

Eco-Health Relationship Browser Notecards: Single-sided (no connections on back of card)



These materials are part of EPA Report #EPA/600/R-18/186.

Instructions:

1. Print out these Notecards SINGLE-sided (preferably in color so that the categories are visibly distinct for students (ecosystems in **green**, ecosystem services in **blue**, and health outcomes in **red**).

Optional: If you have time, cut out and laminate the cards. If you don't have time, students can just hold the paper cards in their hands. You could also slide the pieces of paper into sheet protectors for a quick lamination substitute.

2. Punch holes in the black circles on the Notecards (or, if in sheet protectors, use the existing holes in the sheet protectors).
3. Using yarn or string, tie a loop (long enough to drape the card around the neck) around the Notecards.
4. Follow the instructions in the Lesson Plan: *Connecting ecosystems and human health*.
5. Store for use in future years—just a one-time set-up!

(notecards last updated 9/8/2017)



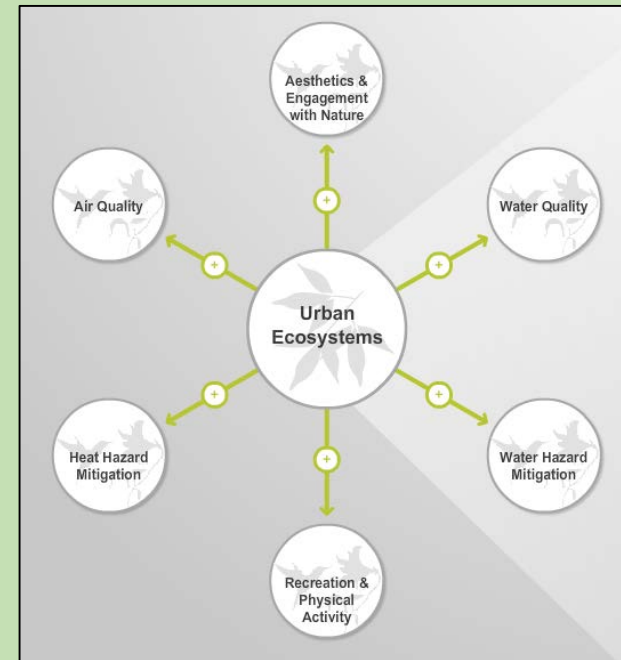
Have time?
Laminate and
hole-punch the
notecards.



Don't have
time? Use
Sheet
Protectors!

Urban Ecosystems

Urban ecosystems are dynamic systems that contain both built and natural environments. Urban ecosystems include all green and blue spaces within the area, such as parks, cemeteries, lakes and streams, along with human components. Urban ecosystems can mimic the function of natural ecosystems and thus provide their own important ecosystem services that contribute to human well-being in those urban areas.



All information available from www.epa.gov/EnviroAtlas

Agro-Ecosystems

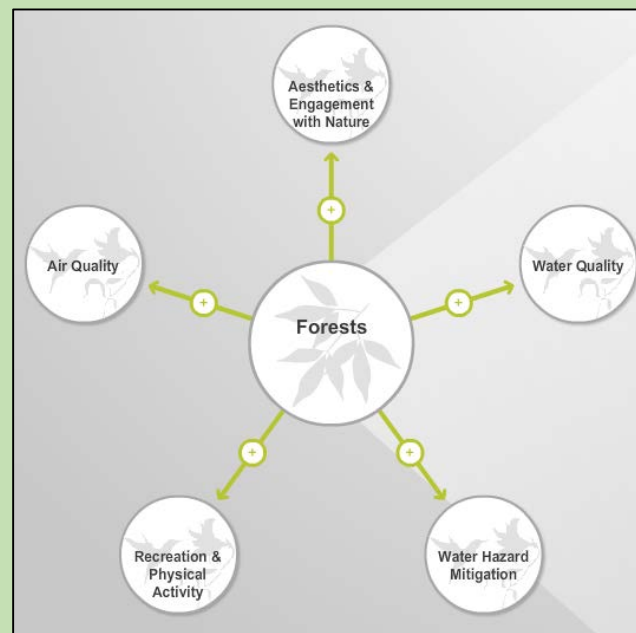
Agro-ecosystems are ecosystems that have been modified by humans for the primary purpose of producing food, fiber or agricultural products (Huggins, 2000). Agro-ecosystems can provide various ecosystem services such as regulation of soil and water quality and carbon sequestration (Power, 2010). Agro-ecosystems may contain cover crops, wetlands, wind rows and wildlife habitats. They can also assist with pollination and pest control/regulation and are often popular for recreation and with bird watchers and hunters.



All information available from www.epa.gov/EnviroAtlas

Forests

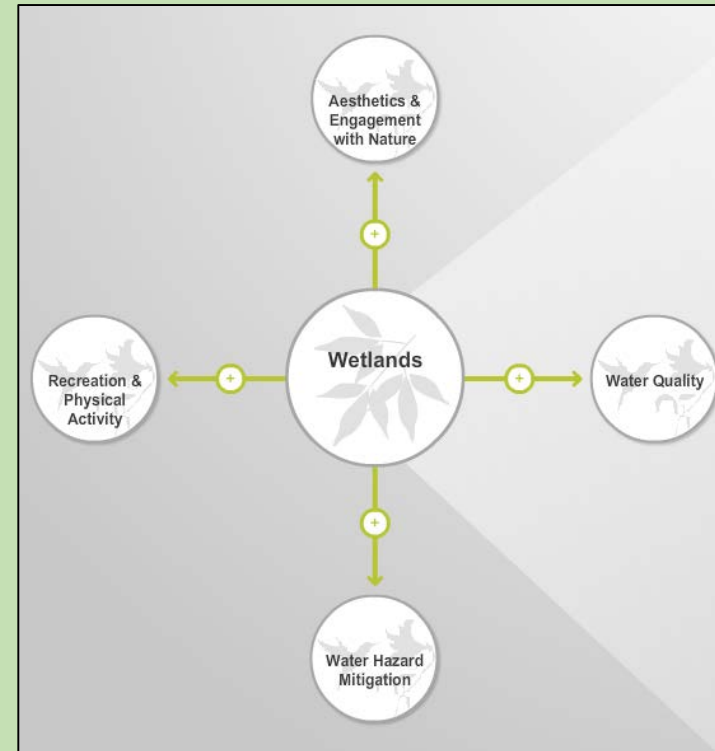
Forest ecosystems are dominated by trees, where the crown cover exceeds 10% and the area is larger than 0.5 hectares. There are multiple types of forests: tropical, wetland, and community-managed forests. Forests are made up of different tree and plant species that vary according to climate, geography, and hydrology. Forests are often managed for the goods that they provide, such as timber and paper products. Forests also provide other services, such as filtering pollutants from water and air that would be virtually impossible to replace using technology. Forests are also used for recreation activities such as hiking and camping.



All information available from www.epa.gov/EnviroAtlas

Wetlands

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Some common wetlands in the US include coastal salt marshes, peat bogs, lowland swamps, and even rivers and lakes. Wetlands are often rich in bird species and thus are prime bird watching areas. They also provide opportunities for other recreation activities such as fishing and hunting.



All information available from www.epa.gov/EnviroAtlas

ADHD

Definition:

Attention-deficit/hyperactive disorder (ADHD) is the most common neurobehavioral disorder of childhood. It manifests as an unusually high and chronic level of inattention, impulsivity/hyperactivity or both.

Organ System:

Nervous System

Demographic:

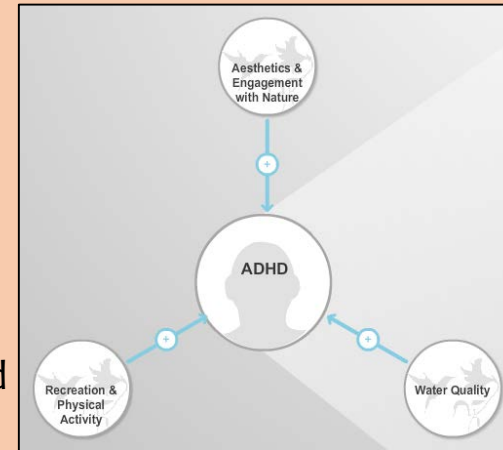
ADHD is a common condition that affects children and adolescents, while ADD is more common in adults.

Trend in Incidence Rate:

ADHD affects more than 2 million school-aged children. Recent statistics indicate that among children aged 6 to 11 years the incidence of ADHD is approximately 7%.

Known Contributing Factors:

Premature Birth, Fetal Trauma (including that from infection or drug/alcohol exposure)



Aggression

Definition:

Aggression often manifests in the form of hostility - a multidimensional construct consisting of cognitive, affective and behavioral dimensions. These include cynicism and mistrust; feelings of anger, irritation, rage, contempt; and various acts of physical and verbal aggression.

