

***Childhood Obesity
in North Carolina:
Economic Cost
and Implications***

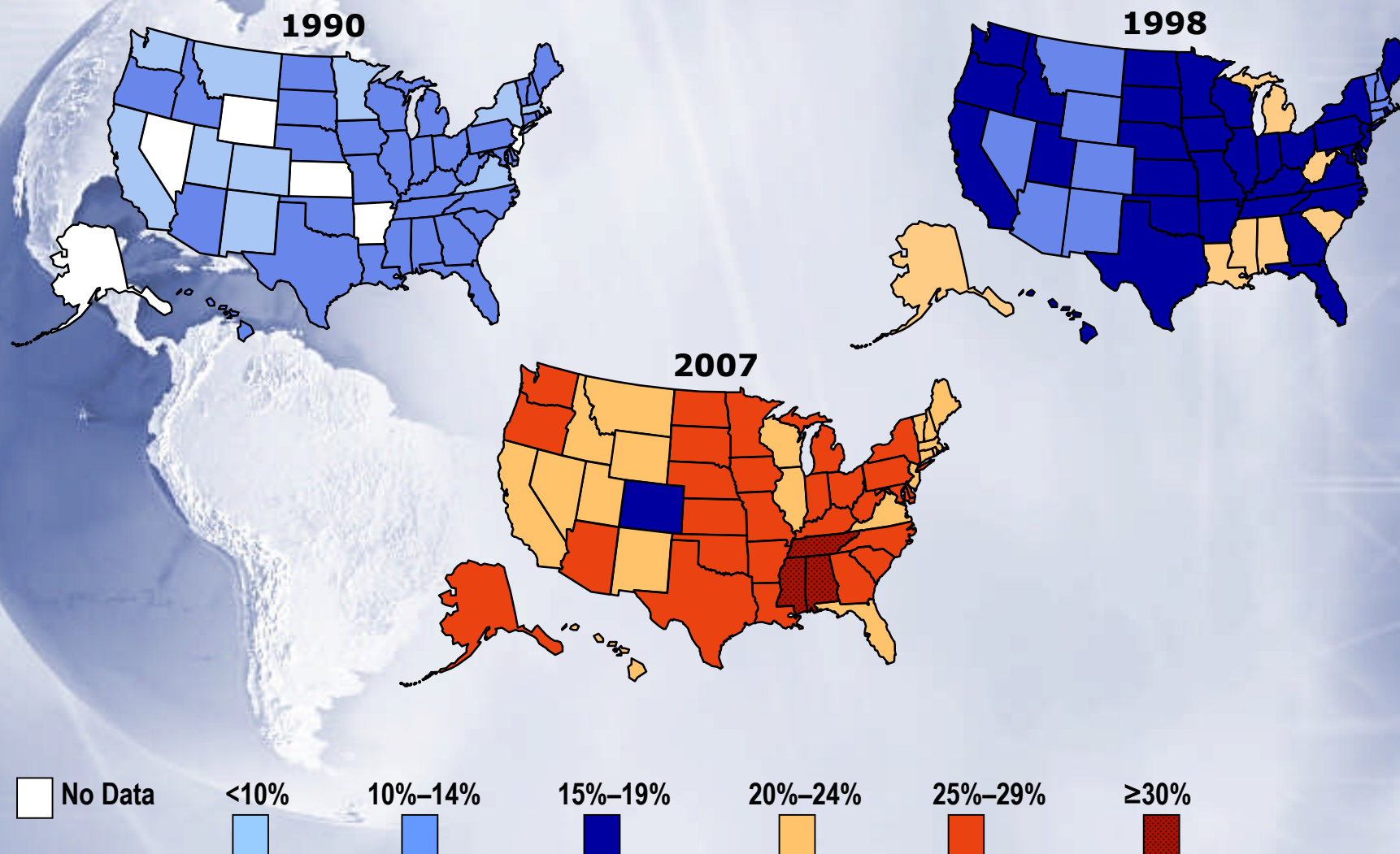
***Legislative Task Force
on Childhood Obesity
Raleigh, NC
January 26, 2010***

David Chenoweth, Ph.D., FAWHP



Obesity Trends Among U.S. Adults

1990 - 2007

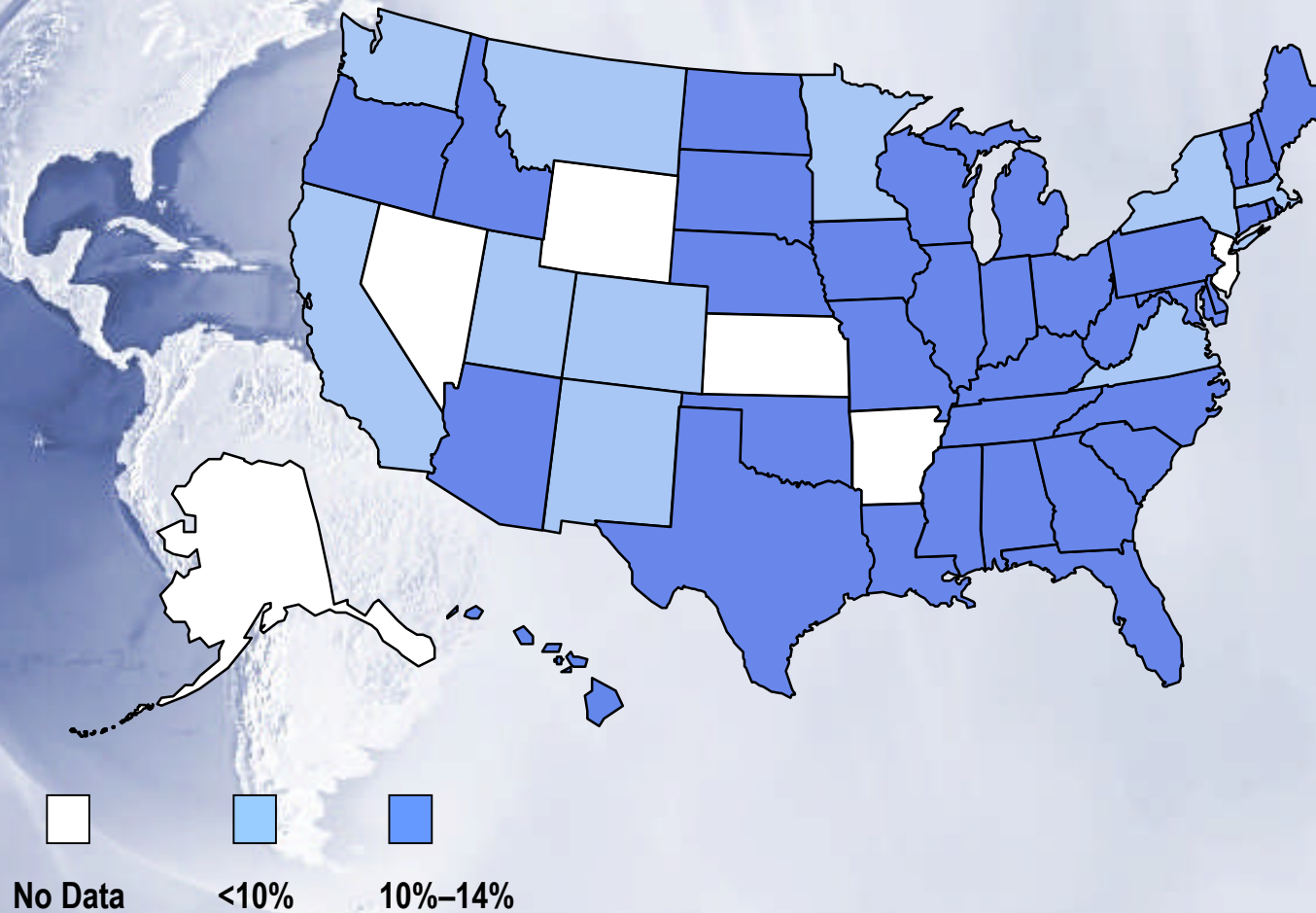


Source: Behavioral Risk Factor Surveillance System. CDC, Atlanta, GA.

