McKinsey Health Institute

Table

The healthy 23: Drivers of your health and longevity

December 2022

Modifiable drivers of health heavily influence overall health status. A large and growing body of evidence suggests that out of 23 drivers, 19 reside outside of traditional healthcare systems. Each of these drivers appears to have an independent, direct, material, and causal impact on health and longevity. What's more, these drivers are modifiable.

Drivers	Description	Illustrative highlights
Physical inputs		
Diet	Food selection; portions; preparation; eating timing; macro/micro nutrients; fasting/calorie restriction; water consumption	• Fasting has shown the ability to reverse Type 2 diabetes and reduce the likelihood of cognitive decline[1] • Emerging research is demonstrating that ketogenic diets can help treat serious mental illness[2] • A range of healthy diets has been shown to reduce risks of disease, extend life, and improve mood[3] • A Mediterranean diet including olive oil and nuts is associated with a 30% lower risk of cardiovascular disease[4] • Drinking 2 sugar-sweetened beverages per day is associated with a 14% higher risk of mortality from any cause[5] • Higher blood glucose levels in nondiabetic patients is associated with 30–40% higher likelihood of cardiovascular and cancer-related death[6]

Drivers	Description	Illustrative highlights
Physical inputs (continued)		
Supplementation	Frequency; extent of use; type (eg, extracts, teas, vitamins, minerals, herbs, botanicals, amino acids, metabolite, probiotics, caffeine)	• Multiple studies have found DHA and EPA supplementation (fish oil) lowers risk of cognitive decline, especially among people at high risk for Alzheimer's disease, and is linked to a 37% reduced risk of heart-disease-related mortality[7] • Drinking 1–4 cups of coffee per day is associated with a lower mortality risk of 12–17%[8] • Despite having enough food, 2 billion people do not get enough micronutrients (eg, up to 500,000 children who lack vitamin A become blind every year)[9] • Vitamin D supplementation reduced the risk of death from cancer by 15%[10]
Substance use	Frequency; extent of use; type (eg, alcohol, tobacco/nicotine, vaping, cocaine, marijuana, heroin, psilocybin)	• Smokers who stop smoking at age 40 can recover 9 of 10 years lost due to lifelong habit[11] • Drinking >17 units of alcohol a week has been linked to accelerated DNA aging, cognitive decline, and cardiovascular disease[12] • When used in a time-bound and appropriately dosed manner, oral cannabinoids have been shown to reduce chemotherapy-induced nausea by up to 38 percent[13]
Movement		
Mobility	Mix of time by position; standing, sitting, walking, posture, typing, neck position, use of fine motor skills	• Dozens of studies demonstrate that walking reduces chronic pain, strengthens the immune system, and significantly decreases anxiety, sadness, and fatigue[14] • Numerous large observational studies show a strong link between walking and all-cause mortality[15] • More than 12 million years of lives are lost or lived with disability annually because of occupational ergonomics (matching workplace conditions and infrastructure to suit human factors such as posture)[16]
Exercise	Duration; frequency; type (eg, sports, endurance, high intensity, strength/ resistance, stability, flexibility, coordination, individual/group)	• Extensive robust research shows that consistent exercise alone can extend life by 3–5 years and improve quality of life by 5–10 years[17] • Burning 1,000 calories a week can reduce mortality by 20%[18] • A study found that people over age 60 who participated in weekly balance and resistance training showed a 34% reduction in falls[19] • People with poor fitness (25th percentile of cardiovascular fitness) have an all-cause mortality risk 3.9x higher than those with high fitness (75th percentile)[20] • High-intensity activity for a relatively short period of time appears to stimulate brain growth in older adolescents [21]
Sleep	Quality; duration; mix by stages; regularity; consistency; alignment to circadian rhythm	• Sleep quality, duration, and consistency are associated with better academic performance in college students[22] • Sleeping <6 hours vs 7–9 hours a night is associated with an all-cause mortality increase of 13%[23] • One week of 4 hours of sleep per night results in a ~40% reduction in ability to process glucose[24] • Sleeping >9 hours a night has been associated with lower cardiovascular health[25] • Insomnia is linked to increased risk of cognitive impairment by 27%[26]

