**Mrs. Dennis**

**Choir/General Music Packet 17-21**

**I have numbered and dated all of my assignments. Please take your time completing assignments. I have sent everyone a copy in Livegrades, and a copy can be found on the school’s website. Please don’t hesitate to contact me on Livegrades if you have any questions. Once you complete all assignments (17-21), if you have internet access, you can send me a livegrades message letting me know you are done. If you do not have internet access, just wait until we receive instruction on how to turn in packets done on paper. I hope you have a great week and enjoy my assignments!**

**17 (4/20/20) Monday**

**Read the following article from Medical News Today, “The Power of Music: How It Can Benefit Health”** <https://www.medicalnewstoday.com/articles/302903>

**The power of music: how it can benefit health**

“I think music in itself is healing,” American musician Billy Joel once said. “It’s an explosive expression of humanity. It’s something we are all touched by. No matter what culture we’re from, everyone loves music.” Most of us would wholeheartedly agree with this statement, and it is this universal bond with music that has led researchers across the globe to investigate its therapeutic potential.

We can all think of at least one song that, when we hear it, triggers an emotional response. It might be a song that accompanied the first dance at your wedding, for example, or a song that reminds you of a difficult break-up or the loss of a loved one.

“We have a such a deep connection to music because it is ‘hardwired’ in our brains and bodies,” Barbara Else, senior advisor of policy and research at the [American Music Therapy Association](http://www.musictherapy.org/) told *Medical News Today*. “The elements of music – rhythm, melody, etc. – are echoed in our [physiology](https://www.medicalnewstoday.com/articles/248791.php), functioning and being.”

Given the deep connection we have with music, it is perhaps unsurprising that numerous studies have shown it can benefit our [mental health](https://www.medicalnewstoday.com/articles/154543.php). A 2011 study by researchers from McGill University in Canada found that listening to music [increases the amount of dopamine produced in the brain](https://www.medicalnewstoday.com/articles/213412.php) – a mood-enhancing chemical, making it a feasible treatment for [depression](https://www.medicalnewstoday.com/articles/8933.php).

And earlier this year, *MNT* reported on a study published in *The Lancet Psychiatry* that suggested listening to hip-hop music – particularly that from Kendrick Lamar – [may help individuals to understand mental health disorders](https://www.medicalnewstoday.com/articles/293391.php).

But increasingly, researchers are finding that the health benefits of music may go beyond mental health, and as a result, some health experts are calling for music therapy to be more widely incorporated into health care settings.

In this Spotlight, we take a closer look at some of the potential health benefits of music and look at whether, for some conditions, music could be used to improve – or even replace – current treatment strategies.

**Reducing pain and anxiety**

Bob Marley once sang: “One good thing about music, when it hits you feel no pain.” According to some studies, this statement may ring true.

Earlier this year, *MNT* reported on a study led by Brunel University in the UK that suggested music may [reduce pain and anxiety](https://www.medicalnewstoday.com/articles/298069.php) for patients who have undergone surgery.

By analyzing 72 randomized controlled trials involving more than 7,000 patients who received surgery, researchers found those who were played music after their procedure reported feeling less pain and anxiety than those who did not listen to music, and they were also less likely to need pain medication.

This effect was even stronger for patients who got to choose the music they listened to. Talking to *MNT*, study leader Dr. Catharine Meads said: “If music was a drug, it would be marketable. […] Music is a noninvasive, safe, cheap intervention that should be available to everyone undergoing surgery.”

This study is just one of many hailing music for its effects against pain. In March 2014, researchers from Denmark found music may be [beneficial for patients with fibromyalgia](http://journal.frontiersin.org/article/10.3389/fpsyg.2014.00090/abstract) – a disorder that causes muscle and joint pain and [fatigue](https://www.medicalnewstoday.com/articles/248002.php).

Listening to calm, relaxing, self-chosen music “reduced pain and increased functional mobility significantly” among 22 patients with [fibromyalgia](https://www.medicalnewstoday.com/articles/147083.php), according to the investigators.

