

**Client Name: [REDACTED]**

**Date: 03/09/2024**

**First Meeting: Initial Measurements**

## **Baseline Personalized Plan**

During our consultation, the client noted their usage of nicotine vapes, general lethargy (and a frequent lack of motivation), and their addiction to online video games. As per our client's data (which was normalized against data collected by our previous experiments), **Baseline** was able to procure a personalized plan for our client.

Our measurements can be subcategorized into three groups: stationary, physical activity, and entertainment. Consider stationary, when our client's pH and SpO<sub>2</sub> were measured at rest (client pH of 6.38-6.40 and client SpO<sub>2</sub> of 96.0-96.2%), we were able to observe that our client was healthy as both values were within the average range (average pH of 5.5-6.5 and client SpO<sub>2</sub> of 95-100%).

As for the physical activity phase of data collection, we asked our client to do fifty jumping jacks to induce sweat for pH analysis. We measured the pH and the SpO<sub>2</sub> values of our client at three different time points: 15 seconds, 1 minute, and 3 minutes. The client continued sweating as the time elapsed, causing their pH level to decrease to the lowest point of 5.73. As for their SpO<sub>2</sub> level, the client exhibited the lowest value of 94.3-94.5% right after exercise, which is normal as the body uses its oxygen reserves during aerobic exercise. However, here we noted that our client demonstrated an almost 2.0% decrease in their SpO<sub>2</sub> level, which can most likely be attributed to inhaling smoke from vapes, decreasing the function of our client's lungs and aerobic pathways.

As for the entertainment phase, we observed that our client could not recover their sweat pH level to what they exhibited at rest (6.38 at rest vs. 5.97 at the last experiment). Still, the client exhibited high values of SpO<sub>2</sub> after watching a stressful TV show clip for 5 minutes — this phenomenon is normal, as the client enters a mild state of "fight or flight," and the body attempts to collect more SpO<sub>2</sub> in response to this stressful event. When normalized against our data, we observed that our client demonstrated a significant increase in their SpO<sub>2</sub> levels, so much so that their last recorded value was greater than that observed at the stationary phase. This could be explained by our client's addiction to video games (which often force players into stressful win-or-lose conditions), as the body has become accustomed to conditions that require SpO<sub>2</sub> levels to rapidly return to high levels.

Overall, we recommend three tangible steps to help return our client's base dopamine level (as well as the phasic peaks exhibited during the entertainment phase). **First**, our client should abstain from vaping (or smoking of any kind, for that matter) to help prevent further damage to their aerobic pathways. **Second**, our client should frequently engage in **aerobic activities**, whether it's jogging, biking, swimming, or recreational sports that require some form of cardio. This will help to create a solid foundation for respiration, helping to decrease such drastic changes in the SpO<sub>2</sub> levels, which is usually a signal of increased epinephrine, cortisol, and endorphins expression, all of which are hormones linked to dopamine production. **Third**, our client should abstain from video games, as stimulating our brains to be accustomed to highly-engaging entertainment can cause the frequent production of cortisol and serotonin, which can ultimately dim dopamine pathways if these hormones are too frequently produced (almost like a body becoming immune to signals to secrete dopamine).