

# Using Music, Dance, and Exercise as Ways to Relieve Stress

**Tag Words:** Stress; Music; Exercise; Dance; Relaxation; Anxiety; Health; Cortisol; Endorphins

**Authors:** Andrew R. Sooklall, Joshua R. Flores with Julie M. Fagan, Ph.D

**Summary:** Stress is a problem that any individual of the world can be affected by and not even realize how serious it is. Stress can take a powerful toll on people's health and lives and, unfortunately, not many people know how to adequately deal with stress in a healthy manner. Music, dance, and exercise are healthy and efficient ways to reduce stress. The video we've created shows an example of a dance (choreographed) that can be used to reduce stress. By utilizing healthy dance routines and preferred musical pieces, people can relieve stress in an effective and safe manner.

## **Video Link:**

[http://www.youtube.com/watch?v=W1Jkhax4b0E&list=UUts4\\_1WyqXMmVDfu9ZffstA&index=6&feature=plpp\\_video](http://www.youtube.com/watch?v=W1Jkhax4b0E&list=UUts4_1WyqXMmVDfu9ZffstA&index=6&feature=plpp_video)

## **Stress, a problem of today. (AS)**

Stress is a very real problem in the lives of people today. It affects the lives of every individual and comes in various forms. To be frank, it is general knowledge that high stress levels can be a sign of future health problems in individuals (McEwen and Gianaros, 2010)<sup>2</sup>. Stress can result in extreme anxiety, emotional instability, reduces work performance, health issues, etc. The most unfortunate fact about stress, however, is that most people today cannot adequately deal with stress.

When people get stressed out they tend to turn to various things to ease the pressure on their minds and bodies. However, most of those things tend to be harmful to the person as well. One example of such a stress reducing agent are expensive therapeutic techniques. Massages and acupuncture can be very healthy and good for you, as well as suitable stress reducing agents. However, in today's time where people get stressed out easily and often, those techniques can add up to be very costly when repeated often to just reduce stress. While these techniques are good to be used in rare fashion, relying solely on these methods is just another way to put a hole in someone's wallet.

Another method that can be harmful to a person is alcohol. Many people turn to alcohol to reduce stress or when they just need an "escape from life." Alcohol abuse can be very detrimental to a person's health and can even result in liver failure or death. However, some more immediate effects of alcohol are the reduced control of emotional and action, reduced ability to think and act properly, and illnesses alcohol poisoning can cause. The cost of alcohol can also be a problem when one considers how often alcohol would be taken in order to keep stress levels reduce. However, ignoring the price, the reduced control of emotion and actions can be stressors as well; this is more prominent when actions are taken, while drunk, that would be regretted once sober. Alcohol abuse can also be detrimental to a person's health and life in other fashions. One such fashion is drunk driving; a person drinking to reduce stress at a bar, then

driving home could easily get into an accident and get seriously injured or die, while possibly causing harm to other people involved in the accident as well. Many people use alcohol as a stress reducer and it has too many adverse side effects to even be considered a proper way to reduce stress.

Another method people use to reduce stress is through the abuse of drugs. In a similar fashion to alcohol, both prescription and illegal drugs can be used as a way to reduce stress or escape from the world. However, these drugs are just as dangerous as alcohol abuse (and expensive as well) and they can result in death just as readily - if not easier. Drugs can result in just as terrible situations as alcohol, and overdosing is a very real problem. Drugs, like alcohol, are a terrible way to reduce stress and drug abuse is very illegal as well. Going to jail due to drug abuse would be an even larger stressor, so it makes no sense to use something that causes this much stress as a stress reducing agent.

Unfortunately, people are not exposed to proper stress reducing methods and so they resort to whatever they can find quickest. However, some people cannot reduce stress adequately with those methods and they resort to suicide instead. Suicide can be caused by various forms of stress due to bullying, self-loathing, and other forms of mental, emotional, and physical pressure. The world can be a very dangerous place, especially for young teens and even adults who cannot adequately deal with the stress they are exposed to in their everyday lives. Suicide leads to a very real problem - death.