Obesity Trends Among U.S. Adults

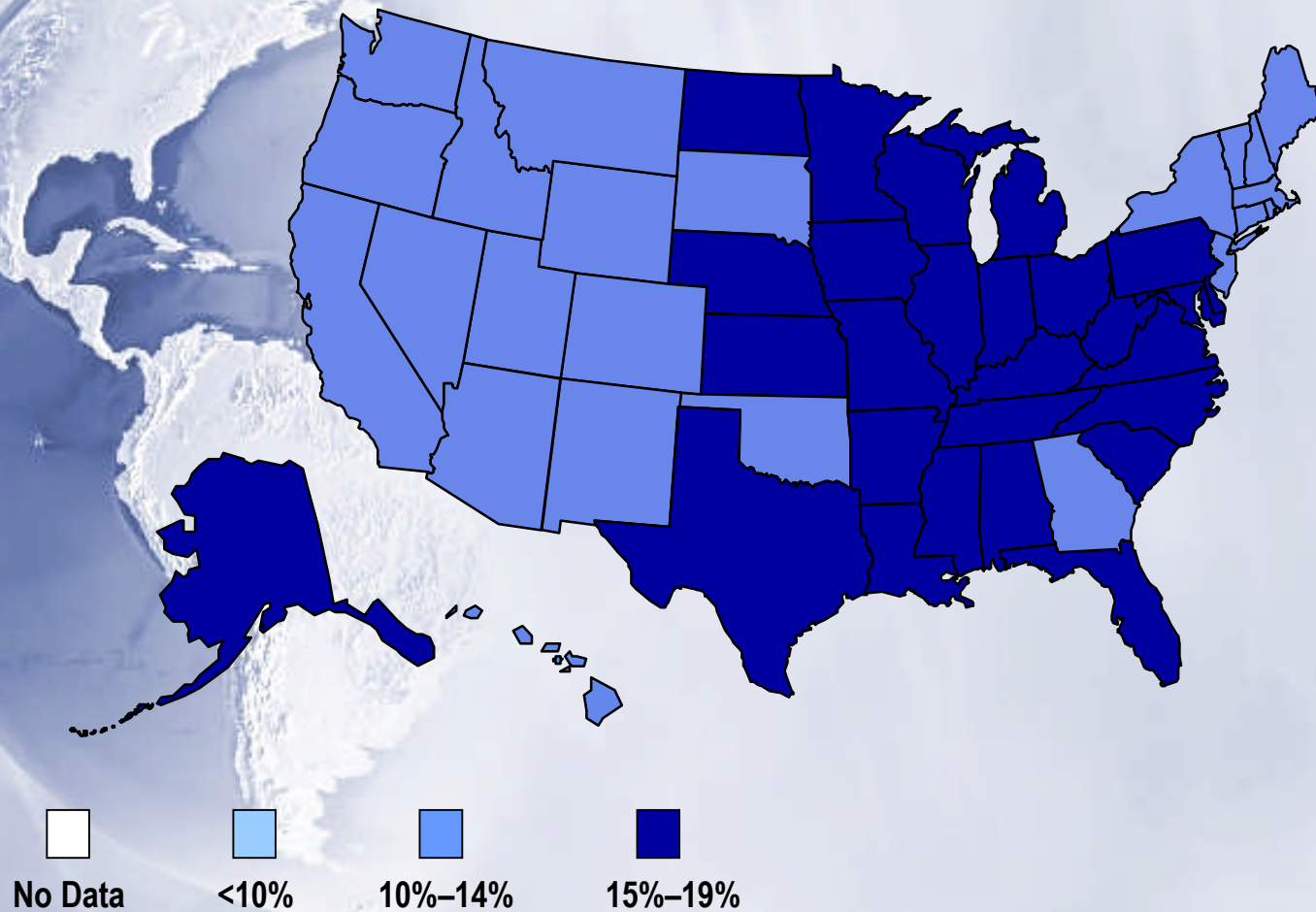
1990

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



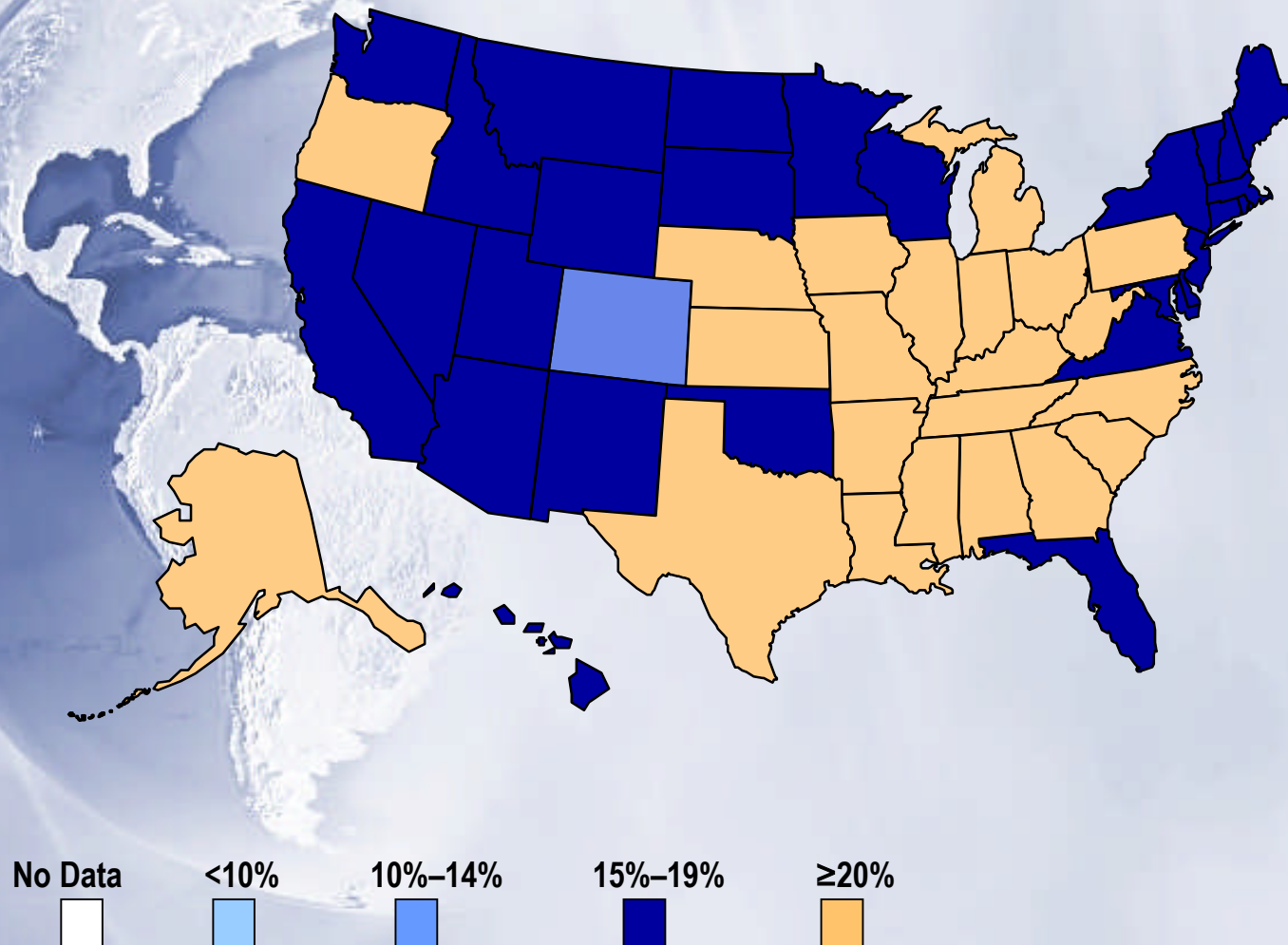
Obesity Trends Among U.S. Adults

1995



Obesity Trends Among U.S. Adults

2000



Obesity Trends Among U.S. Adults

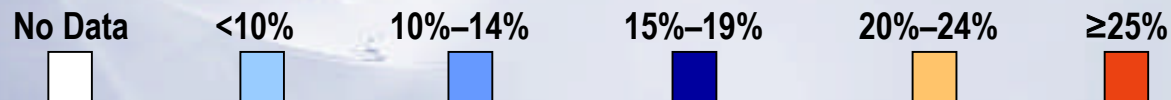
2003

A choropleth map of the United States illustrating the prevalence of obesity among adults in 2003. The map uses six color-coded categories to represent different ranges of obesity rates across various states. A legend at the bottom provides the key for these colors.

