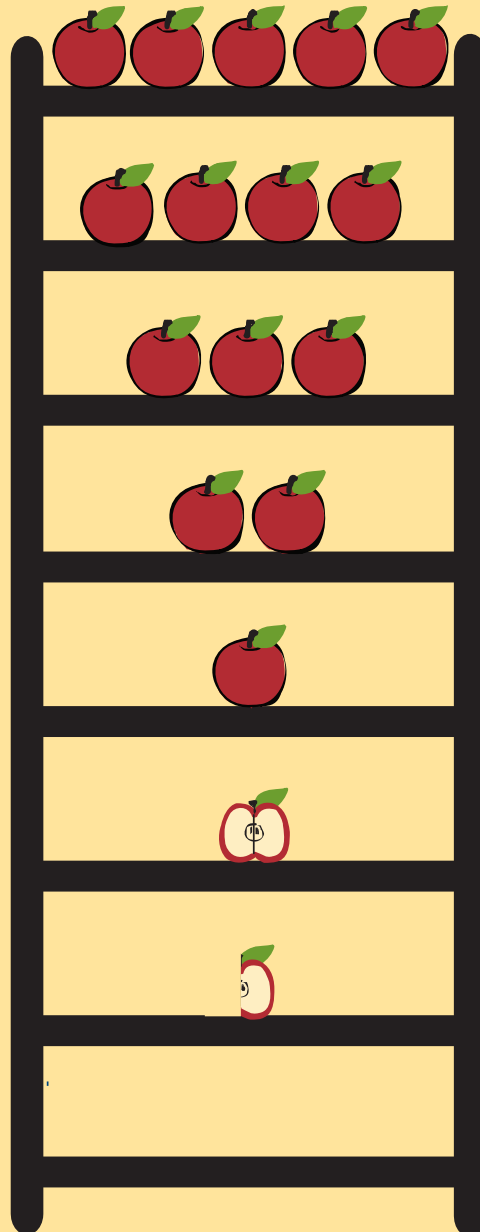


REACHING FOR A HEALTHIER LIFE

Facts on Socioeconomic Status and Health in the U.S.





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**This work would not have been possible without the generous support
of the John D. and Catherine T. MacArthur Foundation. With
special thanks to Katherine Newman, Christina Paxson, Larry Adelman,
Molly French & Elizabeth Adler.**

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Introduction

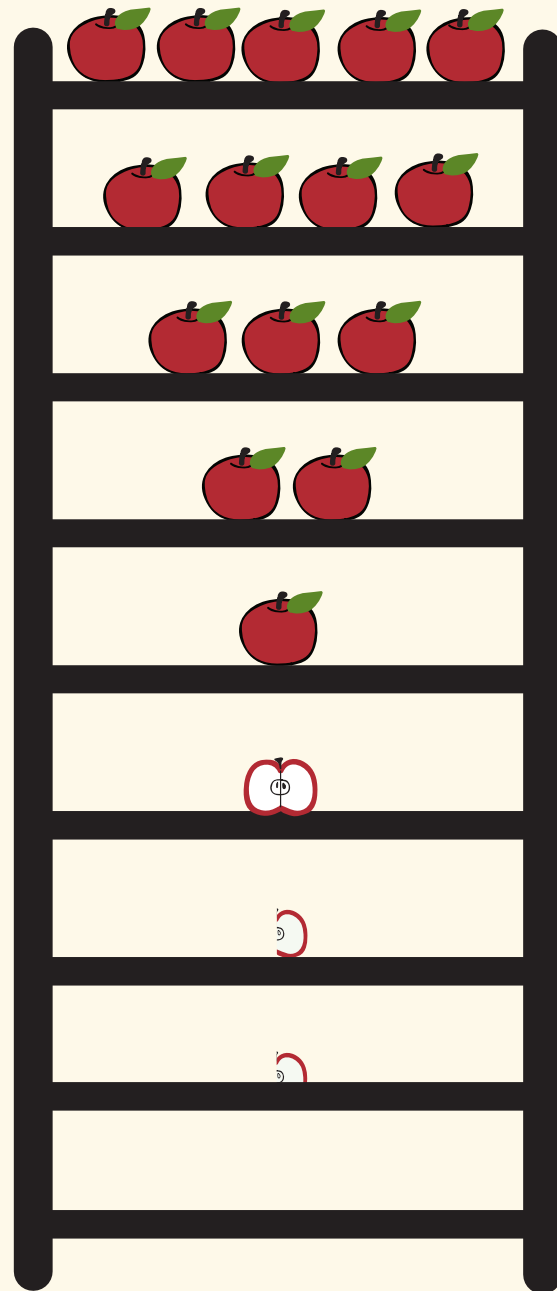
SOCIETIES ARE STRUCTURED LIKE LADDERS. *The rungs of the ladder represent the resources that determine whether people can live a good life – prosperous, healthy, and secure – or a life plagued by difficulties – insufficient income, poor health, and vulnerability. People standing on the top rungs are the best educated, have the most respected jobs, ample savings, and comfortable housing.*

On the bottom rungs are people who are poorly educated, experience long bouts of unemployment or low wage jobs, have nothing to fall back on in the way of savings, and live in substandard homes. The people in the middle have more resources to rely on than do people at the bottom, but far less than people on the top. In reaching for health, every step up makes a difference.

Your position on the ladder predicts how long you live and how healthy you are during your lifetime.

Of all the outcomes determined by your position on the ladder, none is more fundamental than this: it predicts how long you live and how healthy you are during your lifetime. This is a surprising finding because we tend to think of health as something that is fixed by our genetic heritage. But genes are only part of the picture. It turns out that the more advantaged our lives are, the longer we live and the healthier we are from birth to old age. People who grow up on the bottom die younger and are sicker throughout their lifetimes than those who are born to the rungs above them.

Premature death is more than twice as likely for middle income Americans as for those at top of the income ladder, and more than three times as likely for those at the bottom than those at the top.



Where You Are on the Ladder Matters a Lot

EVERY SOCIETY HAS ITS OWN LADDER, BUT COUNTRIES DIFFER IN HOW LONG AND STEEP IT IS. Nations also diverge in how powerful an impact a person's position on the ladder has on his or her health and longevity. In some countries, public policies dampen its force. For example, some countries ensure that people at the bottom are provided with secure housing or a high quality education, even if they cannot afford to get it for themselves. In other countries, little effort is made to distribute resources apart from what individuals can do on their own. There are ladders in both kinds of countries, but their consequences are quite different.

In the United States a person's position on the ladder determines to a large degree how healthy and long-lived he or she is. The ladder in the United States is both long and steep. There are substantial differences in the resources available to those at the top and the bottom, and there are a limited number of social programs that assure access to goods and services for those on lower rungs. The impact on health can be seen by taking a careful look at those who are dying prematurely; that is, those dying before age 65. The nature of the U.S. ladder is such that the risk of dying before the age of 65 is more than three times greater for those at the bottom than for those at the top. Yet this is not simply a question of the large gap between the bottom and top. People in the middle are also at greater risk than those at the top. Premature death is more than twice as likely for middle income Americans as for those at the top of the income ladder.

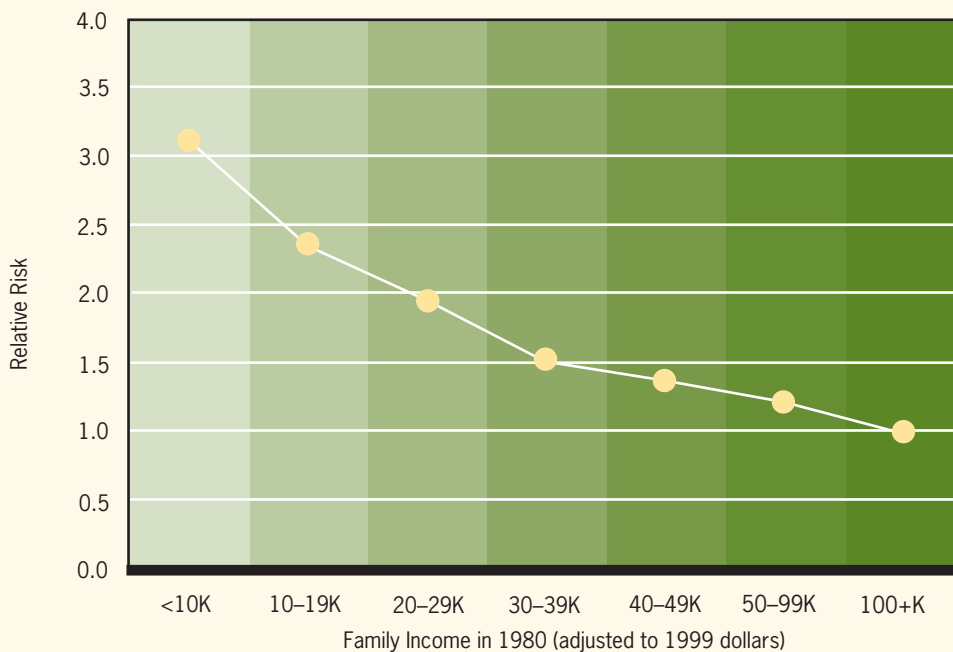


Figure 1. Relative Risk of Premature Death by Family Income (U.S. Population).

*Age and sex-adjusted relative risk of dying prior to age 65
Based on 9-year mortality data from the National Longitudinal Mortality Survey

Another way to illustrate how powerful the ladder is in this country is to consider the proportion of deaths that would not have occurred if life opportunities and resources were equally distributed. About a quarter of these excess deaths (those before age 65) cluster among the poorest 8% of the population — families with annual incomes of less than \$10,000. Yet

Though we are one of the richest countries in the world, our people have one of the shortest life expectancies of any industrialized nation.

excess death is not just a problem for the very poor. More than half of America's excess deaths occur in the middle class in families that earn \$20,000 to 100,000 a year. What this tells us is that the power of social status to impact the most precious resource we have — life itself — is enormous and pervasive.

Indeed, though we are one of the richest countries in the world, our people have one of the shortest life expectancies of any industrialized nation. We rank behind more than twenty other countries, even though our per capita income is substantially higher, and we spend far more per capita on health care than any other nation. If everyone in the U.S. could experience the kind of healthy life that people at the very top of our ladder enjoy, we would be among the longest lived people in the world. Sadly, this is not our situation.

The age of death is only one outcome that varies along the ladder's rungs. Other serious health problems follow the same pattern of inequality. Those lower on the socioeconomic ladder are more likely to experience:

- Newborn health problems like premature birth, low birth weight, birth defects.
- Signs of future disease like high blood pressure, obesity, weakened immune system.
- Chronic diseases like diabetes, heart disease, and many forms of cancer.
- Infectious diseases ranging from HIV/AIDS to the common flu.
- Disabilities like blindness, mental illness and decline of physical strength.

These problems are far from random in their distribution. Again, children and adults who live at the bottom of the ladder face these life threatening and debilitating conditions far more often than those in the middle, who in turn are more at risk than Americans at the top. At each step down the ladder, the opportunity to enjoy a long and healthy life diminishes.

Environments Influence Health Habits

IN ADDITION TO ONE'S GENES, A PERSON'S BEHAVIORS PLAY A POWERFUL ROLE IN HEALTH AND LONGEVITY. If health habits are a major reason that some people are in good health and live long lives while others are ill much of the time, is the individual responsible? Individuals do have some responsibility for their behaviors, but while there are many things we can do to make the most of our genetic makeup, the ease or difficulty of practicing healthy behaviors is powerfully affected by our place on the ladder. Environments mold health habits. At each stage of life, from birth onward, the conditions we live in – the physical and social environments we encounter – constrain or expand the options available to us for improving our health and avoiding disease. Each step down the ladder provides fewer tools to help the individual engage in health-protecting behaviors: there are fewer recreational facilities, less safe neighborhoods, fewer supermarkets, more fast food restaurants and more alcohol outlets. In addition, high levels of stress are more common lower down on the ladder. Great stress can increase health-damaging behaviors, such as the consumption of fat and sugar and reliance on tobacco and alcohol. Healthy behaviors become more difficult to sustain the further down the ladder we are.