Death is irreversible, and can affect many people other than the person who died. Death is the ultimate end for inadequate response to stress. In order to prevent such horrible outcomes, people in present times need very accessible and healthy ways to reduce stress. One such way is through music and the various ways to incorporate music with dance and exercise. Music is a low cost, healthy alternative to other stress reducing methods and can be used to prevent such horrible outcomes like death.

### **Results of Stress on the Body. (AS)**

Stress can affect the human body in many ways. A person who is stressed out already has a taxed mind; future pressure on that person will result in a greater negative response over time. Unfortunately, this means that as a stressed out person is subject to more strenuous stressors, that person will end up in a worse condition with each event. Not only that, but the more taxed the mind of the person is, the more likely they are to negatively react towards situations and other people. This means that stress can generally put people in "bad moods" due to the constant pressure exerted on that person's mind.

Stress is also known to stimulate the CNS (Central Nervous System) to release Cortisol through a hormonal cascade. Stress upregulates the production of corticotropin releasing hormone (CRH) in the hypothalamus and adrenocorticotropic hormone (ACTH) in the anterior pituitary gland. CRH upregulates the production of ACTH which upregulates the production of cortisol in the zona fasciculata of the adrenal cortex. Cortisol inhibits the immune system and, by doing so, reduces a person's immune response. More specifically, cortisol leads to downregulation of interleukin-2 receptors on CD4 T-Helper cells. This results in a decrease of B-cell antibody production. Cortisol also upregulates the production of nuclear factor  $\kappa$ B (NF- $\kappa$ B) which results in the

activation of inflammatory proteins; with an increased inflammatory response, but no activation of inflammation removal agents, the body has a large inflammatory response that it cannot get rid of easily (Gu, Tang, and Yang, 2012)<sup>4</sup>. A body with a constantly deprived immune system is one that cannot recover properly, and a body constantly under an inflammatory response is one that constantly appears sick. An increased inflammatory response without infections can be just as bad as reduction of immune response in an individual. A stressed individual with abnormally high cortisol levels is an immunocompromised individual.

Through the same stimulation of cortisol and the sympathetic nervous system, stress also results in the increase of heart rate and constriction of blood flow (Kroust 2006). Stress results in anxiety, hypertension, and other related incidents. Stress can cause the release of corticosteroids, cytokines, inflammatory proteins, and other molecules that induce an adhesive effect at sites of damaged endothelium. A prolonged stress response can be detrimental to the human body due to more than just a reduced immune response or increased inflammatory proteins - it can physically damage the body and endothelium itself. When stress damaged endothelium and causes these adhesive molecules to gather there, it can cause a buildup of molecules that may begin to block arteries. This blockage of an artery can lead to atherosclerosis which can lead into increased heart rate, blood pressure, heart attacks, etc (Gu, Tang, and Yang, 2012)<sup>4</sup>. Constant hypertension can result in damage of the vessels and damage to the heart itself, furthering the chance of a heart attack or eventual death.

Anxiety due to constant stress taxes the human mind in such a way that it can be deadly if a person does not cope properly. Constant stressful activities can come in any form, and can even lead to suicide when not taken care of. It's best to reduce stress as soon as possible in order to reduce its effect on the human body before it gets to a state that cannot be reversed.

### **Stress Development in Children (AS)**

There are many adverse side effects that come tied with the development of stress in individuals. However, younger individuals may be impacted harder than others when it comes to stress due to the fact that the adverse effects of stress will be an impact on those individuals throughout their lives. Constant application of stressors could lead to a change in stress response, and this change in response can cause serious damage to a child's development - especially in terms of developing emotions and attention regulation (Loman and Gunnar, 2009)<sup>1</sup>. There are many ways to cause malicious stress development in children. Some of these ways are inadequate caregiving, inappropriate environment/behavioral influences, genetic factors, and bias.

