

Coronavirus (COVID-19) Precautions & Guidance for FOP Patients & Families

Revised June 19, 2023

The Coronavirus (COVID-19) pandemic continues to pose a significant risk to the population worldwide with new variants of SARS-CoV-2 virus are emerging. **The ICC recommends that people living with FOP to continue to follow precautionary measures to prevent infection from SARS-CoV-2, the virus that causes the COVID-19 illness.** The ICC is providing this update to the prior statement in May 2022. This document focuses on updated information reporting on COVID-19 infection and vaccination in FOP patients, approval on COVID-19 vaccination in children aged 6 months and above, boosters and treatment.

The recommendations are changing rapidly and are country specific. Most countries have ended their emergency regulations for COVID-19.

- **UNCHANGED!** The ICC does not provide recommendations on whether a patient with FOP should or should not receive a COVID vaccine.
- **UNCHANGED!** The decision to take a vaccine is a **personal one** and based on the balance of risks and benefits, and this should be discussed with your medical team. ICC continues to recommend that COVID-19 vaccines be administered that same route that it was approved (ie intramuscular).
- **UPDATED!** Additional information about COVID-19 and COVID vaccination in patients with FOP is now published. (<https://ojrd.biomedcentral.com/articles/10.1186/s13023-022-02246-4> and <https://ojrd.biomedcentral.com/articles/10.1186/s13023-023-02638-0>)
 - o Amongst 23 FOP patients who received intramuscular COVID-19 vaccination. Most common symptoms were pain/soreness, tiredness and swelling. These symptoms are similar to those reported by the general population. 1 out of 23 developed a flare up. No patients who received the COVID-19 vaccine were hospitalized.
 - o Amongst 19 FOP patients with COVID-19 infection. Most common symptoms were fatigue, loss of taste or smell and cough. 2 out 19 FOP patient developed flare ups and 3 patients were hospitalized.
- **UPDATED!** Vaccines are now generally available for children age 6 months or over. ICC does not provide recommendations on whether a patient with FOP should or should not receive a COVID vaccine. Discuss with your medical team, as local recommendations on when to take a vaccine or eligibility for a vaccine may vary.
- **UPDATED!** ICC **does not provide recommendations for or against** the booster vaccination, but boosters should be considered if you completed vaccinations previously and are in a high risk area. Please consult with your medical team prior to receiving the booster to discuss if a booster is appropriate and safe.
- **UPDATED!** Patients with FOP are at high risk of complications with COVID-19 infection and should discuss with their medical team if use of monoclonal antibodies or anti-retroviral medications would be beneficial, in the event of a SARS-CoV2 infection.
 - o Monoclonal antibodies are given intravenously and are approved for adults and pediatric patients (≥ 12 years of age weighing ≥ 40 kg). Those innervations should be started as early as possible and before 10 days of symptoms onset. Note that some monoclonal antibodies are not effective against the newest strains of SARS-CoV2.

- Anti-retrovirals are pills that have been approved. These should generally be administered within 5 days of symptoms onset.
 - Availability and recommendations of the use of these treatments are rapidly changing and country specific. Some of these therapies may not work against strains prevalent in a particular region. Please consult with your local medical team for recommendations
 - Discuss with your doctors to make sure there are no medication interactions
- If you are in a clinical trial it is important to discuss any vaccines or therapies with your study doctors.
 - Thank you to all of our prior participants who have contributed clinical data about FOP and COVID/SARS-CoV2 infection. The studies at UCSF have now concluded and are published here:

Social and clinical impact of COVID-19 on patients with fibrodysplasia ossificans progressiva | Orphanet Journal of Rare Diseases | Full Text (biomedcentral.com)

<https://ojrd.biomedcentral.com/articles/10.1186/s13023-022-02246-4>

A follow-up report on the published paper Social and clinical impact of COVID-19 on patients with fibrodysplasia ossificans progressive (biomedcentral.com)

<https://ojrd.biomedcentral.com/articles/10.1186/s13023-023-02638-0>

- Masking continues to be an important component of controlling the spread of SARS-CoV-2. The ICC strongly recommends the use of tight fitting N95, KN95, or KF94 masks whenever possible to protect the wearer from infection by SARS-CoV-2. If these masks are not available or uncomfortable, then wearing a 3-layer surgical mask would be the next best choice.
- The ICC is aware of a recent publication suggesting that the use of subcutaneous needles could still induce adequate vaccine response. However, this study likely delivered the vaccine via a shallow intramuscular route. Furthermore, there are multiple reports in the literature of severe reactions to subcutaneous injection of the COVID vaccine. Efficacy of subcutaneous delivery of a COVID vaccine remains unproven. **Therefore, the ICC continues to recommend following the manufacturers' directions for vaccination and NOT taking intramuscular COVID vaccines by the subcutaneous route.**

Important! If you decide to take the COVID vaccine or booster, we recommend:

- **Discuss your plans with your doctor.** Review any potential allergies or prior reactions like anaphylaxis that you should consider before taking the vaccine.
- **If you are in a clinical trial or study, it is important to discuss any vaccines or therapies with your study doctors.**