No Data	<10%	10%–14%	15%–19%	20%–24%	≥25%
(White)	(Light Blue)	(Medium Blue)	(Dark Blue)	(Orange)	(Red)

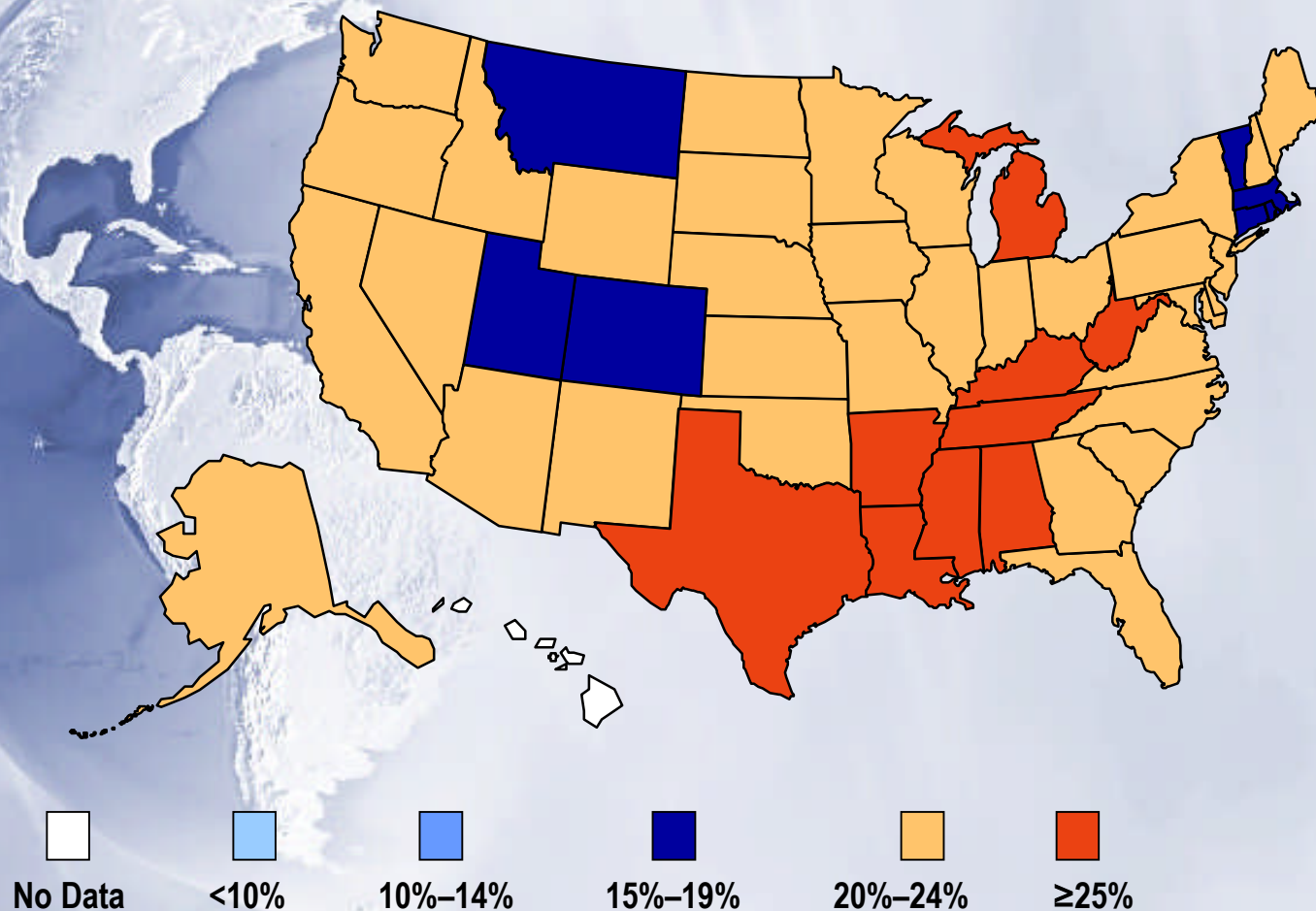
The following table summarizes the distribution of obesity prevalence by state in 2003:

Prevalence Category	States
<10%	None
10%–14%	None
15%–19%	Montana, Wyoming, Colorado, New Mexico, Florida, Massachusetts, Vermont, New Hampshire, Maine
20%–24%	Alaska, Washington, Oregon, California, Nevada, Idaho, Utah, Arizona, Texas, Oklahoma, Kansas, Nebraska, Minnesota, Iowa, Missouri, Arkansas, Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia, West Virginia, Kentucky, Tennessee, Indiana, Michigan, Wisconsin, Illinois, Indiana, Ohio, Pennsylvania, Maryland, Delaware, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, Maine
≥25%	Indiana, West Virginia, Mississippi, Alabama



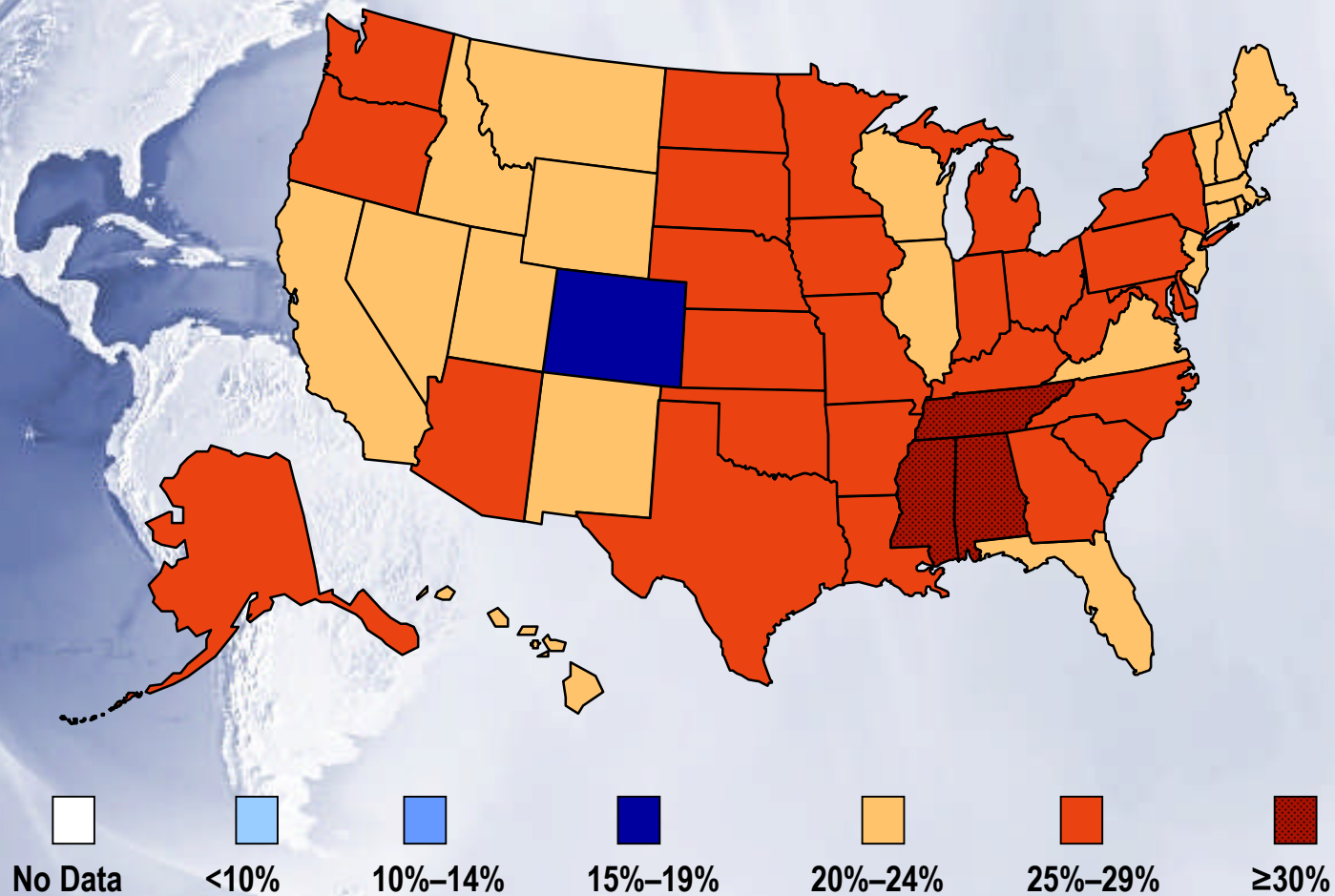
Obesity Trends Among U.S. Adults

2004



Obesity Trends Among U.S. Adults

2007



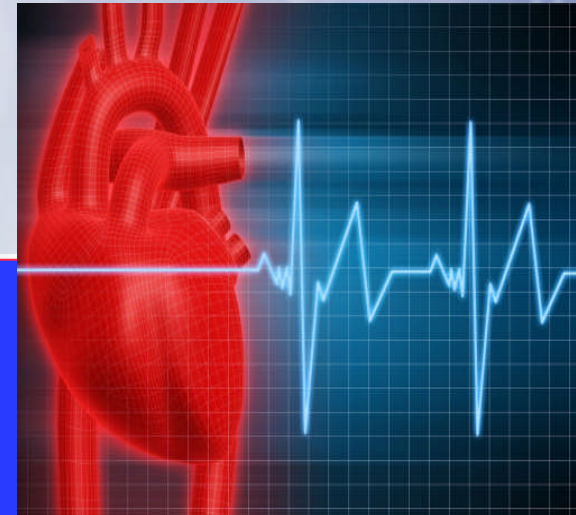
Economic Cost Analyses of Excess Weight

- **North Carolina**
1999/2001/2004/2007
- **California: 2005/2008**
- **Maine (2007)**
- **Massachusetts (2005)**
- **Michigan (2005)**
- **New York (1999/2002)**
- **Texas (2004)**
- **Washington (2005)**



