

## It is in the shelter of each other that the people live – Irish Proverb

The manifestations of COVID-19 and the necessary actions needed are best informed by our social biology – best informed by our neighbor.

Viruses need to get inside us to replicate.

We live in groups.

When within our tribe's circle of protection our immune system's default mode is anti-viral.

If, however, we become like a horse outside the herd, outside our circle of protection, with felt danger outweighing felt safety, our immune system moves into a merciful inflammatory response in preparation for possible wounding from predator.

Our immune system is preparing to protect us from possible injury<sup>1</sup>.

The danger outside our circle of protection, from our body's point of view, is harm from physical injury – from wolves and weapons.

Our immune system's anti-bacterial inflammatory forces, as such, ramp up to protect, secure and defend while our anti-viral forces dial down<sup>2</sup>.

From the body's point of view, the risk of being attacked while outside the circle is a greater danger than infection from a virus.

Not a useful mode during a viral pandemic and potentially dangerous as there is more of a tendency for the body to tilt into over-inflammation in response to the virus thereby causing collateral damage to the body's organs.

Useful, however, for the coronavirus as a body in over-inflammation mode is a body with its anti-viral defenses dialed down.

Our social biology influences our immune system's response in many ways.

Our immune system is socially sensitive as are we.

The same parts of our brain activate when there is physical or social pain<sup>3</sup>.

The same parts of our brain participate when there is perceived threat to physical or social safety or well-being<sup>4</sup>.

Our brain and body have many sensitive safety and danger receptors spread out throughout which coordinate a finely tuned response to potential threat.

These safety and danger receptors are under the influence of our tribe - tuned while our nervous system is developing, when we are most dependent upon others and most vulnerable<sup>5-7</sup>.

Our Danger Brain recognizes safety and danger and is three times faster than thought.

Instinct is always a step ahead, never behind.

Our Brain of the Long View is able to direct attention, remember the past, consider future consequences of actions, think logically and keep watch over oneself.

If, however, our nervous system's window of tolerance becomes overwhelmed, our Brain of the Long View goes offline and our Danger Brain runs the show to respond to felt danger and felt threat<sup>8,9</sup>.

If it is safe to move, our body moves into *fight* –Raise voice! Use words as weapons! Get physical! A dog that barks and can bite! or *flight* – move back, move away, avoid all together – the end result is to create more physical space, feel safe when feeling crowded.

For these actions the body is going to need a head of steam – increase of blood pressure, increase heart rate, get ready for possible wounding, prepare to defend!

If it is unsafe to move, as if there is a predator in the room – then the body freezes - don't make eye contact, but know exactly where *it* is, barely breathing, don't move – wait for *it* to go away.

Increase blood pressure, increase heart rate, get ready for possible wounding, prepare to defend – now like a coiled spring winding tighter and tighter – ready in the face of danger, waiting to see what happens in the end.

And if predator is now moving near – then springing into fight or flight, or if instinct knows that such actions further harm may bring, the body may just shut down.

The body floods with *endogenous morphine* (endorphins that can block out pain) released by our nervous system, blood pressure dropping, heart rate slowing – time to faint, close everything down.

And in between these extremes – everything in between.

A body tuned to danger is a body tuned to threat detection and response to threat – don't reach out or expect others to help and keep one's head on a swivel - to best thrive and survive in a dangerous world within a dangerous tribe.

Such a body, tuned to detect threat, is going to have a tendency to have an inflammatory system turned on, foot lightly on the gas, preparing to be attacked, preparing to be wounded, stuck in defend.

Being in this world of danger- of having to defend against those who should protect - is normal for this body.

Primed to defend – and with whatever Animal Defenses are its style – Fight, Flight, Freeze or Shut Down.

Primed to defend, ready to go into its default mode when under threat.

Such bodies will have the balance between danger and safety receptors shifted toward having more danger receptors – and less safety receptors.

Such bodies will have more inflammation as such bodies are under threat never-ending, always preparing to be wounded, stuck in defend.

With each repeated historical expectation, with each repeated historical outcome – the danger response becoming more sensitive, more amplified and less specific.

A whisper now seems like a shout!

Never may they rest in peace.

Our bodies' innumerable safety and danger receptors strive to be in balance for the most flexible response to threat.

When the danger system is activated it commands the body to tighten up the blood vessels - raise blood pressure, save salt and water, thicken the blood, activate our immune system's anti-bacterial inflammatory forces in preparation for attack.

The body now acting as a single unit to protect, secure and defend from the results of physical wounding – of blood-spilling hemorrhage, bacterial invasion and death.

When the safety system is activated it does the opposite, invites the body to relax the blood vessels - lower blood pressure, no need to save extra salt and water or thicken the blood - time to turn on our anti-inflammatory system.

And feeling more safe, more protected, less likely being wounded, our bodies transition from protect, secure defend to repair, restore, recover, return to rest.

One of our body's danger receptors, the ACE receptor, activates the danger system.

Its balancing safety receptor partner, the ACE-2 receptor, activates the safety system.

COVID-19 gains entry into the body by sticking to the safety receptor.

Sticking to the safety receptor, it enters our cells pulling the safety receptor in with it.

This removes a safety receptor from the community of safety receptors that are serving as a counterweight to the danger system.