The Relationship Between Health and Ladder Position

THE RELATIONSHIP BETWEEN HEALTH AND SOCIOECONOMIC RESOURCES (E.G., EDUCATION, INCOME, OCCUPATION) IS COMPLICATED BECAUSE EACH AFFECTS THE OTHER. The rung we're on affects our health, and in turn our health affects our ability to reach higher rungs. Children born to families lower on the ladder who have fewer socioeconomic resources tend to experience more illness and injuries and suffer from more chronic conditions such as asthma. In turn, children who experience disease or disability tend to miss school, and ultimately complete fewer years of schooling. This then limits the kind of occupations they qualify for, relegating them to poorly paid jobs. Poorly paid jobs tend to be jobs with little control and stressful physical working conditions, both of which contribute to the onset of health problems. The onset of health problems during the working life of an adult impacts the ability to continue working or to advance occupationally. This impacts the economic security people experience in retirement.

The greater proportion of one's life a person spends at the high end of the ladder, the more health protection benefits accumulate. The immune system is not overtaxed; nutrition and exercise create and maintain a strong body, calm conditions promote rest and restoration. Closer to the bottom, exposures to adverse conditions add up. Those who are persistently exposed to poor living conditions face increased odds of contracting serious disease. For example, heart and lung diseases are disproportionately found among people who lived in low income households in both their childhood and their adulthood.

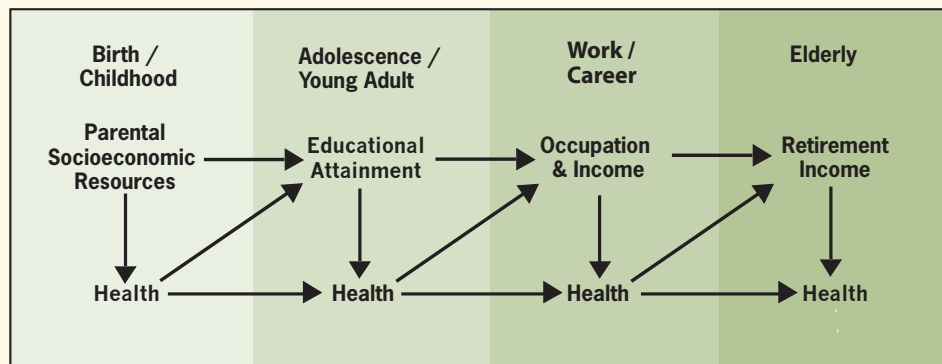


Figure 2. The Dynamic Relationship Between Health and Ladder Position.

What to Do

ADDRESSING THESE INEQUALITIES IN HEALTH WILL HAVE MULTIPLE BENEFITS IN ADDITION TO REDUCING HUMAN SUFFERING. A healthier population needs less medical care, the cost of which is creating economic hardships for individuals, businesses and the government. Approximately 16% of our Gross Domestic Product was spent on health care in 2006; it is projected to increase to 20% by 2016. The most critical long-term strategy for reducing these expenditures is to address the underlying determinants of disease. Just as important, healthy people are more productive and can contribute more to the economy.

The most critical long-term strategy for reducing health expenditures is to address the underlying determinants of disease.

These kinds of policies go far beyond the health insurance issues that dominate current public discussions, since health care access has a much smaller influence on population health than do the underlying social determinants of health.

Two kinds of policies are required to reduce premature death and eliminate the disparities that widen as we move from the bottom to the top of the ladder. 1. Policies that affect the length of the ladder and the distance between its rungs, and 2. Policies that buffer the damaging conditions of living below the top rungs.

1 Policies that Affect the Ladder: Policies that impact income and wealth distribution, educational attainment, and occupational mobility will make a difference because these are the fundamental components of the ladder itself. If the gradient—the steepness of the ladder—were less dramatic, we would see smaller gaps in the conditions that cause inequalities in the first place. Examples of such policies include:

Education

- Provide access to high quality early childhood education for all children
- Reform school financing to equalize access to quality education in K through 12
- Reduce financial barriers that prevent qualified students from attending college

Income

- Provide adequate income to every household through minimum wage increases
- Offer income supports to families for newborns
- Provide earned income tax credits to reduce the burden on those with less income
- Secure pension plans and increase saving incentives

Training

- Equalize access to opportunities for new or enhanced job skills training on the job, in community colleges, and in other venues

2 Policies that Blunt Adverse Consequences: Policies that can ameliorate health risks associated with position on the ladder include ones that govern housing, occupational safety and health, exposure to toxic hazards, the availability of nutritious food and places to exercise and other neighborhood resources. Examples of such policies include:

Environment

- Provide affordable housing
- Tighten zoning to restrict noise and pollution
- Enforce lead abatement ordinances
- Increase traffic safety
- Reduce violence and crime

Work

- Limit exposure to physical hazards, chemicals, and psychosocial strains in workplaces
- Increase opportunities for control over work demands
- Reduce disruptive shift changes and extended work hours
- Provide working parents with sufficient leave time to attend to children when they are sick
- Minimize work-family conflict

Cigarettes and Alcohol

- Ban smoking in public areas, subsidize treatment programs for smoking cessation and drug and alcohol abuse
- Increase excise taxes on cigarettes, alcohol and junk food and use proceeds to support public health programs
- Control advertising of tobacco and alcohol products
- Limit the concentration and operating hours of stores selling alcohol

Recreation

- Increase access to recreational facilities through construction support and policies to open up schools and other institutions evenings or weekends

Nutrition

- Ban sale of soft drinks and junk foods in schools
- Modify school lunch programs to improve nutrition
- Provide incentives (e.g., tax breaks or low cost business loans) for green markets and grocery stores that sell fresh produce

Are these really health policies and not social policies designed to reduce inequality or poverty? They are both: these domains are completely interwoven. We will not see the reduction of premature death and disease if we do not go after the root causes. To name only a few, housing policy, educa-

**Health policies and social policies
are completely interwoven.**

tion policy, labor regulations, and zoning are critical to determining the conditions that lead to patterns of disease and mortality. They are all health policies.

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Social Status Matters for Health, from Birth to Death

Overview

BEGINNING EVEN BEFORE BIRTH AND CONTINUING THROUGH OLD AGE, THE RESOURCES WE HAVE AT OUR DISPOSAL in the form of educational attainment, family income, and the quality of the jobs we hold determine our exposure to hazards and resources that impact health. Family, neighborhood, school and community environments shape children's development. Along with the work environments that come later, they continue to influence the way that adulthood and old age unfold. The consequences of living in a positive setting or a negative one are not transitory; they are cumulative. The longer people remain on the lower rungs of the ladder, the worse their physical health and mental functioning will be later in life.

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Children from families higher on the ladder tend to enjoy high quality preschool education, which puts them ahead of the game when they reach kindergarten. Because they perform well in their early years of schooling, they are advantaged in the later years and enter the job market well prepared by virtue of their long history of educational accomplishment. Children who have no preschool and have a rougher adjustment to the early years of school may fall behind in reading and math, and find it hard to recover their footing. They are at risk for dropping out of school or languishing in the bottom tracks. The beginnings set children on trajectories which shape their health and their future position on the ladder.

Interventions to improve health and reduce disparities should target specific stages of life to increase the likelihood of positive transitions (e.g., between elementary and middle school). Policies that support the healthy growth of children and adolescents are particularly important. These investments pay off more handsomely because correcting for the damage later on in life is far more costly and less likely to succeed. Safety nets and springboards for the young translate into healthier and more productive lives for the adults they will become. And that is good for all of us.

Resources Shape Health Before Birth and Throughout Life

At birth. Even before children are born, the resources their families can command are shaping their health. Pregnant women who live on the lowest rungs of the ladder receive less prenatal care, experience higher levels

of stress, and deliver more premature and low weight babies (less than 5.5 pounds). The consequences of low birth weight are enormous: increased risk of infant death, slow cognitive development, hyperactivity, breathing problems, overweight, and heart disease.

Through childhood. Even if we eliminate the problems associated with low birth weight, children in families lower on the socioeconomic ladder develop health problems at younger ages than their more affluent counterparts. As Figure 3 makes clear, the health impact occurs all along the ladder, not just at the bottom. Chronic conditions, injuries, ear disease, asthma, and physical inactivity are most frequent among children whose families are at the bottom of the ladder. Those whose parents are lowest in education, income and occupational prestige (the “Socioeconomic Status” ladder) suffer most from these diseases, while those in the middle are less affected, and those at the very top have the lowest incidence.

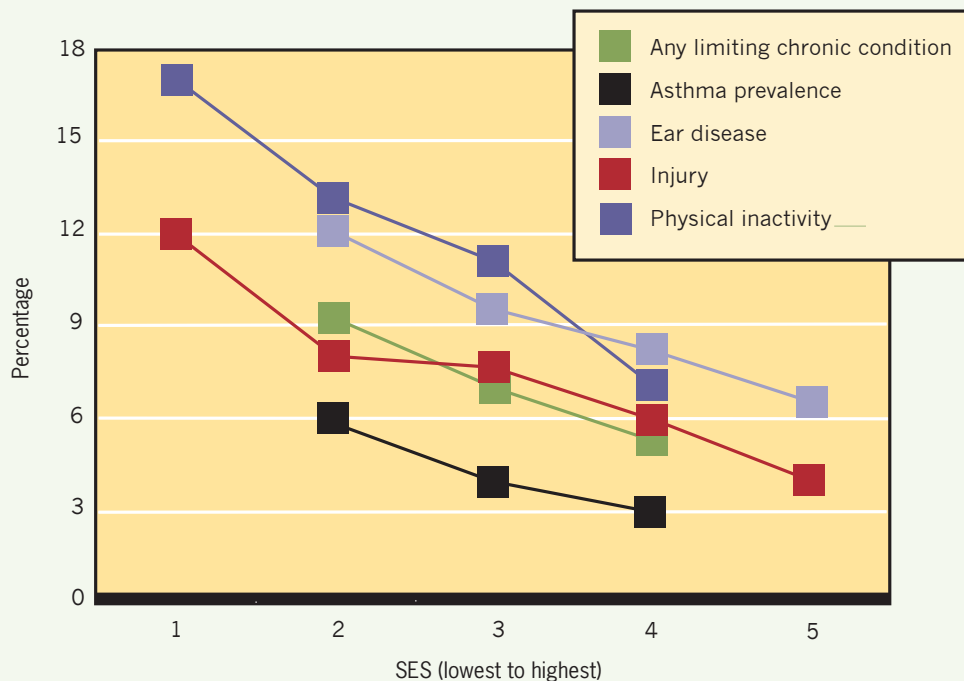


Figure 3. Prevalence of Health Problems in Children.

Note: Different studies generated the data used to create this figure, and some of these sources did not analyze all SES groups.
Source: Created from data reported in *Psychol Bull.* 2002; 128:295-329.

The pattern of diseases associated with position on the ladder differs depending on the specific problem. At all ages conditions like severe asthma are most prevalent among families at the bottom of the ladder. Other conditions, like injury and high blood pressure, seem to even out more in adolescence, though they are very unevenly distributed in childhood. Finally, for health risks like smoking and physical inactivity, adolescence is the biggest trouble spot.

