



Changes to the Meningococcal C conjugate (MenC) vaccine schedule 2013

Q&As for healthcare practitioners

Background

The meningococcal C (MenC) vaccination programme was first introduced into the UK routine immunisation programme in November 1999. All children and adolescents under the age of 18 years were offered immunisation over the subsequent two year period. In 2002 the catch-up campaign was extended to include all adults less than 25 years of age.¹

In 2006, following studies that showed two doses of MenC vaccine provided good protection in the first year of life but protection waned during the second year of life, the primary immunisation course was changed to two doses at three and four months of age, and a booster dose at 12 months of age was added to extend the duration of protection.^{1,2}

Following the success of the MenC vaccination programme, disease caused by MenC has fallen by over 95% and cases are now at an extremely low level in the UK. This is due to both individual direct protection and indirect protection or herd immunity. In order to maintain these low levels of disease and herd immunity, the Joint Committee on Vaccination and Immunisation (JCVI) has recommended further changes to the schedule.

Meningococcal disease

What is meningococcal disease?

Meningococcal disease is caused by invasive infection with the bacterium *Neisseria meningitidis*, also known as the meningococcus. There are 12 identified serogroups of which groups B, C, W and Y were historically the most common in the UK. Since the introduction of the routine MenC vaccination programme, cases of invasive meningococcal disease in the UK due to serogroup C have reduced dramatically, with serogroup B accounting for the majority of cases.

Meningococcal infection most commonly presents as either meningitis or septicaemia, or a combination of both.

Meningococci colonise the nasopharynx of humans and are mostly harmless commensals. Between 5 and 11% of adults and up to 25% of adolescents carry the bacteria without any signs or symptoms of the disease. In infants and young children, the carriage rate is low.

Meningococcal disease is transmitted by respiratory aerosols, droplets or by direct contact with the respiratory secretions of someone carrying the bacteria.



The incubation period is from two to seven days and the onset of disease varies from fulminant with acute and overwhelming features, to insidious with mild prodromal symptoms.

Who is affected by meningococcal disease?

Meningococcal disease can affect all age groups, but the rates of disease are highest in children under five years of age, with the peak incidence in those under one year of age. There is a second peak in incidence in young people aged 15 to 19 years of age.

The vaccination programme

Why is the MenC vaccination programme changing?

JCVI have advised that changes to the schedule will make the overall MenC immunisation programme more effective and offer greater protection in teenagers and young adults. Studies show that vaccination against MenC disease in early childhood provides a relatively short-term protective immune response. Protection given by vaccination at 12 months wanes by the teenage years, but vaccination later in childhood provides higher levels of antibody that persist for longer.^{3,4,5,6} Evidence also shows that MenC vaccination significantly reduces nasopharyngeal carriage of the serogroup C meningococcus, providing indirect protection through herd immunity.^{7,8}

Infant programme: The second dose of MenC vaccine currently given at 4 months of age is to be removed from the routine schedule. This recommendation follows a study that showed a single priming dose in infancy at three months of age is sufficient to provide protection against MenC disease in the first year of life.⁹

Teenage booster: JCVI have recommended the introduction of an adolescent booster to be given at the same time as the teenage tetanus, diphtheria and polio vaccine (Td/IPV), to extend protection into early adulthood.

New starters at universities: JCVI noted that older adolescents who will be beyond the age of the routine booster at the time of the introduction of the adolescent booster programme which will start in the 2014/15 academic year, and may have only received a single dose of MenC vaccine at a young age. This group are at increased risk of contracting MenC disease if they enter into higher education in a university setting for the first time.

Therefore, it is recommended that new starters at universities (first time entrants to higher education in a university setting) under 25 years of age should be offered MenC vaccine before first admission to university to boost their antibody levels prior to starting as there is evidence to show that the acquisition of meningococcal bacteria and increased risk of disease occurs soon after entry.¹⁰



This will be a limited catch up programme running for several years until university entrants have received a dose of MenC vaccine routinely as part of their adolescent booster.

What are the changes to the MenC programme?

From summer 2013 the MenC routine schedule will change to the schedule shown in Table 1.

Table 1 MenC routine vaccination schedule revised 2013

Age	Primary/ Booster	Dose
3 months	Primary	1 dose – MenC vaccine NeisVac-C® or Menjugate® Kit ONLY
12-13 months	Booster	1 dose –Hib/MenC vaccine Menitorix®
From 14-15 years during academic year 2013/14 moving towards 13-14 years	Booster	1 dose – MenC Vaccine Meningitec® Menjugate kit® †
Catch-up programme for new starters at universities		
From late summer 2014, there will be a catch-up programme running for several years to offer the vaccine to new starters at universities* under the age of 25 entering university for the first time. Meningitec® Menjugate kit® † should be the vaccine of choice for this group.		

†Any MenC vaccine can be used, however if possible use Meningitec® or Menjugate Kit® until current supplies are exhausted.

*New starters at universities: a person entering into higher education in a university setting for the first time ('fresher').

When will the changes to the MenC programme start?

The national or local Child Health Computer Systems will schedule the 4 month dose of MenC vaccine to stop from the 1st June 2013.

The routine MenC booster immunisation for teenagers will start in the 2013/14 academic year. It will be offered at the same time as the current teenage Td/IPV booster.



