

Letting the body repair itself through autophagy

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In the past, fasting was attributed to human spiritual belief in worshiping God for meditation reasons. It has been practised for thousands of years in serving various purposes of life. It is still a practice today. Generally, the practitioners are subjected to certain dietary procedure which trains them to be better disciplined to gain better self-control.

Fasting to Muslims is a practice of abstaining from food and drinks, sexual contact, arguments and unkind language or acts from dawn to sunset. It is the fourth pillar of Islam. It is an obligation for every able-bodied Muslim during the month of Ramadan. Fasting is also encouraged to be practised more frequently, especially on certain days and religious events of the Islamic calendar, and also on Mondays and Thursdays as supererogatory fasting.

Fasting dampens the rebellious tendencies of the carnal soul through physical effort and submission, which involves abstention from all forms of lust. The main purpose of fasting is to attain taqwa (piety), as decreed in the Quran: "O you, who have believed, decreed upon you is fasting as it was decreed upon those before you that you may become righteous."

Fasting is also meant to be a protective shield for every Muslim as mentioned by Prophet Muhammad ﷺ: "O youth! Whosoever amongst you can afford to get married, let them get married. And, whoever cannot afford to do so, then they should fast because it will help him control his desires." (narrated by al-Bukhari and Muslim).

Besides, fasting brings spiritual and physical benefits. Recent clinical researches have found that a proper way of fasting could lead to health improvements under certain conditions. Prominent research journals such as Science magazine has reported in many of its volumes that short-term fasting may improve several aspects of health. The possibility of disease infection could be reduced by controlling food intake.

In addition, a calorie restriction that cuts food intake by up to 40 per cent increases longevity in a variety of organisms and forestalls age-related ailments.

It is proven that intermittent fasting is capable of increasing the levels of growth hormone in blood to fivefold, which facilitates muscle gains, and causing a significant drop in the levels of insulin in the blood, which then facilitates fat burning.

In the cellular scale, fasting is observed to drive the changes in several genes and molecules, which lead to cell longevity and protection against disease.

Interestingly, this natural process lets the body cleanse out various debris, including toxins, and recycles damaged cell components. The mechanism is known as

“autophagy”, which means “self-eating”, in which a cell disassembles unnecessary and dysfunctional components through recycling. It should be noted that this process can only be initiated from the “starvation” of the cell itself, and fasting can be one of the major contributing factors.

The cell is said to “repair” itself by reusing dysfunctional components to sustain a new healthy cell. This biological mechanism is considered to be one of the natural detoxification processes and explains how dead cells in the body are disposed of.

The term autophagy was coined by Belgian biochemist Christian de Duve in 1963. He and two other researchers (Albert Claude and George E. Palade) won The Nobel Prize in Medicine in 1974 for their discoveries concerning the structural and functional organisation of the cell. According to Science News Staff, back in the 1960s, autophagy was recognised to be active when the cell was under stress, especially when nutrients were in short supply or when the organism was fighting off an infection. But, how the process worked and even which cells used the method was unclear.

The discoveries of mechanisms for autophagy are credited to a Japanese cell biologist, Yoshinori Ohsumi, who was the Nobel Prize winner in Medicine in October last year. Ohsumi and his research team identified 15 essential genes involved in the process and discovered how the genes work together to keep the cell’s recycling centres running.

According to the Abcam’s overview on autophagy, the process involves the following stages: induction and phagophore (isolation membrane — thin pliable skin of a cell) formation; autophagosome (isolated membrane — elongation and formation; and, fusion, degradation and recycling.

In spite of the fact that fasting has many health benefits for humans, Muslims fast for the sole purpose of complying with an order from Allah as mentioned previously.

And, the intention (niat), even for supererogatory fasting, must be truthful in seeking the blessing of Allah through submission and worship.

A Muslim would obtain benefits in both spiritual and physical health if he practises fasting with the right intention and purpose. Health benefits which follow are a form of reward granted at Allah’s own pleasure.

In this sense, we have to inculcate sincerity and trust (tawakkal) in the worship (ibadah) that we offer to our creator.

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