- **Take the vaccine via the recommended route and dose** (ie **intramuscular (IM)** for the currently available vaccines). Safety and efficacy of taking an IM vaccine through the subcutaneous route is not known, and could cause a more unexpected inflammatory responses or poor immune reactions, and is currently not recommended.
 - If possible, take the vaccine in a **location that is already fused**, as the vaccines all appear to induce some local site reaction (arm pain and swelling). For example, if your left hip or right shoulder are fused, you should use the muscle around those sites.
 - As with other vaccines, patients with FOP should be **flare free for at least 2 weeks** prior to receiving the vaccine.
 - Have the injection done by an experienced nurse, physician, or pharmacist.
 - Use the **shortest needle available** (this varies with clinical site). The clinician should be aware that patients with FOP may have hidden HO and thinned muscle at the site of the injection. Avoid injecting directly next to existing HO bone if possible.
 - Prior to the vaccination, **have ibuprofen or acetaminophen available**. Also, have a course of prednisone for flares available.
 - The symptoms reported by patients with FOP after a COVID vaccination are similar to those reported for the general population (low grade fever, headache, muscle aches, fatigue, etc.)
 - Make sure your physician is familiar with the ICC Treatment guidelines, specifically on vaccinations and flare management (see below). Notify your physician you plan to do the vaccine, and when.
 - On the day of the injection:
 - Your local team may not allow you to take ibuprofen or acetaminophen prior to the injection (this is because they may screen for COVID symptoms first).
 - After you receive your injection, there may be a brief observation period.
 - After that is completed, take ibuprofen (2 to 3 times/day) or acetaminophen (2-3 times/day) following the label instructions, for the next 48 hrs, regardless of your symptoms.
 - Rest and stay hydrated.
 - In the event of a flare, contact your physician for guidance. You may need to do a short course of prednisone, but this needs to be balanced with the immunosuppressive effects of steroids. The usual flare dosing is prednisone 2 mg/kg/day up to 100 mg, for 4 days; your physician may recommend starting at a lower dose, depending on your symptoms.
 - Even if you take the vaccine, you still need to continue physical distancing, wearing masks, and appropriate hand washing
- **The ICC can't guarantee that these steps will "work" to prevent complications. Flare or flare-like activity has been reported in patients with FOP who receive a COVID vaccine. All medications and treatments have risk, so it is important to discuss your specific situation with your doctor as you decide whether the vaccine is appropriate for your situation.**

- Make sure that you complete the full immunization regimen recommended (ie do both doses if the vaccine recommends 2 doses)
- Discuss with your physician if you should do a booster and if that is appropriate for you, such as to cover local SARS-CoV2 variants. This is an area of active investigation so will need to be updated as the ICC receives more information.

Important! How does the development of a vaccine change things?

- Recent developments of a vaccine provide long term hope. Many types of vaccines are being tested and new variants of SARS-CoV-2 virus are emerging and so this is a rapidly changing field. Boosters may be needed.
- The exact duration of immunity conferred by the vaccines is unknown but does not seem to be lifelong.
- The ICC recommends that **FOP family members and caregivers be fully vaccinated for SARS-CoV2** if safely available for them.
- Vaccinations can take 2+ weeks to show any efficacy, so there is no protection immediately after vaccination. In addition, vaccines do not confer absolute immunity to the SARS-CoV-2 virus, and may not have activity against all forms of the SARS-CoV-2 virus. **Anyone who receives a vaccine should still continue with masking, hand hygiene, and physical distancing.**
- Please discuss with your local care providers regarding benefits and risk of any locally approved vaccines and boosters.
- **It's very important to maintain social distancing and wearing a mask when around members outside your household**

Recommendations if a patient with FOP or caregiver tests positive for SARS-CoV2

- **Notify your primary care physician to help coordinate care**
- **Follow your local guidelines for isolation/quarantine and the needed durations and procedures.**
- Everyone, including the person with the positive SARS-CoV2, should wear a mask at all times to avoid transmission.
- **Patients who are negative for SARS-CoV2 but have similar symptoms should be tested for influenza.**
- Patients with FOP are at high risk of complications with COVID-19 infection and should discuss with their medical team if use of monoclonal antibodies or anti-retroviral medications would be beneficial, in the event of a SARS-CoV-2 infection. The main reason for treatment would be to reduce respiratory complications, as patients with FOP are at high risk of breathing complications and are difficult to intubate. However, access to these medications may be limited in your area. **Please discuss with your physician if these medications are an option and appropriate for you.**
 - o Monoclonal antibodies are given intravenously and are approved for adults and pediatric patients (≥ 12 years of age weighing ≥ 40 kg). Those interventions should be started as early as possible and before 10 days of symptoms onset.
 - o Anti-retrovirals are pills that have been approved for treatment of COVID-19. These should generally be administered within 5 days of symptoms onset.

- Availability and recommendations of the use of these treatments are rapidly changing and country specific. Please consult with your local medical team
- Discuss with your physician about any potential medication interactions prior to starting anti-viral therapies

References:

Kou S, Kile S, Kambampati SS, Brady EC, Wallace H, De Sousa CM, Cheung K, Dickey L, Wentworth KL, Hsiao EC. Social and clinical impact of COVID-19 on patients with fibrodysplasia ossificans progressiva. *Orphanet J Rare Dis.* 2022 Mar 4;17(1):107. doi: 10.1186/s13023-022-02246-4. PMID: 35246171; PMCID: PMC8894823.

Wallace H, Lee RH, Hsiao EC. A follow-up report on the published paper Social and clinical impact of COVID-19 on patients with fibrodysplasia ossificans progressiva. *Orphanet J Rare Dis.* 2023 Mar 20;18(1):61. doi: 10.1186/s13023-023-02638-0. PMID: 36941608; PMCID: PMC10025781.

Guidelines - International Clinical Council (ICC) on Fibrodysplasia Ossificans Progressiva (FOP) (iccfop.org).