Music in Sport and Exercise : An Update on Research and Application

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Submitted by: Costas Karageorghis and David-Lee Priest - Brunel University

Abstract

In spring 1999, almost a decade ago, the first author published in The Sport Journal an article titled "Music in Sport and Exercise: Theory and Practice." The present article's origins are in that earlier work and the first author's research while a master's student at the United States Sports Academy in 1991–92. To a greater degree than in the original 1999 article, this article focuses on the applied aspects of music in sport and exercise. Moreover, it highlights some new research trends emanating not only from our own publications, but also from the work of other prominent researchers in the field. The content is oriented primarily towards the needs of athletes and coaches.

Music in Sport and Exercise: An Update on Research and Application

With the banning of music by the organizers of the 2007 New York Marathon making global headlines, the potentially powerful effects of music on the human psyche were brought into sharp focus. In fact, music was banned from the New York Marathon as part of the wider USA Track & Field ban on tactical communications between runners and their coaches. The marathon committee upheld this ban, which is often otherwise overlooked, justifying its action in terms of safety.

The response to the ban was emphatic. Hundreds of runners flouted the new regulation and risked disqualification from the event—such was their desire to run to the beat. Experience at other races around the world confirms the precedent set in New York; try to separate athletes from their music at your peril! But why is music so pivotal to runners and to sports people from a wide variety of disciplines?

How Music Wields an Effect

In the hotbed of competition, where athletes are often very closely matched in ability, music has the potential to elicit a small but significant effect on performance (Karageorghis & Terry, 1997). Music also provides an ideal accompaniment for training. Scientific inquiry has revealed five key ways in which music can influence preparation and competitive performances: dissociation, arousal regulation, synchronization, acquisition of motor skills, and attainment of flow.

Dissociation

During submaximal exercise, music can narrow attention, in turn diverting the mind from sensations of fatigue. This diversionary technique, known to psychologists as dissociation, lowers perceptions of effort. Effective dissociation can promote a positive mood state, turning the attention away from thoughts of physiological sensations of fatigue. More specifically, positive aspects of mood such as vigor and happiness become heightened, while negative aspects such as tension, depression, and anger are assuaged (Bishop, Karageorghis, & Loizou, 2007). This effect holds for low and moderate exercise intensities only;

at high intensities, perceptions of fatigue override the impact of music, because attentional processes are dominated by physiological feedback, for example respiration rate and blood lactate accumulation.

Research shows that the dissociation effect results in a 10% reduction in perceived exertion during treadmill running at moderate intensity (Karageorghis & Terry, 1999; Nethery, 2002; Szmedra & Bacharach, 1998). Although music does not reduce the perception of effort during high intensity work, it does improve the experience thereof: It makes hard training seem more like fun, by shaping how the mind interprets symptoms of fatigue. While running on a treadmill at 85% of aerobic capacity (VO2max), listening to music will not make the task seem easier in terms of information that the muscles and vital organs send the brain. Nevertheless, the runner is likely to find the experience more pleasurable. The bottom line is that during a hard session, music has limited power to influence what the athlete feels, but it does have considerable leverage on how the athlete feels.

Arousal Regulation

Music alters emotional and physiological arousal and can therefore be used prior to competition or training as a stimulant, or as a sedative to calm "up" or anxious feelings (Bishop et al., 2007). Music thus provides arousal regulation fostering an optimal mindset. Most athletes use loud, upbeat music to "psych up," but softer selections can help to "psych down," as well. An example of the latter is two-time Olympic gold medalist Dame Kelly Holmes's use of soulful ballads by Alicia Keys (e.g., "Fallin'" and "Killing Me Softly") in her pre-event routine at the Athens Games of 2004. While the physiological processes tend to react sympathetically to music's rhythmical components, it is often lyrics or extramusical associations that make an impact on the emotions. Ostensibly, fast tempi are associated with higher arousal levels than slow tempi.

Karageorghis and Lee (2001) examined the interactive effects of music and imagery on an isometric muscular endurance task which required participants to hold dumbbells in a cruciform position for as long as possible. Males held 15% of their body weight and females held 5% of their body weight. The authors found that the combination of music and imagery, when compared to imagery only, music only, or a control condition, enhanced muscular endurance (see Figure 1), although it did not appear to enhance the potency of the imagery. The main implication of the study was that employing imagery to a backdrop of music may be a useful performance-enhancement strategy that can be integrated in a pre-event routine.

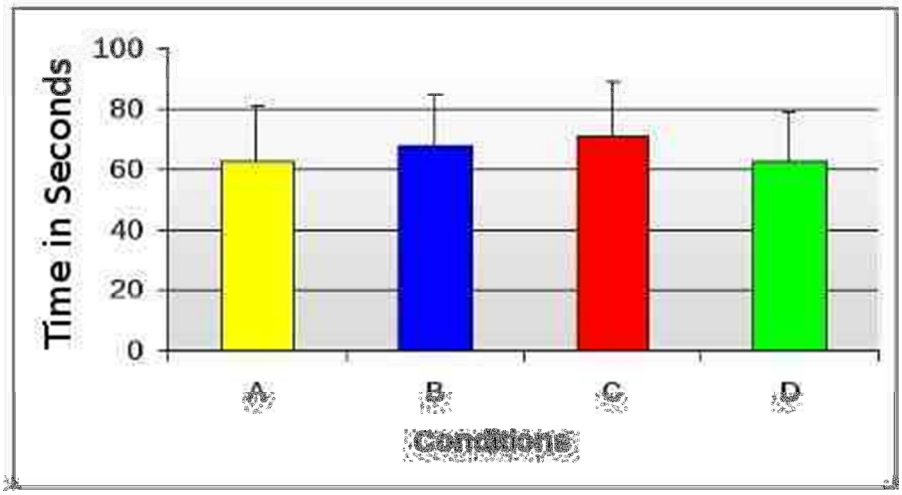

Figure 1. Bar chart illustrating mean scores (+ 1 SD) for isometric muscular endurance under conditions of imagery only (A), motivational music (B), motivational music and imagery (C), and a no music/imagery control (D).