Organ System:

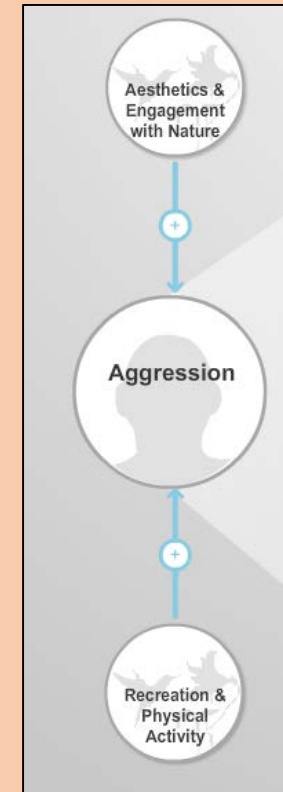
Nervous

Demographic:

Individuals from any race, ethnicity, gender or age group can experience hostility. Men, especially between the ages of 20 - 30, exhibit more physical aggression and hostile behavior than women. Evidence suggests, however, that women in romantic relationships may exhibit as much hostile behavior as their partner.

Known Contributing Factors:

Low Economic Status, Vitamin Deficiency, Alcohol Use, Testosterone



Anxiety

Definition:

Anxiety is characterized by excessive and unrealistic worry about everyday tasks that interferes with normal functioning. Several types of recognized anxiety disorders exist.

Organ System:

Nervous

Demographic:

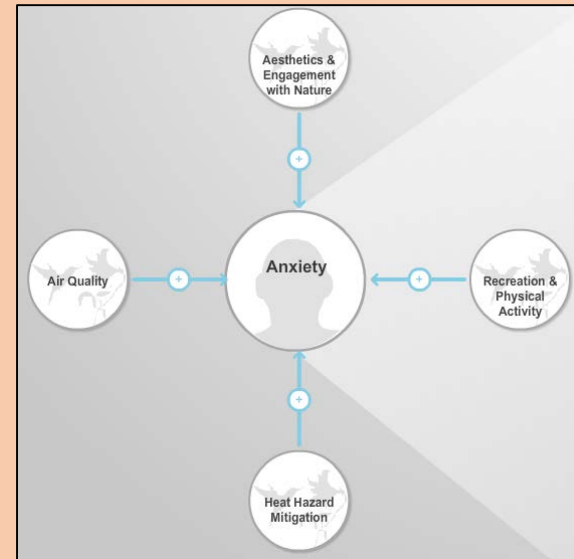
Children and adults

Trend in Incidence Rate:

Anxiety disorders are the most common mental illness in the U.S., affecting 18% of adults, according to leading specialists in anxiety treatment.

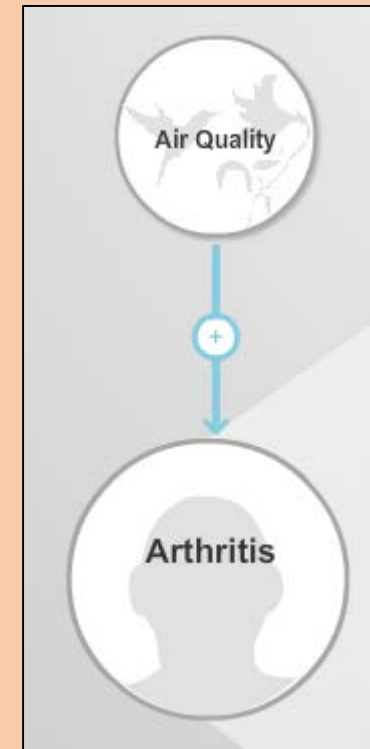
Known Contributing Factors:

Chemical Imbalance in the Brain, Lack of Exercise, Poor Diet, Stressful Environments



Arthritis

Definition:	Arthritis is inflammation of one or more joints, which results in pain, swelling, stiffness, and limited movement. There are over 100 different types of arthritis.
Organ System:	Skeletal, Muscular, Immune
Demographic:	Most people over age 60 have arthritis to some degree, but its severity varies. Even people in their 20s and 30s can get arthritis. In people over 50, more women than men get arthritis.
Trend in Incidence Rate:	Arthritis affects nearly 27 million Americans. The chance of developing the disease increases with age.
Known Contributing Factors:	Heredity, Injury to Joints, Abnormal Metabolism, Blood Infections, Aging



Asthma

Definition:

Asthma is a chronic disease of the airways that makes breathing difficult. With asthma, there is inflammation of the air passages that results in a temporary narrowing of the airways that carry oxygen to the lungs.

Organ System:

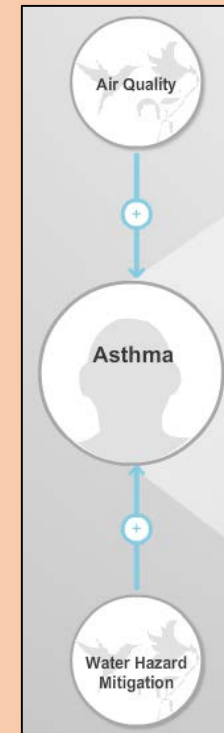
Respiratory

Demographic:

Both children and adults have asthma, although in 2009 a higher percentage of children (9.6%) were reported as having asthma when compared to adults (7.7%). Diagnoses were especially high among boys (11.3%). In 2009, the highest rate of asthma among racial/ethnic groups was 17% for non-Hispanic black children.

Trend in Incidence Rate:

Asthma affects 24.6 million Americans. The CDC reports that the number of people in the U.S. diagnosed with Asthma grew by 4.3 million, from 7.3% of the population to 8.2%, between 2001 and 2009.



Birth Outcomes

Definition:

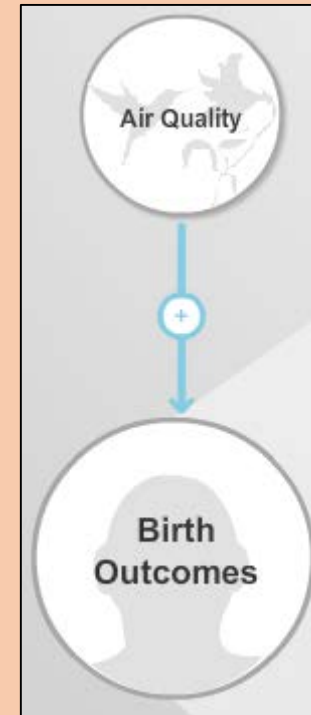
For the purposes of the browser, birth outcomes can mean multiple adverse outcomes or issues associated with pregnancy or birth. These may include preeclampsia, high blood pressure, preterm birth, low birth weight, birth defects, and miscarriage.

Organ System:

Main: Reproductive, other systems

Known Contributing Factors:

Obesity, Older age, First Pregnancy, Multiple Pregnancy (twins+)



Bronchitis

Definition:

A condition resulting when the bronchial tubes, which carry air to the lungs, become inflamed and irritated. When this happens, the tubes swell and produce mucus. This results in coughing and wheezing that can last for up to 8 weeks.

Organ System: Respiratory

Demographic:

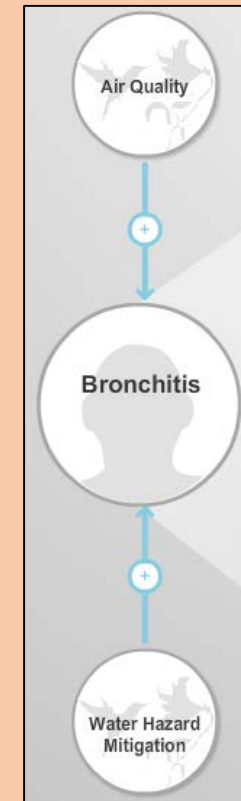
Bronchitis is equally distributed among men and women.

Trend in Incidence Rate:

In the US, it has been estimated that almost 5% of the general population develops acute bronchitis each year.

