Combinations. This means combining a cereal protein with pulse, nuts, seeds, egg or a milk product. Good examples:

* Choosing protein foods – All animal proteins, including milk and eggs, provide high quality proteins containing all the necessary nutrients. The table below shows the sources of these nutrients are summarised in the table below.

Nutrient | Foods
---|---
Protein | Milk, eggs, cheese, yoghurt, soy and oils, pulses and beans, nuts, chocolate, breads*
Calcium | Milk and milk products, wholegrain cereals, nuts and seeds
Vitamin B12 | Yeast extracts (supplements of Vitamin B12 may be desirable)
Zinc | Milk and milk products, wholegrain cereals, nuts and seeds
Iron | Fortified infant cereals, prepared breakfast cereals, beans and pulses

Note on Iron: Iron is an important nutrient for children, particularly girls. Iron deficiency is common in children and can result in tiredness and poor growth. Fortified infant cereals, prepared breakfast cereals, beans and pulses are good sources of iron.

Reflections question:
1. When a parent tells you their child is a vegetarian, how do you react?
2. Do you feel confident in your ability to provide advice/support to parents who indicate their child is vegetarian?
3. When would you consider referring a parent with a vegetarian child to see another professional, such as a doctor or dietician?

Note from the Editor:
On behalf of the CPR board, we are pleased to mail this first edition of CPR directly to you. We would like to take this opportunity to highlight some of the changes and improvements that have been made to the CPR for 2005:

- 4 edition this year, each 6 pages in length
- The topics for the next edition will include:
  - Risk
  - School Readiness
  - Obesity in children
  - Parent fact sheets will be included in 2 editions of the CPR

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Community Paediatric Review
A National Publication for Community Child Health Nurses and Other Professionals

Preneumococcal disease and the new universal vaccination program

What is pneumococcal disease?
Preneumococcal disease is caused by a common bacterium called Streptococcus pneumoniae. The pneumococcus bacterium has approximately 80 different serotypes, only some of which commonly cause disease. Elusive serotypes are responsible for most of the disease in infants across the globe, with seven serotypes accounting for the majority of diseases in developed countries. The four remaining serotypes account for a significant proportion of disease in developing countries.

The burden of pneumococcal disease
Disease burden in children in Australia

Notification rates of invasive pneumococcal disease, Australia, 2002 by age under 5.

- Pneumococcal disease is the leading cause of meningitis, otitis media, and bacterial bacteraemia.
- Pneumococcal disease is the leading cause of meningitis in children under 5 years. Invasive pneumococcal disease is more common than the deadly meningococcal disease. Preneumococcal meningitis may cause more severe illness in children than meningococcal meningitis.
Pneumococcal disease is now largely preventable through vaccination. Clinical studies in the United States showed that Prevenar is 97 percent effective in reducing invasive pneumococcal disease, caused by 7 strains covered in the vaccine, in fully vaccinated children. The vaccine has also been shown to be effective in reducing the frequency of otitis media. In a US study conducted on children who had completed the primary series of Prevenar at 2, 4 and 6 months of age, there was a 24 percent reduction in all cause ear purulent insertions.

Nasal carriage has been identified as the first step in the transmission of pneumococci, and a necessary first step for disease. Studies have shown that most children younger than 2 years become carriers of S. pneumoniae at some time or another. In fact, it is estimated that 95% of children between 6 and 34 months age become nasal carriers of S. pneumoniae at some time over a 5-month period. Young children have the highest carriage rates of pneumococci, and furthermore, the duration of nasal pneumococcal carriage of penicillin-resistant S. pneumoniae is longer among those less than 1 year-old compared with older children and adults. Young children also play a major role in the transmission of the pathogen to older children.

Can invasive pneumococcal disease be treated?
Invasive pneumococcal disease can usually be treated with antibiotics if detected early enough, however the disease can develop very quickly. Symptom-free to death can occur quickly and is not uncommon. Early symptoms are usually easy to spot in an acutely ill child. The disease is becoming more resistant to antibiotics, making it harder to treat effectively. Vaccination can prevent pneumococcal disease as well as reduce the number of deaths in other children. Nasal carriage has been identified as the first step in the transmission of pneumococci, and a necessary first step for disease. Studies have shown that most children younger than 2 years become carriers of S. pneumoniae at some time or another. In fact, it is estimated that 95% of children between 6 and 34 months age become nasal carriers of S. pneumoniae at some time over a 5-month period. Young children have the highest carriage rates of pneumococci, and furthermore, the duration of nasal pneumococcal carriage of penicillin-resistant S. pneumoniae is longer among those less than 1 year-old compared with older children and adults. Young children also play a major role in the transmission of the pathogen to older children.

