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Medical Education

# Fundamentals of Pacemaker/ICD Therapy

*Management and Care of Implantable Device Patients*

## Medical Education

### Management & Care of the Implantable Device Patient

#### ▶ Disclaimer

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- This presentation is provided with the understanding that the slide content must not be altered in any manner as the content is *subject to FDA regulations*.
- This presentation is to be used in conjunction with other resource material including the applicable Boston Scientific device *physician's manual* and any *implant accessories instructions* for use.
- This presentation is not intended to replace implant training.
- Proper surgical procedures and techniques are the responsibilities of the medical professional.
- If this presentation is not used in its entirety, the following information must be included:
  - Appropriate Indications
  - Contraindications
  - Warnings
  - Precautions and Adverse Events

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*When we complete this program you will be able to:*

- *Describe* the clinical goals of patient care management
- *Identify* patient education teaching tools
- *Prepare* a patient follow-up schedule
- *Recognize* the importance of patient care records
- *Review* patient instructions for EMI precautions

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### *Clinical Goals*

- *Educate* and reassure patient and family
- *Optimize* clinical effectiveness and longevity
- *Monitor* the pulse generator and lead function
- *Maintain* accurate and up-to-date patient records

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### *Principles of Learning*

- Assess the patient's learning needs
- *Establish* rapport with patient and family members
- *Ensure* appropriate learning environment
- *Prioritize* the information
- *Encourage* active participation
- *Obtain* feedback

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### *Educational Tools*

- Instructional Videos
- Audio/Visual Aids
- Written Materials

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- Education is a continuous process
- Information needs to be repeated
- Provide written instructions
- Always provide contact numbers



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### *Patient Involvement*

- Instruct patient on how to check pulse for a full minute
- Inform patient of their lower pacing rate
- Call if heart rate is consistently 10 bpm lower than minimum pacing rate



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### *Signs and Symptoms of Pacemaker Problems*

- Instruct patients to call if they experience:
  - Redness or swelling
  - Pain in the incision
  - Fainting
  - Dizziness or lightheadedness
  - Palpitations

# Follow-up

## Pacemaker and ICD Patient

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- Pacemaker and ICD patient follow-up begins before implantation
  - Patients actively involved in their care
  - Patients accountable for follow-up
  - Understand consequences of noncompliance

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- The frequency of the follow-up will depend on the patient's individual needs
- Medicare has established some routine pacemaker guidelines for clinic follow-up

#### Single-chamber Pacemakers

**First 6 months** Twice then every 12 months

#### Dual-chamber Pacemakers

**First 6 months** Twice then every 6 months

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### *Phone Follow-up Schedule*

<b>First month</b>	Every 2 weeks	
<b>First 36 months</b>	Every 8 weeks	
<b>After 36 months</b>	Every 4 weeks	

# Follow-up Telephonic Pacemaker

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- The clinician can receive the telephonic ECG on the receiver
- Strips can be stored on computer program or paper file
- Do pre- and post- magnet strips



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### *Magnet Test*

- Pacemaker magnet application
  - Each manufacturer is different
  - May cause asynchronous pacing
  - Check battery
  - Check capture and threshold margin
  
- Defibrillator magnet application
  - Inhibits therapy
  - May disable ICD

# Follow-up

## Patient Care Records

### Medical Education

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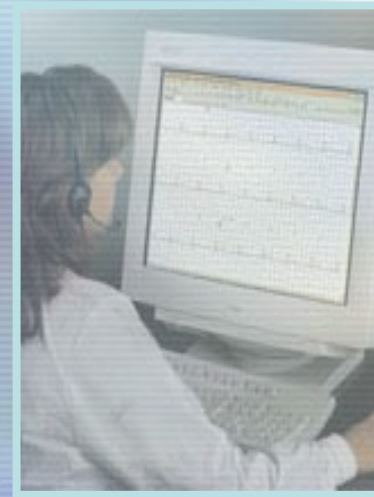
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- Keep current demographic information on all patients
- Set up database to be able to search by manufacturer and model number



# Electromagnetic Interference (EMI)

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- Patient education includes instruction on EMI
- Keep electrical appliances grounded and in good repair





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### *No Precautions Needed with ICD / Pacemakers*

- Microwave Ovens
- Televisions, VCRs
- AM/FM Radios, CD Players
- Table Top Appliances (toasters, blenders, can openers, etc.)
- Hand-held Appliances (shavers, hair dryers, etc.)
- Electric Blankets, Heating Pads
- Personal Computers
- Fax/Copy Machines

## *Equipment / Tools*

Keep these items

at least **12 inches** away ▶

- Stereo Speakers
- Strong Magnets
- Power Generators
- Arc Welders
- Battery-powered Tools
- Running Engines/  
Alternators



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## *Cell Phone Precautions*

Maintain a distance of

*at least 6 inches away*

- Hold the cell phone on the opposite side
- Do not carry the active phone near the device



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### *Metal Detectors / Security Systems*

- Walk through the systems at a normal pace
- Do not lean against the system
- If scanning with a hand-held metal detector is required
  - Inform the security personnel of the implanted electronic medical device
  - Show implant card

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### *EMI from Medical Devices*

- Electrocautery
- Cardioversion
- TENS (Transcutaneous Electrical Nerve Stimulation)
- Radio Frequency Ablation
- Therapeutic Radiation
- Magnetic Resonance Imaging (MRI)



# Electromagnetic Interference (EMI) Questions

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- Refer to the manufacturer's device manual
- Manufacturer's technical services  
**1-800-CARDIAC**
- [www.guidant.com](http://www.guidant.com)

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- Patients can lead a normal active lives
- Patients and families recognize the importance of follow-up care
- Patient and family teaching is ongoing



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