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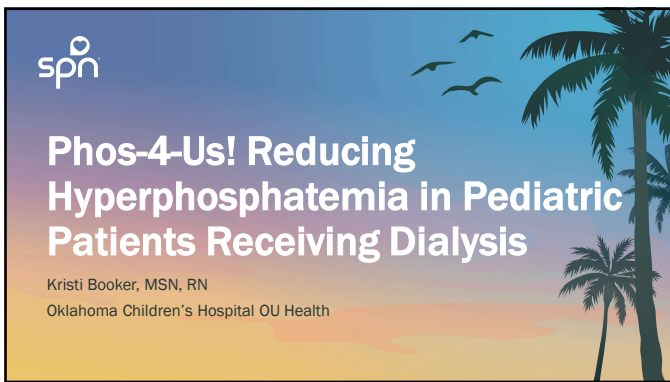
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**Learning Objectives**



1. Review the major principles of dialysis
2. Analyze the impact of electrolyte imbalances associated with chronic kidney disease
3. Discuss importance of motivation for pediatric patients to manage chronic conditions.

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## What is Hemodialysis?

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## Why is Hyperphosphatemia Bad?

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### Why is hyperphosphatemia bad?



 <p><b>AVOID</b></p> <ul style="list-style-type: none"> <li>• Pizza</li> <li>• Frozen pancakes/waffles</li> <li>• Processed cheese</li> <li>• Box meals (mac &amp; cheese, hamburger helper)</li> <li>• Processed meats (hot dog, sausage, bacon, pepperoni, ham, deli meat)</li> <li>• Hot chocolate</li> <li>• Chocolate milk</li> <li>• Bottles sodas</li> <li>• Dark colas</li> </ul>	 <p><b>LIMIT</b></p> <ul style="list-style-type: none"> <li>• Baked beans, dried beans</li> <li>• Lentils</li> <li>• Brown or wild rice</li> <li>• Nuts or nut butters</li> <li>• Whole grain bread</li> <li>• Chocolate</li> <li>• Oatmeal</li> <li>• Homemade pancakes, waffles, biscuits</li> </ul>
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### Why is hyperphosphatemia bad?

Hyperphosphatemia in Pediatric ESRD

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### Why is hyperphosphatemia bad?

Hyperphosphatemia in Pediatric ESRD

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### Why is hyperphosphatemia bad?

Food	Phosphorus	Food	Phosphorus
Turkey and Cheese sandwich	370mg	Cheese Pizza	230mg
Doritos	60mg	French Fries	70mg
Dr Pepper	30mg	Fruit	15mg
<b>Total Meal</b>	<b>460mg</b>	Milk	240mg
		<b>Total Meal</b>	<b>555mg</b>

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**Why is hyperphosphatemia bad?** 

**Healthy Kidneys** = **about 1,400 mg/day**



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**Why is hyperphosphatemia bad?** 

**ESRD on Dialysis** = **about 900 mg/day**



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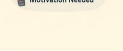

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**Why is hyperphosphatemia bad?** 

**Hyperphosphatemia in Pediatric ESRD**

Why It Happens	Impact on the Body	Challenges for Adolescents
 Healthy Kidney Removes Excess Phosphorus	 High Phosphorus ↓  Calcium Imbalance ↓  Vascular Calcification ↓  Bone Weakness ↓  Heart Disease Risk	 Junk Food & Processed Snacks   No Symptoms Now  Years Later  Damage in the Future ↓  Education & Motivation Needed

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### Why is hyperphosphatemia bad?

Hyperphosphatemia in Pediatric ESRD

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### Prior State – Before the Intervention

An average of only 33% of our patients were achieving acceptable phosphorus levels

- How do you motivate children and teens
  - Harm to their body??

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### Intervention – Phos 4 Us Game

**IF YOUR LEVELS ARE:**

- 3.4 or lower, there is no change.
- 3.5-5.5mg/dL, QR level decreases by 3-4 points, move forward 2 spaces.
- 5.6-7.5mg/dL, QR level decreases by 4-2 points, move forward 1 space.
- 7.6-9.5mg/dL, no move.
- 9.6mg/dL, move backwards 1.

10 SPACES – TARGET GIFT CARD  
10 SPACES – PEE YOUR CHOICE OF STAFF

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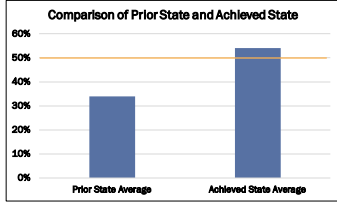
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### Achieved State



Increased our average of hemodialysis patients achieving acceptable phosphorus levels 21%! From an average 34% to an average of 55%!



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### Achieved State



Increased our average of hemodialysis patients achieving acceptable phosphorus levels 21%! From an average 34% to an average of 54%!



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### Achieved State



Increased our average of hemodialysis patients achieving acceptable phosphorus levels 21%! From an average 34% to an average of 54%!



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### Achieved State



Increased our average of hemodialysis patients achieving acceptable phosphorus levels 21%! From an average 34% to an average of 54!



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### Achieved State



Increased our average of hemodialysis patients achieving acceptable phosphorus levels 21%! From an average 34% to an average of 54!



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### Ongoing Challenges and Lessons Learned



- Sustainment
- Patient Engagement
- Motivation

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**Where can these principles be applied?**

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