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Community Paediatric Review 3

Airborne droplets from the nasopharynx, also reduce antibiotic resistance. They are easily mistaken for a common cold. Nasal carriage has been identified as the first step in the acquisition of pneumococci, and a necessary first step for the disease.

Studies have shown that most children younger than 2 years become carriers of S. pneumoniae at one time or another. In fact, it is estimated that 35% of children between 6 and 14 months of age became carriers of S. pneumoniae at least once during the study period. Young children have the highest carriage rates of S. pneumoniae, and the duration of nasopharyngeal carriage of penicillin-resistant strains of the organism can be as long as 1 year. In one study, 91% of children between 6 months and 2 years of age were found to carry S. pneumoniae in their nasopharynx.

Nasal carriage has been identified as the first step in the development of pneumococcal disease. In fact, in one study, 91% of children between 6 months and 2 years of age were found to carry S. pneumoniae in their nasopharynx. Preventive strategies that can reduce the risk of disease include the use of vaccines, antibiotics, and other interventions. However, the most effective strategy for reducing the risk of pneumococcal disease is the vaccination of young children.

Invasive pneumococcal disease is usually caused by bacteria that are not readily detectable in the nasopharynx, and the disease can develop very quickly. Symptoms of disease can include fever, pain, and complications such as meningitis, sepsis, and pneumonia.

The new Australian Standard is expected to cover 67% of invasive isolates in indigenous Australian children. Rates of invasive disease, according to the Australian Paediatric Surveillance Unit (APSUS), are much higher than expected, with rates of invasive disease varying depending on the age of the child. In children under 5 years of age, rates of invasive disease are much higher than expected, and the rate of invasive disease is much higher than expected in children under 2 years of age.

Vaccination is required to protect children against pneumococcal disease. The vaccine Prevenar is indicated for the active immunisation of children from 18 to 23 months of age. Prevenar is a pneumococcal conjugate vaccine that contains seven capsular antigens of S. pneumoniae, which are conjugated to diphtheria CRM197 protein. CRM197 is a non-toxic protein that is used to conjugate the capsular antigens of S. pneumoniae to the diphtheria CRM197 protein.

Prevenar is expected to provide rapid and sustained protection against the pneumococcal type that is most commonly found in children under 5 years of age. In the first 6 months after vaccination, Prevenar was found to provide protection against the type 14 serotype, which is the most common type of pneumococcal disease in children under 5 years of age. Prevenar is expected to provide long-lasting protection against the pneumococcal type that is most commonly found in children under 5 years of age.

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Protein quality, and the best use can be made of protein from vegetable sources by eating these in complementary consideration in planning a vegetarian pattern are Protein, Calcium, Vitamin B12, Iron and Zinc. The sources of these nutrients are summarised in the table below.

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Food sources of nutrient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>Milk, eggs, cheese, yogurt, soy and tofu, pulses, beans (chickpeas, beans, lentils) Nut pastes after 12 mths (avoid whole nuts until about 5 years because of the risk of choking)</td>
</tr>
<tr>
<td>Calcium</td>
<td>Milk and milk products, wholegrain cereals, nuts and seeds</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>fortified soy drinks, soy and tofu, pulses and beans, (A mix of wholegrain and refined cereals is more wholegrain and high fibre foods, as bulky and high fibre meals can make it difficult for children to meet energy and nutritional requirements.)</td>
</tr>
<tr>
<td>Zinc</td>
<td>Milk, milk products, wholegrain cereals, nuts and seeds</td>
</tr>
<tr>
<td>Iron</td>
<td>fortificated infant cereal, breakfast cereal, beans and pulses, (Avoid whole nuts until about 5 years because of the risk of choking)</td>
</tr>
</tbody>
</table>

Reflection questions:
1. When a parent tells you their child is a vegetarian, how do you react?
2. Do you feel confident in your ability to provide advice/support to parents who indicate their child is vegetarian?
3. When would you consider referring a parent with a vegetarian child to see another professional, such as a doctor and/or dietician?

