Mistletoe Extracts (PDQ)

url: https://www.cancer.gov/about-cancer/treatment/cam/patient/mistletoe-pdq  
  
  
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Overview  
Mistletoe is a semiparasitic plant that grows on many types of trees, including apple, oak, pine, and elm (see Question 1).  
Mistletoe extracts are one of the most widely studied complementary and alternative medicine therapies in people with cancer. In Europe, mistletoe extracts are among the most prescribed drugs for patients with cancer (see Question 1).  
Mistletoe extracts are usually given by injection under the skin or, less often, into a vein, into the pleural cavity, or into a tumor (see Question 2).  
Few side effects have been reported from the use of mistletoe extracts (see Question 5).  
The U.S. Food and Drug Administration (FDA) has not approved mistletoe extracts as a treatment for cancer or any other medical condition (see Question 6).  
Questions and Answers About Mistletoe  
What is mistletoe?  
Mistletoe is a semiparasitic plant that grows on many types of trees, including apple, oak, maple, elm, pine, and poplar. It has been used for hundreds of years to treat medical conditions such as epilepsy, asthma, hypertension, headaches, menopausal symptoms, infertility, dermatitis, arthritis, and rheumatism.  
  
Mistletoe extracts are one of the most widely studied complementary and alternative medicine therapies for cancer. In Europe, mistletoe extracts are among the most prescribed therapies for cancer patients.  
  
Mistletoe products vary, based on the following factors:  
  
The species of mistletoe.  
The type of host tree on which the mistletoe grows.  
The time of year the plant is picked.  
The type of extract used and if it is made with homeopathic methods.  
The company that makes the product.  
Mistletoe extracts are made in water-based solutions or solutions of water and alcohol. Mistletoe products may be named by the type of tree on which the plant grows. For example, IscadorM is from apple trees, IscadorP comes from pine trees, IscadorQu is from oak trees, and IscadorU comes from elm trees.  
  
How are mistletoe extracts given?  
Mistletoe extracts are usually given by an injection under the skin. Less common ways to give mistletoe extracts include by mouth, into a vein, into the pleural cavity, or into a tumor.  
  
What laboratory or animal studies have been done using mistletoe extracts?  
In laboratory studies, a substance is tested in tumor cells to find out if it has any anticancer effects. In animal studies, a drug, procedure, or treatment is tested in mice or other animals to see if it is safe and effective. Laboratory and animal studies are done before a substance is tested in people.  
  
Laboratory and animal studies have tested the effects of mistletoe extracts. For information on laboratory and animal studies using mistletoe extracts, see the Laboratory/Animal/Preclinical Studies in the health professional version of this summary.  
  
Have any studies of mistletoe extracts been done in people with cancer?  
Most clinical trials using mistletoe extracts to treat cancer have been done in Europe. Many studies use mistletoe products as adjuvant therapy in patients with cancer. Although some studies have shown that mistletoe extracts can work against cancer, these findings should be read with caution because some of the studies:  
  
Have small numbers of participants.  
Lack detailed information about participants.  
Lack detailed information about doses.  
Are poorly designed.  
Studies with large numbers of participants reported the following:  
  
Breast cancer  
  
A study in postoperative early-stage breast cancer patients compared standard treatment and mistletoe extract to standard treatment alone. Less adverse drug reactions were reported in the group given mistletoe extract.  
Another study in breast cancer patients compared survival between those who had standard therapy and mistletoe extract and those who had standard therapy alone. Improved survival was reported in the group given mistletoe extract.  
Colorectal cancer  
  
A retrospective cohort study done between 1993 and 2000 looked at the use of mistletoe extract as long-term adjuvant therapy in patients treated with chemotherapy and/or radiation therapy for colorectal cancer that had not spread. The study found that patients treated with mistletoe extract had longer disease-free survival, fewer adverse events, and better symptom relief than patients who did not receive mistletoe extract as adjuvant therapy.  
Pancreatic cancer  
  
A study published in 2013 looked at the use of mistletoe extract in advanced or metastatic pancreatic cancer. Patients received best supportive care and were randomly assigned to receive either mistletoe extract or no anticancer therapy. Results from the study showed that patients treated with mistletoe extract had improved survival compared with those who did not receive mistletoe extract.  
Non-small cell lung cancer  
  
Two randomized clinical trials that compared chemotherapy to mistletoe extract in patients with non-small cell lung cancer reported no differences in quality of life between the two groups.  
A study done between 1978 and 1987 looked at the use of mistletoe extract in non-small cell lung cancer that could not be treated with surgery. Patients were randomly assigned to receive one of 3 treatments: (1) a mistletoe extract injection; (2) an injection made from a sheep spleen said to stimulate the immune system and have antitumor effects; (3) a placebo injection of vitamin B. Results among the 3 groups were no different in survival or tumor response. It was noted that more patients in the mistletoe extract group than in the other groups reported an improved sense of well-being.  
Melanoma  
  
A randomized clinical trial in melanoma patients treated with mistletoe extract for 1 year found that there was no increase in survival time.  
Reviews of combined clinical trials  
  
Reviews have looked at the effects of mistletoe extract on quality of life, survival, and symptom relief in different types of cancer. Some of the studies were well designed and reported benefits for patients, while others were not. A few studies reported a difference in survival or quality of life in patients who received mistletoe extract compared with those who did not.  
  
