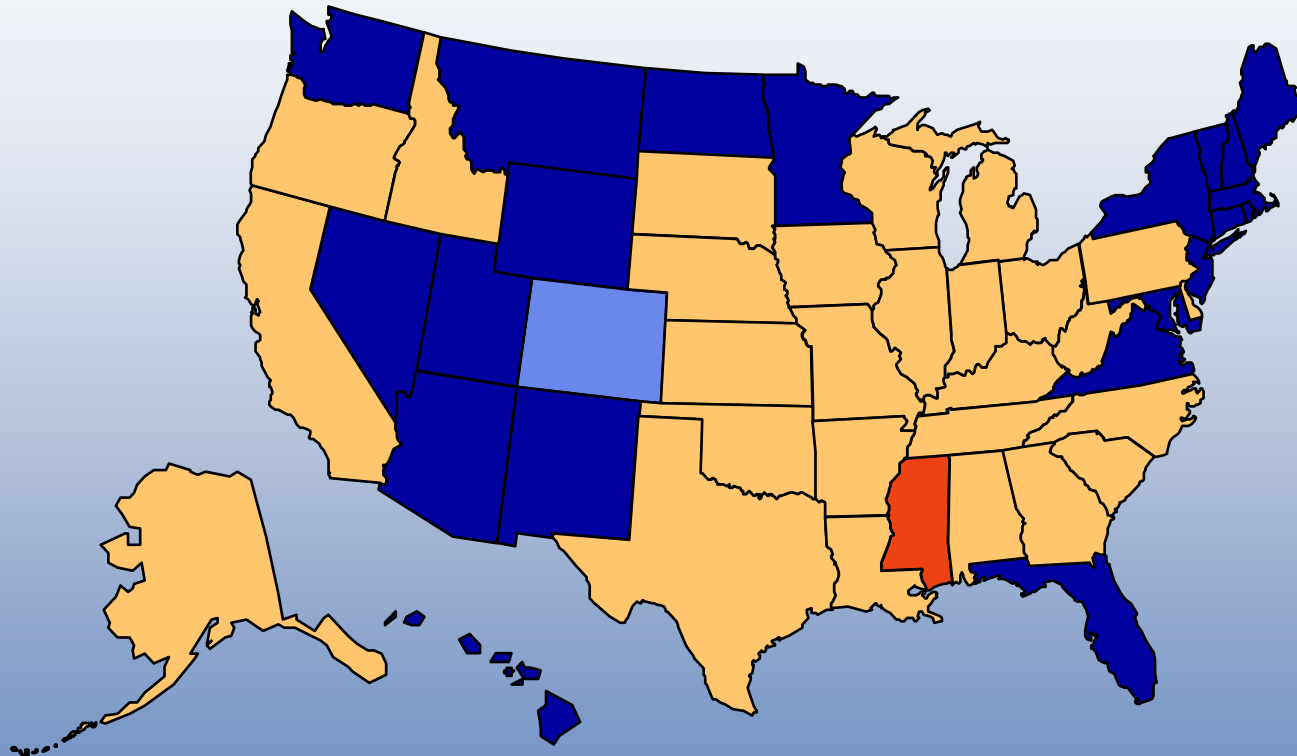
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 2001

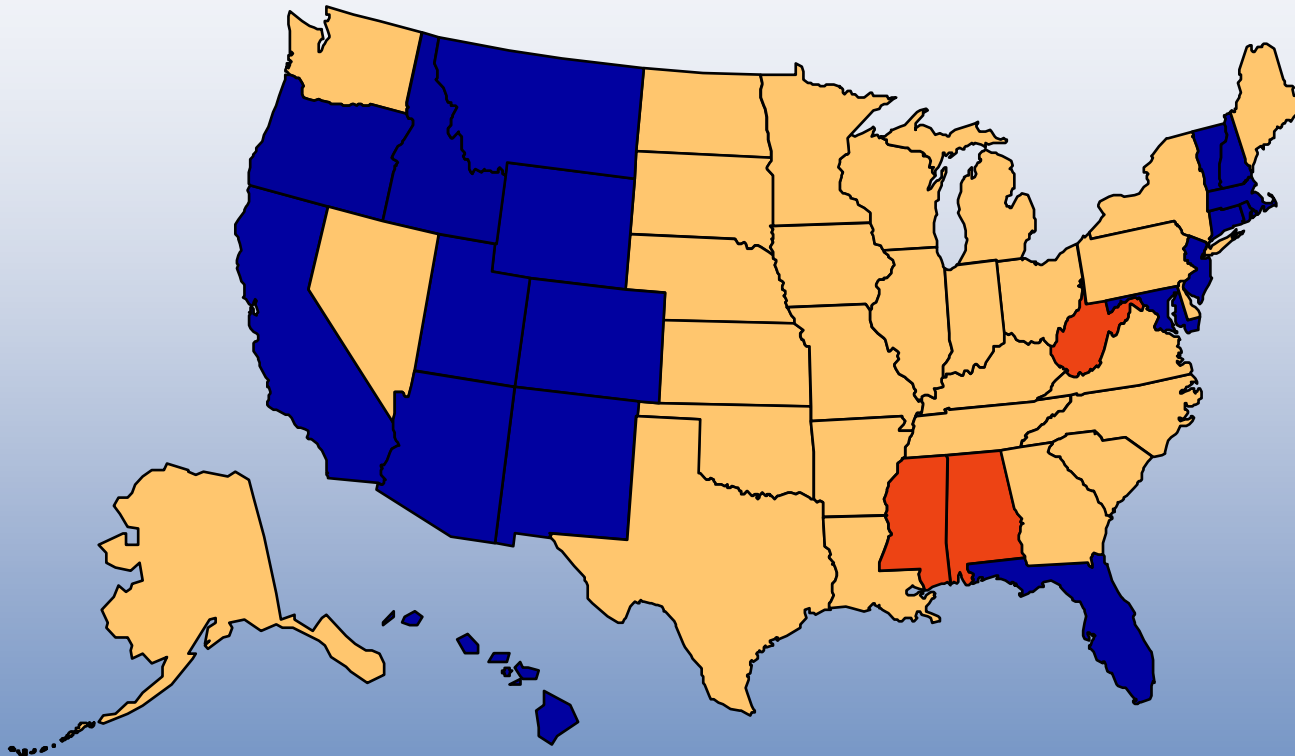
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2002

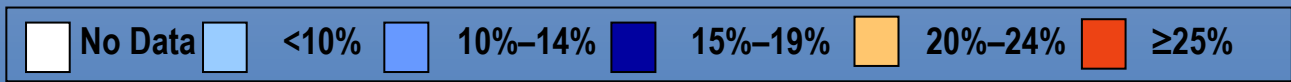
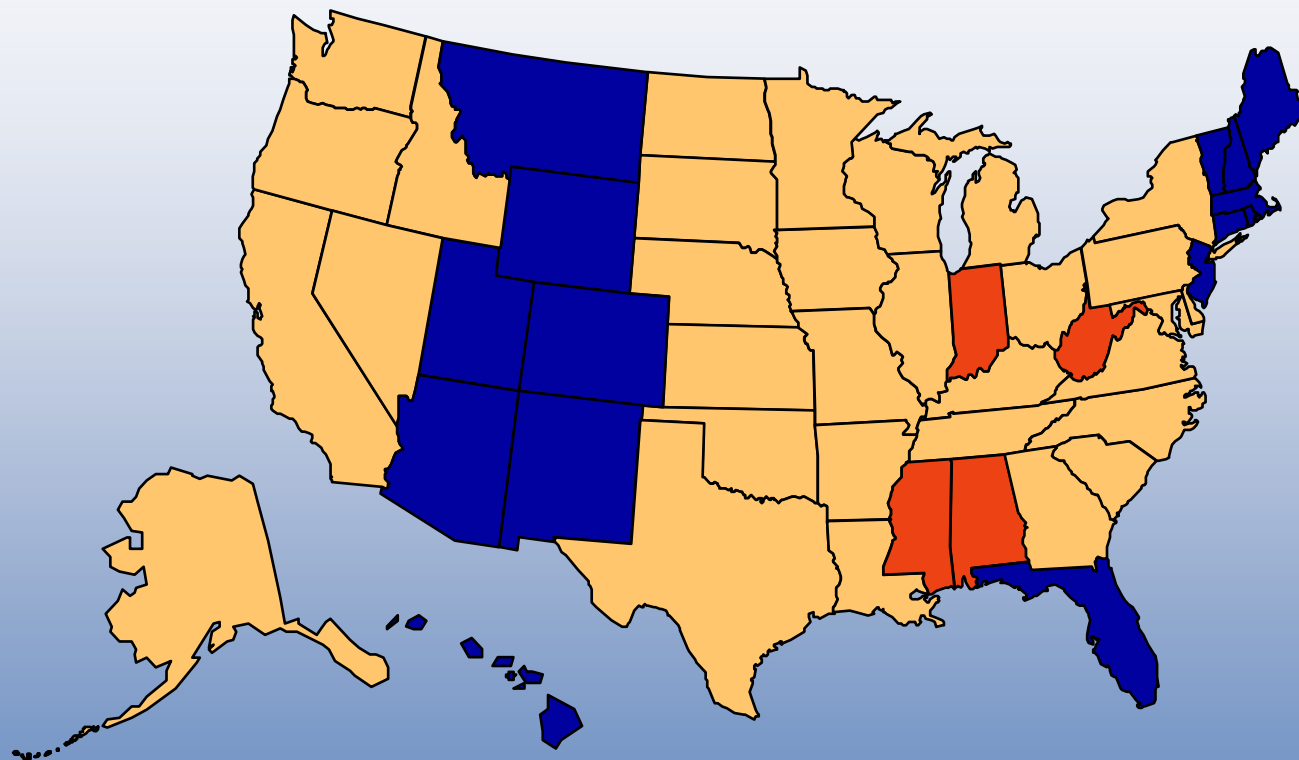
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 2003

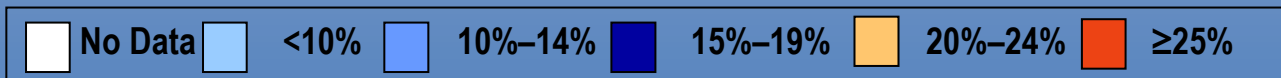
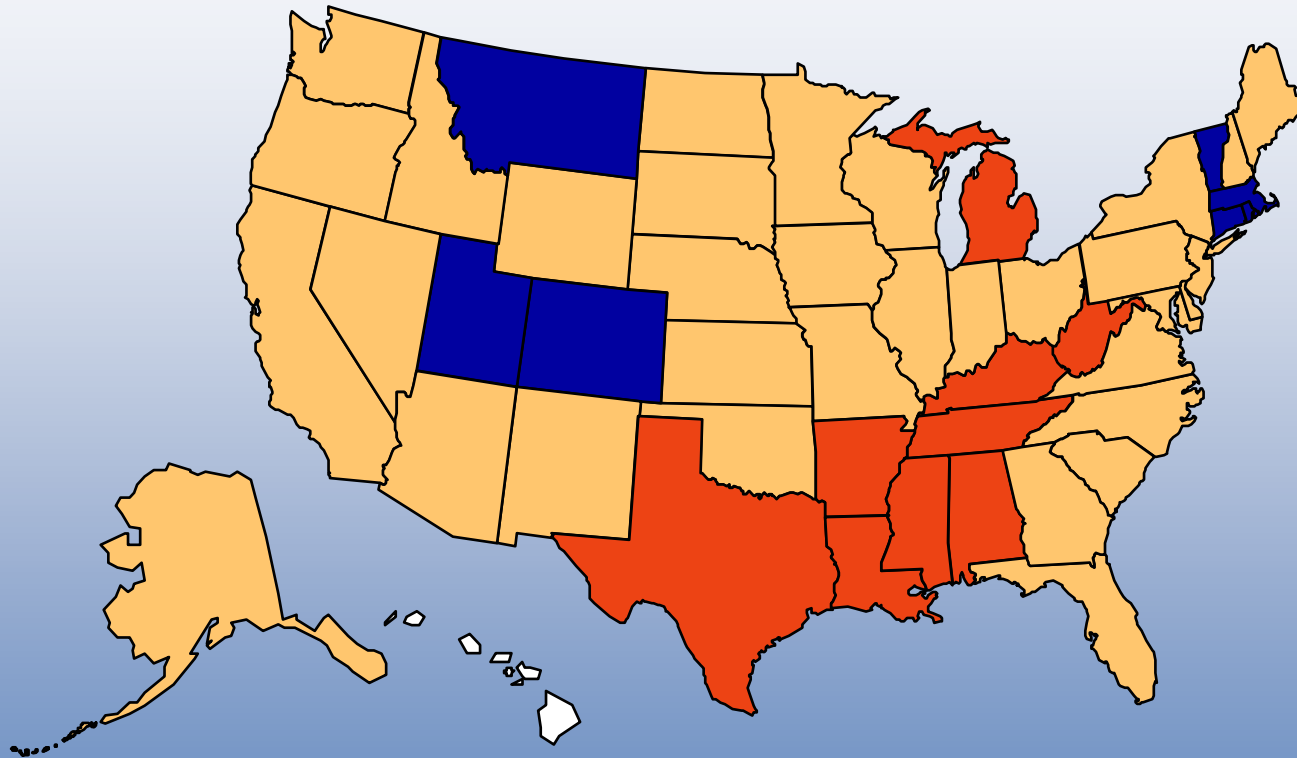
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2004

