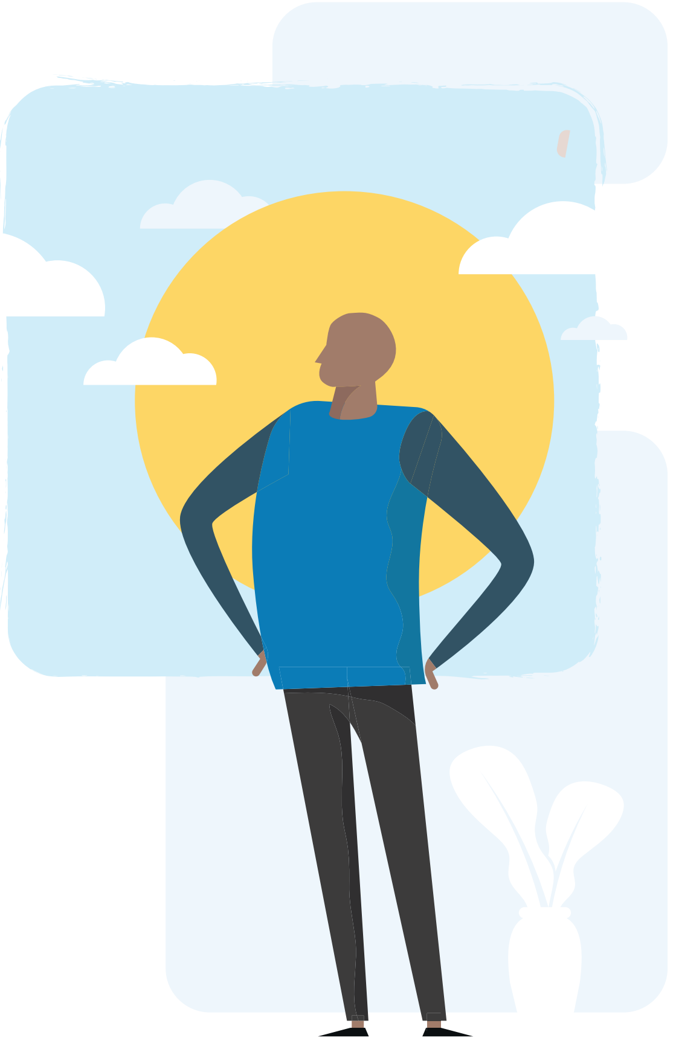


Scanxiety Nightmares:

Overcoming Anxiety of the Next Scan.

What is scanxiety?

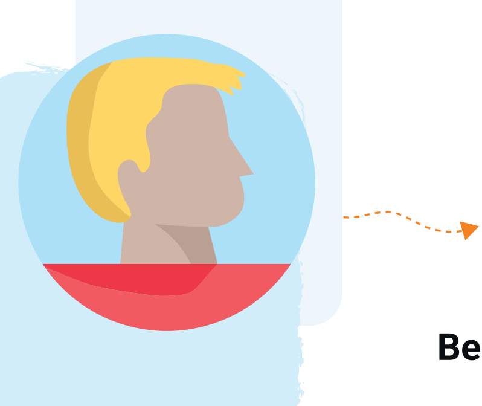
"Scanxiety" is the term used by cancer patients and survivors on the apprehension they feel surrounding their next scan.

