

COVID-19: What we can do to be a part of the solution

Hello everyone.

Last week, I was part of an on-line meeting regarding COVID-19, its spread and the implications for athletes and the general population. The information was provided by a Sports Medical Doctor who has been part of the medical staff at several Olympic Games and works with several sports and associations, here in Australia.

The information provided here is an overview of what was discussed (as well as links to reputable and informative sites) and what we can do to be part of the solution toward lowering the current rates of infections.

Symptoms of COVID-19

The main symptoms are:

- fever
- cough
- runny nose
- fatigue and tiredness
- shortness of breath
- severe acute respiratory distress syndrome

Sources:

<https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/what-you-need-to-know-about-coronavirus-covid-19>

<https://www.healthdirect.gov.au/coronavirus-covid-19-symptoms-and-how-the-virus-spreads-faqs#symptoms>

<https://www.dhhs.vic.gov.au/victorian-public-coronavirus-disease-covid-19>

<https://www.dw.com/en/covid-19-recovered-patients-have-partially-reduced-lung-function/a-52859671>

Implications for athletes

Getting sick, is a disruption that no one ever wants.

Athletes, who are training hard often have a lowered immune system and maybe susceptible to getting sick more easily.

For an athlete, getting sick means missed training sessions, time away from the sport, and in some cases a lengthy period of getting back to a level of fitness needed to compete.

Although many people are recovering from COVID-19, some have been left with damaged lungs. It is too early to say if this damage is reversible, but reports are indicating some patients are experiencing reductions in lung function by about 20 to 30%.

A reduced lung function for an athlete will severely hamper an athlete's ability to ever compete at a high level.

Therefore, avoiding contact with COVID-19 infected persons is critical for athletes.

Sources:

<https://health.clevelandclinic.org/heres-the-damage-coronavirus-covid-19-can-do-to-your-lungs/>

<https://www.dw.com/en/covid-19-recovered-patients-have-partially-reduced-lung-function/a-52859671>

Some important points to know

1. It takes between 1-14 days for the virus to incubate. The average is 5 days
2. Not all people with the COVID-19 present with the described symptoms.
3. The first symptoms of COVID-19 and influenza (flu) infections are often very similar. Fever and similar respiratory symptoms. As such, an infected person may not know they have the virus.
4. The virus is transmitted through contaminated droplets by coughing or sneezing, or by contact with contaminated hands, surfaces or objects.
5. Virus survives for 48 hours on surfaces at room temperature.

Sources:

<https://ama.com.au/article/update-novel-coronavirus-covid-19>

Current rate of contraction of the virus

To understand the rate of contraction better, here is a quick overview of the reproduction number.

As an infection spreads to new people, it reproduces itself.

The reproduction number (R_0 value), is a mathematical term that indicates how contagious an infectious disease is.

Depending on the R_0 value, there are three possible outcomes for existing infections:

- R_0 less than 1: an existing infection will result in less than one new infection. I.e. the disease will decline and eventually die out.
- R_0 equals 1: an existing infection will cause one new infection. I.e. the disease will stay alive and stable, but not develop into an outbreak or an epidemic.
- If R_0 more than 1: an existing infection causes more than one new infection. I.e. the disease will spread further and likely result in an outbreak or epidemic.

In a society which is functioning 'normally', COVID-19 has a R_0 value of about 2.5. So, for every infected person they will infect another 2.5 people. The infection process is exponential in that as each person becomes infected, they in turn infect another 2.5 persons and so on.

If a person does not know they are infected and continue to carry on with the daily activities, then virus continues to spread. *IT'S PEOPLE THAT MOVE, NOT A VIRUS.*

Sources:

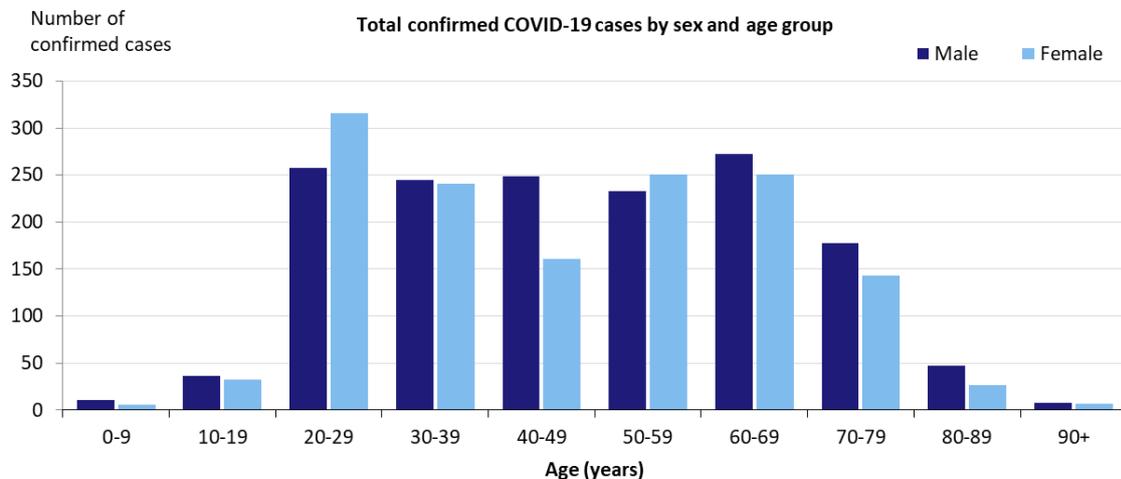
<https://www.healthline.com/health/r-nought-reproduction-number>

https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200306-sitrep-46-covid-19.pdf?sfvrsn=96b04adf_2

<https://www.mja.com.au/journal/2020/212/10/pre-emptive-low-cost-social-distancing-and-enhanced-hygiene-implemented-local>

Who is at the greatest risk?