But why does music appear to ease pain? While the exact mechanisms remain unclear, many researchers believe one reason is because listening to music triggers the release of opioids in the brain, the body’s natural pain relievers.

Dr. Daniel Levitin, of McGill University in Canada, and colleagues talk about this theory in a 2013 review, citing research that found people experienced [less pleasure from listening to their favorite song when given Naltrexone](http://daniellevitin.com/levitinlab/articles/2013-TICS_1180.pdf) – a drug that blocks opioid signals – suggesting music induces the release of opioids to ease pain.

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**An effective stress reliever**

When feeling stressed, you may find listening to your favorite music makes you feel better – and there are numerous studies that support this effect.

A study reported by *MNT* last month, for example, found that infants remained [calmer for longer when they were played music](https://www.medicalnewstoday.com/articles/301680.php) rather than spoken to – even when speech involved baby talk.

The study researchers, including Prof. Isabelle Peretz of the Center for Research on Brain, Music and Language at the University of Montreal in Canada, suggested the repetitive pattern of the music the infants listened to reduced distress, possibly by promoting “entrainment” – the ability of the body’s internal rhythms to synchronize with external rhythms, pulses or beats.

Share on PinterestResearch suggests music lowers levels of the “stress hormone” cortisol.

Another study conducted in 2013 found that not only did listening to music help reduce pain and [anxiety](https://www.medicalnewstoday.com/info/anxiety/) for children at the UK’s Great Ormond Street Hospital, it [helped reduce stress – independent of social factors](http://pom.sagepub.com/content/early/2013/08/22/0305735613499781.abstract).

According to some researchers, music may help alleviate [stress](https://www.medicalnewstoday.com/articles/145855.php) by lowering the body’s cortisol levels – the hormone released in response to stress.

The review by Dr. Levitin and colleagues, however, suggests this stress-relieving effect is dependent on what type of music one listens to, with relaxing music found most likely to lower cortisol levels.

Another mechanism by which music may alleviate stress is the effect it has on brainstem-mediated measures, according to Dr. Levitin and colleagues, such as [pulse](https://www.medicalnewstoday.com/articles/258118.php), heart rate, [blood pressure](https://www.medicalnewstoday.com/articles/270644.php) and body temperature; again, the effect is dependent on the type of music listened to.

“Stimulating music produces increases in cardiovascular measures, whereas relaxing music produces decreases,” they explain. “[…] These effects are largely mediated by tempo: slow music and musical pauses are associated with a decrease in heart rate, respiration and blood pressure, and faster music with increases in these parameters.”

Music’s effect on heart rate and its potential as a stress reliever has led a number of researchers to believe music may also be effective for treating heart conditions.

Earlier this year, *MNT* reported on a study presented at the British Cardiology Society Conference in Manchester, UK, in which researchers from the UK’s University of Oxford found repeated musical phrases may help [control heart rate and reduce blood pressure](https://www.medicalnewstoday.com/articles/295023.php) – though they noted more research is required in this area.

**Music and memory**

Certain songs have the ability to remind us of certain periods or events in our lives – some that make us smile, and some we would rather forget.

With this in mind, researchers are increasingly investigating whether music may aid memory recall.

Share on PinterestStudies suggest music may aid memory recall for adults in the early stages of dementia.

In 2013, a study published in the journal *Memory & Cognition* enrolled 60 adults who were learning Hungarian. The adults were randomized to one of three learning tasks: speaking unfamiliar Hungarian phrases, speaking the same phrases in a rhythmic fashion or singing the phrases.

When asked to recall the phrases, the researchers found [participants who sang the phrases had much higher recall accuracy](http://link.springer.com/article/10.3758%2Fs13421-013-0342-5) than the other two groups. “These results suggest that a ‘listen-and-sing’ learning method can facilitate verbatim memory for spoken foreign language phrases,” say the authors.

Evidence from such studies has led researchers to suggest music may help memory recall for people with cognitive disorders, such as [Alzheimer’s disease](https://www.medicalnewstoday.com/articles/159442.php).