Synchronization

Research has consistently shown that the synchronization of music with repetitive exercise is associated with increased levels of work output. This applies to such activities as rowing, cycling, cross-country skiing, and running. Musical tempo can regulate movement and thus prolong performance. Synchronizing movements with music also enables athletes to perform more efficiently, again resulting in greater endurance. In one recent study, participants who cycled in time to music found that they required 7% less oxygen to do the same work as compared to cycling with background (asynchronous) music (Bacon, Myers, & Karageorghis, 2008). The implication is that music provides temporal cues that have the potential to make athletes' energy use more efficient.

The celebrated Ethiopian distance runner Haile Gebrselassie is famous for setting world records running in time to the rhythmical pop song "Scatman." He selected this song because the tempo perfectly matched his target stride rate, a very important consideration for a distance runner whose aim is to establish a steady, efficient cadence. The synchronization effect in running was demonstrated in an experimental setting by Simpson and Karageorghis (2006), who found that motivational synchronous music improved running speed by ~.5 s in a 400-m sprint, compared to a no-music control condition (see Figure 2).

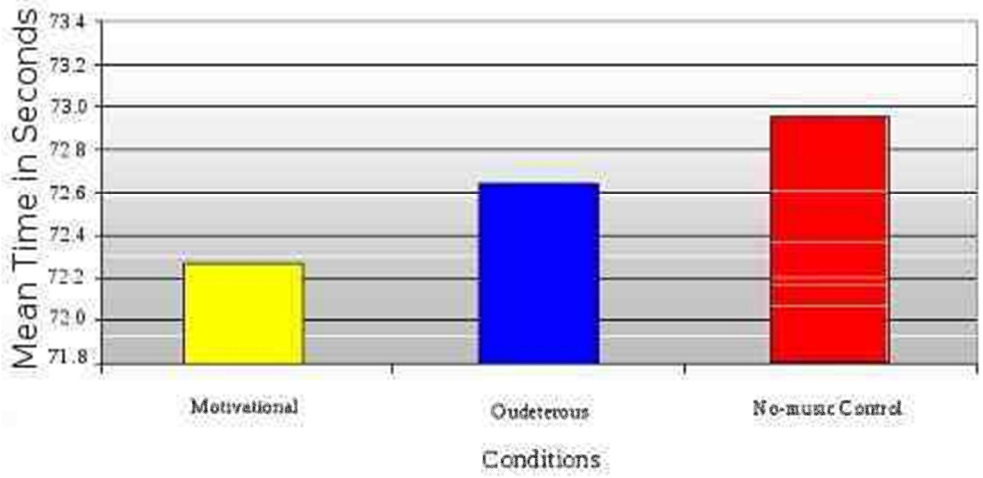

Figure 2. Mean 400 m times for synchronous motivational music, synchronous oudeterous music, and a no-music control.

Acquisition of Motor Skills

Music can impact positively on the acquisition of motor skills. Think back to elementary school days and your initial physical education lessons, which were probably set to music. Music-accompanied dance and play created opportunities to explore different planes of motion and improve coordination. Scientific studies have shown that the application of purposefully selected music can have a positive effect on stylistic movement in sport (Chen, 1985; Spilthoorn, 1986), although there has been no recent research to build upon initial findings.

There are three plausible explanations for the enhancement of skill acquisition through music. First, music replicates forms of bodily rhythm and many aspects of human locomotion. Hence, music can transport the body through effective movement patterns, the body providing an apparent visual analogue of the sound. Second, the lyrics from well-chosen music can reinforce essential aspects of a sporting technique. For instance, in track and field, the track "Push It" (by Salt-n-Pepa) is ideal for reinforcing the idea that the shot should be put, not thrown; throwing the shot is the most common technical error. Third, music makes the learning environment more fun, increasing players' intrinsic motivation to master key skills.

Attainment of Flow

The logical implication of study findings concerning music's effects on motivational states is that music may help in the attainment of flow, the zenith of intrinsic motivation. Recent research in sports settings has indeed found that music promotes flow states. Using a single-subject, multiple-baselines design, Pates, Karageorghis, Fryer, and Maynard (2003) examined the effects of pre-task music on flow states and netball shooting performance of three collegiate players. Two participants reported an increase in their perception of flow, and all three showed considerable improvement in shooting performance. The researchers concluded that interventions including self-selected music and imagery could enhance athletic performance by triggering emotions and cognitions associated with flow. Karageorghis and Deeth (2002), furthermore, investigated the effects of motivational music on flow during a multistage fitness

test. The multiple dimensions of the flow experience were represented by the factors incorporated in the Flow State Scale (FSS) developed by Jackson and Marsh (1996). When compared to oudeterous music and a no-music control condition, motivational music led to increases in several FSS factors.

Selecting Music for Sport and Exercise

Type of Activity

An athlete searching for music to incorporate in training and competition should start by considering the context in which he or she will operate (Karageorghis, Priest, Terry, Chatzisarantis, & Lane, 2006). What type of activity is being undertaken? How does that activity affect other athletes or exercisers? What is the desired outcome of the session? What music-playing facilities are available? Some activities lend themselves particularly well to musical accompaniment, for example those that are repetitive in nature: warm-ups, weight training, circuit training, stretching, and the like. In each case, the athlete should make selections (from a list of preferred tracks) that have a rhythm and tempo that match the type of activity to be undertaken. To assess the motivational qualities of particular music, the Brunel Music Rating Inventory (BMRI) may be used (Karageorghis, Terry, & Lane, 1999), as may its derivative, the BMRI-2 (Karageorghis et al., 2006).