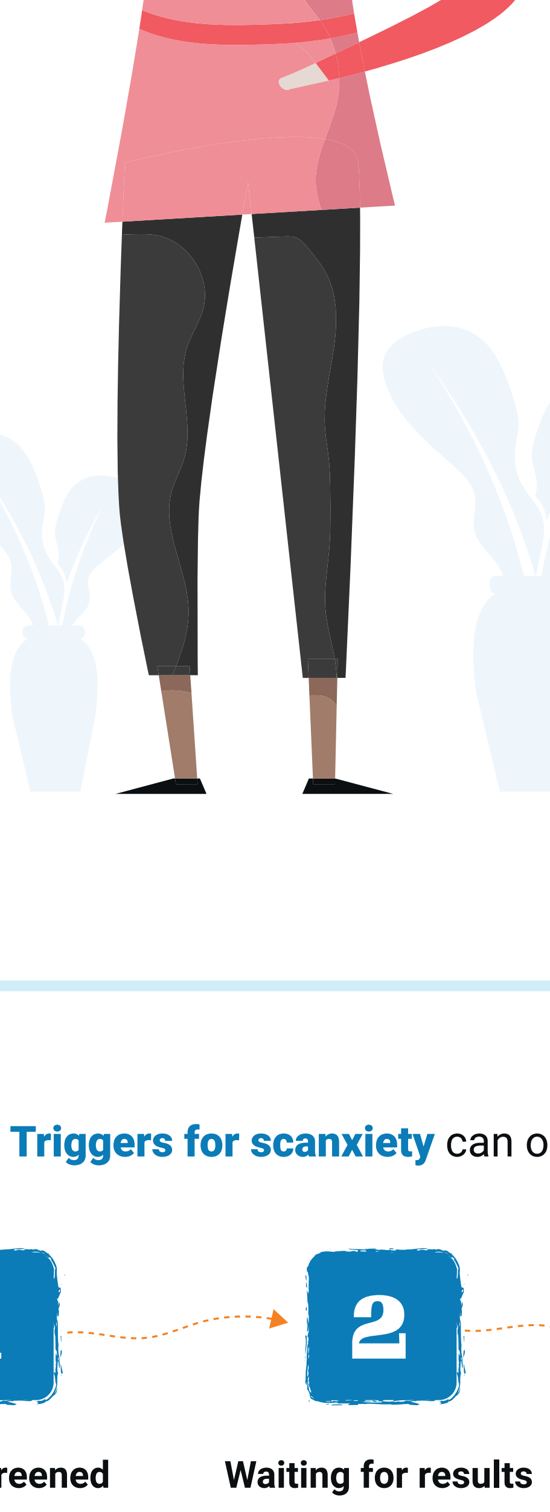
Ultimately, **anxiety and distress** can affect the quality of life of patients with cancer.

Anxiety: unease, fear and dread caused by stress.[1]

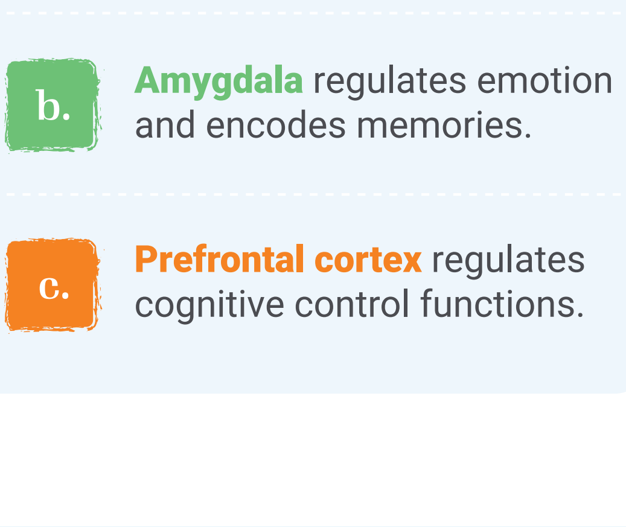
Distress: emotional, mental, social or spiritual suffering. Emotions can range from sadness, loss of control, depression, panic and isolation.[1]

In a study of 222 participants, **55%** experienced scanxiety.[2]



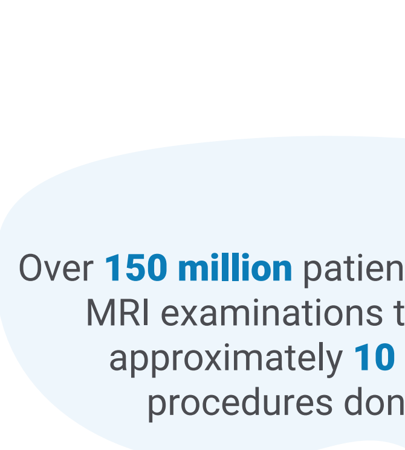


When you're anxious, your body is under stress and shrinks the hippocampus (learning and memory). Anxiety weakens the connections between the amygdala and the prefrontal cortex.[3]



- **a.** **Hippocampus** regulates learning and memory.
- **b.** **Amygdala** regulates emotion and encodes memories.
- **c.** **Prefrontal cortex** regulates cognitive control functions.