Known Contributing Factors:

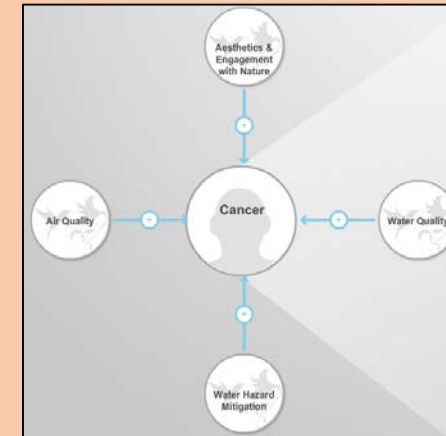
Cigarette Smoke, Compromised Immune System, Air Pollution/Irritants



All information available from www.epa.gov/EnviroAtlas

Cancer

Definition:	Cancer is the uncontrolled growth of abnormal cells in the body. Cancerous cells are also called malignant cells.
Organ System:	Multiple
Demographic:	Anyone can develop cancer, although the risk of being diagnosed with cancer increases with age. In 2007, there were 11.7 million Americans living with a history of cancer. About 78% of all cancers are diagnosed in persons 55 years of age or older.
Trend in Incidence Rate:	Roughly 1.65 million new cancer cases were estimated to be diagnosed in the year 2015. Cancer is the second most common cause of death in the U.S. with more than 1,600 people a day dying from it.
Known Contributing Factors:	Diet, Tobacco, Air/Water Pollution, Alcohol, Radiation, Medications, Genes



All information available from www.epa.gov/EnviroAtlas

Cardiovascular Disease

Definition:

Cardiovascular Diseases are a group of diseases that affect the heart and blood vessels. These include several types of heart diseases, cerebrovascular disease, and arterial disease. Coronary heart disease, which is the leading cause of cardiovascular-related deaths, is a narrowing of the small blood vessels that supply blood and oxygen to the heart.

Organ System:

Cardiovascular System

Demographic:

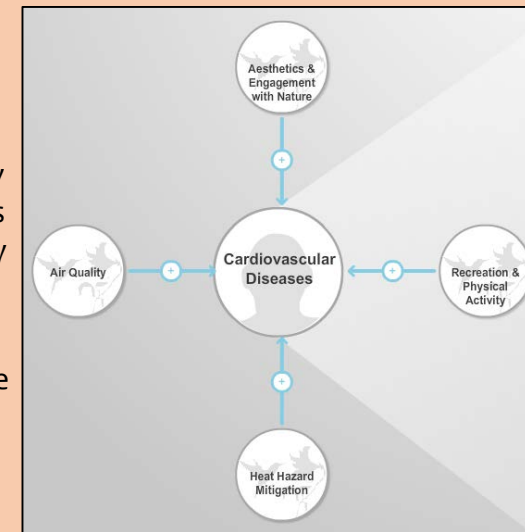
CVDs are the leading cause of death worldwide. Those in low and middle income countries are disproportionately affected - roughly 80% of cases take place in these countries. In the U.S., CHD affects men roughly 40% more than women, while hypertension is slightly higher in women.

Trend in Incidence Rate:

Worldwide, the number of people with cardiovascular diseases is rising and WHO estimates that by 2030, almost 23.6 million people will die from CVDs, mainly heart disease and stroke. In the United States, age-adjusted prevalence for coronary heart disease declined overall from 6.7% to 6.0% between 2006 and 2010.

Known Contributing Factors:

Diet, Physical Inactivity, Tobacco Use, Alcohol Abuse, High Cholesterol, Access to Health Care, Socioeconomic Status



Cognitive Function

Definition:

Cognitive function refers to a person's ability to process thoughts. Cognition primarily refers to things like memory, the ability to learn new information, speech, and reading comprehension. Cognitive function can become impaired as a result of aging, head trauma or the presence of disease such as Alzheimer's.

Organ System:

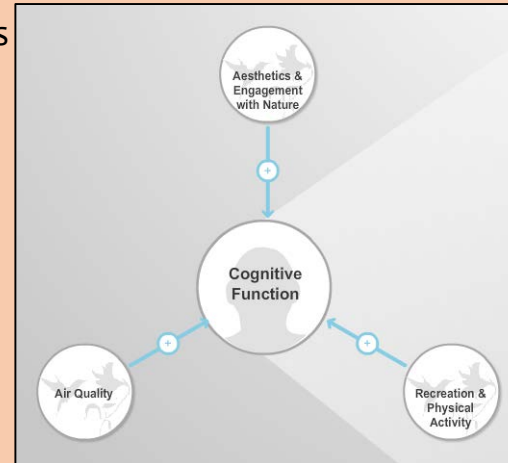
Nervous

Trend in Incidence Rate:

Cognitive function can become impaired as people grow older and may develop conditions such as dementia. Alzheimer's disease is the 5th leading cause of death among those 65 and older in the United States

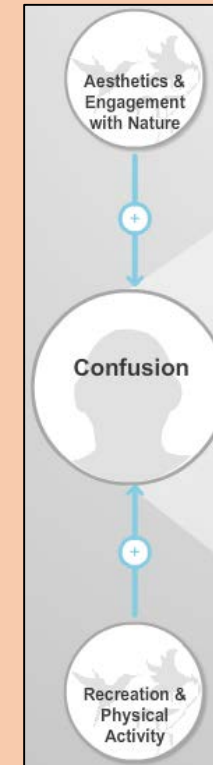
Known Contributing Factors:

Exercise, Diet, Sleep, Aging, Disease



Confusion

Definition:	Confusion is the inability to think with one's usual speed or clarity. This includes difficulty in remembering, paying attention or making decisions.
Organ System:	Nervous
Demographic:	Confusion is more common in the elderly.
Known Contributing Factors:	Alcohol intoxication, Head Trauma, Brain Tumor, Low Blood Sugar, Infection, Drug Use



COPD

Definition:

Chronic Obstructive Pulmonary Disease (COPD) is a disease of the lungs that makes it difficult for one to breathe. The term COPD most often includes two conditions: chronic bronchitis and emphysema. With chronic bronchitis, the lining of the lung airways becomes irritated, thickens, and produces large amounts of mucus. With emphysema, the walls between the lung's air sacs become damaged and deflate, reducing gas exchange in the lungs.

Organ System:

Respiratory

Demographic:

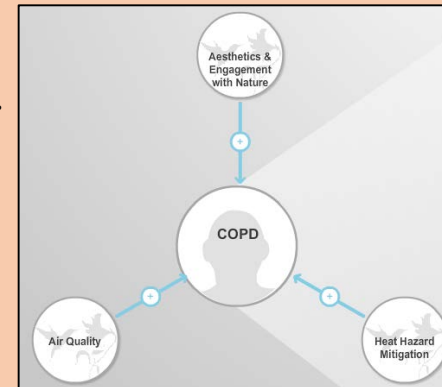
Worldwide, 64 million people have COPD. Typically, people between the ages of 65 - 84 develop COPD. Men and women are affected by the disease equally at present. Those who smoke are much more likely to develop the disease.

Trend in Incidence Rate:

In 2012, more than 3 million people died of COPD and WHO predicts that by 2030 it will be the third leading cause of death worldwide. The number of women with COPD is increasing due to increased tobacco use in high-income countries and exposure to indoor air pollution in low-income countries.

Known Contributing Factors:

Smoking, Exposure to Air Pollutants, Indoor Air Quality, Outdoor Air Quality



All information available from www.epa.gov/EnviroAtlas

Diabetes

Definition:

Diabetes is a disease in which blood glucose levels are above normal. When people have diabetes, their bodies either do not make enough insulin or cannot use it as well as they should.

Organ System:

Diabetes can affect major organs, including heart, blood vessels, nerves, eyes, and kidneys.

Demographic:

Compared with non-Hispanic whites, members of racial and ethnic minority groups are more likely to have diagnosed diabetes. During their lifetime, half of all Hispanic men and women and non-Hispanic black women are predicted to develop the disease.

Trend in Incidence Rate:

Over the past 32 years, from 1980 through 2012, the number of adults with diagnosed diabetes in the United States nearly quadrupled, from 5.5 million to 21.3 million. Among adults, about 1.7 million new cases of diabetes are diagnosed each year.

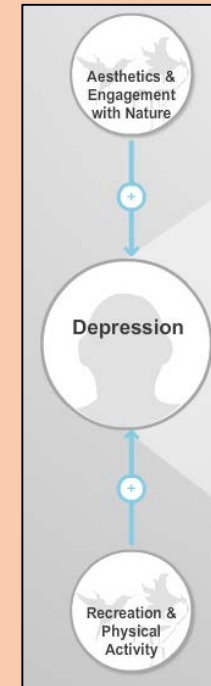
Known Contributing Factors:

Obesity, Sedentary Lifestyle, Heredity, Hypertension (High Blood Pressure), Low levels of HDL and Elevated Levels of Triglycerides in the blood.



Depression

Definition:	Depressive disorders are characterized by persistent low mood, loss of interest and enjoyment, and reduced energy, causing varying levels of social and occupational dysfunction.
Organ System:	Nervous
Demographic:	Women are affected twice as often as men. In patients with an affected first-degree relative, the lifetime risk of depression increases to 1.5 to 3.0 times average. First onset occurs most frequently in patients aged 12 to 24 years and in those older than 65 years.
Trend in Incidence Rate:	In people aged 18 to 44 years, depression is the leading cause of disability and premature death. Depression is predicted to be the second leading cause of disability in people of all ages by the year 2020.



Fatigue

Definition:

Fatigue is a feeling of tiredness, weariness or lack of energy. It can be a normal response to physical or emotional stress among other factors but can also be a sign of more serious conditions.

