Pacemakers and external factors

Pacemakers and radiotherapy

Pacemakers and MRI

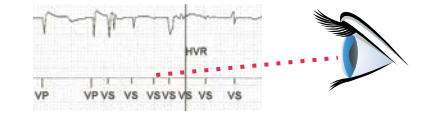
As the number of patients with pacemakers requiring radiation therapy is on the rise, it's important to understand the risks for the patient and how to avoid them.

- Radiation beam
- Neutron beam
- Photon beam

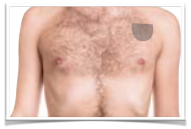
Hazards ⚠

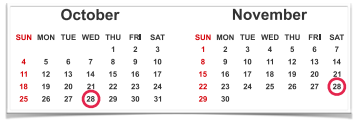
Interaction	Hazard	Beam
Pacemaker detects radiation as intrinsic cardiac activity	Device withholds pacing potentially leading to bradycardia or asystole	Direct or scattered radiation
Temporary exposure to direct or scattered neutrons	Electrical reset	Neutron beam photon beam >10 MV
Device circuitry can be permanently affected by radiation	Permanent failure in device function	Accumulated dose of direct/scattered radiation

Hazards ⚠



During therapy precautions





Precautions

Takeaway message

With the **relevant precautions,** there is **no reason** why a patient with a pacemaker should not receive radiotherapy.