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BREATHING AND CANCER:

Learn to see the connection



Introduction

Which razor do you prefer?

There is a huge selection of quality products for both men and women. The manufacturers do not make money on the razor, but selling razor blades for it.

The difference in price from the cheapest Gillette razor with two blades to the most expensive with 5 blades can be up to ten times.



The producer advertises by telling how close a shave the new, more expensive blade gives.

The truth is that the closeness of a shave is highly dependent on how much time you spend on it. We are willing to pay ten times more for the most expensive blade. Just to save a couple of minutes.

Why?

The art of making connections

Dear Reader, are you puzzled perhaps to see what razor blades have to do with cancer?

Have patience and I will take you by the hand and lead you gently forward. I promise you that together we will uncover several interesting connections.

But before you get the answer why we are willing to buy the expensive razor blades and what it has to do with cancer and breathing - let me take you a couple of million years back in time, away from the age of razor blades....

Evolutions flip side

About 2.5 million years have passed since our earliest ancestors of the species *Homo* lived. That's roughly 90,000 generations dominated by physically demanding hunter-gatherer activity.

Recent periods in contemporary human history have occurred in a relatively short time. From an evolutionary perspective, this has been a period of dramatic revolutions with strongly accelerated development:

- Earliest human species - 90,000 generations ago (2.5 million years)
- Modern contemporary human DNA - 1,000 generations ago (30,000 years)
- Agricultural revolution - 350 generations ago (10,000 year)
- Industrial revolution - 7 generations ago (200 years)
- Digital revolution - 2 generations ago (50 years)

How do we stand now at the start of the 21st Century with respect to our hunter-gatherer DNA?

The last two revolutions have occurred rapidly seen from an evolutionary perspective. It seems that they have created an imbalance in our human family. We now live in a hi-tech society dominated by sedentary behavior. The same DNA code as for 1000 generations ago is still programmed for physically demanding behaviour. Behaviour that goes right back to our hunter gathering ancestors, who had the same genes as today's people - you and me. This major mismatch between expected and actual behaviour is a huge problem for our physiology.

How do we know this?

Dry statistics

Statistics speak their clear language and the indications are not good. Almost every other person will experience cancer during his or her lifetime. Every fifth person will develop diabetes.

Similar prognoses exist for other lifestyle diseases such as asthma, allergies, cardiovascular disease, autoimmune and neurodegenerative diseases such as Alzheimer's, Parkinson's and others, a total of approximately 250 diseases.

These 250 diseases are called lifestyle diseases because they are the ones most commonly occurring because of our way of life. In total, approx. 30,000 diseases have been discovered by modern medical science. But 95 percent of all cases of illness consist of lifestyle diseases. This reality emphasizes the causes of lifestyle illness.

A long life at all costs?

These statistics are to be seen in conjunction with an expected life expectancy for Danish men aged 78 and 82 for women.

Medical and technological research is developing ever more advanced treatment methods. This is one of the main reasons why our average life expectancy grows. But what is it worth living for 80 years when according to statistics, we are suffering from debilitating illness earlier and earlier in life?

It is an artificial development. In fact, the present generations appear to be the weakest and most fragile representatives of our 30,000-year-old contemporary human species, *Homo Sapiens Sapiens*.

How did we end in such a blind alley?

Normal breathing

Research results from around 40 studies show that man's breath has changed significantly over the past 100 years. The main parameter that defines a normal respiratory pattern is the amount of air passing through the lungs in one minute in a calm state.

It's called minute ventilation. It depends on the respiratory frequency and volume of each breath.

100 years ago, textbooks in human physiology defined a normal minute ventilation being 5 liters per minute, i.e. 10 breaths of half a liter. In modern physiology books you can read that the average normal minute ventilation is at 6 liters per minute, ie 12 breaths of half a liter - instead of 10 breaths 100 years ago. All in all, 6 liters per minute today against 5 liters 100 years ago.