Organ System:

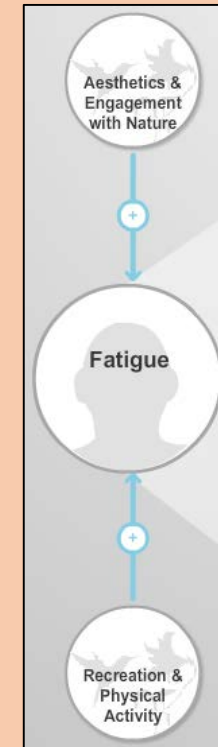
Fatigue can affect the entire body or be localized in certain systems.

Demographic:

Any person from any race, ethnicity, gender, or age group can experience fatigue.

Known Contributing Factors:

Anemia, Depression, Certain Medications, Sleep Disorders, Malfunction of Thyroid Gland, Chronic Disease, Malnutrition, Exertion



Gastrointestinal Illness

Definition:

Gastrointestinal infections (GIs) can be caused by a host of different parasites, viruses and bacteria and often result in diarrhea, nausea, cramping and vomiting. Bacterial gastroenteritis (food poisoning) is commonly caused by E.coli, Salmonella, and Staphylococcus. Enteric viral gastroenteritis, often called stomach flu, is caused by viruses such as adenovirus and rotavirus.

Organ System:

Digestive

Demographic:

Those with the highest risk for severe gastroenteritis include the young, the elderly, and people who have suppressed immune systems.

Trend in Incidence Rate:

Each year in the US, foodborne illness causes 48 million gastrointestinal illnesses. Incidence rates for foodborne illnesses fluctuate yearly, although in the US, the general trend from 1996 - 2010 has shown a decrease in illnesses as a result of Campylobacter and Shigella, while there has been an increase in illnesses associated with Salmonella.

Known Contributing Factors:

Tainted Food or Water, Contact with an Infected Person (viral)



All information available from www.epa.gov/EnviroAtlas

Happiness

Definition:

Happiness is a specific emotion that people feel when good things happen and is considered by psychologists to be one of the few basic emotions (cannot be broken down further) that humans experience.

Organ System:

Nervous

Demographic:

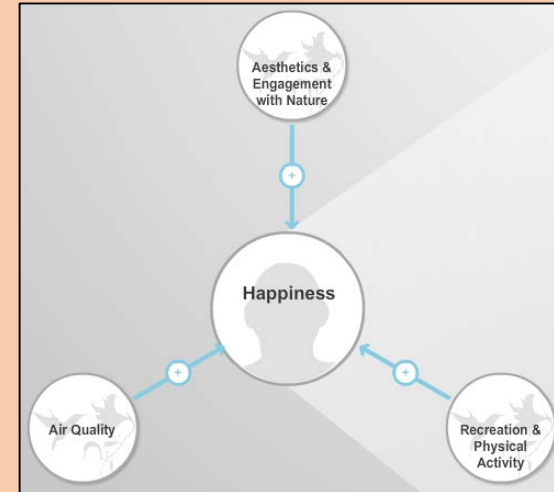
Those who live in countries with higher incomes and less suffering typically have higher life satisfaction. A 2010 Gallup Poll found that European countries such as Denmark and Finland have high happiness ratings while many countries in Africa shared the lowest ratings.

Trend in Incidence Rate:

Up to a threshold point, people who gain wealth are happier. In 2007, a Pew study found that happiness in many countries globally was increasing largely due to economic growth. As of 2006, in the US, happiness inequality among demographic groups had decreased considerably since the 1970s.

Known Contributing Factors:

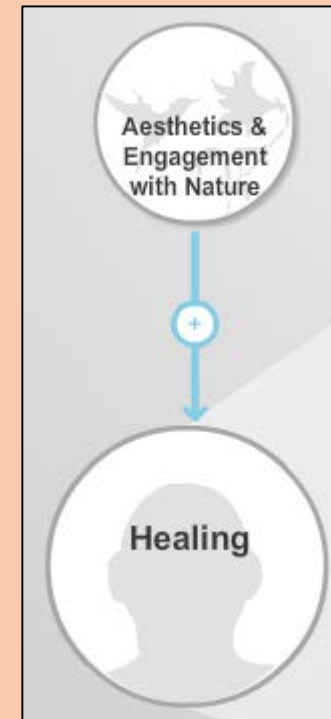
Quality of Life, Social Relationships, Income



Healing

Definition:

To heal is to mend or make better and includes recovery from injury and surgery. For the purpose of this browser, healing refers to physical and mental recovery.



Heat Stroke

Definition:

Heat stroke is the most severe heat illness, and occurs when body temperature reaches 104° Fahrenheit. Heat stroke is typically preceded by other heat illnesses such as heat exhaustion and dehydration.

Organ System:

Multiple

Demographic:

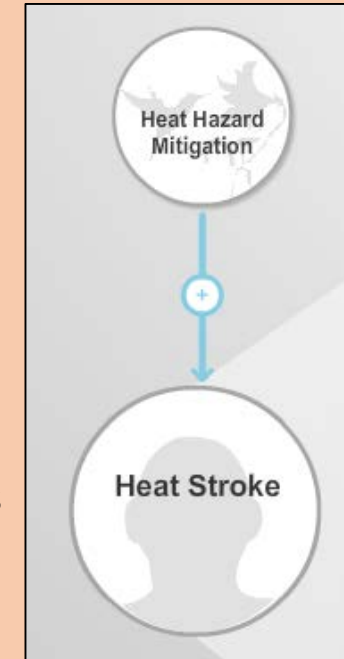
Any person can suffer from heat stroke, though children, the elderly, those who work outdoors, and obese people are at higher risk of developing heat illness.

Trend in Incidence Rate:

Serious heat illnesses occur most often during the summer months and during heat wave events. As the global climate is expected to warm, it is likely that heat wave events and heat illnesses will increase in many areas.

Known Contributing Factors:

High temperatures, High humidity, Dehydration



High Blood Pressure

Definition:

High blood pressure (HBP), also called hypertension, is when a person's blood pressure is at or above 140/90 mmHg most of the time. HBP is a serious condition and can lead to coronary heart disease, heart failure, stroke, and kidney failure, among other problems.

Organ System:

Cardiovascular

Demographic:

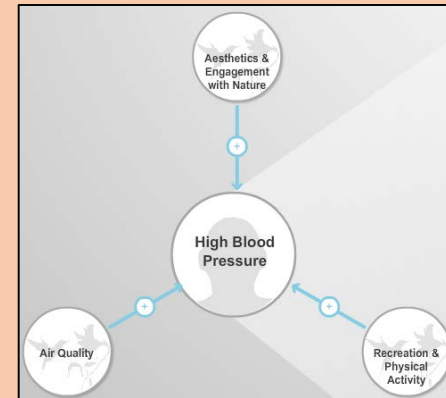
Risk of getting HBP increases with age as the blood vessels becomes stiffer. African Americans are particularly prone to HBP along with those who are overweight or obese. Hypertension affects approximately 30% of US adults.

Trend in Incidence Rate:

In the US, hypertension increased from 23.9% (1988 - 94) to 28.5% (1999-2000). Though hypertension prevalence did not change between 2000 and 2008, hypertension control increased to roughly 50%. In 2000, the global number of adults with hypertension was estimated at 972 million with 2025 future projections reaching 1.56 billion.

Known Contributing Factors:

Overweight, Smoking, High Salt Intake, Alcohol Consumption, Stress, Age, Genetics



Hospital Admissions

Definition: The "hospital admissions" portion refers to people who were admitted to a healthcare facility to receive illness diagnosis and/or treatment.



All information available from www.epa.gov/EnviroAtlas

Kidney Malfunction

Definition:

The kidneys are two small organs that are connected to the urinary bladder. Their main function is to remove waste products and excess water from the blood. The kidney plays a major role in regulating levels of various minerals in the body as well as producing some important hormones. Damage to the kidneys can be caused by a number of factors and if serious, can result in kidney failure.

Organ System:

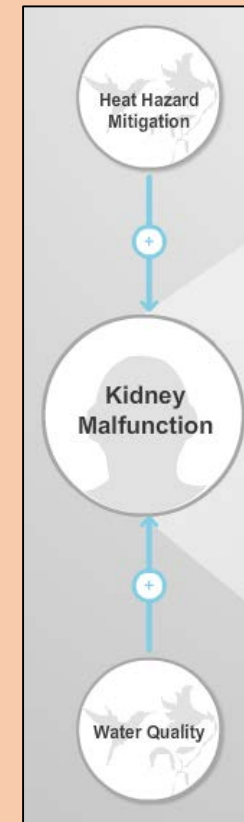
Urinary

Demographic:

Issues with the kidneys become more common as people age. In the US, more than 10 percent of people, or more than 20 million, ages 20 years and older have chronic kidney disease.