ADULTHOOD. The impact of family circumstances and childhood may not show up until adulthood, after the body's regulatory system has been overburdened for a long time, and the cumulative damage manifests itself as disease. Disease may emerge only after years of cumulative risk. Hence high blood pressure, excessive weight gain, and insulin resistance – which may go on for awhile without producing alarming symptoms – can evolve into heart disease, diabetes, cancer, arthritis, and other conditions that cut life expectancy.

The Long Term Impact of the Environment

WHY DO DIFFERENCES IN HEALTH OUTCOMES EMERGE FROM CHILDHOOD CONDITIONS? The answer lies in part in exposures to environmental hazards that sharply distinguish children living at the bottom of the ladder from their “middle rung” counterparts, who in turn face different problems than those at the top. The lower the rung on the ladder, the more children are subject to:

- Toxins and pollutants, including lead, dirty air and noise. These affect health directly and indirectly in the form of poor cognitive development, resulting in school performance problems.
- Less access to playgrounds, parks, and other safe places to exercise.
- Libraries are scarcer, and so opportunities to read are less plentiful.
- Unstable housing that translates into disruptions in social support and lack of continuity in school attendance.
- Greater consumption of fast food; less access to healthy food. Poor eating habits set the stage for childhood and adult obesity.
- Violence in school and on the street, which exposes children to conflict and anxiety.
- Inadequate and delayed health care, which increases the chance that injuries and illnesses will develop into permanent disabilities.

While these conditions are ubiquitous for children at the bottom, the point in the life cycle where they have the greatest impact varies. Features of the environment that matter most for young children may be very different from those that impact teens, and those with greatest impact on working adults may change upon retirement.

- The health outcomes of young children are most powerfully affected by family relations, housing, and childcare quality.
- As children move into adolescence, peer relations, characteristics of their neighborhoods, and health habits assume greater importance.
- For employed adults, the quality of the work environment – work load, job stress and physical conditions – becomes a more significant influence on health.
- As adults move toward retirement, the quality of social support they can call on from family and friends, coupled with the extent of their social integration into activities, organizations, and local communities plays a powerful role in sustaining good mental health and physical functioning.

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Neighborhoods Matter

Overview

DRIVING THROUGH ANY AMERICAN CITY, IT IS EASY TO SEE THAT NEIGHBORHOODS DIFFER DRAMATICALLY. Some are blessed with amenities that promote the health of their residents: parks and playgrounds that afford opportunities for exercise, buildings in good repair, safe streets that enable people to walk with ease, and well stocked libraries. Others are riddled with conditions that tend to make children and adults unhealthy, including physical features like inadequate recreational facilities, crumbling buildings, stores that do not stock affordable, healthy food, as well as social conditions including high levels of unemployment, depression, or unsafe streets.

Which rung a particular community occupies tells us a lot about the health problems residents are likely to face.

Equal opportunity for good health requires policies that encourage health-promoting conditions in local neighborhoods. The instruments at our disposal include zoning policy, transportation initiatives, community economic development, and housing as well as traditional public and environmental health programs.

It's the Neighborhood Itself, Not Just the People Who Live There

NEIGHBORHOODS CAN ALSO BE ARRAYED ON LADDERS, ranging from those that are most lavishly “furnished” to those that are most “threadbare.” Which rung a particular community occupies tells us a lot about the health problems residents are likely to face above and beyond the difficulties they would experience as a result of their individual characteristics or behaviors.

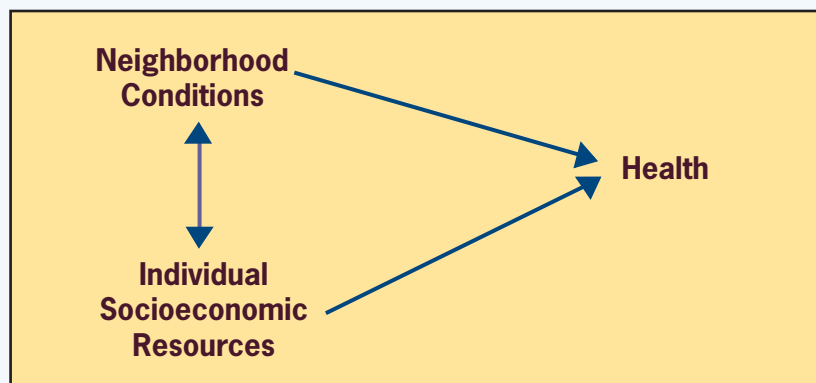


Figure 4. Where You Live Affects Your Health

Table 1. Neighborhood Features, Hazards, and Health Effects

Neighborhood Feature	Hazard	Health Effect
Biological /Chemical environment ■ Air ■ Water ■ Soil	■ Air & water pollution ■ Noise ■ Waste ■ Lead paint ■ Other environmental hazards	■ Respiratory diseases ■ Hearing loss ■ Sleep deprivation ■ Developmental delays ■ Impaired cognition
Built environment ■ Housing ■ Transportation ■ Commercial establishments ■ Billboards ■ Parks ■ Libraries	■ Housing-related environmental toxins ■ Allergens ■ Inadequate access to healthy food ■ Increased exposure to fast food, alcohol and tobacco products ■ Exposure to tobacco smoke ■ Lack of recreation	■ Asthma ■ Obesity ■ Alcohol and tobacco addiction (leading to liver, lung and cardiovascular disease) ■ Hypertension (due to obesity and lack of exercise) ■ Compromised immune system
Social environment ■ Levels of neighborhood stress and support ■ Enforcement of common rules for public behavior ■ Behavioral norms	■ Violence ■ Crime ■ Social isolation ■ Low levels of interpersonal trust ■ Public disorder	■ Anxiety ■ Fear ■ Hyper-vigilance ■ Depression ■ Stress related behavior (over-eating, smoking, addiction)

For this reason, we need to understand how a neighborhood's physical environment, man-made structures, and social attributes impact health (see Table 1, above).

Neighborhoods can be characterized by three broad domains: biological/chemical, built, and social. For each of these domains less affluent neighborhoods have more hazards and fewer resources that have health effects. Table 1 gives examples of hazards and associated health effects in each domain. For example, as Figures 5 and 6 show, the poorest neighborhoods have far fewer supermarkets, but many more liquor stores, than do either moderate or high income communities. This imbalance has negative consequences for the health of neighborhood residents (see Fact 4).

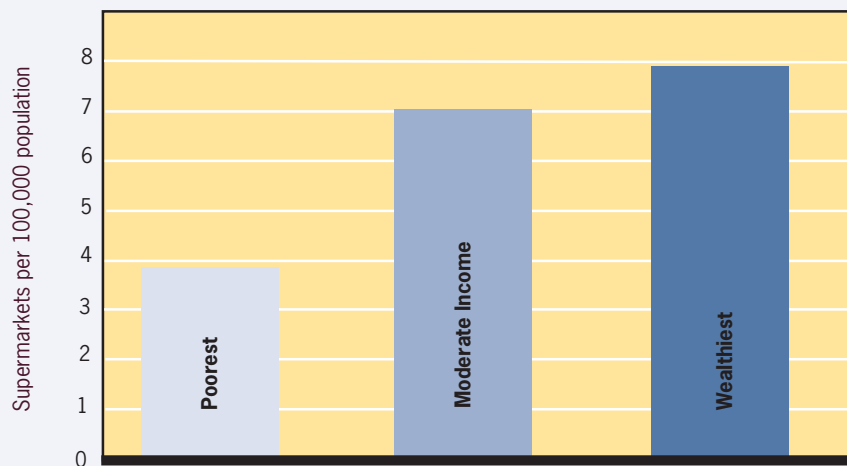


Figure 5. Supermarkets by Neighborhood Income.

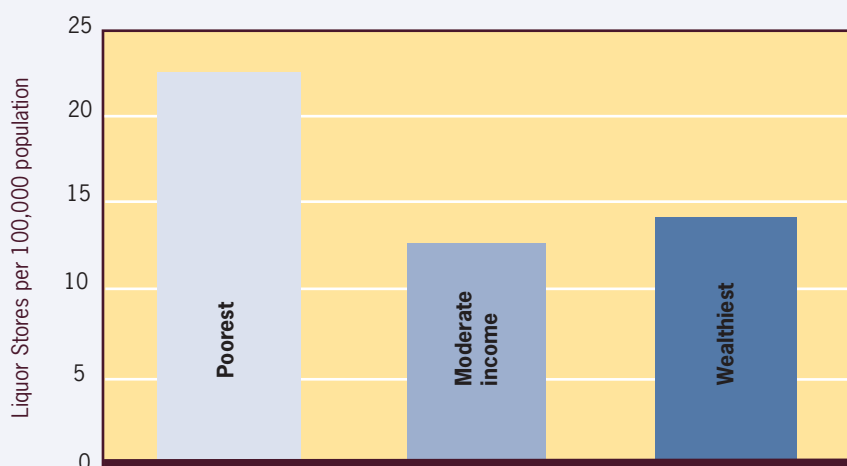


Figure 6. Liquor Stores by Neighborhood Income.

Source: Moore LV, Diez Roux AZ. Associations of neighborhood characteristics with the location and type of food stores. *Am J Public Health.* 2006; 96(2): 325-331. Data corresponds to selected areas of Baltimore MD, New York City, NY and Forsyth County, NC.

Since community characteristics matter for health and contribute to disparities, we need to assure that neighborhoods at all rungs of the ladder are health-promoting. Through zoning, transportation, community development, and housing policies, we can create environments conducive to healthy living for people on all rungs of the ladder.

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FACT 3 Employment Conditions Matter

Overview

AMERICANS PUT MORE HOURS INTO THEIR JOBS THAN ADULTS IN VIRTUALLY ANY OTHER INDUSTRIALIZED COUNTRY. Even when we factor in the time spent on vacation, American adults spend 40-50% of their waking hours at work. For example, according to International Labour Organization statistics, Americans who are paid by the hour average 41-42 hours of work per week, compared to 39 in the United Kingdom, 37 in Germany and 38 in Japan. For salaried workers, the differences may be even larger, but are harder to document. Given that so much of our life is spent working, conditions on the job – including the demands that jobs make on our physical and psychological well being – make a big difference in health patterns overall.

Although labor policy may seem distant from health policy, the fact is that each affects the other.

There is no substitute for having a job as a source of positive identity, income, and social support. It is absolutely central to an honorable adulthood, particularly in the United States, where work is important as an anchor for meaningful participation in most aspects of life. Yet harmful features of work environments can jeopardize one's health. When employees have little control over the pace or content of their work, they experience damaging levels of stress. Physical requirements on the job can lead to injuries or exhaustion. Doctors see the end result in their waiting rooms: workers suffering from respiratory and cardiovascular disease, muscle or repetitive strain or back problems. The balance of helpful and harmful work conditions tips in a positive direction at the high end of the labor market. Prestigious jobs that pay well tend to have comfortable working conditions. Accordingly, people at the top of the job ladder enjoy health-promoting conditions on the job. As you descend the ladder, the balance turns more negative.

Although labor policy may seem distant from health policy, the fact is that each affects the other. Improvements in work conditions will improve health, and healthier workers will improve productivity. The investment we make in improving work conditions – including policies that reduce stress in the work world or that enable workers to cope with the pressures that cannot easily be changed – will make a difference in reducing disparities between the most and least advantaged workers. Some will worry that interventions of this kind will dampen productivity. Not so. In fact, the contrary is the case. Healthy workers are more productive. In addition, the enormous economic burden of covering health care costs – a force bankrupting many American firms from the airlines to the auto industry – would be substantially reduced if the workforce was healthier. There is no trade off

between health and productivity; both benefit from the thoughtful redesign of the workplace. Such redesign will also reduce the gap in health at different rungs of the ladder.