One of the latest developments in the music-in-sport field is London's Run to the Beat half-marathon, an event that will feature scientifically selected motivational music performed live by musicians positioned along the route (Run to the Beat: London's Half-Marathon, n.d.). Our research team has been instrumental in managing the music policy for Run to the Beat and in ensuring that runners are delivered music that is appropriate to their preferences and sociocultural backgrounds. We have gathered relevant information from the half-marathon's website and used it in prescribing musical selections contoured to the event's motivational and physiological demands.

Intensity of Activity

An athlete or exerciser whose goal during warm-up is elevating the heart rate to 120 beats per minute should select accompanying music that has a tempo in the range of 80–130 beats per minute. Successive tracks should create a gradual rise in music tempo to match the intended gradual increase in heart rate. Moreover, segments of music can be tailored to various components of training, so that, for example, work time and recovery time are punctuated by music that is alternately fast and loud or slow and soft. This approach is especially well suited to highly structured sessions such as circuit or interval training. The authors have used this technique with collegiate athletes engaged in a tough weekly circuit training session, and the upshot has been a 20% improvement in attendance.

Our recent research has uncovered the tendency among athletes and exercisers to coordinate bursts of effort with those specific segments of a musical track they find to be especially motivating. We refer to the phenomenon as segmentation (Priest & Karageorghis, 2008). The segmentation effect is particularly strong if the individual knows the musical track very well and can anticipate the flow of the music. It is also beneficial to match the tempo of music with the intensity of the workout. For example, when cycling at around 70% of one's aerobic capacity, mid-tempo music (115–125 beats per minute) is more effective than faster music (135–145 beats per minute) (Karageorghis, Jones, & Low, 2006; Karageorghis, Jones, & Stuart, 2008).

Delivery of Music

Coaches and athletes must choose how selected tracks will be delivered before or during training or competition. If others are training nearby and might be disturbed by one's music, it should be delivered via an MP3 player. Music intended to enhance group cohesion or inspire a group of athletes is best delivered with a portable hi-fi system or stadium public address system. If distraction is an important consideration, the volume at which music is played should be set quite high, but not high enough to cause discomfort or leave a ringing in the ears. Indeed, sound at a volume above 75 dB delivered during exercise—when blood pressure in the ear canal is elevated—can cause minor temporary hearing loss (Alessio & Hutchinson, 1991).

Selection Procedure

The researchers suggest accompanying training activities with music, to enable athletes to tap into the power of sound. To start, assemble a wide selection of familiar tracks that meet the following six criteria: (a) strong, energizing rhythm; (b) positive lyrics having associations with movement (e.g., "Body Groove" by the Architects Ft. Nana); (c) rhythmic pattern well matched to movement patterns of the athletic activity; (d) uplifting melodies and harmonies (combinations of notes); (e) associations with sport, exercise, triumph, or overcoming adversity; and (f) a musical style or idiom suited to an athlete's taste and cultural upbringing. Choose tracks with different tempi, to coincide with alternate low-, medium-, and high-intensity training.

A further consideration is variety among selections. A study we published of data from a major fitness chain in the United Kingdom (Priest, Karageorghis, & Sharp, 2004) indicated that variety in the selections was paramount. Table 1 presents titles of motivational tracks suitable for different components of a single training session with a specific individual in mind.

Table 1

Example Motivational Music for Training-Session Components of Different Exercise Intensities

The Effects of Music on Exerise?

By Len Kravitz, Ph.D.

From the introduction of aerobic dance in the early 70's, it has generally been regarded that the music accompaniment to exercise provides an important beneficial effect to the exercise experience. Many health and fitness instructors regard the addition of music to exercise similarly to an ergogenic aid, with the removal of music or an inappropriate selection of music as a sure bet to an unsuccessful class. However, it may come as a surprise that scientific evidence has conflicting results when it comes to investigating the effects of music on exercise performance. In this article, a research review of the literature will be presented and discussed, exploring the following:

1) the effects of music on respiration and heart rate,
2) the effects of different types of music on physical strength,
3) the effects of music and rhythmic stimuli in the rehabilitation of gait disorders
4) the effects of music on endurance performance,
5) the effects of rhythmic accompaniment upon learning fundamental motor skills
6) the influence of music elements on aerobic fitness

Effects of Music on Respiration and Heart Rate

The effects of music on respiration and cardiac activity have been of particular focus to researchers due to the value of these physiological parameters to health and disease prevention. The ability to control cardiac activity may be desirable in the treatment of various heart conditions. However, much of the early research on the physiological response to music has been rejected by researchers because of poor research designs, inadequate procedures, and limits of the equipment (Dainow, 1977) . In a well-designed study, Ellis and Brighouse (1952) noted that respiration rate increased significantly with the onset of jazz music and tends to return to pre-music levels with the cessation of music. Heart rate was only moderately effected by the introduction of the music. The average heart rate is between 72-80 beats per minute while music tempos may range from 70 to 170 beats per minute. A review of studies indicates that heart rate tends to only moderately follow the music; increasing in response to fast music and decreasing in response to slow music (Dainow, 1977) . Dainow cites several investigations that actually show any type of music (sedative or stimulative) will show a moderate increase in heart rate. Much of this increase in heart rate by all types of music can be explained due to the fact that music does produce some kind of emotional effect, thus increasing the heart rate.

Application: The research applications suggest that fitness teachers may benefit their students by playing music that in many ways depicts the intensity of the upcoming workout as students enter the workout room. In this way, the increases in respiration

and moderate increases in heart rate from the music will better prepare the students for the forthcoming workout.

Effects of Different Types of Music on Physical Strength

Surprisingly, only one investigator has thoroughly conducted research comparing the influence of stimulative music, sedative music, and silence (no music) on measured grip strength (Pearce, 1981) . Subjects were 33 male and 16 female undergraduate students randomly assigned to the order of the three types of stimulation (stimulative, sedative, and silence). Analysis indicated that listening to sedative music decreased strength significantly when compared to stimulative music and silence. However, no statistical significant difference was seen between stimulative music and silence.
Application: It appears that sedative music may actually decrease a person's muscular fitness potential training ability. This is congruent with early pioneering research that shows muscle tension can be altered by choice of music: stimulating music increasing muscle tension with sedative music decreasing muscle tension (Sears, 1957) . Although more research is needed, the lack significant difference in strength comparing stimulative music to silence suggests that personal trainers would be well-advised in surveying their clients as to their perceived best workout environment (with or without music accompaniment).