Known Contributing Factors:

Genetics, Diabetes, High Blood Pressure, Aging, Illness, Injury



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Longevity

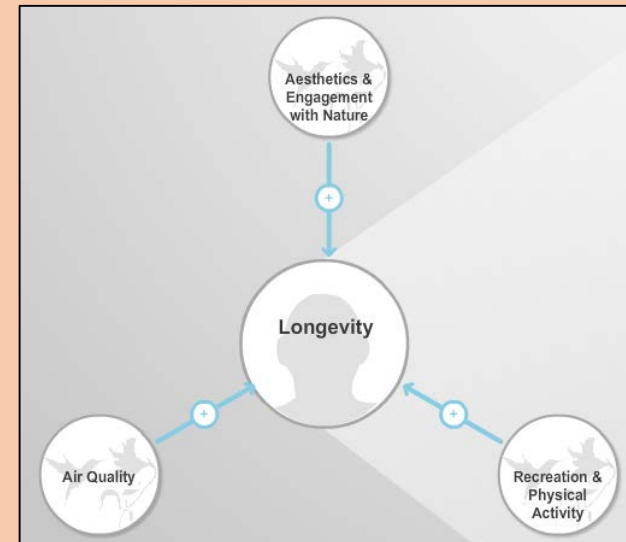
Definition: Life expectancy is the average number of years a person is expected to live from birth and is often used as a measure of overall quality of life in a country.

Organ System: Life expectancy is affected by all organ systems.

Demographic: Life expectancy varies among countries and regions. In 2009, the lowest average life expectancy was 47 years for those who live in Malawi and the highest was 83 years for those from Japan. The United States' average life expectancy is 79 years. Low income countries generally have lower life expectancies.

Trend in Incidence Rate: Life expectancy has increased globally by four years since 1990. However, in many African countries it has actually decreased, largely due to HIV/AIDS.

Known Contributing Factors: Access to Medical Treatment, Quality of Life, Chronic Disease, Infectious Disease, Nutrition, Lifestyle



All information available from www.epa.gov/EnviroAtlas

Low Birth Weight

Definition:

An infant is considered to have a low birth weight if it weighs less than 5lbs 8 oz. (2500 grams) at birth.

Organ System:

Reproductive

Demographic:

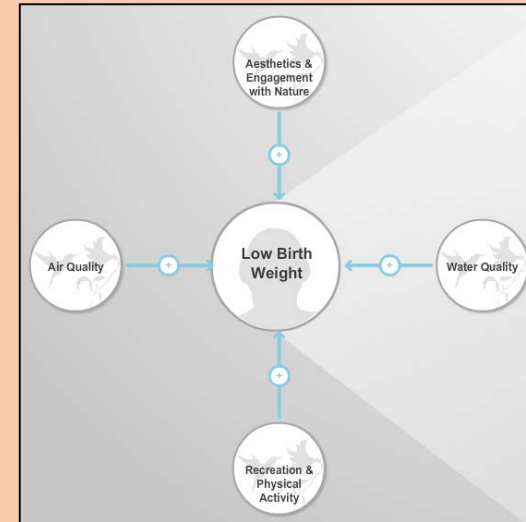
Roughly 30 million babies are born with low birth weight annually. Low income or developing countries have higher numbers of low-weight births than higher income countries.

Trend in Incidence Rate:

Globally, prevalence of low-weight births is slowly decreasing.

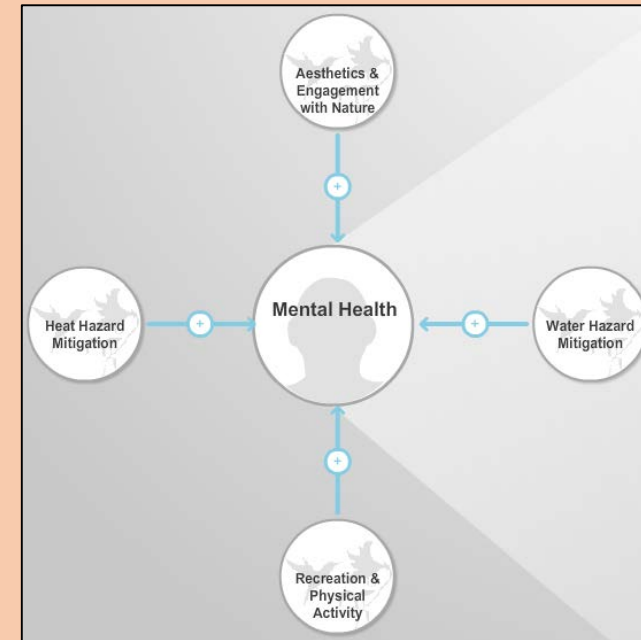
Known Contributing Factors:

Multiple Pregnancy (twins+), Previous Chronic Conditions, Smoking, Drug and Alcohol Use, Uterine or Cervical Issues



Mental Health

- Definition:** Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community.
- Organ System:** Nervous
- Demographic:** Mental and behavioral disorders are estimated to account for 12% of the global burden of disease. Mental and behavioral disorders are common, affecting more than 25% of all people at some time during their lives. Around 20% of all patients seen by primary health care professionals have one or more mental disorders.
- Known Contributing Factors:** Social Relations, Social Support, Spirituality/Religion, Physical Health, Substance Abuse, Trauma, Stress



Migraine

Definition:

A migraine is a type of severe headache caused by abnormal brain activity that is often accompanied by nausea, vomiting or sensitivity in light.

Organ System:

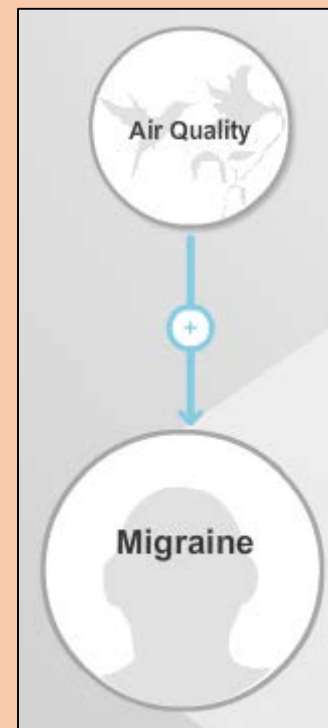
Nervous

Demographic:

Migraine afflicts 28 million Americans, with females suffering more frequently (17%) than males (6%). This trend, where roughly 6% of men and 15-18% of women are affected by migraines is also seen in Europe and Central and South America. Migraines affect women 2 - 3 times more than men in most countries that have been studied.

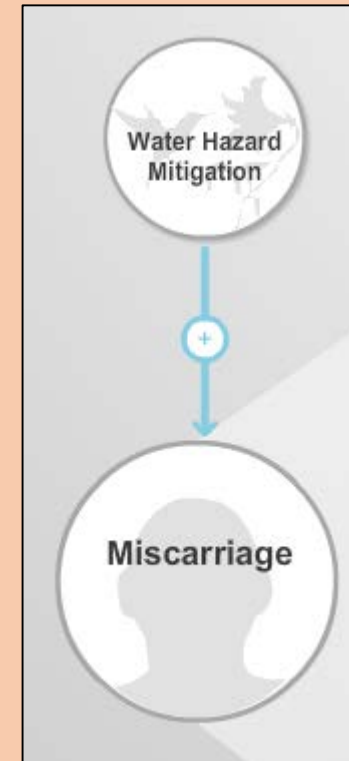
Known Contributing Factors:

Stress, Alcohol Use, Allergic Reactions, Certain Foods, Environmental Factors (these are thought to have an effect on migraines)



Miscarriage

Definition:	A miscarriage is the spontaneous loss of a fetus before the 20th week of pregnancy.
Organ System:	Reproductive
Demographic:	Miscarriages occur in women who are pregnant and increase in likelihood as women age. Women over the age of 30 and those who have previously had a miscarriage are at greater risk of having a miscarriage.
Trend in Incidence Rate:	Studies show that about 8 to 20 percent of women who know they are pregnant have a miscarriage some time before 20 weeks of pregnancy; 80 percent of these occur in the first 12 weeks (Regan 2000).
Known Contributing Factors:	Diabetes, Chromosomal abnormalities, Drug and alcohol abuse, Exposure to environmental toxins, Hormone problems, Infection, Obesity (potential contributing factors)



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Mortality

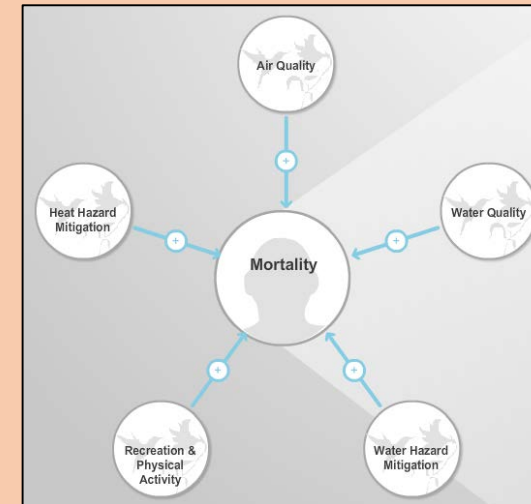
Definition: Put simply, mortality means death. Infant mortality rate is often used as an indicator for the health level in a country.