A study published in the journal *Gerontologist* last year assessed the effect of music on memory recall in individuals with early-stage [dementia](https://www.medicalnewstoday.com/articles/142214.php).

For the research, 89 people with dementia and their caregivers were randomly assigned to either a 10-week singing coaching group, a 10-week music listening coaching group or usual care.

The results revealed that both the singing and music listening groups not only had better mood and overall well-being that the usual care group, but they demonstrated [better episodic memory on cognitive assessments](http://www.ncbi.nlm.nih.gov/pubmed/24009169). The singing group also showed better working memory than the usual care group.

“Regular musical leisure activities can have long-term cognitive, emotional, and social benefits in mild/moderate dementia and could therefore be utilized in dementia care and rehabilitation,” the authors concluded.

**Helping recover brain injury, treat seizures**

Increasingly, research is indicating that music can help aid recovery from brain injury – such as that from [stroke](https://www.medicalnewstoday.com/articles/7624.php).

A 2008 study conducted by researchers from the University of Helsinki in Finland found that stroke patients who listened to music for around 2 hours daily had [better verbal memory and attention](http://www.sciencedaily.com/releases/2008/02/080219203554.htm)and a more positive mood than those who listened to an audio book or nothing at all.

What is more, studies have shown that music may aid speech recovery following stroke. One study conducted in 2013 by researchers from Korea, for example, found that stroke patients who developed communication problems after stroke demonstrated [improved language ability following 1 month of neurologic music therapy](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3764351/).

Commenting on the possible benefits of music therapy for stroke patients, Barbara Else told *MNT*:

“While the [neuroscience](https://www.medicalnewstoday.com/articles/248680.php) and research findings around the various music therapy interventions employed to support speech, language, and communication are rapidly growing and evolving, this is an exciting area.

When combined with our colleagues’ working with these patients in related disciplines, we often see good results. Many open questions remain but the work is very encouraging.”

It has also been suggested that music may help treat [epilepsy](https://www.medicalnewstoday.com/articles/8947.php) – a brain disorder characterized by the occurrence of seizures. Reported by *MNT* in August, a study found the brains of patients with epilepsy show [different responses to music](https://www.medicalnewstoday.com/articles/297864.php) than the brains of those without the condition.

Conducted by Christine Charyton, of The Ohio State University Wexner Medical Center, and colleagues, the study found the brains of people with epilepsy showed greater synchronization in response to music – a “surprising” finding.

“Persons with epilepsy synchronize before a seizure. However, in our study, patients with epilepsy synchronized to the music without having a seizure,” Charyton told us.

These results, Charyton said, could lead to a novel treatment strategy for epilepsy. “Persons with epilepsy may use the music to relax; stress causes seizures to occur,” she explained. “By listening to the music, many patients reported that they felt relaxed.”

Music therapy should be utilized more in health care settings

Based on the substantial evidence that music offers numerous health benefits, many experts are calling for greater utilization of music therapy within health care settings.

“Music therapists are poised and ready to assess, deliver and document music therapy treatment but also to consult with our colleagues (physicians, nurses, physiotherapists physical, occupational therapists, speech-language pathologists, etc.) to support the patient as part of the interdisciplinary team and care of the patient,” Else told *MNT*.

In addition, Else believes that music therapy could offer an alternative treatment option for some conditions – such as tension [headaches](https://www.medicalnewstoday.com/articles/73936.php).

“A more complicated case example I can think of, although more rare, is for certain persons who experience seizure activity associated with music and auditory exposures – often high-frequency sounds and rhythmic intensity,” she said.

“Customized music therapy interventions to cope with the offending acoustic exposures can support stabilization of the patient’s symptoms and may, in turn, result in a medication reduction or taper,” she continued.

Based on the research to date, there is certainly evidence that we have much more than just an emotional connection with music. So the next time you put on your favorite track, have a little dance around safe in the knowledge that you are likely to be reaping some health benefits.

