# The Role of a Healthy Lifestyle in Addressing Inter-Related Physical and Behavioral Health Needs

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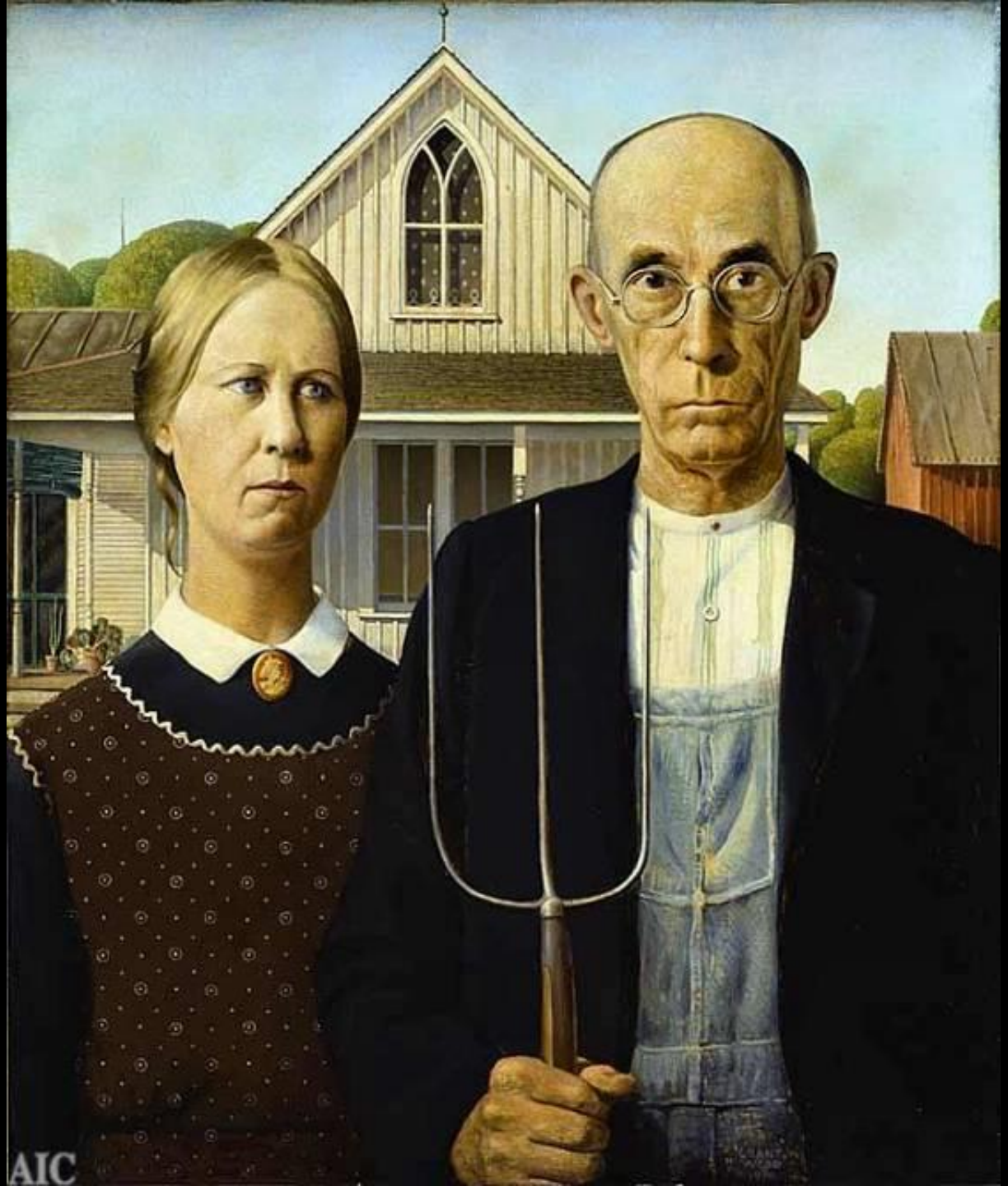
US/HMR/0915/0870

# Looking Back at America Over the Past 50 Years:

# What Looks Different?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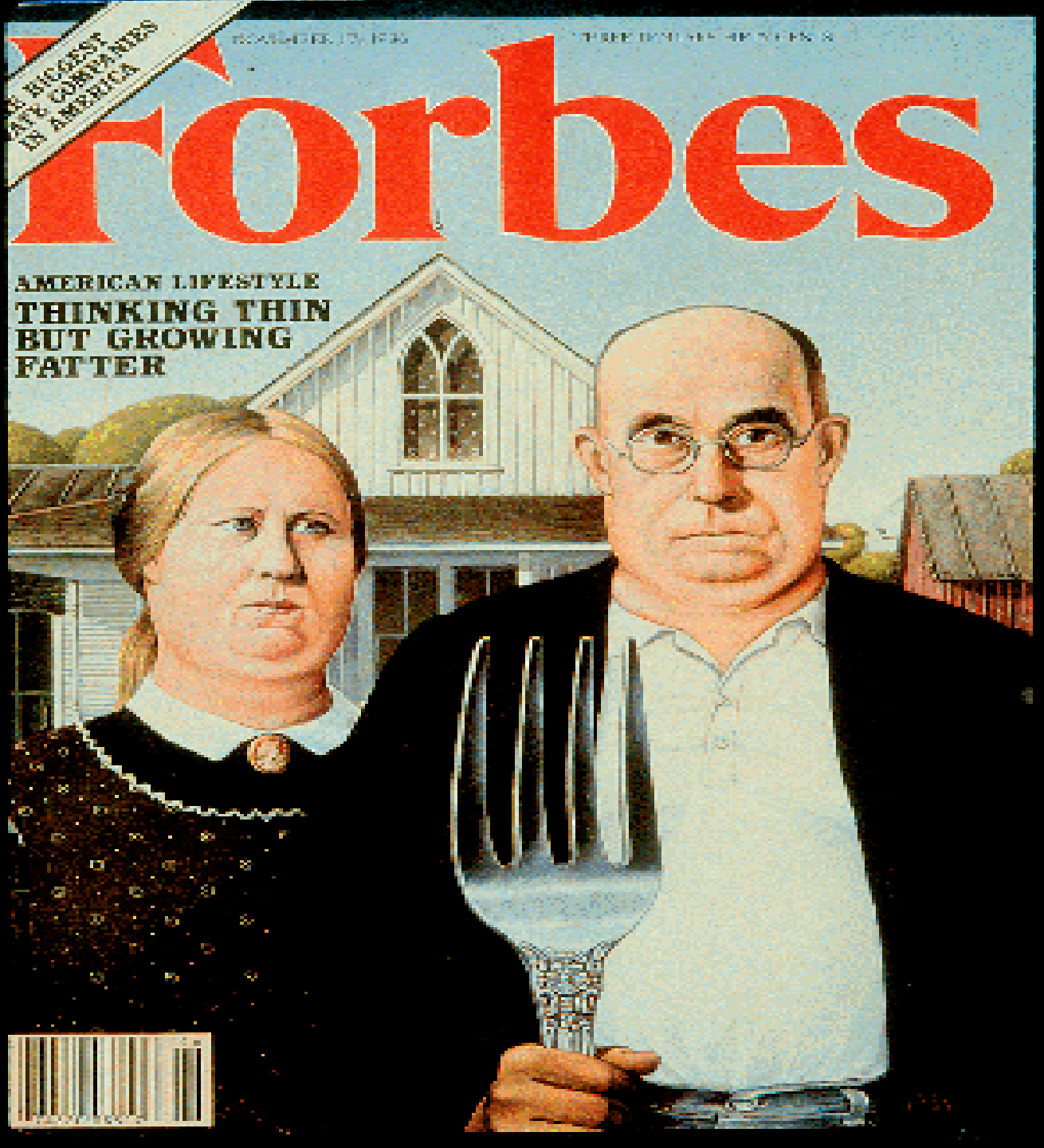
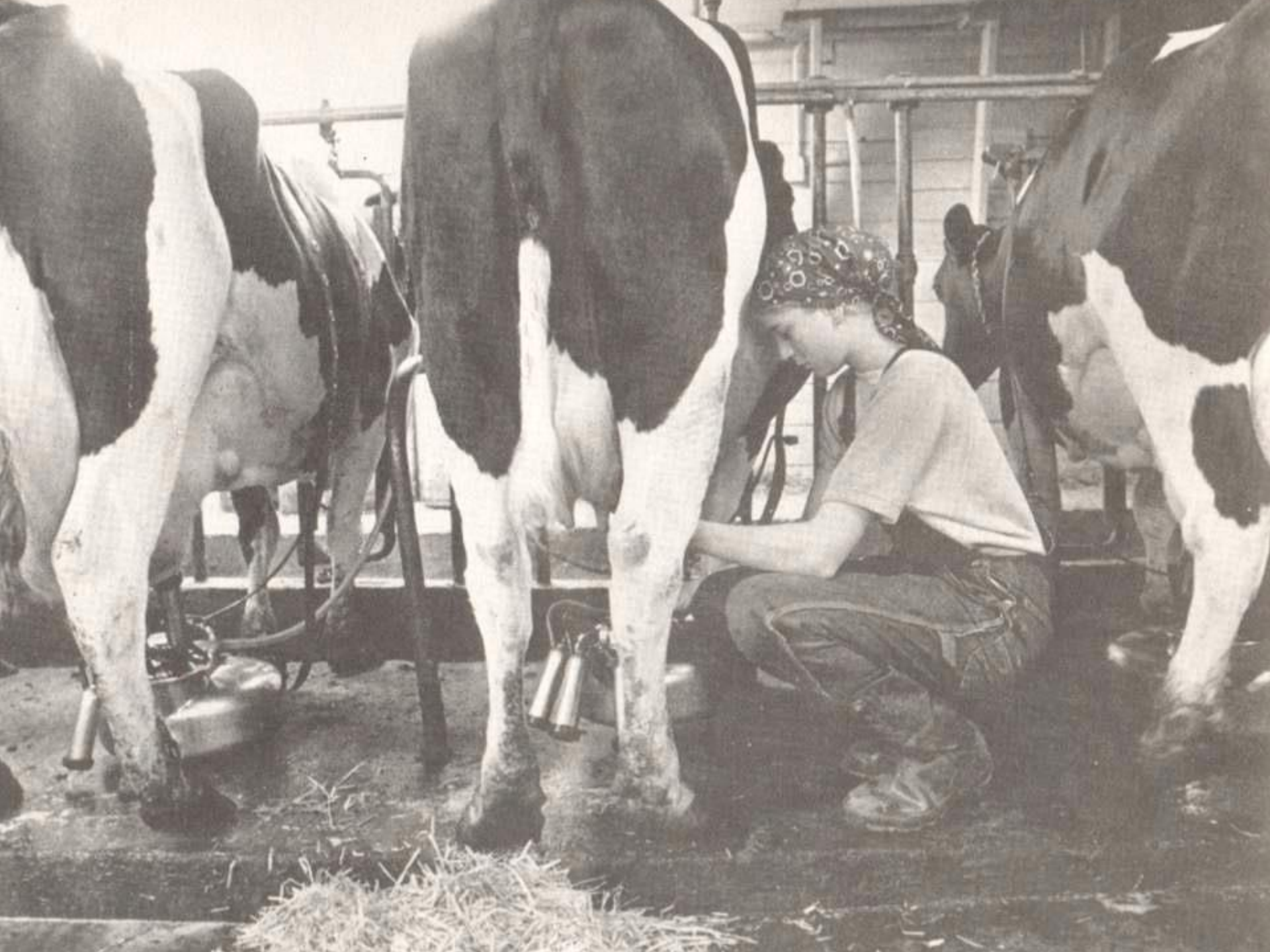
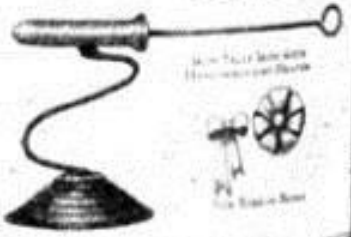

