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varicose veins

You get varicose veins if you remain motionless for too long and too often. This hampers the flow of blood and causes the pressure in the arteries in your legs to become too high.

Move your damage counter forward **7** steps.

pesticides

You ingest a reasonable amount of pesticides by eating too many unwashed fruits and vegetables.

Move your damage counter forward **8** steps.

depurination

Every day, thousands of purines (A and G) spontaneously split due to hydrolysis. (This happens to everyone, in every cell in the body.)

Move your damage counter forward **8** steps.

lack of sleep

You sleep too little and too irregularly, which means that your body does not have enough time to repair itself.

Move your damage counter forward **8** steps.

bacteria

A serious infection with MRSA bacteria considerably taxes your immune system.

Move your damage counter forward **9** steps.

replication error

Incorrect nitrogenous bases are regularly inserted during DNA replication prior to cell division.

Move your damage counter forward **9** steps.

chlamydia

Through unprotected sex, you become infected with the bacterium that causes chlamydia. You do not notice until your oviducts/epididymises become infected.

Move your damage counter forward **9** steps.

bicycle accident

You fall off your bike after a night out. You suffer a broken collarbone and slight whiplash.

Move your damage counter forward **9** steps.

osteoporosis

The bones in your skeleton become more porous, partially due to your osteoblasts (cells that form the bones) being less active.

Move your damage counter forward **10** steps.

telomerase

Mutations have caused an enzyme – telomerase – to become extremely active in some cells. This means that in principle the cells can divide endlessly, increasing the likelihood of tumours.

Move your damage counter forward **10** steps.

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viral infection

You become infected with human papilloma virus (HPV), a virus that causes mutations and can lead to cervical cancer.

Move your damage counter forward **10** steps.

sunlight

You go grape picking in France for a holiday job. You forget to apply sunscreen, and get badly sunburnt several times.

Move your damage counter forward **10** steps.

heat shock

You always drink hot tea, sometimes too hot. Short-term exposure to heat (heat shock) causes all kinds of hydrolytic reactions that damage your DNA.

Move your damage counter forward **10** steps.

short telomeres

Unfortunately, you only possess short telomeres (the ends of your chromosomes). This means that your organs and tissues may age more quickly.

Move your damage counter forward **11** steps.

diverticular disease

A number of outpouchings have formed in your colon, and become infected. Your diet probably contains too little fibre.

Move your damage counter forward **11** steps.

vitamin deficiency

You do not eat enough fruit and vegetables, leading to a vitamin deficiency. This has consequences for various organs.

Move your damage counter forward **11** steps.

parasite

During a trip to Thailand, you become infected with a parasitic worm: Schistosoma mansoni. Infection with this parasite can affect the lungs and liver.

Move your damage counter forward **11** steps.

Alzheimer's disease

You have a genetic predisposition for Alzeimer's disease. This disease causes brain cells to die at a faster rate later in life.

Move your damage counter forward **11** steps.

exhaust fumes

You live close to a busy motorway. Nanoparticles in exhaust fumes can cause a range of heart and lung conditions.

Move your damage counter forward **11** steps.

facelift

You want a facelift (when you are older). This causes haematomas (bruising) and damages a nerve.

Move your damage counter forward **11** steps.

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radioactivity

You work in a nuclear power plant and come into contact with radioactive materials. This causes a range of mutations.

Move your damage counter forward **12** steps.

salty food

You use a lot of salt in your food. Because of this, your blood pressure is often too high (hypertension).

Move your damage counter forward **12** steps.

no exercise

You never get any exercise. This causes your level of fitness and the condition of your organs to deteriorate slowly but surely.

Move your damage counter forward **12** steps.

solarium

You go to the solarium a lot. This not only causes your skin to turn brown, but also affects all kinds of mutations in the DNA of your skin cells.

Move your damage counter forward **12** steps.

paint thinners

You use an old can of paint in the shed to paint a table. The solvent that it contains (benzene) gets into your airways and causes all kinds of mutations.

Move your damage counter forward **12** steps.

oxidative deamination

Burning of glucose in the mitochondria releases free radicals (oxygen atoms with one unpaired electron), which damage DNA.

Move your damage counter forward **12** steps.

saturated fat

Your diet contains lots of saturated fats. This causes the raise of cholesterol levels in your blood and increases your chances of cardiovascular disease.

Move your damage counter forward **13** steps.

cocaine

You are a regular cocaine user. Slowly but surely your energy stores are depleting.

Move your damage counter forward **13** steps.

food poisoning

The student house where you live is a pigsty, and you suffer food poisoning several times.

Move your damage counter forward **13** steps.

gene deletion

A replication error early in your embryonic development has caused a particular gene to be deactivated in all of your body's cells.

Move your damage counter forward **13** steps.

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cigarette smoke

You are a smoker. Cigarette smoke contains aromatic hydrocarbons and nitrosamines that damage the DNA in your lung cells. This can cause lung cancer.

Move your damage counter forward **14** steps.

oxidative stress

The burning of glucose in the mitochondria releases free radicals (oxygen atoms with one unpaired electron). These damage proteins and all kinds of other molecules within the cell.

Move your damage counter forward **14** steps.

stress

You lead a particularly stressful life. This means that your body uses up a lot of energy, but repairs itself very little.

Move your damage counter forward **14** steps.

emphysema

Years of smoking seriously damages the alveoli in your lungs, making it more difficult for you to breathe.

Move your damage counter forward **15** steps.

diabetes

Being overweight means you suffer from diabetes. Your body's glucose regulation system is disrupted, and can only be regulated using insulin.

Move your damage counter forward **15** steps.

liver cirrhosis

Excessive alcohol consumption affects your liver. Your liver becomes inflamed, and this impairs the liver's ability to remove toxic substances from the blood.

Move your damage counter forward **16** steps.

p53

In some cells, the gene encoding protein p53 has mutated. This increases your chances of developing a tumour.

Move your damage counter forward **17** steps.

obesity

You are extremely overweight. You become short of breath and have an increased risk of cardiovascular disorders.

Move your damage counter forward **18** steps.

heart attack

Your cholesterol levels are too high, and your coronary arteries (those that supply blood to the heart itself) become constricted. This increases the likelihood of a heart attack.

Move your damage counter forward **19** steps.

atherosclerosis

Smoking and poor diet causes fats and other substances to be deposited against the walls of your arteries. This increases the likelihood of a blockage.

Move your damage counter forward **20** steps.