LATE SIDE EFFECT	DESCRIPTION	WAYS TO MANAGE
Bone Loss	 Chemotherapy, steroid medicines, hormonal therapy, or radiation therapy may cause thinning of the bones. With radiation therapy, bone loss will occur only in the part of the body that was treated. 	 After cancer treatment, you should have regular check-ups. During these visits, your doctor or nurse will do a physical exam and may order tests to check for bone loss. You can help lower your risk of bone loss by: Not smoking or using other tobacco products Eating foods that are rich in calcium and vitamin D Walking, jogging, or doing other weightbearing exercise Limiting how much alcohol you drink If you had radiation to the head and neck, also see Mouth Changes for tips on managing bone loss in your jaw.
Brain Changes	Some chemotherapy drugs and radiation therapy to the brain can cause problems months or years after treatment ends. Late effects may include: • Memory loss • Problems doing math • Problems concentrating • Slow processing of information • Personality changes • Movement problems Radiation to the brain can cause radiation necrosis. This problem may happen when an area of dead tissue forms at the site of the brain tumor. Radiation necrosis can cause movement problems, problems concentrating, slow processing of information, and headaches.	 After cancer treatment, you should have regular check-ups. If you have symptoms of brain changes, you will have tests to see whether they are due to the cancer or are late side effects of your treatment. If you have late side effects, your doctor or nurse: Will talk with you about ways to manage late side effects May refer you to a physical, occupational, or speech therapist who can help with problems caused by late side effects May prescribe medicine or suggest surgery to help with the symptoms

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LATE SIDE EFFECT	DESCRIPTION	WAYS TO MANAGE
Eye Problems	 Chemotherapy, hormone therapy, immunotherapy, and steroid medicines may increase the risk of cataracts. Cataracts are a problem in which the lens of your eye becomes cloudy. Cataracts can cause: Blurred, cloudy, or double vision Sensitivity to light Trouble seeing at night Some chemotherapy drugs can cause dry eye syndrome. This is a problem in which your eyes do not produce enough tears. Symptoms include feeling as if your eyes are dry or have something in them. 	 If you are at risk for cataracts, you should have regular visits with an ophthalmologist (a medical doctor who treats eye problems). If cataracts become serious, they can be treated with surgery. In this type of surgery, an eye surgeon will remove the clouded lens and replace it with a plastic lens. You will usually have local anesthesia and be able to go home the same day. If you develop dry eye syndrome, your doctor may prescribe regular treatment with eye drops or ointments.
Hearing Loss	 Watch for signs of hearing loss. Let your doctor know right away if you notice changes in your hearing. Treatment with certain chemotherapy drugs (in particular, cisplatin and high doses of carboplatin) and high doses of radiation to the brain can cause hearing loss. 	 See an audiologist. An audiologist is a professional trained in hearing disorders. If you had a cancer treatment that can cause hearing loss, you should have at least one visit with an audiologist after you have finished treatment. Depending on the type and dose of cancer treatment that you received, you may need to see an audiologist more often.

LATE SIDE EFFECT	DESCRIPTION WAY	YS TO MANAGE
Heart Problems	 nd radiation therapy to the chest may ause heart problems. xamples of drugs that tend to cause leart problems include: Trastuzumab Doxorubicin Daunorubicin (Cerubidine) Epirubicin (Ellence) Cyclophosphamide (Neosar) Heart problems caused by cancer reatment may include: A weakening of the heart muscle, which is known as congestive heart failure. It can cause shortness of breath, dizziness, and swollen hands or feet. Coronary artery disease, which occurs when the small blood vessels that supply blood and oxygen to the heart become narrow. It can cause chest pain or shortness of breath. This problem is more common in those who had high doses of radiation therapy to the chest. Exercise: The right ty help keep you and you doctor about which ad Exercise can help you active as possible. Quit smoking and avor your doctor about prohelp you quit smoking smoke. Smoking and ow orse and harm your Get enough rest: See SIDE EFFECT AND POS Take medicines presc doctor may prescribe	iet: A heart-healthy diet include etables, and whole grains. It also coultry, fish, beans, and fat-free c products. Your doctor will that you follow a diet low in cause extra fluid to build up in art problems worse. <i>The</i> <i>ciation</i> has many tips for heart- rinking too much fluid can ns, so it's important for people e to drink the correct amounts k with your doctor about what fluid you should have each day right away if you have sudden d mean extra fluid is building up t failure, you shouldn't drink overweight or obese: Carrying added strain on your heart. h care team to lose weight pe and amount of exercise can ur heart healthy. Talk with your ctivities you can safely do. become more fit and stay as oid using illegal drugs: Talk with ograms and products that can g. Also, try to avoid secondhand drugs can make heart failure health. <i>Sleep Problems above under</i> <i>SIBLE CAUSE</i> .