Organ System: Multiple

Demographic: Mortality rates vary among countries depending on a number of factors. Infant mortality rates range from 2.60 to 144 deaths/1,000 live births. Developing countries typically have higher mortality rates than those in developed countries.

Trend in Incidence Rate: In the United States, the death rate for 10 out of the 15 leading causes of death has been declining in the past several years. For the U.S., the death rate in 2007 was 803/100,000 compared to 2009's rate of 741/100,000.

Known Contributing Factors: Heart Disease, Stroke, Cancer, Infectious Disease, Malnutrition, Diet, Chronic Disease, Violent Crimes



All information available from www.epa.gov/EnviroAtlas

Obesity

Definition:

Obesity is a preventable disease characterized by being extremely overweight and having a high percentage of body fat or a body mass index (BMI) of 30 or greater. BMI is a calculated weight to height ratio used to determine a person's relative body fat amount and is typically accepted as a good indicator of fat content. A BMI between 18.5 and 25 is considered normal and healthy.

Organ System: Multiple

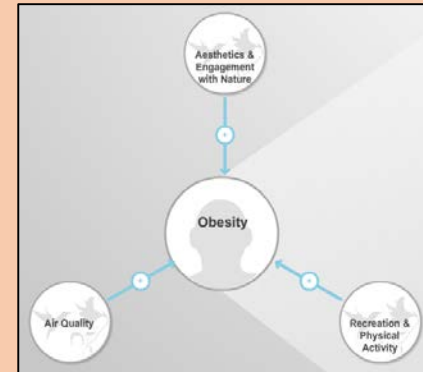
In 2008, 1.5 billion adults (age 20 and older) worldwide were deemed overweight. Of those, over 500 million were obese. In 2010, around 43 million children under five were overweight, of whom 81% were in developing countries. In the United States, roughly one third of adults (33.8%) are obese. In the U.S. more women than men are obese and non-Hispanic blacks have the highest rate of obesity (44.1%) compared to non-Hispanic whites who have the lowest rate of obesity (32.6%) of the reported groups.

Demographic:**Trend in Incidence Rate:**

Worldwide, obesity has more than doubled since 1980 and along with being overweight is the fifth leading risk for global deaths.

Known Contributing Factors:

Lack of Exercise, High Calorie Intake, Genetics, Drug Usage



Preterm Birth

Definition:

A baby is considered preterm, or premature, if it is born at least three weeks before its due date - or 37 weeks. Of all neonatal deaths, 28% are due to preterm birth.

Organ System:

Reproductive

Demographic:

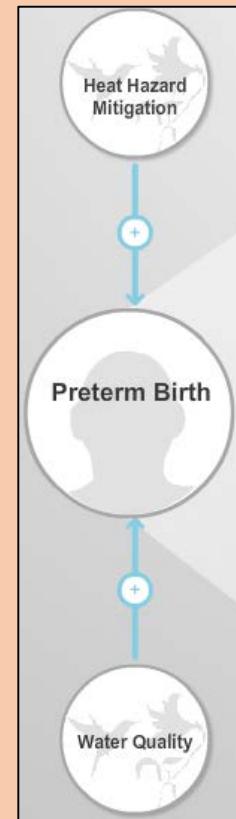
Pregnant women worldwide have premature births. In the United States, 1 in 8 babies is born premature.

Trend in Incidence Rate:

In countries where data is available, such as the U.S. and UK among others, preterm birth rates have risen dramatically over the past 20 years due to a number of factors.

Known Contributing Factors:

Carrying More than One Child, Previous Preterm Birth, Uterine or Cervical Issues, Previous Chronic Health Problems; Cigarette Smoking, Alcohol Use, or Drug Use During Pregnancy



PTSD

Definition:

Post-Traumatic Stress Disorder (PTSD) is an anxiety disorder that some people get after seeing or living through a dangerous or traumatic event. People who have PTSD may feel stressed or frightened even when they're no longer in danger.

Organ System:

Nervous

Demographic:

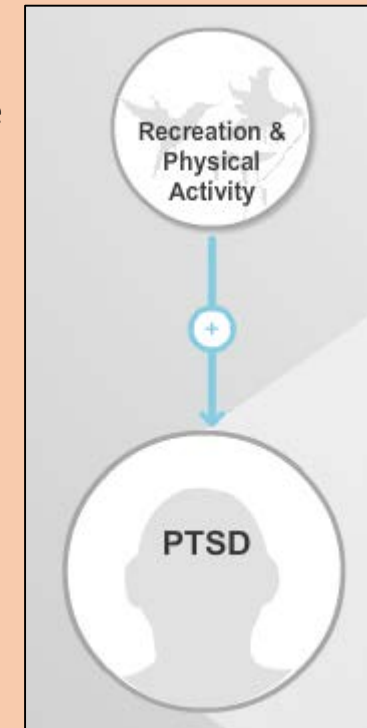
Anyone can get PTSD at any age. Roughly 7 or 8 out of every 100 people will experience PTSD at some point in their lives.

Trend in Incidence Rate:

About 8 million adults have PTSD during a given year. This is only a small portion of those who have gone through a trauma. Women are more likely to develop PTSD than men.

Known Contributing Factors:

Traumatic Event, Prior Trauma, History of Mental Illness, Mental Illness in the Family, Genetics, Alcohol Abuse, Education Level



Respiratory Symptoms

Definition:

Common respiratory symptoms include coughing and wheezing. There are a number of respiratory symptoms that are associated with serious respiratory illnesses. These symptoms include the following: difficulty breathing, rapid breathing, shallow or deep breathing, and absence of breathing.

Organ System:

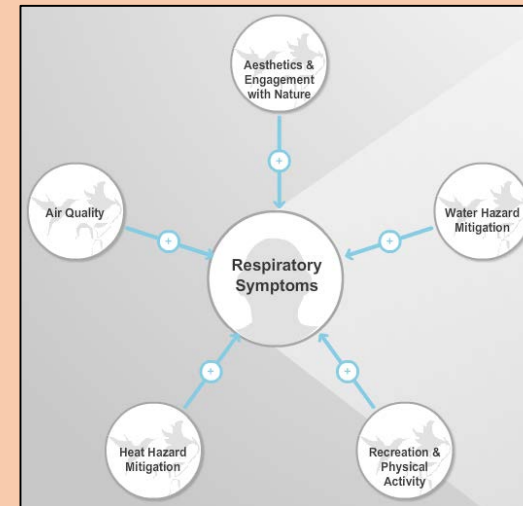
Respiratory

Demographic:

Respiratory symptoms can affect any person regardless of age, race or gender, though women are more likely than men to develop a chronic cough.

Known Contributing Factors:

COPD, Infection, Inflammation, Smoking, Heart Conditions, Irritants, Allergens



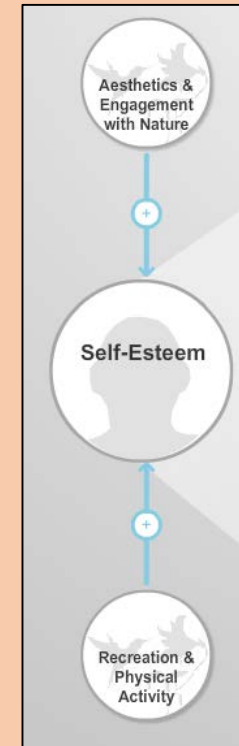
Self-Esteem

Definition:

Self-esteem is used to describe one's overall sense of self-worth or personal value. Many experts think self-esteem is a major component of human existence and plays an important role in one's construct of identity.

Organ System:

Nervous



Social and Community Ties

Definition:

Social relations, which are often referred to as social interactions, include the relationships that individuals have with one or more people. The term includes long-term relationships and everyday social interactions with others.

Organ System:

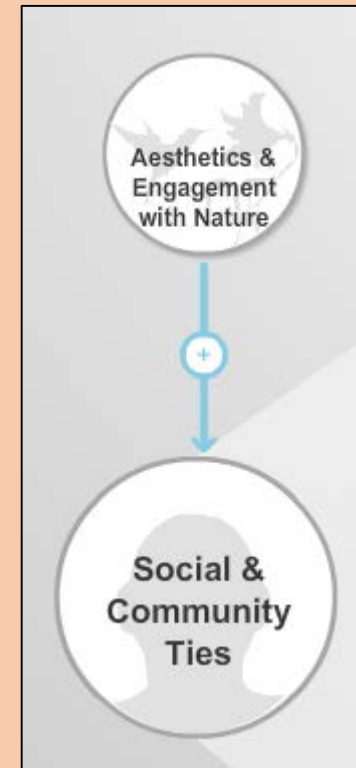
Nervous

Demographic:

In general, humans feel the need for contact with other human beings and interact with others on a regular basis. Demographic factors that may affect a person's social connectedness include: age, marital status, church attendance, home ownership, education and income.

