Syncope and Palpitation
Evaluation and Guidelines

The Heart Center

Syncope

• What was patient doing at time of episode?
  ___________________________________________________
• When did it occur?
   With exercise
   While driving
   In hot environment (e.g., shower)
   After prolonged standing
   With identifiable trigger (e.g., sight of blood)
• Patient's position at time of episode
   Lying down
   Sitting
   Standing
• How long was patient unconscious?
  _________________________________________________________
• How often is patient experiencing the symptoms?
  ______________________________________________
• Associated symptoms
   Dizziness
   Pallor
   Cold sweat
   Nausea
   Loss of bladder or bowel control
   Seizure
• Dietary
  Amount of food and beverage consumed prior to episode
  ______________________________________
  Breakfast consumed on day of episode?
   Yes
   No
  Amount of fluid consumed per day (teens target 50-70 oz. per day)
  _________________________________
  Caffeine consumed regularly and/or on day of episode?
   Yes
   No
  Amount of salt present in diet
  _____________________
  Number of times patient urinates per day
  __________
  Color of urine
  _________________________________

Palpitations

• With syncope?
   Yes
   No
• With exercise?
   Yes
   No
• Rate
   Mild (<100 bpm)
   Moderate (100-150 bpm)
   Racing (>150 bpm)
• Can patient tap out rate?
   Yes
   No
• How long did palpitations last?
  ____________________________________________________________
• How often is patient experiencing palpitations?
  ______________________________________________

Family History

 Sudden cardiac death
 Deafness
 Cardiomyopathy
 Long QT Syndrome
 Implantable defibrillator or pacemaker
 Brugada Syndrome
 Syncope

Physical Examination

 Normal
 Abnormal

Notes
_______________________________________________________________________________
_____________________________________________________________________________________

Electrocardiogram

 Read by pediatric cardiologist or pediatric electrophysiologist

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Referrals and Consultations
Online: NationwideChildrens.org/HeartCenter
Phone: (614) 722-6200 or (877) 722-6220
Fax: (614) 722-4000

Physician Direct Connect Line for 24-hour urgent physician consultations:
(614) 355-0221 or (877) 355-0221.
Syncope and Palpitations

Syncope and palpitations are common complaints in the pediatric and adolescent age groups. Initial work-up for patients presenting with palpitations is often aimed at ruling out an arrhythmia. Palpitations may be due to autonomic nervous system dysfunction that is the cause of dizziness and syncope; therefore, the work-up for these symptoms (palpitations, dizziness and syncope) is along a continuum. The diagnostic and therapeutic modalities that are most appropriate for the individual patient can be determined after completing a patient history, physical examination, family history and ECG.

Guidelines and Management

If physical examination, ECG and family history are negative, the following algorithm can be used:

**Syncope, Palpitations and Dizziness (Pediatric/Adolescent)**

<table>
<thead>
<tr>
<th>History of Symptoms</th>
<th>Recommended Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Syncope Occurs</strong></td>
<td></td>
</tr>
<tr>
<td>• With exercise</td>
<td>Refer to Cardiology</td>
</tr>
<tr>
<td>• While driving</td>
<td></td>
</tr>
<tr>
<td>• Age 6 or under</td>
<td></td>
</tr>
<tr>
<td>(not related to breath holding)</td>
<td></td>
</tr>
<tr>
<td><strong>Palpitations Occur</strong></td>
<td>Educate as indicated:</td>
</tr>
<tr>
<td>• Associated with syncope</td>
<td>• Avoid the trigger</td>
</tr>
<tr>
<td>• Caused by exercise</td>
<td>• Dietary changes</td>
</tr>
<tr>
<td>• &gt;2 episodes per month and/or lasts longer than 15 minutes</td>
<td></td>
</tr>
<tr>
<td><strong>Recommended Therapy</strong></td>
<td></td>
</tr>
<tr>
<td>Refer to Cardiology</td>
<td></td>
</tr>
</tbody>
</table>

- With urination or defecation
- With hair brushing
- With identifiable trigger (e.g., sight of blood)

- With hot environment (e.g., shower)
- With prolonged standing
- <2 episodes

- Presuming the physical exam and ECG are normal and the family history is negative for sudden death and cardiomyopathy, no need to be referred, unless palpitations become more frequent or last longer
- Occurs less than once per month and lasts less than 15 minutes

- Address dietary concerns:
  - Consume breakfast regularly
  - Increase fluid intake to 50-70 oz.
  - Decrease/eliminate caffeine
  - Increase salt intake (consider salt tablets)

- Symptoms improve after 1 week
  - NO
  - Refer to Cardiology
  - YES
  - Educate as indicated:
    - Avoid the trigger
    - Dietary changes

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Syncope and Palpitations

Syncope and palpitations are common complaints in the pediatric and adolescent age groups. Initial work-up for patients presenting with palpitations is often aimed at ruling out an arrhythmia. Palpitations may be due to autonomic nervous system dysfunction that is the cause of dizziness and syncope; therefore, the work-up for these symptoms (palpitations, dizziness and syncope) is along a continuum. The diagnostic and therapeutic modalities that are most appropriate for the individual patient can be determined after completing a patient history, physical examination, family history and ECG.

