Cellular Respiration And Photosynthesis

Photosynthesis and cellular respiration are connected in a way that one cannot take place if the other is not performed. They need each other's existence, basically. It's like they are made to be soulmates; they co-exist. Light + 6CO2 + 6H2O ? C6H12O6 + 6O2. Photosynthesis, with the help of light, 6CO2 (6 carbon dioxide molecules), and 6H2O (6 water molecules), produces C6H12O6 (glucose) and 6O2 (6 oxygen molecules). C6H12O6 + 6O2 ? 6CO2 + 6H2O + ATP. On the other hand, cellular respiration, using C6H12O2 and 6O2, produces ATP (adenosine triphosphate), 6CO2, and 6H2O. They are not completely the exact opposite of each other's chemical equation, because of light and ATP, but they both give off energy.

Carbon dioxide needed by photoautotrophs that get converted into glucose along with other components in the Calvin cycle is released by humans and/or animals as a product of cellular respiration. Water broken down to make oxygen during photosynthesis is produced at the electron transport chain (ETC) of cellular respiration by combining oxygen inhaled by animals and/or humans that is produced by plants with hydrogen. We can conclude that one's reactant is another's product. That is another way of them being essential to each other.

Exposure to too much carbon dioxide results in short and long-term term health issues. It may cause short-term suffocation, unconsciousness, headaches, vertigo, tinnitus, and seizures. Breathing in so much carbon dioxide emissions might be life-threatening. It causes changes in our bone calcium and body metabolism in the long run.

Lack of oxygen intake causes poor blood circulation and low oxygen level in our blood results to hypoxemia, and it also results to limited and poor ATP production, which means low energy.

Of course, photosynthesis produces vegetables, sustain the animals, and gives us and them oxygen, which gives me meat and vegetables. The carbon dioxide that we and the animals produce supplies and continues photosynthesis, and vice versa. We can conclude that photosynthesis and cellular respiration can affect me in a positive and negative way.

Oxygen and carbon dioxide has that 'perfect' ratio that comes with balance to produce and intake carbon dioxide and oxygen. The higher the oxygen level, the higher the carbon dioxide concentration gets, as well, but as any other 'perfect' ratio, too much of something will lead to less of the other. Nowadays, air pollution and high carbon dioxide emission are problems that has solution but cannot be applied, because of our growing population with less plants and trees due to deforestation, for example. This will cause the greenhouse effect, and with less photoautotrophs to maintain that balance, photosynthesis gets affected. More carbon dioxide, the faster the rate of photosynthesis gets at a certain limit. Too much carbon dioxide will yield to the inefficiency of the plant, and in the long run will cause the plant to die. If photosynthesis is poor, so will be cellular respiration. Less oxygen intake will result to those mentioned above.

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