

A/B. The disease process I got was allergies. The underlying pathophysiology of this disease process includes an exaggerated immune response known as type 1 hypersensitivity. The disease process contains two main phases, the first phase is sensitization phase, and the second phase is the allergic reaction phase. Allergic rhinitis is a symptom of common allergies, allergic rhinitis poses a global health problem and can be challenging to treat, many of the current symptomatic treatments for AR have been available for decades, yet there has been little improvement in patient quality of life or symptom burden over the years (Bjermer et al., 2019). The sensation phase starts with initial exposure (when an allergen enters the body), which activates the t-helper cells, which stimulates b cells to produce allergen-specific IgE antibodies which bind to receptors of mast cells. At this point, it's now "sensitized" to that allergen (Bjermer et al., 2019). The second phase is the allergic reaction phase, which starts with a second exposure, where the allergen binds to and cross-links the igE antibodies on the surface of the sensitized mast cells and basophils (Bjermer et al., 2019). The cross-linking triggers rapid degranulation, causing inflammatory mediators from their granules. Histamine is immediately released, and the inflammatory process begins, causing smooth muscle contraction (Bjermer et al., 2019). After the release of the mediators, it results in the sustained inflammation, leading to chronic allergic conditions (Bjermer et al., 2019). In Wilbur's case, the flat, purple rash is not indicative of an allergic reaction, the rash is usually itchy. The white coating on his tongue is sounding more like oral thrush, and the patient being "sick a lot" can describe another illness, unless he has several allergies, which can show he has a weakened immune system. His clinical signs and symptoms do not point towards your normal allergic reaction presentation. He would need a further work up. It would be challenging to diagnose without proper lab work to rule out other infections, he would need a thorough diagnostic work up to clarify his symptoms and allergic processes.

C. The diagnostic test results needed include a complete blood count that can test for infection based on the white count, a comprehensive metabolic panel to provide baseline kidney and liver function, to better understand systematically where the infection/inflammatory process is. A swab to the area on Wilbur's tongue, which can be cultured and confirm thrush or not, microscopic examination. The rash on his back could be biopsied, if need be, or starting with a steroid cream to see if it disappears. The white count would be elevated for an infection (Berhan et al., 2025).

D. I had type 1 hypersensitivity (allergies) and another peer had delayed cell mediated (type 4) which we could argue that the cases are similar and fit the same. The delayed onset for delayed cell-mediated shows that