COVID-19 guidance for children and young people with cancer undergoing treatment

Guidance updated 13 December 2021 (updated sections/new sections coloured red).

This guidance is intended for children and young people on active cancer treatment up to the age of 18 and for those who have received a bone marrow transplant (BMT), also called a stem cell transplant (SCT).

This information is based on the UK Government and Public Health England advice and may differ from guidance issued from other countries. It will be regularly updated as and when new information is available. It has been written by experts in Childhood and Teenage cancer to reflect the particular needs of our patients. This guidance is consistent with the advice from the Royal College of Paediatrics and Child Health and has been developed with them.

We acknowledge there is a huge amount of information online and this can be overwhelming and sometimes conflicting, causing even more worry and stress. It is important that families make sure that information is filtered and gathered from reliable, easy to understand sources. Our booklet 'Searching for information and support online' has further information.

Any Covid-19 questions? You can join our closed Parents and Carers Facebook Group to get the latest advice from experts at www.cclg.uk/parentgroup

Update 13 December 2021

- Update on vaccination of children and young people with cancer including information on third doses
- Update on new monoclonal antibody treatment for children who are hospitalised with COVID-19

How has CCLG decided what the new recommendations should be?
The rapid increase in cases of the new Omicron variant has led to the UK Covid Alert Level to be increased from Level 3 to Level 4 as of 12 December 2021. The latest data suggests Omicron is extremely transmissible and will become the dominant variant by mid-December. We understand that this will be causing concern for families with children and young people with cancer.

However, the risk of COVID-19 for children and young people with cancer remains low. We have continued to collect and analyse information on children and young people with cancer who have tested positive for COVID-19 from all CCLG centres in the UK. This has now been published and can be read in full [here](#). The number of cases remains low and importantly, the majority continue to have a very mild disease course. The UKPCCMP has also shown that unlike in adults, children with haematological malignancies are at no greater risk of severe SARS-CoV-2 infection than those children with non-haematological malignancies. This paper can be read in full [here](#).

We also monitor data on COVID-19 in children with cancer from across the world where the majority of cases have asymptomatic or mild severity. However, we will continue to closely analyse the information available in the UK particularly as new variants such as the Omicron variant emerge.

**Our guidance remains the same: children with cancer in the UK remain at low risk of severe SARS-CoV-2 infection, standard infection precautions should continue for children with cancer and vaccination (up to three primary doses) is recommended for children > 12 years old.**

There are no changes to the children and young people in the extremely vulnerable group or vulnerable group.

Children in the extremely vulnerable group are not recommended to attend school or nursery even before the pandemic. These children remain at higher risk of other infections (apart from coronavirus) and should therefore continue to follow precautions such as regular hand washing, avoiding contact with people
who have symptoms of infection and avoiding crowded places. These children and their families do not need to shield as a household.

**Your treating team may choose to follow different advice depending on your child’s individual circumstances. Your treating team may temporarily move your child from the vulnerable group to the extremely vulnerable group at certain points in treatment.**

**Is my child in the extremely vulnerable group?**

This group includes all children and young people:

- Receiving induction chemotherapy (initial course of chemotherapy with high dose steroids) for acute lymphoblastic leukaemia (ALL) and non-Hodgkin’s lymphoma
- Receiving chemotherapy for acute myeloid leukaemia (AML)
- Receiving chemotherapy for relapsed and/or refractory leukaemia or lymphoma (although children receiving blinatumomab or on maintenance therapy may be moved to the vulnerable group and return to school/nursery depending on the advice of your treating team)
- Who have received a donor stem cell transplant (allogeneic transplant) until their immune system has recovered
- Who have received their own stem cells back (autograft transplant) until their immune system has recovered
- Patients undergoing CAR-T therapy until their immune system has recovered

**Is my child in the vulnerable group?**

This group includes all children and young people:
- Undergoing active chemotherapy for any cancer diagnosis including Langerhans cell histiocytosis (LCH) and up to 6 months after completion of treatment
- Receiving treatment for acute lymphoblastic leukaemia (ALL) or non-Hodgkin’s lymphoma (NHL) after induction and up to 6 months after completion of treatment
- Up to 6 months after completion of treatment for acute myeloid leukaemia
- Receiving treatment for chronic myeloid leukaemia (CML) with tyrosine kinase inhibitor (for example, imatinib)
- Who are on long term maintenance steroids
- Who have completed treatment for cancer but have ongoing chronic lung, heart, kidney or neurological conditions
- Receiving antibody treatments for cancer (these usually end with -mab, for example dinutuximab – also known as antiGD2) and up to 6 months following antibody treatment
- Receiving targeted cancer treatments (these usually end with –nib, for example dasatinib, crizotinib) and up to 6 months following targeted cancer treatment
- Receiving replacement immunoglobulin therapy

**What are the current recommendations for COVID-19 vaccination in children between 12 and 15 years undergoing treatment for cancer?**

As of 19 July 2021, the JCVI (Joint Committee on Vaccination and Immunisation) is advising that children between 12-15 years with specific underlying health conditions that put them at increased risk of serious COVID-19 are offered two doses of the Pfizer-BioNTech vaccine with an interval of eight weeks between doses.
All eligible children should be offered the opportunity to book an appointment by 23 August and a first vaccination before the start of the new school year.