Drivers	Description	Illustrative highlights
Daily living		
Productive activity	Work, volunteering, caregiving, hobbies, worshipping, activism, playing music, arts/crafts, travel	• Multiple studies have found that more engaged employees experience better physical and mental health[27] • Laid-off workers in the US were found to be 54% more likely to have fair or poor health, and 83% more likely to develop a stress-related condition, such as stroke, heart attack, heart disease, or arthritis[28] • There is a strong correlation between health (including longevity) and engagement in altruistic activities (eg, people who volunteer have fewer symptoms of depression, anxiety, and stress-induced pain compared with non-volunteers)[29]
Social interaction	Conversations, meals, vocational interaction, friendships, physical intimacy, marriage/dating, activities; in-person or remote	• Dozens of studies have observed an average 50% increased likelihood of survival for participants with stronger social relationships[30] • Social integration during childhood is related to blood pressure and BMI in adulthood[31] • Sports with more inherent social interaction (tennis, badminton, soccer) are associated with greater longevity gains than other sports[32] • Owning a pet is associated with decreased risk of cardiovascular disease[33]
Content consumption	Entertainment, literature, news, music, pornography; all formats—online, apps, social media, newspaper, in-person, TV, gaming	• Consuming pornography for >30 minutes in a row is linked to a higher prevalence of erectile dysfunction[34] • >5 hours' daily use of social media was associated with a 35–50% increased risk of depressive symptoms in adolescents[35]
Hygiene	Handwashing, bathing, showering, oral care, ear protection, grooming	• Washing hands with water and soap reduces by 50% the risk of spreading diarrheal disease[36] • Personal hygiene significantly impacts our risk of infection and affects our mental health (eg, poor oral health can exacerbate social withdrawal, isolation, and low self-esteem). It can also cause problems with speaking and eating and is correlated with higher mortality for older adults[37]
Exposure		
Nature	Time among forests, flowers, bodies of water, wildlife/insects, mountains; day/night sky	• Exposure to nature, or higher levels of greenery, lowers levels of depression, increases motivation for physical activity, and can lower the risk of respiratory disease[38] • Death from respiratory disease is reduced by 35% in women who have high levels of vegetation around their homes[39] • A recent random control experiment demonstrated that exposure to nature for 30 minutes–1 hour reduced stress and improved the brain's ability to successfully navigate future stressors[40]

Drivers	Description	Illustrative highlights
Exposure (continued)		
Atmosphere	Temperature; humidity; weather, weather events; radiation; smoke; high heat/cold exposure (sauna, cold plunge)	• Multiple studies show that regular use of saunas at high temperatures decreases the risk of all-cause mortality by as much as 40% and the risk of dementia as much as 66%[41] • Worldwide, air pollution causes 7 million deaths annually, of which 3.2 are due to indoor air pollution (eg, cooking with solid fuel)[42]
Sensory	Screens; sun/exterior light; type/degree of interior light; noise: type, intensity, duration	• Regular exposure to sunlight can avoid a decrease in a hormone that can trigger depression symptoms (seasonal affective disorder)[43] • Noise pollution leads to 12,000 premature deaths a year in the EU, mostly through a link with heart attacks and diabetes[44]
Materials	Type (air, water, surfaces, fabrics, containers); contents (toxins, germs, pollutants, heavy metals, allergens)	• Research suggests weighted blankets may benefit people with anxiety, pain and autism[45] • Exposure to toxins from consumer products, even cheap jewels, can cause physical damage[46] • Globally, lead exposure is estimated to account for 30% of intellectual disability without a known cause[47] • A study associated children who had high exposure to pesticides with a 7-point IQ drop compared with children who had low exposure[48]
Stress	Response to physical, emotional and/or mental challenge (pressure, trauma, excitement); acute and chronic; includes eustress	• Eustress, or favorable stress, including time in "flow," is associated with stronger cognitive function, resilience, and improved immune function[49] • Chronically elevated levels of stress can increase the risk of cardiovascular disease, neurodegenerative disease, and metabolic disease[50] • *The Lancet* recently reported that individuals have a 3× increased risk of mortality the year they are diagnosed with a stress-related disorder[51]
State of being		
Mindsets/beliefs	Attitudes/perspectives toward all aspects of life: religion/ philosophy, optimism, agency, nature of people, purpose, hope	• Optimists (a learned behavior) are 35% less likely to experience a cardiovascular event compared with pessimists[52] • Optimistic people may have better immunity when dealing with moderate stress[53] • A randomized, controlled trial of 4,000 children demonstrate that 30 minutes of training around a "growth mindset" had strong and lasting positive effects on mental health and academic performance[54] • Multiple studies highlight an association between gratitude and better physical health, more friends, stronger resilience, reductions in depression, and better sleep[55]
Body composition	Body fat by type of fat; lean muscle mass; morbid obesity	• Increasing lean muscle mass can improve metabolic function across all age groups and prevent falls in the elderly[56] • Excess body fat accounted for 120 million years lost to disability or premature death; 37% of the years lost occurred among nonobese individuals[57] • Visceral fat is most closely linked to health span and longevity[58]

