



## Music Therapy and Procedural Support to Aid Vaccinations

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COVID-19 vaccine hesitancy has been well documented, but one cause for hesitancy, fear of needles, has often gone overlooked. Needle phobia (trypanophobia) is common in both children and adults (McLenon & Rogers, 2019; Taddio et al., 2012), and estimates suggest that 11.5 to 66 million (~20%) of Americans experience needle fear (Love & Love, 2012). Fear of needles can result in distress and adverse symptoms, and those with a needle phobia often avoid vaccinations (McLenon & Rogers, 2019). This poses challenges for preventative care and public health.

Given the important role of vaccinations in stopping the spread of COVID-19, finding ways to support those with needle fear during vaccination is vital. Music therapists have a long history of providing procedural support during medical procedures (Noguchi, 2006; Yinger & Gooding, 2015; Yinger, 2016).

### What is Procedural Support?

Procedural support involves the use of music interventions by a board certified music therapist to decrease distress (e.g., pain and anxiety) and promote coping during medical procedures (Beer & Lee, 2017; Ghetti, 2012; Millet & Gooding, 2018). Music therapy-based procedural support has been used with a wide variety of procedures, including needle-based procedures (Birnie et al., 2015). Music therapists use interactive and receptive music interventions (Beer & Lee, 2017; Millet & Gooding, 2018) based on a range of cognitive and behavioral strategies such as distraction, breathing, positioning, modeling, and relaxation (Birnie et al., 2015; Croke, 2021), or integrating strategies such as focusing on the breath or imagery (Beer & Lee, 2017).

### Who Can Help?

Board Certified Music Therapists can provide live, interactive musical engagement for individuals who need more intensive support. For those who require less support, caregivers, nurses, or other healthcare professionals providing the injections can also incorporate techniques such as singing to/with patients or using other music resources to direct the patient's attention. The patient can even help themselves with a little preparation by creating their own personal vaccination music plan. This is true for both adults and children, depending on their developmental level.

### Why Work with a Music Therapist?

While evidence in support of music-based interventions among patients spans all age cohorts, consistent evidence is found for music-based distraction techniques, especially among youth (Birnie et al., 2015; Birnie et al., 2018; Klassen et al., 2008; Yinger & Gooding, 2015). Support includes:

- Live, music-based procedural support provided by music therapists before, during, and just after vaccinations allows for continual adjustment of the music and interaction as part of a reflexive process to positively influence outcomes including pain, anxiety, fear, and attention (Ghetti, 2012). This can be especially helpful among individuals with needle phobia, autism, or other support needs.



- Live music appears to have a greater impact on outcomes (Beer & Lee, 2017) but recorded music and simple music-based techniques can also be very helpful.
- Songs can help meet psychoeducation objectives where children learn more about important topics including normalizing thoughts and feelings around vaccinations and health procedures.
- Music therapists can provide consultations with parents in advance of vaccinations to prepare children and tailor a developmentally appropriate vaccination music plan.

Given the demand for vaccinations in youth at this point in the pandemic, it is suggested that the credentialed music therapist also be called upon in a consulting role to assess with providers the best way to meet the needs of youth undergoing vaccination and to triage procedural support music therapy services. This may include:

- Pre-vaccination youth education and preparation using music in classrooms working with teachers, aides, and school nurses,
- Caregiver consultations and in-service with health providers,
- Music therapists participating with the healthcare team at larger vaccination pop-up clinics and centralized vaccination sites, and
- Parent or provider referral for disabled youth and children with acute vaccine avoidance and stress.

### **How Can You Find a Music Therapist?**

- If you are a community member, talk to your healthcare provider for help connecting with a music therapist.
- The American Music Therapy Association (AMTA) can provide more information on procedural support music therapy or help you connect with a music therapist. For more information visit [www.musictherapy.org](http://www.musictherapy.org) and AMTA's COVID-specific music therapy information may be found at [https://www.musictherapy.org/about/covid19\\_resources/](https://www.musictherapy.org/about/covid19_resources/)
- Community members and healthcare providers can search for a music therapist at the Certification Board for Music Therapists <https://my.cbmt.org/cbmtssa/f?p=CRTSSA:17800:5319440260797:::17800::>

### **If Access to a Board Certified Music Therapist Is Unavailable, How Can You Use Music to Help Individuals Through Vaccinations?**

Depending on resources available, a range of strategies from receptive listening to developmentally appropriate music to live, interactive music-making can help. Some possibilities include (a) reading music books, singing, and music listening [ages birth-3], (b) music listening, interactive music making, and audio books with music [ages 3-12], and (c) music listening, talking about music, breathing exercises, or watching music videos [ages 12+].

### **What Music Works Best?**

Knowing an individual's preference is important. Select music the individual enjoys and use strategies designed to get them interacting with the music. Similarly, choice and a sense of control are important. Some individuals prefer to approach the vaccination (e.g., seek info or monitor events), while others



prefer to avoid it (divert their attention away). Music-based techniques should promote a sense of control and facilitate each individual's preferences.

Music for young children should be developmentally appropriate, and musical preferences should be considered for all age groups. Keep in mind that personal music selections may not necessarily align with those of providers or caregivers. If the patient is old enough to engage independently with music, it may be helpful for them to create a personal play list reserved specifically for their needle stick procedures.

### Explore Online Music

In addition to reducing stress during vaccination, music can also be used to convey information related to the vaccine and the vaccination process. Check out these videos of songs to help children and adults better understand the importance of vaccination.

