List 4.13.1: Conditions associated with an increased risk of invasive pneumococcal disease (IPD) in children and adults, by severity of risk

**Category A: Conditions associated with the highest increased risk of IPD**

- functional or anatomical asplenia, including:
  - sickle cell disease or other haemoglobinopathies
  - congenital or acquired asplenia (e.g. splenectomy), splenic dysfunction
- immunocompromising conditions, including:
  - congenital or acquired immune deficiency, including symptomatic IgG subclass or isolated IgA deficiency (Note: children who require monthly immunoglobulin infusion are unlikely to benefit from vaccination)
  - immunosuppressive therapy (including corticosteroid therapy $\geq$ 2 mg/kg per day of prednisolone or equivalent for more than 1 week) or radiation therapy, where there is sufficient immune reconstitution for vaccine response to be expected
  - haematological and other malignancies
  - solid organ transplant
  - haemopoietic stem cell transplant (HSCT)$^\dagger$
  - HIV infection (including AIDS)
  - chronic renal failure, or relapsing or persistent nephrotic syndrome
- proven or presumptive cerebrospinal fluid (CSF) leak
- cochlear implants
- intracranial shunts

**Category B: Conditions associated with an increased risk of IPD**

- chronic cardiac disease
  - particularly cyanotic heart disease or cardiac failure in children
  - excluding hypertension only (in adults)
- chronic lung disease, including:
  - chronic lung disease in preterm infants
  - cystic fibrosis
  - severe asthma in adults (requiring frequent hospital visits and use of multiple medications)
- diabetes mellitus
- Down syndrome
- alcoholism
- chronic liver disease
- preterm birth at <28 weeks gestation$^\S$
- tobacco smoking$^\P$

$^*$ See also 3.3.3 Vaccination of immunocompromised persons for more recommendations for immunocompromised persons, including more specific revaccination recommendations for haematopoietic stem cell transplant recipients.

$^\dagger$ Recommendations for pneumococcal vaccination differ for those aged >5 years (but not for those aged <5 years) between categories in this table, i.e. depending on whether the person is in ‘Category A: Conditions associated with the highest increased risk of IPD’ or ‘Category B: Conditions associated with an increased risk of IPD’. See also relevant sections below.

$^\ddagger$ HSCT recipients require 3 doses of 13vPCV post transplantation, followed by 23vPPV, irrespective of previous vaccine doses received (see Table 3.3.3 Recommendations for revaccination following HSCT in children and adults, irrespective of previous immunisation history).

$^\S$ All infants born at <28 weeks gestation should receive vaccines recommended for those up to age 5 years with a medical condition(s) associated with an increased risk of IPD, according to Table 4.13.1. Thereafter, they only require further pneumococcal vaccine doses if they have chronic lung disease, and/or other chronic medical conditions as specified above.

$^\P$ Tobacco smoking is not a medical condition, but is associated with an increased risk of IPD.