Why?

Evolution or degeneration

You may think that the change in the normal value of 1 liter over the past 100 years sounds like much, but believe me - it is. Breathing is the most important physiological process that characterizes us as a species.

Such an extremely rapid change of a vital breathing parameter as minute ventilation is in evolutionary terms alarming for our 30,000 year old genetic code. Is it a nod and a wink that warned us about the degeneration of the species?

The last 100 years of catastrophic trend in the frequency of lifestyle diseases unfortunately confirm the degenerative development.

But why is an extra liter of air per minute so bad for us?

Chronic hyperventilation

Human physiology gives a very concrete explanation of a fairly clear connection. The more air we pull through the lungs in a relaxed state, the more our health diverges from the physiological norm. This pushes all our body systems further into the dysfunctional direction of chaos and disease.

People with normal minute ventilation of 5-6 liters per minute generally have completely normal functional health. They are healthy. On the other hand, people with life-threatening diseases from asthma to cancer have a minute ventilation of up to 6 times this, i.e. between 10 and 30 liters per minute. Their breathing is dysfunctional in all respects, and their energy utilization is not seen as optimal. That's what makes them sick.

Their condition is called chronic hyperventilation syndrome (CHVS) and this was described in the 1930s by physician William Kerr as an underlying cause of lifestyle diseases.

The extent of the problem

Chronic hyperventilation induces a whole bunch of diseases, rather than a single disease. My experience as a therapist tells me that this situation is the rule rather than the exception. The bouquet of diseases we receive is very individual and depends on our genetic family predisposition and the individual's lifestyle.

As I previously mentioned, the change of 1 liter over the past 100 years is a violent change for our normal breath.

But the situation looks even more bleak when we look at how many of us deviate even more from today's slightly elevated normal value. According to a large number of studies, around 80-90 percent of the population in western countries has respiratory patterns that differ from the norm.

These respiratory patterns vary in the direction of chronic hyperventilation.

The paradox of breathing

The connection between minute ventilation and disease is explained by a significant scientific discovery made in 1904 by Niels Bohr's father, Christian Bohr. His name is unfortunately not as well known to the public as his famous son's name. Nevertheless, he is behind one of the most significant discoveries in physiology.

It is about the connection between the gas balance in the lungs and the optimal absorption of the cells. The 'Bohr effect' tells us that the less carbon dioxide (CO₂) we have in the lungs and in the blood, the less oxygen (O₂) we get to our cells. In other words, the more we ventilate the lungs and 'dilute' their carbon dioxide content, the less oxygen comes to the cells.

So - the less we breathe, the more oxygen we get. Paradoxically, but physiologically true!

How can this be?

Carbon dioxide - waste gas or important hormone?

If we think of gas balance, Bohr Effect means that more ventilation leads to more oxygen in the lungs and in the bloodstream. In other words, the more oxygen we have in the lungs and in the blood, the *less* oxygen the cell receives. Does it sound paradoxical in your ears?

The fact is that carbon dioxide has an even more important role in regulating respiration than oxygen. The widespread misunderstanding that carbon dioxide is nothing but waste gas has for decades been the biggest physiological fallacy and error, which needs to be explained and corrected.

The last decades of research by Gilbert Ling, William Koch, Albert Szent-Gyorgyi, Hans Selye and Mae-Won Ho show that carbon dioxide is one of the body's most important hormones that regulates everything in our body from lung function, cardiovascular system, immunity, fluid balance system, inflammation and other functions. Carbon dioxide deserves that I write more about its role for our body in an article for itself.

Time is Money or Chronic Stress

Increased minute ventilation and the epidemic of lifestyle diseases are symptoms of the same overall problem that our society has developed over the past 100 years.

The problem is called *chronic stress*. The type of stress has characterized our industrialized and "well-developed" society more and more over the past 100 years.