THE BIGGEST U.S. COMPANIES IN AMERICA
Forbes
AMERICAN LIFESTYLE
THINKING THIN BUT GROWING FATTER

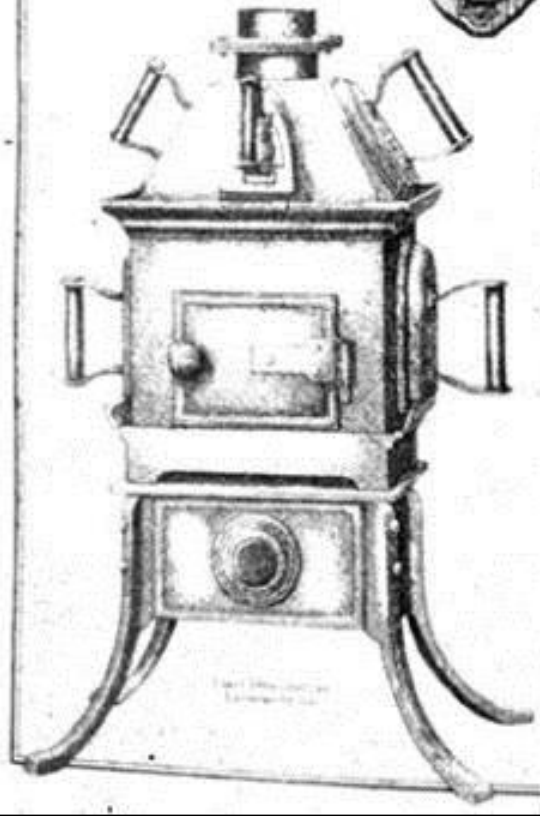


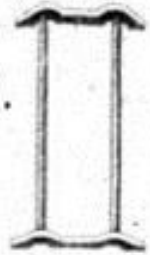
# The Iron Age

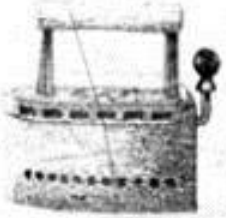
Two basic types of iron pressed in the nineteenth century: the flat iron and the box iron. Flat irons were of various weights, heavy for thick material, light for sheer cloth. They were either heated in front of the open stove or on the kitchen range, although some large houses had a purpose-built heating stove. Box irons were much deeper in the bells, designed to contain a cast-iron slug, which was heated until red hot and then placed inside the iron with tongs. Later box irons burned charcoal or coal and featured a row of holes in each side for ventilation. Several special-purpose irons were also made: the Italian or tally iron was indispensable for ironing frills and penetrating pleats. Sprinkling bottles with metal stoppers, as in the second half of the nineteenth century, but were gradually superseded by the electric iron, first patented in the United States in 1882.

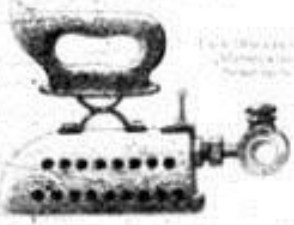


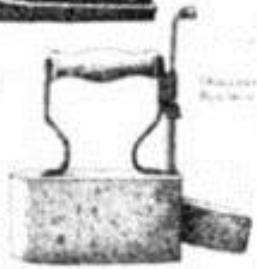


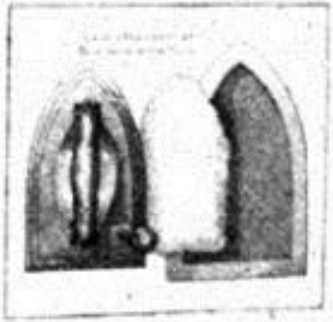












“Genetics loads the gun; the environment pulls the trigger”

Judith Stern, University of California-Davis

# The Pace of Life has Changed

The ACOEM (American College of Occupational Environmental Medicine) has identified depression as a major common, chronic and often recurrent disorder whose consequences span the continuum from mild and barely perceptible effects to disabling symptoms, affecting employees at all levels of business.

Depression in the Working Population.
Position Statement of the ACOEM Feb. 4, 2009
www.ACOEM.org/Print.aspx

- Depression contributes to excess absenteeism, decreased productivity (presenteeism) and disruption of work organization.
- The result is a surfeit of direct (medical and indemnity) and indirect health care, disability and organizational costs.

Depression in the Working Population.
Position Statement of the ACOEM Feb. 4, 2009
www.ACOEM.org/Print.aspx

# Definition and Management of Depression in the Working Population

Two overarching conclusions from the ACOEM

- A more comprehensive approach is needed spanning a continuum from prevention and health promotion, through early identification and intervention and evidence-based disease and disability management to relapse prevention.
- Workplaces offer unique advantages in addressing the problem in the working population which can and should be recognized and utilized by all stakeholders.

Depression in the Working Population.
Position Statement of the ACOEM Feb. 4, 2009
www.ACOEM.org/Print.aspx

# Scope of the Problem

- 6 to 8 percent of the U.S. population have a major depressive episode annually; in addition 1-2% have a major disabling episode association with bipolar disorder, and another 1-2% have active dysthymic disorder each year.
- That means 1 in every 8-10 persons has an active and recognizable significant psychiatric issue that affects their behavior annually.
- In addition, the incidence and prevalence of sub-threshold depression is unknown and difficult to estimate.

Depression in the Working Population.
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# Depression and Physical Problems are Intimately Related

- Major depression commonly (70% of the time) occurs with, and is complicated by, other chronic mental and physical disorders such as arthritis, cardiovascular disease, diabetes, and obesity.
- The median age of onset for significant depression is 32 years (much earlier than most other chronic diseases) and tends to affect workers earlier and thus throughout their working life, markedly increasing the total burden of disease.

Depression in the Working Population.
Position Statement of the ACOEM Feb. 4, 2009
www.ACOEM.org/Print.aspx

# Business Case for Intervention

There is a clear relationship between depression and work impairment. Improving the quality of depression care for employees represents an opportunity that not only can be a financially sound investment but almost certainly will help shape a more positive and livable social work environment.

Depression in the Working Population.
Position Statement of the ACOEM Feb. 4, 2009
www.ACOEM.org/Print.aspx

# What Stands in our Way?

- Patient factors such as stigma and reluctance to seek help or focus solely on physical symptoms.
- Provider factors such as failure to detect and treat appropriately and to follow accepted guidelines.
- Organizational factors that focus away from behavioral diagnoses and when diagnosed fail to apply case management and stepped care approaches.
- Health plan and employer factors which may limit access to mental health care and fail to integrate behavioral health and primary care and a failure to understand and use community resources.