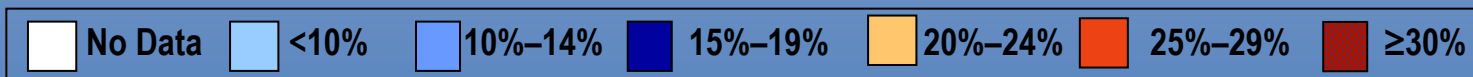
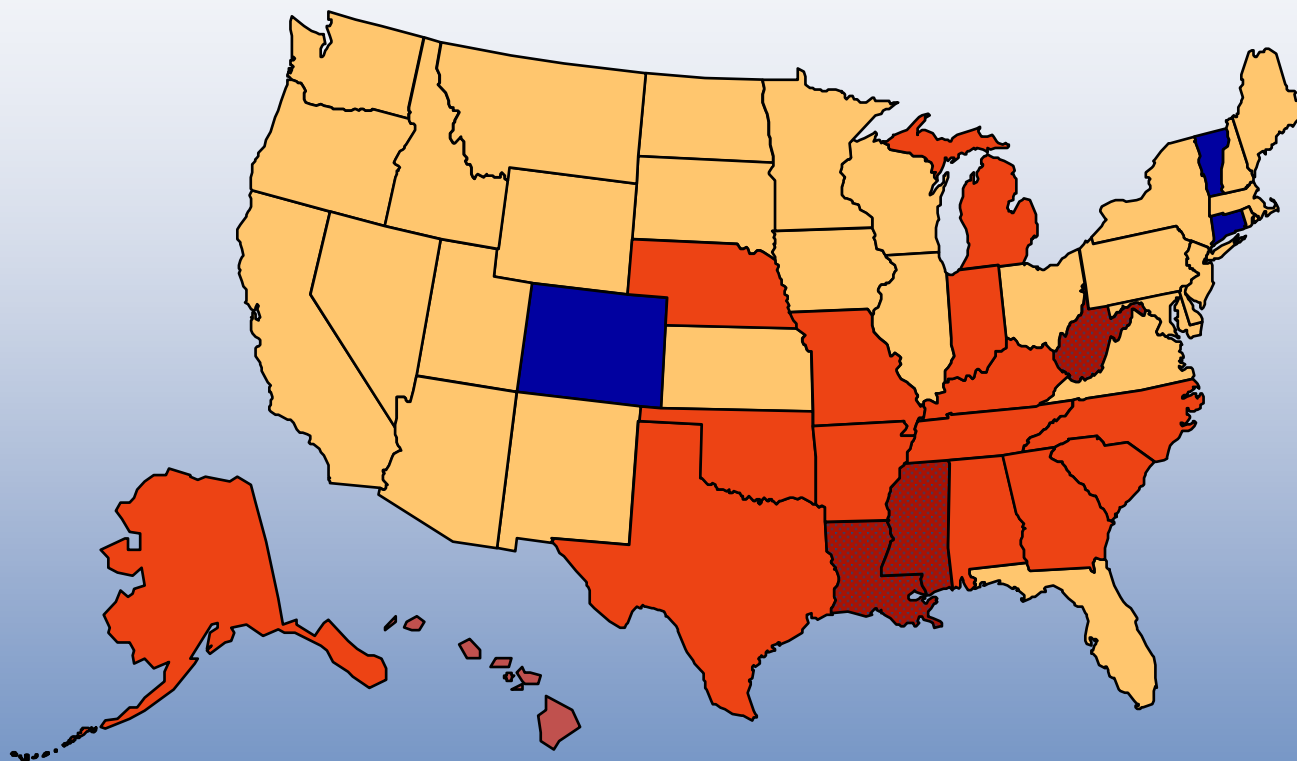
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 2005

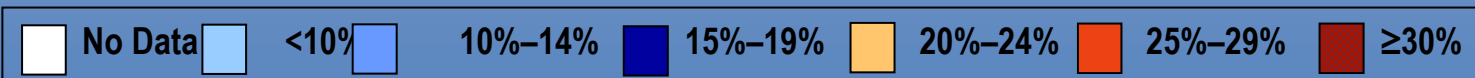
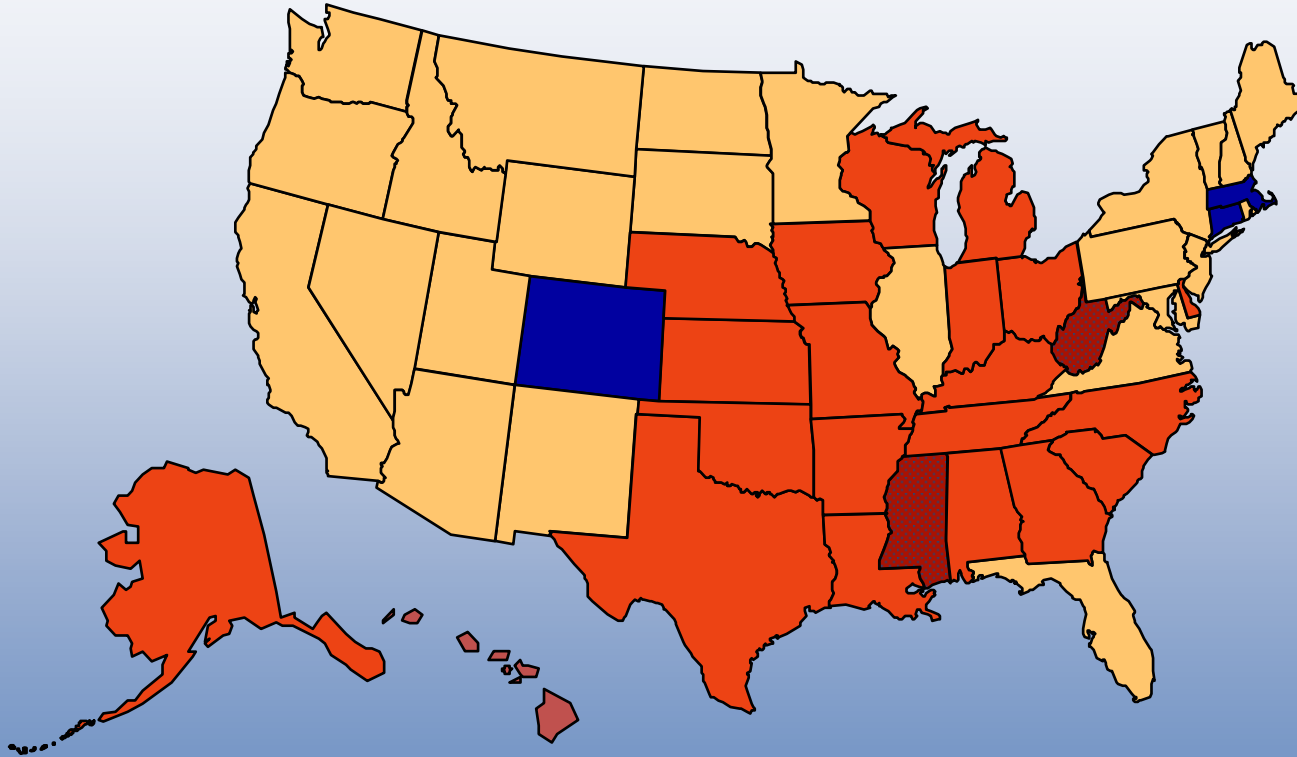
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 2006

(\*BMI  $\geq 30$ , or ~ 30 lbs. overweight for 5' 4" person)

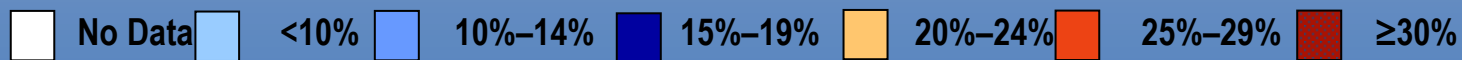
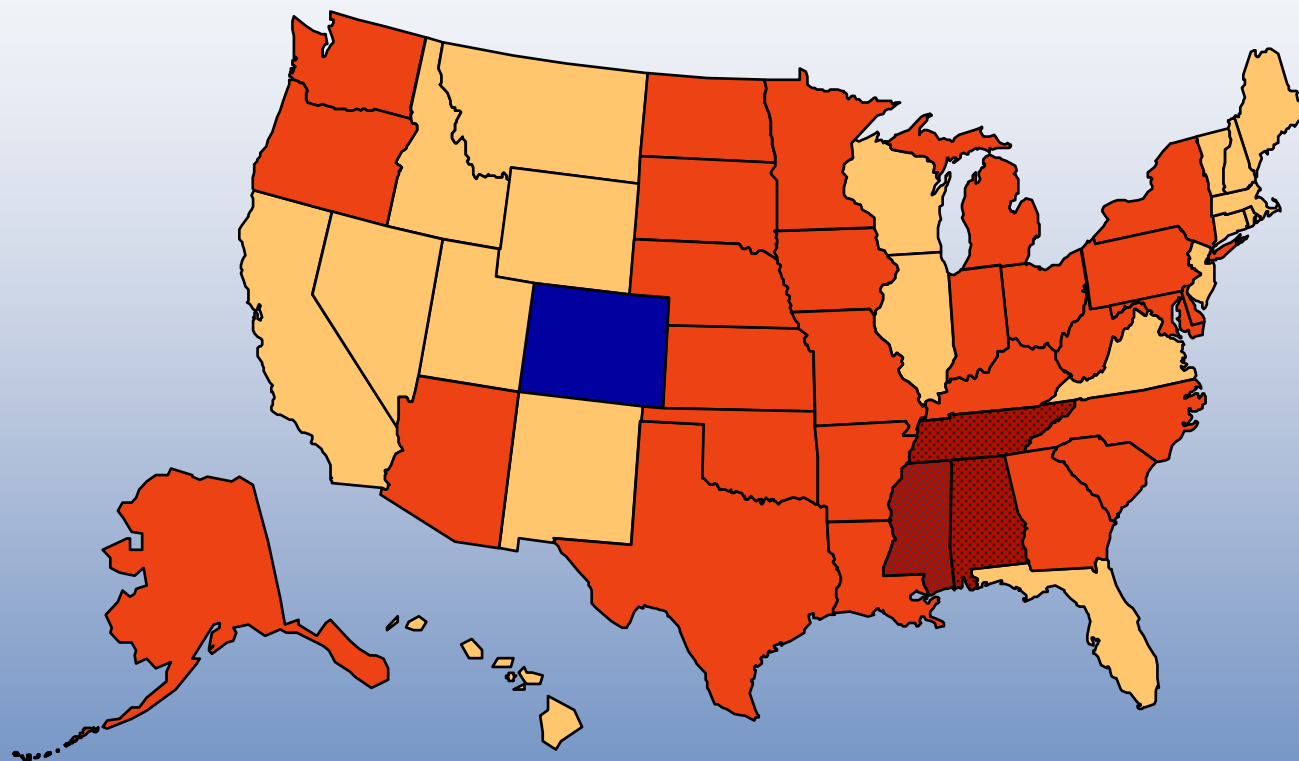




# Obesity Trends\* Among U.S. Adults

BRFSS, 2007

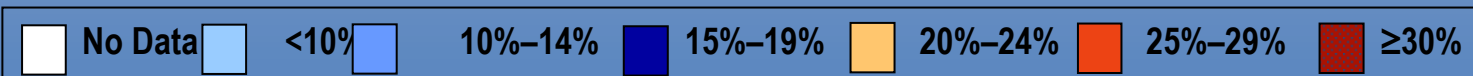
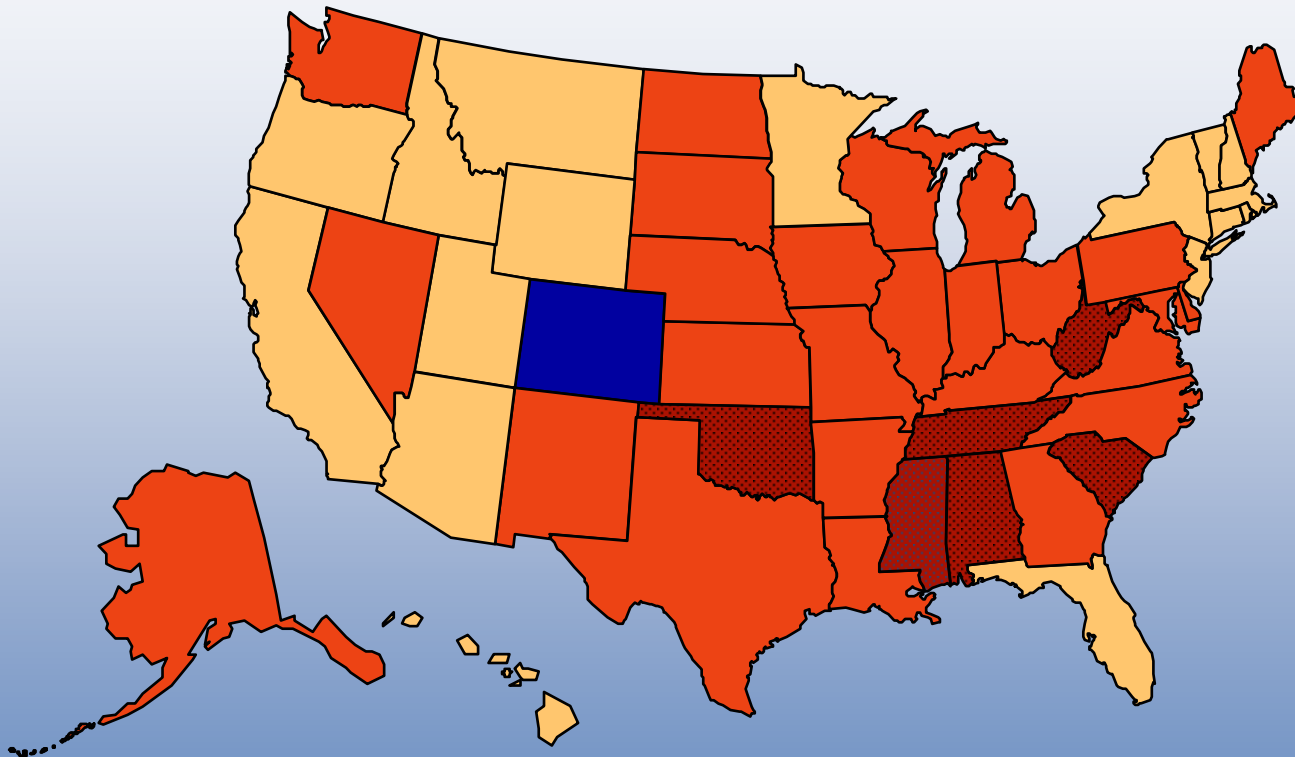
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 2008

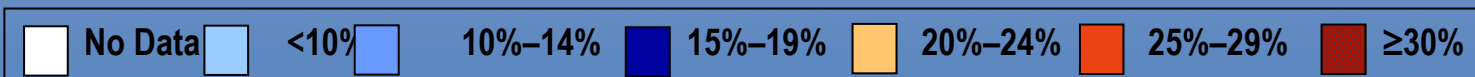
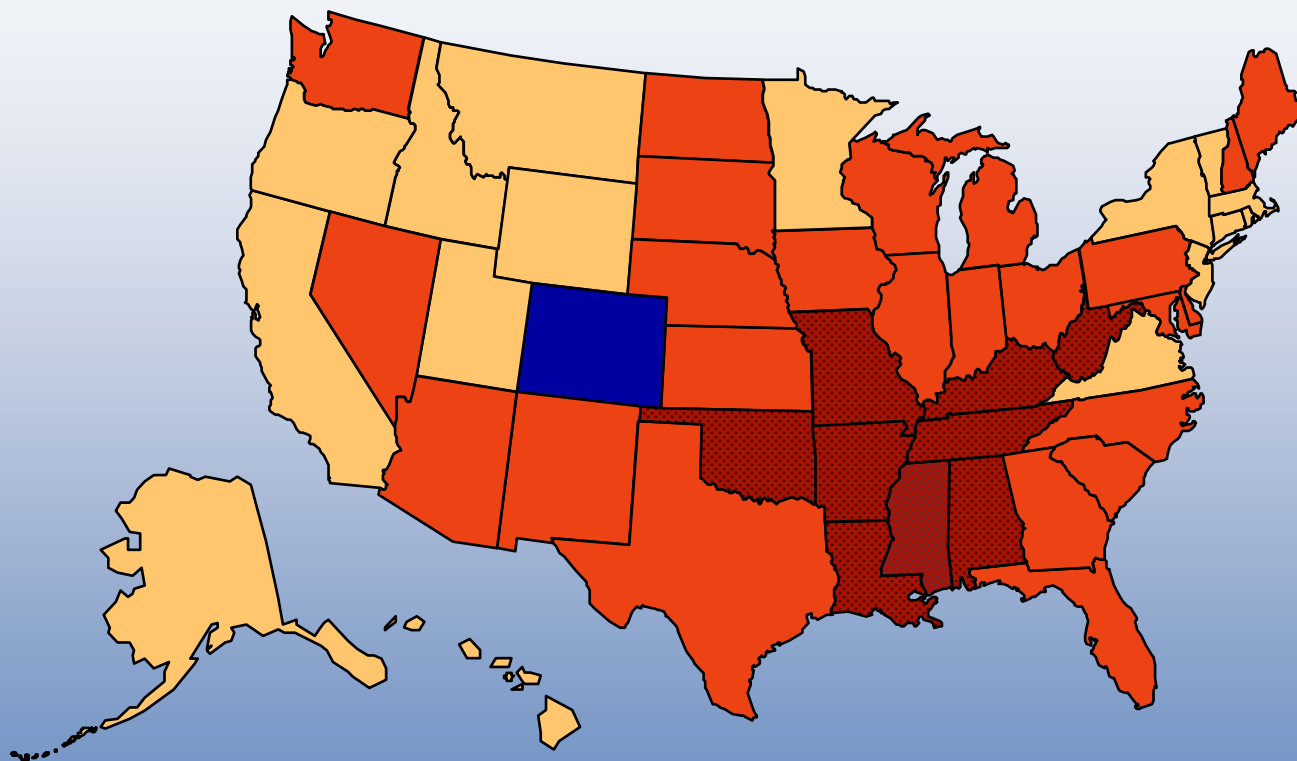
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