Note from the Editor
On behalf of the CPR board, we are pleased to mail this first edition of CPR directly to you.

Editor
Dr Jane Redden-Hoare
Michele Meehan
Sharon Foster

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Note:
* Choosing protein foods – All animal proteins, including milk and eggs, provide high quality proteins containing all the essential amino acids, or building blocks for use in building the body’s own protein. Vegetable proteins have a lower protein quality, and the best use can be made of protein from vegetable sources by eating these in complementary combinations. This means combining a cereal protein with pulse, nuts, seeds, egg or a milk product. Good examples: breaded beans on toast, doll with rice.

Foods for a healthy eating pattern

Children eat best if meals are eaten together as a family whenever possible.

Occasional food refusal or appetite fluctuation is normal, bringing in children is not helpful.

Children need regular meals and snacks to provide energy and nutrients. For growth and development. Healthy snacking in between meals is an important contributor to intake.

Water should be offered to drink rather than cordial, juice or soft drink.

Family lifestyle

Planning for shopping and meals should include a wide variety of foods from each of the basic food types.

• cereals, 1/2 ring of wholemeal and refined cereals is fine. There is no need to put too much emphasis on white whole and high fibre foods, as bulky and high fibre meals can make it difficult for children to meet energy and nutritional requirements.

• milk, milk products, calcium-fortified soy drinks

• fruits and vegetables

• protein foods.

The healthiest family meals are based on the basic foods. Foods prepared at home tend to be lower in fat, salt and sugar than their non-vegetarian counterparts. Keep foods high in girl, salt and sat fats as sometimes foods.

Keeping active is a part of every healthy lifestyle, along with healthy eating. Family practices of walking to school or shops, encouragement of outdoor and active play, and ‘Husies’ rule for time spent in TV and screen activities are useful.

Author
Kay Gibbons
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Royal Children’s Hospital, Melbourne

Parent Information

Preneumococal disease and the new universal vaccination program

What is pneumococcal disease?

Preneumococcal diseases are caused by a common bacterium called Streptococcus pneumoniae. The pneumococcal bacterium has approximately 90 known serotypes, only some of which commonly cause disease. Eleven serotypes are responsible for most of the disease in infants across the globe, with seven serotypes accounting for the majority of diseases in developed countries. “This has lead to pneumococcal disease being a major cause of morbidity and mortality in children of all ages and worldwide.”

The four remaining serotypes account for a significant proportion of disease in developing countries. “This is a cause to pneumococcal disease being a major cause of morbidity and mortality in children of all ages and worldwide.”

What is the burden of pneumococcal disease?

Disease burden in children in Australia

Preneumococcal disease is the leading cause of meningitis, bacteraemia, pneumonia and bacterial meningitis. Preneumococcal meningitis is the leading cause of meningitis in children under 5 years. “Preneumococcal disease is a leading cause of meningitis, bacteraemia, pneumonia and bacterial meningitis. Preneumococcal meningitis is the leading cause of meningitis in children under 5 years. “Preneumococcal disease is a leading cause of meningitis, bacteraemia, pneumonia and bacterial meningitis. Preneumococcal meningitis is the leading cause of meningitis in children under 5 years. “
Foods for a healthy eating pattern

There are several classifications of vegetarian. These are not important in name, but for breadth which include healthy eating.

- Children eat well. If milk is eaten together as a family whenever possible.
- Occasional foods such as milk and milk products, egg or a milk product. Good examples: essential amino acids, or building blocks for use in building the body's own protein. Vegetable proteins have a lower addition to intake.

† Including milk and milk products, eggs, dairy, yeast extracts. Yeast extracts (supplements of Vitamin B12 may be necessary).

<table>
<thead>
<tr>
<th>Protein</th>
<th>Foods for a healthy eating pattern</th>
</tr>
</thead>
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<tr>
<td>Milk, eggs, cheese, yoghurt, soy and tofu, pulses, and beans (chickpeas, beans, cornbread)†. Nut pastes after 12 mths (avoid whole nuts until about 5 years because of the risk of choking)</td>
<td></td>
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<td>Milk and milk products</td>
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