

## Chemotherapy 101 – understanding this often misunderstood cancer treatment.

Chemotherapy—the use of strong drugs to treat cancer—was developed as a cancer treatment in the 1950s. In the 60 plus years since its development, chemotherapy (also called chemo) has been studied, tested, and improved many, many times, leading to the large arsenal of effective, life-saving chemotherapies we have at our disposal today.

### THE CHEMOTHERAPY TOOL

Chemo kills cancer cells. These drugs can affect normal cells, too, but most normal cells can repair themselves.

There are more than 100 chemo drugs used today. Oncologists choose certain drugs based on the kind of cancer and its stage.

#### Chemo may be used to:

- Keep the cancer from spreading
- Slow the cancer's growth
- Kill cancer cells that may have spread to other parts of the body
- Relieve symptoms such as pain or blockages caused by cancer
- Cure cancer

Treatment often uses multiple chemo drugs that work together to kill more cancer cells. This is called combination chemotherapy. Sometimes chemo is the only cancer treatment needed. More often, it's part of a

treatment plan that can include surgery and radiation therapy.

Most chemo drugs are administered intravenously in a hospital or clinic. Chemotherapy can also be given as a pill or liquid, a shot, or topically.

### CHEMO SIDE EFFECTS

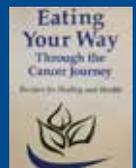
Can chemotherapy have unpleasant side effects? Yes. But it is still the most important and successful cancer-fighting tool we have. Because chemo drugs are designed to kill any fast-growing cells, some normal, healthy cells can be damaged leading to side effects. When side effects are particularly bad, the chemo dosage may be reduced or the time between treatments increased. For most people, side effects go away after their treatment ends, but response varies for each person.

- Nausea and vomiting
- Hair loss
- Bone marrow changes
- Mouth and skin changes
- Fertility problems
- Memory changes
- Emotional changes
- Some may have an allergic reaction to chemotherapy with more serious effects

### Strategies for managing side effects

- Get rest
- Eat healthy foods with adequate protein and calories to rebuild cells
- Get exercise and fresh air with doctor's consent
- Check with doctor before taking vitamins or supplements

**Sierra Nevada Cancer Center has developed a cookbook promoting healthy eating with proceeds benefiting local cancer patients. *Eating Your Way Through the Cancer Journey - Recipes for Healing and Health* is available at [sierracancer.com](http://sierracancer.com)**





## WHAT'S NEW IN CHEMOTHERAPY

Several exciting new uses of chemotherapy and other agents hold even more promise. New drugs, new combinations of drugs, and new delivery techniques are helping doctors cure or control cancer and improve the quality of life for people with cancer. There are many expected advances in coming years; here are just a few:

- New classes of chemotherapy medicines and combinations of medicines are being developed.
- New ways to give the drugs are being studied, such as using smaller amounts over longer periods of time or giving them continuously with special pumps.
- Some newer medicines, called targeted therapies, are designed to attack a particular target on cancer cells. These drugs may have fewer side effects than standard chemotherapy drugs and may be used along with them. Several are now being studied, and many are already being used.
- Other approaches to targeting drugs more specifically at the cancer cells – such as attaching drugs to monoclonal antibodies – may make them work better and cause fewer side effects. Monoclonal antibodies, which are special types of proteins made in the lab, can be designed to guide chemotherapy drugs directly to the cancer cells. A number of these are being studied and some are available through clinical trials. A couple of monoclonal antibodies that deliver radiation to the cancer cells have already been approved.
- Monoclonal antibodies (without attached chemotherapy) can also be used as immunotherapy drugs, to strengthen the body's immune response against cancer cells. A number of these types of drugs have been approved, and more are being studied.
- Liposomal therapy uses chemotherapy drugs that have been packaged inside liposomes (synthetic fat globules). The liposome helps the drug penetrate the cancer cells more selectively and decreases possible side effects (such as hair loss and nausea and vomiting). Examples of liposomal medicines already being used are Doxil® (the encapsulated form of doxorubicin) and DaunoXome® (the encapsulated form of daunorubicin).
- Chemoprotective agents are being developed to protect against specific side effects of certain chemotherapy drugs. For example, dexrazoxane (Zinecard®) helps prevent heart damage, amifostine (Ethyol®) helps protect the kidneys, and mesna protects the bladder.
- Some new agents may be given along with chemotherapy to help overcome drug resistance. Cancer cells often become resistant to chemotherapy by developing the ability to pump the drugs out of the cells. These new agents inactivate the pumps, which allows the chemotherapy to remain in the cancer cells longer, which might make it more effective.

Source • Cancer.org



## Sierra Nevada Cancer Center Locations

**Carson City**  
1460 S Curry Street, Suite 100  
Carson City, Nevada 89703

**Fallon**  
1020 New River Parkway  
Fallon, Nevada 89406

**Gardnerville**  
1107 Hwy 395  
Gardnerville, Nevada 89410

**Sparks**  
2345 E. Prater Way, Suite 102  
Sparks, Nevada 89434

Now seeing  
patients.

**South Lake Tahoe**  
1154 Emerald Bay Road  
South Lake Tahoe, CA 96150

Would you like to receive this newsletter electronically? Sign up at [sierracancer.com](http://sierracancer.com)