

# **Vision, Hearing and Spatial Perception as triggering and exacerbating factors in Neuroplex type disorders and diseases, with attention to post-inflammatory diseases such as Long COVID**

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## What is this:

Here are notes, directed at a formative effort:

- hypotheses providing foundation for research - primarily data analytics to start, then further clinical evaluations
- paper to be published, etc.
- stimulus for team members re: Gaia Oasis and extended circle of partner specialists
- aiming for establishment of a diagnostic methodology and then a therapeutic protocol

All of this intended to involve a few persons who are connected already or relevant and applicable to Gaia Oasis as a clinical operation.

Warning: these are only rough notes at this point (24.jan.2023). Very sketchy and with many gaps. Furthermore, this is built upon a lot of earlier work by many - very many! - different people in a wide range of physics, chemistry, biochemistry, molecular biology, and medical disciplines. The "founding and grounding" references, the bibliographies, are immense. Finally, this may be the "ultimate Connect-the-Dots" experimental leap, certainly by the primary author (MJD), and while it is definitely not just some leap into the dark or into some abyss, it is probably not simple and straightforward at first glance as to why some things are being asserted. Some of those reasons are actually summed up - but again, not with the expected precision and detail, perhaps, to which many readers are accustomed, in the October 2021 "introduction" to the theoretical foundations and rationales:

## **Synopsis of TBD and ANCES Theoretical Framework underlying models of neural stress, dysautonomia and consequences within neurocybernetic networks including cardiovascular and gastrointestinal subsystems**

[http://neuroplex-c.tdyn.org/docs/tbd-ances-framework-synopsis\\_mjd\\_v1-0\\_28oct21\\_0315.pdf](http://neuroplex-c.tdyn.org/docs/tbd-ances-framework-synopsis_mjd_v1-0_28oct21_0315.pdf)

## Basic hypothesis put forward here:

We begin with NP.

Consider the basic neuroplex model ("NP"; former terms used: "NpC", "neuro-cardio", etc.). Stressor agents are processes, functions. These operate on the signaling, the communications, intracellular and intercellular. Examples; energy transfer, ATP-ADP, within protein chains, like actin, and MT. Transmissions along neuronal axons. Synaptic exchange. Disruptions from the stressor agents in the form of constructive and destructive interference, disruption of biosolitons and their exchange networks, dissipation of energy, noise, loss of signals, confusion of signals, loss of CQER within biomacroscale BEC-type assemblies at molecular and cellular levels.

Observable systemic results span a wide range of typically not-associated-together pathologies: dysautonomia, arrhythmia (broadly within: cardiovascular (CV), autonomic nervous system (ANS), gastrointestinal tract (GI), peripheral nervous system (PNS) within the ANS, cognitive-memory functions (CM)), inflammatory imbalance and excess, autoimmune response to these triggering stimuli.

Formal disease identifiers range from tachycardia to AFIB, IBS to Crohn's, EDS, CF/ME, POTS, Alzheimer's and other dementia, MS, potentially other epidural and peripheral/connective tissue disorders labeled as "autoimmune", contributions to exacerbation of MALS, certain urogenital dysfunctions including sexual dysfunctions, and (strongly) inflammatory disease excesses from tissue trauma and infectious disease especially, of which post-COVID effects from inflammatory extremes are widely appearing within the general population worldwide.

We assert that these NP-related disorders are also in a very close relationship with psychological, social-societal, and sensory-spatial processes, of which the following are powerful in causally bidirectional manners, with positive feedback loops often involved:

[1] psychological causal agents - meaning, in this context: behaviors and underlying neurological processes that are considered to be cognitive, emotive, and centralized in the brain, and of the sort that are historically considered to be psychological in origin and in any therapeutic treatment (such being with or without the use of pharmaceutical or invasive medical actions).

[2] psychological effects - meaning, in this context: consequences of the NP disorders and diseases that contribute to and exacerbate psychological dysfunctions. Such psychological effects span a very wide range of varieties but especially are linked with anxiety, depression, certain spatial-geomorphic phobias, certain transference phenomena (particularly with respect to fears and aggravated emotional ("fight or flight") response to particular places, shapes, geometries, and also how such are perceived with respect to certain objects including persons and animals), and there are contributing links leading toward formation of dependencies upon a variety of substances including alcohol and sensory0-perception altering drugs.

