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

Guidance updated 19 August 2021 (updated sections/new sections coloured red). Amended 2 September 2021 to include comments on the newly published COVID-19 in childhood cancer global registry study (addition coloured green). Amended 6 September 2021 with minor changes (coloured blue).

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 19 August 2021

Update on vaccination of children and young people with cancer:

- Recommendations for 12-15 year olds undergoing treatment
- Recommendations for healthy siblings between 12-17 years
- Recommendations for 16-18 year olds
- Recommendations for children less than 12 years old undergoing treatment
- Change to allow children and young people with a history of PEG allergy to receive Pfizer vaccine under medical supervision (Green Book now updated to reflect this)
- Recommendations for children between 12-15 years old who have completed treatment.
- Information about third dose of vaccine for children over 12 years old.

How has CCLG decided what the new recommendations should be?

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 emerge.

Results from the Global Registry of COVID-19 in Childhood Cancer from 45 countries were published on 26 August 2021 and can be read in full here. The paper describes 1500 episodes of SARS-CoV-2 infection in children with cancer across the world with 358 episodes from high income countries and the remaining 1142 episodes from low to upper middle income countries. Overall,
the majority (80%) of children had an asymptomatic or mild/moderate infection. Of those that had a severe or critical infection, over 90% were from low to upper middle income countries. International data including low and middle income countries can make direct comparisons with the UK more challenging due to inequality of health resources, delays in presentation and differences in supportive care infrastructure.

The paper highlighted low lymphocyte counts (lymphopenia) and low neutrophils counts (neutropenia) as some of the risk factors associated with severe or critical COVID-19 disease. We know that children with cancer who have lymphopenia and neutropenia are more prone to infections. We recommend that the standard infection precautions for these children should continue including regular hand-washing, avoiding known unwell contacts, prompt medical review if they develop a fever.

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 should be considered 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 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 2 doses of the vaccine. However, we strongly support more research in this area to help us better understand how children and young people undergoing treatment for cancer will respond to the COVID-19 vaccine.
Your GP should invite your child to receive the vaccine shortly. Should you wish your 12-15 year old child to receive the 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 it.

**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?**

As of 19 July 2021, the JCVI recommends that children and young people aged 12 years and over who are household contacts of children who are immunosuppressed should also be offered two doses of Pfizer-BNT162b2 vaccine.

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. Your GP should invite the household contacts of your child to receive the vaccine shortly.

**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 Green Book recommends children over 12 years old who have a history of haematological malignancy can receive the COVID-19 vaccination. There is no specified time for this in the current guidance. Therefore, you may receive an invitation for vaccination from your GP even if your child completed treatment for a haematological malignancy more than 6 months ago. If you wish your 12-15 year old child to receive the vaccine, the current guidance recommends that they are eligible.
The JCVI recommendation for vaccination is for children 12 years and older who have an increased risk of serious COVID-19 infection. 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 not be an increased risk. 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.

What about the third vaccine does for children and young people over 12 years old?

On 1 September 2021, the JCVI recommended a third dose of the Pfizer BioNTech vaccine should be offered to children and young people between 12 and 17 years old who were severely immunosuppressed at the time of their first or second dose, 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.

Many children and young people have not yet received two doses of the vaccine so the third “top-up” dose will be in the future. Further information on eligibility for third doses can be found in the Green Book [here](#) (page 19/20).
How should families with children or young people undergoing treatment for cancer manage the lifting of restrictions in England on 19 July 2021?

We acknowledge that the lifting of restrictions on 19 July 2021 will be a cause for concern for many families with children or young people undergoing treatment for cancer especially if you have already been taking additional precautions to avoid COVID-19 infection over the last year.

It is important to remember that the risk of severe COVID-19 disease remains low in this patient group. The majority of children with cancer who might develop COVID-19 are likely to have an asymptomatic infection or become mildly unwell.

We recommend a more cautious approach as restrictions are lifted if your child is in the clinically extremely vulnerable group. This will mean measures that your family will likely be doing anyway: regular hand washing, avoiding crowded indoor places and avoiding people with symptoms of infection.

We also suggest you limit the close contact you have with those you do not usually live with, and increase close contact gradually. This includes minimising the number, proximity and duration of social contacts. You should meet outdoors where possible and let fresh air into homes or other enclosed spaces.

We also recommend where possible, that people that are close to your child receive two doses of the vaccine.

Further information on the Government guidance on the lifting of restrictions in England can be found here.

Should families with children or young people undergoing treatment for cancer continue to wear face coverings after restrictions have been lifted?

COVID-19 spreads through the air by droplets and aerosols that are exhaled from the nose and mouth of an infected person. Face coverings have played an
important role in healthcare settings, helping to protect patients, staff and visitors by limiting the spread of COVID-19.

Despite the lifting of restrictions on 19 July 2021 in England, all patients, visitors and NHS staff will continue to use face coverings and maintain social distancing in all healthcare settings.

Outside the healthcare setting, we suggest you consider the risks of the situation. For example, the Government recommends that people continue to wear face coverings in crowded areas, such as public transport.

**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