Excess Weight & Clinical Conditions

- ✧ **Cardiovascular disease**
- ✧ **Cerebro-vascular disease**
- ✧ **Hypertension**
- ✧ **Type-2 diabetes**
- ✧ **Cancer: breast, colo-rectal, uterine, esophageal, kidney**
- ✧ **Hip fracture**
- ✧ **Musculo-skeletal**
- ✧ **Depression**
- ✧ **Anxiety**
- ✧ **Carpal tunnel syndrome**



Sources: "Medical Hazards of Obesity." *Annals of Internal Medicine*, 119, 1, 1993; "Midlife Body Mass Index and Hospitalization and Mortality in Older Age." *J Amer Med Association*, 295, 190-198, 2006; "Secular Trends in Cardiovascular Disease Risk Factors According to Body Mass Index in US Adults." *J Amer Med Association*, 293, 1868-1874, 2005.

In 2006, physical inactivity, excess weight, type II diabetes and low fruit/veggie intake cost North Carolinians an estimated *\$34.2 billion.*



I-181-0373 © Tom Young / The Stock Market

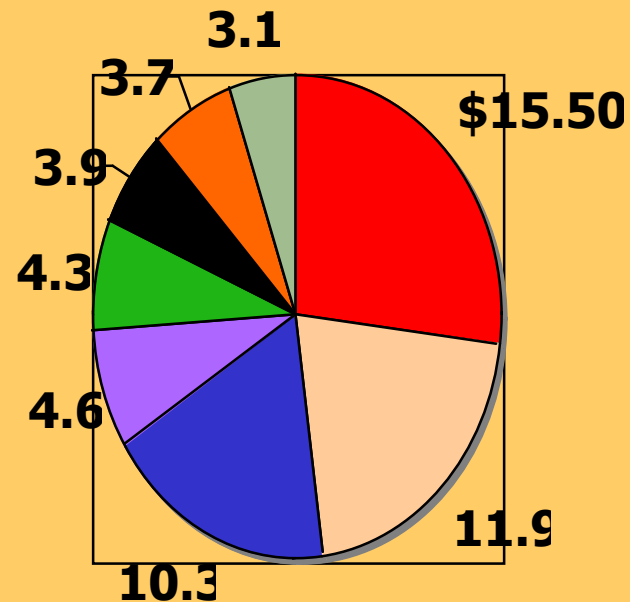
*The majority of this tab was paid by **business & industry** through employer health insurance premiums and lost productivity.*

Source: *Tipping the Scales* (2008). Be Active North Carolina, Inc.[www.beactivenc.org]

In 2006, physical inactivity, excess weight, type II diabetes and low fruit/veggie intake cost North Carolinians an estimated *\$34.2 billion.*



I-181-0373 © Tom Young / The Stock Market



- Excess Wt.
- Phys. Inact
- Poor Bl Lip
- H.B. Press
- Tobacco
- Depression
- Diabetes
- Low F/V in

Healthcare Costs Per Employee

Indirect Costs:

Presenteeism 62%

Direct Costs:

Med & Rx Drugs 24%

Absenteeism 6%

STD 6%

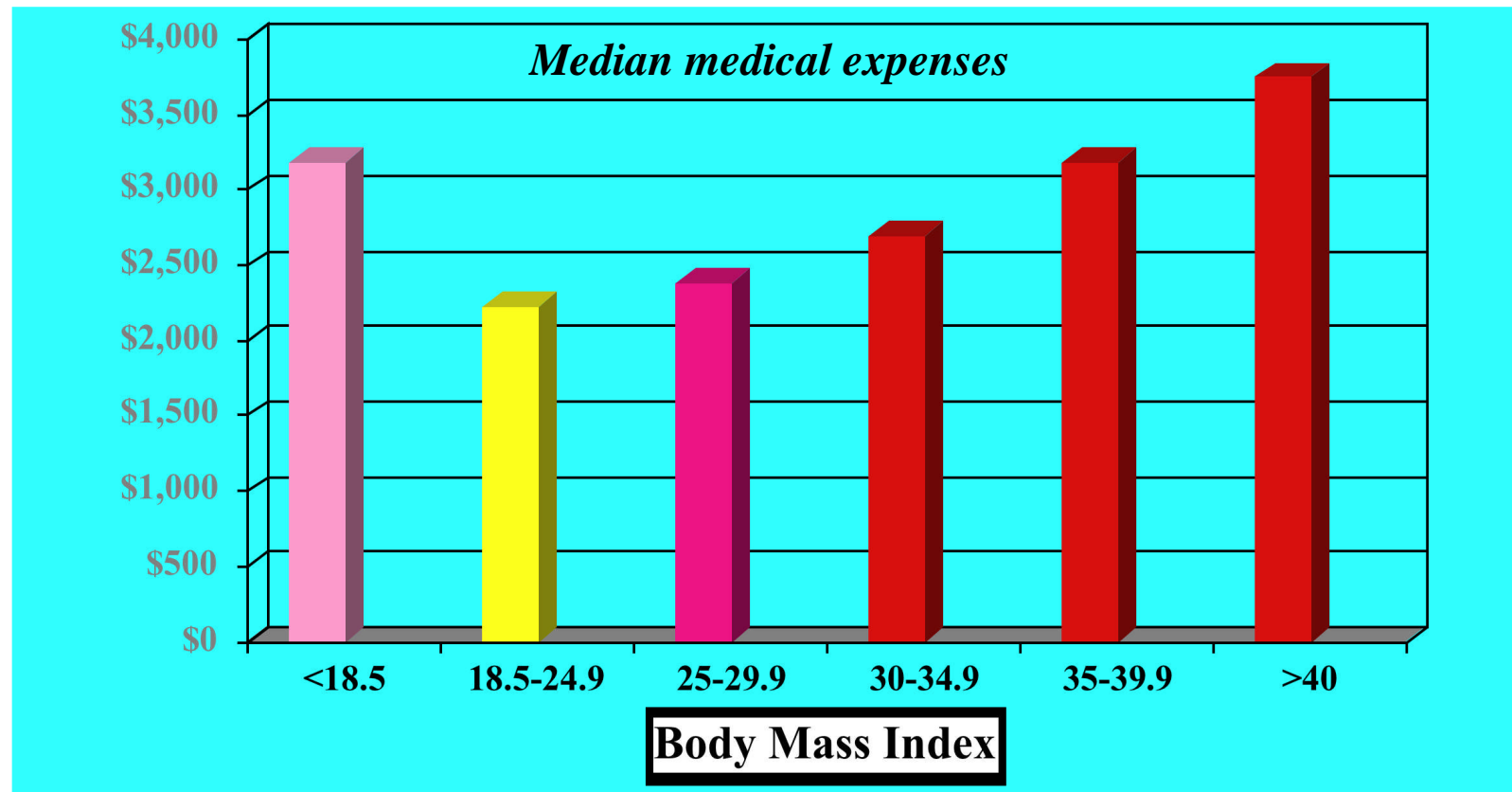
LTD 1%

WC 1%

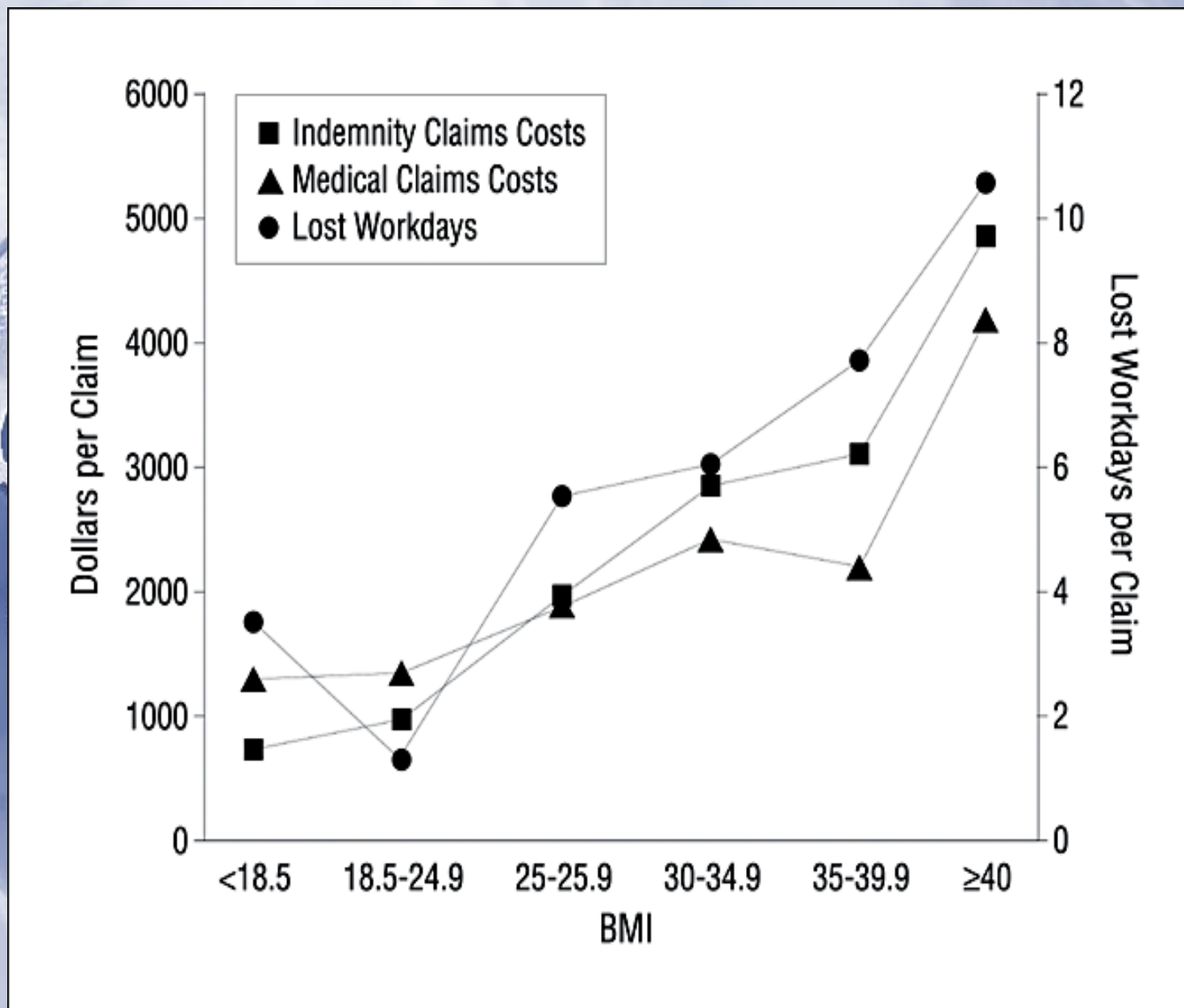
STD=Short-term disability; LTD=Long-term disability; WC = Workers' comp

Sources: *Harvard Business Review*, Oct. 2004, pp. 49-58 and Goetzel, R. et al *Journal of Occupational & Environmental Medicine*, 40, 10, 843-854.

Medical Care Costs & Body Mass Index (BMI)



Source: Edington, D. et al. "The Relationship Between National Heart, Lung, and Blood Institute Weight Guidelines and Concurrent Medical Costs in a Manufacturing Population." *American Journal of Health Promotion*, Jan./February 2003 [Sample of 177,781 employees, retirees, and adult dependents]



Ostbye, T. et al. Arch Intern Med 2007;167:766-773.

ARCHIVES OF
INTERNAL MEDICINE

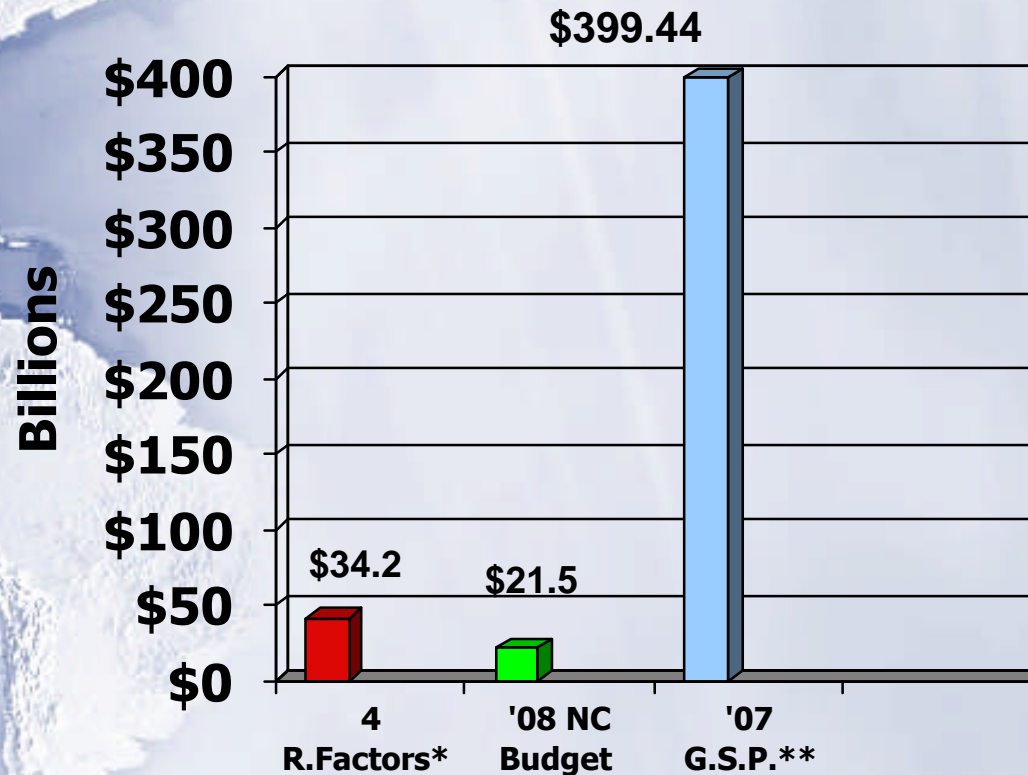


*"...health insurance doesn't really do anything for our company's productivity --
healthy employees do."*

**James Goodnight, Ph.D.
CEO & Founder
SAS Institute, Inc.
Cary, North Carolina**

Comparing dollars...[at time of analysis]