[3] vision, hearing and spatial perception (sensory-spatial processing, "SSP"), the latter spanning from geometric and topological identification and recognition to distance perception and relationship determination, principally as an instinctive, unconscious process - meaning, in this context: both causal and effective relations, such that (a) the NP disorders contribute to dysfunction in the sensory/spatial processing (SSP), and that problems within the SSP, such as from eyesight, auditory hearing, vestibular and inner-ear equilibrium functions, and other SSP problems originating in the brain (e.g., right parietal lobe damage or other aberrations) in a positive-feedback type of cycle, and that (b) SSP dysfunctions contribute to the NP disorders, also in a positive-feedback type of cycle.

The basics are more complex and interdependent. These can be illustrated by the following diagrams, one describing the basic relationships operating, and the second describing the additional and often exponentiating consequences from a pandemic-scale infectious and inflammatory disease such as COVID-19, with psychological and societal impact that further empowers positive feedback loop dynamics:

Psychological, Visual-Auditory, Spatio-Temporal Causal Relations  
with Neuroplex-class disorders and diseases (basic)

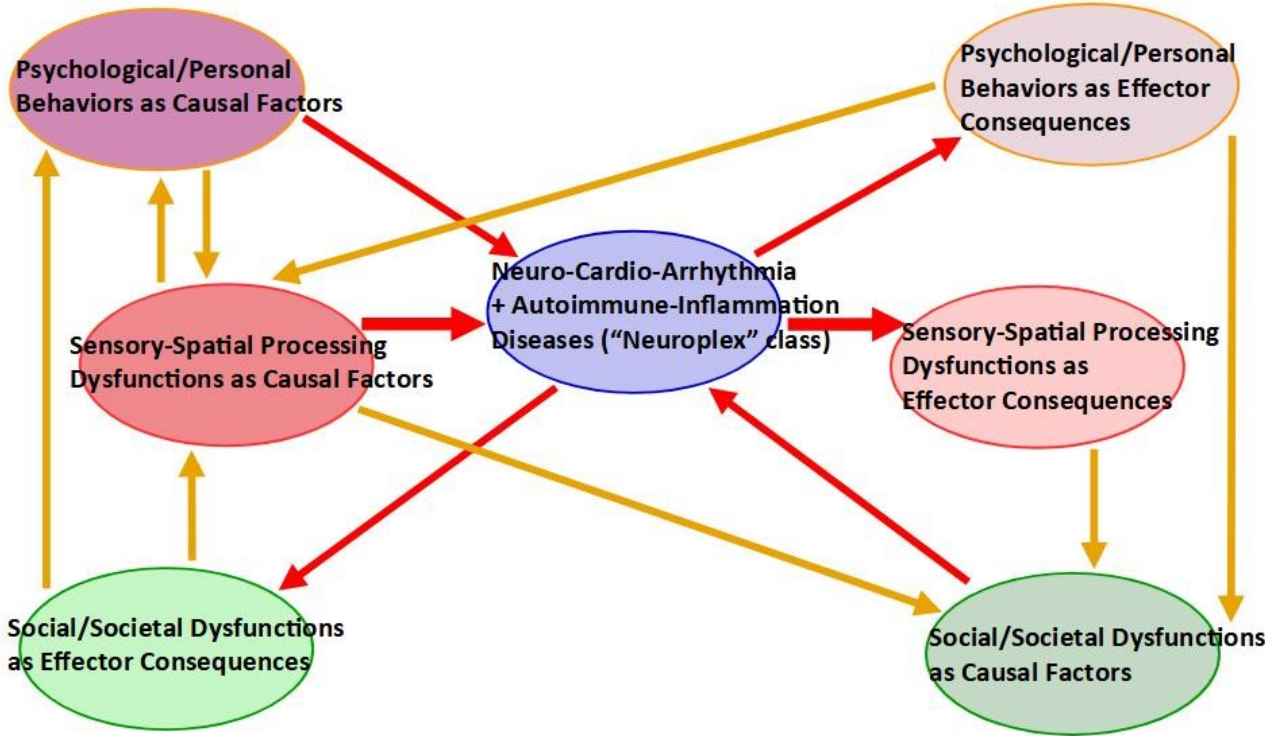
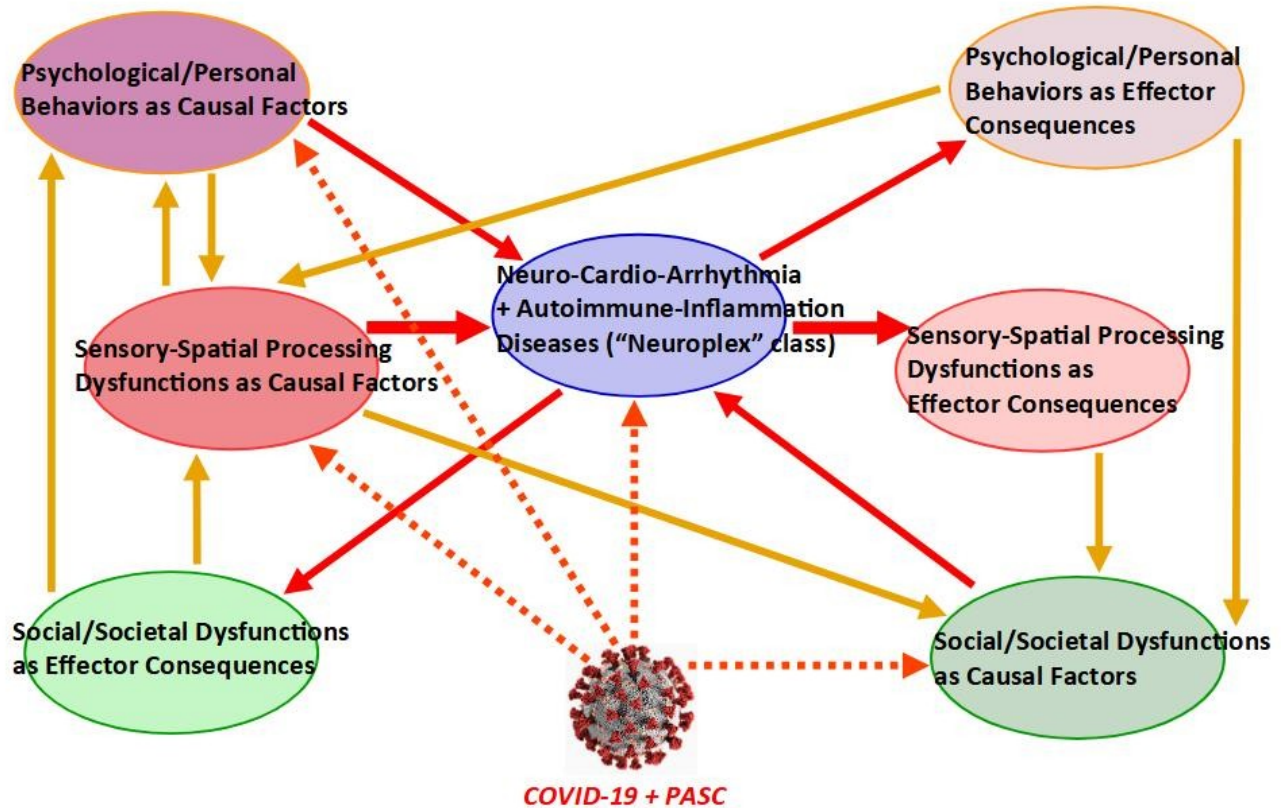


Figure 1 - the basic cycles and feedbacks

Psychological, Visual-Auditory, Spatio-Temporal Causal Relations  
with Neuroplex-class disorders and diseases (amplified, post-COVID)



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Figure 2 - amplifications and exponentiations to the basic cycles and feedbacks

An important set of relationships is revealing itself, and this is occurring more so in recent times and linked with a set of events occurring within the human population particularly in the 20th and now 21st centuries. This is complicated as well as complex. Here are just some summary/intro points:

These new relationships, new phenomena, new exertions of the sensory-spatial processing (SSP) network of our biology, have significant effects upon neurology, neuromuscular coordination and aspects of stress and relaxation (including rejuvenation, rebalancing, biological repair). These events (processes) particularly involve (emerge through) industrialization, urbanization, and aspects of modern lifestyle. They are not isolated processes, and they fit together, in ways that include mutual exacerbation and stress of those subsystems we refer to as "Neuroplex" or "NP".