For more information on mistletoe extract studies, see the health professional version of Mistletoe Extracts.  
  
Have any side effects or risks been reported from mistletoe extracts?  
Side effects from the use of mistletoe extracts include soreness and inflammation at injection sites, headache, fever, chills, nausea, and feeling very tired. A few cases of severe allergic reactions, including anaphylactic shock, have been reported.  
  
One review reported that treatment with mistletoe extract did not reduce immune system response. High doses of mistletoe extract damaged the liver in some cases, but the damage was repaired. Another review reported adverse effects that included circulatory problems, thrombophlebitis, swelling of lymph nodes, and allergic reactions.  
  
In an observational cohort study, three types of mistletoe extract (Iscador, Helixor, and abnobaVISCUM) were found to be safe in a small group of cancer patients with autoimmune diseases.  
  
Is mistletoe extract approved by the U. S. Food and Drug Administration (FDA) for use as a cancer treatment in the United States?  
The FDA has not approved the use of mistletoe extract as a treatment for cancer or any other medical condition.  
  
Current Clinical Trials  
Use our clinical trial search to find NCI-supported cancer clinical trials that are accepting patients. You can search for trials based on the type of cancer, the age of the patient, and where the trials are being done. General information about clinical trials is also available.  
  
Changes To This Summary (06/21/2023)  
The PDQ cancer information summaries are reviewed regularly and updated as new information becomes available. This section describes the latest changes made to this summary as of the date above.  
  
Changes were made to this summary to match those made to the health professional version.  
  
About This PDQ Summary  
About PDQ  
Physician Data Query (PDQ) is the National Cancer Institute's (NCI's) comprehensive cancer information database. The PDQ database contains summaries of the latest published information on cancer prevention, detection, genetics, treatment, supportive care, and complementary and alternative medicine. Most summaries come in two versions. The health professional versions have detailed information written in technical language. The patient versions are written in easy-to-understand, nontechnical language. Both versions have cancer information that is accurate and up to date and most versions are also available in Spanish.  
  
PDQ is a service of the NCI. The NCI is part of the National Institutes of Health (NIH). NIH is the federal government s center of biomedical research. The PDQ summaries are based on an independent review of the medical literature. They are not policy statements of the NCI or the NIH.  
  
Purpose of This Summary  
This PDQ cancer information summary has current information about the use of mistletoe extracts in the treatment of people with cancer. It is meant to inform and help patients, families, and caregivers. It does not give formal guidelines or recommendations for making decisions about health care.  
  
Reviewers and Updates  
Editorial Boards write the PDQ cancer information summaries and keep them up to date. These Boards are made up of experts in cancer treatment and other specialties related to cancer. The summaries are reviewed regularly and changes are made when there is new information. The date on each summary ("Updated") is the date of the most recent change.  
  
The information in this patient summary was taken from the health professional version, which is reviewed regularly and updated as needed, by the PDQ Integrative, Alternative, and Complementary Therapies Editorial Board.  
  
Clinical Trial Information  
A clinical trial is a study to answer a scientific question, such as whether one treatment is better than another. Trials are based on past studies and what has been learned in the laboratory. Each trial answers certain scientific questions in order to find new and better ways to help cancer patients. During treatment clinical trials, information is collected about the effects of a new treatment and how well it works. If a clinical trial shows that a new treatment is better than one currently being used, the new treatment may become "standard." Patients may want to think about taking part in a clinical trial. Some clinical trials are open only to patients who have not started treatment.  
  
Clinical trials can be found online at NCI's website. For more information, call the Cancer Information Service (CIS), NCI's contact center, at 1-800-4-CANCER (1-800-422-6237).  
  
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The best way to cite this PDQ summary is:  
  
PDQ Integrative, Alternative, and Complementary Therapies Editorial Board. PDQ Mistletoe Extracts. Bethesda, MD: National Cancer Institute. Updated <MM/DD/YYYY>. Available at: https://www.cancer.gov/about-cancer/treatment/cam/patient/mistletoe-pdq. Accessed <MM/DD/YYYY>. [PMID: 26389415]  
  
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The information in these summaries should not be used to make decisions about insurance reimbursement. More information on insurance coverage is available on Cancer.gov on the Managing Cancer Care page.  
  
Contact Us  
More information about contacting us or receiving help with the Cancer.gov website can be found on our Contact Us for Help page. Questions can also be submitted to Cancer.gov through the website s E-mail Us.  
  
General CAM Information  
Complementary and alternative medicine (CAM) also called integrative medicine includes a broad range of healing philosophies, approaches, and therapies. A therapy is generally called complementary when it is used in addition to conventional treatments; it is often called alternative when it is used instead of conventional treatment. (Conventional treatments are those that are widely accepted and practiced by the mainstream medical community.) Depending on how they are used, some therapies can be considered either complementary or alternative. Complementary and alternative therapies are used in an effort to prevent illness, reduce stress, prevent or reduce side effects and symptoms, or control or cure disease.  
  
