Vaccination and prophylaxis for asplenia: Guideline for clinicians

Adults
Acknowledgements

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Sir Charles Gardiner Hospital

- Dr D. Speers (Infectious Disease Physician)
- Dr R Murray (Infectious Disease Physician)

Notes and disclaimer

The information contained in this brochure has been produced as a guide only and is not intended to replace specialist medical advice.

New vaccinations and related branding appear on the market regularly, so please refer to the Australian Technical Advisory Group on Immunisation for current information or visit www.immunise.health.gov.au for vaccine availability.

Also available in this series is a version for children and adolescents: Vaccination and prophylaxis guideline for asplenia: children and adolescents, at www.watag.org.au.

For information about WACA or these guidelines visit www.watag.org.au. Also available in this series is a version for adults: Vaccination and prophylaxis guideline for asplenia: adults, at www.watag.org.au.

To provide feedback email us at wamsg@health.wa.gov.au
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Introduction

Persons without a functional spleen are at increased risk of infection with encapsulated bacteria, such as:

- *Streptococcus pneumoniae* (pneumococcus)
- *Neisseria meningitidis* (meningococcus)
- *Haemophilus influenzae* type b (Hib).

The best protection against infection is with immunisation, however other precautions described in this booklet will assist.

Clinicians should discuss these precautionary measures with their asplenic patients and encourage them to seek immediate medical investigation and management should they develop any sign of febrile illness.

Clinicians should also encourage asplenic patients to wear medical alert jewellery, such as a medic-alert bracelet.

Provide the following ‘Important information for patients without a spleen’ flyer to patients.

Key points

- In the case of suspected infection, empiric antibiotics such as benzylpenicillin 1.8g IV/IM, ceftriaxone 2g IV/IM (for those with non-anaphylactic hypersensitivity to penicillins), or vancomycin 1g IV (for those with anaphylactic hypersensitivity to beta-lactam antibiotics) are recommended.

- For elective splenectomy, it is advisable to administer vaccinations at least two weeks prior to surgery. If possible, a longer period is preferable to allow the administration of two doses of meningococcal vaccine.

- For emergency splenectomy, or when vaccinations are not administered preoperatively, patients should be immunised when they have recovered from surgery but before discharge from hospital. For patients who have not been immunised prior to splenectomy and who will be receiving immunosuppressive chemotherapy and/or radiotherapy, vaccination should be delayed until six months after therapy is completed. Antibiotic chemoprophylaxis should be continued throughout this period.
• **If immediate access to medical care is not available** (e.g. patients travelling or living remotely), a supply of antibiotics should be available for immediate use should symptoms of infection develop.

• Recommended antibiotics include amoxicillin and clavulanate (e.g. Augmentin®), cotrimoxazole, azithromycin and moxifloxacin. The β-lactamase inhibitor clavulanate will provide some activity against β-lactamase-producing strains of *H. influenzae* and *Capnocytophaga canimorsus*. Moxifloxacin will have activity against penicillin-resistant pneumococci. The appropriate choice of antibiotic should be based on drug allergy and local antimicrobial resistance patterns.

• When travelling asplenic patients should be aware of the increased risk of severe *Plasmadium falciparum* malaria. Precautions to avoid mosquito bites as well as appropriate antimalarial prophylaxis should be adhered to.

• Babesiosis is a rare tick-borne infection endemic to certain countries (including North and South America, Europe, Asia and Africa). Asplenic patients travelling to these areas should take precautions to avoid tick bites.

• Adequate prophylactic antibiotic cover (such as Augmentin or moxifloxacin for patients hypersensitive to beta-lactam antibiotics) following dog and other animal bites is important for asplenic patients as they are particularly susceptible to infection with *C. canimorsus*.

• Other bacterial pathogens have been reported to cause more severe infection in asplenic patients including *Salmonella* species, *Staphylococcus aureus, Escherichia coli, Campylobacter* species, *Bacteroides* species, *Pseudomonas* species and *Plesiomonas shigelloides*.

• Antimicrobial prophylaxis during bacteraemia-associated **dental procedures** is not recommended unless asplenic patients have an associated condition, such as a cardiac abnormality, where antimicrobial prophylaxis is recommended. Further information may be obtained from the current edition of Therapeutic Guidelines: Antibiotic.

• **Pregnant** asplenic women are not at increased risk of infection.
Antibiotic prophylaxis

Antibiotic prophylaxis is recommended for:

- at least three years following splenectomy
- asplenic patients with severe underlying immunosuppression
- at least six months after an episode of severe sepsis.

Amoxicillin 250mg daily should be used

OR

Phenoxymethylpenicillin (penicillin V) may be substituted for amoxicillin at a dose of 250mg BD.

If hypersensitive to beta-lactam antibiotics, then use roxithromycin 150mg daily or erythromycin 250mg daily.

Immunisations

Pneumococcus

- Administer single dose of pneumococcal 13-valent conjugate vaccine (13vPCV)\(^1\) (e.g. Prevenar 13\(^\circ\)) if not previously received.
- Administer 23-valent polysaccharide vaccine (e.g. Pneumovax 23\(^\circ\), 0.5mL IM or deep subcutaneous) a minimum of two months after the 13vPCV (e.g Prevenar 13\(^\circ\)).
- If previous dose(s) of 23vPPV (e.g. Pneumovax 23\(^\circ\)) received administer 13vPCV (e.g. Prevenar 13\(^\circ\)) but delay until at least one year after the last 23vPPV (e.g Pneumovax 23\(^\circ\)) dose.
- Revaccinate with 23vPPV (e.g. Pneumovax 23\(^\circ\)) a minimum of five years after the first 23vPPV (e.g. Pneumovax 23\(^\circ\)) dose and give a third dose at 50 years (Indigenous adults) or 65 years (non-Indigenous adult) or five years after the revaccination, whichever is later.