When children are exposed to these stressors in large amounts, the children become conditioned to have a larger reaction towards "normal" stimuli. This means that a normal "stressor" can induce a larger stress response from an individual because that individual "normalizes" anxiety, fear, pain, etc. as a regular response. This leads to an unnatural development of the prefrontal cortex resulting in irregular development of a child's emotional control and attention regulation. It is currently believed that neural systems controlling autonomic, endocrine, and behavioral responses are "malleable" during childhood and can be easily molded. This means that stress can create irregular develop of either of these systems and result in unnatural release of hormones, irregular responses, or even stunted mental growth (Loman and Gunnar, 2009)<sup>1</sup>.

Stress already leads to an increased release of cortisol and cortisol pathway hormones (adrenocorticotrophic hormone and corticotropin-releasing hormone). Cortisol naturally leads to a decreased immune response due to its negative feedback system with the CD4 T-helper cells (cortisol downregulates interleukin-2 receptors). This means that stressed individuals, with an abnormally high cortisol level, will have a decreased resistance to infections and disease. An immune system deficiency, compounded with possible neural system deficiencies due to high early stress levels in children, can result in an extremely compromised child (Loman and Gunnar, 2009)<sup>1</sup>.

This makes it imperative that children have reduced level of stress when growing up, and, if these “stressors” cannot be removed, the child should be able to release any stress he or she has. While research is being done on how to reduce the effects of stress development once it reaches such a level, a better option would be to prevent the stress build-up that affects the children from the start, or reduce the amount of stress induced on children in general. Music can be the tool to achieve such results. Music can be used to reduce the levels of stress the child has before it reaches such a critical level.

The same stress that affects children from an early age will continue to affect them throughout their lives. Stress affects people of all ages, and if it is difficult to reduce the amount of stress put onto children at a young age, it is important that stress reducing techniques are still implemented in the lives of people regardless of age. Regardless of age, people can benefit from the reduction of stress in their lives. The stressors may not be the same; students may be stressed out from exams, applications, etc., and adults may be stressed out from their school, career, children, mortgage and bill payments, etc. Regardless of why people are stressed, the fact is that they have pressures on their lives that need to be relieved. Music can be the tool to achieve such an effect.

### **Music Information (JF)**

Music is an art of sound in time that expresses ideas and emotions in significant forms through the elements of rhythm, melody, harmony, and color. It has been a part of mankind for thousands of years. Throughout time it has been used for religious, societal, and cultural purposes. Whether viewed objectively or subjectively, music is seen as having a healing factor. Ancient Greeks believed it to heal the mind, body, and soul. They believed it could influence behavior. It is versatile in nature and contains unbridled potential. These factors allow us to use music in different ways such as walking, family functions, etc. Our use of music has also increased with the inventions of recording equipment, music players, and the ability to mass produce and distribute music all over the world. Today we listen to it during our commutes, in elevators, surgery, during a movie, taking a bath, etc. Music has evolved to become as a part of our lives as clothing. It is a necessity we think we can live without, but ultimately need to truly live well.

We may be exposed to music from birth. Actually, some children may be exposed in utero, but we will focus on our connection with music post birth. We may be exposed through the singing of a cared one, toys, and other ambient music. We believe that exposing babies to this kind of music will soothe them and keep them in a state of happiness. Toddlers may experience music through daytime television or songs sung in school. The purpose of these songs is to educate,

such as the ABC song. In this scenario music is a tool to educate and sooth. This means that we are somewhat conditioned to view music as a tool for relaxation and focus.

As we become older our music tastes change because of our environment. One particular genre of music might not be enough to relieve stress. We might include other genres in our repertoire of stress relieving music. These kinds of songs are music that we favor above all others in the battle to reduce stress. Contrary to popular belief classical music does not relieve stress in everyone. Every person has a preferred taste and might be inclined to favor rock, rap, or any other style that is available for consumption. Any song or genre may relieve or reduce stress in an individual, but they might be listened to on a situational basis.