The Cost of Job-Related Health Conditions

WHEN THE NATIONAL ACADEMY OF SOCIAL INSURANCE TOTALED UP THE COST of insurance claims, work replacement, and lost productivity from work-related problems, it discovered that the annual cost totaled a whopping \$55 billion in the year 2000. That amounts to 0.8% of the gross domestic product and constitutes a huge drain on American business. If we were to include the indirect costs – costs associated with retraining, turnover and the impact of workplace instability on productivity – we would be looking at a figure double or triple this estimate. In a competitive international climate, we can hardly afford the drag these costs impose. And since they fall most heavily on the shoulders of American workers on the bottom rungs of the job ladder, there are inequalities in injury and disease rates that cannot stand up to the basic tests of fairness.

Working conditions vary a great deal across industries. Typically, workers lower on the ladder are more exposed to noxious chemicals and physical hazards. For example, they experience more noise and heat, heavy lifting and other forms of physical exertion that tax the body, long work hours and unstable shift assignments that do not permit adequate rest, psychological stress, and risks of injury. Employees at the top of the ladder face hazards too, but when they encounter difficulties they are less likely to be physical and more likely to be mental (too much work, too fast a pace) or social (workplace politics). We do not want to minimize these difficulties. However when workers with higher level jobs confront problems, they generally have more options for responding in protective ways because they have more resources and say over how they do their jobs. That is the essence of being at the top: control and autonomy.

Health Impact of Work Environments

FOR MANY YEARS THE FOCUS OF RESEARCH IN OCCUPATIONAL HEALTH was on diseases like black lung (among miners) or brown lung (among textile workers). Exposure to particulate matter in coal mines or dust in weaving factories is a common and deadly hazard with all too predictable results, but affects a limited number of workers. More recent studies across a larger variety of occupations show that working conditions common to many occupations – not just specialized ones like mining – are responsible for a broader class of diseases that impact millions of workers. Physical conditions of dust, heat and noise are common in many work environments, and exposure to them produces debilitating health problems ranging from respiratory, cardiovascular, and muscular and skeletal problems to mental health disorders.

Moreover non-physical job stressors such as excessive work load, shift work, low control, threats of pay cuts or job loss, and conflicts between family obligations and work demands also contribute significantly to physical and mental ill health. Because exposures to these physical and social conditions are more likely at the bottom of the job ladder, poorer workers are at greater risk for these negative health outcomes. As a result, for example, rates of chronic diseases in workers paid by the hour at a large aluminum company are typically 1.5 to 3 times higher than in salaried workers.

Work Stressors

EXAMPLES OF WORK STRESSORS THAT INCREASE AT LOWER RUNGS OF THE LADDER INCLUDE:

Work Load and Shift Work

Globalization, the growth of the service sector, and the desire of retailers to serve dual career households with little time to shop during the day, has contributed to increasing pressures to work long hours, overnight, and alternating day/night shift patterns. Workers employed in low wage jobs are the ones most often burdened by these exhausting conditions. They experience sleep disturbances, gastrointestinal problems, weight gain, family disruption, fatigue, inability to concentrate and depression which contribute to higher risk for accidents and cardiovascular disease.

Job Stress

While we tend to think of poor working conditions as physical in nature, there are psychological aspects of work that contribute to health disparities as well. Jobs that are plagued by time pressure, conflicting demands, low control over how and when tasks are done, worker/management conflict, threats of pay cuts or job loss, and conflicts between family obligations and work requirements can create damaging levels of stress that surface in disease (see Fact 7). Studies of workers who have lost their jobs or anticipate losing their jobs show that they are at higher risk for heart disease than workers who are steadily employed. Researchers in the United Kingdom have found that workers who are at the mercy of others all day long, who have few options for controlling the pace of their jobs and limited opportunities for exercising judgment experience depression, excessive absenteeism and premature death, even when they face no physical hazards.

Physical Hazards

About 15% of all respiratory disease, 5-10% of cardiovascular disease, 5% of cancers, and 25-75% of musculoskeletal disorders are caused by hazards in the work environment. Harmful chemicals, noise, heat, radiation, and, increasingly, biologic agents that cause infection or allergy (blood borne pathogens, molds, etc.) are all found in the workplace and are more ubiquitous in jobs held by low income workers.

Since work environments matter for health and contribute to disparities, we need to assure that jobs at every rung of the ladder protect workers' safety and provide them opportunities for control.

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Overview

EXERCISE, MAINTAINING A HEALTHY DIET, AND BUCKLING UP THE SEAT BELT are all behaviors that reduce the chances a person will die early. Smoking, eating high fat and high calorie food, drinking heavily, and indulging in risky sex send people careening toward a premature demise. How much does personal behavior matter? The best estimates suggest that 40-50% of early death is attributable to such actions.

Why are those higher on the ladder more likely to refrain from health-damaging behaviors and engage in those that promote health?

Health-damaging behavior is more common at the bottom of the ladder; health-promoting activity is more common at the top. These behaviors account for some of the association of socioeconomic status and health. The crucial question, however, is why this pattern occurs. Why are those higher on the ladder more likely to refrain from health-damaging behaviors and engage in those that promote health? The answer lies in the environments people inhabit at the different rungs of the ladder. Each step up the ladder provides for more opportunity to engage in health-protecting behaviors and more ways to avoid health-damaging ones. The higher a family's income, the more they can afford healthy food, find recreational facilities that promote exercise, and avoid being bombarded by fast food outlets and ads that tout alcohol and/or tobacco.

Where Health Behaviors Come From: It's More than Lack of Will Power

THE RELATIONSHIP BETWEEN THE LADDER AND INDIVIDUAL BEHAVIOR IS NOT A SIMPLE QUESTION OF WILL-POWER OR MORAL FORTITUDE. It is not the case that the poor are less able to exercise self-control than the rich. Rather, it is the case that people living at the bottom of the social hierarchy face conditions that tend to induce unhealthy behavior. They include:

- Exposure to heavy marketing of cigarettes and alcohol.
- High levels of stress that can induce health-damaging behavior, like the consumption of fat and sugar and reliance on tobacco and alcohol. The short term benefit of stress release accompanies consumption of these products but creates serious long-term health risks.
- Easy access to fast food and alcohol, but difficulty finding supermarkets, pharmacies, full-service restaurants, and recreational facilities.
- Higher prices for healthy food, especially fruits and vegetables, particularly when compared to the cost of junk food.

- Fewer educational and employment opportunities. The lack of such opportunities has been shown to lead to riskier behavior and earlier sexual activity.

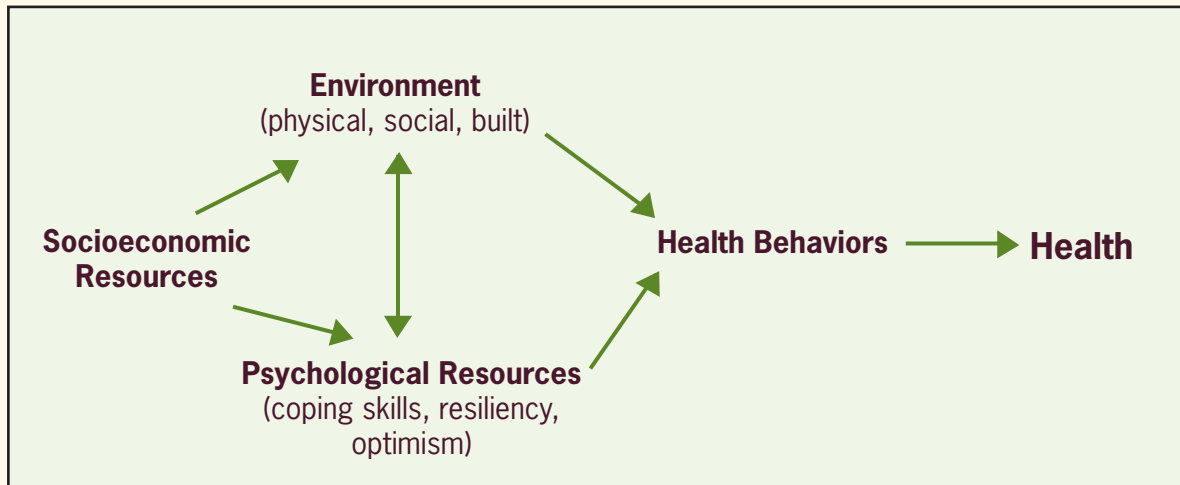


Figure 7. Pathways by which Socioeconomic Status Affects Health Behaviors.

How Resources Determine Health Behaviors

Tobacco

Smoking, the most significant preventable cause of mortality, causes over 400,000 premature deaths every year. The further we move down the ladder, the more we see the use of tobacco. This has not always been the case. In fact, forty years ago, smoking was widespread among people on all rungs of the ladder. Yet as the news about the link between smoking and cancer spread, those higher on the ladder were more likely to be exposed to public health announcements, newspaper and magazine articles, and television programs that drove the message home. As a result, they were the ones more likely to quit, both because they knew it was important and because they had the resources to help them stop smoking.

Children experiment with cigarettes no matter what their rung is on the ladder. But when we look at them later in life, differences in patterns of smoking emerge that reflect their position on the ladder. More educated smokers try to quit in greater numbers than those with less education. Of smokers who make the effort to quit, the higher their income and the lower their stress in daily life, the more likely they are to succeed. As a result, smoking rates go down as we ascend the ladder as shown in Figure 8.

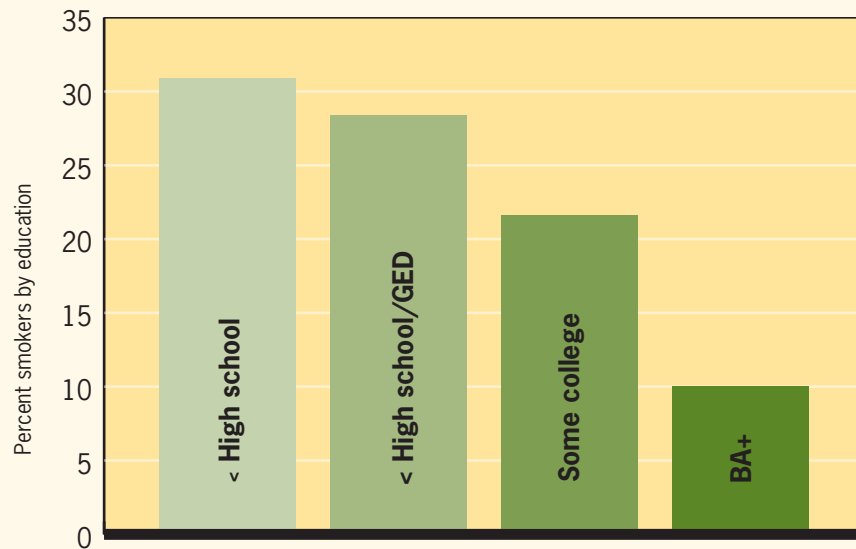


Figure 8. Current Cigarette Smoking by Adults Age 25 Years.

Source: Health, United States. 2004 p. 225

Diet and Exercise

Somewhere between 300,000 and 500,000 people die prematurely every year because of insufficient exercise and poor diet. Long before they pass away, they are unfit and often obese. It is harder to maintain a proper diet and be physically active in poorer neighborhoods. Healthy food is harder to come by, and food that is bad for you is cheap and in abundant supply (see Fact 2). Simultaneously, the lack of recreational facilities, combined with fears for one's safety outdoors, deters residents of these neighborhoods from walking or exercising. This combination leads to obesity, which increases the chances of developing a range of diseases, and of dying prematurely.