*** Physical inactivity, excess weight, type II diabetes, and low fr/veg. intake**

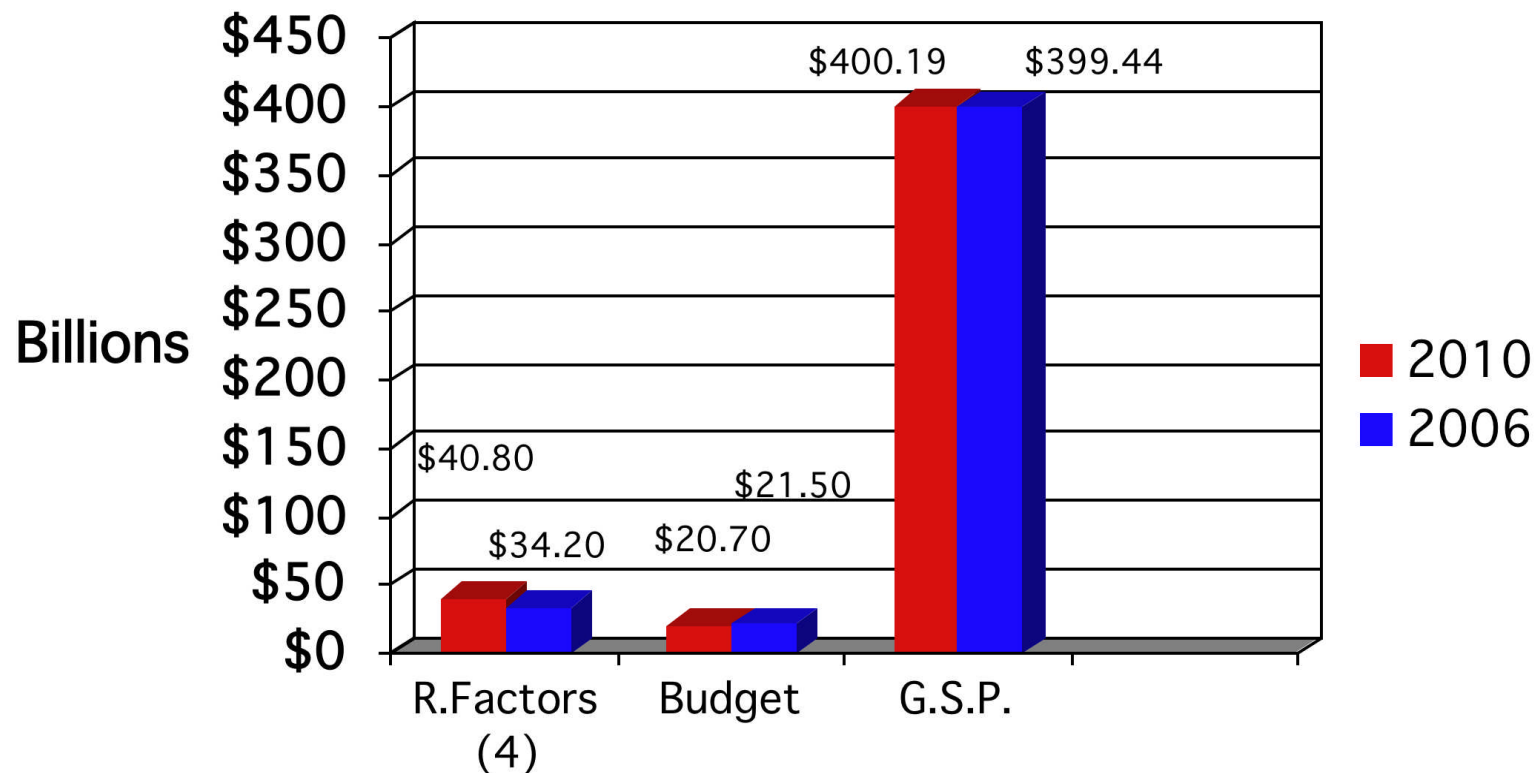


Sources: '08 N.C. Budget - Office of State Budget and Management. [www.osbm.state.nc.us]

** Gross State Product - [www.statehealthfacts.org]

Comparing dollars: 2006 vs. 2010

* Physical inactivity, excess weight, type II diabetes, and low fr/veg. intake



Sources: '09 N.C. Budget - Office of State Budget and Management. [www.osbm.state.nc.us]

** Gross State Product - [www.statehealthfacts.org]

Obese workers might keep employers away

Some companies weigh obesity rates

BY LAUREN BERRY
THE CHARLOTTE OBSERVER

You've heard of the steps companies are taking to cut their health care costs: They're banning smoking, offering yoga and wellness classes, even putting healthy snacks in vending machines.

But what steps do companies take before they even open?

In a trend that might sound extreme, a growing body of evidence suggests that some companies are factoring health into the way they select sites. Among other considerations, companies could be eyeing obesity rates before deciding where to put new plants and offices.

The idea is that by examining obesity rates and avoiding opening where more obese people live, companies can cut their future health care costs. For the Carolinas, that could spell trouble, given that the majority of residents are tipping the scales.

No companies that have recently opened sites in the Carolinas have acknowledged they consider such

FAT WORKERS

According to 2005 data from the N.C. State Center for Health Statistics, 62.6 percent of North Carolinians are overweight or obese. Here are the percentage of residents in Triangle counties considered overweight or obese:

Orange County	51.6 percent
Durham	59.1 percent
Wake	62.7 percent
Johnston	68.5 percent
Franklin and Nash	73.8 percent

SOURCE:

WWW.EATSMARTMOVEMORENC.COM

tion worse for employers. Researchers at RTI International have found those with high levels of obesity miss more days of work, and cost \$460 to \$2,500 per year in additional medical expenses. The extra cost of obesity at a company with 1,000 workers was pegged at \$285,000 a year, RTI's 2005 study found.

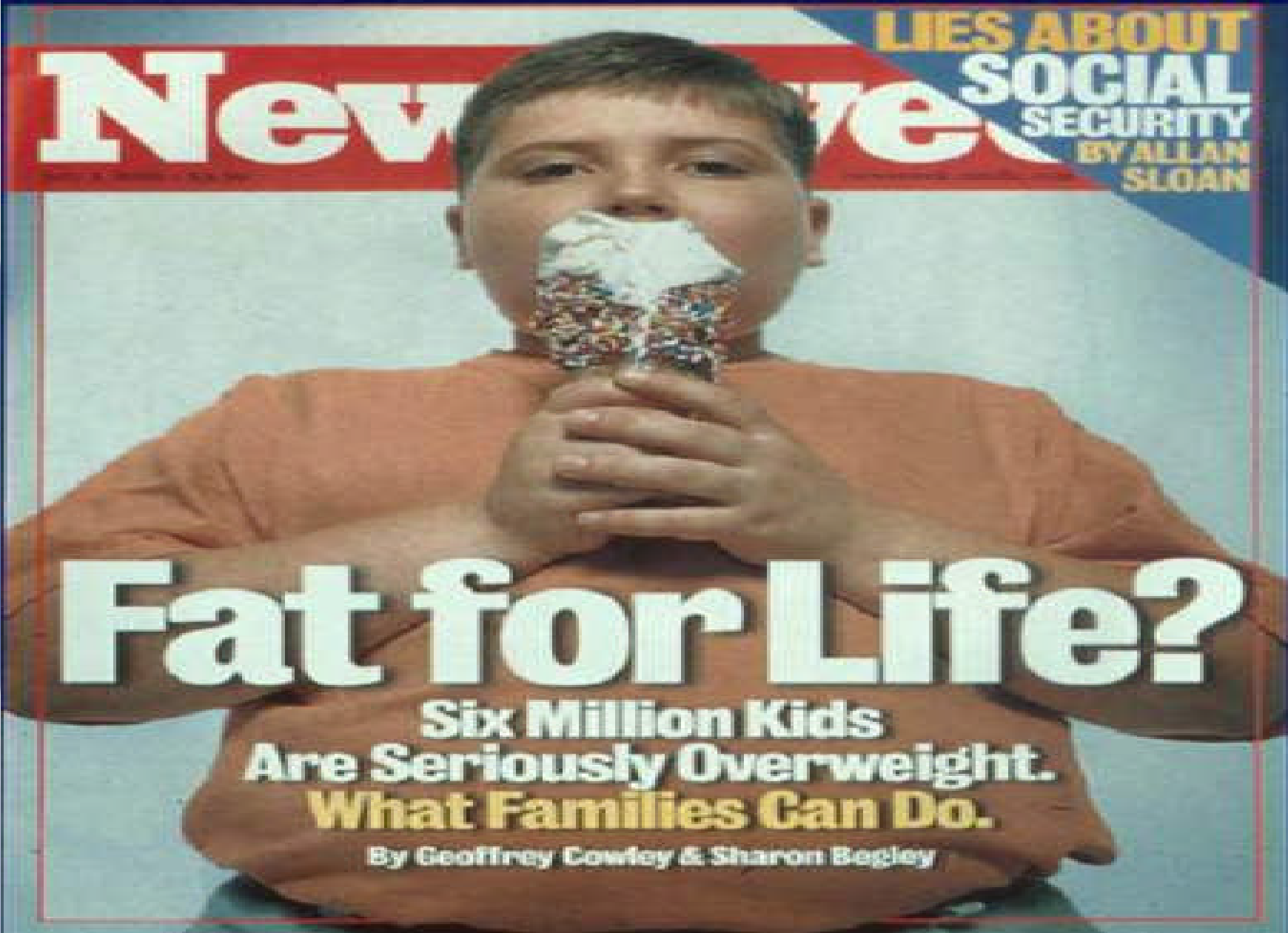
**The News &
Observer**
Aug. 17, 2008,
page 8G.

Ask yourself.....

*How can **North Carolina** compete in a GLOBAL economy when we spend:*

- > more \$ per capita on illness care than Virginia & Georgia?
- > a larger % of our GSP on health care each year?
- > more than 10% of our GSP on only 4 risk factors?