The popularity of the term Time is Money and the society's proclaimed need for constant economic growth shows where the problem arises. But the price we pay for chronic stress is far too big. The price is called lifestyle illness.

But why does chronic stress always lead to lifestyle disease?

Let your genes sleep

Chronic stress is not programmed into the human 30,000 year old DNA, as opposed to acute stress, which is. Acute stress response is the body's normal response to external stimuli. But when we are constantly small-stressed, it is termed chronic stress. And that kind of stress does not have human or animal physiological mechanisms to handle it. Problems in the form of small and large genetic defects, potentially in your and my DNA, are caused by chronic stress.

It is said that our otherwise 'sleeping' genes wake up and 'express' chronic stress. Many different factors can awaken our sleeping genes, including both mental, physical, immune, nutritional and environmental. And the factors become even stronger when they occur in combination with each other. This is more the rule than the exception in our times and society.

Chronic stress and cancer

Chronic stress triggers greater minute ventilation of the lungs. This development results in less oxygen for all the body's cells. The paradox is called: More air in the lungs - less oxygen to the cells.

It is precisely what wakes 'sleeping' populations of cancer cells to life. And now we will come closer to this article's main topic: the connection between breathing and cancer.

What nourishes cancer cells?

The German physiologist Otto Warburg received the Nobel Prize in 1931 for discovering that cancer cells, unlike normal cells, are not dependent on oxygen as the main source of energy.

When a normal cell gets less and less oxygen, it becomes more and more sick. Eventually, it is forced to change to survive, i.e. to mutate. Mutation does not make it healthier, but it gets an opportunity to live on as a dysfunctional cell. When the cell mutates, its small power stations, *mitochondria*, change to the degree that they no longer use normal energy production based on oxygen. There is no more oxygen available, so in order to survive, the cell begins using fermentation of glucose as the main source of energy.

Our food as nourishment for cancer

The shift to using energy from fermented glucose becomes unproblematic to the diseased mutant cell, because most of it is from the surplus of glucose in our body. This is due to our eating habits dominated by foods filled with carbohydrates like sugar, flour, starchy vegetables, fruit, etc. It is a fact that all types of carbohydrates are transformed into glucose in the body.

Excess glucose causes the mutated cell to multiply without restriction. A small harmless group of single cancer cells grows into a cancerous tumor. It begins to invade the surrounding tissue. Cancer cells are also spread through the blood as metastases to other parts of the body.

Therapeutic strategies

There are many individual aspects to be considered in each case, but generally we use the same strategies to stop cancer and to avoid cancer.

We can optimize both the absorption and distribution of energy in the body. *The Sakharoff Protocol for Health & Resilience* has helped many of my clients to regain their health by re-establishing the interaction between immunity and other body systems. The protocol makes a difference by integrating five interdependent areas of human health into one life-changing process. The aim is to achieve a robust healing and healing synergy effect.