Alcohol Use

Does drinking impact health in negative ways? The picture is complex. Moderate drinking may actually reduce the risk for some diseases, while heavy consumption (including binge drinking) can lead to injury, liver disease, cancer, and premature death. Excessive drinking is more common among those lower on the ladder, while low to moderate intake is more common among people toward the top. Advertising and the presence of liquor and convenience stores selling alcohol contribute to this pattern of unequal exposure. For example, billboards trumpet beer and malt liquor in most ghetto neighborhoods. We rarely see them in rich communities.

Sexual Practices

Early initiation into sex, multiple partners, and the avoidance of condoms increase the rate of unintended pregnancy and sexually transmitted infections, including HIV/AIDS. Risky practices are more common among adolescents and young adults who have limited educational, recreational and

employment opportunities. It doesn't help that the same youth lack access to reproductive health care. As a result, poorer neighborhoods see higher rates of sexually transmitted infections which makes for a greater risk of exposure to these viruses. Thus the same behavior (having unprotected intercourse) carries much greater risk of infection for those living in poorer areas than in more affluent communities (see Fact 2).

Because behaviors are affected by environmental influences and are not just a matter of individual "choice," we must assure access to the resources needed to engage in health-promoting behaviors and avoid health-damaging behaviors regardless of position on the ladder.

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FACT 5 Health Care Matters

Overview

ALONE AMONG INDUSTRIALIZED NATIONS, THE UNITED STATES DOES NOT PROVIDE UNIVERSAL HEALTH CARE FOR ITS CITIZENS. 46.6 million

Americans lack insurance coverage. This group is drawn disproportionately from those lower on the ladder.

Adults and children who lack medical coverage often forego needed care until they are very sick. This is both costly and dangerous, for delayed treatment means their condition may be far harder and much more expensive to treat. The care they receive is often of poor quality compared to that of those who are insured. Yet even those who are covered are more likely to get substandard medical treatment if they are lower on the ladder.

Even those who are covered [by health insurance] are more likely to get substandard medical treatment if they are lower on the ladder.

Who Lacks Coverage?

46.6 MILLION AMERICANS – ROUGHLY 16% OF THE POPULATION – WERE WITHOUT MEDICAL INSURANCE IN 2006. Why? Increasingly, employers

are abandoning workers' health plans, and those that still provide coverage call on their workers to make larger contributions toward the cost.

As health care costs rise, more workers are forced to drop their coverage because the expense is more than they can afford. Even among the middle class many families find it difficult to absorb the increases in the cost of health care.

The State Children's Health Insurance Program (SCHIP) and Medicaid catch a substantial proportion of the poor, but these programs reach less than half of the qualified low income Americans. Despite the effort to cover the needy, about 8.5 million children fall between the cracks of Medicaid and employer-provided coverage.

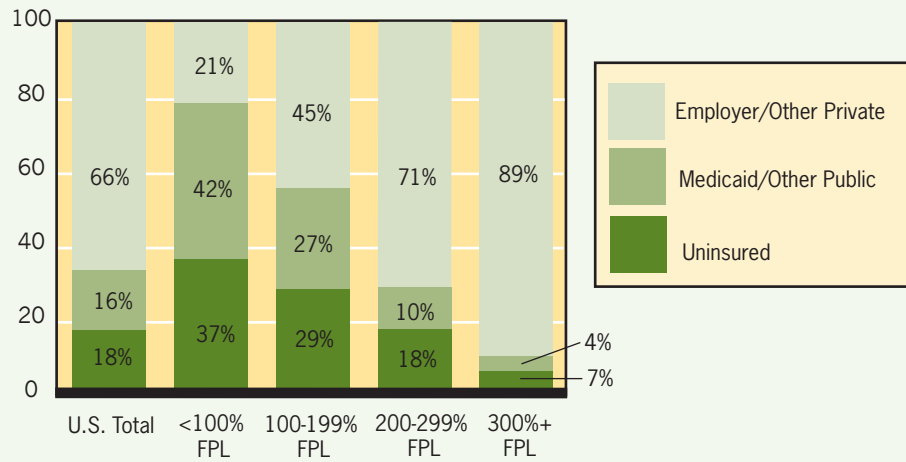


Figure 9. Health Insurance Coverage by Income Level, 2004.

Note: The federal poverty level (FPL) was \$19,307 for a family of four in 2004.

Source: Kaiser Commission on Medicaid and the Uninsured. *The uninsured and their access to health care*. November, 2005.

Gaps in Access and Quality Persist, Even Among the Insured

MEDICAL CARE IS FAR EASIER TO ACCESS FOR THE INSURED. But access is only part of the equation. The quality and accessibility of treatment varies by income, even among those who have insurance. Health care consumers lower on the ladder find that:

- Health care providers are less likely to refer low-income patients for diagnostic and treatment services for heart disease and other serious diseases.
- Patients from minority and poor backgrounds often feel that they are disrespected or treated unfairly by health care providers.
- Medicaid reimbursement rates are low, a policy that translates directly into poor quality care in nursing homes that depend on this income source. Facilities that serve the poor have fewer registered nurses than those that serve the more affluent and as a result, provide less responsive medicine.
- Preventive services (such as vaccination or cancer screening) are harder for low income Americans to access compared to more advantaged groups (see Figure 10.)
- Poorly educated health consumers find it more difficult to navigate the health care bureaucracy, cannot advocate as forcefully on their own behalf when they meet with resistance, and are less able to adhere to prescribed treatment.

Hence, even though insurance coverage increases access to medical care, disparities in the quality of preventative medicine and treatment persist.

Because access and quality care contribute to better health and save money, we need to assure such care for everyone, regardless of their position on the ladder.

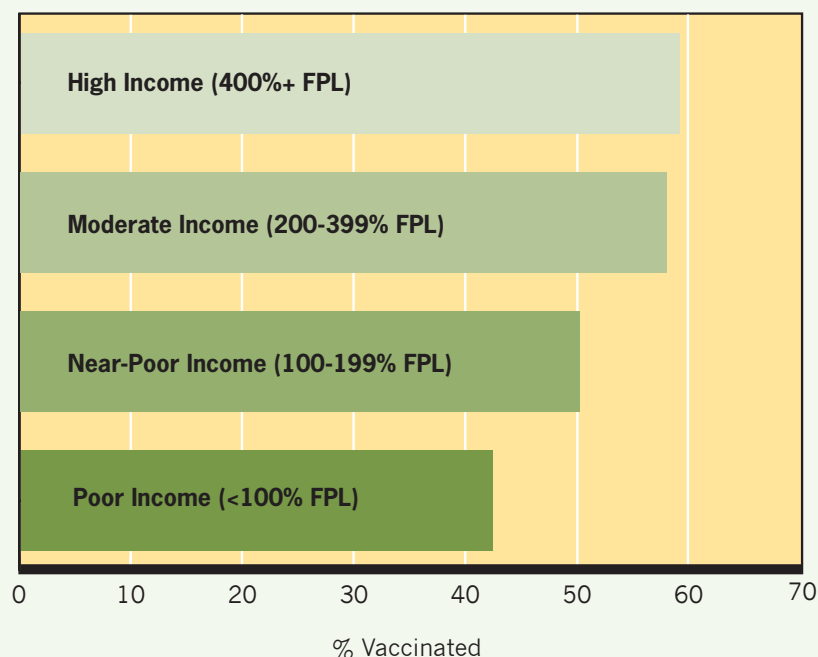


Figure 10. Pneumococcal vaccination of U.S. adults 65 and over, 2001.

Notes: Percents are age adjusted to the 2000 standard population. The federal poverty level (FPL) was \$11,610 for a family of two in 2001.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics. *National Health Interview Survey*. (Figure derived from NHDR Table 1.83a.)

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Overview

ON AVERAGE, AFRICAN AMERICANS EXPERIENCE DISABILITY EARLIER IN LIFE and die sooner than others in our society. This distressing fact is a clear result of their relatively lower position on the socioeconomic ladder. African Americans are generally poorer, have less education, and are employed in lower status occupations than are European Americans. Long-term discriminatory practices in housing, education, employment, and health care contribute to these patterns. More troubling, though, is that even when at the same level or higher on the socioeconomic ladder, Blacks have relatively worse health outcomes. This suggests that there is an added burden of race due in part to the stresses of encountering everyday discrimination.

Because race and socioeconomic status interact to produce ill health, eliminating the health gap between Blacks and Whites will require reform on more than one front. Policies that address social and economic disadvantage will need to be coupled with programs that speak directly to specific realities of the lives of Blacks in our society.

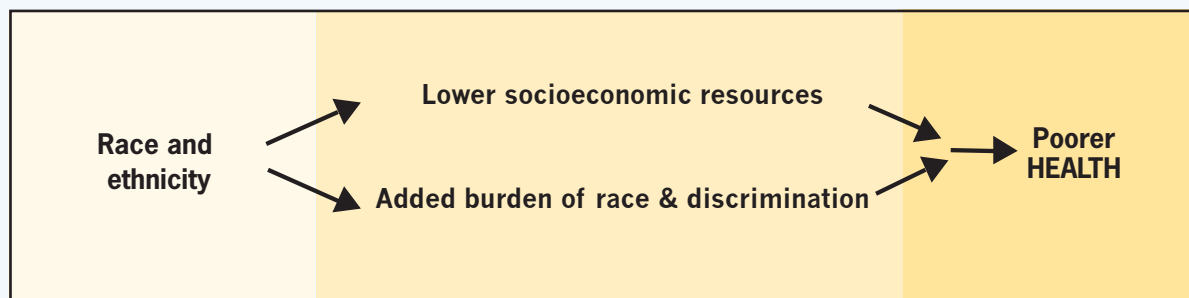


Figure 11. Pathways Through which Race and Ethnicity Affect Health.

It Isn't Primarily a Matter of Genetics

SOME MAY ATTRIBUTE THE HEALTH GAP BETWEEN WHITES AND BLACKS TO GENETIC DIFFERENCES. Although genetics play a role in some diseases, the overall impact of genetic differences in the health gap between Whites and Blacks is minimal. We can see this in patterns of hypertension. African Americans have a higher prevalence of hypertension than European Americans. If this were due to greater genetic vulnerability to hypertension associated with African ancestry, Blacks should have similarly high rates of hypertension across different countries. Any variation by country should be in the direction of greater prevalence among populations with more direct African lineage (i.e., highest rates in African countries and progressively lower rates

in countries with more intermarriage with groups at lower risk). In fact, we see the opposite. Hypertension is more common among native-born U.S. Blacks than among Blacks born and living in Africa and is intermediate in Caribbean countries. Social conditions experienced in the U.S., not genetics, account for the increased risk of hypertension among African Americans.

A similar pattern is found for the health gap in relation to other minority groups. Native Americans, Hispanics, Native Hawaiians, and some Asian/Pacific Islanders have higher rates of some specific diseases compared to Non-Hispanic Whites. First-generation immigrants, born in their native

land, have better health than their descendants born and raised in the United States. We would expect either no change or the opposite pattern if the health gap was due to genetic differences. The difference in life expectancy between immigrants and U.S.-born generations occurs for all groups but is greatest for Blacks: Black immigrant men and women live 8 and 6.5

Social conditions experienced in the U.S., not genetics, account for the increased risk of hypertension among African Americans.

years longer respectively when compared to U.S.-born Black Americans. The fact that the health gap is greater among those who are U.S.-born than among immigrants suggests that conditions of life in the U.S. are responsible for the poorer health status of minority groups rather than genetic differences.

Racial and Ethnic Differences in Health Stem from Economic and Social Inequality.

THE MAJOR FACTOR ACCOUNTING FOR POORER HEALTH AND SHORTER LIFE EXPECTANCY AMONG BLACKS IS SOCIOECONOMIC DISADVANTAGE.