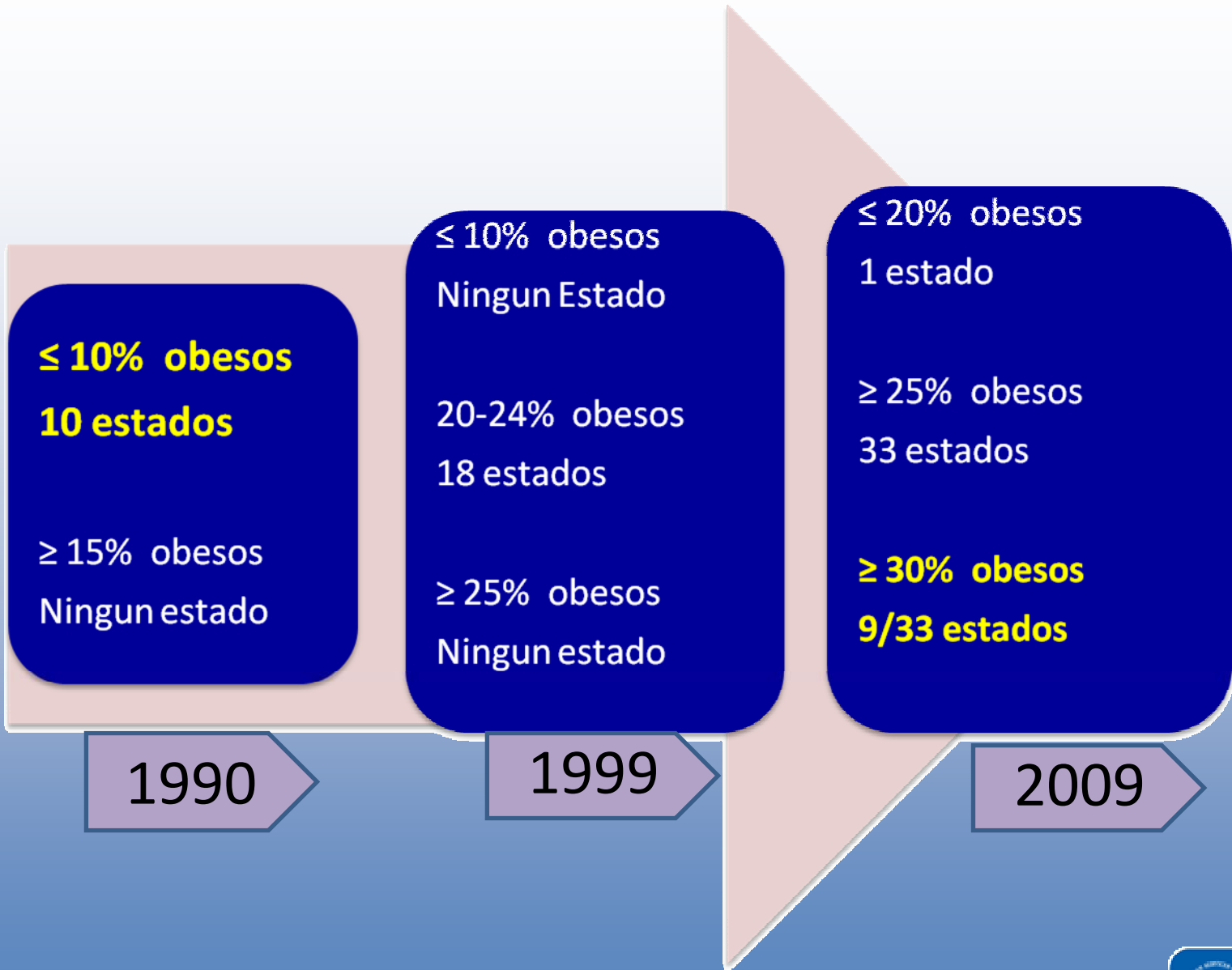


# Obesity Trends\* Among U.S. Adults

BRFSS, 2009

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)





**$\leq 10\%$  obese**  
**10 estados**

$\geq 15\%$  obese  
Ningun estado

1990

$\leq 10\%$  obese  
Ningun Estado

20-24% obese  
18 estados

$\geq 25\%$  obese  
Ningun estado

1999

$\leq 20\%$  obese  
1 estado

$\geq 25\%$  obese  
33 estados

**$\geq 30\%$  obese**  
**9/33 estados**

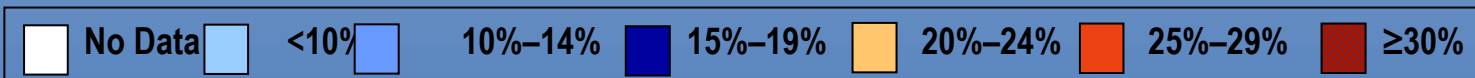
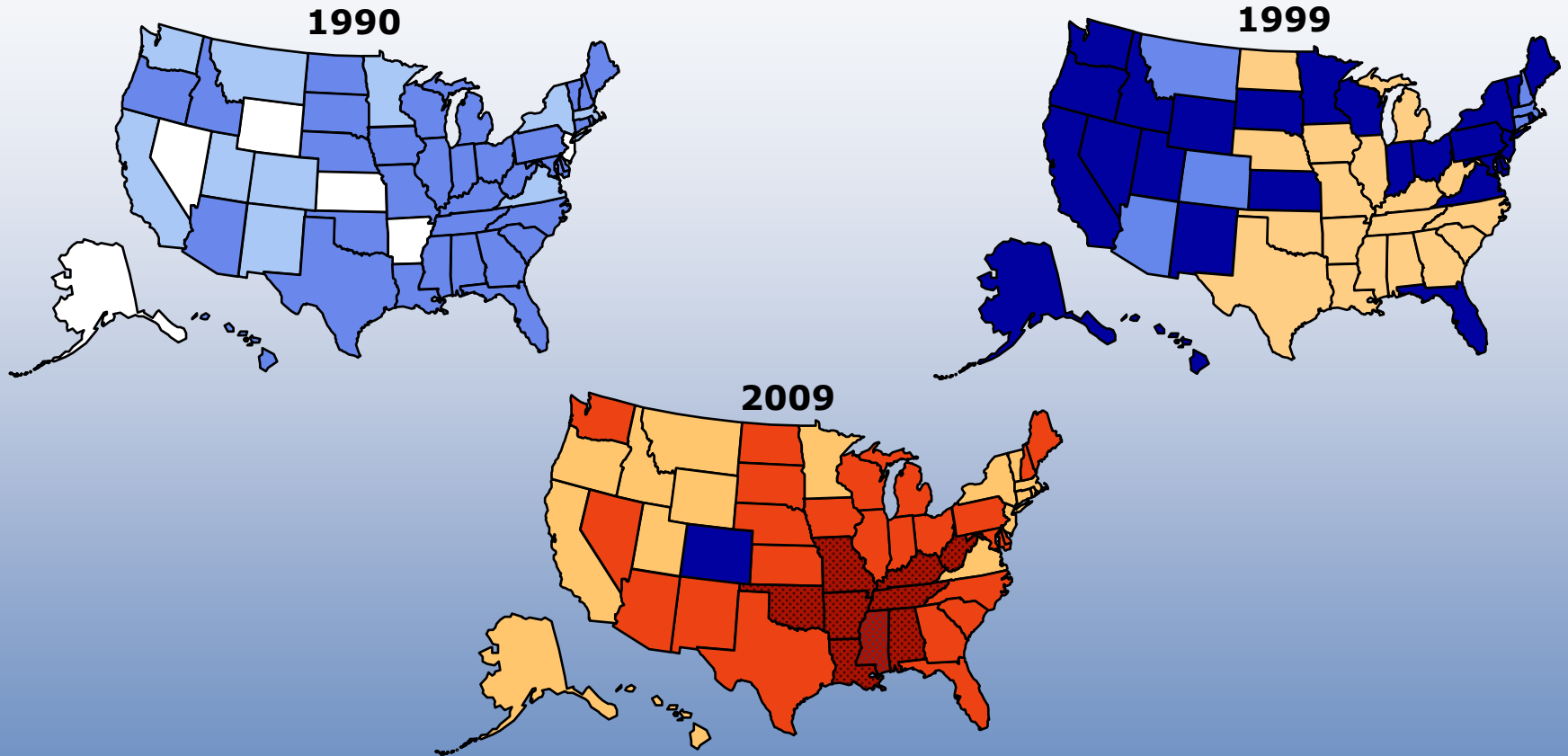
2009

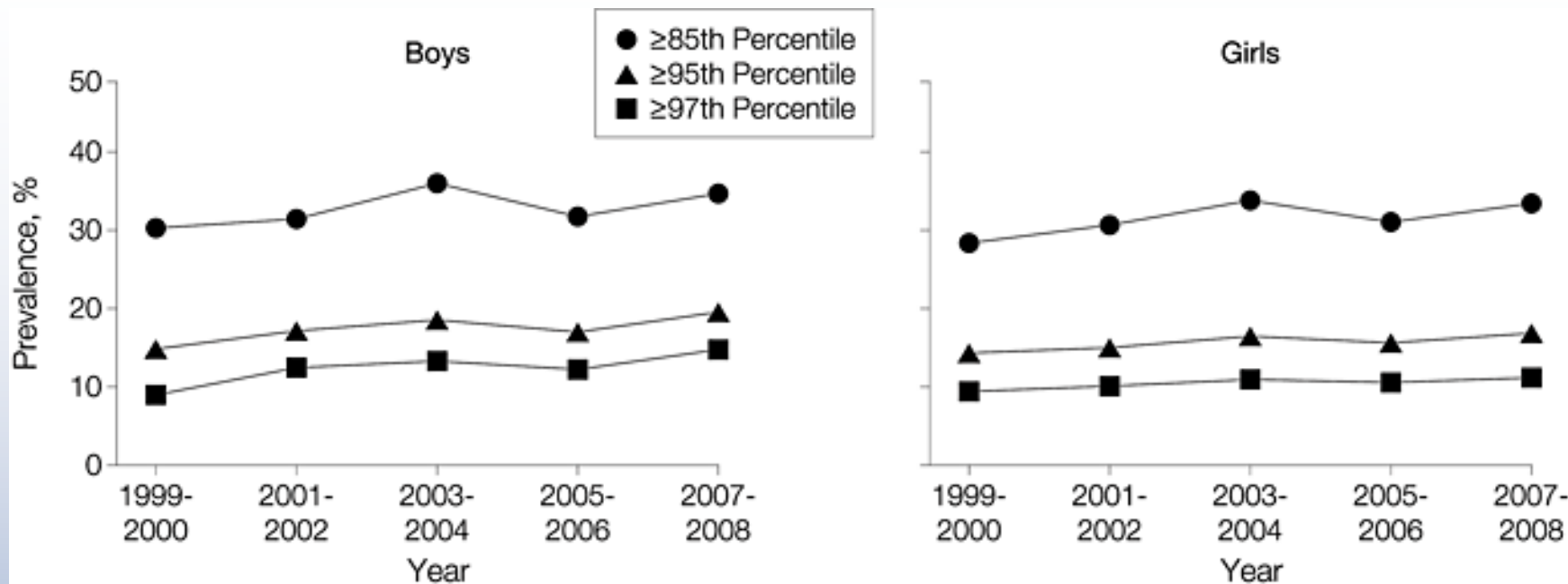


# Obesity Trends\* Among U.S. Adults

## BRFSS, 1990, 1999, 2009

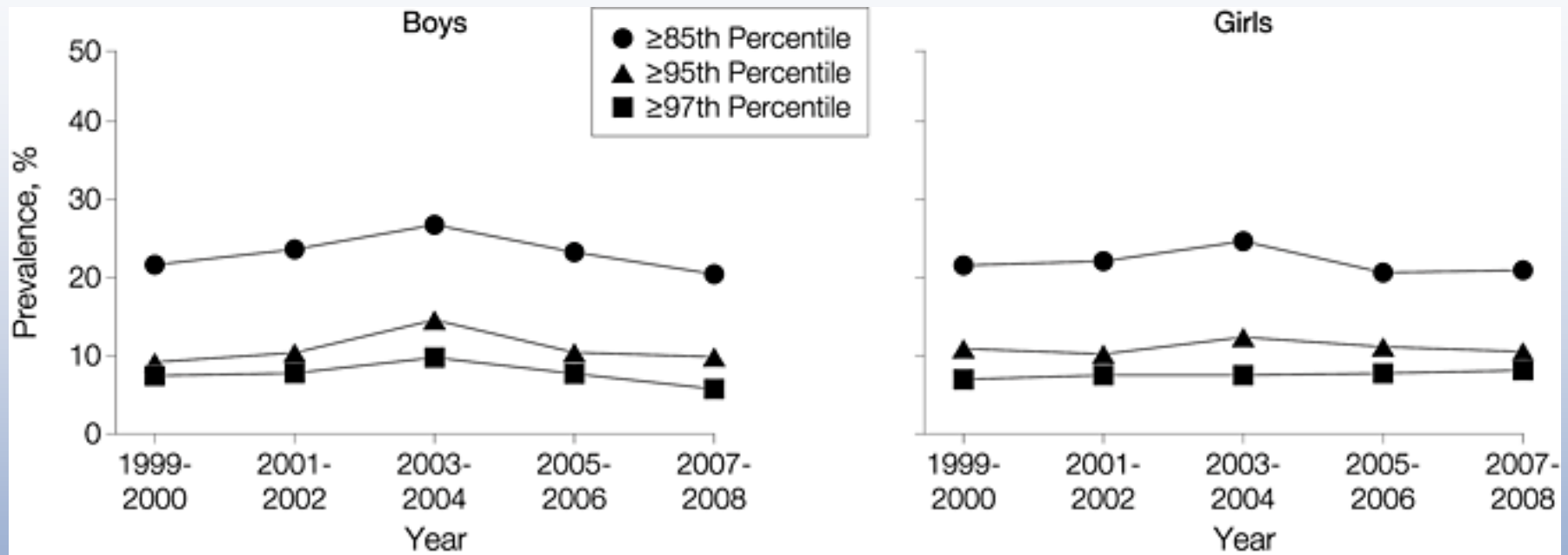
(\*BMI  $\geq 30$ , or about 30 lbs. overweight for 5'4" person)