Position statement of the ACOEM 2009

If we can agree that the maintenance and promotion of behavioral health, including the reduction of stress, anxiety and mental illness is of vital concern to both business and employees, *what effective lifestyle measures can make that task more doable?*

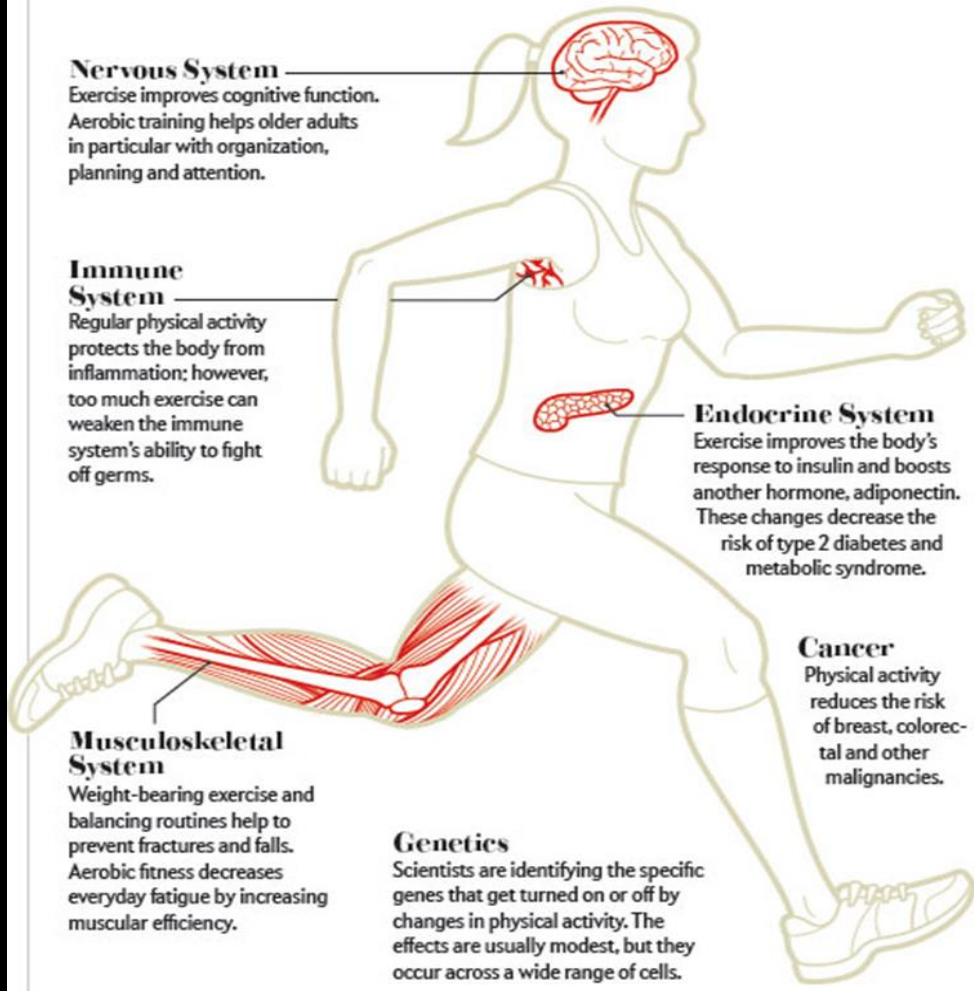
# The Role of Physical Activity

- There is general agreement that physical activity is a positive lifestyle. The behavioral question is: *how important is being active when it comes to overall behavioral health?*
- There is some data, but it is never easy to prove relationships between continuous variables and specific measureable outcomes.
- A later diagram from *Scientific American* will illustrate the various benefits attributed to exercise.

Bassuk SS, et al. *Why Exercise Works Magic*. Scientific American 2013; 309:74-79

# Exercise Benefits Even Obscure Parts of the Body

Most people do not realize that sustained bouts of moderate to vigorous physical activity completely change our bodies from the inside out. Here is a look at a few of the less widely known effects, starting with the neural connections in the brain and extending all the way out to the major muscles and bones of the limbs.



**Nervous System**
Exercise improves cognitive function. Aerobic training helps older adults in particular with organization, planning and attention.

**Immune System**
Regular physical activity protects the body from inflammation; however, too much exercise can weaken the immune system's ability to fight off germs.

**Endocrine System**
Exercise improves the body's response to insulin and boosts another hormone, adiponectin. These changes decrease the risk of type 2 diabetes and metabolic syndrome.

**Cancer**
Physical activity reduces the risk of breast, colorectal and other malignancies.

**Musculoskeletal System**
Weight-bearing exercise and balancing routines help to prevent fractures and falls. Aerobic fitness decreases everyday fatigue by increasing muscular efficiency.

**Genetics**
Scientists are identifying the specific genes that get turned on or off by changes in physical activity. The effects are usually modest, but they occur across a wide range of cells.

Bassuk SS, et al. Why Exercise Works Magic. Scientific American 2013; 309:74-79

# Evidence for the Stress Benefits of Physical Activity in the Workplace

"One-year physical exercise intervention improved mental well-being among working adults and this was associated with an improvement in cardiorespiratory fitness. The positive changes remained after the 12-month follow-up"

Kettunen O, et al. A 12-month exercise intervention decreased stress symptoms and increased mental resources among working adults-Results perceived after a 12-month follow-up.

Int J Occup Med Environ Health 2015;28(1):157-168.

# Exercise and Depression

- According to Harvard Special Health Report on depression a number of studies have found that regular exercise can improve mood in people with mild to moderate depression and may even play a role in treating severe depression.
- The same report cited an earlier unnamed study that found that walking fast for about 35 minutes a day five times a week or 60 minutes a day three times a week significantly improved symptoms in people with mild to moderate depression.

Understanding Depression:
http://www.health.harvard.edu/special_health_reports/Understanding_Depression.htm

# The Role of Nutrition

- Again, it is difficult to prove the role of nutrition in behavioral health, but it is reassuring that what is good for the body is also good for the mind!
- Data from the prospective Nurses' Health Study reveal that:
  - Women who regularly drank sodas, ate red meat and refined grain and infrequently consumed wine, olive oil and vegetables were 29% to 41% more likely to be depressed than those who followed a less inflammatory diet.

Lucas M, et al. Inflammatory dietary pattern and risk of depression among women. *Brain Behav Immun.* 2014 February; 36:46-53.

# The Physical / Mental Connection

- What Chronic Conditions Trigger Depression?
- Although any illness can trigger depressed feelings, the risk of chronic illness and depression gets higher with the severity of the illness and the level of life disruption it causes. The risk of depression is generally 10-25% for women and 5-12% for men. However, people with a chronic illness face a much higher risk -- between 25-33%. Risk is especially high in someone who has a history of depression.
- Depression caused by chronic disease often makes the condition worse, especially if the illness causes pain and fatigue or it limits a person's ability to interact with others. Depression can intensify pain, as well as fatigue and sluggishness. The combination of chronic illness and depression might lead you to isolate yourself, which is likely to make the depression even worse.
- Research on chronic illnesses and depression indicates that depression rates are high among patients with chronic conditions

Voinov B, Richie WD, Baily RK. Depression and Chronic Diseases: It is Time for a synergistic Mental Health and Primary Care Approach.
Primary Care Companion CNS Disord. 2013;15 (2):PCC.12r01488.

# Prevalence of Depression in Major Chronic Illnesses

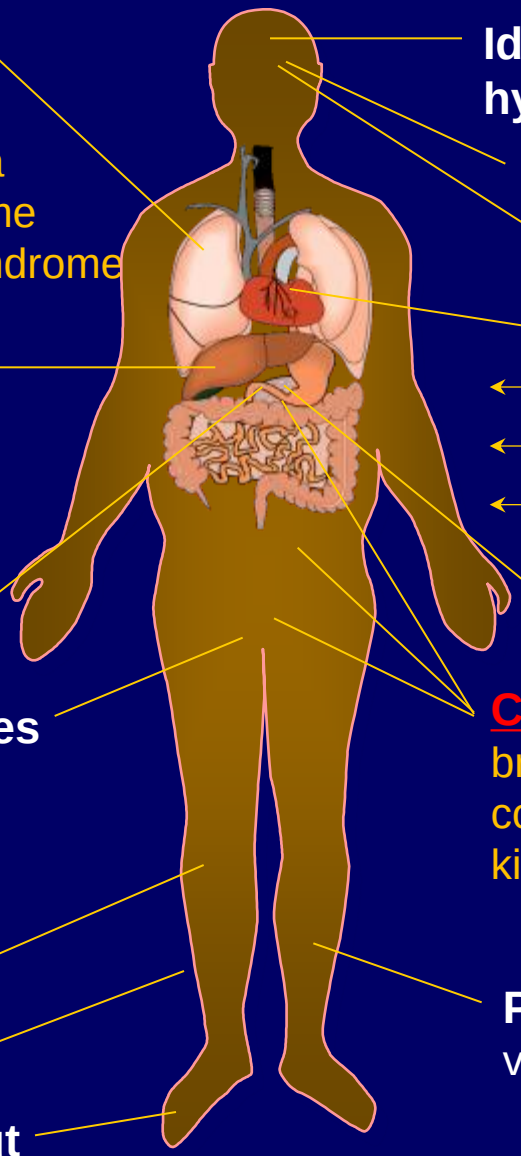
- General population approx. 10%
- Diabetes Mellitus approx. 27%
- Cancer approx. 30%
- Heart Disease approx. 45%
- Stroke approx. 60%

Voinov B, Richie WD, Baily RK. Depression and Chronic Diseases: It is Time for a synergistic Mental Health and Primary Care Approach. Primary Care Companion CNS Disord. 2013;15 (2):PCC.12r01488.

