

## June 2023: Your Mighty Mitochondria and Exercise



Hello reader

Kia ora koutou - a warm welcome to the Millhouse community and other readers,  
Rain, more rain and three winter months to come. How frustrating this is!

**Did you try the short breathing exercise** I mentioned in the [last newsletter](#)? Some refer to this as a *physiological sigh*. You breathe in, pause, inhale again to totally fill the lungs, and give a long outward SIGH (could be audible) emptying the lungs completely. Repeating this exercise for 5 minutes has a profound relaxation effect on the autonomic nervous system. Perform this whenever stress, anxiety and frustration comes your way.

Recently a patient told of the frightening tornado experience when, along with 50 other East Auckland families, he lost his house roof. Later I visited friends near Muriwai. Motutara and Waitea Road were still closed to non-residents three months after Cyclone Gabrielle had devastated the North Island, leaving 125 uninhabitable red-stickered houses at the beach settlement. Many others are suffering too and I am often recall the axiom '*a problem/worry shared is a problem/worry halved*'. Talk to someone - your partner, friend or work colleague - about your distress; remember too your family doctor can enrol you in the free Wellness Programme. An appointment with Vani, our [HIP/Behavioral Health Coach](#), can also provide support and assistance with social and whanau issues.

### In this month's newsletter

- Remember the simple breathing exercise for handling stress
- Comments on Covid and Long Covid
- Making use of our Nurse Practitioner and Health Improvement Coach
- Doctors' specialist areas
- Flu and Meningococcal vaccinations
- We are still accepting new patients
- Patient Emails to doctors may not be answered; contact Nurses.

*and Dr Ric continues the series on  
Changes towards a Positive Lifestyle  
- this month  
**the Mighty Mitochondria and  
Exercise***

**Covid continues** with a new dominant Omicron strain, nicknamed '*Kraken*', after the legendary Scandinavian sea creature which doomed ships and sailors to their grave. Thankfully, although this variant appears more infectious, it is less harmful than previous viral strains. However, continue to be vigilant if you are susceptible to respiratory illness, and use the approaches discussed in the last [two years of newsletters](#), to maintain a healthy immune system.

During lockdown the Ministry of Health (MOH) was generous in funding community treatment of COVID

infection but there has been little ongoing support for 'Long Covid' sufferers, where infection continues beyond three months. I still hope Long Covid will bring renewed interest in the understanding of the chronic viral fatigue that has always affected 1% of the population. [Recent research](#) has suggested Vitamin D may play a part in recovery, but until a randomised trial is done, the answer is unknown. My recommendation is that all post-Covid patients continue taking higher doses of Vitamin D, a cheap and relatively harmless supplement that may well be shown to ameliorate ongoing symptoms. [Another report](#) highlighted the place of a diversity of bugs (microbiome) in the bowel. So don't forget to eat a variety of unprocessed, and preferably fresh, fruits, nuts, and wholegrains, with plenty of greens and root vegetables.

In this newsletter, I discuss the importance of mitochondria, the amazing organelles that power each cell, and continue the conversation on the value of exercise, which is probably the most important lifestyle intervention for health and longevity.

## Millhouse News

**NEW PATIENTS** are still being accepted by Millhouse.

**PATIENT EMAILS** to our doctors may not be answered. We are receiving more and more emails which take considerable time to read and answer, although no service fee is charged. If you have an urgent problem, please speak to one of the Practice Nurses about your concerns.

**NURSE PRACTITIONER GABRIELLA** is a highly-skilled and insightful health professional trained to investigate, diagnose, and manage illness as well as prescribing treatment. She is a valued member of the medical team and has a particular interest in child, teenager and women's health and the management of diabetes. Some of you will have experienced her skill in assessing acute problems when your doctor has been unavailable. Don't hesitate to see her to discuss any concerns and she will liaise with your doctor.

**HEALTH IMPROVEMENT COACH VANI** is available by appointment, at no cost; book through Reception.

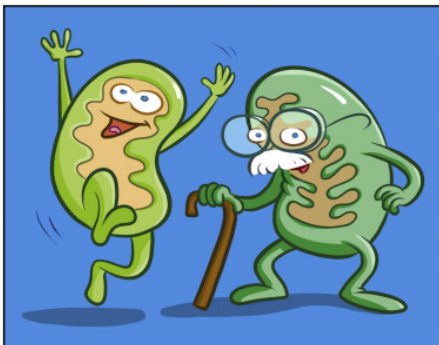
**DOCTOR CONVERSATIONS** can take place in a variety of languages and each of us has particular medical interest [highlighted on the website](#).