Figure 12 shows life expectancy at age 25 for U.S. males by race and household income. The difference in life expectancy between those with more and less income *within* each racial group is greater than is the difference in life expectancy *between* racial groups. On average, White men live 4.4 years longer than Black men. In contrast, Whites with incomes over \$25,000 live 7.9 years longer than Whites with incomes less than \$10,000; the comparable difference for Blacks is 8.6 years.

Because racial and ethnic health disparities are due in large part to the unequal distribution of socioeconomic resources, the gap between groups decreases substantially when they are compared at similar levels of the socioeconomic ladder. Figure 12 shows that the difference in life expectancy between Blacks and Whites is largest in the low income group (3.4 years), and smallest at the highest income group (2.7 years). However, the racial gap never entirely disappears.

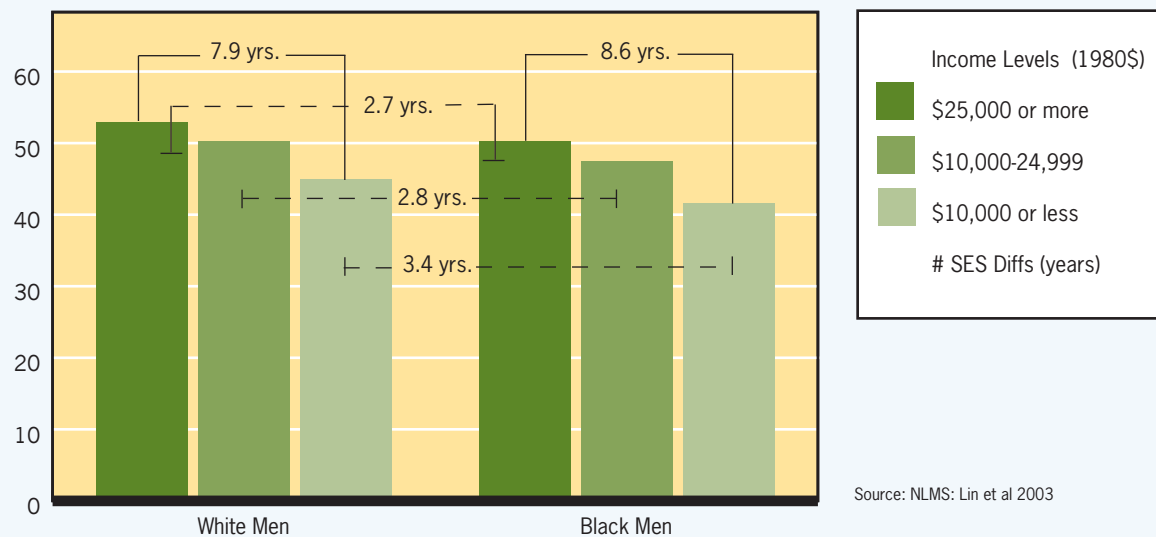


Figure 12. Life Expectancy at age 25 for U.S. Black and White Men with Similar Income Levels.

Race: An Added Burden

THE DIFFERENCES IN LIFE EXPECTANCY DEMONSTRATED IN FIGURE 12

PROVIDE POWERFUL EVIDENCE for the impact that both income and race have on health and longevity. The relative impact of race and socioeconomic position will vary depending on the health condition or disease. For example, race is especially important in relation to infant mortality. Babies born to Black college graduates are more likely to die in infancy than babies whose mothers are White high school dropouts. For other health conditions, racial differences become far less significant or even disappear when adjusted for income and education.

Babies born to Black college graduates are more likely to die in infancy than babies whose mothers are White high school dropouts.

One reason that the racial gap in health persists at similar income levels is that at the same income level, Whites have more wealth (assets like savings and home equity) than Blacks do. Wealth provides a reserve that protects against uncertainty in the labor market and helps reduce stress on families. It also allows families to purchase homes in neighborhoods with parks and playgrounds that afford opportunities for exercise, buildings in good repair, safe streets that enable people to walk with ease, and well stocked libraries (see Fact 2). Thus, policies that help increase accumulation of wealth for disadvantaged groups will be particularly helpful in reducing the racial health gap.

No account of racial gaps in health would be complete without a discussion of the impact of discrimination. Although race affects health largely through its effects on socioeconomic resources, additional effects beyond socioeconomic disadvantage result from how society treats people of color. In addition to structural discrimination, which impacts the distribution of opportunity or resources, interpersonal discrimination creates adverse social climates. Both types of discrimination take a toll on health. Examples of racial bias that can affect health include:

- **INSTITUTIONAL POLICIES.** Residential segregation by race, the result of discriminatory housing policies and lending patterns, channels African Americans into neighborhoods that expose them to greater physical and social hazards and fewer resources. They also pay higher mortgage rates and accrue equity more slowly.
- **UNFAIR TREATMENT IN HEALTH CARE SETTINGS.** Even when they have equal insurance coverage and access to care, African Americans and some other ethnic groups, are less likely to receive life-saving treatments and preventive services than are non-Hispanic Whites.
- **SOCIAL FRICTION.** Experiencing prejudice and discrimination is bad for one's health. Everyday encounters – like being followed by a security guard in a store – have a physiological effect, raising blood pressure and releasing stress hormones. If prolonged and chronic, such responses contribute to wear and tear on the body and increases vulnerability to disease (see Facts 7 and 8).

Measures May Underestimate Socioeconomic Inequalities

OUR CURRENT MEASURES OF SOCIOECONOMIC RESOURCES DO NOT FULLY CAPTURE RACIAL DIFFERENCES IN SOCIOECONOMIC POSITION. Standard measures of socioeconomic status have different implications for the resources they provide to people of color compared to Whites. For example, children of color often receive poorer quality education. As a result, high school graduation may confer a greater economic advantage to Whites than to minority children. Similarly, discriminatory housing locks many Blacks into neighborhoods where goods and services cost more, which reduces their purchasing power compared to Whites at the same income levels. If these differences were taken into account, education and income inequalities would explain more of the racial gap.

Since race matters for health, discriminatory practices in housing, employment and education must be eliminated. Without attention to race, the benefits of policies to impact income and wealth distribution, educational attainment, and occupational mobility as well as housing, occupational safety, exposure to toxic hazards, and the availability of nutritious food and places to exercise will fall short of the goal of eliminating health disparities.

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FACT 7

Stress Matters

Overview

No LIFE IS STRESS FREE. However, stress only becomes toxic when it is extreme or prolonged. Those standing higher on the socioeconomic ladder have less exposure to toxic stress and its biological consequences.

Stress is an internal psychological and physiological reaction to a threatening situation that cannot be successfully resolved. Socioeconomic resources provide more options for avoiding threats of this kind. When threats cannot be avoided altogether, these resources also help people manage their responses and reduce the resulting harm to the body.

At the bottom of the ladder, demands and threats are omnipresent, and the resources for either avoiding or mitigating their effects are sparse. Running the body at a high level of arousal, with few periods of rest and recuperation, creates an enormous biological strain. Chronic arousal and toxic stress disrupt the body's normal regulatory mechanisms, particularly the endocrine and immune systems which has multiple consequences: more days of poor health, declining productivity on the job, and diminished capacity to withstand future stresses. As one ascends the ladder, exposure to toxic stress and its consequences diminishes.

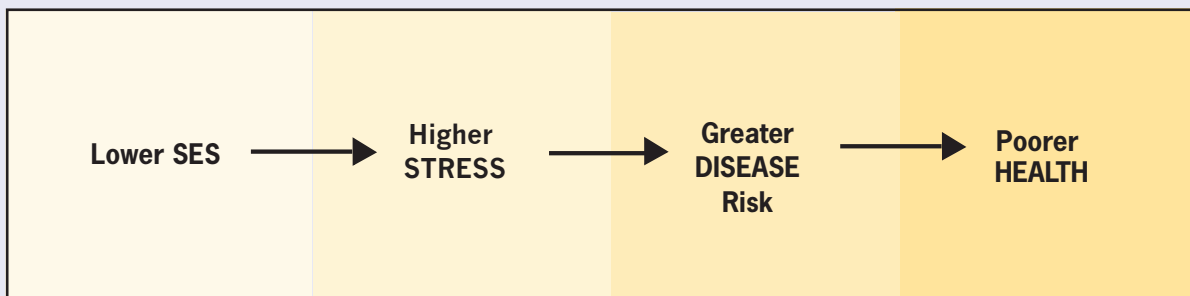


Figure 13. Lower Levels of Socioeconomic Power Increase Risk for Disease by Increasing Stress.

More Threats, Fewer Resources

ALTHOUGH A COMMON PERCEPTION IS THAT STRESS IS GREATER FOR THOSE AT THE TOP OF THE LADDER, particularly the “stressed executive,” the reverse is the case. While top executives and others high on the ladder have many demands, they have commensurately greater resources and more control to meet these challenges. With adequate resources, demands become challenges, not stress. The kind of toxic stress that has adverse consequences on the body increases at progressively lower levels of the ladder.

At lower rungs of the ladder stresses of various kinds pile up. Financial strain can cause a panoply of problems within families and their communities. Those living in poorer neighborhoods contend with higher crime rates and greater frustration on the streets. Crowded living space, fewer services and more limited access to transportation, groceries and health care, greater conflict among people and more exposure to violence cause increased wear and tear on residents. The resources to buffer or protect children and adults from the consequences of adverse environments are strained and weakened, in part because they are constantly in use. Social safety nets such as personal relationships, extended kin, and friendship connections may be fragile or under greater pressure.

These problems are considerably less salient in higher income neighborhoods where there is less exposure to threats to begin with, and where financial and social resources help to buffer residents from the impact of pressures. In sum, the balance of resources to threats and demands becomes more favorable at each step up the ladder and toxic stress diminishes. Particular sources of toxic stress include:

- Life events, such as conflict within the family, problems at work, job loss, eviction, violence, the early death of loved ones.
- Adverse environments, including crowded homes, noisy streets, polluted air, high levels of violence, exposure to illicit drug use, and substandard housing.
- Social isolation, sparser social networks, and fewer individuals who can provide material and emotional support.
- Heightened sensitivity to threat. Repeated exposure to threatening environments increases physiological responses because the “priming” mechanisms are always switched to “on.” At the same degree of threat, the person with a prior history of persistent exposure will show a stronger biological reaction.

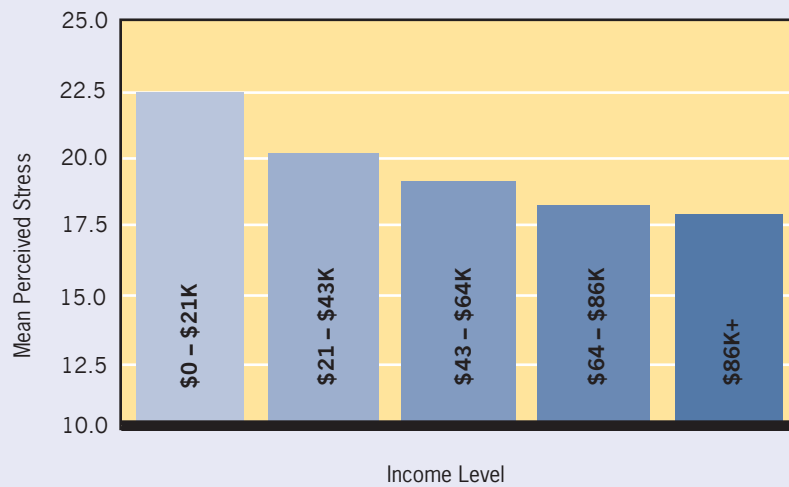


Figure 14. Perceived Stress Decreases as Income Increases.