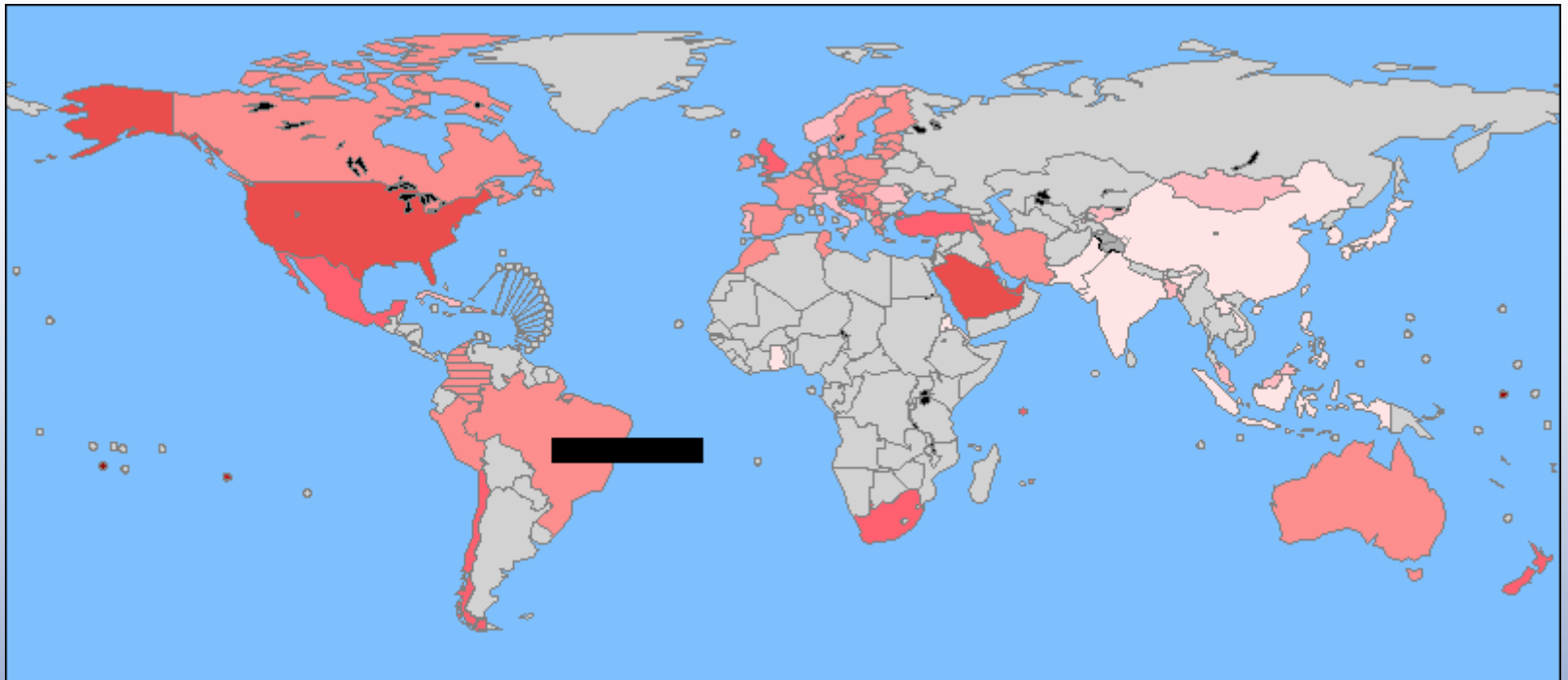


Prevalencia de IMC alto  
en niñas/os de 6 a 19 años entre 1999-2008

La prevalencia en los varones con IMC > 97th percentil mostró una tendencia de aumento estadísticamente significativa ( $P < .004$ ).



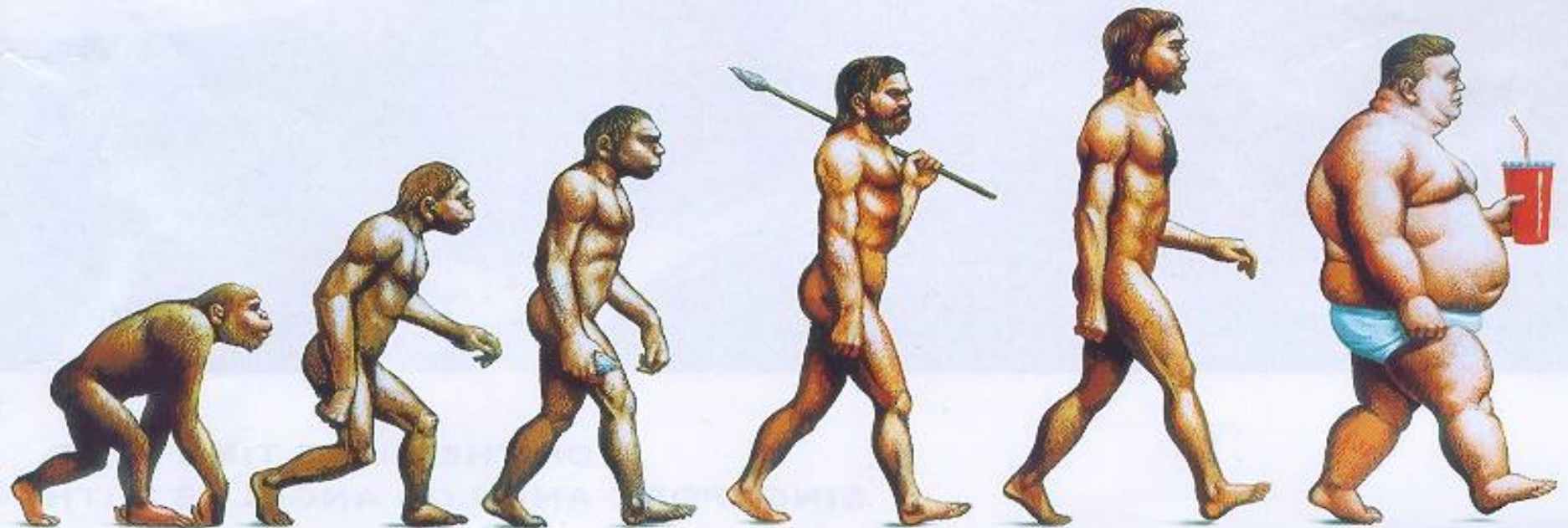
Prevalencia de IMC alto en niños/as de 2 a 5 años  
1999-2008



350 millones personas obesas (BMI  $\geq 30.0$ )  
1 billon con sobrepeso (BMI  $\geq 25$ )  
2.5 millones muertes  
son atribuidas al S y Obesidad en el mundo



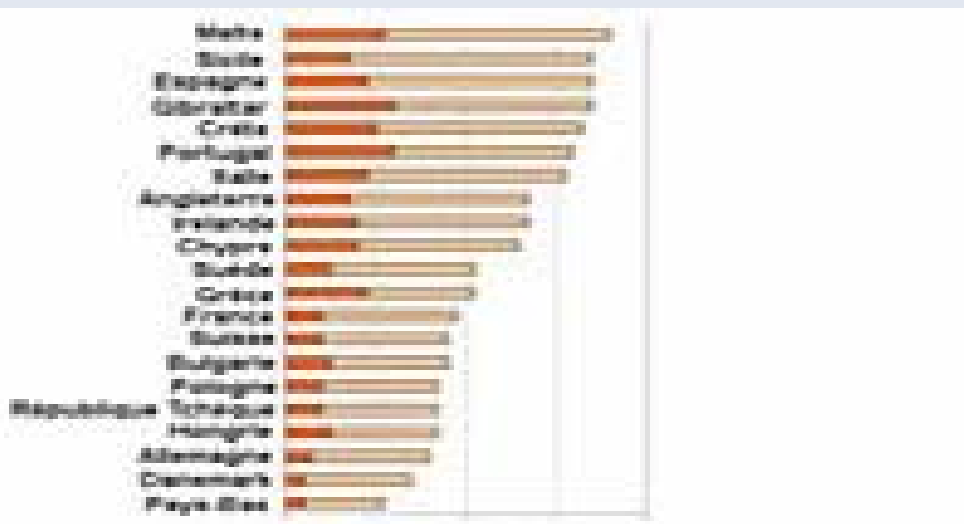
# HACIA DÓNDE VAMOS



# ***Europa 1 de cada 5 niños tiene Sobrepeso u obesidad***

La región mediterránea tiene el mayor predominio  
Algunos países tienen hasta 30%.de niños con S

(> a EEUU)



**Aumento anual:  
0,2% Década del 70  
•2% Actualmente**

***Cada año el número de jóvenes europeos con  
S u Obesos aumenta en 400.000.***

# Obesidad: Un alerta a los niños chinos

Entre 1985 y el 2000



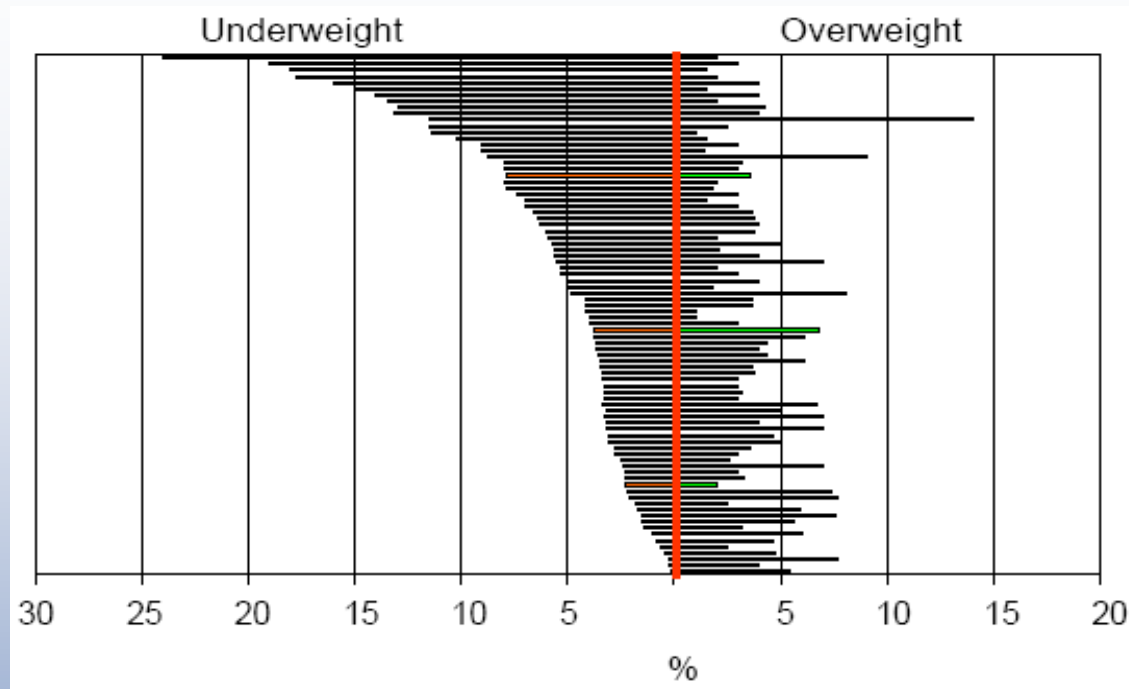
El número de niños con sobrepeso y obesidad se ha incrementado 28 veces.



Wu Yangfeng *British Medical Journal*.



## Prevalencia de niños menores de 5 años de edad con desnutrición y S por países



*En los países **No industrializados***

*los cambios nutricionales de la población hacia la obesidad*

*se dan más rápidamente que en los desarrollados,*

*pero coexisten la malnutrición en exceso con el déficit*

# ***“Hogares con doble carga”***

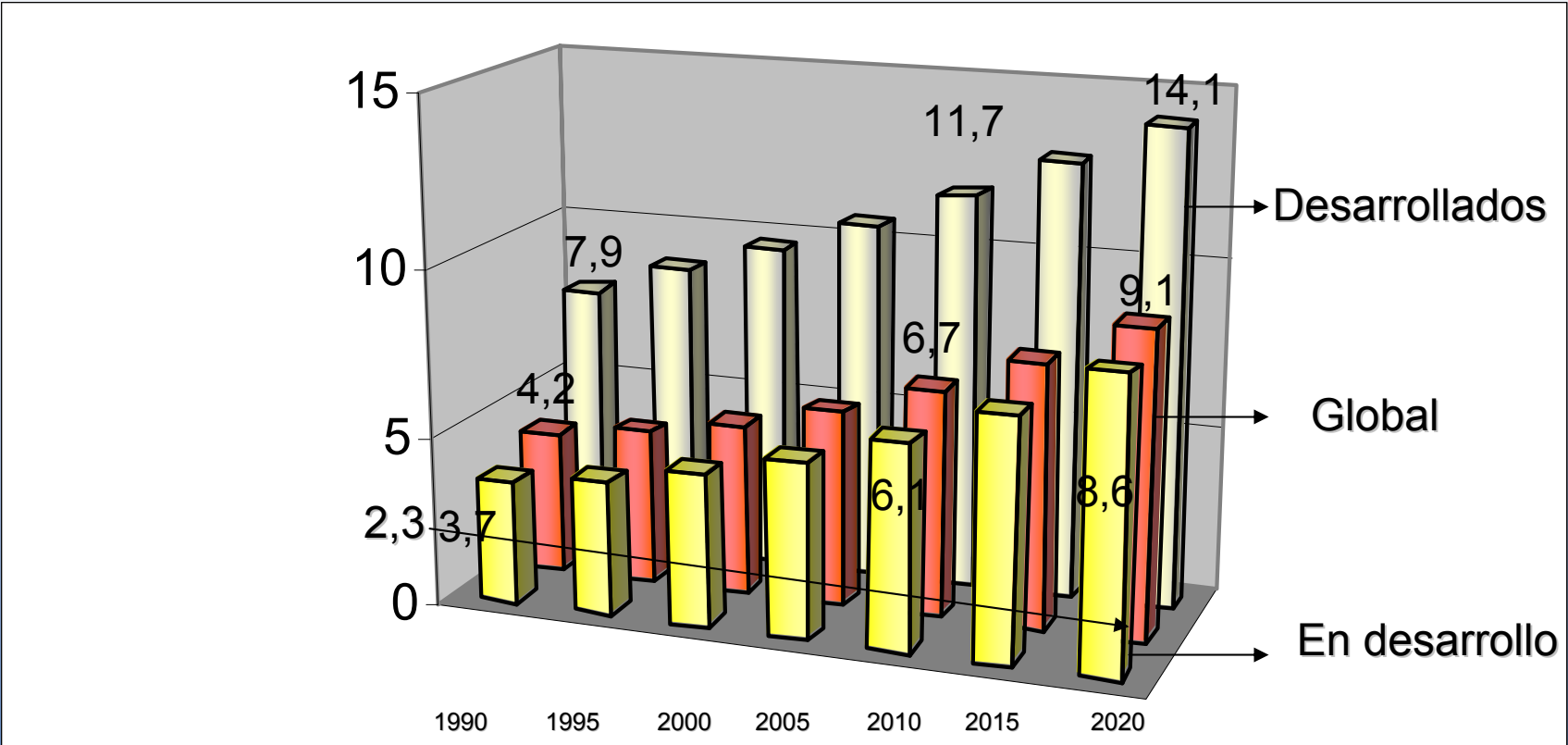
(dual burden household)