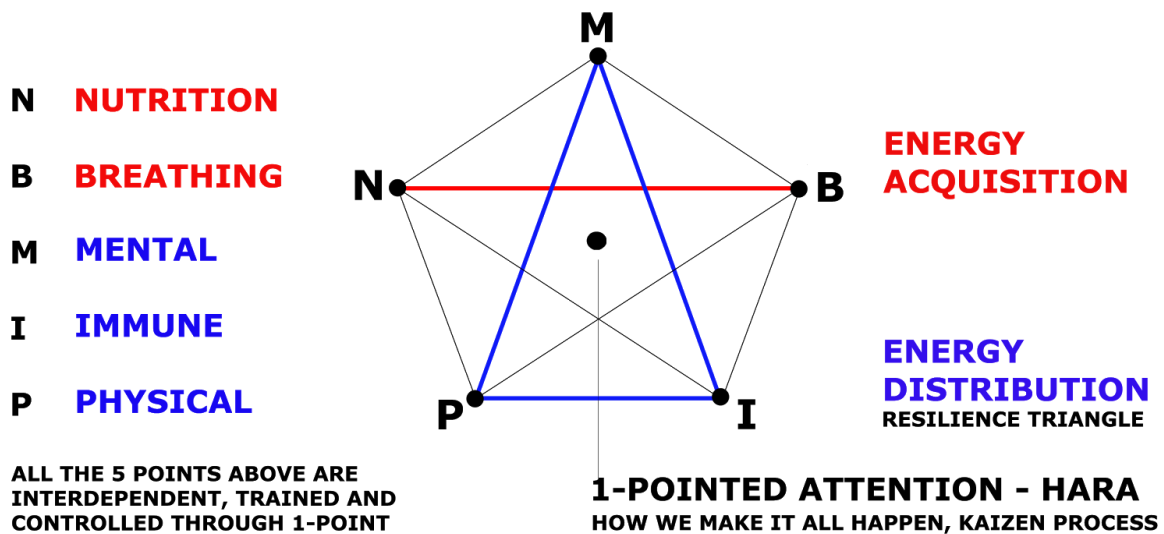
ENERGY-AQUISITION:

- 1 – Breathing
- 2 – Nutrition

ENERGI-DISTRIBUTION:

- 3 – Mental resilience
- 4 – Physical resilience
- 5 – Immune system resilience

SAKHAROFF PROTOCOL FOR HEALTH AND RESILIENCE



Structured action in these five areas ensure consistent optimization of all of the body's 12 systems. Normalizing the body's functions makes our bodies more and more uninhabitable for cancer cells. Cancer cells die as they cannot thrive in a *normal* functioning body.

Structured action against cancer

My experience with the 1: 1 course says that you can win over cancer by structured action. In my practice, I combine different techniques to achieve strong organic synergy effects

1. **Breathing, optimisation** – Buteyko method for normalizing dysfunctional breathing, through optimization of automatic breathing patterns 24/7. Respiratory, which normalizes your body's metabolism and stops systemic inflammation.

The most important thing about cancer is that normalized breathing makes life hard for cancer cells by optimizing oxygen at the cellular level. Cancer cells thrive in an oxygen-poor environment, while changes towards optimal oxygenation forces them to die. In addition, according to several studies, normalized breathing may reduce the number of cancer-promoting free radicals, reactive oxygen forms (ROS) and minimize the body's oxidative stress. These aspects further enhance the body's resistance to cancer.

2. **Nutrition, optimisation** – Therapeutic ketogenic nutrition with anti-inflammatory properties and a range of anti-cancer foods. Ketogenic nutrition strengthens the immune system by a radical improvement in metabolism in all the cells of the body. It is achieved by phasing out carbohydrates, introducing healthy fats and moderate protein. This supports a shift from being dependent on glucose to use ketone substances as the preferred source of energy.

The most important thing about cancer is that the diseased cancer cells do not possess the metabolic flexibility of the normal cells, which can make them survive the shift from glucose to ketones. It gets all the body's healthy cells from muscle cells to brain cells to easily make the shift, whereas cancer cells are forced to die. In addition, several studies show that ketone substances can be toxic to cancer cells. Ketogenic nutrition is very satiating, which further enhances cancer-fighting strategies with intermittent fasting and calorie restriction.

Generally, the shift from glucose addiction to using ketone substances as the preferred source of energy has several important cancer-fighting properties:

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- Anti-angiogenic (anti-tumour)
 - Anti-inflammatory- Pro-apoptotic (destruction of cancer cells)
 - Auto-phagocytose (Internal detox of the cells by intermittent fixed / calorie restriction)

3. **Mental resilience** – We combine old knowledge from Samurai and modern Aikido with the latest psycho-physiological stress research on synergistic effects when combining breathing with structured motion.

The most important thing about cancer is that greater mental robustness supports both optimal oxygenation of the body's cells and the cell's independence of glucose. These are the two main strategies for forcing cancer cells to die. In addition, improvement of sleep efficiency is seen as an important factor in a cancer-fighting strategy.