Control is an aspect of listening to music that some people might overlook because of the age in which we live. We live in an age and a nation where internet access is almost everywhere. Internet access provides us with a great deal of information that is readily available at our fingertips. More importantly, it provides us with the ability to acquire songs from almost every country and almost any time period. We gather many songs, but they are played one by one. The ones that we choose are the ones which reduce our stress.

Control is the first step in relieving stress. Often, we are stressed because many situations are out of our control. The act of choosing music does not exhibit this problem, because we have the authority over the outcome. We know when we choose a particular song that it is not going to cause stress. We may feel if we can control our entertainment then we can cope with the other external forces that cause stress.

### **Results of Music on the Body (AS)**

Music has been shown to have various effects on the human body. It can be used to both increase nervous system activity in the body, as well as relax it. Commonly, the type of music thought to relax people was sedative music; sedative music entails anything considered soft, romantic, soothing or an individual's personal choice of music. In contrast, it was thought that music used to stimulate nervous an increased active response was loud, fast, disruptive, or "explosive." However, studies have shown that individuals receive a more relaxing effect from music that they individually prefer. (Iwanaga, Kobayashi, Kawasaki, 2004)<sup>3</sup>

It has been shown that music, which has a relaxing effect, reduces heart rate. This heart rate reduction is more prominent in people as they become more exposed to that particular type of music or song (Iwanaga, Kobayashi, Kawasaki, 2004)<sup>3</sup>. However, music that has a strong excitatory aspect toward an individual will reduce parasympathetic activation while increasing sympathetic activation; this results in an increase of heart rate and active response. The effect of music depends on the individual listening to it because different individuals have different responses to the various types of music possible.

Music, however, has been shown to have a strong relaxation effect regardless of type when exposure to that type of music is repeated; "differences between sedative and excitative music narrowed through repetitive exposure" (Iwanaga, Kobayashi, Kawasaki, 2004)<sup>3</sup>. This means that while music can have both excitatory and relaxing effects, it can be used as a relaxing agent regardless of type. Music is a universal relaxation tool for the human body that just requires

repetition regardless of the type of music. However, this doesn't change the fact that individually preferred music will have a faster and stronger initial relaxation effect upon a person.

### **Music and Dance**

In a combination music and dance work in interesting ways. Often music can serve as a sole method of reducing or relieving stress. Although dance can be done with or without music, some sort of rhythm or melody usually accompanies it. Studies conducted, which measure stress levels in dancers and musicians who perform impromptu collaborative pieces, show that their levels of stress are dramatically reduced post performance (Jeppe 2006)<sup>8</sup>.

During the performance the musician and dancer constantly feed off of each other's emotional state. This is achieved when the musician and dancer focus and react upon what their partner is performing. During this period of time, in the performance, the musician and dancer are somewhat lost in their creativity and emotion. There is an unspoken communication process that takes place that allows them to musically co-exist and influence one another (Jeppe 2006)<sup>8</sup>.

Dancing to music is a level of expression that one may not be able to put into words. A high percentage of our communication is nonverbal. The ability to perceive music and dance freely is a creative process that keeps the mind and body in a positive state. Although energy is expended, the aftermath of a dance concludes with relaxation of the mind and the body. Quality of a dance, for relaxation purposes, depends on the dancer, but ultimately is not a cause for concern. The primary focus of the dancer is to convey true feelings in order to attain peace. Psychologically, dancing to music is a way to freely to express oneself.

### **Dance and Stress (JF)**

Stress causes us to indulge in activities that reduce the amount of actual physical activity needed to stay healthy. When we become stressed we are more likely to engage in activities such as watching television, surfing the web, and other various activities that numb the brain. The way in which we react to stress leads us to becoming lazy individuals looking for an escape. We tend to put our stresses to the side instead of dealing with them directly. This type of behavior causes laziness and a physically unhealthy lifestyle. One viable solution to this problem may lie in dance (Alpert 2010)<sup>5</sup>.