**Weight and Your Health:**

*What is the contribution of obesity to many, if not most, serious chronic conditions?*

# Medical Complications of Obesity



**Pulmonary disease**
abnormal function
obstructive sleep apnea
hypoventilation syndrome
nocturnal aspiration syndrome

**Nonalcoholic fatty liver disease**
steatosis
steatohepatitis
cirrhosis

**Gall bladder disease**

**Gynecologic abnormalities**
abnormal menses
infertility
polycystic ovarian syndrome

**Osteoarthritis**

**Skin**

**Gout**

**Idiopathic intracranial hypertension**

**Stroke**

**Cataracts**

**Coronary heart disease**
Diabetes
Dyslipidemia
Hypertension

**Severe pancreatitis**

**Cancer**
breast, uterus, cervix
colon, esophagus, pancreas
kidney, prostate

**Phlebitis**
venous stasis

# The Silent Culprit: Sleep Apnea

- Sleep apnea disrupts sleep and can lead to a chronic lack of deep sleep.
- Fluctuating oxygen levels can lead to increased generalized stress.
- In addition to daytime sleepiness, sleep apnea is causal or contributory to the development of high blood pressure, heart disease and stroke.

Garvey JF, Pengo MF, Drakatos P, Kent BD. Epidemiological aspects of obstructive sleep apnea. Journal of thoracic disease. Vol 7 No5 (May 2015).

# Weight and Depression

- Do people gain weight because they're depressed, or do they become depressed because they're overweight?
- A study in the 2010 Archives of General Psychiatry found that the obese have a 55% higher risk of developing depression over time when compared to those with normal weight.

Luppino FS, de Wit LM, et al. Overweight, Obesity and Depression.

Arch Gen Psychiatry Vol 67 (No. 3), Mar 2010 pp. 220-229.

# Weight and Depression

- Both obesity and depression, in part, are related to alterations in brain chemistry and function in response to stress.
- Psychological factors are also plausible. Bias and stigmatization can be powerful triggers for depression.
- Odd eating patterns and eating disorders, as well as the physical discomfort of being obese, are known to foster depression.

Luppino FS, de Wit LM, et al. Overweight, Obesity and Depression.

Arch Gen Psychiatry Vol 67 (No. 3), Mar 2010 pp. 220-229.

**A few of the potential reasons that depressed people have double the risk of becoming obese compared to the non-depressed:**

- Elevated levels of cortisol (common in the depressed and those with seasonal affective disorder) may alter substances in fat cells that make fat accumulate, especially in the abdomen.
- People who feel depressed often fail to eat properly and exercise regularly.
- Some medications used to treat mental/emotional problems can cause weight gain.

Luppino FS, de Wit LM, et al. Overweight, Obesity and Depression. Arch Gen Psychiatry Vol 67 (No. 3), Mar 2010 pp. 220-229.

# Why Are Americans Overweight?

## 1900

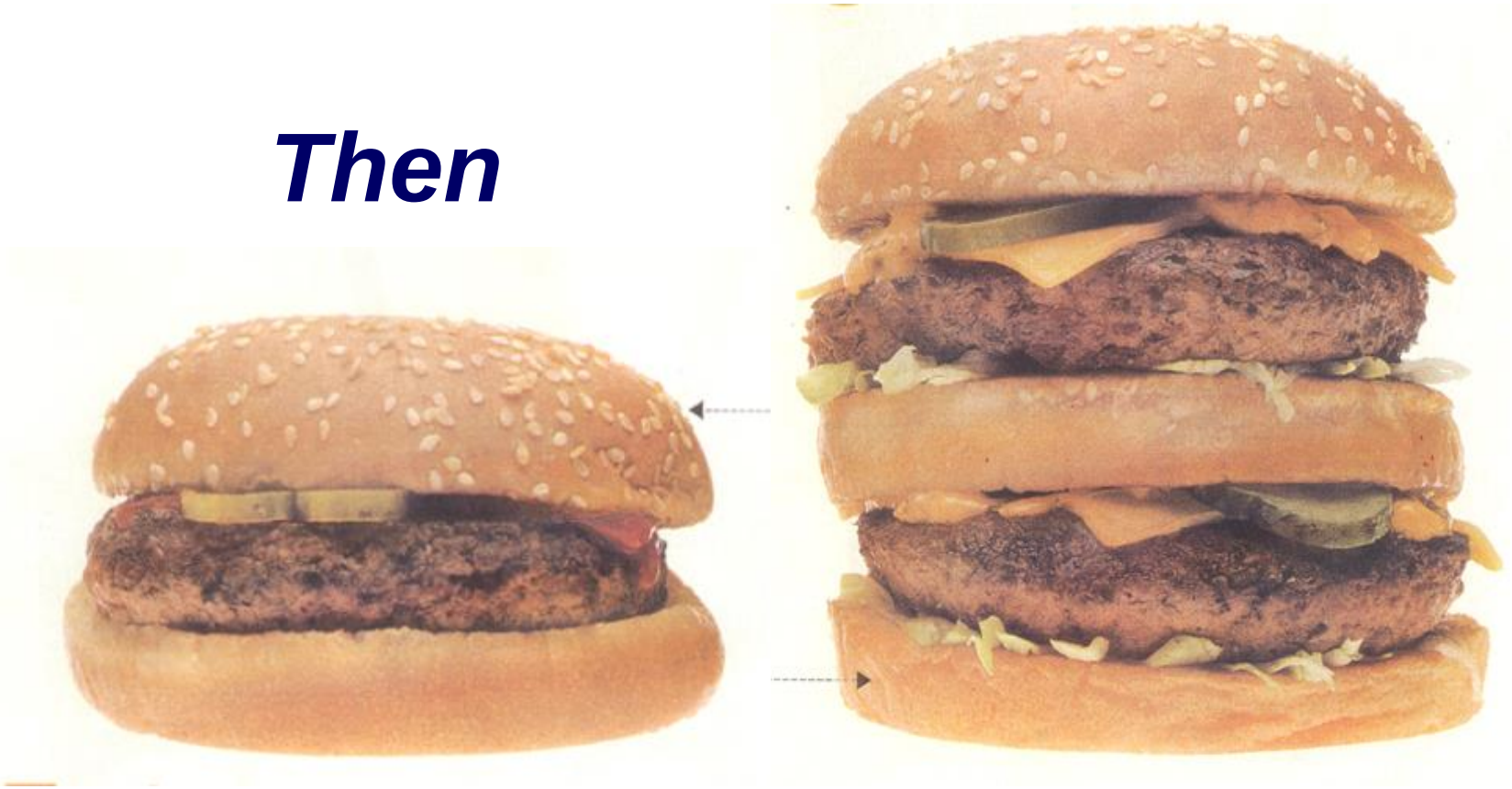
- **Approximately 10% Overweight**
- **Physically Active**
- **Less Dietary Fat**
- **More Complex Carbohydrates**

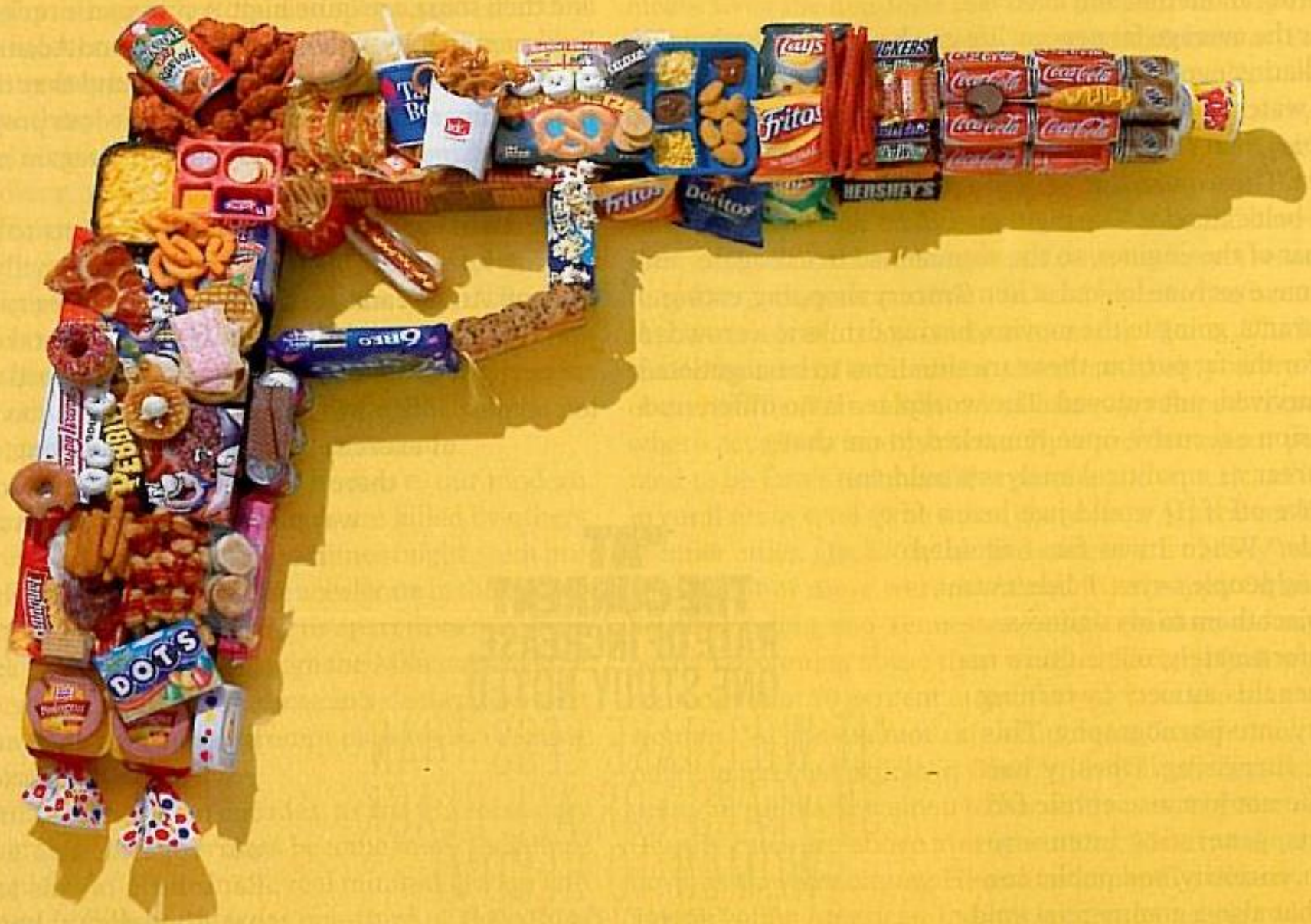
## Today

- **Over 68% Overweight**
- **More sedentary lifestyles**
- **More Dietary Fat**
- **Fewer Complex Carbohydrates** (i.e., vegetables, fruits, legumes, cereals & grains)