Triggers for scanxiety can occur when:[1]



1. **Being screened for cancer**
2. **Waiting for results**
3. **Hearing a cancer diagnosis**
4. **Worrying that cancer will recur**

Some fears are caused by the **X-ray machines** themselves.

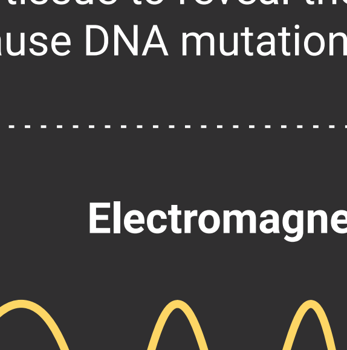
The types of scans and medical imaging machines:

MRI

Over **150 million** patients have had MRI examinations to date, with approximately **10 million** MRI procedures done annually.[4]

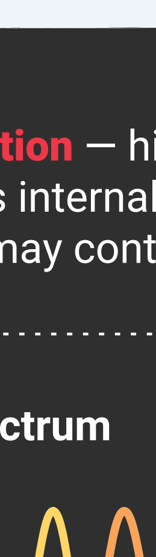
CT/CAT Scan

Between 2010 and 2020, the number of CT scans nearly doubled from **87.4 to 155.7 per 1000 patients.**[5]



X-ray

Between 2010 and 2020, the number of X-ray examinations decreased from **115.1 to 96.9 per 1000 patients.**[5]

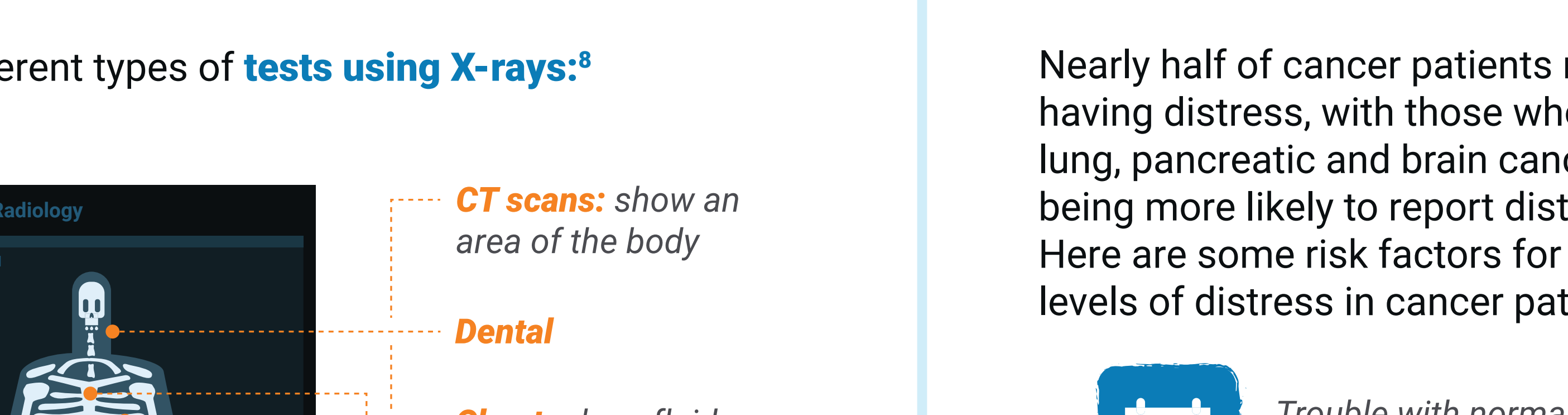


Ultrasound

Diagnostic ultrasound market from the doppler technology segment is expected to exhibit over **4% CAGR** from 2022-2030.[6]