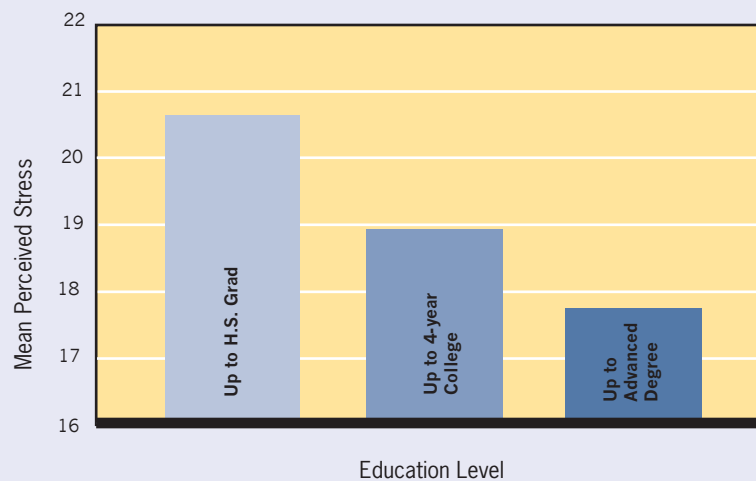


Figure 15. Perceived Stress Decreases with Higher Levels of Education.

Note: Data from Harris Poll data collected in 1983. 2003 equivalents developed from Employment Cost Index (ECI) Inflation Calculator, available at: <http://www1.jsc.nasa.gov/bu2/inflation/eci/inflateECI.html>

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Stress Makes People Sick

PROLONGED, TOXIC STRESS TRIGGERS EMOTIONAL, BEHAVIORAL, AND PHYSIOLOGICAL RESPONSES that contribute to poor health. Stressors that last for a long time – ranging from financial insecurity to interpersonal disputes, from work-induced exhaustion to chronic conflict in public spaces – are more common at lower rungs of the ladder. The duration and salience of stress contribute in potent ways to changes in the body that portend poor health (see Fact 8 for more on the process). Increased stress is associated with a range of negative outcomes, including:

- Depression, smoking, alcohol abuse, poor diet, and sleep deprivation
- Disruption of the immune, cardiovascular, and nervous systems
- Increased incidence of high blood pressure, heart disease, respiratory infections (colds and flu), and slow recovery from illness

- Accelerated aging at the cellular level
- Early death

Coping Under Stress

SOME HEALTH OUTCOMES DIRECTLY RESULT FROM BIOLOGICAL RESPONSES TO STRESS.

Others are due more to indirect effects, reflecting the consequences of adaptations to stress. The ways that people cope with threats help in the short-term but may eventually harm their health. Some people smoke when they feel threatened and anxious. Others overeat; others drink excessively. These are stress relievers and they surface consistently in populations that are under constant pressure; hence they

are more common lower on the ladder (see Fact 4). Unfortunately, they also contribute to disease and early death.

Having opportunities for healthier alternatives to cope with stress reduces reliance on more damaging alternatives.

There are also healthy ways to respond to stress. Exercise improves mood in the short run and is beneficial for over-

all health in the long run. Unless taken to extremes, exercise softens the blows of stressful environments. At higher rungs on the ladder, people have more opportunities to engage in exercise (time, space, and equipment), and therefore do it more often. Having opportunities for healthier alternatives to cope with stress reduces reliance on more damaging alternatives.

The gap between life demands and the resources whether psychological, social, or material we can marshal to cope with them widens at each rung down the ladder. This leads to increased exposure to toxic stress. We need comprehensive policies that reduce stress on one side of the equation and increase resources for coping on the other. Because disease-causing stress increases at each rung down the ladder, we need comprehensive policies that address these conditions and bolster our capacity to cope more effectively with it.

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Our Bodies Pay the Price

Overview

AN INDIVIDUAL'S POSITION ON THE LADDER HAS A TREMENDOUS IMPACT ON BIOLOGICAL PROCESSES that cause disease and early death. Damaging environments and exposures impair the functioning of critical biological systems, permanently altering the body's resilience. These impairments in biological control begin early in life and gather force as we age. What begins as high blood pressure, reduced resistance to infection and impaired metabolism accumulate until they surface as serious disease, chronic disability, and premature death, all of which are more common lower on the ladder.

Stress and Unhealthy Behavior Transform Biological Systems for the Worse

WHEN PEOPLE ARE FEARFUL, FRUSTRATED, OR ANGRY, their bodies mobilize to meet the threat. Hormones rush into the bloodstream. Their hearts beat faster and blood pressure rises, along with blood sugar. Energy reserves come to the ready so that muscles have quick access to a source of energy should they be needed for "fight or flight." Even the immune system goes into overdrive. When the immediate threat subsides, physiological reactions set off by stress hormones diminish and the body quiets down. These protective mechanisms are vital to survival when they are activated for the short run, but if left to run in high gear for too long, serious harm results.

Allostatic Load is the cumulative biological damage of long-term wear and tear on the body.

Environments and experiences that provoke this stress reaction too often, for too long, or repeatedly without respite lead to the chronic release of these high powered hormones which, in turn, alter the nervous system. The body produces high levels of chemicals such as cholesterol, cortisol, glucose, and brain neurotransmitters that can cause a range of diseases. Even at low levels, chronic exposure to stress disrupts the normal functioning of the cardiovascular, immune, metabolic and nervous systems. Toxic levels of stress produce high blood pressure, susceptibility to infection, the buildup of fat in blood vessels and around the abdomen, and cause the atrophy of brain cells. Smoking, sedentary lifestyle, and poor diet exacerbate the impact of stress hormones, and the combination disrupts the optimal functioning of the body.

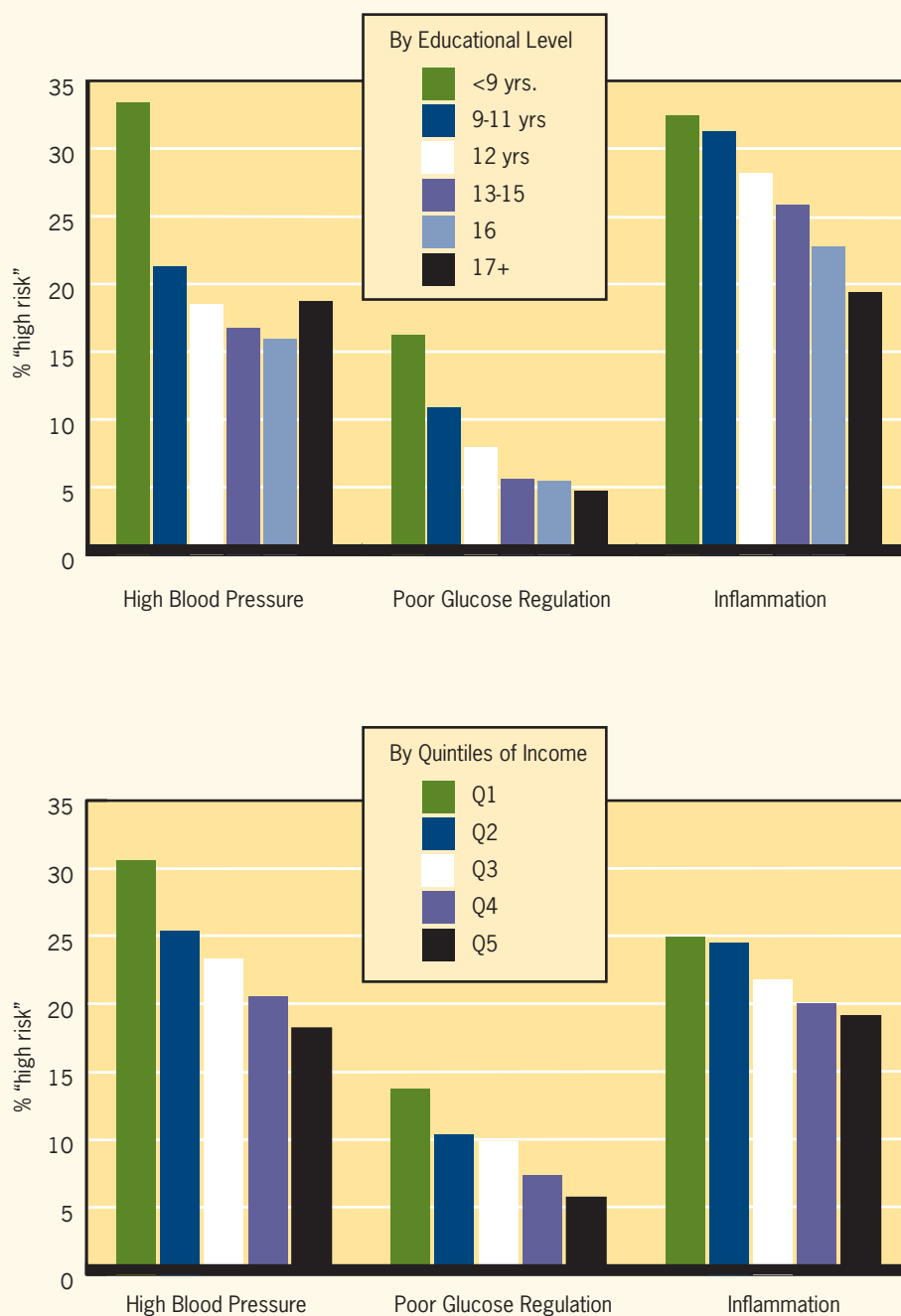


Figure 16. Frequency of Early Signals of Disease Risk by Education and Income: NHANES III, 1988-1994.

Notes: High Blood Pressure refers to systolic blood pressure (SBP) ≥ 140 mmHg. SBP is a marker of the maximum pressure exerted when the heart contracts. High blood pressure increases the risk of heart failure, heart attack, stroke, and kidney failure. Poor Glucose Regulation refers to measures of glycosylated hemoglobin (HbA1c) $\geq 6.4\%$. HbA1c is a marker of average blood glucose regulation over the past 2-3 months and is used to manage diabetes. Poorly regulated diabetes contributes to kidney failure, cardiovascular events, amputations, and blindness. Inflammation refers to measures of C-reactive protein (CRP) ≥ 0.3 mg/dl. CRP is a biological marker produced in the liver that is only present during episodes of acute inflammation. It is not known whether elevated CRP is merely a marker of disease or whether it actually plays a role in causing cardiovascular disease. Many medical experts consider elevated CRP levels to be a positive risk factor for coronary artery disease.

Early Signals of Disease Risk

BEGINNING IN CHILDHOOD AND ADOLESCENCE, long before actual symptoms of disease surface, we can see signs of negative health conditions to come. Early signs of disease become more and more common the farther down the ladder we descend. High blood pressure, poor glucose regulation and inflammation are signs of a dysregulated biological system. As Figure 16 shows clearly, the less education or income an adult has, the greater the disease risk.

Because the stress response involves multiple biological systems, even minor increases in stress levels, particularly those that last for a long time can increase vulnerability to disease. The framework of “allostatic load” was developed to capture the cumulative biological damage that results from this long-term wear and tear on the body. Allostatic load scores reflect how well or poorly the cardiovascular, metabolic, nervous, hormonal and immune systems are functioning. Lower scores indicate less disruption and better functioning. Higher scores, in turn, indicate greater dysregulation and greater vulnerability to disease. Allostatic load scores decrease at each rung up on the ladder. As figure 16 indicates, Americans with the most education tend to have the lowest scores, while the least educated have the highest allostatic loads. As Fact 6 makes clear, higher education may pay off more for Whites than Blacks. Figure 17 shows there is an education “gradient” within both race groups, although at the same level of education, Blacks have higher allostatic load scores than Whites. Higher education seems to slow the accumulation of allostatic load, while less education leaves people vulnerable to the disease-inducing impact of high allostatic load. Similarly, allostatic load also decreases with higher income.