\(^1\) Precautions: Some vaccinations are licenced to be given to specific age groups only (e.g. children at key ages or adults only); brand names have been included to assist practitioners but be alert to brand names changing over time; many brands are not interchangeable for subsequent doses. [e.g. 13vPCV (Prevenar 13\(^\circ\)) is registered for use in children aged ≥6 weeks and in adults; 23vPPV (Pneumovax 23\(^\circ\)) is registered for use in children aged ≥2 years and in adults; 10vPCV (Synflorix\(^\circ\)) is registered for use in infants and children aged 6 weeks up to 5 years] Refer to the latest Australian Immunisation Handbook, by the Australian Technical Advisory Group on Immunisation (ATAGI).
Meningococcus

- Administer two doses of 1-valent meningococcal B conjugate vaccine (e.g. Bexsero®) 0.5mL IM a minimum of four weeks apart.
- Administer two doses of 4-valent meningococcal ACW135Y conjugate vaccine (e.g. Menactra®) 0.5mL IM eight weeks apart.
- Revaccinate with 4-valent meningococcal ACW135Y conjugate vaccine every five years thereafter.

*Haemophilus influenzae type b*

- Single dose of the 1-valent Haemophilus influenzae conjugate vaccine (e.g. Hiberix®) 0.5mL IM if not previously fully vaccinated (no revaccination required).

Influenza

- Annual influenza vaccination is recommended.
- Two doses of influenza vaccine are not required in the first year influenza vaccine is given, unless the asplenic person also has another immunocompromising condition such as post solid organ or bone marrow transplant.

Provide the following ‘Important information for patients without a spleen’ document to patients (also available as a separate document at www.watag.org.au).
Important information for patients without a spleen

Your clinician has given you this information sheet because you have had (or will be having) your spleen removed.

It is possible to live a normal life following a splenectomy; however you will need to take some extra precautions to guard against infection.

1.1 What infections am I at risk of developing?

Children and adults without a spleen are at increased risk of infection with certain bacteria, such as:
- Streptococcus pneumoniae (pneumococcus)
- Neisseria meningitidis (meningococcus)
- Haemophilus influenzae type b (Hib).

Vaccines are available to protect against these bacteria and you should discuss with your family GP the right treatment for your circumstances.

1.2 What can I do to avoid developing an infection?

Learn to recognise if you are feeling unwell, as it is important to act quickly and see your family GP as soon as possible.

Avoid people who you think might be sick to minimise your chance of catching any viruses.

Wear medical alert jewellery, such as a medi-alert bracelet, which will let clinicians know that you have no spleen and are at increased risk of infection. Also, because you have no spleen, your family GP may have to choose different medications to treat you.

Your family GP may recommend that you take regular oral antibiotics to help prevent infection. This treatment might last for several years after removal of your spleen or lifelong, and is dependent on your medical history.

1.2.1 Keep up to date with your immunisation

As well as a routine or seasonal immunisation schedule, your family GP may recommend that you have additional vaccinations. Some of these vaccinations may take place several weeks or months before your operation. However if your spleen is removed as an emergency operation, the first vaccinations are usually given before discharge from hospital.

If you are undergoing chemotherapy or radiotherapy the first vaccinations are often delayed until six months after the completion of treatment.

It is important to remember that immunisation does not provide guaranteed protection against infection, so it is important that you visit your family GP if you feel unwell.
1.3 Life without your spleen

It is important you speak with your family GP before travelling as you may need to take a supply of antibiotics with you just in case.

Similarly, if you own a pet, you are particularly susceptible to infection following animal bites and may be given protective antibiotics.

No special precautions are needed when undergoing dental procedures, unless you have other conditions that require protective antibiotics, such as a heart condition.
# Appendix 1: Immunisation record template: Adult

## Adult Immunisation Record

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Revaccination 1</th>
<th>Revaccination 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumococcus</td>
<td>'Conjugate vaccine'</td>
<td>'polysaccharide vaccine'</td>
</tr>
<tr>
<td>Date</td>
<td>Signature</td>
<td></td>
</tr>
<tr>
<td>Meningococcus</td>
<td>'Conjugate vaccines'</td>
<td>'Conjugate vaccines'</td>
</tr>
<tr>
<td>Date</td>
<td>Signature</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Revaccination 1</th>
<th>Revaccination 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemophilus influenzae (Hib)</td>
<td>'Conjugate vaccine'</td>
<td>'Conjugate vaccine'</td>
</tr>
<tr>
<td>Date</td>
<td>Signature</td>
<td></td>
</tr>
<tr>
<td>Influenza (yearly booster)</td>
<td>Date</td>
<td>Signature</td>
</tr>
<tr>
<td>Date</td>
<td>Signature</td>
<td></td>
</tr>
</tbody>
</table>

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(also available as a separate document at [www.watag.org.au](http://www.watag.org.au)).
References


Useful resources