Dance is physical movement that conveys the mood or attitude of the dancer. Dance may take place with or without music. The moves are based on what the dancer feels is the right move at the time. Dancing does not take much effort and does not have a set structure. Doing as little as tapping a foot or waving a hand can be considered dance. There are dance styles which require the ability to take the forms seriously and have great discipline, but for this purpose the focus is mainly on the stress reduction factor of the simplest form of dance (Alpert 2010)<sup>5</sup>.

Dance may reduce stress because it is considered exercise. Exercise helps us to become and stay healthy. It increases blood flow which may increase muscle mass, flexibility, joint response, bone strength, and overall strength in the body. One of the best results of exercise is the production of serotonin. Serotonin is a chemical produced in the brain that relaxes and puts the body in a happy mood. This chemical is essential for a person's well being because serotonin also regulates sleep, appetite, and the ability to learn. Although pertinent, this information is

usually trumped by the popular belief that exercise is too much work. Thus, many people believe exercise to be stressful (Alpert 2010)<sup>5</sup>.

The difference between dance and exercise is that dance is a fun endeavor. Dance is a physical response to an emotion that is drawn from music. People are usually more inclined to have fun than to work. Dance has the ability to solve this issue because it is both. Moreover, it is work disguised as a fun activity. For this reason it is easier to dance than to work out. This phenomenon is seen by people who work out with music. Their choice of music is favorable and allows the individual to continue their work out. As music plays an individual may find it easier to keep going and push through an exercise because they are supported by the music to which they listen (Alpert 2010)<sup>5</sup>.

### **Different Styles (JF)**

There are many different styles of dance and each of them has merit. They can all be used for exercise. Just like music each style of dance is unique and special to an individual. Dances such as jazz or tap may be a bit fast paced than an average ballet or contemporary piece, but they all serve the same purpose. They may all be used as a way to exercise in a fun way. Also, an individual is not limited to dancing a certain way to a certain song. With a vast array of different styles, music, and people any dance can be applied to any kind of music. The possibilities and joy of mixing and matching are endless.

One thing these styles have in common is the way they are taught. This is done through choreography. Choreography is a specific set of dance moves that are created for a particular song or a particular time. Any individual willing to engage in this kind of style can do this. The act of choreography gives the individual a sense of control over the movements they want to convey. It also gives them structure in their entertainment because the movements in choreography are predetermined (Bräuninger 2012)<sup>6</sup>.

Structure is important in choreography because it is meant to elicit a certain emotion. The tango is a high-energy dance that conveys a certain sexual appeal. Hip-hop generally entails the conveyance of an ego. Every dance has a certain attitude associated with it and different reasons for experiencing stress may call for different styles. Therefore, the music does not necessarily call for a certain type of dance, but it is an emotion from music that beckons a dance (Bräuninger 2012)<sup>6</sup>.

Whether it is choreography or freestyle, dance requires an individual to think on their feet. An individual cannot think properly if they are troubled with stress. Dance allows an individual to reduce stress in order to think properly for the prospective fun of dance. It allows someone to live in the moment. The moment of dance may convey any emotion, but a message will be sent. That message carries on it the burden of stress (Bräuninger 2012)<sup>6</sup>.

### **Engaging in Active Events Using Music (AS)**

Music and dance may not always give an immediate sedative effect, but this does not mean that it will not provide stress relief. Stress naturally builds up cortisol levels, adrenaline, acetylcholine (Ach), and other various biological messengers (Krout 2006). These provide that “adrenaline

rush” or sudden burst of energy that has so many side effects mentioned before. However, people may notice that certain music or music-included activities may generate a similar rush or feeling.

An example of a situation in which this would occur is a football game. Imagine a scenario where you’re in the crowd, cheering on your favorite team. The music is pumping, crowd is cheering, your favorite team is entering the field. Naturally, you’re probably psyched and full of energy - ready to cheer your team on. The music used here was used to generate an excitatory response to get you ready for the game. However, that doesn’t mean it’s generating stress rather than relieving it. On the contrary, stress will actually be relieved in this football game.

