



Causes of Cancer – Part 4b: Your immune system

by Dr Stephen Hardy PhD.

Previous articles in this series (1 - 4) have discussed preventing 37,000 Australian cancer cases a year by addressing six lifestyle factors (5).

Part 4a looked at the cancers you catch – bacteria, viruses, fungi, parasites and other infectious agents (4). We also discussed how surprisingly common these cancer-causing infectious agents were and how your immune system protects you from them. But your immune system does far more: It is fundamental to protecting you from all cancers, no matter what may have caused them. This is what we'll cover here.

To begin, we need to understand two things:

1. What is cancer?
and
2. What does your immune system do?

We'll tackle the second question first: Your immune system is your defence system and protects you from threats. The most obvious threats are from outside – the "What you catch" microorganisms Professor Frazer is talking about we discussed in Part 4a (4, 6). But threats don't just come from outside the body. They can also come from within.

A healthy society works because everyone living in it obeys an agreed set of rules. Every individual has a job to do, knows what is expected of them and does their bit for the common good. As a result, the society survives and prospers. Your body works exactly the same way. You are made up of around 30 trillion highly specialised cells, all working harmoniously together to make up the unique person you are (7). But what happens when one cell isn't interested in the collective good and does its own thing? We have a name for that: Cancer.

Cancerous cells are selfish. Whatever may have caused them to turn cancerous; they aren't interested in being a responsible member of society or in supporting the other cells of your body. They have rejected the rules and only care about getting what they want, when they want it. And they don't care who they lie to, rob, use, ride roughshod over or hurt in the process. They are so selfish that if left unchecked, they will destroy the society they live in and all the other cells in it. And if enough of your cells die, so do you. Cancerous cells are therefore Enemies of the State.

Nature has invested a lot of energy in creating something as large and complex as you. It protects this investment – be it against an attack from outside or one from within - through your immune system. So in addition to protecting you from viruses, bacteria, fungi and parasites, specialised cells of your immune system, notably T-cells and Natural Killer (or NK) cells, play a watchdog role, constantly on the look out for potentially cancerous enemies of the state. When they find them, they flag these early cancers for destruction by the immune system.

This seek-and-destroy mission never stops. It started on the day you were born and will continue to the day you die. Early cancers, irrespective of whatever may have set them off, arise in your body surprisingly often – some would argue almost daily. We will discuss why in later articles. If these early cancerous cells get missed or use camouflage or sneaky tactics to slip past or trick your immune system - which they do (8) - it may be just the start they need to become a full-blown cancer and put your life at risk. I cannot stress this point enough: Potentially life-threatening cancerous cells are constantly being formed in your body and your immune system stops them.

When your immune system is at the top of its game, it will spot these early cancers and flag them for destruction within days to weeks. If your immune system isn't doing its job effectively and an early cancer gets missed or sneaks past your defences, then it is on its way. Left to its own devices a cancer may have been growing inside you for between 2 and 9 years before the doctors know about it (9 - 13). That's giving your opponent a 780 metre head start in an 800 metre race. You've then a real battle on your hands. Do you really want to leave it that long?

So what can you do? Previous articles of this series give powerful clues (1 – 4). As the cost of freedom is eternal vigilance, you need to do everything you can to keep your immune system at the top of its game. Then it can promptly and effectively deal with whatever threats may arise. We touched on this in the opening article of this series (1):

- The worse your diet, the worse your immune system gets;
- The worse your lifestyle, the worse your immune system gets; and
- The more chemicals and pollution you are exposed to, the worse your immune system gets.

We also need to touch on another thing that affects your immune system: Your mental and emotional state. I'm sure it will come as no surprise to discover the worse your mental and emotional state, the worse your immune system gets. Being depressed is an apt description, because that's exactly what it does to your immune system (14, 15). And a watchdog that isn't watching, is no watchdog at all.

You are responsible for your diet, your lifestyle, your chemical exposure and your mental and emotional state. We know from the previous articles these factors not only influence the health and competence of your immune system, they also determine how many cancers may be forming in your body and how quickly they grow. The more early cancers are formed and the faster they grow, the harder your immune system has to work to stop them. Taking action to reduce the load on your immune system so it doesn't have to work so hard to keep you safe is therefore a very good idea.

So what are the take home messages from this article (and this series)?

- If you want to protect yourself from cancer: Look after your immune system so it can spot developing cancers early and eliminate them;
- If you are undergoing treatment for cancer: Look after your immune system as many of the current treatments for cancer also damage the immune system, often severely;
- If you are recovering from cancer: Look after your immune system as it will be cleaning up any residual cancer your treatment might have missed; and
- If you've had cancer and don't want it again: Look after your immune system so it can eliminate any re-occurring cancers early.

If you want to avoid cancer and many other conditions besides, looking after your immune system is an essential and non-negotiable cornerstone of good health.

A search of the scientific literature shows great strides are being made in understanding the role the immune system plays in cancer: From developing vaccines for cancer or the microorganisms that cause them; recruiting the immune system to fight cancer; using the microbiome and immune system as combination therapies against cancer; making the immune system aware of how cancer camouflages itself, how it sneaks past your defences or how it hijacks the immune system for its own ends and many more besides. In time such ideas will flow to the clinic to improve the effectiveness of cancer treatments, although many are still years to decades away. Irrespective of how effective these future treatments may be however, none will ever be better than prevention; of not getting cancer in the first place. This is and will forever remain your best defence. Indeed, it is the primary focus of this entire series of articles. Your body is set up by nature to protect you from cancer – provided you respect it. The decisions you make every day determine whether you are supporting or interfering with the process and therefore, your cancer risk.

Finally, given what is happening to the environment (3) and the increasing stress the immune system is under, I would encourage you to investigate and consider incorporating supplements into your health plan specifically designed to educate and support the immune system and keep it at the top of its game. Because if your immune system isn't happy and healthy, neither are you.

In the next article we'll look at the last cause of cancer: Genetics.



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