La presencia de ambos polos nutricionales en un mismo hogar malnutrición por exceso y por déficit

***Entre el 22 y el 66% de los hogares con 1 persona desnutrida también tienen 1 con S.***

Brasil, China, Indonesia, Rusia, Vietnam, Estados Unidos, la República Kyrgyz

# Prevalencia de obesidad en niños de 0 a 5 años de edad



# Millones de niños Obesos de 0 a 5 años de edad

## Años 1990 a 2020

Developing countries							
( <i>n</i> )	20.7	22.4	25.0	28.9	34.7	42.0	49.9
(95% CI)	14.5, 26.9	16.8, 28.0	19.9, 30.1	23.8, 34.1	28.5, 41.0	33.5, 50.5	38.4, 61.4
Developed countries <sup>3</sup>							
( <i>n</i> )	6.2	6.3	6.4	7.1	8.1	8.8	9.5
(95% CI)	4.7, 8.1	4.7, 8.2	4.8, 8.4	5.4, 9.3	6.1, 10.6	6.7, 11.5	7.2, 12.4
Global							
( <i>n</i> )	26.9	28.7	31.4	36.1	42.8	50.8	59.4
(95% CI)	20.4, 33.3	22.9, 34.5	26.0, 36.7	30.6, 41.5	36.2, 49.4	42.0, 59.6	47.7, 71.1
	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>

# OVERWEIGHT AND OBESITY IN PRESCHOOL-AGE CHILDREN

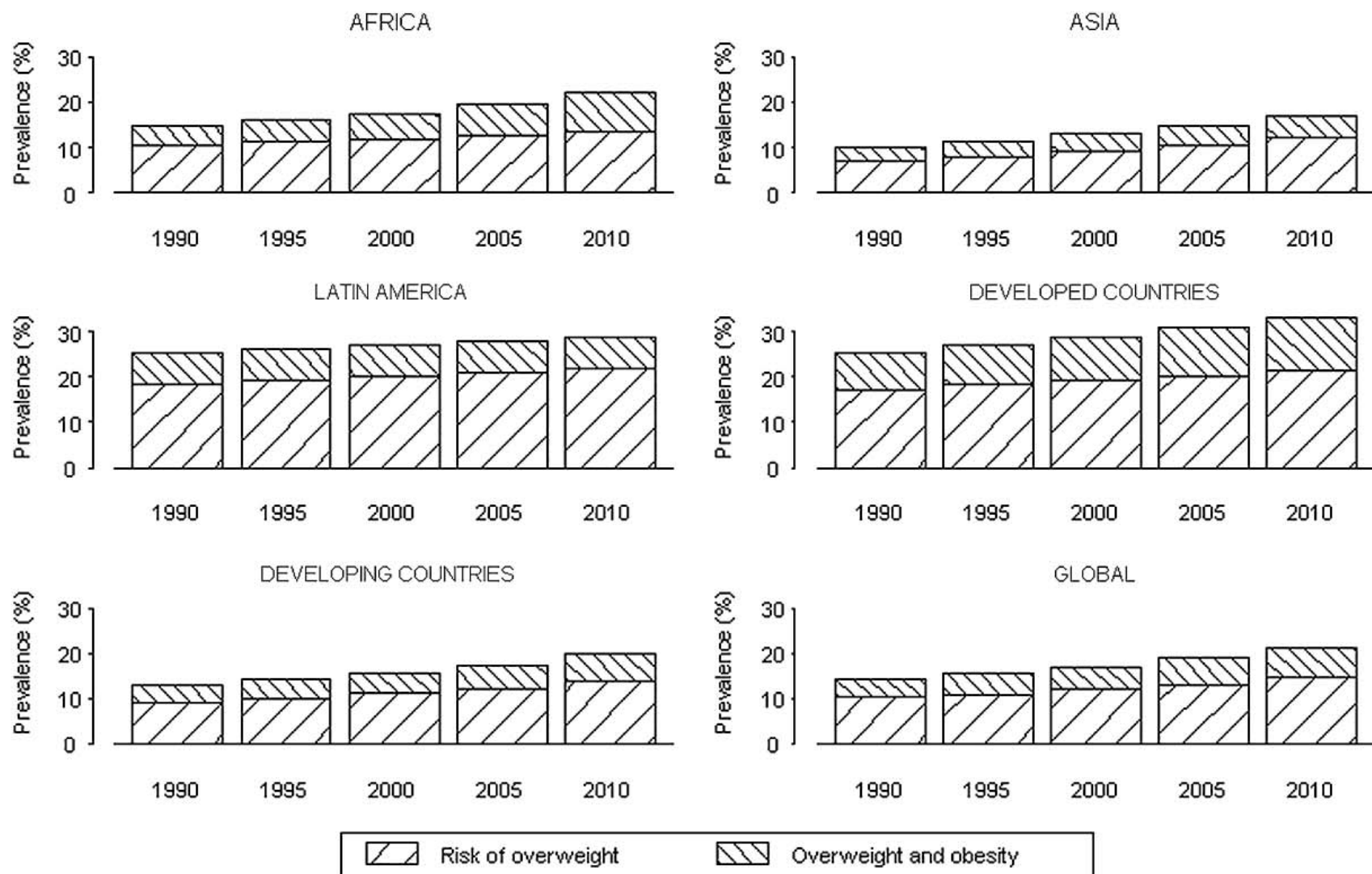
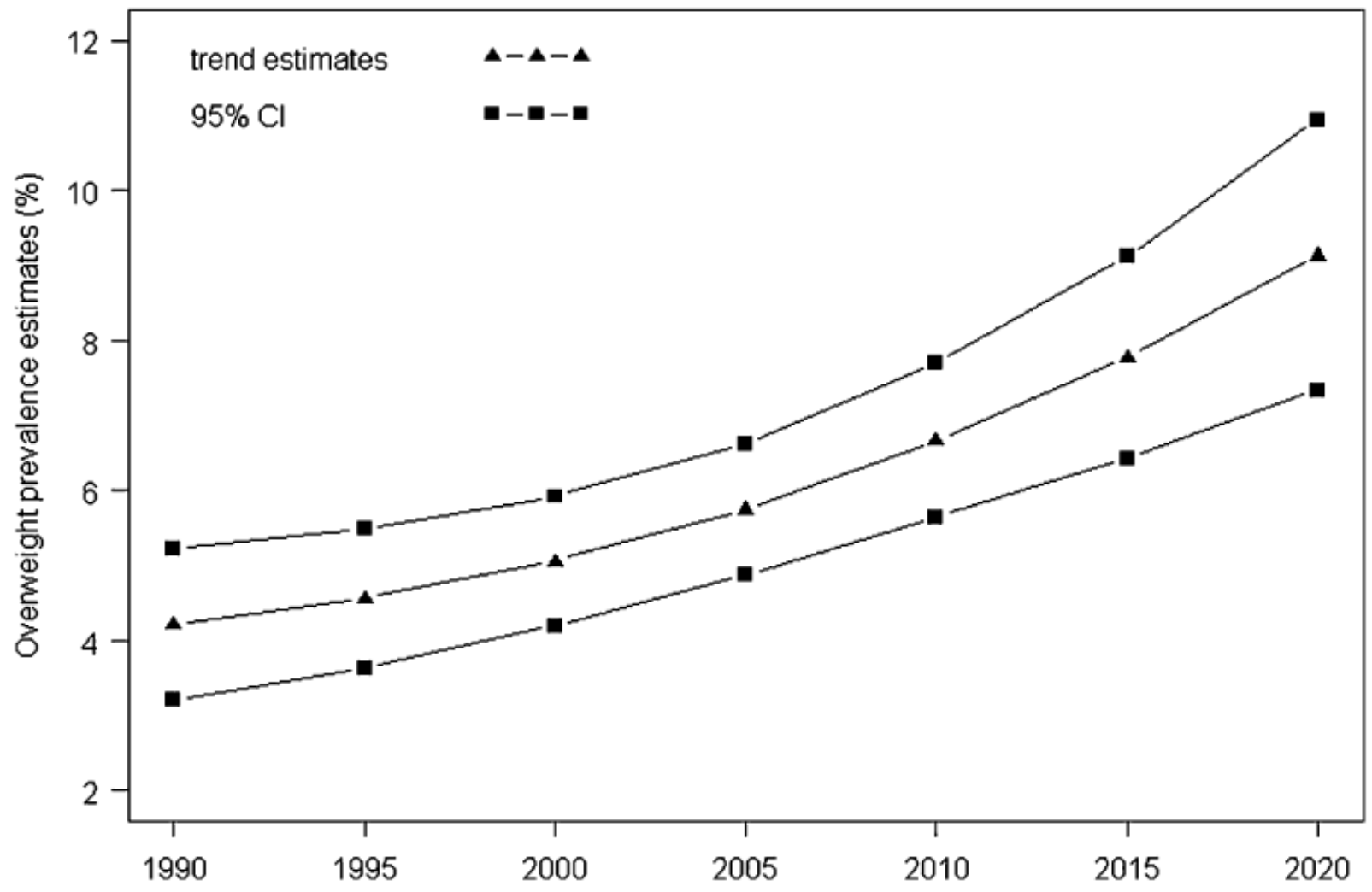


FIGURE 2. Aggregated prevalence, by United Nations region, of children at risk of overweight or classified as overweight or obese.





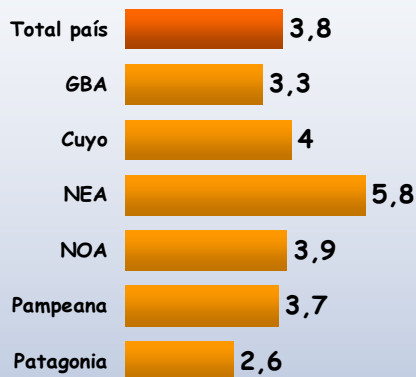
En África en 2010

la prevalencia estimada es de 8,5% (95% CI: 7,4-9,5)

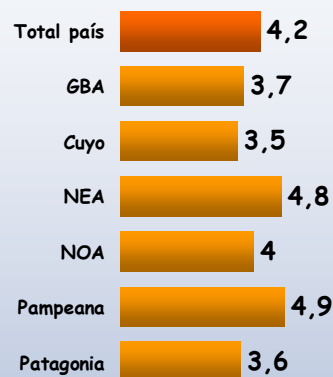
para 2020 se estima en 12,7% (95% CI: 10,6-14,8)

# Prevalencia de estado nutricional antropométrico según regiones (expresado en porcentaje)

## Desnutrición global \*

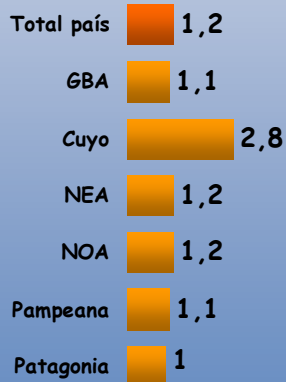


## Acortamiento\*

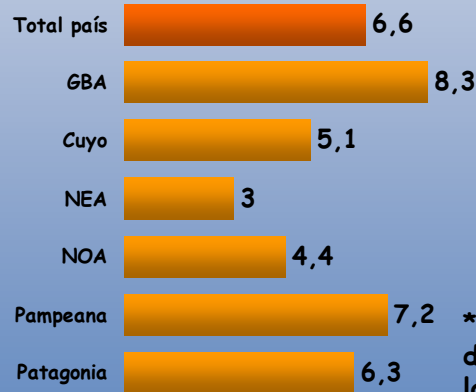


Región	Población (miles)
Argentina	3.159
GBA	1.100
Cuyo	207
NEA	319
NOA	404
Pampeana	946
Patagonia	183

## Emaciación\*\*



## Obesidad \*\*\*



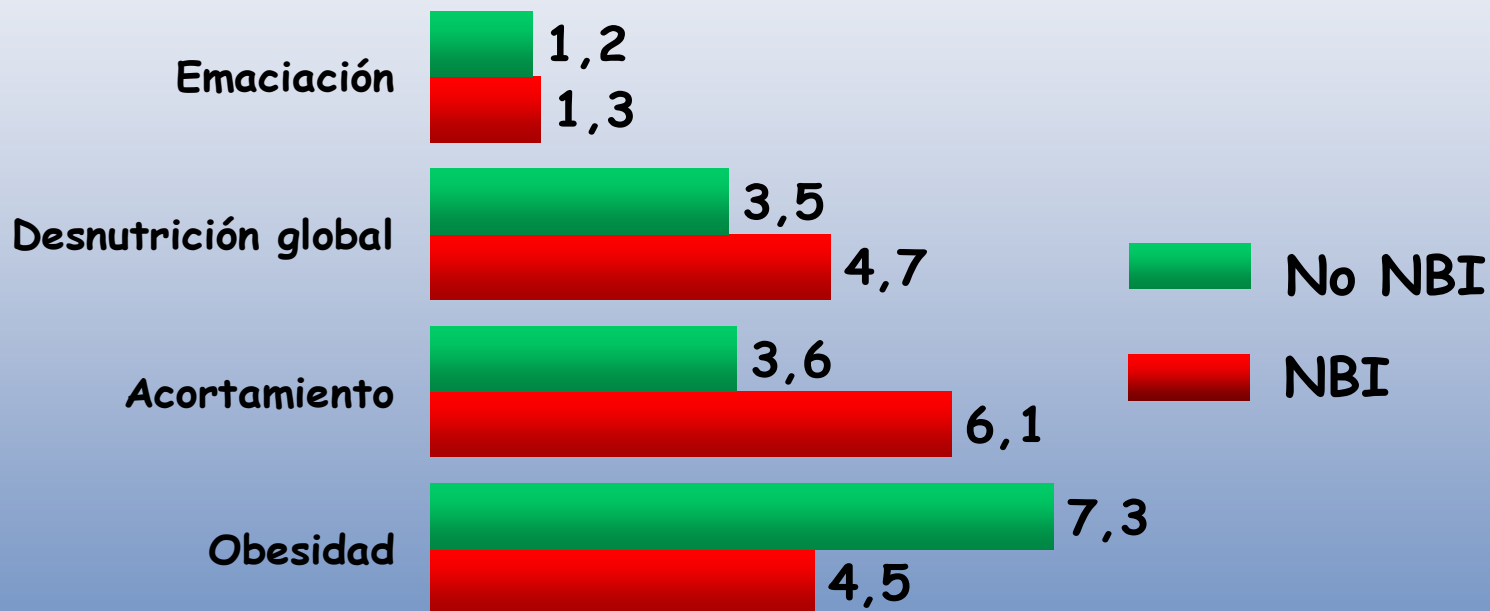
\* Proporción de casos inferiores a -2 DE de la curva de peso/ y de talla para edad de la Sociedad Argentina de Pediatría