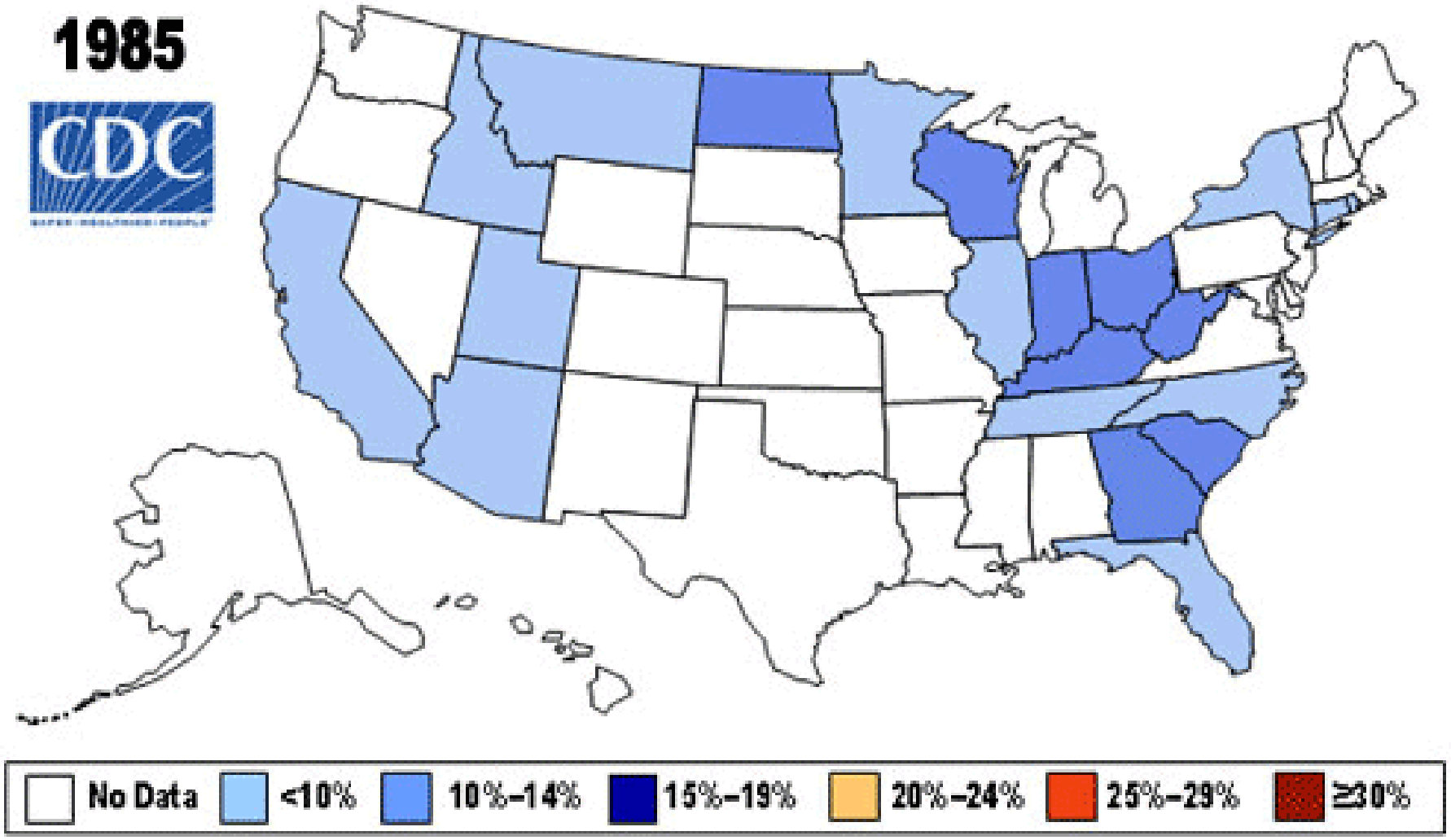
# Now

## Then



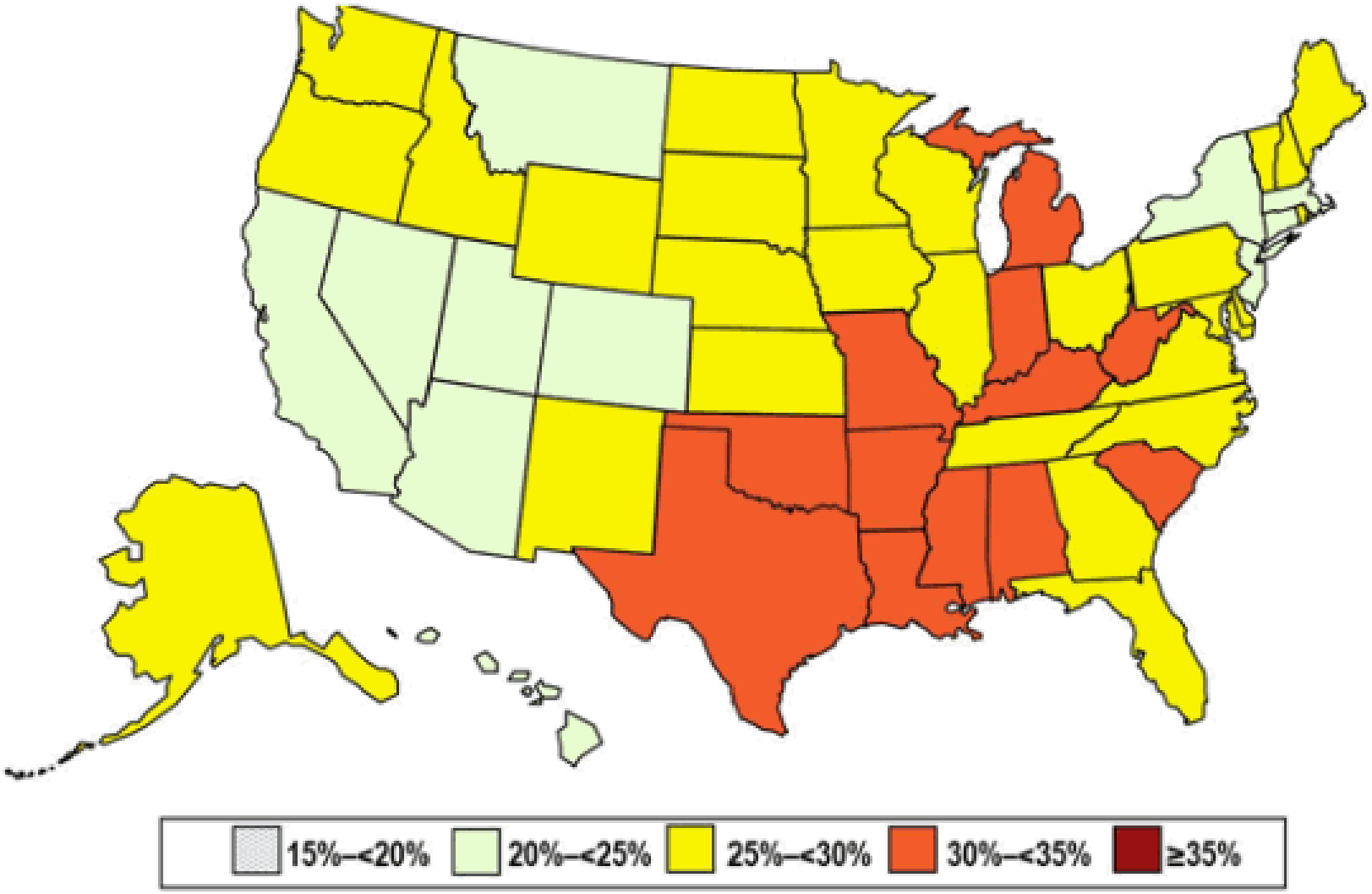

Fritos
Doritos
HERSHEY'S
Coca-Cola
OREO
DOTS

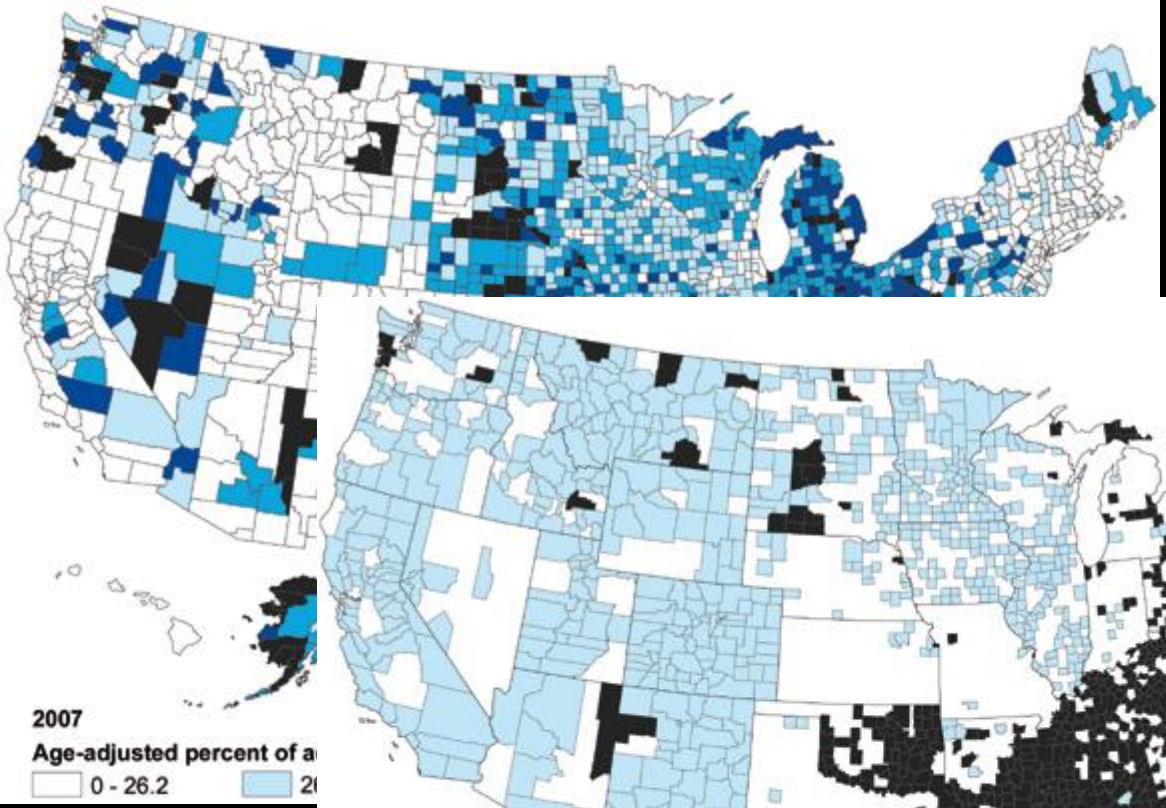
# 1985

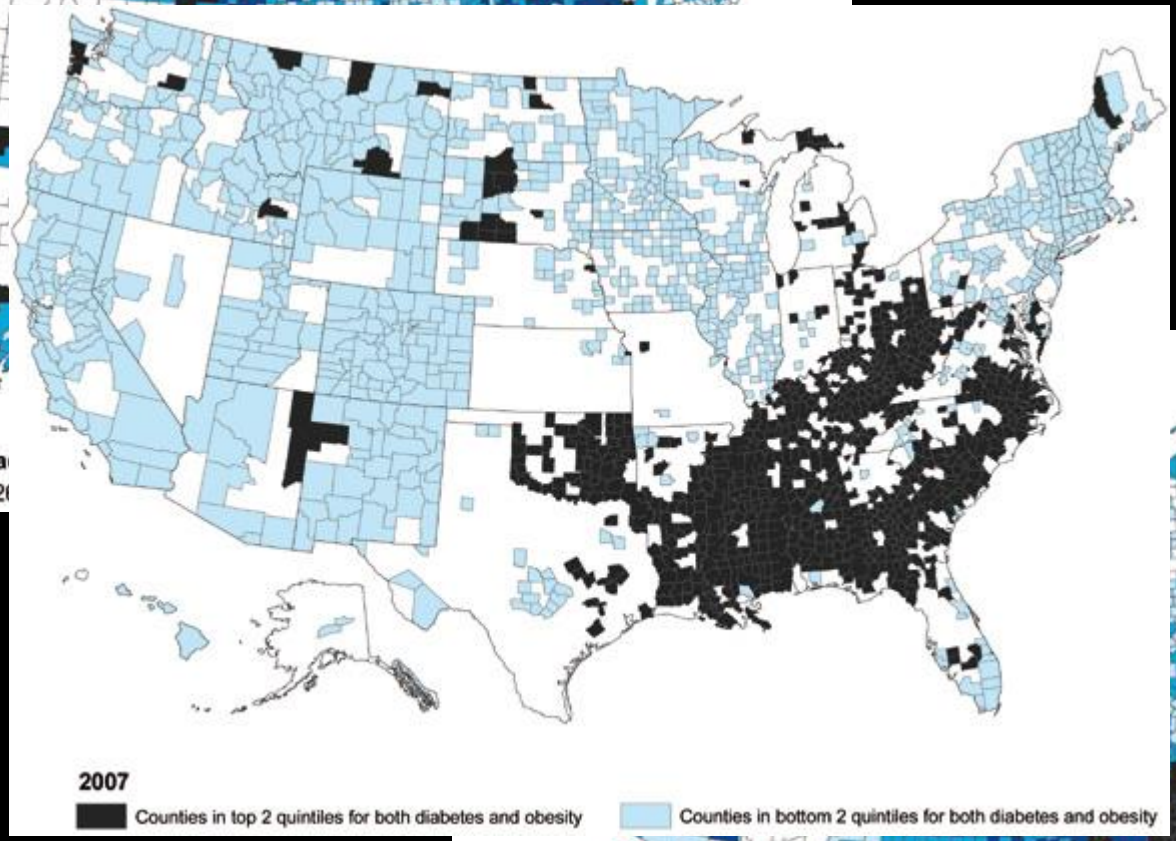


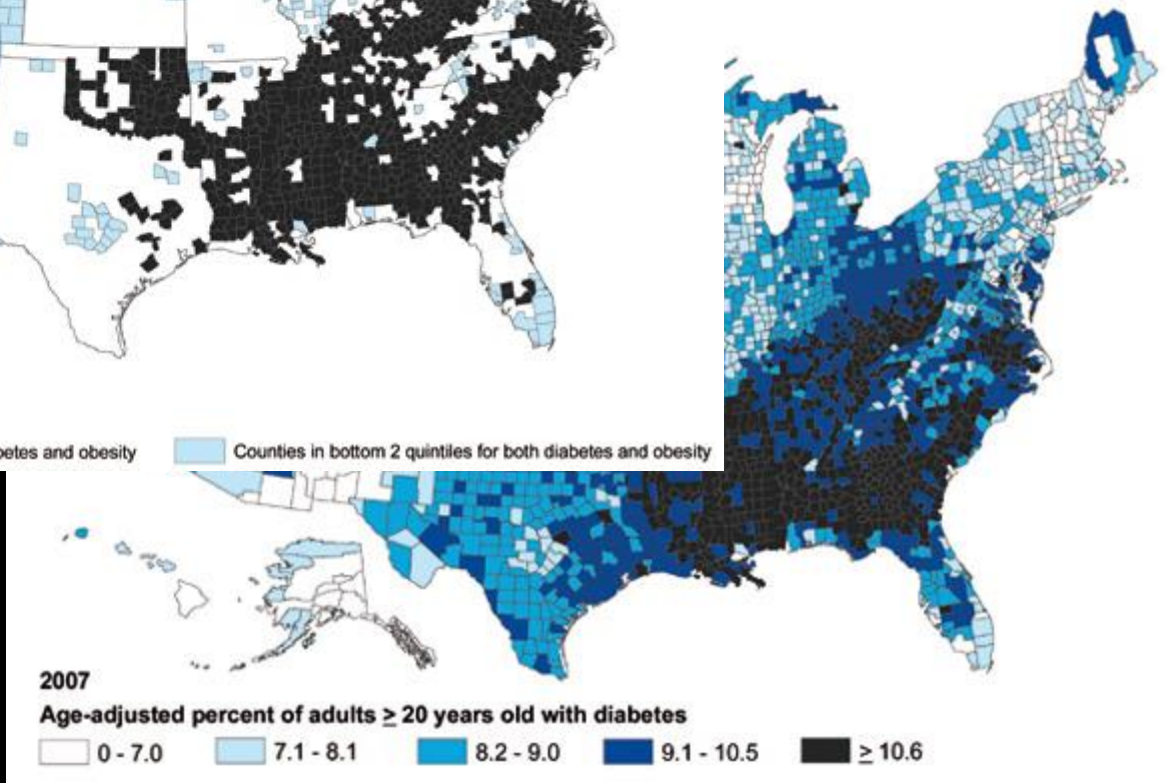
# Prevalence of Self-Reported Obesity Among U.S. Adults

## BRFSS, 2011




2007
Age-adjusted percent of a
0 - 26.2


2007
Counties in top 2 quintiles for both diabetes and obesity
Counties in bottom 2 quintiles for both diabetes and obesity


2007
Age-adjusted percent of adults ≥ 20 years old with diabetes
0 - 7.0
7.1 - 8.1
8.2 - 9.0
9.1 - 10.5
≥ 10.6

cdc.gov

# The Cost of Obesity and its Co-morbidities

- **Obesity adds $2,741 to a person's annual medical bills (almost $28,000 over a 10-year period).** J Health Econ 2012; 31:219-230

- **Healthcare costs for a person with diabetes are 2.7 times greater than for a person without diabetes and, for those diabetics with complications, it is 4.7 times greater.** United Health Group Inc., 2010

- **Obese employees spend 77% more on medications than non-obese employees.** Health Enhancement Research Organization, 2010

# Obesity Now Accounts for 21% of Healthcare Costs: Study

April 10, 2012

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An obese person incurs medical costs that are $2,741 higher (in 2005 dollars) than if they were not obese, according to the newest study. Nationwide, that translates into $190.2 billion per year, or 20.6 percent of national health expenditures.

