To your health

Making SENSE of the immune system

As we are all focused on hygiene and killing germs, it is important to consider the important link between germs and a healthy immune system.

In the Spring issue we covered seasonal allergies which is also related to hygiene: some research suggests that allergies can stem from changes in hygiene habits and possibly a fear of germs. The "hygiene hypothesis" was introduced in the late 1980's by Professor Strachan, whose research showed that children from larger families had fewer instances of ha—y fever due to germ exposure from siblings. This hypothesis has now been refuted, but it did lead to development on microbe research.

It is well established that children in developing countries have reduced allergies and asthma compared with children in developed countries, where asthma has become an "epidemic" phenomenon. More recent studies indicate that reduced exposure to germs in childhood leads to a reduced diversity of microbes living in the gut and respiratory tract, causing an increased susceptibility to allergies such as asthma.

So how does this happen?

Following the industrial revolution, measures were taken by the public health services to sterilise water, milk and other food products. These are necessary, however, the elimination of common and non-life-threatening infections from excessive use of anti-biotics and some vaccines have greatly affected the diversity of microorganisms in the gut and respiratory tract. This and our reduced outdoor activity and increased C-section births (vaginal birth provides important bacteria) have all been associated with low microbial diversity, a rise in antibiotic resistance and increasing incidence of allergies and autoimmune disease.

The balance between cleanliness and exposure can be confusing. There are microbes that can be harmful, such as salmonella and E.Coli, which are avoided with good hygiene practices. However, targeted exposure to microbes from natural environments and animals has shown to be essential in supporting the development of a healthy microbiome and therefore a stronger immune system, particularly in children.

The immune system evolves during our early years to protect against viruses, bacteria and parasites, plus other internal threats such as tumour cells. There are many layers to this system but it can be considered as two parts: innate and adaptive systems.

(1) The innate system has no "memory" but is activated to fight off pathogens such as a viruses. It can be considered a physical barrier, involving skin and mucous membranes, which block the entry of a virus. These tissues also produce chemicals to block the growth of bacteria and viruses. Consider the nasal passage and the sticky mucous that traps pathogens, the acidity of the skin which can destroy them or chemicals in tears and sweat which kill bacteria. Inside the body there are white blood cells that destroy pathogens and aim to prevent them from replicating and proteins that can directly kill them.

(2) The adaptive system is slower but more specific and considered a back-up system to the innate side. It is smart and remembers the foreign invaders, deploying specific white blood cells, who "hang out" in the lymph, spleen and small intestine. When re-encountering an invader, this system responds quickly.

Supporting the immune system

The immune system is regulated by exercise, diet, sleep patterns, age and "stressors": psychological, physical, emotional and chemical. However, there are practical lifestyle changes we can implement to support it alongside practising good hygiene. My personal anagram for this is "SENSE":

Stressors: Avoid factors contributing to increased anxiety, which has a negative effect on the whole body. Up to 80% of our immunity is within the gut wall. This is where bacteria and the immune system meet with a great deal of interaction. Refined sugars, alcohol, medication and stress may reduce the beneficial gut bacteria and lower your immune defences.

Exercise: Move DAILY by walking, dancing, rebounding or gardening to get the blood moving. Many immune system cells use the lymphatic system as well as the bloodstream to move through the body in search of unwanted pathogens. Exercise is so vital for good immune health because it keeps the lymphatic system flowing and prevents stagnation.

Nutrition: Eat the rainbow! A diet rich in whole foods of all colours feeds the beneficial gut bacteria and provides the body with vitamins A & C, zinc and selenium. Avoid refined sugars that can trick the immune system. The glucose molecule is similar to ascorbic acid (vitamin C) so eating sugar actually competes with vitamin C to enter your cells. This is why a low sugar (glucose) protocol is important for immune support.

Sleep & Sunlight: Aim to get 7-8 hours of continuous sleep. Studies have shown 3 x greater likelihood of colds with less than 7 hours of sleep. Cells repair during sleep and when rested the body can fight infections of any kind.

When not sleeping, aim to get outdoors in daylight to support Vitamin D levels.

Equilibrium: Finally, try to do something that makes you feel happy and content on a daily basis to support mental health and reduce fear and anxiety. ◣

CHRISTINE KJELDBJERG

Originally from Berkshire in the UK, Christine has been living in the Riviera since 2006. She is a Pilates & Xtend Barre instructor with a BSc in nutritional therapy and an MSc in personalised nutrition. She has a busy fitness and health coaching business in Grasse and runs various educational workshops.
www.ck-health.com

* For educational purposes only, always consult your doctor before starting or changing medication.