The chart below shows the confirmed cases of COVID-19 as of March 27th 2020



- People of all ages can be affected.
- The greatest number of cases is the 20-29 year old age group. Although recovery rates are good for most age groups, as previously mentioned, it is not sure yet whether there are long term or lasting problems to health after recovery.
- Elderly people and those with prior illness (e.g. asthma, diabetes, heart disease, etc) are more vulnerable to becoming severely ill.
- Around the world, the greatest number of deaths attributed to the virus are the older age groups, 70-79 and 80-89.

It is important that those who are most at risk of contracting the virus, need to be mindful of the importance of protecting the those who are most vulnerable to dying from the virus.

Sources:

<https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers>

<https://www.cebm.net/covid-19/global-covid-19-case-fatality-rates/>

<https://ama.com.au/article/update-novel-coronavirus-covid-19>

Has the Reproduction Number been successfully lowered?

The Reproduction Number can be lowered, and very quickly.

It has been reported that the lockdown implemented in Wuhan, China lowered the R_0 value to 0.3, within 3-weeks.

Similarly, Taiwan, Hong Kong and South Korea achieved R_0 values of 0.6 through extensive testing, backtracking social contacts and strict isolation protocols.

If you are interested in more Information and data, regarding the infection rates and control of COVID-19 then this site; <https://ourworldindata.org/> is a not for profit organisation consisting of comprehensive research and data for many topics.

The link is: <https://ourworldindata.org/coronavirus>

What are the options for tackling the epidemic?

There are three options to tackling this pandemic:

Option	Outcome
1. Don't change anything: Carry-on as if nothing has changed and everything is okay	Widespread infection rates. Prolonged disruptions to lifestyle. Extensive financial disruption
2. Mitigation: Change somethings (but only what suits me	Pretty much the same as option 1
3. Suppression: Tackling the problem head-on by following all recommendations diligently and where possible	Infection rates will dramatically reduce the R_0 value below 1

As you can see, of the three options outlined, Suppression (option 3) is the most suitable. Being part of the solution and not part of the problem, should be everyone's priority.

These links explain the outcomes of the options more in-depth:

<https://medium.com/@tomaspueyo/coronavirus-the-hammer-and-the-dance-be9337092b56>

<https://www.abc.net.au/news/2020-03-25/coronavirus-covid-19-modelling-stay-home-chart/12084144>

How you can be part of the solution and limit the spread of COVID-19

Not doing everything possible to limit the spread of COVID-19, will be catastrophic.

Overseas experience has shown around 20% of COVID-19 case require hospitalisation. Five percent (5%) are "critical" requiring intensive care and artificial ventilation and 14% of the cases are "severe".

If NSW Health's forecasts become a reality and 1.6 million people in NSW (20%) do contract COVID-19, about 320,000 will require hospitalisation and about 80,000 will need to be in the ICU.

Similarly, should Qld Health's predictions of a 25% infection rate happen, it will result in around 255,000 people requiring hospitalisation and almost 64,000 people will need the ICU.

Intensive Care Unit (ICU) beds are very limited at 2200 beds and nowhere near the amount of predicted cases of COVID-19 requiring ICU.

ICU is expensive at \$4000-5000 per day. Increasing the number of units during a worldwide pandemic is not easy as every country is requiring the same type of supplies and equipment. Therefore, the number one priority has to be the lowering of the rate of infections at the source, which is ourselves.

Here is what you can easily do, to be part of the solution.

- Keep informed on the current situation through reputable sources
- Clean your hands with soap and water for 20 seconds or use an alcohol-based hand rub/sanitiser.
- Avoid touching surfaces while you are out in public spaces
- Do not have visitors over to your place of living
- Avoid going to visit others
- Keep to your small group of people (your own cluster)

- Cover your nose and mouth with a tissue when coughing and sneezing or use your elbow, not your hands
- Avoid close contact with people unwell with cold or flu-like symptoms and stay home if you have these symptoms
- Avoid touching your face and avoid shaking hands with others
- Try to maintain a distance of 1.5 metres from others as much as possible and avoid crowded places
- If you do feel sick with the described symptoms, then see a medical professional
- Aim to control what you can, where you can

Sources:

<https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers#current-status>

<https://www.abc.net.au/news/2020-03-27/coronavirus-australia-covid-19-icu-beds-ventilators-hospitals/12090420>

Stay safe

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