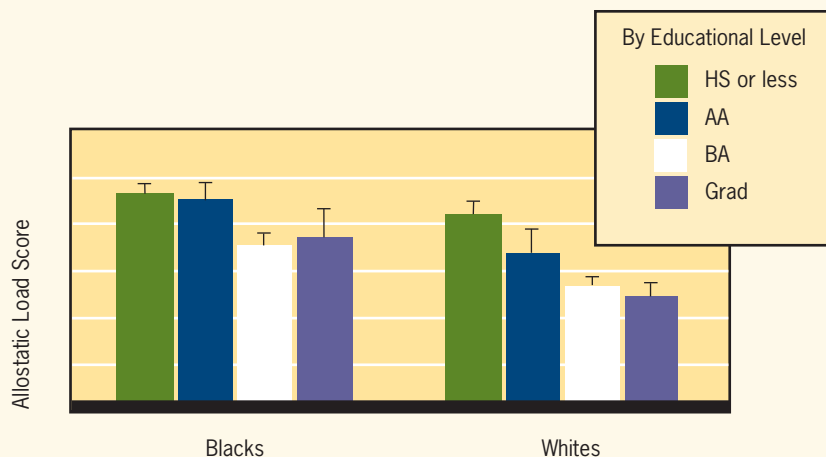


Figure 17. Allostatic Load Score by Education in Two Race Groups.

Notes: Both groups show a gradient in which the allostatic load score is highest for persons who have the least education – meaning they are at the highest risk for disease – and falls in a stepwise fashion as educational levels rise.

Source: Unpublished data from the Coronary Artery Risk Development in Young Adults (CARDIA) study.

Because changes in biological processes begin early in life, programs that improve the environment in early childhood stand the greatest chance of improving life-long benefits for those at the bottom of the ladder. Delaying the emergence of disease by lowering the conditions that produce high allostatic load will increase the odds of a healthy, productive adulthood.

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Policy Implications

WE MUST EXPAND OUR DEFINITION OF HEALTH POLICY.

We must go beyond health care policy if we are to improve the health of the American people and eliminate costly health disparities inconsistent with American values. U.S. health care spending in 2006 was approximately 16% of our gross domestic product. Despite spending far more than any other nation on health care, our life expectancy and overall health lag behind that of most industrialized countries.

At the moment, U.S. health policy deals almost exclusively with access to medical care or quality of treatment, but analyses from the Centers for Disease Control estimate that only 10% of premature mortality is due to inadequacies of health care. Treatment matters a great deal after disease surfaces and assuring equal access to high quality care is an important goal. However the emergence of disease in the first place is less a matter of medical care and more a function of environmental exposures, toxic stress, neighborhood quality, poor diet, smoking, and other conditions that are unequally distributed throughout our society.

This is why educational opportunities, labor market regulation, zoning, and economic policy are actually important forms of health policy. These are the domains that generate the unequal health outcomes that are so costly and debilitating. Only when we devote as much attention to the health effects of these environmental, social, and economic conditions as we do to questions of insurance coverage will we see a closing of the gap in mortality and disease between the more and less fortunate in our society. Quite apart from the fundamental issues of fairness and providing equal opportunity involved, our society is burdened by problems that result from insufficient action. We are losing years of productive labor, enduring catastrophic treatment costs, and paying a huge price in the form of family disruption that attends long-term illness. Addressing these problems after they have emerged in the form of serious disease is by far the most expensive and inefficient way to cope with the problem of health disparities. Attending to the root causes of these problems will lead not only to a healthier population, but to significant savings that can be put to better uses.

In this document we have shown how conditions of life at various levels of the socioeconomic ladder have a profound impact on health. The gap between life demands and the resources that can be marshaled to cope with them – whether psychological, social or material – widens at each rung down the ladder. This increases exposure to a range of hazards including toxic stress. Although the burdens are most debilitating for those in poverty, the impact of this gap is not limited to the least fortunate. Middle class Americans get sicker more often and have shorter lifespans than their upper middle class counterparts. The wealthiest enjoy better health than every one else below them. The facts tell us that achieving optimal health for America requires comprehensive policies.

Two types of policies will make a difference in curtailing premature mortality and health disparities:

1. Policies that affect the steepness of the socioeconomic ladder, its length and the distance between its rungs, and
2. Policies that buffer the adverse consequences of living lower on the ladder.

1 Policies that affect the steepness of the socioeconomic ladder in the United States

Policies that impact income and wealth distribution, educational attainment, and occupational mobility will make a difference because these are the fundamental components of the ladder itself. If the gradient – the steepness of the ladder – were less dramatic, we would see smaller gaps between those at the bottom, in the middle, and at the top in the conditions that cause health inequalities in the first place. The following policies are among those that would close the gap between rungs of the ladder.

Education Policies

- Provide access to high quality early childhood education for all children
- Reform school financing to equalize the quality of education in K through 12
- Reduce financial barriers that prevent qualified students from attending college

Increasing access to high quality education matters because the skills, knowledge and credentials that individuals acquire in the process make it possible for them to be hired and move up to better jobs and hence from lower to higher rungs on the ladder.

Improved education may also enhance health literacy which can have a direct impact on health. This would include exposure to and increased trust of information on health risks as well as how to avoid them. As scientific evidence accumulated that smoking caused cancer, more educated Americans dramatically reduced their smoking. Subsequent cancer rates dropped more for them than they did for those with less education. Spreading education more widely increases the chances that this kind of health information will spread more evenly and be acted upon by more Americans.

Fiscal Policies

Provide adequate income to every household through:

- Minimum wage increases
- Income supports to families for newborns
- Earned income tax credits
- Secure pension plans
- Increased incentives for saving

These fiscal policies underwrite a better standard of living for children and adults, protect people from sharp fluctuations in their resource base, and shield them from precipitous losses in their elder years. By doing so, fiscal policy affects the length of the ladder – the degree of basic inequality. Without such fiscal reforms, the rungs of the ladder remain too far apart.

Skills Training Policies

- Equalize access to opportunities for new or enhanced job skills training – on the job, in community colleges, and through unions and employers
- Assure new job training for downsized workers

Training facilitates movement up the ladder and cushions workers from adverse consequences of market forces such as those related to globalization. It helps workers qualify for better jobs and also fosters more effective adaptation to changes in the job market. This reduces the amount of time spent in unemployment, which limits exposure of worker and family to adverse economic and social conditions. Because economic uncertainty and instability create powerful stresses that have profound health impacts, policies that diminish income volatility will make a difference.

2 Policies that Buffer Adverse Conditions of Being Lower on the Ladder

Policies that govern housing, occupational safety and health, exposure to toxic hazards, and the availability of nutritious food and places to exercise can buffer the effects of being on the lower rungs of the socioeconomic ladder. Even in the most egalitarian societies, there are socioeconomic ladders. However, in some countries, the impact of social or economic position is vastly ameliorated by policies that act to blunt the impact of inequality. The U.S. is far less proactive, and the country pays a large price for failing to protect its citizens against disparities through well-informed social policy. Policies that can ameliorate health risks associated with position on the ladder include the following:

Policies Affecting the Environment

- Provide affordable housing
- Tighten zoning to restrict noise and pollution
- Increase tax incentives and regulation to improve air quality
- Enforce lead abatement ordinances
- Increase traffic safety
- Reduce crime

Such policies diminish exposure to unstable housing conditions, poor air quality, crowding, noise and unsafe streets which are more common at lower rungs of the ladder. Good housing, health conscious zoning, and strong crime prevention make communities healthier and safer. Policies in these domains will diminish direct exposures to health-risks (e.g., lead exposure).

They will also reduce toxic stress which creates wear and tear on the body leading to ill health and shortened life expectancy.

Policies Affecting the Workplace

- Limit exposure to physical hazards, chemicals, and psychosocial strains in workplaces
- Increase opportunities for control over work demands
- Reduce disruptive shift changes and extended work hours
- Provide working parents with sufficient leave time to attend to children when they are sick
- Minimize work-family conflict

Stronger occupational safety and workplace policies, both public and private, would differentially benefit workers occupying jobs on the lower rungs of the ladder. Changes of this kind would both enhance productivity and reduce health disparities.

Policies Enabling Healthier Behaviors

- Ban smoking in public areas
- Subsidize treatment programs for smoking cessation and drug and alcohol abuse
- Increase excise taxes on cigarettes, alcohol and junk food (and use proceeds to support public health programs)
- Improve nutrition of school lunch programs
- Ban sale of soft drinks and junk foods in schools
- Control advertising of tobacco and alcohol products
- Limit the concentration and operating hours of stores selling alcohol
- Increase access to recreational facilities through construction support and policies to open up schools and other institutions on evenings or week-ends
- Provide incentives – in the form of tax breaks or low cost business loans – for green markets and grocery stores that sell fresh produce

Wider and more effective dissemination of information on health risks is necessary but not sufficient to change health behaviors. Health education needs to be coupled with policies that reduce barriers that discourage people from engaging in healthy behaviors. Such policies would create opportunities for making healthy choices easier, and would equalize the possibility for having a healthier lifestyle for people at different rungs of the

ladder. They would reduce the use of tobacco, increase physical activity, and improve nutrition overall. All of these policies would go a long way toward reducing unnecessary illness and chronic disease, thus helping to close the gap in health for those at different socioeconomic levels.

Intervening at Different Stages of Life

In general, interventions earlier in life will have a greater return than those implemented later on when disease risk is less reversible. Policies will be most effective if interventions are developed and disseminated at key stages of life. Since the relationship between environment and health evolves over the life course, policies should target the stages where they will make the most difference. Prenatal programs such as parental leave which address the health of pregnant women are extremely important in avoiding the problems of low birth weight babies, a condition more common on the lower rungs of the socioeconomic ladder. Programs to teach parenting skills to teenage and young parents will improve the well-being of young children by enhancing family functioning. School-based and community recreational activities for youth will be most effective at an age when teens are embedded in peer relations and are responsive to environments outside the family circle.

Monitoring Effects of Policy

To implement change without evaluation is irresponsible and potentially wasteful. We must also improve our monitoring capabilities so we can tell if policies make a difference. Our federal data sources are far from ideal for tracking change over time. For example, many sources report information on the health status of specific racial or ethnic groups, but they ignore income, education and occupation. A few do the reverse. We need all of the information at the same time to make sense of our current situation, and to benchmark changes for better or worse. Anything less risks an inaccurate understanding of health disparities with consequent inefficient targeting of public policies on less cost-effective programs. This is particularly serious with regard to the interaction of race/ethnicity and socioeconomic status. Ignoring this “data issue” may result in perpetuating stereotypes about bad behavior or missing the effect of race in channeling people into neighborhoods that put them at risk.

Broadening Health Policy

We have suggested a wide range of policies. Are these really health policies, or are they just social policies designed to reduce inequality? They are both; these domains are interwoven, and social policy IS health policy. We will not see widespread reduction of premature death and disease if we do not go after the root causes. Housing policy, education policy, labor regulations, and zoning, to name only a few, are critical. They determine the conditions that lead to the patterns of disease and mortality and the disparities discussed here. They are all health policies. If we add in potential savings in health care costs that may result from implementing these policies, the future balance of costs and benefits for these policies will tip in a positive direction. The cost of ignoring the problem grows daily.

**Social policy IS
health policy.**

The one thing we cannot afford to do is nothing.



REACHING FOR A HEALTHIER LIFE

Facts on Socioeconomic Status and Health in the U.S.

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