New Yorker

**LIES ABOUT
SOCIAL
SECURITY**
BY ALLAN
SLOAN

Fat for Life?

**Six Million Kids
Are Seriously Overweight.
What Families Can Do.**

By Geoffrey Cowley & Sharon Begley

For the *first time in more than 100 years*, a USA child's life expectancy is *projected to be shorter* than their parents' lifespan due to the growing prevalence of adolescent obesity.

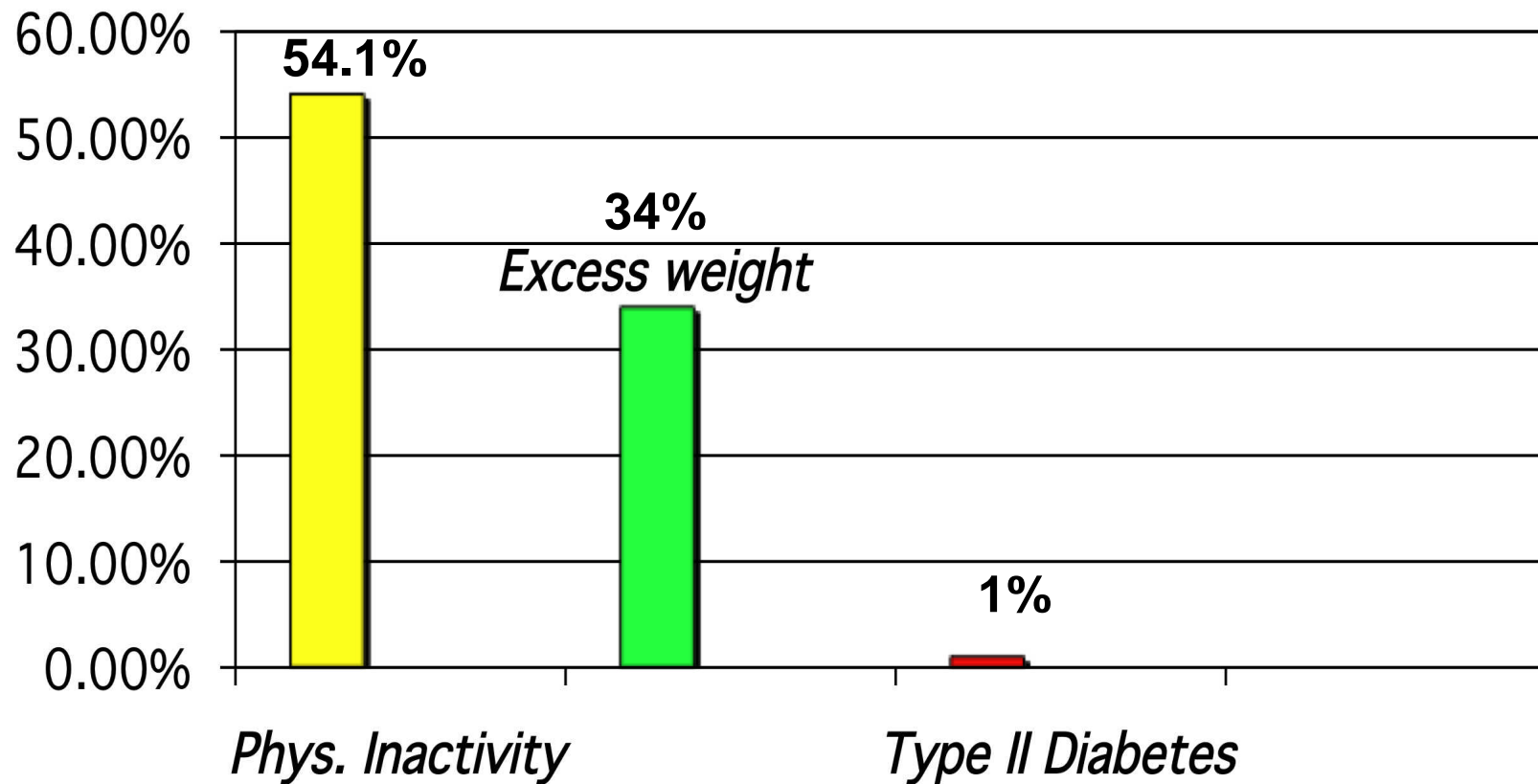


Source: Olshansky S, et al. (2005). A potential decline in life expectancy in the United States in the 21st century. *New England Journal of Medicine*, 352: 1138-1145.

What's real cost of the today's lifestyle?...



North Carolina Youngsters...at Risk!



Source: N.C. Youth Risk Factor Surveillance System, 2005, CDC.

In 2006, the direct medical care cost of **physical inactivity, type II diabetes & excess weight** among North Carolina YOUNGSTERS was approximately \$105.1 MILLION

Past...



Present...



What's the Real Cost of Unhealthy Lifestyles in Your County?



<http://www.beactivenc.org/pages/223/County-Impact/>

ADULTS

The Bad News -The economic cost of unhealthy lifestyles* among adults in Edgecombe County is over \$84 million annually. This cost includes both direct medical expenses and indirect costs such as lost productivity, absenteeism and presenteeism. If the current trend continues and we do nothing to reverse them, we can expect to be spending over \$117 million annually by 2010.

The Good News... If we can get just 3% of at-risk adults in Edgecombe County to be more active, eat nutritiously, and achieve a healthy weight, we can save over \$3.5 million annually. These wasted expenditures would be sufficient to fund about 148 new jobs in our county (based on average salary figures).

YOUTH

The Bad News - The direct medical cost of unhealthy lifestyles* among youth in Edgecombe County is over \$122,000 annually. If the current trend continues, the current group of inactive and overweight youth in our county will incur *medical care and lost productivity costs* of nearly \$172 million by the mid-point of their working years (mid-40s) and nearly \$1.6 billion by the time they retire.

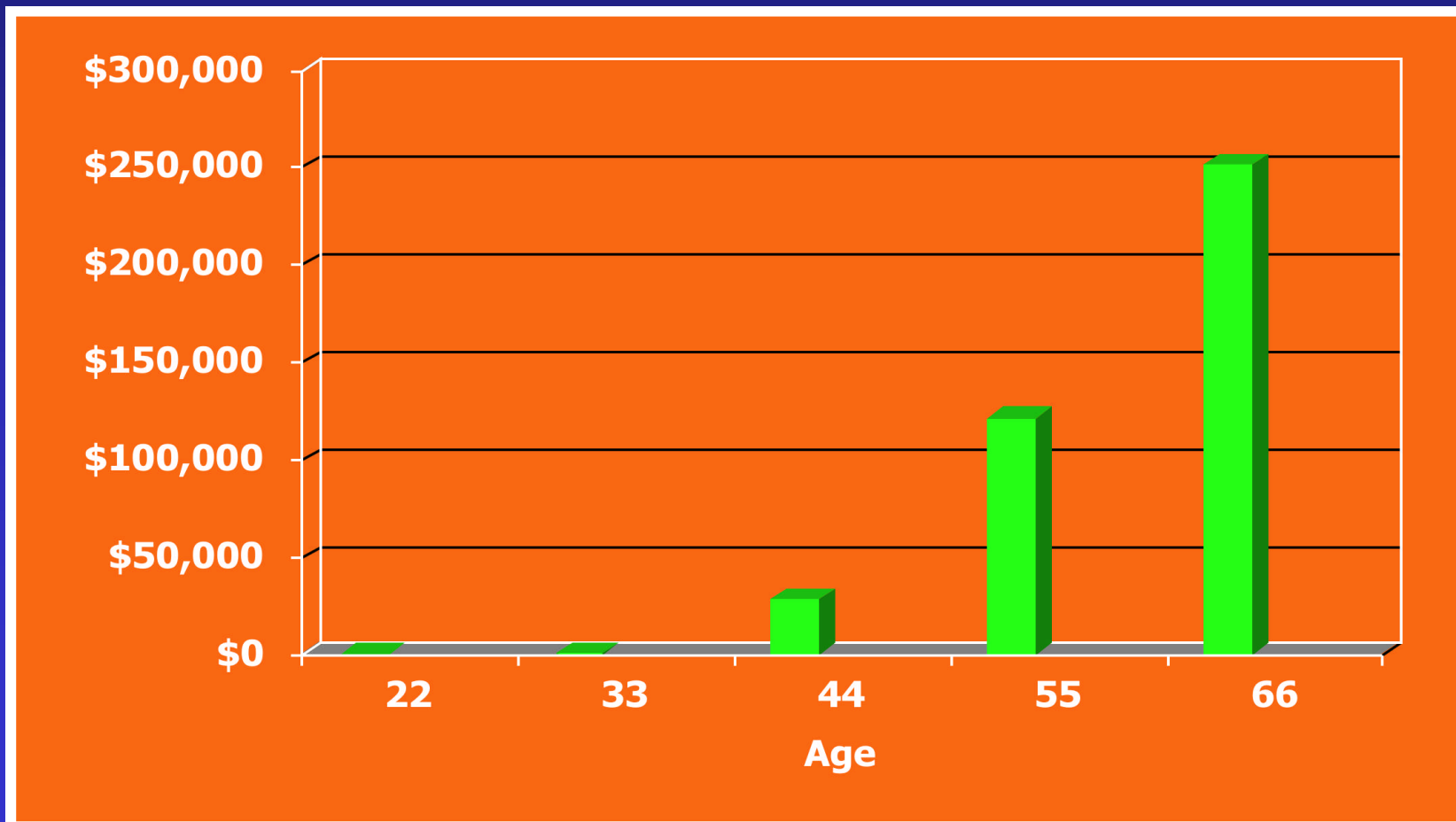
The Good News... If we can get just 4% of at-risk youth in Edgecombe County to be more active, eat nutritiously, and achieve a healthy weight, we can save over \$6,800 annually in direct medical costs.

