

# Preservatives and Antioxidants in Food and their Physiological Function in Body

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## DESCRIPTION

Preservatives come in a variety of forms that are appropriate for certain goods and effective against particular chemical changes. Antimicrobials such as sodium and calcium propionate and sorbic acid, prevent the formation of mold in items including fruit juice, cheese, bread, and dried fruit. Antioxidants, such as butylated hydroxytoluene, or BHT, prevent margarine, shortening, and a range of foods from becoming rancid due to oxidation, comprising oils and fats. Tetracycline's, a kind of antibiotic, are used to stop the growth of germs in chicken, fish, and canned foods. Humectants, or things that soak up moisture, aid in keeping items like shredded coconut wet. In order to stop things from decomposing due to microbial growth or unfavorable chemical changes, preservatives are substances or chemicals that are added to products including food, drinks, and pharmaceutical. It also maintains the product's shelf life so that it may be stored for a longer time without being contaminated.

Some preservatives also have an aesthetic purpose, or they enhance the product's look, in addition to delaying deterioration. One such preservative is sodium nitrate, which is contentious due to its link to the production of a suspected carcinogen (or its nitrite version). As well as giving ham, bacon, and luncheon meats their distinctive reddish color, nitrate and nitrite are employed in the curing of meats to stop the growth of germs that may cause botulism. The argument put out by those opposed to these additions is that modern refrigeration and cleanliness render artificial preservatives unnecessary. Industry advocates argue that the natural brownish color of these meats would be disgusting and justify their usage for aesthetic purposes.

## Physiological changes in human

To stop food from mold, Sodium benzoate is used as a preservative. It is utilized in concentrations of less than 0.5% by volume and aids in maintaining the shelf-stability of our products for at least two years from the date of purchase. While ascorbic

acid is coupled with sodium benzoate, researchers have shown that there are unfavorable side effects (vitamin C). According to their investigations, it subsequently transforms into benzene, a recognized carcinogen that may result in cancer. In addition to other products, cheese, wine, and sodium sorbets are utilized.

Although Sulfur dioxide may not seem appetizing, it is a food preservative that is present in a variety of foods, including dried fruits like raisins, dried apricots, and prunes. One kind of sulfite, whose name may be more well-known, is sulfur dioxide. If a person is sensitive to it, even a little amount of sulfite might cause serious health problems. Eating dried fruits might result in major health issues, such as breathing difficulties, life-threatening allergy-like symptoms, or, in rare instances, death, if you have asthma, sulfite sensitivity, or sulfite allergy.

## Heart conditions

The prevalence of cardiovascular illnesses has increased, and one of the key contributing factors to the rise in heart issues is the usage of preservatives in food products. Food preservatives may impair the cardiac tissues, according to research done by InChem.

## Breathing difficulties

According to study, eliminating preservative-containing items from the diet can aid in easing both the symptoms and the severity of asthma and breathing issues. Aspartame, sulfites, and benzoates are a few of the dietary preservatives that exacerbate respiratory issues.

## Cancer

The tendency of preservatives to turn into carcinogens is one of the most detrimental effects they have on food products. Nitrosamines, a preservative comprising nitrites and nitrates that combine with stomach acids to generate cancer-causing chemicals, are present in several food products.

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## CONCLUSION

Because of how preservatives and antioxidants used in food affect a person's regular bodily functions, there is a drop in GnRH levels. This causes the pituitary gland to secrete less LH

(Luteinizing Hormone) and FSH (Follicle Stimulating Hormone), which reduces the concentration of the hormone testosterone. Additionally, it caused oxidative stress to develop, a drop in antioxidant enzyme levels, and a rise in the production of lipid peroxide.