Unlike conventional treatments for cancer, complementary and alternative therapies are often not covered by insurance companies. Patients should check with their insurance provider to find out about coverage for complementary and alternative therapies.  
  
Cancer patients considering complementary and alternative therapies should discuss this decision with their doctor, nurse, or pharmacist as they would any type of treatment. Some complementary and alternative therapies may affect their standard treatment or may be harmful when used with conventional treatment.  
  
Evaluation of CAM Therapies  
It is important that the same scientific methods used to test conventional therapies are used to test CAM therapies. The National Cancer Institute and the National Center for Complementary and Integrative Health (NCCIH) are sponsoring a number of clinical trials (research studies) at medical centers to test CAM therapies for use in cancer.  
  
Conventional approaches to cancer treatment have generally been studied for safety and effectiveness through a scientific process that includes clinical trials with large numbers of patients. Less is known about the safety and effectiveness of complementary and alternative methods. Few CAM therapies have been tested using demanding scientific methods. A small number of CAM therapies that were thought to be purely alternative approaches are now being used in cancer treatment not as cures, but as complementary therapies that may help patients feel better and recover faster. One example is acupuncture. According to a panel of experts at a National Institutes of Health (NIH) meeting in November 1997, acupuncture has been found to help control nausea and vomiting caused by chemotherapy and pain related to surgery. However, some approaches, such as the use of laetrile, have been studied and found not to work and to possibly cause harm.  
  
The NCI Best Case Series Program which was started in 1991, is one way CAM approaches that are being used in practice are being studied. The program is overseen by the NCI s Office of Cancer Complementary and Alternative Medicine (OCCAM). Health care professionals who offer alternative cancer therapies submit their patients medical records and related materials to OCCAM. OCCAM carefully reviews these materials to see if any seem worth further research.  
  
Questions to Ask Your Health Care Provider About CAM  
When considering complementary and alternative therapies, patients should ask their health care provider the following questions:  
  
What side effects can be expected?  
What are the risks related to this therapy?  
What benefits can be expected from this therapy?  
Do the known benefits outweigh the risks?  
Will the therapy affect conventional treatment?  
Is this therapy part of a clinical trial?  
If so, who is the sponsor of the trial?  
Will the therapy be covered by health insurance?  
To Learn More About CAM  
National Center for Complementary and Integrative Health (NCCIH)  
  
The National Center for Complementary and Integrative Health (NCCIH) at the National Institutes of Health (NIH) facilitates research and evaluation of complementary and alternative practices, and provides information about a variety of approaches to health professionals and the public.  
  
NCCIH Clearinghouse  
Post Office Box 7923 Gaithersburg, MD 20898 7923  
Telephone: 1-888-644-6226 (toll free)  
TTY (for deaf and hard of hearing callers): 1-866-464-3615  
E-mail: info@nccih.nih.gov  
Website: https://nccih.nih.gov  
CAM on PubMed  
  
NCCIH and the NIH National Library of Medicine (NLM) jointly developed CAM on PubMed, a free and easy-to-use search tool for finding CAM-related journal citations. As a subset of the NLM's PubMed bibliographic database, CAM on PubMed features more than 230,000 references and abstracts for CAM-related articles from scientific journals. This database also provides links to the websites of over 1,800 journals, allowing users to view full-text articles. (A subscription or other fee may be required to access full-text articles.)  
  
Office of Cancer Complementary and Alternative Medicine  
  
The NCI Office of Cancer Complementary and Alternative Medicine (OCCAM) coordinates the activities of the NCI in the area of complementary and alternative medicine (CAM). OCCAM supports CAM cancer research and provides information about cancer-related CAM to health providers and the general public via the NCI website.  
  
National Cancer Institute (NCI) Cancer Information Service  
  
U.S. residents may call the Cancer Information Service (CIS), NCI's contact center, toll free at 1-800-4-CANCER (1-800-422-6237) Monday through Friday from 9:00 am to 9:00 pm. A trained Cancer Information Specialist is available to answer your questions.  
  
Food and Drug Administration  
  
The Food and Drug Administration (FDA) regulates drugs and medical devices to ensure that they are safe and effective.  
  
Food and Drug Administration  
10903 New Hampshire Avenue  
Silver Spring, MD 20993  
Telephone: 1-888-463-6332 (toll free)  
Website: http://www.fda.gov  
Federal Trade Commission  
  
The Federal Trade Commission (FTC) enforces consumer protection laws. Publications available from the FTC include:  
  
Who Cares: Sources of Information About Health Care Products and Services  
Fraudulent Health Claims: Don t Be Fooled  
Consumer Response Center  
Federal Trade Commission  
600 Pennsylvania Avenue, NW  
Washington, DC 20580  
Telephone: 1-877-FTC-HELP (1-877-382-4357) (toll free)  
TTY (for deaf and hard of hearing callers): 202-326-2502  
Website: http://www.ftc.gov