As the football game continues and you’re completely in tune with the game due to the music choice, the crowd’s excitement, and your own excitement, you’re forgetting about all the stress inducers that would have normally put pressure on your mind and body. By forgetting these “stressors,” you’re actually removing your stress response. Also, the previously mentioned messenger like Ach (acetylcholine) are elevated temporarily during moments of that rush, but, when the excitement drops after a game, the levels will return to normal. When the levels of Ach and other messengers return to normal, it’s like your body is relaxing after a stressful response. As mentioned before, your body was actually forgetting about the stressors beforehand and, with this sudden drop in levels of stress induced messengers, your body is actually gaining even further relief from the compounded effect of returning to a relaxed state and ignoring stressors.

Due to this effect, an individual can actually become quite relieved from an event like a football game. However, there are other factors that provide relief as well. Serotonin release is increased with motor activity (Turcotte 2011)<sup>10</sup>. Serotonin is the neurotransmitter responsible for the “natural high” or general feeling of euphoria accompanied with exercise and other physical activities. By actively cheering a team on, an individual goes through various forms of motor activity due to standing out of their seats, yelling to cheer their team on, and other various actions. These actions together help build serotonin levels and generate that “good feeling” while the game is going on. With the removal of stressors during the game, an individual has nothing to diminish that good mood during and directly after the game.

Keep in mind that if an individual were to simply sit and stare during a football game, these levels of serotonin would not increase greatly and it’s quite possible that no effect may be noticeable. Like any activity, the only real results are provided when effort is put into the actions. If a person does not try to participate in the game, they most likely wouldn’t enjoy it anyway and this coincides with the lack of serotonin and release and possibility of their mind being on something else other than the game (for example, thinking about stress inducing events). The music in this event is used to put people “in the zone” or in the mood to enjoy the game, stress will only be reduced if the music succeeds in putting people in the game.

### **Music and Dance - Just Requires a Little Effort (AS)**

Music and dance are healthy and efficient ways to reduce stress through passive or active activities. There are many ways to utilize music and dance to relieve stress; these methods range from simply listening to music, to incorporating it in various forms of dance and exercise, to using it to “get in the mood” for various activities that can relieve stress.



Music and dance are very accessible methods to relieve stress as well. Music is available in various forms of media through internet, mp3, radio, television, etc. The music available online can be listened to on sites like YouTube, or even previewed and purchased on sites like Amazon or iTunes (Krout 2006). Not only that, but individuals can always just create their own beats or music using any devices. Sound is universal and has been utilized in many fashions over time - it isn't limited to just listening to what others create and play. Dance can be performed nearly everywhere, including in the comfort of a person's own home. It can be performed with or without music, making it an easy way to relieve stress. It doesn't matter how someone dances or how good that person is; the only thing that matters is that the person enjoys it and dances in a safe, healthy manner.

All it takes is a little effort to reduce stress. Instead of just relying on expensive or unhealthy ways to relieve stress, people need to look into safer methods for getting things off their minds. Music and dance provide many methods to do just that. With a little time and effort, all that stress can melt away into sweet bliss.

### **Dance Video - Dancing Away Stress (AS+JF)**

The problem with people's way of dealing with stress today was that every method was generally ineffective for one of multiple reasons; the methods used to relieve stress were either too costly, too damaging to a person's health, or had no major benefit to the person at all. People needed a way to deal with stress in a manner that was beneficial to them. This manner of stress relief needed to be both healthy and cost effective, and music combined with dance is a method fully capable of doing that.

In order to show people how easy it could be to relieve stress and promote self-well-being, we created a choreographed dance routine with a music mix designed to relax the body. The video first gave a few examples of warm-ups that should always be performed before exercise of any sort - including dance. After the exercises, the dance routine begins. Each move was designed to be simple for new dancers and easy to pick up. As the dance continued, the moves remained relatively simple but progressed slightly in difficulty in order to work the body more.