LATE SIDE EFFECT	DESCRIPTION	NON-DRUG TREATMENT FOR HOT FLASHES AND NIGHT SWEATS IN PATIENTS WITH CANCER	DRUG TREATMENT FOR HOT FLASHES AND NIGHT SWEATS IN PATIENTS WITH CANCER
Hot Flashes and Night Sweats	In patients with cancer, hot flashes and night sweats may be caused by the tumor, its treatment, or other conditions. Sweating happens with disease conditions such as fever and may occur without disease in warm climates, during exercise, and during hot flashes in menopause. Sweating helps balance body temperature by allowing heat to evaporate through the skin.	Treatments that help patients cope with stress and anxiety may help manage hot flashes. Treatments that change how patients deal with stress, anxiety, and negative emotions may help manage hot flashes. These are called psychological interventions. Psychological interventions help patients gain a sense of control and develop coping skills to manage symptoms. Staying calm and managing stress may lower levels of a hormone called serotonin that can trigger hot flashes. Psychological interventions may help hot flashes and related problems when used together with drug treatment.	Hot flashes may be controlled with estrogen replacement therapy. Hot flashes during natural or treatment-related menopause can be controlled with estrogen replacement therapy. However, many women are not able to take estrogen replacement (for example, women who have or had breast cancer). Hormone replacement therapy that combines estrogen with progestin may increase the risk of breast cancer or breast cancer recurrence. Other drugs may be useful in some patients. Studies of non-estrogen drugs
	 Hot flashes and night sweats are common in patients with cancer and in cancer survivors. They are more common in women but can also occur in men. Many patients treated for breast cancer and prostate cancer have hot flashes. Menopause in women can have natural, surgical, or chemical causes. Chemical menopause in women with cancer is caused by certain types of chemotherapy, radiation, or hormone therapy with androgen (a male hormone). 	 Hypnosis may help relieve hot flashes. Hypnosis is a trance-like state that allows a person to be more aware, focused, and open to suggestion. Under hypnosis, the person can concentrate more clearly on a specific thought, feeling, or sensation without becoming distracted. In hypnosis, a therapist helps the patient to deeply relax and focus on cooling thoughts. This may lower stress levels, balance body temperature, and calm the heart rate and breathing rate. Comfort measures may help relieve night sweats related to cancer. Comfort measures may be used to treat night sweats related to cancer. Since body temperature goes up before a hot flash, doing 	studies of non-estrogen drugs to treat hot flashes in women with a history of breast cancer have reported that many of them do not work as well as estrogen replacement or have side effects. Megestrol (a drug like progesterone), certain antidepressants, anticonvulsants, and clonidine (a drug used to treat high blood pressure) are non-estrogen drugs used to control hot flashes. Some antidepressants may change how other drugs, work in the body.