X-ray, CT and nuclear imaging use **ionizing radiation** — high-energy wavelengths or particles that penetrate tissue to reveal the body's internal organs and structure. This can damage DNA and cause DNA mutations that may contribute to cancer years later.[7]

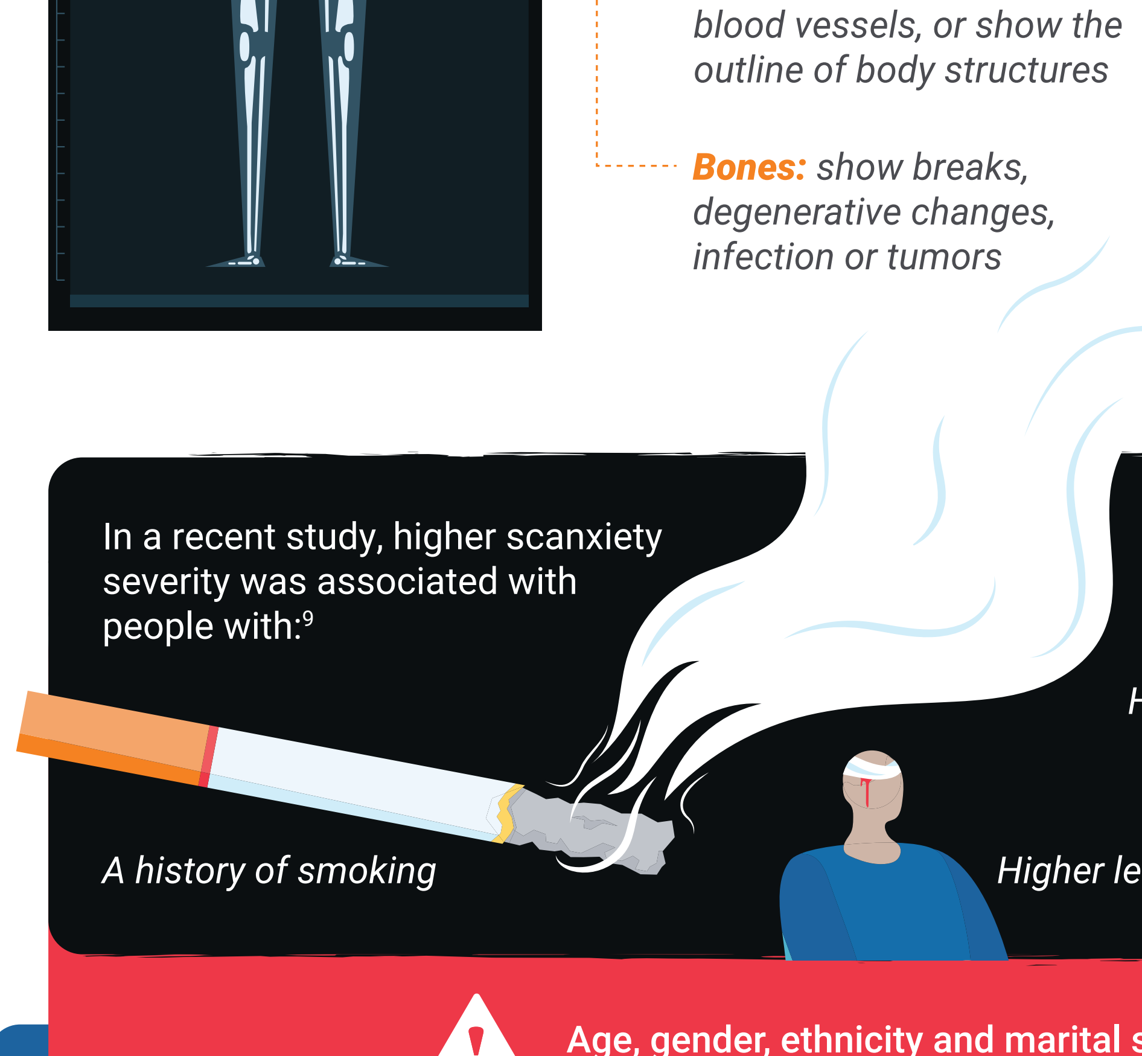
Electromagnetic Spectrum



🟨 **Non-ionizing radiation**

🟥 **Ionizing radiation**

The different types of **tests using X-rays:**[8]