The Effects of Music and Rhythmic Stimuli in the Rehabilitation of Gait Disorders

Neuromuscular and skeletal disorders may seriously affect the quality of a person's life by limiting a person's daily functioning capacity and impeding mobility. Research has steadfastly demonstrated that external auditory cues, such as rhythmic music and percussion pulses favorably affects coordinated walking and proprioceptive control (Rudenberg, 1982; Staum, 1983) . It has been suggested that the music or auditory stimuli improves gait regularity due in part to the use of the beat, which helps individuals to anticipate the desired rate of movement.
Application: Many health and fitness professionals are currently working with the physically challenged, due to neuromusuclar or orthopedic disorders. The use of music and auditory stimuli can be advocated to enhance a person's gait and gross motors skills, leading to increased stability and mobility of the clients.

The Effects of Music on Exercise Performance

Studies investigating the effects of music on exercise performance have revealed inconsistent data. Music accompaniment has been shown to improve muscular endurance in the performance of junior high students doing sit-ups (Chipman, 1966) and college women doing push-ups (Koschak, 1975) , while it did not enhance the running speed of female youth (Leslie, 1967) . In contrast, college-aged males and females were able to walk farther and with less effort when exercising to music as compared to no music (Beckett, 1990) . In a well-designed study, Schwartz, Fernhall

and Plowman (1990) investigated the effect of music on submaximal bicycle performance with untrained college men and women. Music exhibited no significant influence on any physiological variable measured (aerobic capacity, ventilation, respiratory exchange ratio, heart rate, and blood lactates). In addition, the psychological perception of effort was not altered with or without the music stimulus, although subjects felt they performed better with the music. Another investigation of submaximal intensity walking/jogging on a treadmill showed that subjects had longer times to exhaustion when listening to slow, soft music as compared to loud fast music (Copeland & Franks, 1991) .

A possible explanation to some of the discrepancies seen in these studies can be attributed to subject bias. In some studies the subjects were aware of the purpose of the study, which may have led them to try to "help the researcher." In studies involving music, "blinding" the subjects as to the purpose of the study will most likely improve the internal validity (see Reading and Enjoying Research) of the study.

Application: The practical application of this research is indirect. Research is unclear at this point as to the physiological effects music may have on exercise performance. New, well-designed and controlled studies are warranted. However, more important to the health and fitness educator is the exercise adherence of his/her students to the physical activity programs. Music in many ways may improve a person's enjoyment and compliance to a fitness program, therefore ensuring long-term benefits, such as enhanced quality of life and reduction of risk to coronary heart disease and other causes of death.

The Effects of Rhythmic Accompaniment Upon Learning Fundamental Motor Skills

In a rather large study with over 600 boys and girls in grades 1 through 6, Beisman (1967) compared basic motor skills such as throwing, catching, climbing, balancing, dodging, bouncing, and striking learned to music and no music. In all grade levels and in both genders, students learned the motor skills better, as demonstrated by performance tests, with the rhythmic accompaniment. In the discussion the author noted that the music produced a relaxed and enjoyable atmosphere for the students to learn.

Application: This study supports the value of music in teaching motor skills that many elementary physical education instructors and teachers are aware of from their empirical experience.

The Influence of Music Elements on Aerobic Fitness

Information obtained from 70 college students (35 males and 35 females) enrolled in an aerobic dance class indicated that 97% of the students felt (perceived influence) that the music affected their performance during aerobic activity (Gfeller, 1988) .

Respondents identified the following factors which influenced their aerobic performance: music style (97%), rhythm [beat] (94%), tempo (96%), lyrics (77%), volume (66%), mood (37%), and melody (17%). A strong correlation between male and female responses indicated that gender is not a particularly important factor to consider when selecting music for an aerobic activity.

Application: Although the results of this study are best generalized to college-age students, some applications seem appropriate. The results of this study support previous research that indicates that music benefits students from a motivational standpoint (Nelson & Finch, 1963) , although not always from a physiological perspective. Subjects emphasized the role that mental attitude was enhanced as compared to physical skill. Also, the results of this study indicate that musical taste of the class (kids, seniors, boomers, college students, etc.) should be a consideration when selecting music for the aerobic activity. The preferred music may facilitate focus on the music or other external stimuli rather than the discomforts that often accompany strenuous exercise. Thus, music also has the capability to evoke pleasant associations, possibly masking unpleasant stimuli (such as heavy breathing associated with exertion) or serve as a distraction to internal feelings associated with discomfort (Boutcher & Trenske, 1990) . It should be noted that the exact neurological effects of music on pain or discomfort are not understood. However it has been clearly demonstrated that music can reduce factors contributing to pain and discomfort such as stress, tension, and anxiety (Maslar, 1986) .

Summary and Conclusions

The review of original research on the relationship between music and exercise may verify what many of you already know from practical experience. This does not lessen the importance of the research, it actually helps to validate the knowledge and experience of you, the applied professional. The following are some interpreted summary statements and conclusions from this review article.

1. One valuable way an aerobic fitness instructor can use music in the teaching arena is as a pre-class stimulus. The majority of the studies suggest that music may significantly increase respiration rate and moderately elevate heart rate, preparing the student for the anticipated workout.
2. Personal trainers should be very attuned to the background music playing as their clients workout. Slower, sedative music decreases a person's muscular fitness potential. Many persons may actually prefer a silent atmosphere, where there are no musical distractions, even of a stimulative quality.
3. Health and fitness professionals working with persons affected by orthopedic and neuromuscular disorders may achieve superior results in improving gross motor skills, such as walking, with the accompaniment of music or rhythmic stimuli in the rehabilitation process.