4. **Physical robustness** – We optimize training to support all parts of your body-psyche integration. Structured motion stabilizes bone structure, strengthens body balance, improves mobility and rebuilds body joints and cartilage.

The most important thing in relation to cancer is that structured motion restores the pump function in the lymphatic flow to achieve an immunity that is strong enough to hold cancer cell populations down.

5. **Immune system robustness**– Our body has two main defense systems, also called responses. Fight, flight or freeze response, or stress response, is aimed at external stressors or threats. The relaxation response is aimed at internal stressors such as viruses, bacteria, fungi and parasites.

The most important thing about cancer is that relaxation response sets your inner immune system going. Exercise of the single point's attention maintains you in a relaxation response throughout the day. This helps your immune system on a daily basis to establish a stable self-healing process.

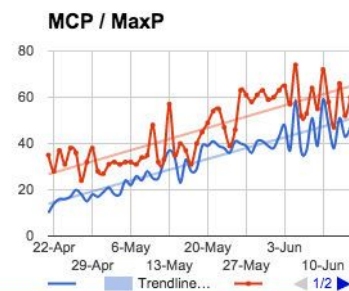
When is the body strong enough to resist cancer?

In all training, it is important to have some guidelines that you can measure progress with. The Buteyko Respiratory System provides us with such an indicative parameter to measure. Control pause (CP) reflects the normality of the regulation of gas balance in the lungs, as well as the blood and body pH. The control pause can be measured with a stopwatch. It constitutes the length of a breath withholding performed after a generally effortless exhalation and until the first need to breathe.

The default value for CP is 40 seconds. The exercise normalizes your body's metabolism and stops systemic inflammation. But the most important thing about cancer is that Dr. Buteyko's clinical experience has shown that a control break over 60 seconds stops the development of cancer. When CP is measured in the morning, it is called MCP, the most important parameter for assessing both health condition and sleep efficiency.

A structured therapeutic strategy with efforts in all five areas supports cancer patients in expanding their individual pause from the 5-10 seconds that is common for cancer patients for over 60 seconds. And several of my clients have achieved MCP in over 120 seconds that belong to super-health (see image).

BREATHING - LOG													www.sakharoff.com
Date	FRav	APu	ACP	Sleep	Wake	MPu	MCP	MaxP	FR1	PE 1 - morning	IF start	IF window	Symptoms, medication, testing
26-Sep	28	62	53	5,00	4,30	53	110	141	28	105 g� l�b st	16,00	3,30	
27-Sep	28	61	55	6,00	4,30	56	105	127	28	60 g� l�b st	15,00	4,00	
28-Sep	28	60	52	5,00	4,30	51	107	131	28	60 g� l�b st ma	14,30	4,30	
29-Sep	30	58	61	5,30	4,30	56	106	127	30	60 g� l�b st ma	15,00	4,00	
30-Sep	30	62	54	5,00	4,30	58	104	126	30	60 g� l�b st ma	17,00	2,30	
1-Oct	30	62	55	5,00	4,30	57	103	124	30	60 g� l�b st ma	15,30	3,30	
2-Oct	30	64	52	5,30	4,30	60	106	129	30	60 g� l�b st ma	15,30	4,00	
3-Oct	30	66	45	5,00	4,30	62	101	124	30	60 g� l�b st ma	15,30	4,00	
4-Oct	30	62	58	5,00	4,30	58	102	123	30	60 g� l�b st ma	13,45	4,00	
5-Oct	32	61	50	4,30	4,00	63	106	129	32	60 g� l�b st ma	17,15	2,00	
6-Oct	32	67	62	4,30	4,00	61	109	139	32	60 g� l�b st ma	17,15	2,45	
7-Oct	32	63	67	4,30	4,00	61	107	135	32	60 g� st l�b ma	16,30	2,00	
8-Oct	32	61	73	4,30	4,00	65	108	134	32	60 g� st l�b ma	15,30	3,30	
9-Oct	32	65	59	4,30	4,00	62	104	126	32	60 g� st l�b ma	15,15	4,00	
10-Oct	33	63	65	4,30	5,15	65	110	136	33	60 g� l�b st ma	15,00	4,00	
11-Oct	33	61	72	4,30	4,30	61	112	146	33	75 l�b g� st	16,00	2,30	wow... :-)
12-Oct	33	67	65	4,30	4,00	66	106	139	33	85 l�b g� st	15,30	3,30	
13-Oct	33	61	65	4,30	4,00	63	110	138	33	80 l�b g� st	17,00	3,00	
14-Oct	33	63	67	4,30	4,00	61	114	148	33	80 l�b g� st	16,30	2,30	
15-Oct	33	69	85	4,00	4,00	64	112	145	33	110 l�b g� st	17,30	1,30	
16-Oct		72	68	4,30	4,00	69	109	141					