CT scans: *show an area of the body*

Dental

Chest: *show fluid, infections, enlarged organs, or tumors*

Breasts

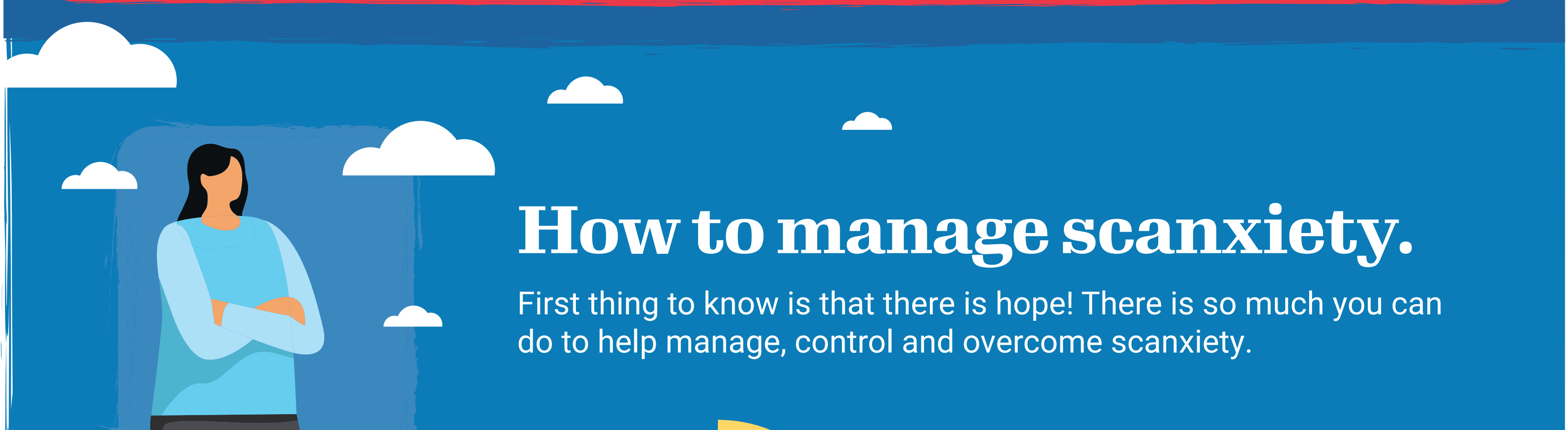
Real-time screening: *helps doctors put in stents or wires, look at blood vessels, or show the outline of body structures*

Bones: *show breaks, degenerative changes, infection or tumors*

Nearly half of cancer patients report having distress, with those who have lung, pancreatic and brain cancers being more likely to report distress. Here are some risk factors for high levels of distress in cancer patients:

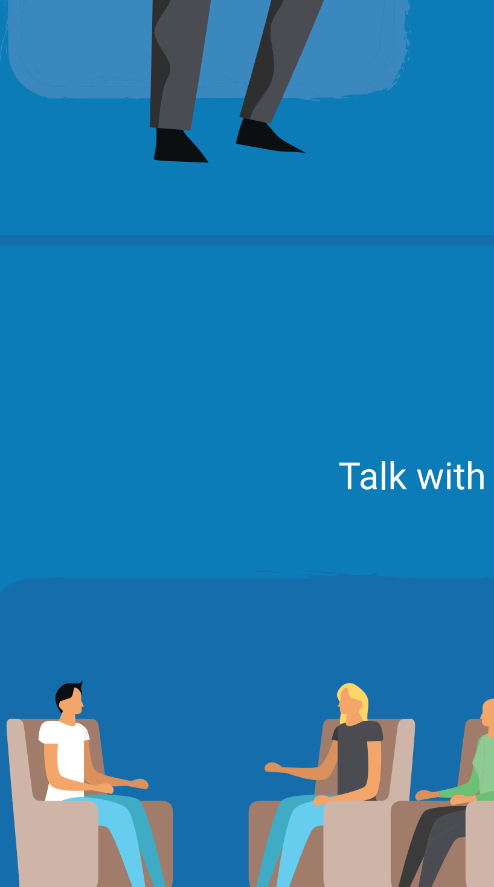
- *Trouble with normal daily activities*
- *Problems at home*
- *Physical problems like fatigue, nausea or pain*
- *Unmet social and/or spiritual needs*