\*\* Proporción de casos inferiores al 80% de la curva de peso//talla de la Sociedad Argentina de Pediatría

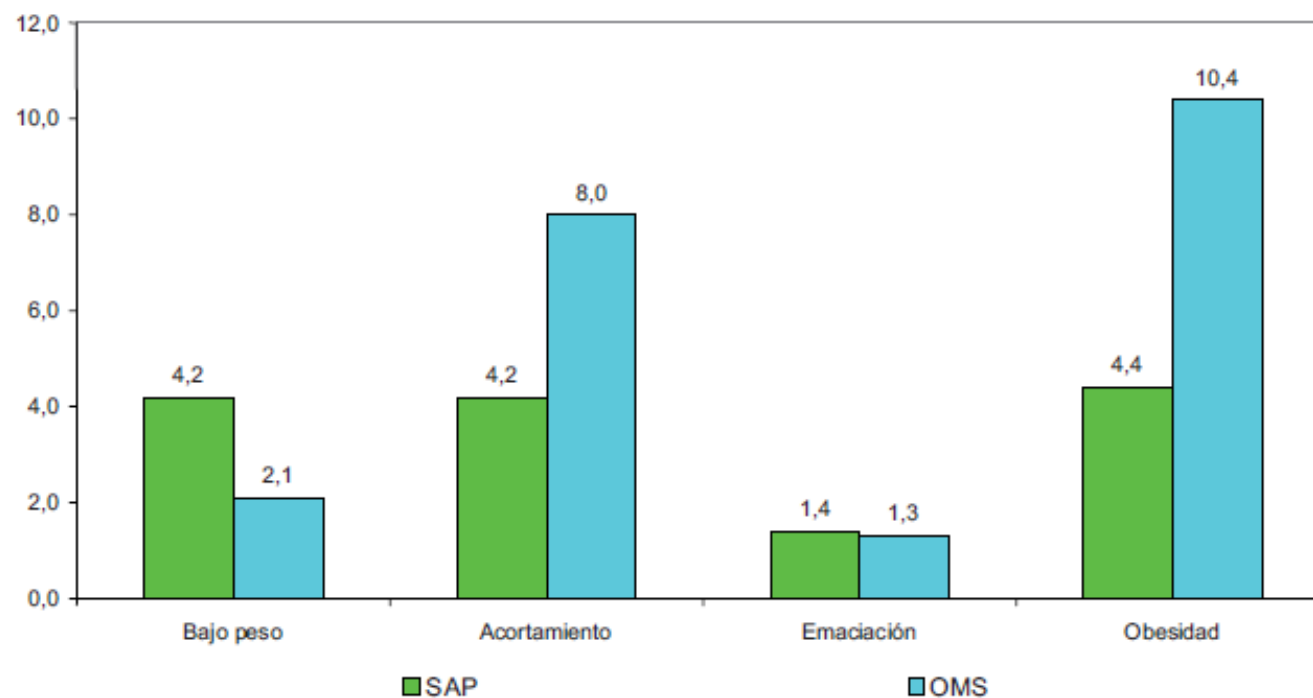
\*\*\* Proporción de casos superiores a 120% de la curva de peso//talla de la Sociedad Argentina de Pediatría

# *Prevalencia de estado nutricional antropométrico según NBI (expresado en porcentaje)*

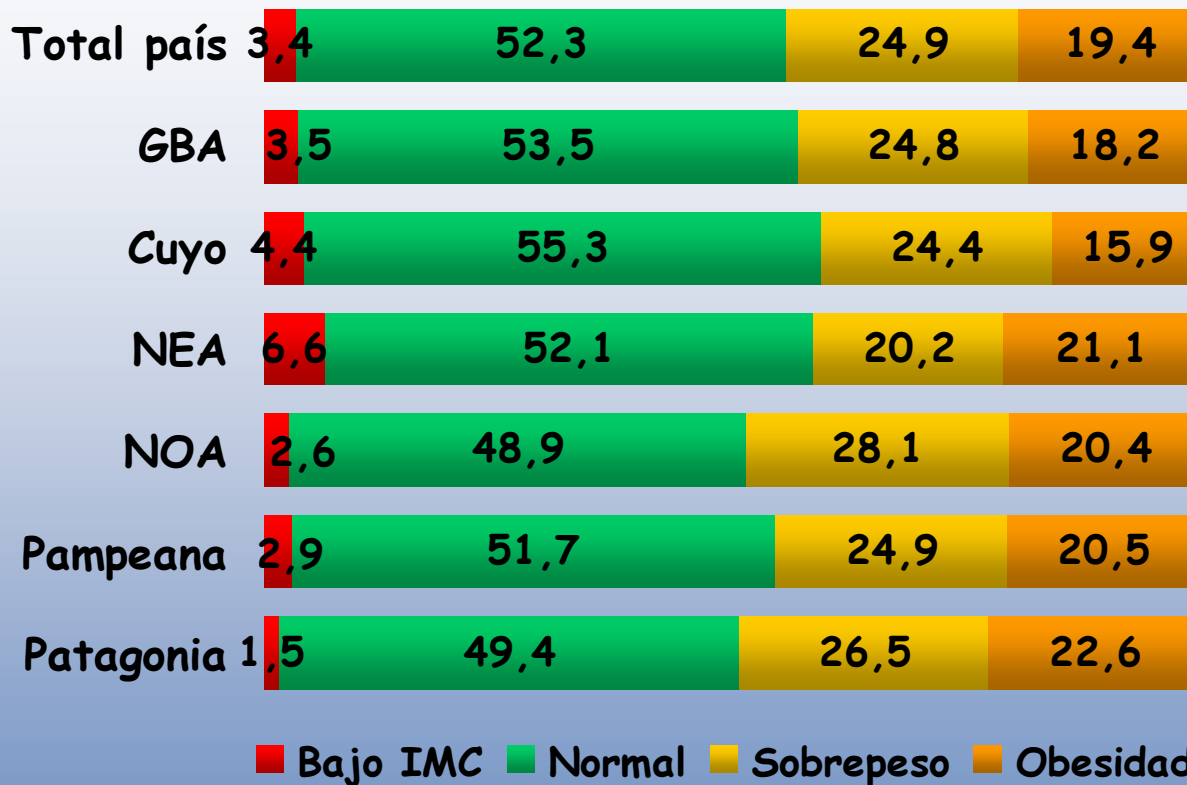
*Niñas/os de 6 meses a 5 años*



**Prevalencias de diagnósticos antropométricos nutricionales de niños y niñas del país según curvas de referencia.**



# Prevalencia de estado nutricional antropométrico de mujeres de 19-49 años según regiones (expresado en porcentaje)



Región	Población
Argentina	6.755.530
GBA	2.690.497
Cuyo	452.670
NEA	485.910
NOA	674.780
Pampeana	2.093.132
Patagonia	358.541

\* Proporción de casos inferiores a 18.5 del Índice de Masa Corporal (IMC).

\*\* Proporción de casos entre 25 y 29.9 del Índice de Masa Corporal (IMC).

\*\*\* Proporción de casos iguales o superiores a 30 del Índice de Masa Corporal (IMC).

Provincia de Bs. As.  
Dirección General de Escuelas y Cultura  
Ministerio de Salud  
Evaluación Nutricional de lo escolares de la totalidad de los  
distritos.

