

THE ARMY AND THE CLEANERS

THE IMMUNE SYSTEM

The general view of the immune system is that it is the body's army, fighting off and keeping out invading hordes of disease-causing organisms (called **pathogens**).

You *can* look at it this way – particularly if your view is that life on Earth is dangerous and we are beset with enemies everywhere we turn. However, there is another approach. The immune system has many functions which can be seen as being more like tidying up and house cleaning than fighting. It *does* protect us from external threat, preventing disease-causing microorganisms from 'invading' us and multiplying too much within us. Also, it protects us from our own cells if they are dead or damaged, or turn cancerous or malignant. Yet if we remember that bacteria are our ancestors, that we have evolved together for billions of years on this planet, and hold the view that we have a safe place in this beautiful, incredible universe, along with all the other life forms we share it with, does this change things? A traditional naturopathic view is that germs are actually the cleansing agents that help us to recover from toxins or other assaults to the body. Their presence stimulates fever and increases the cleaning activities of our immune system. When their work is done, they become permanent parts of the body, in that the body can now keep them under check for optimum health. As Sara Hamo, Israeli naturopath working in the tradition of The Kingston Clinic, Edinburgh, says:

'We get sick when we (our bodies) *invite* germs (the cleansing agents) to come and make order in the polluted body'.¹²²

Louis Pasteur is generally revered as being the father of modern microbiology. He was involved in early work on microbiology, though the **Germ Theory of Modern Medicine** was at least one hundred years older than Pasteur, and contemporaries of his were working away on the same lines. Bernard, one particular colleague, fought with Pasteur over the course of their careers about whether it was the germ or the state of the person that caused disease: Bernard argued for terrain; Pasteur for germs. On his deathbed Pasteur's last words were in support of the terrain theory: 'C'est le terrain.'¹²³ Of course, modern medicine ignored this and carried on with germ theory anyway!

¹²² Sara Hamo *The Golden Path To Natural Healing*.

¹²³ You can read all about this on the internet. In July 2008 I accessed it at http://www.mnwelldir.org/docs/history/biographies/louis_pasteur.htm

When one considers what ‘the terrain’ means, bear in mind it is more than the state of the immune system; it is the condition of health (or lack of it) of our organs and tissues, which is related to many considerations, including diet and lifestyle. A great way to get a cold, for instance, is to be overdoing it and need a rest. Many experiments have shown that we don’t get colds by being exposed to them – only 20% of people will actually catch a cold, even when the cold virus is directly painted onto the mucous membranes of their nose. **Rudolph Virchow**, known as the father of pathology, says, ‘if I could live my life over again, I would devote it to proving that germs seek their natural habitat – diseased tissue – rather than being the cause of the diseased tissue, in the way that mosquitoes seek the stagnant water, but do not cause the pool to become stagnant.’¹²⁴

There are other alternative ways of looking at the immune system too. For example, the great philosopher Rudolph Steiner suggested that before we are born our spirit chooses the body that will best fit it, then after we are born childhood illnesses help shape it to become more exactly what we need. Certainly, parents will have observed the leaps of development that come after a period of illness in a young one.

Like all the other systems in this book, we are going to considerably simplify the immune system, which really is an amazingly intricate and complicated operation. Although it is considered to be part of the lymphatic system, in fact many body systems are involved in its functioning. Unlike other systems, which have very specific tissues and structures, the immune system is made of billions of cells, and even more molecules, spread throughout the body. In addition to the lymphatic system, big contributors to immunity are the heart and circulation, the skin, lungs, kidney, gut, nervous and endocrine systems...yes, just about everything!

There are considered to be two main types of immunity: **non-specific**, or **simple immunity**, which is a generalized defence, and **specific**, or **acquired immunity**, which is a more specialised form of defence.

Non-specific immunity

There are mechanisms in the body that will clean up any irritant or abnormal substance that threatens the internal environment. This is a general protection, and includes mechanical barriers such as the skin and the mucous membranes, chemical barriers such as the hydrochloric acid in the stomach, phagocytosis by white blood cells, and generalized mechanisms like fever.

The skin is a vital barrier in the front line against infection. As well as being a straightforward physical barrier to many outside organisms and materials, the skin cells (specifically, the **keratinocytes**) make **interferons**, which are proteins that block viral infection.