- "Cootie Shot" Pierce Freelon: <https://www.youtube.com/watch?v=xe9F8KReGtg>
- "My Shot" Vax'n 8: <https://www.youtube.com/watch?v=-YiZW2sfurk>
- "Hit me with your best shot" song parody by Tallahassee Memorial Hospital Music Therapy team: <https://www.youtube.com/watch?v=UrBGUt49HrU>
- "Community Immunity" from Hip Hop Public Health: <https://www.youtube.com/watch?v=oH6dCTgxbY>
- "Just a Vaccine" - School House Rock Parody by SOMCPortsmouth: <https://www.youtube.com/watch?v=aiXDWFBIJ7I>

### References

- Beer, L., & Lee, K. V. (2017). Music therapy and procedural support: Opportunities for practice. *Music and Medicine* 9(4). <http://dx.doi.org/10.47513/mmd.v9i4.515>
- Birnie, K. A., Chambers, C. T., Taddio, A., McMurtry, C. M., Noel, M., Riddell, R. P., & Shah, V. (2015). Psychological interventions for vaccine injections in children and adolescents: systematic review of randomized and quasi-randomized controlled trials. *The Clinical Journal of Pain*, 31(Suppl 10), S72.
- Birnie, K. A., Noel, M., Chambers, C. T., Uman, L. S., & Parker, J. A. (2018). Psychological interventions for needle-related procedural pain and distress in children and adolescents. *The Cochrane Database of Systematic Reviews*, 10(10), CD005179. <https://doi.org/10.1002/14651858.CD005179.pub4>
- Croke, L. (2021). Guideline first look: Guideline for complementary care. *AORN Journal*, 113(5), P4-P6. doi: 10.1002/aorn.13404
- Ghetti, C. M. (2012). Music therapy as procedural support for invasive medical procedures: Toward the development of music therapy theory. *Nordic Journal of Music Therapy*, 2(11) 3-35. doi:10.1080/08098131.2011.571278
- Klassen, J. A., Liang, Y., Tjosvold, L., Klassen, T. P., & Hartling, L. (2008). Music for pain and anxiety in children undergoing medical procedures: A systematic review of randomized controlled trials. *Ambulatory pediatrics : The Official Journal of the Ambulatory Pediatric Association*, 8(2), 117-128. <https://doi.org/10.1016/j.ambp.2007.12.005>



- Kristjánsdóttir, Ó., & Kristjánsdóttir, G. (2011). Randomized clinical trial of musical distraction with and without headphones for adolescents' immunization pain. *Scandinavian Journal of Caring Sciences*, 25(1), 19–26. <https://doi.org/10.1111/j.1471-6712.2010.00784.x>
- Love, A. S., & Love, R. J. (2021). Considering Needle Phobia among Adult Patients During Mass COVID-19 Vaccinations. *Journal of Primary Care & Community Health*. <https://doi.org/10.1177/21501327211007393>
- McLenon, J., & Rogers, M. (2019). The fear of needles: A systematic review and meta-analysis. *Journal of Advanced Nursing*, 75(1), 30–42. <https://doi.org/10.1111/jan.13818>
- Millett, C. R., & Gooding, L. F. (2018). Comparing Active and Passive Distraction-Based Music Therapy Interventions on Preoperative Anxiety in Pediatric Patients and Their Caregivers. *Journal of Music Therapy*, 54(4), 460–478. <https://doi.org/10.1093/jmt/thx014>
- Noguchi L. K. (2006). The effect of music versus nonmusic on behavioral signs of distress and self-report of pain in pediatric injection patients. *Journal of Music Therapy*, 43(1), 16–38. <https://doi.org/10.1093/jmt/43.1.16>
- Orenius, T., LicPsych, Säilä, H., Mikola, K., & Ristolainen, L. (2018). Fear of injections and needle phobia among children and adolescents: An overview of psychological, behavioral, and contextual Factors. *SAGE Open Nursing*, 4, 2377960818759442. <https://doi.org/10.1177/2377960818759442>
- McLenon, J., & Rogers, M. (2019). The fear of needles: A systematic review and meta-analysis. *Journal of Advanced Nursing*, 75(1), 30–42. <https://doi.org/10.1111/jan.13818>
- Sierzega, J. (2021, March 18). Conquering needle phobia for the COVID-19 vaccine. *Healthy Driven Blogs*. <https://www.eehealth.org/blog/2021/03/needle-phobia-covid-19-vaccine/>
- Taddio, A., Ipp, M., Thivakaran, S., Jamal, A., Parikh, C., Smart, S., Sovran, J., Stephens, D., & Katz, J. (2012). Survey of the prevalence of immunization non-compliance due to needle fears in children and adults. *Vaccine*, 30(32), 4807–4812. <https://doi.org/10.1016/j.vaccine.2012.05.011>
- Yinger O. S. (2016). Music therapy as procedural support for young children undergoing immunizations: A randomized controlled study. *Journal of Music Therapy*, 53(4), 336–363. <https://doi.org/10.1093/jmt/thw010>
- Yinger, O. S., & Gooding, L. F. (2015). A systematic review of music- based interventions for procedural support. *Journal of Music Therapy*, 52(1) 1-77. doi: 10/1093/jmy/thv004
- Yinger, O. S., Walworth, D., & Gooding, L. (2014). *Procedural support music therapy: A guide to evidence-based practice and program development*. Lambert Academic Publishing.
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