4. Although performance may or may not be enhanced by the addition of music to the workbout, subjects regularly report that they felt their performance was better with the music accompaniment. Therefore, music may directly improve a person's enjoyment and fulfillment of the physical activity, leading to greater exercise compliance; a worthwhile objective for any fitness educator.
5. Boys and girls in grades 1 through 6 appear to learn basic motor skills such as throwing, catching, climbing, balancing, dodging, bouncing, and striking better when taught with rhythmic accompaniment.
6. Music appears to provide a motivational construct to exercise, positively affecting the mental attitude of the students. Music style, rhythm and tempo are factors that significantly influence the aerobic activity. Therefore, care of selection of music for the population (kids, seniors, ethnic groups, boomers, etc.) should be taken to maximize the teaching experience.
7. Music may evoke pleasant associations, while masking unpleasant stimuli (such as rapid breathing associated with exertion). It may also serve as a distraction to some internal feelings, possibly associated with discomfort. Accordingly, students may be able to endure the challenges of progressive overload of exercise with the music providing a pleasurable environmental stimuli. As a practical application, it would behoove the instructor to play the type of music universally agreed by the class as the most motivating during the challenging parts of the workout (e.g., standing leg toning, power work on the step, or sprint drills on the slide, etc.).
8. As our industry moves towards a more holistic approach of exercise for the mind, body, and spirit, perhaps we will learn new ways to incorporate music to achieve these ends.

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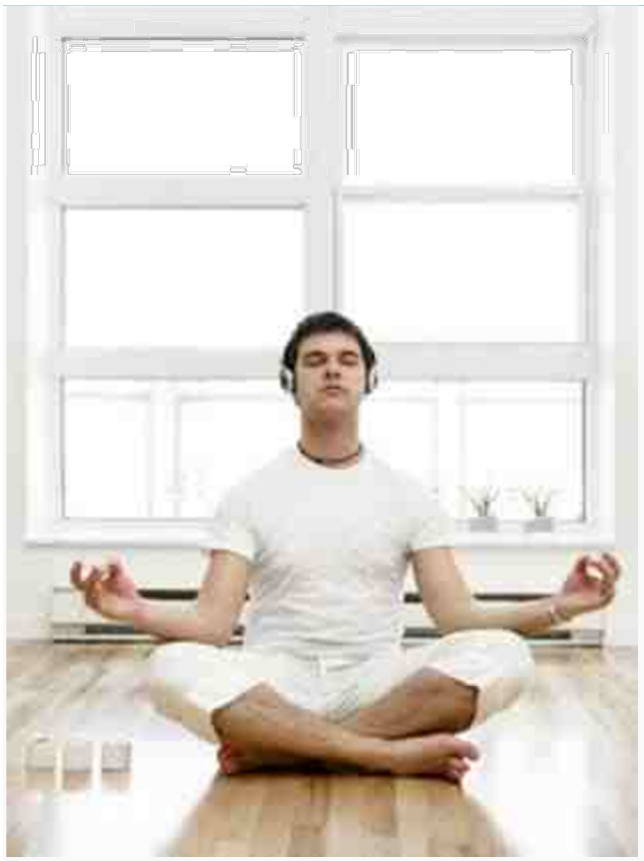
Benefits of Yoga Music



By Tracey Kelley

Registered Yoga Instructor

The benefits of yoga music vary, depending on the individual. Traditionalists don't listen to music with their yoga practice. However, many other people are open to enhancing the connection between sound and movement. They want to explore how the combination affects the body, mind, and spirit.

Examining the Benefits of Yoga Music

For anyone who has eased into an asana to the strains of an Indian flute, it might be surprising to learn that classical yoga is not performed to a soundtrack. Traditional yogis still feel this way: yoga is a pathway to greater enlightment. Consequently, one needs to listen to one's inner voice, not to external influences.

As the practice evolved, many people were unaccustomed to complete silence. They had difficulty letting go and embracing such an intimate focus. Soft, instrumental music provided a bridge by which to introduce yoga to the Western world.

But, other ancient practices involving sound exist. For example, Shakti Yoga, a practice believed to be centuries old, uses chants and incorporates elements of Tantra Yoga to stimulate the chakras and prepare the senses for higher consciousness.

The general benefits of yoga music include:

- The ability to fully relax
- Improve balance and concentration
- Provide a foundation to help clear the mind of thought
- Using specific tones or waves (such as alpha or delta) to achieve a particular state of mind
- Revive the listener and help him or her move from one state to another

Keep in mind that what may sound pleasant or relaxing to some might be grating noise to others. This is why the research of sound and its effects continues.

Music in Yoga - a science and aid to deepen the journey

Music is a sound system, which may be a distractor, concentrator or an accelerator of mind. Every music, every single tone or sound have a particular effect on the human energy system.

Thus the effects of beat, classical European, Indian, folk, ethnic, new age or Savita music may be totally different. Some musical structures may inhibit the wandering of mind, some provoke it. Some music may lift the mind, other may push it down. Some music may soothe and relax the body, some may distract it and bring it out of balance.

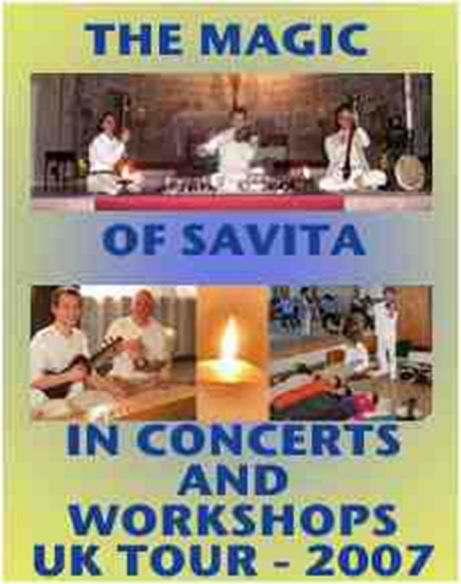
This contribution deals with suggestions for using/not using music in yoga training.