Drivers	Description	Illustrative highlights
State of being (continued)		
Physical security	Physical security/ safety: absence of war, armed conflict, criminal violence, domestic violence, avoidable accidents	• Exposure to violence and breaches to safety have long-term effects on health. Between 1990–2017, war contributed to an extra 29 million civilian deaths[59] • 1.7 billion people are exposed to temperatures and humidity that can be deadly[60]
Economic security	Food security, housing security, income security, access to healthcare	• High-income individuals are 5× more likely to self-report strong health[61] • The rising cost of living has adversely impacted population health. In 2021, >6,000 deaths in England were directly attributable to fuel poverty[62] • Impoverished conditions can permanently alter a child's brain architecture and increase risk of developing chronic illnesses[63]
Healthcare		
Vaccination	Regularity and extent of vaccination: measles, mumps, rubella (MMR); flu; COVID-19; tuberculosis; polio; tetanus	• In 2021, COVID-19 vaccinations are estimated to have prevented 14.4 million deaths worldwide[64] • The polio vaccine spared 16 million from paralysis since 1998 and has achieved 99.9% of polio eradication[65]
Detection/ diagnosis	Monitoring; testing; screenings; genetic testing; diagnosis of risk factors, disease and/or conditions	• Advancements in diagnosing disease has enabled us to halt progression of disease and prevent death from malignancy[66] • In the UK, cervical cancer screening every 5 years was found to have reduced deaths from cervical cancer by 70%[67] • A study conducted by the Office for National Statistics shows that for most cancers, survival at 1 and 5 years is much higher if the cancer is detected early (at stage 1) (eg, for colorectal cancer, 1-year survival if detected at stage 1 is 97.7%, falling to only 43.9% if detected at stage 4)[68]
Clinical intervention	All forms of clinical treatment: surgeries, device implant, pharmacologic; therapy; hearing aids; other medical devices	• 5-year cancer survival rates in the US have increased from 50% in the 1970s to 67% by the 2010s, including for cancers detected late, due to improved treatments[69] • HIV medication has saved 16.5 million lives since 2001[70]
Adherence	Extent to which an individual follows a prescribed treatment plan including interventions, extent, frequency, duration, method	• A 25% decrease in adherence to inhaled steroids for asthma doubles the rate of asthma-related hospitalization[71] • 200,000 premature deaths in Europe per year are due to poor adherence, and mortality rates for patients with diabetes and heart disease who don't adhere to medication are nearly twice as high than for those who do[72]

Disclaimer: Drivers of health are complex. Effects can vary among individuals based on genetics, traits, randomness, and interaction with other drivers. Each driver can be optimized (or not) based on a myriad of individual choices and structural/environmental influences.

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