* "Unhealthy lifestyles" includes the risk factors of diabetes, depression, excess weight, physical inactivity, abnormal blood lipid level, low fruit & vegetable intake, and tobacco use.

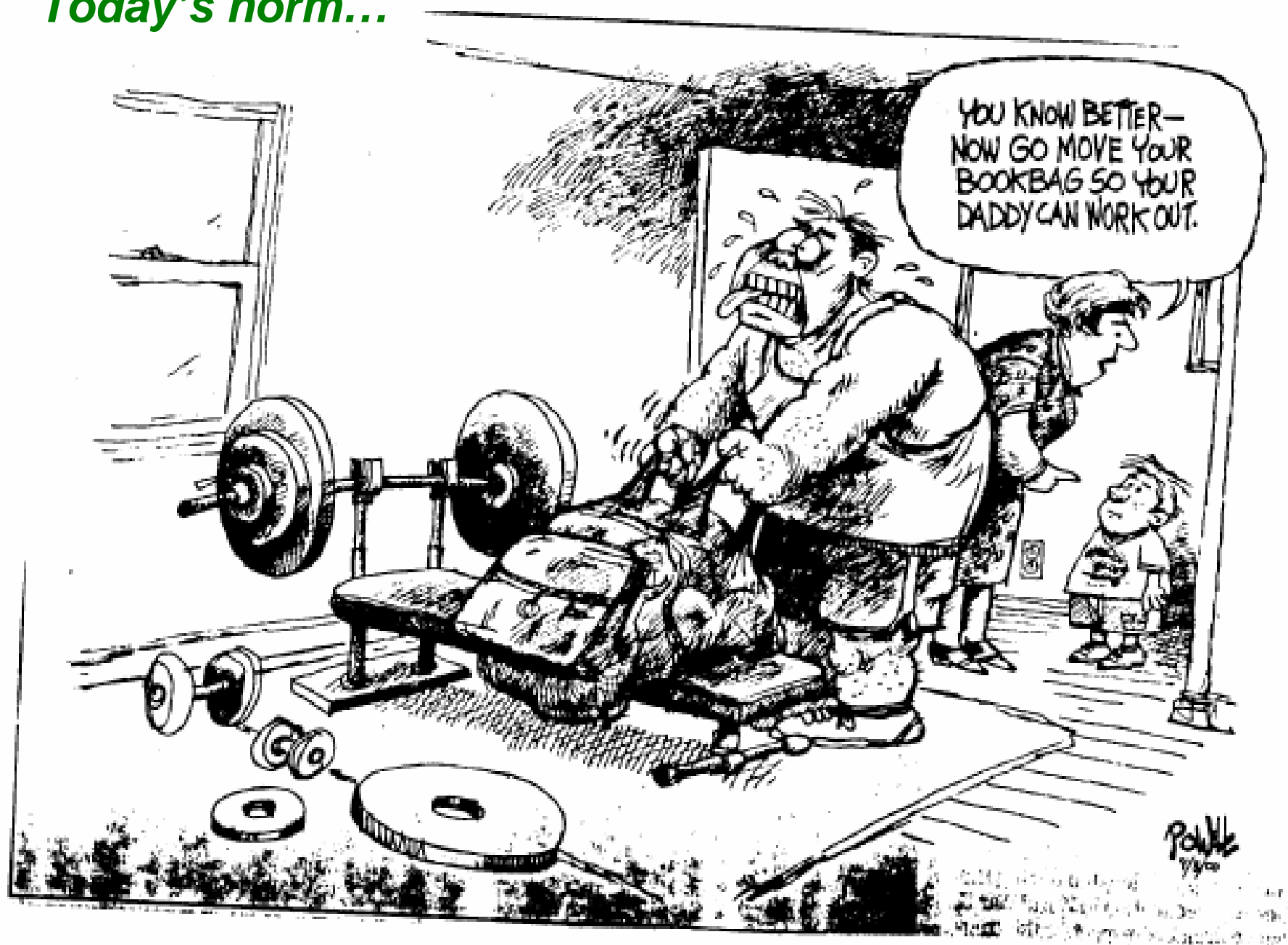
Source: All data extrapolated from *Tipping the Scales: How fat has become a weighty problem for the North Carolina economy*. Be Active North Carolina, Inc., February, 2008.

Heavy kids...lead to heavy costs...

An overweight young adult in NC will incur more than \$22,000 in **direct medical care** expenses due to **excess weight** alone by the mid-point of their working years... and cumulatively incur over \$250,000 as they near retirement.

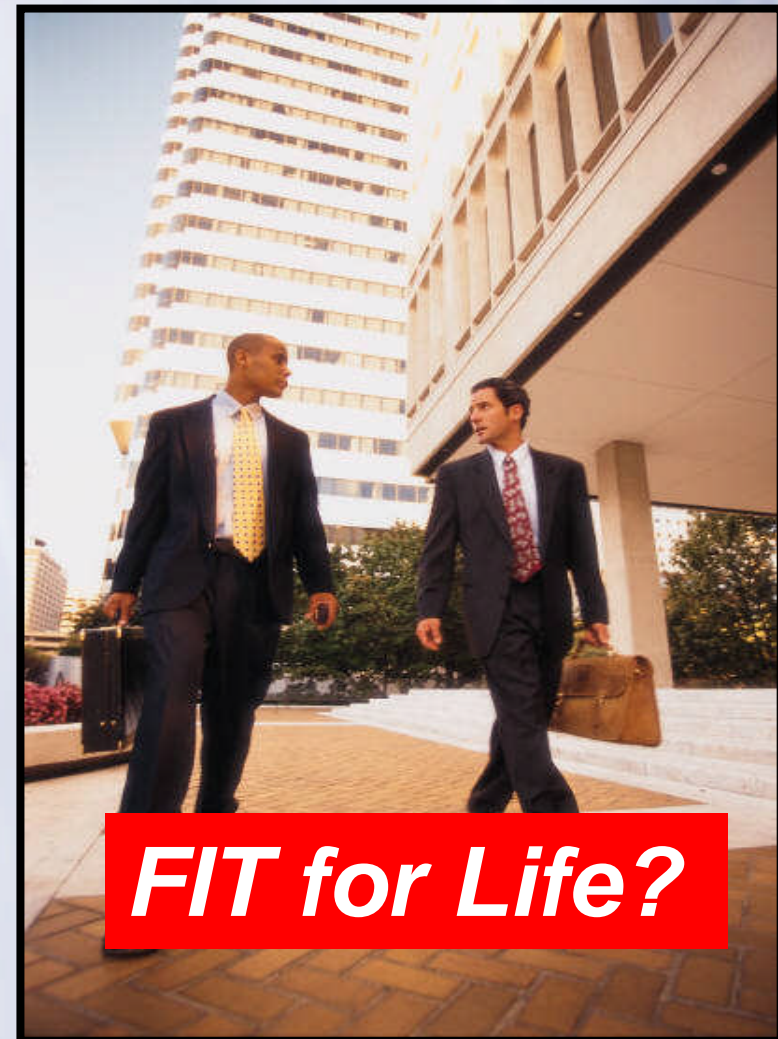


Today's norm...



Future Implications...

What we do [or don't do] will determine how OUR future looks...



Thank you...



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