""Never before had I experienced such an intimate touch of sounds and music which penetrated my whole being..."
a participant of the Yoga Congress, Assisi, Italy

INTRODUCTION

Music was used in yogic training since time immemorial. Indian music, for example, is specially well fitted for supporting mental and spiritual yoga training, but has limitations, too.

This presentation gives an outline of the main types of music used in spiritual and yoga training and shares recommendations for optimal use of music in individual and group yoga training. It would be almost impossible to give a full account on all uses of music in the yogic and yogiod training styles.



See Schedule and venues

First let us define what we would call music. For our purpose, music is**structured sound**, where the height, stress, tone, rhythm, succession and structuring of sound elements is used for expressing (and inducing) states of mind - moods, feelings, impressions, thoughts. Music sensu lato would include also natural sounds of musical character. Therefore chanting - as we know it in **mantra yoga** - would also come under music. The moods related by music are not always universal and are often culture dependent. Their cross-cultural application does not always bring the same result as in the home culture. But still - there is something in music which is universal. Something which can deeply touch heart and soul of any human, at any time, at any place. What is it ? In most of cultures sound and music were considered sacred. If we look at the symbolic descriptions of the beginning of this universe, we can mostly see the same - "In the beginning there was a Word", "The Ã“m signifies the beginning, middle and end", etc. The "word" means here primordial vibration. Music is considered to be a reflection of that Infinite vibration which is the source and the moving Power of the manifest universe.

music in yoga return to top

At the same time **body, mind and soul** are also a kind of vibrational "music". We can thus say that everything is "solidified" music. Modern science finds that human body, mind and soul are extremely sensitive to music, sounds and vibrations. Music and sounds can influence and change many bodily and mental aspects and processes in a human being (but also in animals and plants). No wonder that music, in its original role was always considered as a means to 1) soothe, relax and heal 2) elevate the mind (bhakti, religious music) 3) induce altered state of consciousness 4) achieve magical changes. Nowadays - in a paradoxical way - music is so freely available in thousands of varieties from thousands sources that its original mighty power was somehow forgotten. Music is often played and created just to entertain the masses, for commercial purpose, as an intellectual construction etc. All this dilutes its strength. Nevertheless, if we try to delve deep in the hidden aspects of our own being (e.g. through yoga), music can certainly help us in many ways - can help us more than we can usually imagine.

MUSIC AS A NON-VERBAL LANGUAGE

Music is an age-long way of communication of feelings and/or thoughts and ideas. It is difficult to track down the entire history of music, but as it was already mentioned, the early (pre-vedic, vedic) yogis discovered that sounds have definitive energetic charge, that if the sound is coupled with tone, height modulation and rhythm, they have strong effect on mind. In case of proper design, it enables reaching non-ordinary states of consciousness. If we realise that mantras are not used for

interpersonal communication, but for tuning the mind to non-ordinary levels of perception, mantra chants can be understood as a strong, non-verbal means of communication in spite of the fact that mantras may contain meaningful words or have grammatical structure.

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Music as such "speaks" or induces feelings etc. through musical means and without words. The quality of music - from the point of view of applicability in yoga - depends on the vibrational effect on the mind and body, but the response to music is a very individual affair. Nevertheless, classical Indian music (sensu lato) can be used as an efficient means for inducing moods. In yoga training, meditative or relaxation moods are the most frequently desired. Thus mantras, chants of classical texts, ragas, Tibetan bowl sound, tuned glass, didjeridoo etc. are the most frequently used non-verbal mood inducing tools.

Classical European music is sometimes more difficult to use for meditation as it "speaks" to the mind and usually makes difficult to detach the mind from the content of this music. The most suitable music for supporting relaxation and meditation comes from the older periods where the music was mostly considered to be an expression of religious and spiritual moods.

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MUSIC IN ANCIENT YOGA TRAINING

As we can see from ancient paintings, at the yoga ashrams musical instruments were in use and evidently they were used also as a training supporting instruments. Vedic chants, chanting mantras, puranas - all create a flow of melody (although in this case a relatively simple one) which induces concentration in the listening mind. At the same time it always contains a deep meaning, a powerful universal energy which we can connect to. Indian classical music which later developed from this deep and powerful ground, was originally meant as a full sadhana - a musician had to penetrate deeper and deeper layers of the musical lines and structures till he reached the point of merging with the Primordial vibration.

MUSIC IN CONTEMPORARY YOGA TRAINING

Contemporary yoga training uses music mainly for relaxation and for guided meditations. Some schools use music as a background for practising asanas and pranayama, too. If we analyse the range of musical types used in yoga training we see the following types: Mantra chants (with or without instrumental support). They can invoke strong moods, influence the subtle energy fields within us and direct our consciousness towards higher realms. Bhajans - usually chanted verses. They invoke moods through their content, musical construction and atmosphere they create, repeated melodies and a devotional text content often connected with certain mantras. We can say that group chanting induces much more powerful and inspiring mood comparing to individual chanting. They may or may not be linked to special orientation of a given yoga school.

European music.

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We can observe that the main line and content of classical European music till the baroque period was mostly spiritual - devotion and praise of God was the main topic and inspiration of most of the compositions. Most of the works of Bach, Palestrina, Orlando di Lasso and many other composers of those periods can be considered as the highest musical mysticism, literally "the music of the spheres" and can very effectively induce very inspiring and devotional inner mood in us. Often more, than for example contemporary Indian classical music which is very much influenced by many superficial aspects like the need of commercial success, exhibition of virtuosity and so on. In the later periods (classicism, romanticism and so on) the European music has slowly abandoned the spiritual dimensions and became more academic, more connected with the personality of a composer. However - for relaxation and guided imagery proper European music from the later periods may form a very good background. Modern music, as it has usually a dissonant and less structured form (very calculated, theoretical and experimental), can be used only for training pratyahara, though even there are exceptions.