Bodies which are already burdened with states associated with chronic inflammation – older age, hypertension, diabetes and obesity – with danger receptors outweighing safety receptors are already treading upon an ever-narrowing balance beam between safety and danger<sup>10,11</sup>.

The more safety receptors removed by the coronavirus, the easier it is going to be to reach a tipping point and free-fall into an ever-accelerating inflammatory fight to protect, secure and defend.

The serious symptoms of COVID-19 of worsening shortness of breath, clotting, kidney failure, heart failure, brain failure – organ failure - are coming from the body's over-reaction to the virus not from the virus.

Defense causing damage.

The same parts of our brain activate when there is physical or social pain.

The same parts of our brain participate when there is perceived threat to physical or personal safety or well-being.

To the body it can feel the same – each can feed the other – get locked into a closed loop.

If alone, vulnerable and under threat of being attacked – outside our own and our larger community's circle of protection - it will be even more likely to fall into danger and over-reaction.

Communities in conflict are vulnerable to the serious complications of COVID-19.

Where one is vulnerable and feels unwelcome – there is the virus.

Where one is alone and feels unprotected – there is the virus.

Where one feels unsafe and is seen as dangerous – there is the virus.

The coronavirus disables the very safety features which can brake uncontrolled inflammation in an individual's body.

The coronavirus can thrive and survive best wherever felt danger reigns over felt safety - wherever there is division, disunity, discord – everything opposite to the sheltering protection of each other.

Over time medicine will be found to destabilize the virus itself.

Over time medicines will be found to put a brake on the over-reaction inflammatory danger response.

Over time there will be a vaccine.

At *this* time our medicine is to shelter each other – to shelter each other is our part to play.

Sheltering each other brings felt connection.

Felt connection brings felt safety.

Felt safety automatically turns on our anti-viral, anti-inflammatory system.

Many bodies have, however, during the time of this pandemic, developed fear of being near other bodies.

People are now the felt danger.

Even when wearing a mask and being six feet apart, there is felt danger and the impulse to move away quickly and not make contact.

Yet in pausing in the midst of this felt danger, taking a breath and remembering that when wearing a mask and being six feet apart from another one is safe, our Brain of the Long View becomes active and we can choose in the midst of felt danger to safely come into felt connection with our neighbor<sup>12</sup>.

We become a tribe of two sheltering the each, the other.

Extending this felt connection to all those around us in view makes the feeling of felt connection reciprocally expand and exponentiate.

When practicing with each other, coming into felt connection becomes second nature once again.

Coming into felt connection, our bodies feeling more protected, more safe and less likely being wounded – our anti-bacterial inflammatory system dials down and our anti-viral system ramps up.

For our brothers and sisters falling into danger – restoring felt connection at this very moment is a lifeline emanating from love of neighbor.

When the body reaches a tipping point and is falling into danger, it is the surrounding community coming into felt connection that can restore balance through the power of felt safety resurrecting within our common circle of protection.

How we are with each other in our community may be our greatest common weakness.

It is also our greatest common strength.

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25 July 2020

1. Moseley GL, Butler DS. *Explain Pain Supercharged*. Noigroup Publications. South Australia. 2017.
2. Cole SW. The Conserved Response to Adversity. *Current Opinion in Behavioral Sciences* 2019; **28**: 31-37.
3. Panksepp J. Feeling the Pain of Social Loss. *Science* 2003; **302**: 237-239.
4. Eisenberger NI, Moieni M, Inagaki TK, Muscateli KA, Irwin MR. In Sickness and in Health: The Co-Regulation of Inflammation and Social Behavior. *Neuropsychopharmacology Reviews* 2017; **42**: 242-253.
5. Teicher MH, Samson JA, Anderson CM, Ohashi K. The effects of childhood maltreatment on brain structure, function and connectivity. *Nature Reviews Neuroscience* 2016; **17**: 652-666.
6. van der Kolk, B. *The Body Keeps the Score*. Penguin Books. New York. 2015.
7. Felitti VJ, Anda RF. The Relationship of Adverse Childhood Experiences to Adult Medical Disease, Psychiatric Disorders, and Sexual Behavior: Implications for Healthcare, in Lanius RA, Vermetten E, Pain C. *The Impact of Early Life Trauma on Health and Disease*. Cambridge University Press. New York. 2010.
8. Ogden, P. *Trauma and the Body: a Sensorimotor Approach to Psychotherapy*. W. W. Norton & Company. New York. 2006.
9. Porges, SW. *The Polyvagal Theory: Neurophysiological Foundations of Emotions, Attachment, Communication and Self-Regulation*. W. W. Norton & Company. New York. 2011.
10. McEwen BS. Allostasis and Allosteric Load: Implications for Neuropsychopharmacology, *Neuropsychopharmacology* 2000; **22**: 108-124.

11. Verdecchia P, Cavallini C, Spanevello A, Angeli F. The pivotal link between ACE2 deficiency and SARS-CoV-2 infection. *European Journal of Internal Medicine* 2020; **76**: 14-20.
12. LeDoux J. A Call to Action: Overcoming Anxiety through Active Coping. *American Journal of Psychiatry* 2001; **158**: 1953-1955.