Among these new SSP relationships are those that include extensive, increased activity, dependence, "over-exposure" (this will be explained, further) and over-exertion of the visual system - the eyes - for reading, for "fine print" tasks, for long-distance viewing in situation of constant change (e.g., driving automobiles), for viewing a world of things and each other (people) in a variety of artificial and often intense and unnatural lighting (e.g. fluorescent lights on a large scale), and where there is often added

stress due to the importance of not making mistakes in observation and discrimination (identification, as in reading, seeing signs, identifying persons and both "friend and foe" situations).

There is more than vision involved, certainly, in these now-critical, now-changed areas of SSP performance, and definitely there is the auditory sensing, both for actual hearing and interpretation of sounds, but also for equilibrium, basic balance. Furthermore, there is the basic neurological process of spatial/geometrical discrimination, determination of shape, boundaries, limits, extensions of objects, contiguity, and distance from self, from others, from other objects. Quite simply, we are doing more of such SSP tasks with greater variety and critical need for accuracy and to avoid making mistakes, in nearly every imaginable facet of what may be called "events and routines of ordinary everyday life".

Thus, we are looking at new sources and types of stressor-agent activity that can "bend or break" the balance, the harmony, of how the brain, both autonomically and cognitively, processes its "spaces" of "self", "other", and "boundary region between and adjoining" self and other.

This is all feeding into the action depicted in the two figures (1 and 2) above.

Now we must consider, over and beyond everything we have thought earlier (refer to those specific NP papers and presentations and notes, from mainly 2020-2022) about NP disorders and diseases, the pathways of feedback and influence between the psychological/personal and the social/societal, as indicated in the above two figures, and how these feedback processes can create systemically harmful, pathological actions. Some of these "surface" as particular "syndromes" of the NP types. Some of them surface and manifest themselves very clearly and openly as psychological behaviors, the types that are typically categorized as neurosis or psychosis, and some of these lead to events on the social (group, community) scale that further generate positive feedback loop activity which generates more stress agents, more disruption, including in those often seemingly forgotten and ignored processes, those that are often considered to be "physiological" and not modifiable or malleable by the psychological events - such as our SSP systems, and especially, our vision, and the entire macro-process of How We SEE Our World.

Our vision system in our brains - and indeed also our other senses, particularly the auditory and tactile sensing - and also our senses of spatial placement, relation and coordination, which are very strongly influenced by our vision processing - this is not a linear-function machine like a camera, microscope or telescope. Certainly, those mechanisms of optical physics are working in our biological vision processing. But there is a deep and bidirectionally affective relationship between our vision system and our psychological processes of how we perceive, recognize, categorize, classify, and decide. Our emotional and cognitive functions influence How and What We See much more than we are likely to realize - until we start thinking hard and deep about the matter.

§ Note on some terminology that needs to be better-crafted:

◆ "Psychological/personal" includes what goes on in behaviors of the individual as self, solo, solipsistically as it were, and also in close personal relations; i.e., the close/intimate couple, the bonded friends, the classic family relations parent:parent, parent:child, sibling:sibling. These are the behaviors, and the neuroses and psychoses, that are most typically classed in the categorizations of mental health

as illnesses and as the subject-matter of therapies of all the classical types, particularly "analysis" methods (e.g., part of the emphasis of Gaia oasis and N-Therapy (and by other names TBD), and also including the use of pharmaceutical regimens.

◆ "Social/societal" includes what goes on in behaviors involving groups of people, of various parameters, typically more than and extending beyond the domains of the "immediate family/home circle" and involving organized as well as semi-organized and indefinite/undefined-organized groups, and extending to crowds, clan/tribal structures, communities, larger civic entities, nations, and trans-national ethnic groups. Here we are dealing with processes that operate on the logic of the swarm, the flock, the herd, the species. Here we are entering also the domain of the Collective Unconscious and the collective phenomena involving CQER on a scale, an order, that is simply not understood at all at present; we observe the phenomena as events, as happenings, and usually somewhat after-the-fact, temporally, meaning, after some events have taken place and those who "pick up the pieces" so to speak (e.g., after a riot, war, genocidal societal psychosis, or some other set of events rightfully termed "holocaustal"), are now assessing, analyzing, and trying to discern "Whatr really happened here and how?"