In a recent study, higher scanxiety severity was associated with people with:[9]



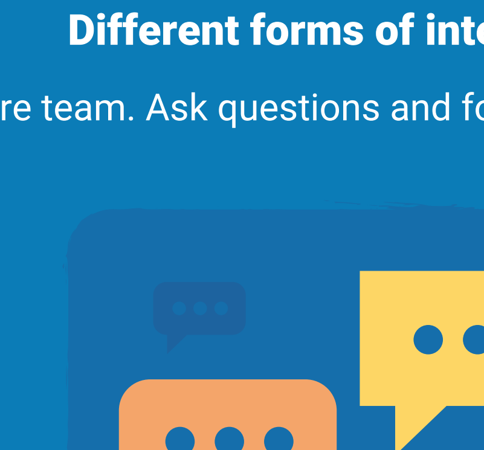
- *A history of smoking*
- *Higher levels of pain*
- *Higher perceived risk of cancer*
- *Diagnostic scans*
- *Lower education*

Age, gender, ethnicity and marital status did not affect it.



How to manage scanxiety.

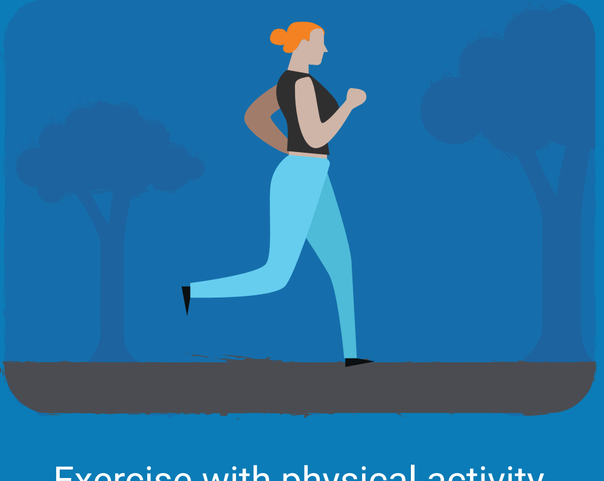
First thing to know is that there is hope! There is so much you can do to help manage, control and overcome scanxiety.



60% of people overcame scanxiety through a form of intervention.[9]

Different forms of intervention

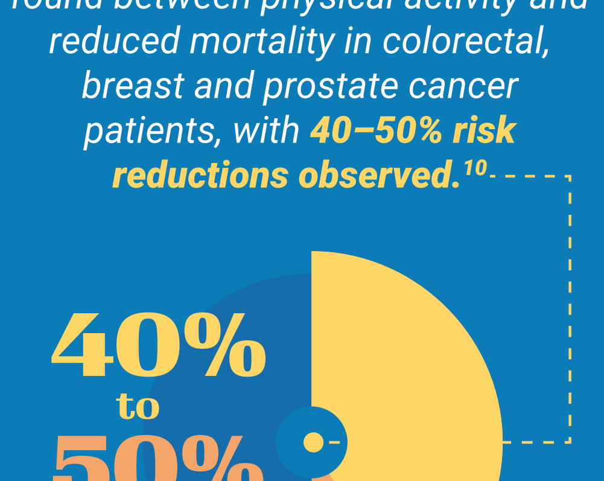
Talk with your care team. Ask questions and form a treatment plan with them.



Join a support group.

