

CT scans in the emergency department

They may not be needed as often as you think

If you or someone you care for is in the emergency department, you want the medical staff to do everything they can to find out what's wrong and provide the right treatment. The doctors in the emergency room (ER) want the same thing.

There are times when a CT scan (Computerized Tomography Scan, sometimes called a CAT scan) might be needed to help with the diagnosis. A CT scan uses X-rays to take pictures of your insides.

If your doctor orders a CT scan, ask why you need it. And ask if your health problem could be managed without it. These facts about CT scans can help you talk with your doctor about them.



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CT scans for head injuries

Head injuries are a common reason for going to the ER. Most head injuries don't involve something that needs to be found with a CT scan, such as skull fractures or bleeding in the brain.

Each patient is different. So be sure to give your health history and get an exam. The history and exam can help your doctor decide how bad your injury is. If your head injury is not serious, a CT scan will not give your doctor useful information. So there is no reason to do the test.

Even if you briefly pass out, you probably don't need a CT scan **unless** you have a major head injury. In that case, you will have certain symptoms. For instance, you may keep throwing up or have an altered mental state.

Sometimes people think they need a CT scan if they pass out, even if they did not hit their heads. People sometimes think that passing out is a sign of a stroke or bleeding in the brain, but it almost never is. If you don't have any other symptoms and your exam is normal, a CT scan is not likely to give your doctor any helpful information.

You may need a CT scan of your head if you have dangerous symptoms, such as:



Changes in mental state or alertness



Throwing up again and again



Injury that your doctor can see or feel



Very bad headache that starts suddenly



Signs of a stroke (You may suddenly feel dizzy. Your face, arm, or leg may be weak or numb, especially on one side of your body. Or you may have trouble seeing.)

CT scans may also be advised for patients with minor head injuries who take blood thinners. These include warfarin (Coumadin), rivaroxaban (Xarelto), and clopidogrel (Plavix), or one of the generic versions of those drugs. That's because these patients are more likely to bleed from minor injuries. Bleeding in the brain is serious.

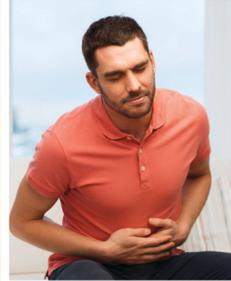
CT scans for kidney stones

A kidney stone is a solid piece of material that forms in your kidney. It may stay in your kidney or travel down your urinary tract.

Signs of kidney stones

If you have kidney stones, you may:

- Feel sick to your stomach
- Have very bad, sudden pain in your back or upper belly
- Throw up



Tests you may need

Here are some tests you may need if you have signs of kidney stones:

- **Blood test.** This test checks how well your kidneys are working.
- **Urine test.** This test checks for signs of kidney stones and infection.
- **CT scan of your belly and pelvis.** This test checks for other health problems, such as gall bladder disease. This test is only done if you have never had kidney stones before. If you have had kidney stones before, you do not need this test.



If you have kidney stones

If you have kidney stones, they will likely pass on their own within two weeks. If they don't, a doctor must remove the stones. The doctor might need to do an ultrasound first to check their size and where they are. This test is safe. It uses sound waves instead of X-rays to take pictures of your insides. You will not need a CT scan to check the size and location of the kidney stones.

The next time you have signs of kidney stones, you likely won't need another CT scan. Your health history, urine tests, and blood tests should tell your doctor if you have kidney stones again. You'll need a CT scan **only** if:

- You are age 50 or older, or
- Your signs are not clearly caused by kidney stones

CT scans for blood clots in the lungs

A blood clot in the lungs is a very bad health problem. It's also called a pulmonary embolism, or PE.

Signs of blood clots

If you have a blood clot in your lungs, you may have:

- Chest pain that gets worse when you take deep breaths
- Coughing up blood
- Fast heartbeat
- Heart strain (Your doctor can look for this with a simple, painless test called an EKG.)
- Swelling in your legs
- Trouble breathing



Risk factors for blood clots

You are more likely to have a blood clot in your lungs if you:

- Are age 50 or older
- Have been injured or had surgery in the last four weeks
- Have had blood clots or an abnormal heartbeat before
- Use birth control with hormones

Tests you may need

Here are some tests you may need if you have signs and risk factors for blood clots:

- **D-dimer test.** You may need this test if you have just **a few** signs and risk factors for blood clots. This blood test looks for signs that your body is trying to dissolve a blood clot. A positive result does not always mean you have a blood clot in your lungs.
- **CT scan.** You may need this test if you have **all or most** of the signs and risk factors for blood clots. You may also need a CT scan if your D-timer test is positive. A CT scan should not be the first test you get.