An obese person incurs medical costs that are $2,741 higher (in 2005 dollars) than if they were not obese, according to the newest study. Nationwide, that translates into $190.2 billion per year, or 20.6 percent of national health expenditures.

J Health Econ 2012; 31:219-230

http://www.insurancejournal.com/news/national/2012/04/10/242749.htm

# Cost per Claim/Lost Work Day per Claim relative to BMI

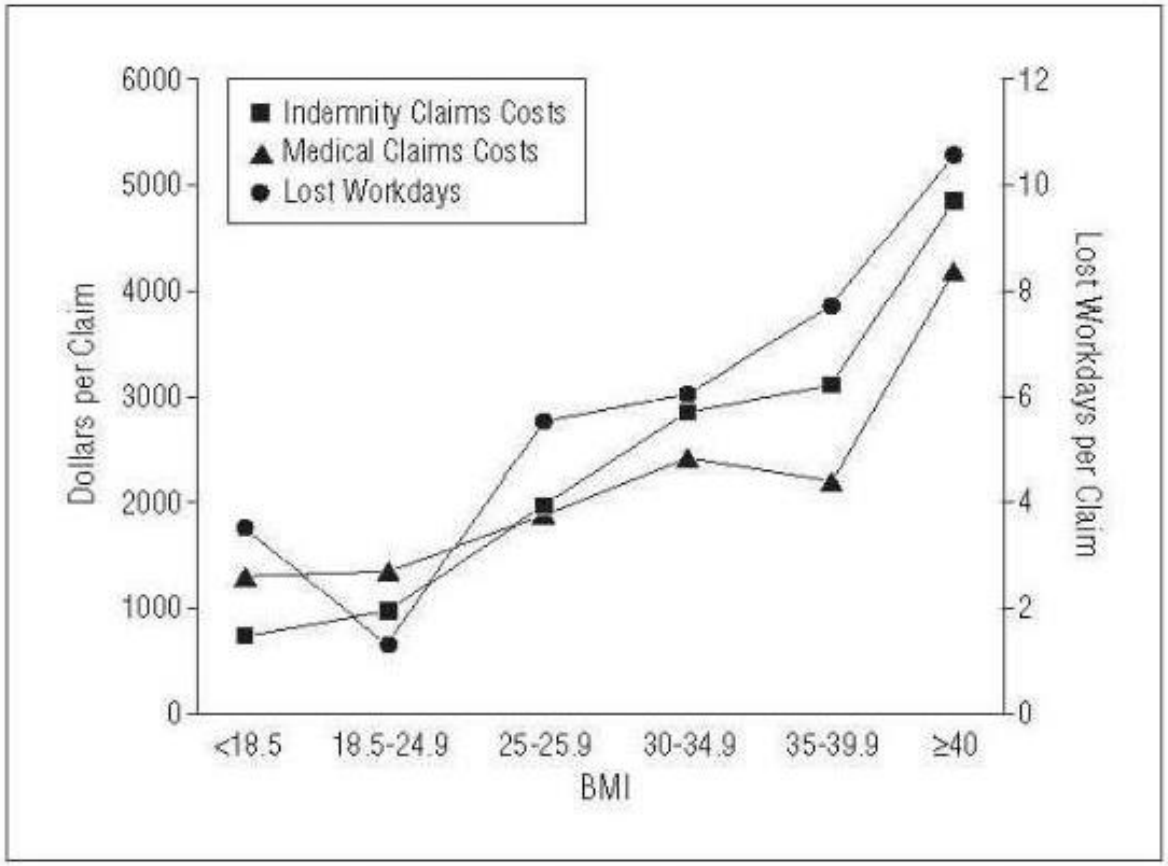


**Figure 1.** Mean indemnity claims costs, medical claims costs, and number of lost workdays per claim by body mass index (BMI) category. Body mass index is calculated as weight in kilograms divided by height in meters squared.

Ostbye et al. Arch Intern Med/Vol. 167, Apr. 23, 2007, pp. 766-773.

# CDC's LEAN *Works!* - A Workplace Obesity Prevention Program



**Related Links**
- Healthy Weight
- Overweight and Obesity
- Division of Nutrition, Physical Activity, and Obesity



## Obesity Cost Calculator

Obesity is increasingly affecting workers all over the world. Many organizations realize the need to assess the costs of obesity as it relates to their bottom line. Forward thinking organizations are looking for ways to quantify the magnitude of this challenge and to assess the options and benefits of providing interventions and incentives to better manage the health of their employees.

CDC's **Obesity Cost Calculator** uses input data provided by human resources or benefits personnel to calculate an estimate of the costs to an organization that are obesity related. More specifically, the Obesity Cost Calculator:

Estimates the costs of obesity based on characteristics of your company. These include costs for medical expenditures and the dollar value of increased absenteeism resulting from obesity. Costs are estimated separately for four groups based on Body Mass Index (BMI); measured as weight in kilograms divided by height in meters squared):[194]

- Overweight (BMI 25-29.9)
- Obese 1 (BMI 30-34.9)
- Obese 2 (BMI 35-39.9)
- Obese 3 (BMI > 40)

**Before you begin using the cost calculator, you will need to gather specific information about your company.** You can use the Obesity Cost Calculator Worksheet (DOC-492k) to collect this information to better approximate the costs of obesity to your organization. To obtain better estimates for your company, you will need to know the average hourly wages, percent of employees receiving health benefits, and the body mass index (BMI) of your employees. If you do not have some of this data for your company, the Obesity Cost Calculator will provide default values from nationally representative datasets to calculate the cost estimates.

**Ready?** Calculate Cost of Obesity

### Also in This Section

- Information About Estimations
- Frequently Asked Questions (FAQ)

**Before You Calculate**

Weight-based Discrimination

Obesity Cost Calculator Worksheet (DOC-492k)

**Ready?**

Calculate Cost of Obesity

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Print page
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Leading Employees to Activity and Nutrition

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1600 Clifton Rd
Atlanta, GA 30333

800-CDC-INFO
(800-232-4636)
TTY: (888) 232-6348
24 Hours/Every Day

cdcinfo@cdc.gov

# We Know We Have a Problem…
# *What Can We Do About It?*

**Although 76% of Americans say they have healthy eating habits, and 87% believe that diet is essential to good health, the top 5 sources of calories among Americans (ages 2 years and older) are:**

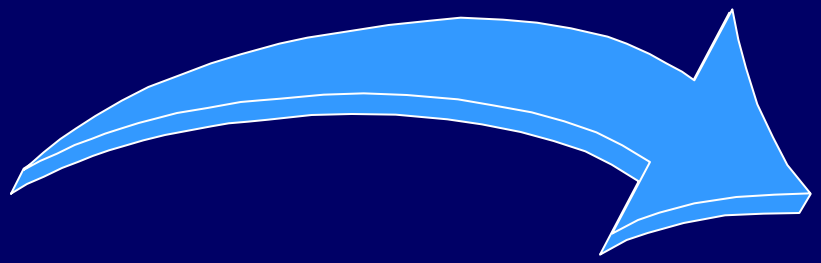
1. **Pastries (cake, cookies and other processed grains)**
2. **Soft drinks**
3. **Burgers (and other beef)**
4. **Crackers, chips and similar snack foods**
5. **Cheese**

**Fruits and vegetables make up only 10%.**

# Where's the "healthy eating"?

*Nutr J* 2013;12:116

http://www.cdc.gov/diabetes/prevention/pdf/postcurriculum_session5.pdf



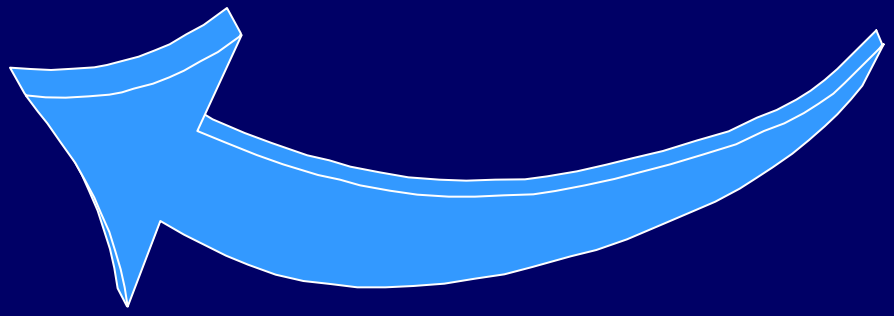
## Weight Management

- Increased exercise
- Decreased dietary fat
- Increased complex carbohydrates/fiber

=

## Health Management

- Increased exercise
- Decreased dietary fat
- Increased complex carbohydrates/fiber