What should be exercised?

Breathing is the most indispensable of the vital physiological processes in our body. We can live days and even weeks without water and food, but most of us will collapse already after 30 seconds without air supply.

In fact, there is a lot to do to ensure that breathing is normal. And there are many widespread misunderstandings about what is normal. Not only among ordinary people, but unfortunately also among professionals like body therapists, physiotherapists, fitness instructors and even medical staff.

When we work with optimizing automatic breathing patterns, we need to take care of several aspects of the normal breathing physiology:

- **Posture** - to ensure structured posture both in rest and motion to reduce the influence of breathing muscles from other muscle groups,
- **Route** - to develop breathing only through the nose both in and out, completely ceasing breathing through the mouth,
- **Scope** - to reduce the volume of air both in and out,
- **Frequency** - to reduce the number of breaths per minute,
- **Velocity** - to reduce the speed of the air flow both in and out,
- **Timing and balance** - to prolong the exhalation in relation to the inhalation,
- **Rhythm** - to promote even breathing flow without interruption, inhale and hold,
- **Placing** - to reduce the use of the breast muscles and expand the use of abdominal muscles,
- **Pauses** - to exercise natural breaks with relaxation after exhalation.

In addition, there are many aspects of exercise that both have a strong therapeutic and preventive effect on cancer and other lifestyle diseases.

Respiration and cancer - summary

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We have now looked at a whole range of factors that connect breathing and cancer:

1. The mismatch between our genetic code based on physically active behavior and our modern life dominated by sedentary behavior leads to physiological imbalance.
2. Imbalance leads to an epidemic of lifestyle diseases.
3. The change in normal breathing over the last 100 years can be a sign of an alarming development.
4. Chronic elevated pulmonary ventilation can be seen as a physiological explanation of lifestyle diseases through direct association with oblique gas balance in lungs and low CO₂ in the blood.
5. The paradox of breathing - the less we breathe, the more oxygen we get.
6. Chronic stress causes some of our sleeping genes to express and result in chronic disease.
7. Chronic stress leads to intensified growth of cancer cells that thrive in an oxygen-poor environment by switching to using glucose as the main source of energy.
8. Our high-carbohydrate eating habits contribute to the surplus of glucose in the body, supporting the development where the mutant cancer cells grow unhindered.
9. Therapeutic strategies for structured action against cancer that feature optimization of respiration, nutrition, movement, immunity and mental resilience.
10. All strategies are based solely on scientific research.

Make your body an uninhabitable environment for cancer

I told you about shaving blades at the beginning of this article. One of the highly effective breathing exercises against stress that I introduce on my 50-week course can be done in the bathroom and has something to do with shaving.

Which razor blade do you think I recommend for this exercise - the most expensive or the cheapest?

Read more about the 50-week post-cancer course: www.thrivepostcancer.com

Read more about other 50-week courses: www.sakharoff.com

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