Other cells in the skin, called **Langerhans cells**, interact with pathogens that have

¹²⁴ Dr Robert O. Young *Sick and Tired – Reclaim Your Inner Terrain*.

managed to get through the outer layer of the epidermis. The Langerhans cells then take these pathogens to nearby lymph organs and help to initiate an immune response, called a **messenger function**. This response is disrupted by even the mildest of sunburns – UV radiation disables the cells which take the pathogens to the lymph tissue. This is probably why exposure to the sun can bring out a cold sore in people who tend to get them.¹²⁵

Mucous membranes also provide an actual barrier when intact. Those in the gut and respiratory systems can produce copious amounts of mucous which washes away debris, and also is sticky, so (for example in the nose) inhaled dust can stick to it. The mucous dries out, and the debris-filled ‘bogeys’ can be removed from the body (with a conveniently sized finger...!). Have you ever been traveling in London or another big city or do you live there? After a few days there you can find most interesting black bogeys coming from your nose. Great! That’s a load of dirt that *didn’t* get into your lungs.

Mucous is thus primarily a way for the body to be rid of toxins or unwanted visitors. It is a gel, so becomes more runny and watery when heated.¹²⁶ When we have a fever, therefore, our mucous runs freely, washing away micro-organisms and their toxins, as well as internally produced toxins, from the body. Unfortunately, the modern practice is to take antipyretics¹²⁷ like paracetamol (acetaminophen in the US) at the first hint of any fever. One effect of this is that mucous tends to thicken and remains stuck in the body. In children, the suppression of fever in this way leads to chronic mucous problems like glue ear, sinusitis or chest catarrh. Mucous can also accumulate in the digestive and urinary systems. It then can act as food for further growth of bacteria, leading to persistent recurrent infections.

If you get something in your eye, **tears** are produced to wash it out. Tears also contain a chemical called ‘lysozyme’ which is a strong disinfectant.¹²⁸ **Earwax** is another barrier – both physical and chemical. (Remember earwax as an anti-pimple agent? Earwax also contains the powerful antibacterial lysozyme).

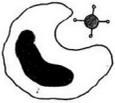
Then there are some quite explosive mechanical ways to get things out of the body – **coughing**, **sneezing**, and **vomiting**. Later on, if something got past the first defenses, diarrhea can wash things out. **Hydrochloric acid** is very inhospitable to life. If there is plenty of it in our stomachs then most germs we eat are instantly killed by it.

¹²⁵ The herpes simplex virus causes cold sores. You get them initially by contact with someone else that has them – don’t ever kiss anyone with a visible sore! Then the virus lurks in your skin cells, where your body tries to keep it down but can’t always get rid of it completely. So, every time you are run down and your immunity is low, you get a cold sore. Looked at positively, you get an early warning signal that your system is suffering stress, and can take appropriate action before more serious problems evolve.

¹²⁶ As the old schoolyard rhyme goes “we have joy, we have fun, flicking bogeys at the sun, when the sun gets too hot, the bogeys turn to snot” – thanks to Mark Jack for this gem...

¹²⁷ Antipyretics are medicines which lower fever.

¹²⁸ Actually tears are amazing. As well as washing things out, and being a disinfectant, they provide the **ONLY** route for us to excrete stress hormones whole, without the liver having first metabolized them. So when we are stressed the chemical content of our tears changes. Crying is one of our body’s helpful ways to protect us from stress. Much more on this later in the chapter on emotional causes of disease.



Phagocytosis is a very important defense mechanism, part of both non-specific and specific immunity. In the case of non-specific immunity the type of white blood cell known as 'monocytes' leave the blood and migrate to the tissues. There they enlarge, become known as macrophages, and lie in wait to clear up any foreign matter that comes their way. They approach the foreign matter, engulf it, then digest it if possible. Particularly large collections of them are found in the liver sinuses¹²⁹, the lung alveoli, and the lymphoid tissue of the throat (tonsils and adenoids) and of the gut. In other words, they gather at points of entry to the body.

You can see that if one's non-specific defenses are strong and vigorous, there would barely even be a need to engage specific immune defenses.

Fever or 'pyresis' is an important part of the immune response. Initially the body's thermostat in the hypothalamus is reset at a higher level. This causes the first stage of fever, when you feel cold and shivery. There is no sweating, and blood vessels of the skin constrict to keep heat inside, making you look pale, though the skin may be hot to touch. As the body temperature rises, you start to feel hot. This extra heat makes an unpleasant environment for any invading organism, which usually prefers normal body temperature, and it also greatly stimulates your own immune response. Then the fever 'breaks' and you start to sweat profusely as the body seeks to lower its temperature again. Toxins produced by infectious agents and other toxins the body wishes to be rid of are excreted quickly from the body in this kind of sweat, along with viruses. The sheets of a person ill in this way should be changed after a bout of sweating, to avoid leaving them surrounded by the very germs they are trying to get rid of.