The programme for new starters at universities will begin from late summer 2014.

Which MenC vaccine is recommended for the primary dose at 3 months of age?

Neisvac-C® or Menjugate Kit® should be used for the dose given to infants at 3 months of age because these vaccines provide a good immune response after one dose under 1 year of age, and strong immune responses when boosted with Hib/MenC vaccine routinely given at 12 to 13 months.³

Meningitec® should **not** be used for primary vaccination of infants as one dose is less immunogenic under 1 year of age.

Neisvac-C® or Menjugate Kit® or Meningitec® can be used for teenagers and new starters at universities. However to ensure there is sufficient stock of other MenC vaccines available for infants, the Chief Medical Officer letter states that **Meningitec®** should be the vaccine of choice for these groups.

What about teenagers who have already received their Td/IPV vaccine, will there be a catch up programme?

Yes, there will be a limited catch-up programme. The programme will offer MenC vaccine to new starters at universities under the age of 25 from late summer 2014/15. This will be a temporary programme that will run for several years by which time new university entrants should have been offered the MenC vaccine routinely aged 13-14 years. The risk of meningococcal infection increases for students entering university compared with those of a similar age in the general population. The incidence of infection is:

- 5.1 cases per 100,000 in first year of university, and
- 1.4 cases per 100,000 in general population¹¹

The increased risk is higher in the first few days, weeks or months of entering university.^{10,12,13} It has been suggested that increased exposure to meningococcal bacteria occurring in the first year of university leads to asymptomatic carriage that boosts immunity to provide protection over subsequent years.^{11,14}

What does 'Around 14 years' mean?

Whilst JCVI has advised that the adolescent MenC booster dose be given in school year nine (13 to 14 years of age) and at the same time as the Td/IPV vaccine booster dose, we are aware that presently, a significant proportion of Td/IPV vaccine is offered at a later age, e.g. school year 10 (14 to 15 years of age). Eventually arrangements should be made to align the new routine schedule into school year 9 (13-14 yrs), however the MenC conjugate booster dose may, for a period of time, be administered in other school years alongside the adolescent Td/IPV booster. The term 'around 14 years' is to avoid being



prescriptive about the age at which vaccination should occur, thus allowing for local differences in the age at which the teenage booster vaccinations will be offered in the near term.

How will new starters at university be informed that they require a MenC vaccine and how will they receive it?

Information about the need for a MenC vaccine will be provided in the communications that new students receive from the Universities and Colleges Administration Service (UCAS) or the university. It is important that these students, including overseas students, receive vaccination at least two weeks before they attend university whenever possible. Ideally they should receive the vaccine from their family GP prior to leaving for university. Where students are not vaccinated before leaving for university they should be offered the vaccine as soon as possible after they arrive.

What about young people not entering into higher education for the first time?

Studies show that young people not entering higher education in a university setting for the first time are not exposed to the same level of risk of developing MenC disease.¹¹

The Summary of Product Characteristics (SPC) for Neisvac-C® and Menjugate Kit® state two doses two months apart in infants less than a year old. What action should be taken?

Evidence from a UK study shows that immunogenicity is adequate following a single priming dose in infants.⁹ In this situation where the SPC information differs from the information within the Green book, the information in the current chapter of the Green Book should be adhered to.

What if a child aged ten years or older has received a booster dose of a MenC vaccine previously?

Individuals vaccinated age ten years or older have higher levels of antibody, and protection persists until at least early adulthood and possibly longer.⁶ Therefore if a child received a booster dose of MenC vaccine age ten years or older, they should be adequately protected and do not need further routine scheduled doses in adolescence.

If an infant has received a dose of Meningitec® at 3 months of age, which brand should be used for the second dose at 4 months of age?

Infants immunised with Meningitec® at 3 month of age can receive either Meningitec® or Menjugate kit® at 4 months of age.



Why can't Neisvac C® be used as the second dose?

Some infants receiving Meningitec® or Menjugate kit® at 3 months followed by Neisvac-C® at 4 months may not develop an adequate immune response to help protect them against Hib or against MenC.

If the practice only has Neisvac C® available is it better to give it as the second dose, or not to give a second dose at all?

In such cases, the practice should request Meningitec® or Menjugate kit® for the infant.

Where can I get more information?

- DH/PHE/NHS England Joint letter IMPORTANT CHANGES TO THE NATIONAL IMMUNISATION PROGRAMME IN 2013/14: CHANGES TO THE SCHEDULE FOR MENINGOCOCCAL SEROGROUP C CONJUGATE VACCINATION
- Immunisation against infectious disease (the Green Book) Meningococcal chapter <https://www.gov.uk/government/organisations/public-health-england/series/immunisation-against-infectious-disease-the-green-book>
- Training slides available at <https://www.gov.uk/government/organisations/public-health-england/series/immunisation>
- Leaflets and poster resources available to order from the Publications Orderline www.orderline.dh.gov.uk/ecom_dh/public/home.jsf
- Information on meningococcal disease is available at: www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/MeningococcalDisease/



Useful links

- Meningitis Research Foundation: www.meningitis.org/
- Meningitis Trust: www.meningitis-trust.org/
- NHS Choices: www.nhs.uk/Pages/HomePage.aspx
- Joint Committee on Vaccination and Immunisation:
<http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/ab/JCVI/index.htm>

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