Non-European native music has a very varied character and its use in yoga training needs a careful consideration - depending on the cultural/racial composition of the trainee/s, the time and place as well as aim of training. Simple resonant instruments (like Tibetan bowls, gongs, tuned glass, didjeridoo) and drums are perhaps the most frequently used instruments for special parts of yogic training. The appearance of keyboards on the musical ground made the appearance of countless "special effects", but as very often the inspiration and inner experience of the composers (well, perhaps "syncretisers" would be a better word) does not satisfy a level needed for composing music for yoga training, care is needed in the selection of music for relaxation or meditation. The lack of a natural, sensitive touch between the musician and his instrument, and a huge spectrum of very cheap but still in a way amazing effects of electronic instruments bring sometimes the synthesizer music to a category of beautiful but rather "artificial flowers". The beat-dominant modern musical styles, though very suggestive and though they indeed induce frequency following response from the audience, were found to have negative impact on human health - both physical and mental.

For dynamic exercises (special pranayama, transpersonal techniques etc.) music (especially live music) can work as an extremely accelerating and intensifying factor.
Conclusion: Today we have a huge selection of all possible music. However, before applying it to yoga training support, we have to consider

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* 1. that its effect depends on the right choice,
* 2. that even the best recording cannot surpass live music using acoustic instruments - as in live music there are so many aspects present apart from the musical construction itself, which create that inspiring, invisible connection between a musician and a listener and between a musician and a source of his inspiration.

The music created at a very moment of listening can open many inner worlds of a listener. The disadvantage of this approach is that specially trained musicians are needed for such task and not many of us can have a personal musician who is able to play for us any time we need it. Thus the musical recordings become the main source of music for yoga training.

HOW TO SELECT THE RIGHT MUSIC
Music has a direct influence on the body and its physiology. Every cell is sensitive to sounds and music and reacts to it. Music influences also the mind and the emotions. This in turn effects the physiological dynamics. Furthermore, special music can create a feeling of peaceful environment around us, an atmosphere which spontaneously relaxes our body and mind, which enhances our ability to concentrate, meditate etc. Certain music can also very easily connect us to higher spheres, to open meditative and religious moods in us.

But the main question remains -
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WHAT KIND OF MUSIC is suitable for all that, which type of music can be successfully used for relaxation, healing purposes, creating a peaceful environment, inducing a meditative mood, calming the mind etc?
Such music should have two basic characteristics:

* 1. It is created with a positive, devotional attitude, the aim to become just an instrument of higher inspiration,
* 2. The musician/s creating the music has to be a master of his instrument and has to understand deeply the principles of musical language.

If these two conditions are fulfilled, it is very likely that the music we are listening to can inspire us in many ways
Referring to the special subjects of yoga training, let us consider the use of appropriate music for different areas and stages of yoga training.

* **1. Creating a quiet and inspiring atmosphere**
As yoga and meditation practice usually mean a certain step outside our rushing routine life, it is very useful and important to be able to create quickly and effectively such an atmosphere. Here, proper music can serve us very well. It is amazing, how well it works. Listen for example to the sound of a gong - Isn't there a difference between the moment before the sound and after? One can feel that the atmosphere became more quiet, our mind sharper, relaxed and concentrated. (the same experience tends to come when listening to Tibetan bowls, tanpura etc.) There are many recordings of this type that can help us in this way.

* **2. Group practice of asanas, pranayama, meditation exercises**, which require a complex attention - here just the background music of the above mentioned type (if at

all) seems to be really useful. Music with complex structures and meaning could be rather a distracting factor.

To conclude, we can say that music in yoga - when appropriately used can enhance the effects of yoga training. Acoustic instruments have more penetrating effects than electro-acoustic instruments.

The strongest effect can be achieved by live music. Recorded music has, however, sufficient strength to affect positively the training. Music has to be applied with sense and over-indulgence in music may make cause music becoming ineffective.

For advanced, intensive yoga training direct musical support is not substantial (and at times disturbing), but for beginning and intermediate level it can be of a significant help in creating and keeping the right mood. It is not recommended though, to have music constantly on. It has to come as a "gift".

Barely audible (almost subliminal) background music can be had for greater length, but here a very careful selection of music recordings are to be made as this type of music presentation slips into the mind of the practitioners almost unguarded.

But still, apart from the above mentioned possibilities, music can also act as a main and very powerful tool for inducing and supporting many inner processes during yoga and spiritual training. These approaches have been widely developed by our team and are presented in a number of workshops and seminars onSAVITA YOGA

Geza M. Timcak, Ivo Sedlacek,
Slovak and Czech Republics

Relax and distress with Yoga Music

You have decided that yoga is right for you. Have you thought if music and yoga can gel together. You don't like to exercise without it. There are many types of music for yoga available. You can even find free yoga music online or at the very least hear yoga music samples.

Different Types Of Yoga Music

You should be prepared to get spiritual when you are looking for good music for yoga practice. Yoga music is full of Hindu and Indian imagery. It is not intended to convert people to another religion, but to get them to explore practicing yoga in its original form. This does not stop you from listening to some classical music like Bach or Beethoven. New Age music would work fine. It just depends on your mood and your music style.

Popularity Of Music In Yoga

Most people view slow music for yoga. It can be extremely relaxing. Yoga meditation music is very popular nowadays. You can find free yoga music on several online websites.

Some yogis believe that listening to music while they practice puts them in "the zone" and they can focus on their movements and meditation better. When they are in this heightened state of awareness, they can combine their mind and body with breathing. It can be used as an extremely powerful tool to enhance your yoga experience.

A lot of yoga instructors believe that background music for yoga sets the right tone and mood for the classes to begin. It helps their students to focus better and relaxes them so they can meditate.