**18 (4/21/20) Tuesday**

**Write a Song!**

That’s right, I’m asking you to write a song! Don’t worry, you don’t have to compose your own music. Use a melody to a song you already know, then change the words to something uniquely your own. You can write about what you’ve been doing the past few weeks, or maybe something you have missed doing, be creative and have fun! Here’s an example for you. Read this to the tune of “Twinkle, Twinkle, Little Star”:

Covid, Covid, little virus

How I wonder when you’ll leave

Out in there in the world I know

Causing chaos, stopping the show

Now I’m social distancing

All my students I’m missing

**19 (4/22/20) Wednesday**

**Read this article titled “The Evolution of Music in Movies”** <https://reelrundown.com/film-industry/Music-in-Film>

**First Films, Lumiere Brothers**

In the beginning, there were the Lumière brothers, who made short moving pictures of normal occurrences: crowds, trains, people in lines. The camera they developed in 1895 captured the first moving pictures ever.

How exciting must that have been?

How, then, did we get from their completely silent, grainy images to our movies filled with and driven by full-force soundtracks?

Interestingly enough, there is a psychological reason that many scholars of film believe the improvised music was added to "silent" films. They assert that watching the actors, in black and white, speak with absolutely no sound would make us feel, on some base level, "unalive."

**Silent Films and Expressionism**

The artistic movement of Expressionism arrived at around the time that silent films became widely popular. As a result of this, many of the early silent films are either comedies (see Charlie Chaplin).

Either way, these films would be projected on a large screen in front of an audience. But sitting in silence probably wouldn't go over too well, and they couldn't add music to the film itself, so they had live music played at each showing of the film.

This would be anything from an upright piano to a full string quartet, and there would be no written score! That's right, they made it up as they went along and watched the movie. When Chaplin's character fell down (and obviously the musicians would get to memorize the films after several performances a day for weeks), they'd mirror that with a similar sound in the music.

They would have some written music sometimes, but it was usually a starting point for their improvisation. The written music would be published in books and was always ripped off from dead or obscure composers. Then there would be a page or two of "Circus Music" that could give the pianist an idea of where to start his improv in a carnival scene, et cetera. It was a fluid type of performing, and each showing of the film would be a bit different.

**Early Talkies**

Charlie Chaplin, unfortunately, didn't really survive the transition to films with sound, or "talkies." Suddenly hearing his voice and associating it with all the images of him they had seen silently proved to be too much of a shock to audiences! (The house musicians for the theaters were undoubtedly less than thrilled about the switch, as well.)

So instead of slapstick comedies, musicals began to flood the scene at the end of the '20s. In musicals, of course, everything seems to stop when a song begins so that the character can sing. Clearly directors and writers were very aware of the fact that they were adding music to their movies and were unsure of how to do it in a subtler way. That would come.

*The Jazz Singer* in 1927 was the first feature film to include speech synchronized to the actors on the screen. This means that the first words spoken on film were the first words of this movie:

"Wait a minute! You ain't heard nothin' yet!"

**Classical Scoring Technique**

You know all about this one; you just might not realize it. After the (admittedly brief) era of mainly musicals came the Classical Scoring Technique, which is still one of the most popular ways that music comes into film. It is the subtlest and often most powerful way for music to influence a movie.

In 1933, the original *King Kong* was released with Max Steiner's original score (meaning "written music"). It was one of the first movies to have comprehensive scoring throughout the whole plot, and Steiner wrote it using the Classical Scoring Technique.

To explain it in the simplest way: the Classical Scoring Technique just sounds like an orchestra playing in the background of the movie. When there's an intense scene, the music is intense. When there's a happy scene, the music sounds happy.

On a more complicated level, the composer uses themes (a whole melody to represent something like love or war) and leitmotifs (a couple notes in a recognizable pattern to represent one character or small idea). They hold the whole score together without the audience even noticing that their ears are recognizing the repeated patterns in the music.