Known Contributing Factors:

Environment, Development of Social Skills



Stress

Definition:

Stress is a normal feeling that can manifest as a result of an event or thought that makes people frustrated, upset or nervous. While some stress can be healthy, chronic and/or prolonged stress can have negative health effects. Stress affects people differently and can bring about headaches, muscle pain, and rapid breathing, among other symptoms.

Organ System:

Nervous System

Demographic:

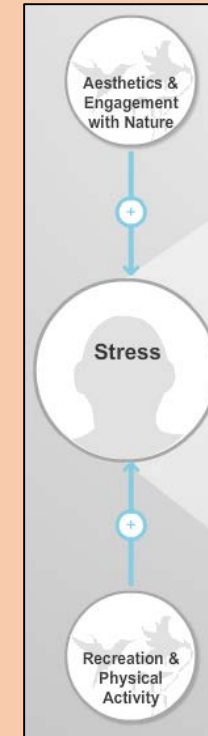
Stress can affect people of all ages, regardless of sex or ethnicity. However, one study in the United States found that women, individuals with lower income, and those who have less education reported higher levels of stress.

Trend in Incidence Rate:

Studies in the US indicate that stress decreases with age and education level.

Known Contributing Factors:

Emotional or Important Life Events; Injury or Illness in Yourself, a Friend, or Loved One; Depression



Thyroid Dysfunction

Definition:

The thyroid gland is located in the neck and is a hormone-producing endocrine gland. When the thyroid gland malfunctions, it may cause too much or not enough hormone to be produced. A thyroid gland that is not active enough (hypothyroidism) may cause weight gain and fatigue.

Organ System:

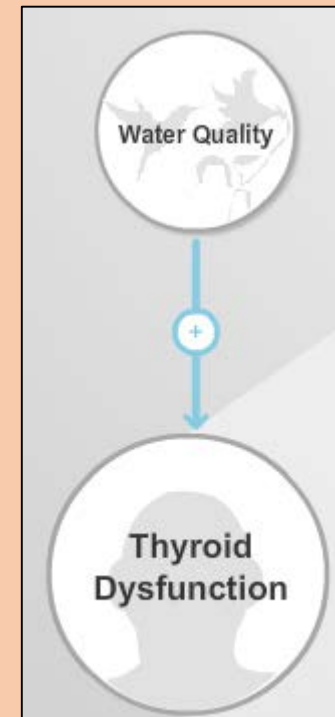
Endocrine

Demographic:

People over the age of 50 and females are at higher risk of hypothyroidism (most common thyroid dysfunction).

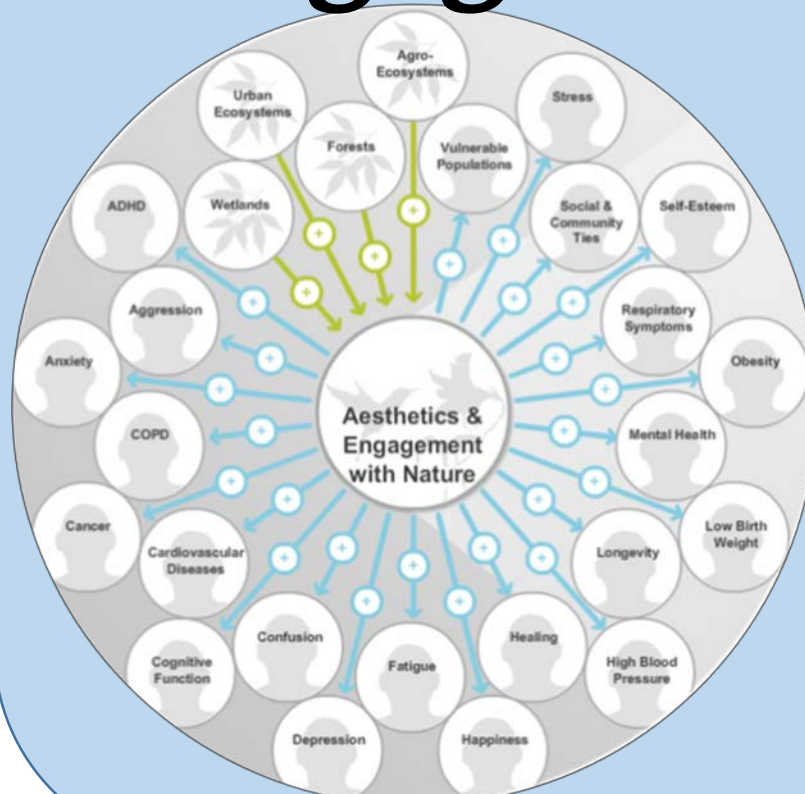
Known Contributing Factors:

Inflammation of the thyroid gland, birth defects



Aesthetics & Engagement with Nature

front



People enjoy recreating, relaxing, and spending time outdoors. Scientific studies show that exposure to nature is positively associated with numerous aspects of health and good social relations. Causal mechanisms for some of these associations have been demonstrated in the laboratory: **faster recovery from neurological fatigue appears to be responsible for the observed effects that greenness has on mental concentration and the alleviation of ADHD symptoms in children.** Exposure to natural scenery, even through a window or a photograph, slows the heart rate and calms anxiety. Humans' innate affinity for nature may be responsible for observations that people are preferentially drawn to community green space, where they are more inclined to interact with neighbors while relaxing or recreating. Gardens have long been components of hospital grounds and urban settings for their perceived benefits to well-being. **Engagement with less cultivated outdoor environments is believed to facilitate exploration, creativity, and self-esteem in children (Louv 2005).**

All information available from www.epa.gov/EnviroAtlas

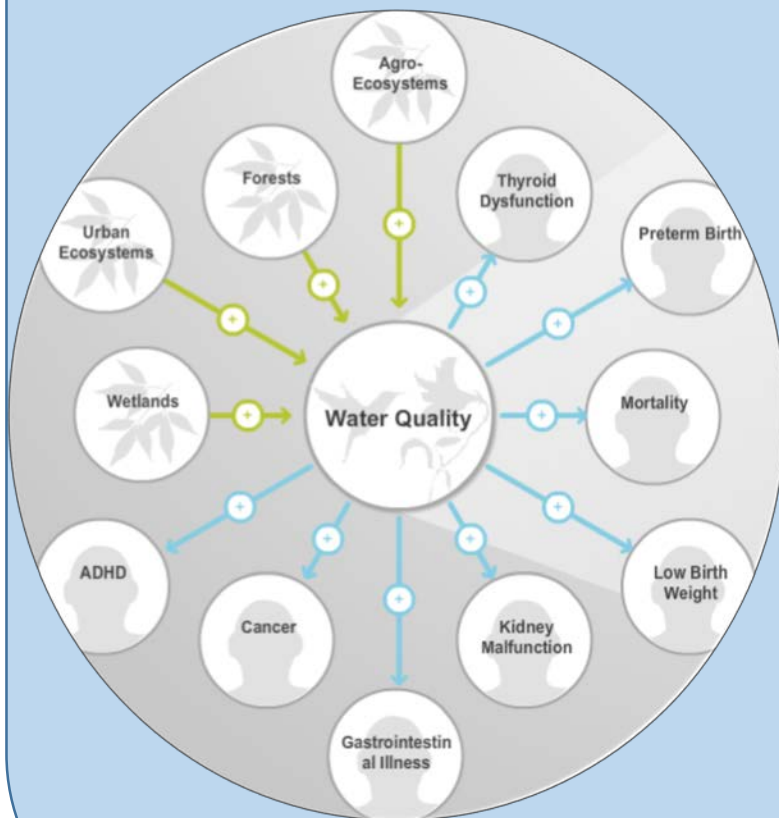
Air Quality



As industry, urbanization, and use of motor vehicles have increased, so too has the concentration of pollutants in the atmosphere. **Forests and other green spaces can reduce the atmospheric concentrations of many of these pollutants, including** those regulated under the U.S. Clean Air Act: particulate matter (PM 10 and PM 2.5), **carbon monoxide, sulfur dioxide, nitrogen dioxide and ozone. Due to their significant negative health effects, their natural removal, dilution, or displacement can protect public health.** In heavily populated areas, even small air-quality improvements from tree cover are estimated to significantly reduce incidence and severity of respiratory and related illnesses, as well as reduce health-care costs and days missed from work and school. Vegetation can also increase air pollution through the production of pollen, fungal spores, and volatile organic compounds, which contribute to ozone formation.