Guidelines and Management

If physical examination, ECG and family history are negative, the following algorithm can be used:

### Syncope, Palpitations and Dizziness (Pediatric/Adolescent)

[Visual Aid: Why Children Faint]

#### Autonomic (Automatic) Nervous System

<table>
<thead>
<tr>
<th>Nervous System</th>
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</thead>
<tbody>
<tr>
<td><strong>Non-Autonomic</strong></td>
</tr>
<tr>
<td>Things you think about doing: walking, writing, chewing</td>
</tr>
<tr>
<td><strong>Autonomic</strong></td>
</tr>
<tr>
<td>Things your body does on its own without thinking: breathing, blitiking, maintaining blood pressure</td>
</tr>
</tbody>
</table>

#### Comparison: Normal vs. Abnormal Autonomic Nervous System

**Child stands up**

- Blood redistributes to the legs

**Autonomic nervous system slow to respond**

- Blood pools in the legs
- Blood pressure drops
- Brain sends message to heart to speed up
- Heart sends message to brain to speed up; however, heart cannot pump blood it does not have

**Autonomic nervous system constricts blood vessels**

- Sends blood to heart
- Blood pressure maintained

**Additional Reasons Children Faint**

Child more susceptible to fainting with:
- Prolonged standing
- Heat
- Intercurrent illness

**History of Symptoms**

- Symptoms improve after 1 week
  - YES
  - NO

**Recommended Therapy**

- With hot environment (e.g., shower)
- With prolonged standing
- <2 episodes
- With urination or defecation
- With hair brushing
- With identifiable trigger (e.g., sight of blood)
- Associated with syncope
- Caused by exercise
- >2 episodes per month and/or lasts longer than 15 minutes
- Occurs less than once per month and lasts less than 15 minutes

- Address dietary concerns:
  - Consume breakfast regularly
  - Increase fluid intake to 50-70 oz.
  - Decrease/eliminate caffeine
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- Refer to Cardiology

- Educate as indicated:
  - Avoid the trigger
  - Dietary changes

- Refer to Cardiology

- Educate as indicated:
  - Avoid the trigger
  - Dietary changes
Evaluation Process and Checklist

History of Circumstances Surrounding Symptoms

Syncope

• What was patient doing at time of episode? _______________________________________________

• When did it occur?
  □ With exercise  □ While driving  □ In hot environment (e.g., shower)
  □ After prolonged standing  □ With identifiable trigger (e.g., sight of blood)

• Patient’s position at time of episode
  □ Lying down  □ Sitting  □ Standing

• How long was patient unconscious? ______________________________________________________

• How often is patient experiencing the symptoms? ____________________________________________

• Associated symptoms
  □ Dizziness  □ Pallor  □ Cold sweat  □ Nausea  □ Loss of bladder or bowel control  □ Seizure

• Dietary
  Amount of food and beverage consumed prior to episode ______________________________________
  Breakfast consumed on day of episode?  □ Yes  □ No
  Amount of fluid consumed per day (teens target 50-70 oz. per day) ___________________________
  Caffeine consumed regularly and/or on day of episode?  □ Yes  □ No
  Amount of salt present in diet ___________________
  Number of times patient urinates per day __________
  Color of urine _______________________________

Palpitations

• With syncope?  □ Yes  □ No  With exercise?  □ Yes  □ No

• Rate
  □ Mild (<100 bpm)  □ Moderate (100-150 bpm)  □ Racing (>150 bpm)

• Can patient tap out rate?  □ Yes  □ No

• How long did palpitations last? __________________________________________________________

• How often is patient experiencing palpitations? ______________________________________________

Family History

□ Sudden cardiac death  □ Deafness
□ Cardiomyopathy  □ Long QT Syndrome
□ Implantable defibrillator or pacemaker  □ Brugada Syndrome
□ Syncope

Physical Examination  □ Normal  □ Abnormal
Notes ________________________________________________________________________________
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Electrocardiogram  □ Read by pediatric cardiologist or pediatric electrophysiologist

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