2005 - 2008  
Escuelas Públicas y Privadas  
en todos los niveles educativos

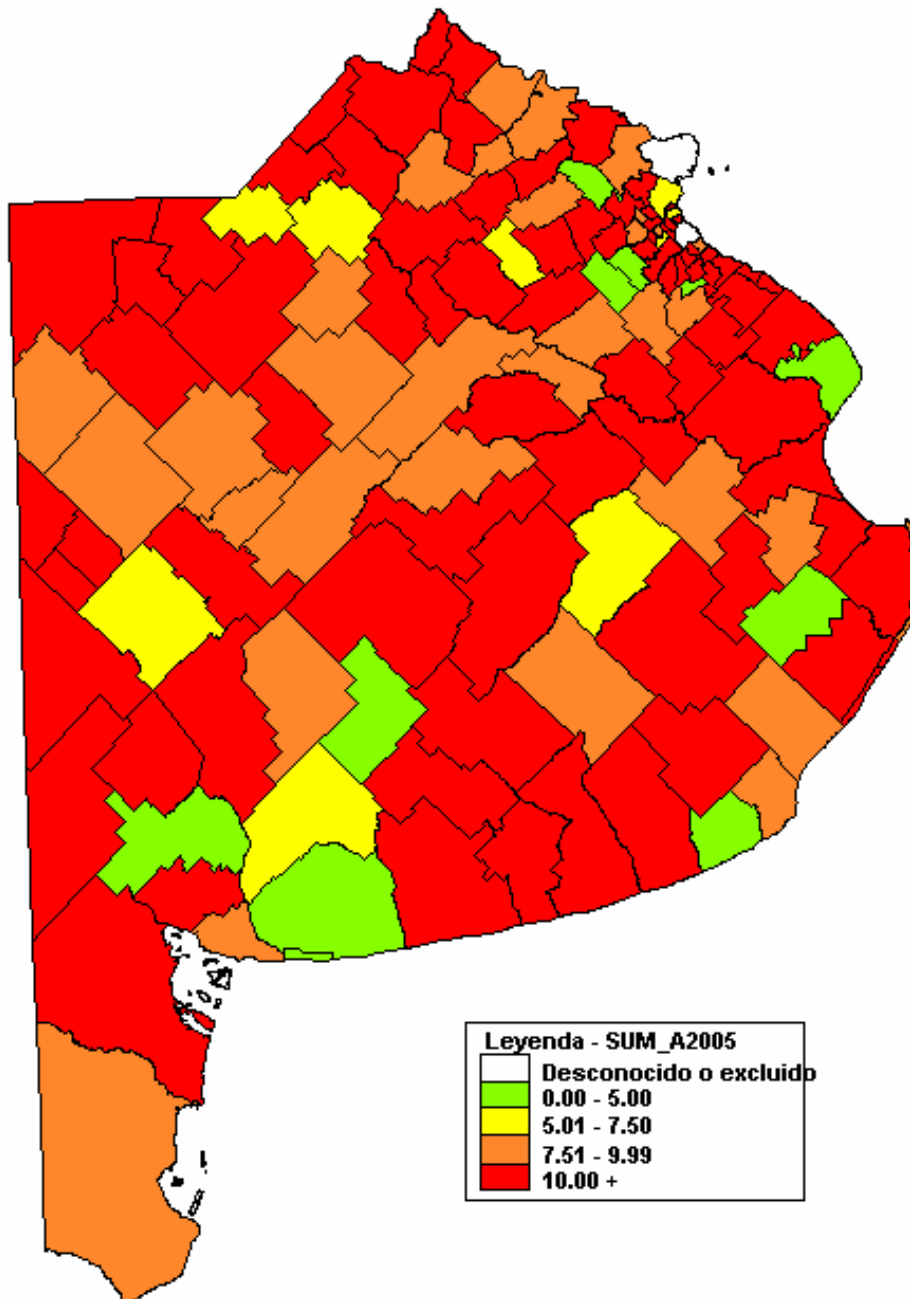
Número de alumnos medidos

Año 2005 = 58966  
Año 2006 = 123674  
Año 2007 = 194421  
Año 2008 = 194968

Total de mediciones 572.029

C. Zabala  
M. Jaquenod

## Obesidad Escolares 2005

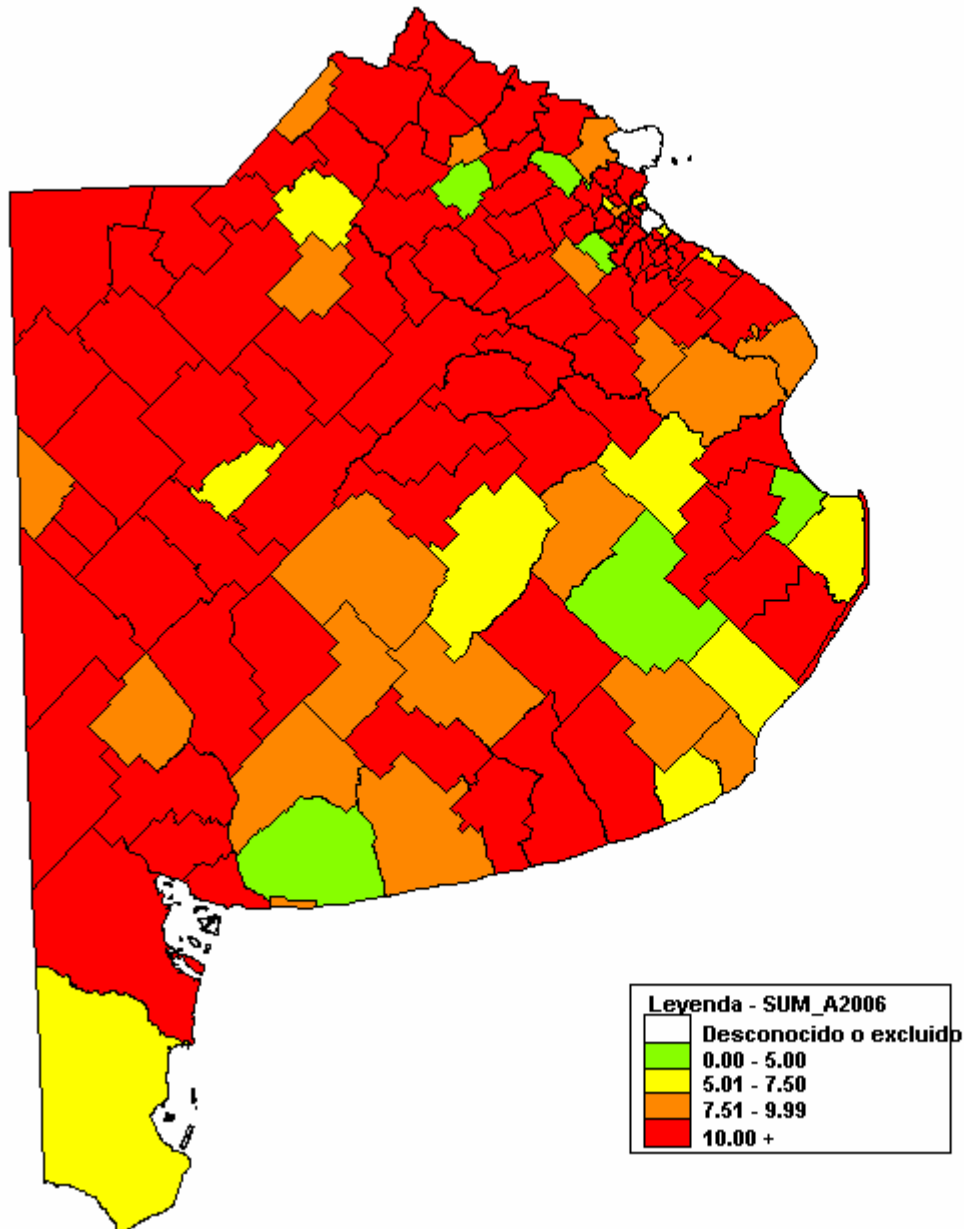


**Leyenda - SUM\_A2005**  
Desconocido o excluido  
0.00 - 5.00  
5.01 - 7.50  
7.51 - 9.99  
10.00 +

C. Zabala  
M. Jaquenod

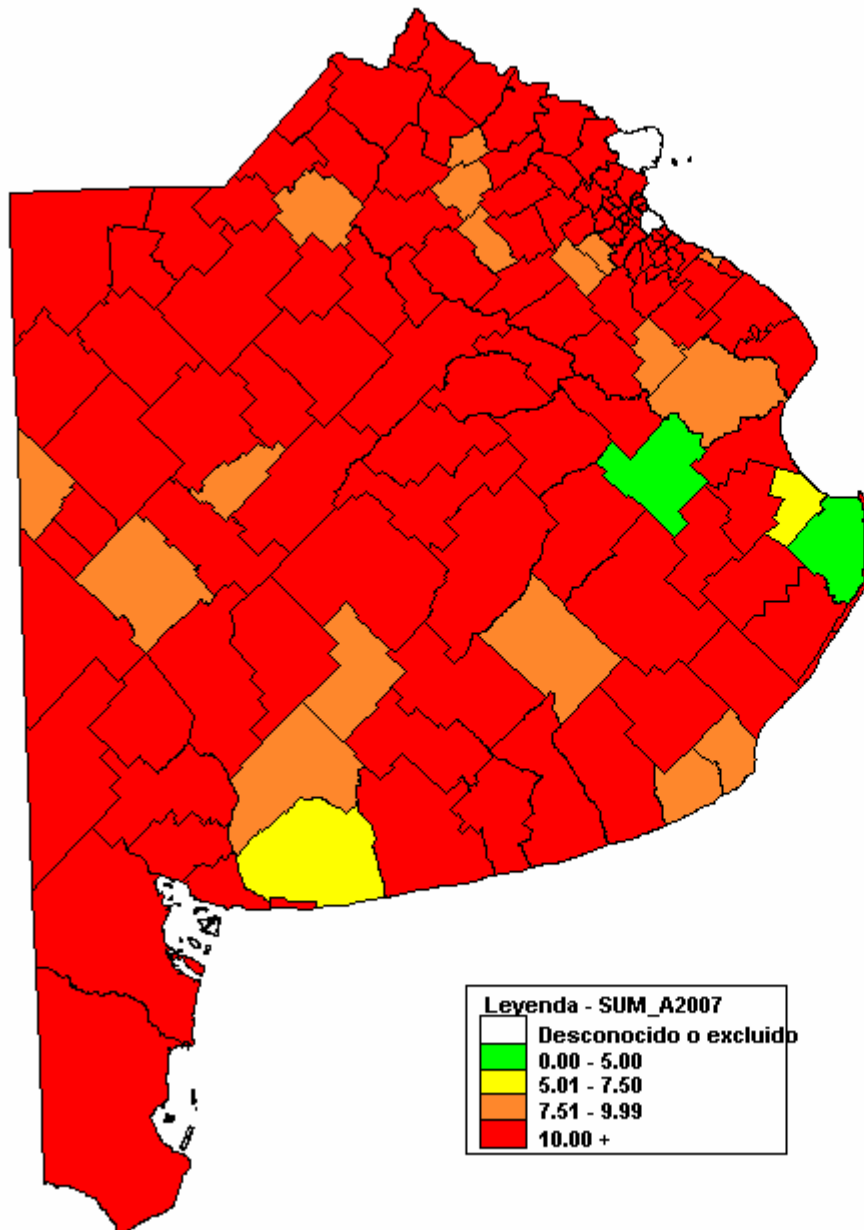


## Obesidad Escolares 2006



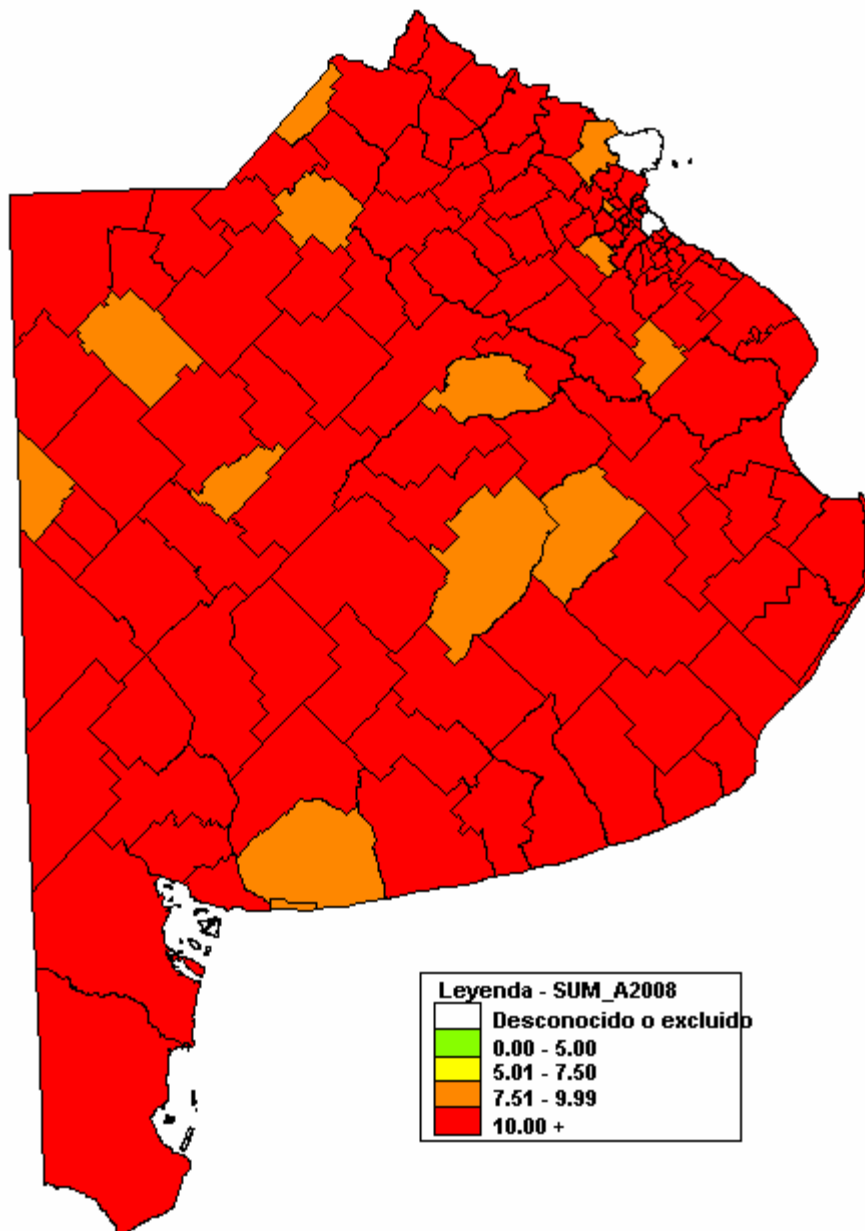
C. Zabala  
M. Jaquenod

## Obesidad Escolares 2007



C. Zabala  
M. Jaquenod

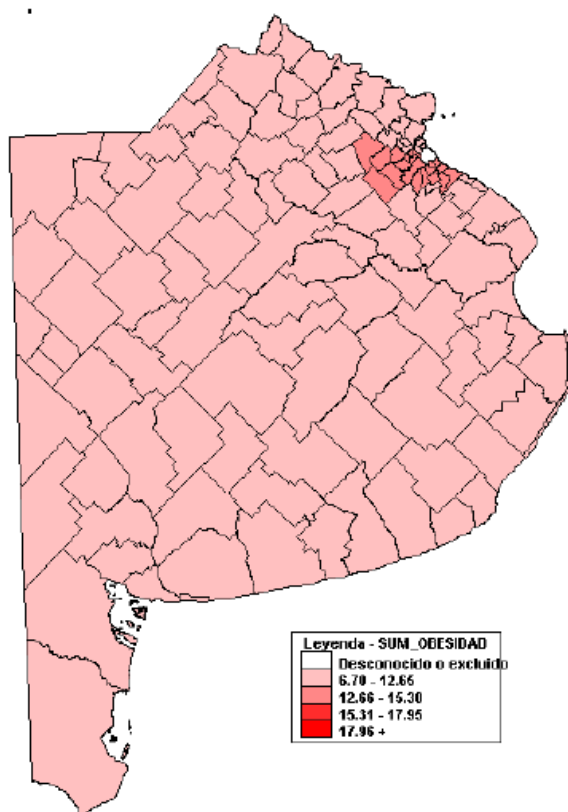
## Obesidad Escolares 2008



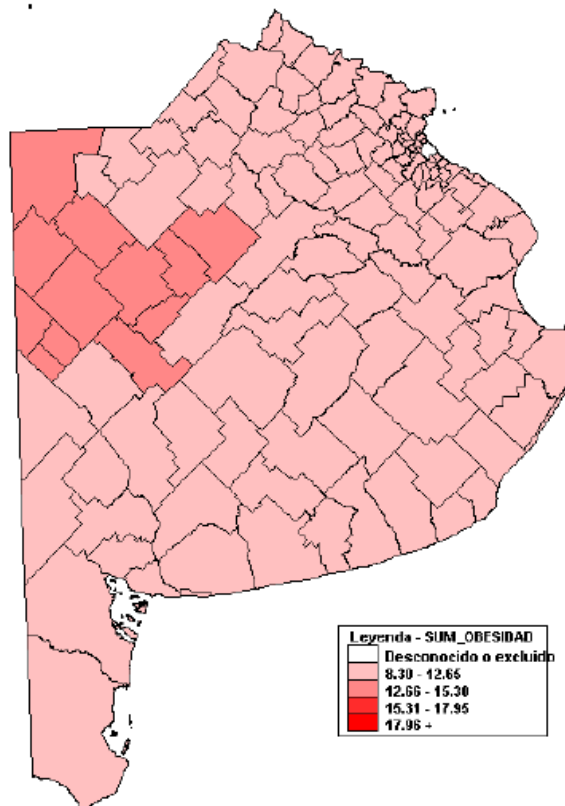
C. Zabala  
M. Jaquenod

# Resultados

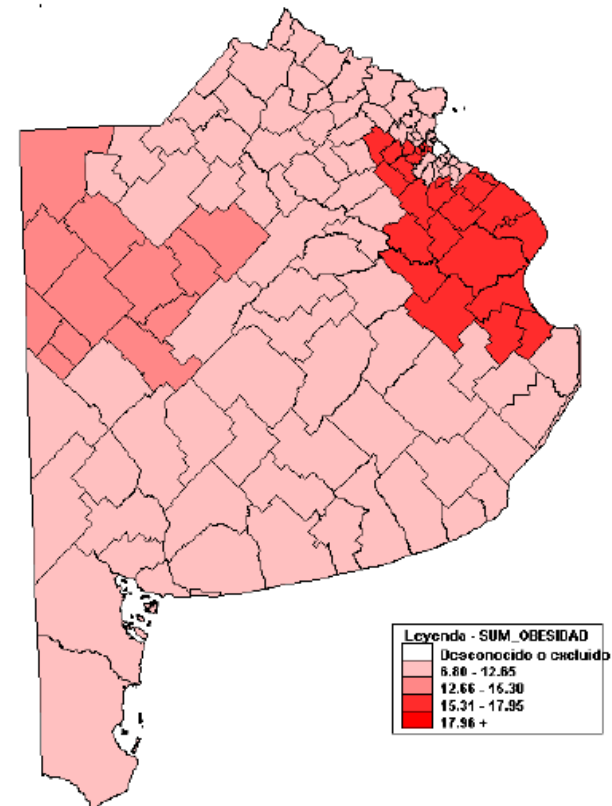
## Obesidad por Región Sanitaria



**Año 1995**



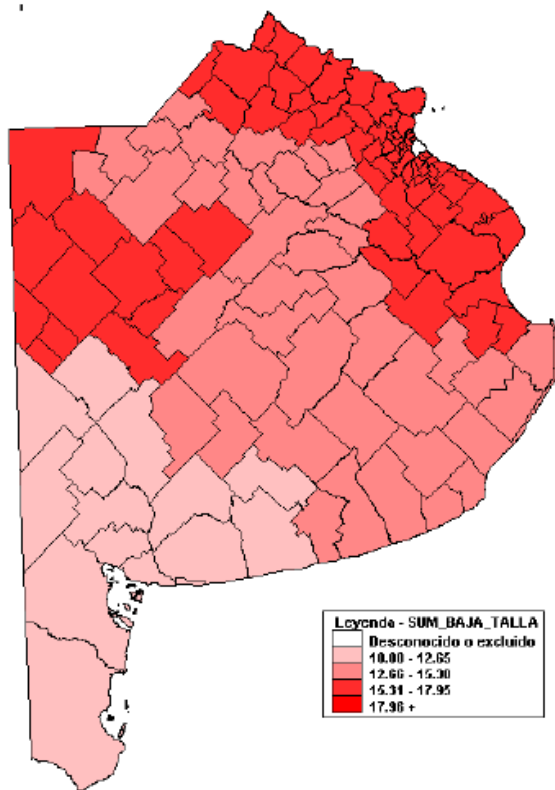
**Año 2002**



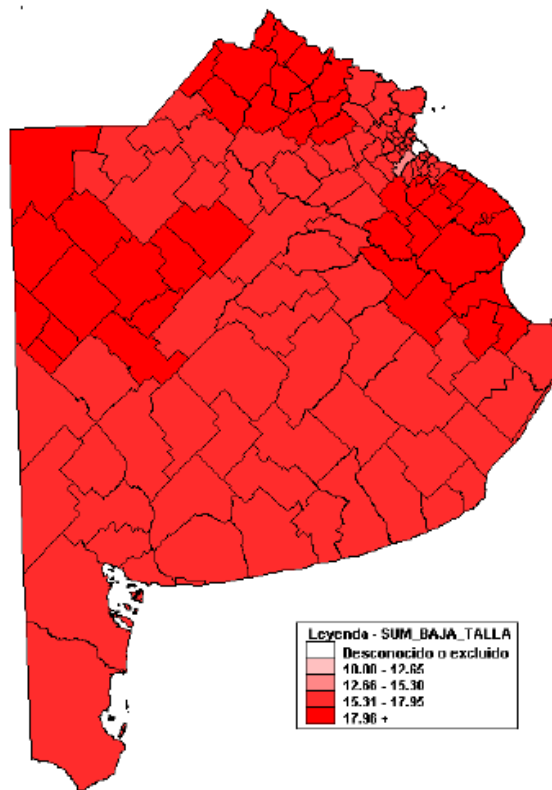
**Año 2009**

# Resultados

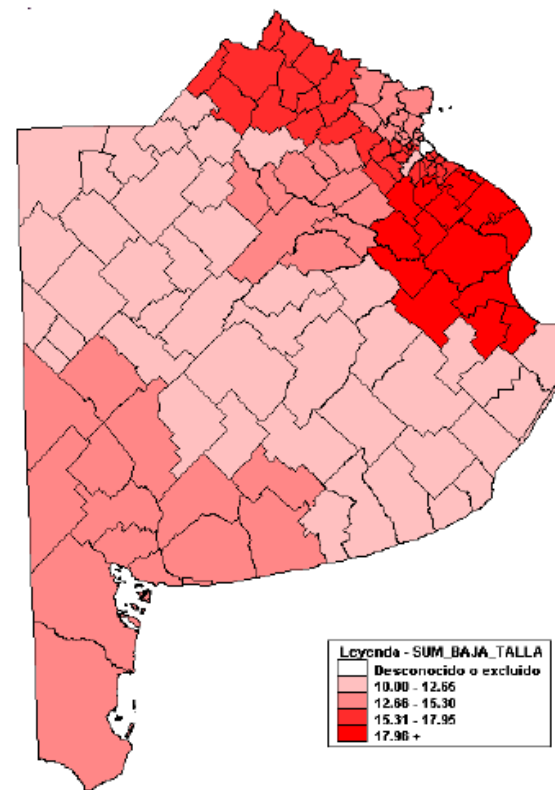
## Acortamiento por Región Sanitaria



**Año 1995**



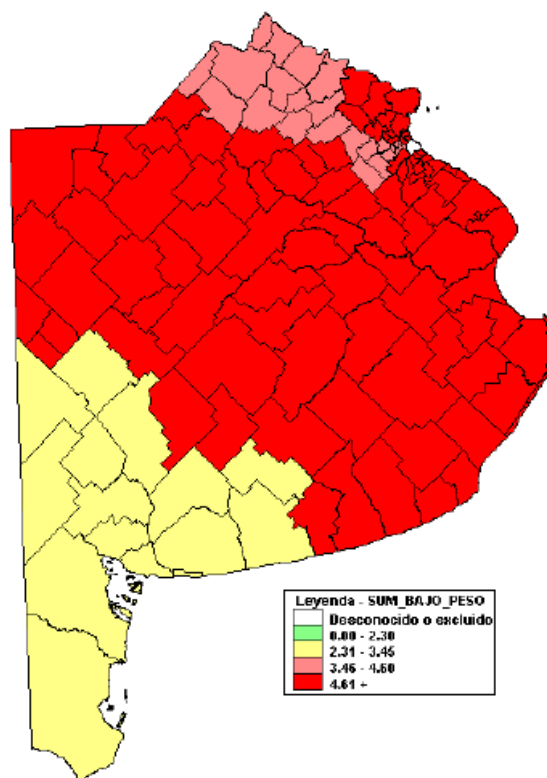
**Año 2002**



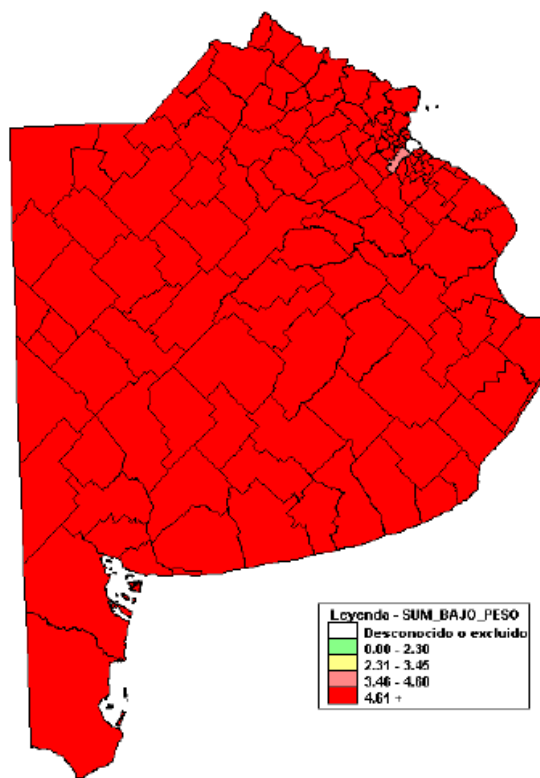
**Año 2009**

## Resultados

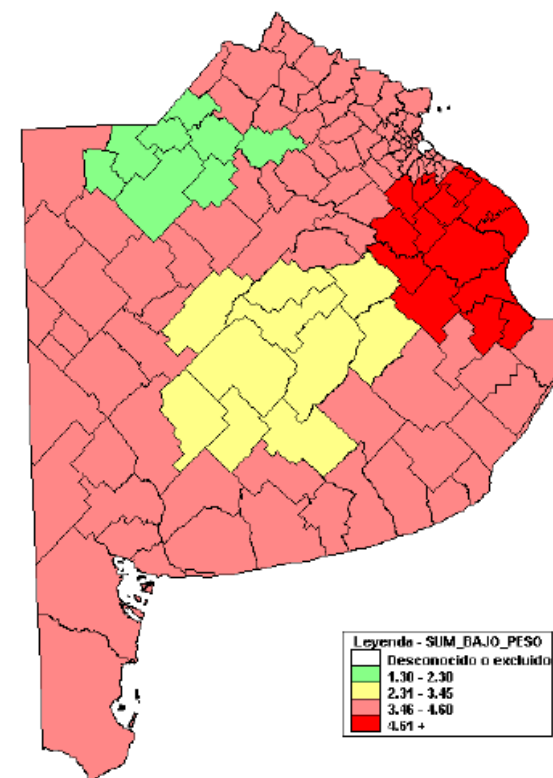
### Bajo Peso por Región Sanitaria



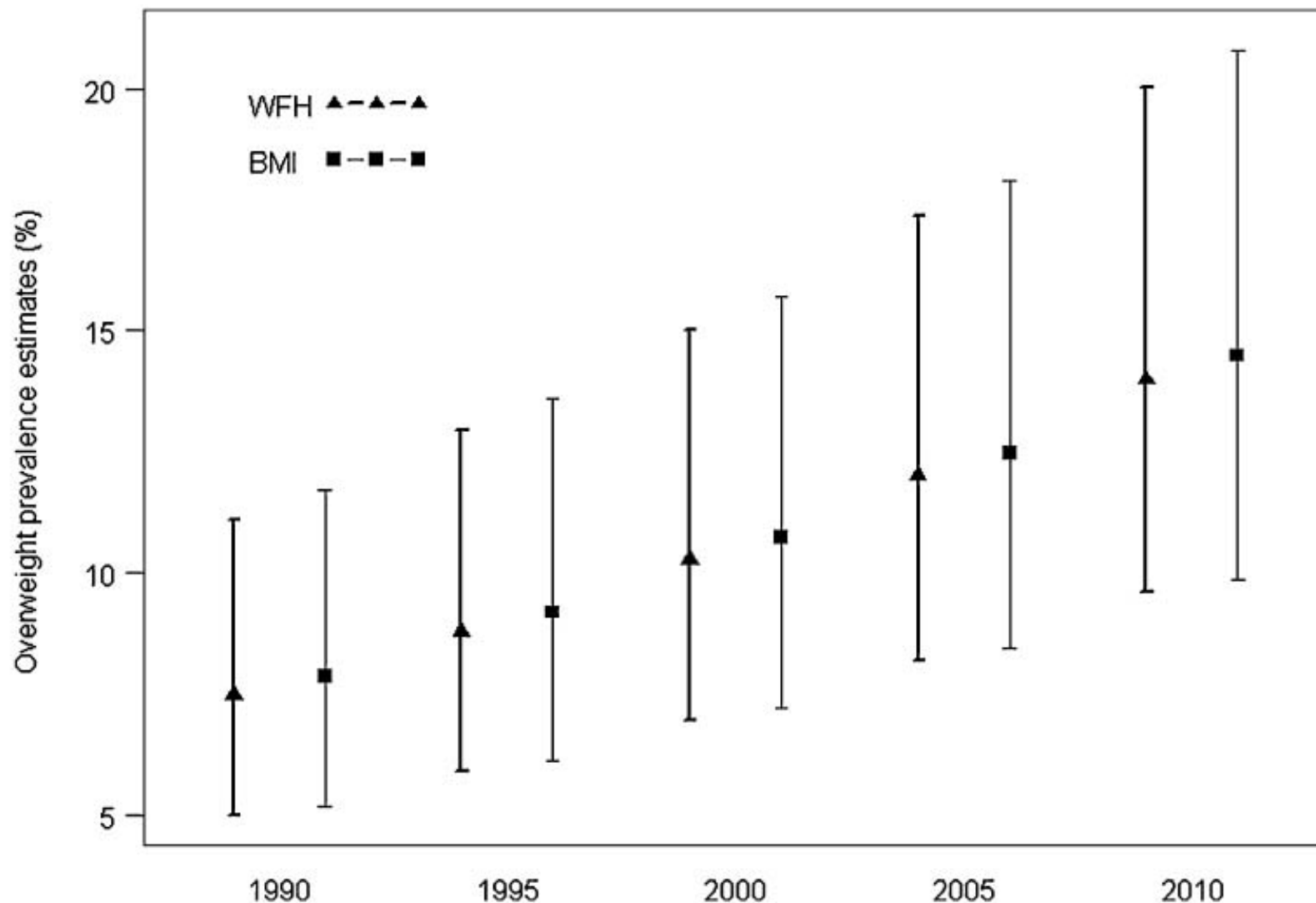