§ Reference is made to some of the early NP material including a series of diagrams that illustrate general relationships and evolutions of NP disorders, found in this lecture-presentation from 2022:

(This is fairly accurate-at-present)

<http://neuroplex-c.tdyn.org/PHIBER-AIM-NpC-MMC-presentation-final.pdf>

See slides 13-17 within the above.

§ What is needed now, and to follow --- bringing in the data, the findings, from the various studies conducted, including particularly those in 2020 and thereafter which bring in CVID and PASC ("Long COVID") to bear on the situation.

§ Notes to self:

Refer to the following:

[1] The EFT presentation, and the material illustrating epigenetic and adrenaline/cortisol cycles (and "fight or flight") with respect to stress and trauma and PTSD.

<http://tdyn.,org/pubshare/thesciencebehindEFT.pdf>

[2] The Dec2021 paper (unfinished) --- this is variously listed with two titles (same document!):

[http://neuroplex-c.tdyn.org/docs/.ANG-II\\_ACE\\_ACE2\\_ARB\\_Inhibitors\\_re\\_COVID-et-al\\_mjd\\_18dec21.pdf](http://neuroplex-c.tdyn.org/docs/.ANG-II_ACE_ACE2_ARB_Inhibitors_re_COVID-et-al_mjd_18dec21.pdf) (.doc)

[http://neuroplex-c.tdyn.org/not-open-public/npc-pasc-inflamm-autoimmune\\_extended-abstr-summary\\_mjd\\_18dec21.pdf](http://neuroplex-c.tdyn.org/not-open-public/npc-pasc-inflamm-autoimmune_extended-abstr-summary_mjd_18dec21.pdf) (.doc)

and further is a longer and more completed document containing most of the same material:"

[http://neuroplex-c.tdyn.org/not-open-public/npc-inflamm-autoimmune-systemic-chronic-stressors\\_extended-abstr-summary\\_mjd\\_09jan22.pdf](http://neuroplex-c.tdyn.org/not-open-public/npc-inflamm-autoimmune-systemic-chronic-stressors_extended-abstr-summary_mjd_09jan22.pdf) (.doc)

§ Consider how to explain with all of this, especially in terms of the individual psychological and the social (societal) behavior non-linearities and extreme/unstable dynamics, and in the context of the basic mechanisms of negative and positive feedback cycles:

Here, for the benefit of reaching readers and decision-makers who are not familiar with some of these concepts in terms of biology and the brain and mind, are just some simple example notes.

[A] Negative feedback - some action  $x$  leads to a response  $y$  that reduces/reverses the change brought about by  $x$ . The change caused by  $x$  is detected by a receptor  $r$  and an effector  $e$  is activated to induce an opposite effect; the result promotes system equilibrium.

Some examples:

- Thermoregulation (if body temperature changes, mechanisms are induced to restore normal levels)
- Blood sugar regulation (insulin lowers blood glucose when levels are high ; glucagon raises blood glucose when levels are low)
- Osmoregulation (ADH is secreted to retain water when dehydrated and its release is inhibited when the body is hydrated)

[B] Positive feedback involves an action  $x$  with a response  $y$  that sustains or amplifies the change brought about by  $x$ . The change caused by  $x$  is detected by a receptor  $r$  and an effector  $e$  is activated to induce the same effect, or at least nothing results to reduce that effect from  $x$ ; the result promotes system instability by amplifying the change and not reducing it back to equilibrium).

Some examples:

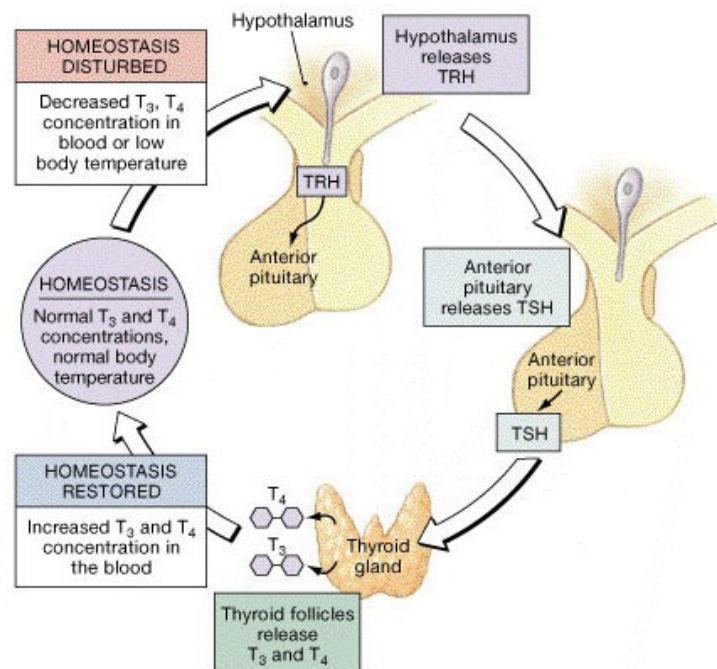
- An action  $x$  is detected by a receptor and an effector is activated to induce the same effect – this promotes further change
- Positive feedback loops will continue to amplify the initial change until the stimulus is removed (or the system breaks down somehow from non-linear and catastrophic effects).