Clinical trials looking at vaccine response to the Pfizer-BioNTech vaccine have been done in healthy children and the vaccine has been shown to be safe and effective. **We do not yet know how effective the vaccine is in children and young people undergoing treatment for cancer.**

Children with cancer between 12 and 15 years **currently eligible** to receive the COVID-19 vaccine include those who are:

a. Receiving chemotherapy for any underlying cancer diagnosis which makes them immunosuppressed 
b. Having radical radiotherapy 
c. Solid organ transplant recipients 
d. Bone marrow or stem cell transplant recipients 
e. Receiving immunosuppressive or immunomodulating biological therapy (usually end with –nab such as rituximab) 
f. Receiving protein kinase inhibitors or PARP inhibitors (usually end with –nib such as dasatinib) 
g. Receiving drugs such as cyclophosphamide or mycophenolate mofetil 
h. Receiving steroids for more than a month at a dose equivalent to prednisolone at 20mg per day (or for children under 20kg body weight a dose of 1mg/kg or more per day) 
i. Have a history of haematological malignancy, including leukaemia, lymphoma 

It is important to remember children and young people on treatment for cancer are likely to have a weakened immune system and may not respond as well to COVID-19 vaccines. Those children and young people in the CEV group are likely to have to have the weakest response to the vaccine due to the intensity of their treatment and/or underlying diagnosis.

As with other vaccinations, we believe that giving a COVID-19 vaccine during chemotherapy is likely to produce a small protective response. The timing of
vaccination should fit with chemotherapy cycles as we do with seasonal influenza vaccines.

Data from adults with cancer suggest that protection from the vaccine is low after one dose and increases after two doses. As there is not yet data available on how well the vaccine works in children and young people with cancer, we would support the JCVI recommendation for 3 doses of the vaccine. Research in this area is planned to help us better understand how children and young people undergoing treatment for cancer will respond to the COVID-19 vaccine.

We advise you to speak with your treating team who will be able to offer advice as to the best timing for your child to receive the vaccine depending on their treatment plan.

**What about the third primary vaccine dose for children and young people over 12 years old?**

The JCVI recommends that a third Pfizer BioNTech vaccine dose be offered to individuals aged 12 years and over who had severe immunosuppression at the time of their first or second COVID-19 doses, including those with leukaemia.

These children and young people may not mount a full response to vaccination and therefore may be less protected than the wider population. The third primary dose is an extra ‘top-up’ dose for those who may not have generated a full immune response to the first 2 doses. In contrast, a booster dose is a later dose to extend the duration of protection from the primary course of vaccinations.

The decision on the timing of the third dose should be made by your child’s treating team. As a general guide, the third dose should usually be at least 8 weeks after the second dose but with flexibility to adjust the timing so that, where possible, immunosuppression is at a minimum when the vaccine dose is given.

**What about booster vaccine doses for young people over 16 years old?**
Those aged 16 years and above will also require a booster dose to extend protection from their primary course. Following the recognition of the Omicron variant in South Africa, JCVI has now advised that a reinforcing dose should be offered from three months after the third dose. Those who have not yet received their third dose may be given their third dose now to avoid further delay. A further booster dose can be given in three months, in line with the clinical advice on optimal timing.

**What if my child or young person undergoing treatment for cancer has a healthy sibling between 12 and 17 years old? Should the sibling receive the vaccine?**

The recommendation is now that all healthy young people aged over 12 years can receive their first dose of COVID-19 vaccine. The JCVI recommends that children and young people aged 12 years and over who are household contacts of children who are immunosuppressed should be offered two doses of Pfizer-BNT162b2 vaccine eight weeks apart.

This is to indirectly protect their immunosuppressed household contacts, who are at higher risk of serious disease from COVID-19 and may not generate a full immune response to vaccination. Healthy siblings of children or young people undergoing treatment for cancer are now eligible to receive the vaccine.

**Should adult household contacts of immunosuppressed children and young people receive a booster vaccine?**

Yes. All adult household contacts of immunosuppressed individuals should receive a booster vaccine as soon as possible. Following the emergence of the Omicron variant, JCVI have now advised accelerating the booster deployment in order of age and risk status. Reinforcing doses should not be given within three months of completion of the primary course.