There is a lot of fear about fever, especially in young people. Because of the easy availability of powerfully effective drugs which lower fever, there is not the familiarity with fever there once was. Even many health professionals (doctors and nurses and so forth) have not seen fever take its natural course. It is true that a small child's temperature can rise very rapidly, and as young ones are developing their immunity as they come across new bugs for the first time, there may be frequent episodes of febrile illness in childhood, but it is unnecessary to treat every childhood fever. The current trend seems to be to dose the child with Paracetamol (acetaminophen) based medicines (like Calpol or Tylenol). Many parents are encouraged to treat even mild fevers like this.¹³⁰ There are two problems with this: one is that Paracetamol will suppress the febrile

¹²⁹ The liver sinusoids are the extra-leaky capillaries which allow the liver cells full access to the nutrients and products absorbed in the digestive tract, which are taken straight to the liver by the portal vein. The macrophages in the liver are known as kupffer cells. There is a wonderful herbal medicine for the liver called milk thistle which, as one of its actions, increases the activity of the kupffer cells.

¹³⁰ This type of drug is routinely given to children from very small babies up. Many young ones are given it for teething, or even just for restlessness to make them sleep.

response, and therefore interfere with the activity of the developing immune system, as well as with the cleansing of mucous from the body described above; the second is that Paracetamol is a dangerous drug. Studies have found it to be toxic to the liver, even at lower than maximum dose and when given to healthy people. One study found that it caused liver damage in up to 44% of all participants who were taking it at the standard dose. Paracetamol has become the major cause of acute liver failure in the USA and Europe. Some of these cases have been the result of unintentional overdose – where perhaps one tablet too many has been taken, or people have taken too much not realising that it is in each of the several products they are taking (i.e. someone may take a cough medicine, a couple of tablets for the headache and something for a fever without realising they all contained Paracetamol). People have died after taking as little as 7g, just 3g above the recommended dose.¹³¹ Liver failure usually kills people if they can't get a liver transplant (which is no picnic either).

High fevers in some diseases (like measles) are needed in order to discharge the virus from the body. In a clinical study of 56 children during a measles epidemic in Ghana, 1967, it was standard practice to treat every case of measles with sedatives, antipyretics like aspirin and Calpol (Tylenol), cough suppressants, and with antibiotics as needed. In the first half of the epidemic 35% of the children died. The treating doctors noticed, however, that the children who survived were usually the ones who had higher fevers and more severe rashes than the ones who died. Although the ones who died seemed less sick than the survivors at the beginning of the illness, they then later got pneumonia and died. The doctors concluded that the high fever and rash helped clear the measles virus from the body so they changed tack and stopped treating the children with sedatives, Aspirin, Paracetamol (acetaminophen) and cough suppressants. They treated only with antibiotics and blood transfusions when needed. As a result of this change of approach the death rate dropped to 17%. This fits with naturopathic and traditional thinking that diseases like measles become a problem only when they get stuck deep in the body.¹³²

In common practice it is considered dangerous to have a fever of 42° C (104° F). The general belief is that this can cause febrile convulsions and even brain damage. When I was researching this book I found that actually only fever as high as 42.2°C¹³³ (108°F) has ever been known to cause brain damage. Therefore it makes sense to treat fevers of 42°C, to prevent them rising any higher. Fevers of 41°C (106°F) should get immediate medical attention as they are likely indications of severe infection.^{134 135}

¹³¹ According to The Lancet (2006; 368: 2395).

¹³² Edda West (2003) *Is Fear of Fever Hurting Our Children?* Accessed June 2008 At URL <http://www.vran.org/news-art/articles/fear-of-fever.htm>

¹³³ Is fever suppression involved in the etiology of autism and neurodevelopmental disorders? Anthony R Torres BMC Pediatr. 2003; 3: 9. Published online 2003 September 2. doi: 10.1186/1471-2431-3-9 PMC194752

¹³⁴ Bear in mind that readings under the tongue or arm are lower than internal temperature, also take care if using mercury and glass thermometers which can break.

¹³⁵ There is a shaman who 'lends' his body to Tatewari (Grandfather Fire), who comes and speaks through him. The man's temperature goes up to 106° when Grandfather is visiting.