**Año 1995**



**Año 2002**



**Año 2009**



**FIGURE 3.** Comparison of overweight prevalence estimates in developed countries on the basis of weight-for-height (WFH)  $>2$  SDs and BMI-for-age  $>2$  SDs.

**Weight-for-stature compared with body mass index-for-age growth charts for the United States from the Centers for Disease Control and Prevention  
Prevalence of BMI-for-age and weight-for-stature  $\leq$ 10th percentile or  $\geq$ 85th percentile by age and sex<sup>1</sup>**  
%

2                                  3                                  4                                  5

Boys

**$\leq$ 10th percentile**

BMI-for-age	5.5	12.6	8.3	6.7
Weight-for-stature	9.4	10.1	9.2	9.3
<b>Difference</b>	<b>-3.9</b>	<b>2.5</b>	<b>-0.9</b>	<b>-2.6</b>

**$\geq$ 85th percentile**

BMI-for-age	15.6	14.8	18.2	17.7
Weight-for-stature	14.1	13.8	12.8	16.2
<b>Difference</b>	<b>1.5</b>	<b>1.0</b>	<b>5.4</b>	<b>1.5</b>

Girls

**$\leq$ 10th percentile**

BMI-for-age	5.1	9.4	7.4	6.6
Weight-for-stature	10.1	11.9	8.9	11.1
<b>Difference</b>	<b>-5.0</b>	<b>-2.5</b>	<b>-1.5</b>	<b>-4.5</b>

**$\geq$ 85th percentile**

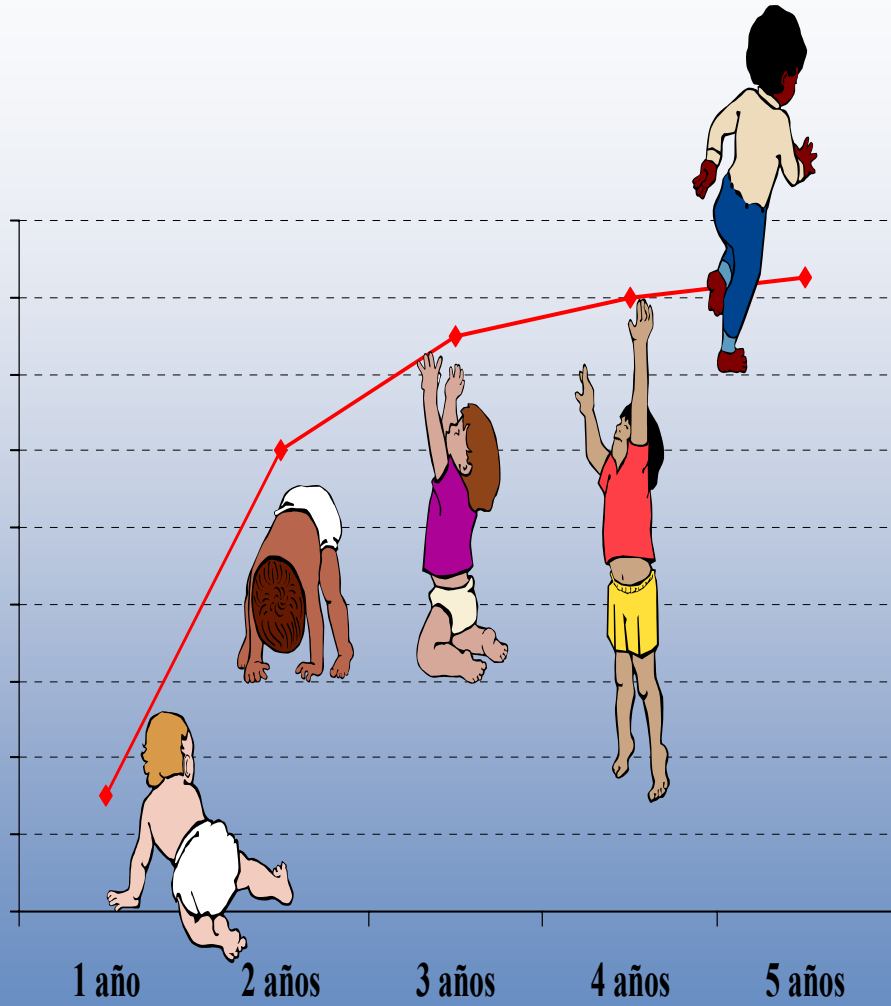
BMI-for-age	16.3	17.2	21.4	21.6
Weight-for-stature	15.0	13.5	15.4	20.7
<b>Difference</b>	<b>1.3</b>	<b>3.7</b>	<b>6.0</b>	<b>0.9</b>

<sup>1</sup>Data were from the third National Health and Nutrition Examination Survey, 1988–1994.



**IMC**

# Nuevo patrón internacional de crecimiento infantil



- 2006

[www.who.int/childgrowth](http://www.who.int/childgrowth)



**Se generó en el siglo XX**



¿Podremos en el siglo XXI disminuirla?