**What are the current recommendations for COVID-19 vaccination in children less than 12 years undergoing treatment for cancer?**
The Pfizer-BioNTech vaccine is the only vaccine that has been authorised for children in the UK, for those aged 12 or older. Therefore, children under 12 years undergoing treatment for cancer should not receive the COVID-19 vaccine outside a vaccine clinical trial. The exception for this may be children who have severe neurodisabilities who tend to get frequent chest infections and spend considerable time in residential care settings for children with complex needs.

**Should my child who is between 16 and 18 years old receive the COVID-19 vaccine?**

Yes – this age group has already been offered the vaccine to receive at an appropriate time in their treatment plan. Please speak to your treating team to advise you regarding suitable timing for vaccination.

**What about children and young people with acute lymphoblastic leukaemia and the risk of reaction with the Pfizer vaccine?**

For children and young people with acute lymphoblastic leukaemia (ALL), there is a theoretical risk of reaction to PEG-asparaginase with the Pfizer and Moderna vaccines. However, research published from Canada showed a group of children and young people with ALL who had a previous reaction to PEG-asparaginase and then received the Pfizer vaccine, did not have an allergic reaction. The paper can be read in full [here](#).

We have consulted the UK Childhood Leukaemia Clinicians Network who agree that the Pfizer vaccine can be given to children and young people with a previous history of PEG-asparaginase reactions. Where feasible, these children and young people should receive the vaccine in a hospital or other appropriate setting to monitor for any potential reactions. This guidance has now been reflected in the Green Book [here](#) (page 25/26).

**What about if my child (over 12 years old) completed treatment for cancer more than 6 months ago? Should they receive the COVID-19 vaccination now?**
The recommendation is now that all young people aged 12 to 15 years can receive their first dose of COVID-19 vaccine. The JCVI have now recommended that a second dose of vaccine should be offered after an interval of 12 weeks. This interval reflects the strong evidence of high levels of protection against severe disease from the first dose, although could be shortened to eight weeks in periods of high incidence or where there was concern about vaccine effectiveness (for example a new variant).

Children with cancer have a low risk of serious infection and if they have completed treatment with standard chemotherapy more than 6 months ago, their immune system is likely to have recovered and therefore should mount an immune response against the vaccine. However, there are exceptions to this – including all children and young people who have received a bone marrow transplant (autograft or allograft) and other children who may have ongoing immunosuppression. Please speak to your treating team for further guidance on this.

**Should children and young people 12 years and over who are immunosuppressed receive new treatments (monoclonal antibodies) for COVID-19 infection?**

Casirivimab and imdevimab is a neutralising monoclonal antibody (nMAB) combination that binds specifically to two different sites on the spike protein of the SARS-CoV-2 virus particle, blocking its entry into the host cell and therefore inhibiting its replication. This treatment has been recommended following the results of the adult **RECOVERY trial** that showed this nMAB combination reduced the relative risk of mortality in hospitalised patients with COVID-19 who had not mounted an antibody response of their own to the virus at the time of treatment.

This treatment has been approved for use for immunocompromised patients over 12 years old who have been hospitalised for the management of acute symptoms of COVID-19 and do not have their own antibodies against SARS-CoV-2.
Children weighing less than 40kg and those under 12 years old are not eligible to receive this treatment.

As evidence to date has shown that most children and young people with cancer tend to have a mild course of COVID-19, your treating team will decide whether this nMAB treatment is likely to benefit your child.

The casirivimab and imdevimab nMAB combination is not intended to be used as a substitute for vaccination against COVID-19.

Where can I find more specific guidance regarding my child who has received or is due to receive a donor bone marrow (stem cell) transplant?

The Bone Marrow Transplant Group have been collecting data across Europe about COVID-19 in children who have had a donor bone marrow (stem cell) transplant. Specific information about transplant patients can be found here.

What if I have some more questions?

Please speak to your child’s consultant or any member of the team in your treating centre.

Original version written by Dr Jessica Bate, Consultant Paediatric Oncologist, Southampton Children's Hospital and Chair, CCLG Supportive Care Group on behalf of the CCLG Executive.

Updated version 17 March revised by Dr Jessica Bate with Dr Bob Phillips, Honorary Consultant in Paediatric Oncology, Leeds Teaching Hospitals, Prof Richard Grundy, CCLG Chairman and Ashley Gamble, CCLG CEO. This information was discussed and reviewed by a national group comprising medical representatives from all UK paediatric oncology Principal Treatment Centres, with representation from CLIC Sargent and Bloodwise.
Updated version 23 March and 24 March revised by Dr Jessica Bate with Dr Bob Phillips, Prof Richard Grundy, Ashley Gamble, Dr Geoff Shenton, Consultant Paediatric Haematologist, Newcastle and Dr John Moppett, Consultant Paediatric Haematologist, Bristol.

Subsequent updates revised by Dr Jessica Bate with Dr Bob Phillips, Prof Richard Grundy, Ashley Gamble, Dr Geoff Shenton and Dr John Moppett