Classical Scoring, creating a great deal of music in the background of the movie, also smooths over scene cuts or any other awkwardness of the film by continuing the idea from one scene to another.

Max Steiner is one of the most prolific and famous Classical Scoring writers, with 26 Academy Award nominations (and 3 wins). He scored *Gone With The Wind* and *Casablanca*, among tens of others.

Today, you'll probably recognize the name of John Williams. He is even more prolific than Steiner was and has scored most of the cinematic giants, such as *Star Wars* and *Harry Potter*. I don't have enough space here to tell you how many awards he's won, so... [Wikipedia it](http://en.wikipedia.org/wiki/John_Williams#Awards).

**A Jazzy Aside...**

Jazz, as almost everything else in the 1930s, became racially divided in the movies of the time: there was "black jazz" and "white jazz." White jazz was almost like swing and was played on violins and other symphonic instruments. It was used in movies to represent fun, usually. Black jazz was much more gritty and more purely "jazz" with trumpets and saxophones. It often represented women of ill repute, immoral character, or a general interruption of normalcy.

**Enter: Jazz**

Jazz music was the first time "popular" culture had entered into movies, and people liked it! Hollywood used it as a tool to instantly characterize the parts of the movies with jazz, as it has very specific associations to certain places and people.

For example, in *A Streetcar Named Desire*, the jazzy (admittedly symphonic) score helps cement the setting of New Orleans and the morally questionable actions of the characters.

Jazz had long been a part of pop culture, with many jazz clubs in the hip parts of town. It was the first truly American genre of music.

Unfortunately and awkwardly enough, jazz was considered "African American music" and had to be "sanitized" before it was put into white movies (see A Jazzy Aside to the right). We see much less (if any) racial coding in our movies today, obviously, as racism becomes less rampant.

**Spaghetti Westerns**

The days of spaghetti Westerns (popular in the '50s and '60s) brought back symphonic scoring, to an extent. They used the same ideas as the Classical Scoring Technique and similar orchestral instruments but added the "Western" sound with a twangy guitar and/or a Spanish trumpet.

The music was broad, long, drawn-out like the scenery. It had to be big to fill all the empty space the movies were showing, so the composers wrote for full orchestras. This music was used to intensify gun battles and horse chases and to help paint the image of the scenery in 360 degrees around the audience. Many of the themes from the more popular movies (see *The Good, The Bad, and The Ugly*from 1967) are constantly parodied or quoted in today's cartoons.

Ennio Morricone is one of the most famous Italian composers for the "spaghetti" Westerns, and he almost always paired with director Sergio Leone. Their collaboration was unprecedented, with Leone playing Morricone's music as he was filming the scene so the actors could hear it. These movies, of course, were the ones for which Clint Eastwood became so famous.

**Dissonant Scores**

Westerns gave way to science fiction and suspense movies, which had eerie, unsettling music. The scores were influenced by avant-garde and the twelve-tone music of Arnold Schoenberg.

This music heightens negative emotions by using notes that don't particularly sound great together. The composers would call for instruments to be used in new, unorthodox ways ("extended techniques"), like banging on the back of a guitar like a drum instead of strumming the strings. This way, the audience would be unable to identify the sounds, which heightens discomfort even further.

Famous movies with this technique include *Psycho* (1960), *Planet of the Apes* (1968), and *Apocalypse Now* (1979).

**Classical Scoring Comes Back**

In 1977, John Williams revived the Classical Scoring technique with his infamous score of *Star Wars*. He brought back to life the legacy of composers like Max Steiner by creating full scores with themes and recognizable leitmotifs. "Luke's Theme" remains one of the most generally familiar in film history.

Danny Elfman (famous now for writing *The* *Simpsons* theme) appeared not too long after and scored Tim Burton's *Batman* in the classical scoring style.

Even though the origins of this classical music are from Germany in the 1880s, our ears now recognize it as generic background music. Because of this, it is called the "default idiom;" even though we're hearing it while Batman zooms around Gotham, no one is asking, "Why is this German classical music playing?" It has been rendered timeless by movie scores.