	Treature of the horizont		
	Treatment for breast	temperature and help control	Side effects of drug therapy
	cancer and prostate	symptoms:	may include the following:
	cancer can cause	Wear loose-fitting clothes	Antidepressants used
Hot Flashes	menopause or	made of cotton.	to treat hot flashes
and Night	menopause-like effects,	Use fans and open	over a short period of
Sweats	including severe hot	windows to keep air	time may cause
Continued	flashes.	moving.	nausea, drowsiness,
	Contain turned of during	Practice relaxation training	dry mouth, and
	Certain types of drugs	and slow, deep breathing.	changes in appetite.
	can cause night sweats.		Anticonvulsants used
	Drugs that may cause	Herbs and dietary supplements	to treat hot flashes
	night sweats include the following:	should be used with caution.	may cause drowsiness,
	 Tamoxifen. 	Most studies of soy and black	dizziness, and trouble
		cohosh show they are no better	concentrating.
	 Aromatase inhibitors. 	than a placebo in reducing hot	Clonidine may cause
		flashes. Soy contains estrogen -like	dry mouth, drowsiness,
	Opioids. Trievelie	substances; the effect of soy on the	constipation, and
	 Tricyclic antidepressants 	risk of breast cancer growth or recurrence is not clear. Studies of	insomnia.
		ground flaxseed to treat hot	Patients may respond in
	• Steroids.	flashes have shown mixed results.	different ways to drug therapy.
		Claims are made about several	It is important that the
		other plant-based and natural	patient's health care providers
		products as remedies for hot	know about all medicines,
		flashes. These include dong quai,	dietary supplements, and herbs
		milk thistle, red clover, licorice	the patient is taking.
		root extract, and chaste tree berry.	
		Since little is known about how	If one medicine does not
		these products work or whether	improve symptoms, switching
		they affect the risk of breast	to another medicine may help.
		cancer, women should be cautious	, ,
		about using them.	
		Acupuncture has been studied in	
		the treatment of hot flashes.	
		Pilot studies of acupuncture and	
		randomized clinical trials that	
		compare true acupuncture and	
		sham (inactive) treatment have	
		been done in patients with hot	
		flashes and results are mixed. A	
		review of many studies combined	
		showed that acupuncture had	
		slight or no effects in breast cancer	
		patients with hot flashes. (See the	
		Vasomotor symptoms section in	
		the PDQ health professional	
		summary on Acupuncture for	
		more information.)	
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LATE SIDE EFFECT	DESCRIPTION	WAYS TO MANAGE
Joint Changes	 Radiation therapy, some chemotherapy drugs, and steroids can cause scar tissue, weakness, and bone loss. These problems can lead to loss of motion in joints, such as your jaw, shoulders, hips, or knees. If you receive radiation therapy, these problems will occur only in the part of the body that was treated. 	 It is important to be aware of early signs of joint problems so these can be addressed before they worsen. These signs include: Trouble opening your mouth wide Pain when you make certain movements, such as reaching over your head or putting your hand in a back pocket Talk with your doctor or nurse. He or she may refer you to a physical therapist, which will assess your joint problems and give you exercises to do. Physical therapy exercises can decrease pain, increase strength, and improve movement.
Lung Problems	 Chemotherapy and radiation therapy to the chest may damage the lungs. Cancer survivors who received both chemotherapy and radiation therapy to the chest may have a higher risk of lung damage. Lung damage can cause shortness of breath, wheezing, fever, dry cough, congestion, and feeling tired. Tell your doctor if you have any of these symptoms. 	 Oxygen therapy: If you have serious trouble breathing, your doctor may prescribe oxygen therapy. Oxygen is most often given through nasal prongs or a mask that fits over your mouth and nose. In some cases, you might receive oxygen through a ventilator. Lose weight if you're overweight or obese: Excess weight can make it hard to breathe. Work with your doctor and health care team to lose weight safely. Exercise: Talk with your doctor about which activities you can safely do. Exercise can help you become more fit and stay as active as possible. Quit smoking and avoid using illegal drugs: Talk with your doctor about programs and products that can help you quit smoking. Also, try to avoid secondhand smoke. Smoking and drugs can worsen lung problems and harm your health. For help to quit smoking, visit <i>Smokefree.gov</i> or call toll-free, 1-800-QUIT-NOW (1-800-784-8669). Take medicines prescribed by your doctor: Your doctor can prescribe medicines to help you relax when it is hard to breathe, relieve discomfort, and treat pain. Some people with lung problems take steroid pills. Steroids can interfere with the way the body uses specific nutrients, including calcium, potassium, sodium, protein, and vitamins C and D. If you take steroid pills for lung problems, it is very important to eat a balanced diet. A healthy diet that includes foods from each food group can make up for

LATE SIDE EFFECT	DESCRIPTION	WAYS TO MANAGE
Mouth Changes	 Radiation therapy to your head or neck and some chemotherapy drugs can cause late side effects in your mouth. Problems may include dry mouth, cavities, or bone loss in the jaw. 	 Visit your dentist You may be asked to have your teeth checked every 1 to 2 months for at least 6 months after radiation treatment ends. During this time, your dentist will look for changes in your mouth, teeth, and jaw. Exercise your jaw Your doctor or nurse may suggest that you open and close your mouth 20 times as far as you can without causing pain, three times a day, even if your jaw isn't stiff. Stimulate saliva Your doctor or nurse may suggest that you drink 8 to 10 cups of liquid per day. Keep a water bottle handy so you can sip throughout the day. You may also find sucking on sugarless candy or chewing gum helpful. Take good care of your teeth and gums Floss and use a mouthwash with fluoride every day. Brush your teeth after meals and before you go to bed. Also, avoid mouthwashes that contain alcohol. Explore your treatment options Ask your dentist to contact your radiation oncologist before you have dental or gum surgery. There may be other treatment options besides surgery. Also, do not have teeth pulled from the part of your mouth that received radiation.
Second Primary Cancer	 Cancer treatment can sometimes cause a new cancer many years after you have finished treatment. When a new primary cancer occurs in a person with a history of cancer, it is known as a second primary cancer. Second primary cancers do not occur very often, but they can happen. 	 Talk with your doctor about the types of second cancers you may be at risk for. Have regular check-ups for the rest of your life to check for cancer—the one you were treated for and any new cancer that may occur. Your doctor can suggest tests you may need to look for a new cancer and how often you should have them. Tell your doctor if you have any new symptoms or problems.