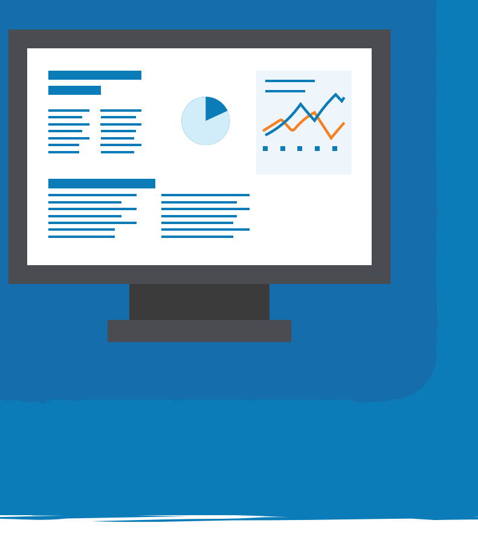
Continue to communicate with friends and family.

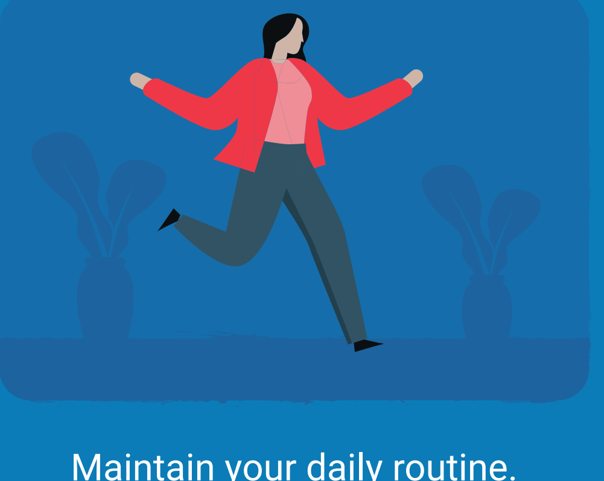
Be confident.



Exercise with physical activity.

*In a study, there was an association found between physical activity and reduced mortality in colorectal, breast and prostate cancer patients, with **40–50% risk reductions observed.***[10]





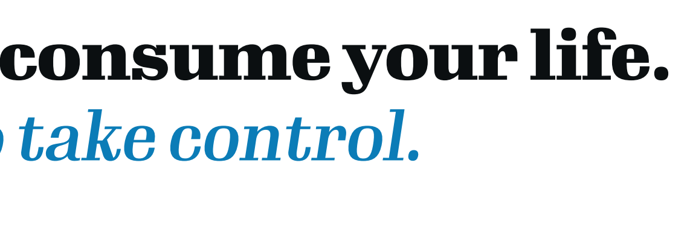
Eat properly. Caffeine is known to trigger anxiety.

Maintain your daily routine.

> **"One of the best practices that I've seen as a patient was at Michigan Medicine. While you're waiting, the room has a blank binder with paper in it sitting on the table next to the magazines. They invite patients to write notes to other patients about what they're experiencing. It is so simple and so powerful,"**
>
> - Amanda C. Itliong / Cancer Survivor / co-chair of the Quality Experience Committee of the ACR Commission on Patient- and Family-Centered Care[11]

Technology for the win!

The "Mirai" algorithm, a new robust artificial intelligence developed by MIT, was significantly more accurate at predicting cancer risk and identifying high-risk groups at nearly two times, compared to the current clinical standard, Tyrer-Cuzick Model.[12]



It's not all negative. Companies like Nanox and SK Telcom are helping supply digital X-ray equipment that expose patients to **70-80% less radiation** than traditional X-rays.[13]

Scanxiety doesn't need to consume your life.

You have the ability to take control.

www.mavenimaging.com

1. https://www.cancer.gov/about-cancer/coping/feelings/anxiety-distress-pdq
2. https://pubmed.ncbi.nlm.nih.gov/34333717/
3. https://www.nm.org/healthbeat/healthy-tips/emotional-health/the-science-of-anxiety
4. https://www.ismrm.org/resources/information-for-patients/
5. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8621920/
6. https://www.gminsights.com/industry-analysis/diagnostic-ultrasound-market#:~:text=Diagnostic%20ultrasound%20market%20from%20the,of%20cardiovascular%20diseases%20(CVDs).
7. https://www.health.harvard.edu/cancer/radiation-risk-from-medical-imaging
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13. https://www.futuremarketinsights.com/reports/digital-x-ray-equipment-market