**Musicals Revived**

Of course, musicals never went away through all of this, but they became much less popular than they were in the days of, say, Gene Kelly. The periodical musical came out and became popular -- *The Sound of Music* (1965), *Cabaret* (1972), *Rocky Horror Picture Show* (1975) -- and, no doubt, this is the way the legacy of musicals will continue.

More recently, we enjoyed the movie version of the musical *Chicago* (2002) and the original (though based on previously completed music, making it also partially a "song score") and overwhelmingly popular *Moulin Rouge!*(2001). I'm willing to bet that musicals will continue to be released every few years but will never catch on like wildfire again.

**Film Music Today: Song Scores**

Around the time we put the first pop music into movies (jazz, remember?), directors began to realize that they could advertise and sell the theme song of their film in an entirely separate market: the music industry. This was the origins of "soundtracks," which are released separately from the movie and contain only the music from the movie.

For the most part, soundtracks tend to be from movies with "song scores," which means that the music heard in them isn't classical and doesn't have similar themes throughout; instead the score is made up of many songs, some of which may be written for the movie and some aren't.

*The Graduate* (1967) is an incredibly famous movie- with- a- song- score, with popular Simon & Garfunkel songs like "Scarborough Fair," "Mrs. Robinson," and "Sound of Silence."

The aim of the song score is to produce nearly twice the revenue: they can sell and market the movie, hoping it does well, and they can sell and market the songs/album and hope that does well, too. Sometimes a song popularizes a movie, and sometimes a movie popularizes a song, but either way, Hollywood wins out twice as big.

Undoubtedly, we'll continue to hear song scores (as well as the classical scoring technique for epic and more classic movies) in movies for quite some time.

**20 (4/23/20) Thursday**

**Watch a movie! Pick one of your favorite movies and watch it. Using what you learned from the article you read on Wednesday, pay attention to the music in your movie. Is it instrumental, something written specific for that scene to enhance emotion? Is there singing? Does everything stop when the music starts so the music is the focus, or is the music in the background to help enhance the scene? Is the music also something you can buy on a soundtrack and listen to, making more profit for the film producers? Think about these things as you watch your movie, and enjoy- don’t forget the popcorn!**

**21 (4/24/20) Friday**

**Check out this article on the coronavirus and music:** <https://www.sciencemag.org/news/2020/04/scientists-have-turned-structure-coronavirus-music>

**Scientists have turned the structure of the coronavirus into music**

You’ve probably seen dozens of images of the novel coronavirus—now responsible for 1 million infections and tens of thousands of deaths. Now, scientists have come up with a way for you to hear it: by translating the structure of its famous spike protein into music.

The sounds you hear—the chiming bells, the twanging strings, the lilting flutes—all represent different aspects of the spikelike protein (above) that pokes from the virus’ surface and helps it latch onto unsuspecting cells. Like all proteins, the spikes are made of combinations of amino acids. Using a new technique called sonification, scientists from the Massachusetts Institute of Technology assigned each amino acid a unique note in a musical scale, converting the entire protein into [a preliminary musical score](https://soundcloud.com/user-275864738/viral-counterpoint-of-the-coronavirus-spike-protein-2019-ncov).

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But in real life, these amino acids tend to curl up into a helix or stretch out into a sheet. Researchers capture these features by altering the duration and volume of the notes. Molecular vibrations due to heat also get their own sounds.

But why would you set a virus to music? The new format can help scientists find sites on the protein where antibodies or drugs might be able to bind—simply by searching for specific musical sequences that correspond to these sites. This, the researchers say, is faster and more intuitive than conventional methods used to study proteins, such as molecular modeling. They add that by comparing the musical sequence of the spike protein to a large database of other sonified proteins, it might be possible to one day find one that can stick to the spike—preventing the virus from infecting a cell.

As for the instruments, they were entirely the researchers’ choice. In this case, a Japanese koto plays the main notes—soothing sounds that might bring some comfort in a time of trouble.