Advice from Consumer Reports

Don't get CT scans unless you need them

Each CT scan gives you a large dose of radiation. In some cases, it's equal to the dose from about 200 chest X-rays. Radiation can damage your tissues. Your body can often repair that damage—but not always. And when it doesn't, the damage could lead to cancer.

The risk from a single CT scan is very low. But the more CT scans you get in your lifetime, the higher your risk of cancer. CT scans can be especially harmful to children.

CT scans are costly

CT scans can also be very expensive, especially in the ER.

How much radiation are you getting?

The chart below shows the dose of radiation from common CT scans compared to the dose from natural sources, such as radon. Doses are typical values for an adult of average size. The actual dose can vary greatly. It depends on how big you are and what type of scan you get.

CT of head = 8 months of natural radiation

January							February						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
						1	2						
3	4	5	6	7	8	9	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28	29					
31													

March							April						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
						1	2						
3	4	5	6	7	8	9	8	9	10	11	12	13	14
10	11	12	13	14	15	16	15	16	17	18	19	20	21
17	18	19	20	21	22	23	22	23	24	25	26	27	28
24	25	26	27	28	29	30	29	30	31				

May							June						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
						1	2						
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10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28	29	30	31			

CT of spine = 2 years of natural radiation

January							February							March								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
						1	2	3	4	5	6	7										
8	9	10	11	12	13	14	8	9	10	11	12	13	14	8	9	10	11	12	13	14	15	16
15	16	17	18	19	20	21	15	16	17	18	19	20	21	15	16	17	18	19	20	21	22	23
22	23	24	25	26	27	28	22	23	24	25	26	27	28	22	23	24	25	26	27	28	29	30
29	30	31					29	30	31					29	30	31						

April							May							June								
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						1	2	3	4	5	6	7										
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15	16	17	18	19	20	21	15	16	17	18	19	20	21	15	16	17	18	19	20	21	22	23
22	23	24	25	26	27	28	22	23	24	25	26	27	28	22	23	24	25	26	27	28	29	30
29	30	31					29	30	31					29	30	31						

July							August							September								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
						1	2	3	4	5	6	7										
8	9	10	11	12	13	14	8	9	10	11	12	13	14	8	9	10	11	12	13	14	15	16
15	16	17	18	19	20	21	15	16	17	18	19	20	21	15	16	17	18	19	20	21	22	23
22	23	24	25	26	27	28	22	23	24	25	26	27	28	22	23	24	25	26	27	28	29	30
29	30	31					29	30	31					29	30	31						

October							November							December								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
						1	2	3	4	5	6	7										
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15	16	17	18	19	20	21	15	16	17	18	19	20	21	15	16	17	18	19	20	21	22	23
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29	30	31					29	30	31					29	30	31						

CT of belly and pelvis = 3 years of natural radiation

January							February							March								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
						1	2	3	4	5	6	7										
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29	30	31					29	30	31					29	30	31						

April							May							June								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
						1	2	3	4	5	6	7										
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29	30	31					29	30	31					29	30	31						

July							August							September								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
						1	2	3	4	5	6	7										
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29	30	31					29	30	31					29	30	31						

October							November							December								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
						1	2	3	4	5	6	7										
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29	30	31					29	30	31					29	30	31						

CT of heart = 4 years of natural radiation

January							February							March								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
						1	2	3	4	5	6	7										
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29	30	31					29	30	31					29	30	31						

April							May							June								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
						1	2	3	4	5	6	7										
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22	23	24	25	26	27	28	22	23	24	25	26	27	28	22	23	24	25	26	27	28	29	30
29	30	31					29	30	31					29	30	31						

July							August							September						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
						1	2	3	4	5	6	7								