

# The Uninvited Dinner Guest: Botulism

I hope you never sit down to eat with the uninvited dinner guest—*botulism*. If you do, it may be your last meal! The botulinal toxin is the most deadly known to man. Symptoms of this type of food poisoning may occur as soon as a few hours or as late as 8 or more days after eating. However, symptoms generally appear within 12 to 36 hours.

Botulism attacks the nervous system. In most patients, the early symptoms of botulism include drowsiness or fatigue followed by visual disturbances such as double vision, blurred vision, or drooping of eyelids, difficulty in swallowing, aching joints, difficulty in breathing, and muscle weakness or paralysis. Vomiting and diarrhea may be symptoms. There is no fever.

You *can* keep this uninvited guest away from your table. Most deaths from botulism are caused by eating vegetables, fruits, and meats that are incorrectly canned in the home.

Botulism is a disease caused by *Clostridium botulinum*, an organism widely distributed in nature and frequently found both in soil and marine environments. It gets on fresh fruits, vegetables, and meats but does not produce the deadly toxin unless it is in a container with no oxygen.

Therefore, fresh vegetables, meats, and fruits are safe from the poisonous toxin. It can be found, however, in home-canned food that is not processed by current, reliable, research methods. Also, improperly processed and packaged dried food can be contaminated.

The spores of this organism like alkaline foods—meats and vegetables. The spores produce cells that rapidly multiply in an airtight container. These cells produce the poisonous toxin. If alkaline foods are canned at 240 degrees F (10 pounds pressure) for the length of time recommended for the particular food being canned and following current, reliable, research methods, the spores should be destroyed and then no toxin will be produced. You can boil food all day long in a jar or tin can and it will never get above 212 degrees F. The only way for food to get to 240 degrees F is to process it under pressure. ***For that reason, all vegetables and meats (low-acid foods) must be processed under pressure at 240 degrees F (10 pounds pressure).***

It is most important that the pressure gauge in your canner be checked at least once each year to be sure it is accurate. The gauge may register 10 pounds, but it may actually be 9 pounds or less. Food packed too tightly in the jar or tin can will prevent the liquid from transferring the heat to all parts of the container, and food in the center of the container will not reach the recommended temperature.

Always be sure to leave the petcock open to exhaust the canner the required length of time. If you do not do this, you will not have an accurate steam pressure reading.

Time the food while in the canner for the exact number of minutes required. When processing time is up, let the pressure canner *cool normally* and do not open the petcock until the gauge registers zero.

Even though you have carefully followed current, reliable, research methods, there is a possibility of human error. You cannot tell if the toxin is in your food because it is odorless, colorless, tasteless, and cannot be seen. *So to be on the safe side, always vigorously boil home canned vegetables and meats for 10 minutes when preparing them to eat. Boil leafy vegetables and corn 20 minutes.*

Most fruits are acid even though sugar may be added. However, if mold is on the canned fruit, it can change from acid to alkaline, and then the spores can produce the cells that produce the deadly toxin. That is why it is most important that fruits, fruit juices, fruit butters, tomatoes, jams, preserves, pickles, relishes, marmalades, and conserves be processed in a boiling waterbath for the recommended length of time. The time depends on the food being processed. If, by chance, there should be mold growing on the food, *do not eat it.*

One safe way to dispose of spoiled food is to put it in a larger glass container and add generous amounts of chlorine solution. Let it stand for 24 hours out of the reach of children, pets, or anyone who may not understand what it is. Then, discard the food through the sewer system or bury it where no one will plant a garden and where it will not be uncovered by animals. Boil for 20 minutes the empty jar, glass container, and any utensils that have touched the spoiled food. They should be completely immersed in the boiling water.

For current, reliable, research information on canning foods, contact your county Cooperative Extension System office for these publications:

*Food Preservation in Alabama*  
*Wise Methods of Canning Vegetables*  
*Canning Fruits*  
*Pickles and Relishes*

## References

*Textbook of Medicine*, Beeson, McDermott, Vol. I, 1975, W.B. Sanders Co., Philadelphia-London-Toronto.

*Botulism*, Institute of Food Technologists, October, 1972.

*Home Canning of Foods? An Emphasis on Safety*, Walter A. Mercer, University of California Laboratory for Research in the Canning Industries, 1950 Sixth Street, Berkeley, California 94710.



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**For more information**, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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