Water Quality

front



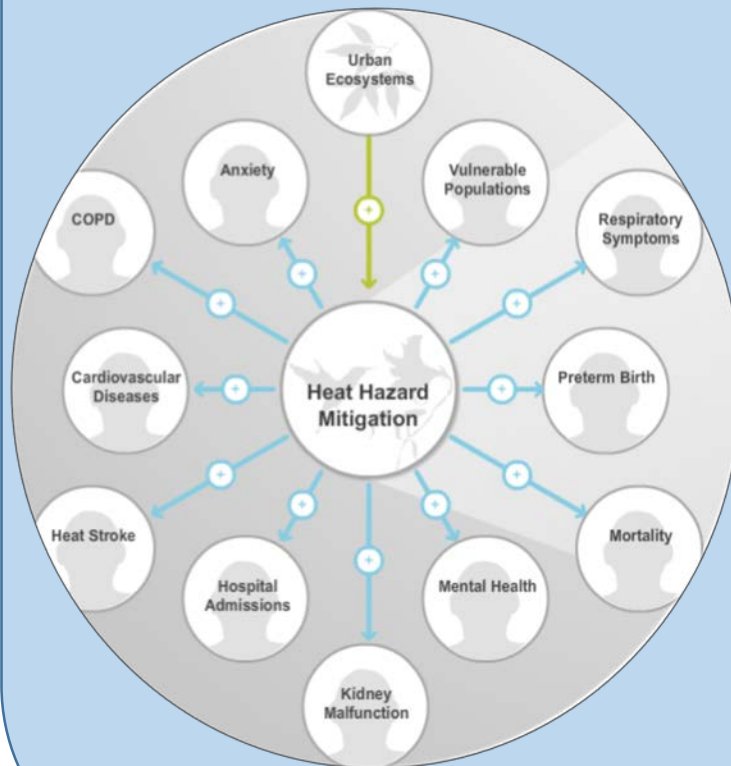
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When a contaminant is introduced into water, it does not always remain suspended in the water but can be taken up by plants, animals, or soil before it reaches a major water body. **Ecological features, whether natural or man-made, with the appropriate plant species and soil types, can remove up to 100% of certain contaminants from various landscapes including urban and agricultural areas.**

This process can reduce contamination of aquatic habitats, drinking-water supplies, and recreational waters. The absence of adequate natural water filtration due to habitat removal or the inability of the filtering environment to cope with the volume of pollution can lead to significant public-health threats. These threats can be reduced with water treatment systems; however, this solution is not always an option due to expense or technology limitations.

One well known example of promoting natural removal of contaminants as opposed to a water treatment system is that of the Catskills watershed. **Faced with building a water filtration plant that would cost at least \$6 billion to build and \$300 million a year to operate, New York City opted to protect the Catskills watershed which provides their water supply.** An investment of \$1 to \$1.5 billion to purchase and restore the watershed allowed for continued purification and filtration of the City's water resources without having to invest in a filtration plant.

Heat Hazard Mitigation



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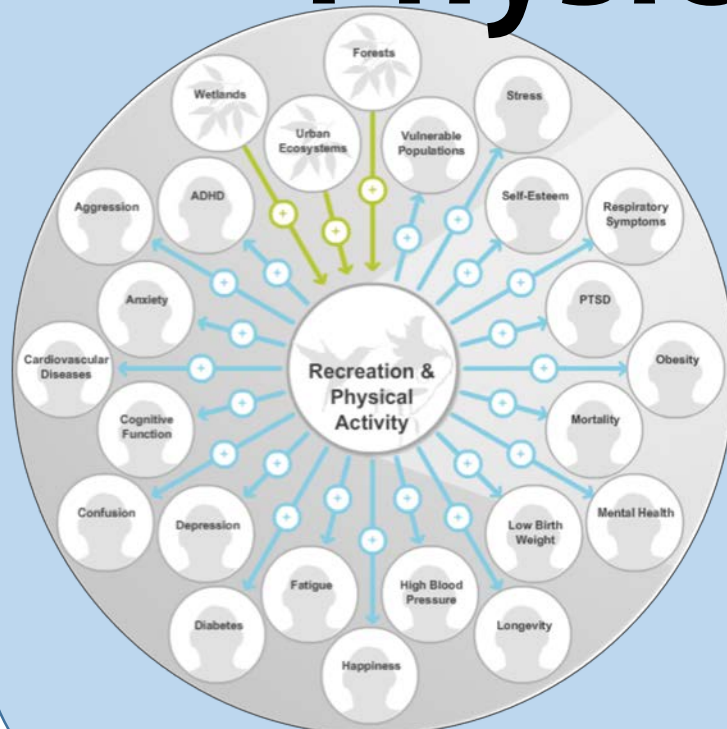
The Urban Heat Island (UHI) effect is a heating phenomenon that occurs in urban centers and their surrounding suburban areas. **With the UHI effect, metropolitan areas do not cool down at night due to the release of heat from dark surfaces that absorb heat throughout the day.**

In UHIs, temperatures can be 6 to 8 degrees higher in urban centers than in nearby woodlands. This fact is especially important during heat wave events, where those who reside in urban areas are often most effected due to exposure to higher maximum temperatures and less nighttime reprieve from heat. In urban systems, green spaces such as parks, urban forests and green roofs, can reduce urban temperatures and mitigate the effects of heat wave events through evapotranspiration and shading.

The cooling effects of these green spaces may be especially important during heat waves, where temperatures directly outside the homes in which people are confined (elderly, infirm) have an effect on mortality.

Recreation & Physical Activity

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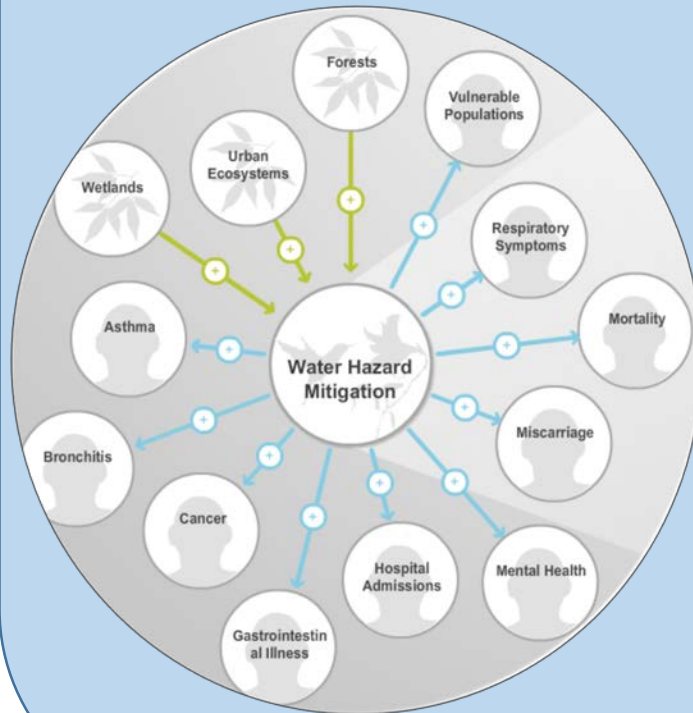


Regular physical activity is essential to a healthy lifestyle. Outdoor areas such as parks, forests, and urban green spaces promote a variety of physical activities such as walking, biking and exploration. Bodies of water also provide opportunities for activities like canoeing, fishing, and water skiing. Though there are numerous opportunities for indoor exercise at fitness centers, these options are often costly in terms of time and money and are not available to everyone. **Studies show that many people prefer exercising outdoors and outdoor exercise has been shown to have more positive mental and physical health effects than indoor exercise. The presence of outdoor green spaces provides more opportunities for people to recreate and participate in physical activities outdoors.** This planned exercise, combined with the incidental exercise that comes from walking and biking from place to place, contributes to overall well-being.

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Water Hazard Mitigation

front



Various ecosystems, whether natural or man-made, can buffer the negative effects that extreme precipitation and weather events have on surrounding areas. **For instance, wetlands moderate the effects of floods by taking in and holding floodwaters and protect coastlines from storm events like hurricanes and tsunamis. Forested ecosystems have also been shown to reduce flooding and help regulate water flow in-between precipitation events by intercepting, absorbing, and slowly releasing water. In urban areas, these forests also reduce the impacts of stormwater runoff.** This water regulation reduces flooding events and their negative health effects while also mitigating potential droughts through water storage. The absence of ecosystems such as wetlands and forests, which are capable of regulating water, may result in increased incidence of extreme events such as flooding, as well as exacerbate the effects of events such as hurricanes due to the lack of a proper buffer from human settlements.

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