The music that was chosen were songs tailored to our personal preferences and the preferences of students in our age range. The mix contained two popular dance songs as well as one popular rock song. We felt that diversity in songs could help us gain a wide variety of viewers. The chosen music also shows that a dance routine can be created to suit different genres. Because our purpose is to inform as many people as possible, we chose to have simple, but energetic moves in our routine.

Energy and openness are very useful tools for teaching and learning this dance because the mix contains fast paced songs. We wanted the audience to be comfortable with the moves that we provide so they can proactively shape their healthy choices. We believe that if we provide the audience with high energy, they will respond positively. Whether a viewer decides to learn the moves or not we wanted to provide information and a fun activity that guides the audience to a healthier future.

We wanted to target students in our age range because we are able to easily empathize with them. Although some might think school is a walk in the park they do not realize the stress we face from college life. We deal with stresses like peer pressure, deadlines, commutes, etc. We believe that music and dance is a positive, economic, and fun way to reduce and relieve stress. Also music and dance is something in which most college students already participate. This routine was meant as a guide to continue these healthy actions.

The exercise from the dance routine causes the release of serotonin which helps to create a sort of “relaxed” feeling or natural “high” and endorphins which block an individual’s perception of pain. This is completely healthy and helps the body get over stress and pressure (also mentioned in the video). The moves were designed to be on beat and, because of this, people can more easily “fall into step” and learn the dance; the dance itself follows a relatively simple 8-beat count most of the time which makes it easy for even kids to pick up. Also, the music provided is generally upbeat and picked as a mass crowd-pleaser. However, as explained in previous paragraphs, the best music for relaxation is one chosen by the listener and this includes dance as well. People are fully capable of dancing to anything and this video is just an example of what one can perform.

An individual’s ability to perform is based on their willingness to learn. In the video we wanted to encourage learning. We did this by including witty jokes, colorful transitions, and multiple people in the final cut. We wanted to be lively because we feel that a viewer might be more inclined to learn this type of choreography if he or she can identify with the people in the video. A person might be more willing to learn something new if they can enjoy what they are learning. We aimed to make this dance fun and exciting instead of just work and scientific information.

The last part of the dance is freestyle and, as such, individuals are able to do whatever they desire. This was designed to leave a choice to the dancers following the choreography and give them a way to express themselves and relieve remaining stress in any way they see fit through dance. A full choreography tutorial was included with the video which demonstrates, step-by-step, how to perform each dance move so a person can easily learn the dance. The videos were designed to show people that dance is both easy to learn, and a great way to promote health and stress relief.

## **References:**

<sup>1</sup><http://www.sciencedirect.com.proxy.libraries.rutgers.edu/science/article/pii/S014976340900075X>

<sup>2</sup><http://www.ncbi.nlm.nih.gov.proxy.libraries.rutgers.edu/pmc/articles/PMC2864527/?tool=pmcentrez>

<sup>3</sup><http://www.sciencedirect.com.proxy.libraries.rutgers.edu/science/article/pii/S0301051105000049>

<sup>4</sup><http://www.sciencedirect.com.proxy.libraries.rutgers.edu/science/article/pii/S0021915012000548>

<sup>5</sup><http://hhc.sagepub.com.proxy.libraries.rutgers.edu/content/23/2/155.full.pdf>

<sup>6</sup><http://www.sciencedirect.com.proxy.libraries.rutgers.edu/science/article/pii/S0197455612000329>

<sup>7</sup><http://www.amsciepub.com.proxy.libraries.rutgers.edu/doi/pdf/10.2466/pr0.2002.91.3f.1195>

<sup>8</sup>[http://ac.els-cdn.com/S0197455606000517/1-s2.0-S0197455606000517-main.pdf?\\_tid=00d6ba16ea0c2a5216bd2a58969d1dd1&acdnat=1343838721\\_c0acfb8e9fc33af94ed63bd0a632759e](http://ac.els-cdn.com/S0197455606000517/1-s2.0-S0197455606000517-main.pdf?_tid=00d6ba16ea0c2a5216bd2a58969d1dd1&acdnat=1343838721_c0acfb8e9fc33af94ed63bd0a632759e)

