

Teen's research towards increasing life expectancy

Have you ever thought about augmenting the natural human lifespan of a human? Lakshya Sharma, a class XII student of **Delhi Public School**, Sector 45, Gurgaon is the youngest researcher to initiate this novel research field in India and has articulated it in his book 'Cellular Senescence & Secretory Phenotypes through the lens of Ageing, In Vivo Reprogramming Technology'.

The young researcher explains, "There are many biological factors affecting the aging of an organism. Cellular Senescence is the single most druggable biological factor that causes aging. What I mean by druggable is that it can be controlled/alterd through the



use of appropriate drugs. When we perturb this biology animals continue to age but they age with a possible longer lifespan and health span.

We know from our younger classes that all

the cells in our body proliferate through the means of division. A single cell divides 50 times at which point an "emergency brake" gets pulled in every cell of our body and cells stop dividing forever. The cells that pull these "emergency brakes" are called senescent cells. This is biologically an important "emergency brake" and should not be messed with pharmaceutically. Since researchers found out that in genetically modified mice (that have similar DNA/Biochemistry as a human) any disturbance to the process of the formation of senescent cells leads to the formation of tumors (Cancer) in mice.

Cells in our body have a natural inhibition process to the formation of tumors (cancer) which functions in two ways - Apoptosis or Cell Death (cell death meaning no tumors can be formed) & Cellular Senescence or the process of halting of cell divisions (since the cell cannot divide further it does not form a tumour). Through the means of these 2 processes our cells are able to inhibit the formation of a tumour leading to cancer."