# The Spectrum of Anticipated Weight Loss Across the Continuum of Obesity Treatments

| Pharma Plus Lifestyle Intervention | Primary Care-based or Community Setting | Comprehensive Behavioral Treatments | Medically Supervised Program (VLCD, LCD) | Gastric Banding and Gastric Bypass |
|---|---|---|---|---|
| 3-9% of initial weight lost | 4-6% of initial weight lost | 8-10% of initial weight lost | 15-25% of initial weight lost | 20% or greater of initial weight lost |
| One year | 6 mos. – one year | During initial weight loss | During initial weight loss | Two years |


Yanovski SZ, Yanovski JA. Long-term drug treatment for obesity: a systematic and clinical review. *JAMA* 2014:311:74-86

Butryn ML, Webb C, Wadden TA. Behavioral treatment of obesity. *Psychiatr Clin North Am* 2011;34:841-859

Picot J, Jones J, Colquitt JL, Gospodarevskaya E, Loveman E, Baxter L, Clegg AJ. The clinical effectiveness and cost-effectiveness of bariatric (weight loss) surgery for obesity: a systematic review and economic evaluation. *Health Technol Assess* 2009;13(41)

Tsai AG, Wadden TA. Systematic review: An evaluation of major commercial weight loss programs in the US. *Ann Intern Med* 2005;142:56-66

# Long-term Weight Loss and Maintenance

- There is a great deal of evidence that weight loss is a key element in the prevention of chronic illness as well as in the stabilization or reversal of conditions like diabetes and hypertension.
- An increasing body of research points to the **exact** behaviors required to maintain significant weight loss over time.
- Consistency, accountability, self-monitoring, low-fat eating and physical activity are among these variables that predict long-term success.

Wing RR, Phelan S. Am J Clin Nutr. 2005 Jul;82(1 Suppl):222S-225S.

# Summary of Key Research-Based Behaviors for Obesity Treatment

**Processes**

1. Attendance and Phone Calls
2. Daily Record Keeping

**Procedures**

1. Minimum 2,000 PA calories per week
2. Minimum 35 servings of V/F per week, including legumes
3. Use of Meal Replacements
   Weight Loss: Minimum 35 per week
   Maintenance: Minimum 14 per week

# Physical Activity: National Weight Control Registry

N = 3,683

Those keeping off 30 lbs. or more (current average is 71 lbs.) for an average of 5.8 years, average 2,621 kcals per week of physical activity.

Catenacci VA, Ogden LG, Stuht J, Phelan S, Wing RR, Hill JO, Wyatt HR.

*Obesity* 2008;16:153-161.

# 10-Year Study by American Cancer Society

Follow-up nutrition survey of Cancer Prevention Study II participants from 1982-1992 (n=79,236)

Two variables that predicted a decrease in BMI included:

- High levels of physical activity
  (e.g., running/jogging)
- 20 or more servings of vegetables per week

*Am J Public Health* 1997;87:747-754

## Pilot Study:

# Effects of Weight Loss in Patients with Long-standing Type 2 Diabetes Requiring Insulin

21 subjects on insulin – 18 completers (8 in lifestyle arm ;10 in rosiglitazone + lifestyle arm)
Duration of treatment: 6 months Average duration of diabetes: 17 years
Baseline BMI: 36.4; Baseline HbA1c: 9.0
Lifestyle treatment: meal replacements, increased vegetables/fruits and physical activity, behavioral education classes

| Pre | Post |
|---|---|
| Weekly PA = 500 kcal | Weekly PA = 2,100 kcal |
| Avg V/F = 15 servings/wk | Avg V/F = 35+ servings/wk |

The table above represents pooled data from both treatment arms. Research has shown that weight loss is associated with favorable changes in risk factors for diabetes. The table below represents data from the lifestyle only treatment arm.

| Medical Risk Factors | Change in Value (mean) |
|---|---|
| Weight Loss | - 16.0 lbs. |
| HbA1c | ⬇1.3% |
| Insulin Dose | ⬇5.6 units/day |
| Triglycerides | ⬇ 105 mg/dL |
| Systolic BP | ⬇ 16.2 mmHg |
| Diastolic BP | ⬇ 12.8 mmHg |
| Waist Circumference | ⬇ 2.8 inches |

Reynolds LR, Konz EC, Frederich RC, Anderson JW. *Diabetes Obes Metab* 2002;4:270-275

# Medically Significant Weight Loss:

## HMR's Published Data on Treatment Outcomes

Recommendations by experts suggest weight loss of 5 to 10% of initial body weight (IBW) can provide significant medical and health improvements.

| Program Option | % Initial Body Weight Loss* for study completers | | |
|---|---|---|---|
| Decision-Free® Diet[1,2,3] | 16.4-21% | (43-66 lbs.) | 12-26 wks. |
| Healthy Solutions® [1,4,6] | 13.7-15.8% | (28-37.5 lbs.) | 12-26 wks. |
| HMR at Home® phone-support[5,6] | 10.4-13% | (23-28 lbs.) | 12-26 wks. |
| HMR at Home® self-directed[7] | 6% | (13 lbs.) | 12 wks. |

**Above data represent published studies conducted in different settings with different timeframes and treatment populations. Weight -loss data for reference 6 are median; all others are means. For additional details, see references:*


1 *J Am Diet Assoc* 2009;109:1417-1421

2 *Int J Obes* 2007;31:488-493

3 *J Am Coll Nutr* 2005;24:347-353

4 *Postgrad Med* 2011;123:205-213

5 *Obes* 2013;21:1951-1959

6 *Int J Obes* 2007;31:1270-1276

7 *Obes Res & Clin Pract* 2009;3:149-157

# Healthy Solutions® at Home Program

**Data for participants completing 10 weeks or more (average of 15.3 weeks)**

Average weight loss:

**27.3 lbs.**

This represents a weight loss of -12.4% of initial body weight

Average weekly weight loss:

**1.9 lbs.**

Average weight loss per person

Per patient weekly averages:

**41** ONE-CUP SERVINGS of fruits & vegetables

**2,025** KCAL of physical activity

| MEASURE (AVERAGE) | TOTAL GROUP | COMPLETED < 10 WEEKS | COMPLETED ≥ 10 WEEKS* |
|---|---|---|---|
| N | 38 | 11 | 27 |
| Weeks in Program | 12.3 | 4.7 | 15.3 |
| Start Weight (lbs.) | 219.8 lbs. | 221.9 lbs. | 219.0 lbs. |
| Total Weight Loss (lbs.) | -23.4 lbs. | -13.6 lbs. | -27.3 lbs. |
| % of Initial Weight | -10.6% | -6.2% | -12.4% |
| BMI Change | -3.7 | -2.2 | -4.3 |
| Fruit & Vegetable | 39.3 | 35.9 | 40.7 |
| Physical Activity | 1859.4 | 1452.8 | 2025.05 |

6 employees left before week 10. The average weight loss of -10.9 lbs (5.1% of initial weight) at an average of 4.3 weeks.

*26 employees are still active with an average weight loss of -26.4 lbs. (11.9% of initial weight) with an average of 14 weeks.

2014. Data on file.

# HMR® Program: Reductions in Medical Risk Factors

## Medical Risk Factor Changes

N = 1,256 patients with an average time between surveys = 186 weeks

**It is well reported that weight loss is associated with favorable changes in risk factors for co-morbidities associated with obesity and with decreased medication needs.**

| Category | Initial Average Value | Latest Average Value | Change from Initial to Latest |
|---|---|---|---|
| **Weight** (lbs.) | **241 lbs.** | **198 lbs.** | **↓ 43 lbs.** |
| **Total Chol/HDL** (mg/dL) | **3.78** | **3.26** | **↓ 13.8%** |
| **Triglycerides** (mg/dL) | **149** | **111** | **↓ 25.5%** |
| **Systolic BP** (mmHg) | **128** | **120** | **↓ 8 mmHg** |
| **Diastolic BP** (mmHg) | **78** | **74** | **↓ 4 mmHg** |
| **Fasting Glucose** (mg/dL) | **104** | **100** | **↓ 3.8%** |

Data from 1,256 patients who enrolled in HMR's clinic-based Decision-Free or Healthy Solutions programs at one of 43 U.S.-based clinics. Patients completed a baseline Health Risk Assessment (HRA) and a follow-up HRA during the maintenance phase of the program (July/August 2012). Patients were excluded if they did not have complete biometric measures. Time between initial and follow-up HRA represents time in and out of the program.

*Presented at The Obesity Society 2013* *Data on file.*

# Greater Initial Weight Loss Increases Total Weight Loss and Improves Long-term Success

"Initial weight loss is the best predictor for success in obesity treatment."

*Patient Educ Couns* 2010;79:361-366

"Collectively, findings indicate both short- and long-term advantages to fast initial weight loss. Fast weight losers obtained greater weight reduction and long-term maintenance, and were not more susceptible to weight regain than gradual weight losers."

*Int J Behav Med* 2010;17:161-167

# The long-term treatment of obesity is a marathon, not a sprint.

## For the Occupational Healthcare program and provider, the long-term treatment of Behavioral Health Needs is also not a sprint!

- **Prevention (health and wellness promotion)**
- Clinical recognition
- Appropriate intervention (psych and pharm)
- Appropriate specialist/program referral
- Integrated approaches to employee care
- Advocacy and education
- Administration and management
- Research

Position Statement of the ACOEM 2009

# Additional Resources for Information on Depression and Chronic illness

- National Alliance on Mental Illness: *“Depression and Chronic Illness”*
- CDC: *“Depression”*
- National Institute of Mental Health: *“Depression and Chronic Pain”*