<sup>9</sup><http://www.sciencedirect.com/science/article/pii/S0197455606001080>

<sup>10</sup><http://www.livestrong.com/article/22590-effects-exercise-serotonin-levels/>

## **Appendices:**

### **Letter to Editor (AS)**

*--- Home News Tribune*

I am a Rutgers student writing to inform others about the situation regarding stress and few ways to reduce it. Stress is a concern that many people have always been faced with. However, people seem to have many more stressors now that their lives have come to the point where problems are confronted on a daily basis all throughout the day. With less time to devote to relaxation, the importance of stress-reducing activities seems to have been forgotten.

Stress may seem like something that can be overlooked by most people; however, stress can have very detrimental effects on health. Stressors have shown to be causes of heart and health related incidents, reduced learning capacity, and unstable emotional mentalities. In other words, stress causes harm to people. Whether it reduced the body's immune response through the stimulation of various hormones, distracts one from thinking properly in terms of work and school, or adds just that extra bit of pressure onto someone's mind that causes that person to break – stress is a very real factor in someone's health.

There are many ways to reduce stress; however some may not just be accessible to the average person for various reasons – money, time, space, etc. A very simple solution is through the use of music. Music has been shown to reduce stress and the best part is – there isn't a special type you need to listen to. Just take some time out of your day to listen to some music you like, or even do it as you travel somewhere. Regardless of how you do it, that extra time put in to relaxing helps. Music is easily accessible through radio, internet, and various other sources. If you want to put the money in, you can always buy your favorite songs.

Another way to incorporate music into your life as a stress reducing agent is through dance. Dance, using music, incorporates both music as well as exercise as relaxing agents. Exercise has been shown to increase productions of hormones that relax the body, as well as improve your health through various other means. Dancing is a great way to improve your health as well as reduce stress. As long as you pay attention to safety concerns when moving your body, it doesn't matter how you dance – just engage in it actively. Anyone can log onto the internet, on websites like YouTube, and find dances and moves to learn if interested.

With the internet available, as well as readily accessible sources of music, dancing and music have become easy-to-use ways to reduce stress. All it takes is a little bit of time to save a lot of headaches later on in the day. Instead of spending a lot of money to reduce a little stress, dancing and music are simple and cheap alternatives to keep your cool.

Andrew Sooklall

## **Letter to the Editor (JF)**

- *NY Daily News*

I am a Rutgers student and I wanted to inform the public about an important way to reduce and relieve stress. First, I want to point out that stress is a factor in most people's lives. Everyday, we face some sort of stress. This can come from many different sources such as school, the workplace, and even home. We are busier than ever and we often seem to forget that we may be stressed and it does have risks.

Stress can be reduced by many different means, but we do not always have the resources to indulge in some of the more common techniques such as a massage chair, baseball game, or sports car with which we can drive up and down the coast. If we do not put in effort to reduce or relieve stress we may be in trouble. Stress can keep us unfocused and in a fast paced world we need all the power from our mind as we can get. It may also decrease our immune response to some of the most common germs. Therefore I am proposing a simple, but effective, solution to this problem.

Listening to music proves to be one of the most effective way to relieve stress. Presently, most of us have some sort of mp3 or portable music player and that is a direction in the right step. The next step is the choice of music. Choice is very important because it allows us to feel in control. Now, the type of music and the song is entirely up to the listener, because they will deem what soothes them. Favorable music may reduce stress and cause another type of stress release which is dance.

Dance can be a fun and healthy way to relieve stress. Body movements to your favorite music expresses the way you feel. Movement might be exercise, but it is something that we all need in order to be healthy. Also, it is a great way to learn what your body can do. You don't have to be a professional to dance, just have fun. Listening and dancing to music is something we should do for ourselves because it is enjoyable and our health comes first.

Joshua Flores