- Childbirth – stretching of uterine walls cause contractions that further stretch the walls (this continues until birthing occurs)
- Lactation – the child feeding stimulates milk production which causes further feeding (continues until baby stops feeding)
- Ovulation – the dominant follicle releases estrogen which stimulates LH and FSH release to promote further follicular growth
- Blood clotting – platelets release clotting factors which cause more platelets to aggregate at the site of injury

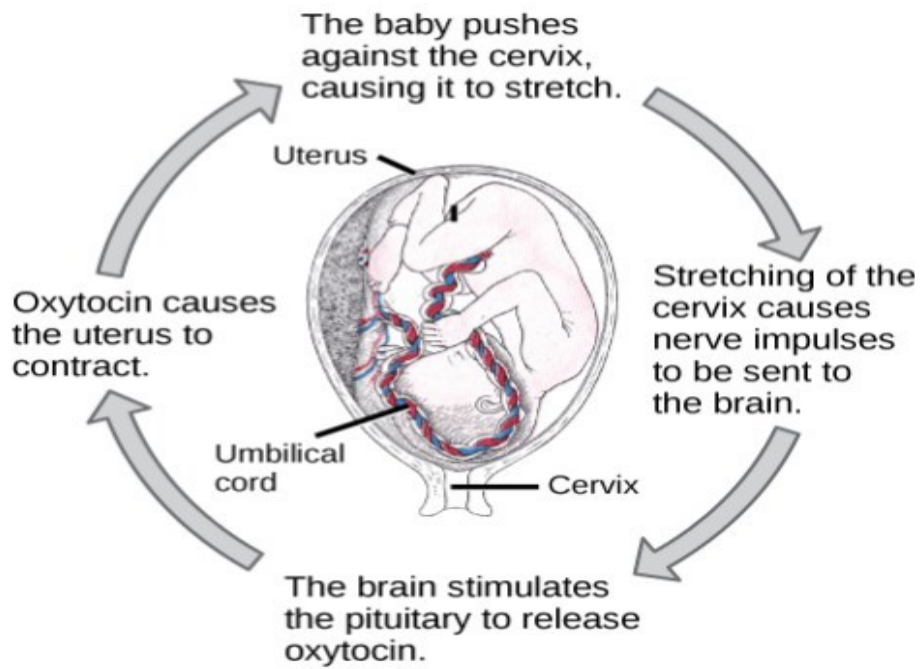
Clearly, not all positive feedback loops are harmful or system-destructive. But often things can get out of control when there is no regulation involved, to "turn down/off" the cycle.

Consider a high fever, for example. A fever triggered by infection is beneficial up to a point, but if the body temperature rises much above 42°C (108°F), it may create a dangerous positive feedback loop. This high temperature raises the metabolic rate, which makes the body produce heat faster than it can get rid of it. Thus, temperature rises still further, increasing the metabolic rate and heat production still more. This "vicious circle" becomes fatal at approximately 45°C (113°F). Thus, positive feedback loops often create dangerously out-of-control situations that require emergency medical treatment.

As another example, consider a person breathing air that has very high CO<sub>2</sub> content. The amount of oxygen in blood decreases while the concentration of carbon dioxide in blood increases. This is sensed by carbon dioxide receptors, which then cause the breathing rate to increase. The person breathes faster, taking in more carbon dioxide, which stimulates the receptors even more, so they breathe faster and faster which ultimately results in death.







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