Nada Yoga

Nada Yoga is the science of the inner sound. This type of yoga is considered meditation through sound. Your mind will easily become engrossed in the sound. With enough practice on concentrating on calming music, the mind will become clear, calm, and transparent. A feeling of bliss will arise and take over.

You can practice it by starting with beautiful music. You should practice trying to maintain your attention on the music for around twenty minutes at least once, if not twice, a day. Continue to practice this way until you start to hear your inner sounds. When you hear them, start listening and focus on them. At that point you can stop using music to begin your meditation and begin using the sounds within yourself. The sounds you hear may change as your mind and body become cleansed and elevated.

Benefits Of Yoga Music

Many people use music during their yoga practice. Most just use it as a tool to help them relax, but many don't' know that it can have effects on your health as well. It will also help to lead a healthier lifestyle. Some studies have shown that music has the ability to lower the blood pressure of people who work on stressful projects at work.

Some studies have shown that slow, calming music has the ability to reduce a person's heart rate and breathing. These are two important components in yoga. Your breathing has to be focused. Some people believe that a person's performance can be increased with the help of music. Even doctors believe that slow music like Mozart can help to reduce anxiety. This type of music may even lower the cortisol levels in your blood. Cortisol is a stress hormone.

There are many effects that music can have on your body and if you add that music to your yoga practice, you can double the effects. If you have decided that music is right for you during your yoga practice, then you are probably wondering where you can purchase your very own music. There are lots of avenues for them.

Where Can You Buy Yoga Music?

You can purchase this type of music just about anywhere. Even Wal-Mart carries a line of classical, New Age, Indian, and folk music that could be right place for yoga practice. If you have New Age stores in your area, then you definitely find your music choices there. If you prefer, you can purchase your music online. There are many sites that are dedicated solely to the music that is perfect for yoga or any type of meditation. Just type in yoga music into your favorite search engine and watch the hundreds, if not thousands, of sites pop up. You have to explore them in detail. There are lots of companies that are engaged in producing these products after seeing the potential and demand in the niche market. You only have to search for them. You can seek the guidance of your friends or relatives and even those who believe in yogic music.

So if you have chosen to hear yoga music during your yoga practice, then this article hopefully should have given enough insights and ideas. Whether you find your music at your local record store or get free yoga music online, you will surely be pleased with the results.

11 far reaching effects of yoga

Q&A: Yoga | **Nutrition** | **Fitness**

Yoga, as most teachers and practitioners insist, is more than physical exercise. It is a routine designed to bring harmony between body, mind and spirit. Its aim, they point out, is as much to improve physical health, as to cultivate mental and emotional well being.

How exactly does yoga do this? According to Timothy McCall MD, author of Yoga as Medicine: the Yogic Prescription for Health and Healing, "…Yoga is arguably the most comprehensive approach to fighting stress ever invented." Stress, we now know, is a factor involved in the onset and development of disease.

McCall believes that doing stimulating exercise, followed by relaxing or meditative practices, enables deep relaxation of a kind that could facilitate prevention of, or recovery from, disease. But, he adds, yoga practitioners also become more responsive to the needs of the body and mind and actively make choices that result in a healthier lifestyle.

These are 11 far reaching effects that yoga confers:

* **Increases strength:** Yoga asanas, including forward and backward bending, stretching, twisting and balancing, involve a rigorous workout for the body. Regular practice thus leads to an increase in bone and muscular strength.
* **Improves posture:** Yoga relieves stiffness, and promotes flexibility and effortless movement. The asanas also help correct the alignment of the spine and joints, thus giving you grace and poise.
* **Boosts breathing:** Yoga includes pranayama or the practice of mindful breathing. Research conducted in Thailand also showed that the practice of certain asanas, during just 18 yoga sessions over a six-week period, significantly improved respiratory capacity. Rita Trieger, editor, Fit Yoga magazine and author of Yoga Heals Your Back says, "When the lungs and heart are operating at their optimal level, overall health improves. Keeping the body filled with fresh breath provides more energy, nourishes organs, helps release toxins and promotes healthy cell growth."
* **Promotes relaxation:** The emphasis on achieving a meditative state – even while performing physically demanding

poses – encourages the ability to relax. Besides, maintaining internal focus helps practitioners be at peace within.

* **Sharpens concentration:** Researchers from the American College of Sports Medicine who assessed participants in yoga classes, found significant improvement in concentration, motivation and anxiety in just over eight weeks. "We've noted empirical evidence that yoga carries affective benefits, but now we've been able to objectively measure the results," said Traci A Statler, a member of the research team.

* **Builds confidence:** Greater control over the body and mind increases self-esteem, helping practitioners overcome inhibitions and shyness. Research conducted by the Preventive Medicine Research Institute in California found that yoga promoted greater body satisfaction in women.

* **Helps the Heart:** Researchers at Atlanta found that yoga, included along with medical therapy, improved patients' capacity to exercise, decreased inflammation levels, and generally improved health.

* **Fights arthritis:** The asanas involve moving joints through their full range of motion, which keeps them healthy and supple, and prevents, or delays the development of arthritis. According to studies in the British Journal of Rheumatology, yoga helped increase hand-grip strength, and also relieved pain and tenderness, during arthritis.

* **Eases depression:** Various studies have documented the benefits of yoga in alleviating symptoms of depression. Author of Yoga and the Quest for the True Self, psychotherapist Stephen Cope, says that doing yoga can release blocked feelings such as grief or anger.

* **Relieves illness:** Yoga also improves the ability to fight sickness. Its practice has been associated with improvement in chronic conditions such as asthma, carpel tunnel syndrome (a condition where the median nerve is twisted at the wrist), depression, diabetes and high blood pressure.

* **Delays ageing:** Doing yoga may or may not increase your life span. But its numerous benefits, such as improved health and resistance to disease, can definitely delay the debilitating effects of old age.

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