**FLU VACCINATION** at 130 Millhouse is now available. Book an appointment to see one of the Nurse team.

**BEXSERO VACCINE** against meningococcal group B disease is also available and funded for children between 8 weeks and 12 months, and for 13 to 25-year-olds in specified close-living situations.

## Mitochondria and your Health

In 1898 microbiologist Dr Carl Benda observed cells under the microscope and noticed an encapsulated shape with threads (mitos) and granules (chondros) which he called collectively *mitochondria*; today much more is known about this specialised structure in cells.



It is thought mitochondria appeared aeons ago as a means of providing living cells with extra energy for survival. This allowed the evolutionary development of plants, animals and humans. Our mitochondria produce energy in the form of ATP (adenosine triphosphate), in their folded inner membrane linings. Around a billion ATP molecules, powering 90% of biochemical reactions, are found in an average cell.

The 'mighty' mitochondria in a cell can number from several hundred to thousands,

## Exercise for Positive Lifestyle

Last month I suggested four positive lifestyle choices that have far reaching impact for 'undoing' or reversing a wide range of chronic diseases. Professor Dean Ornish found these can reverse heart disease, early prostate cancer, type 2 diabetes and a number of chronic ailments. (Many diseases, like chronic inflammation, or ongoing emotional distress, share common underlying biological pathways). Ornish's lifestyle programme has four components - **eat well, move more, stress less and love more**.

This month, let's talk about moving more. In January, I discussed the magic of exercise to improve health and wellness. I mentioned that short bursts of intense exertion, followed by rest, improved lung function, and longevity. Intense mild to moderate forms of aerobic exercise - running, walking, swimming, and cycling - use more oxygen and increase the muscle-cell mitochondria count by as much as 50% in six weeks, even in older people.

Aerobic exercise also releases a neurotrophin (BDNF) which repairs brain cells and supports learning, memory, higher thinking and ability to adapt to stress (neuroplasticity). However, more extreme physical activity is detrimental because unstable free radicals cause damage and inflammation to muscles, and organs. Resistance training (weightlifting, resistance bands) has little effect on building mitochondria numbers and releasing BDNF, but can prevent age-related muscle-wasting (sarcopenia), common in the elderly.

providing energy especially in active organs like the heart, skeletal muscle, brain and ovary. They are not just an energy factory but can react to threats like toxins or injuries with a 'danger response' that defends the cells by reducing energy use - and inhibiting healing.

When we are young, mitochondria are abundant and efficient but by age 40 most people have significant mitochondrial dysfunction. As our mitochondria suffer wear and tear, especially oxidative stress, they lose efficiency and function, leading to chronic disease, ageing, and cancer; mitochondria are thus a biological clock of the ageing process.

**Exercise can dramatically enhance the numbers of mitochondria in human beings.**

Want to read more on this? [Download full newsletter.](#)

Be proactive this year; why not choose one small change in this area in favour of a healthy lifestyle?  
Noho ora mai - look after yourself and stay well.  
Ma te wa, Dr Richard J Coleman

So we know exercise is good for us, but it's hard work, and few are motivated to go to the gym or see a personal trainer. Let's rethink the problem. What life goals do you have that will need stronger muscles and aerobic fitness to achieve them? Here are some ideas:

What exercise will help you achieve:

- Independent safe living – dressing, showering, preparing meals, not falling, getting up off the floor, using high & low cupboards, climbing stairs & walking up steep hills, visiting & carrying bags at supermarket, driving a car.
- Participating safely in enjoyable activities – travelling overseas, carrying own luggage, walking & hiking with friends, swimming, playing bowls golf, croquet, skiing.
- Improved disease control- diabetes, heart disease, asthma & chronic airways, Parkinson's, memory issues, cancer, depression & anxiety and more.

Want to know more about Positive Exercise?

[Go to the full article on our website....](#)

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