

MUSIC TO MY EARS

It would come as no real surprise that there is a good reason for marching bands - they make the marchers more efficient! So - does music assist runners/walkers and even make them faster?

There is a growing amount of evidence that this is the case. For many people, music is essential to peak performance, proving motivational during a workout. Research is demonstrating that music actually changes both the body and the mind during exercise; it elevates mood, appears to distract people from pain and fatigue, increases endurance and reduces perceived effort. After prolonged exercise, fatigue begins to set in but music competes with physiological feedback in the brain changing a person's perception of their effort: it seems easier to run those 10 kilometres when Beyoncé is there with you.

One of the leading researchers on the subject of music and exercise is Costas Karageorghis at Britain's Brunel University. He believes there are four factors that contribute to a piece of music's motivational qualities: basically two music factors - beats per minute and melody/harmony, and two factors personal to the individual – musical preferences/background and how an individual associates certain music. Studies by Karageorghis over 20-years consistently observed positive effects of music and show up to a 15-percent performance gain based on listening to the right song during a workout.

What is the most obvious thing that happens when we listen to music? Very quickly runners and walkers synchronise their stride with the beat of the music. And it doesn't seem to matter what the style or mood of the music is. Synchronising beats per minute with steps per minute increases efficiency by naturally regulating an athletes' style.

At Liverpool's John Moores University a group of cyclists pedaled to the same song over three trials. The researchers first played the song at normal speed, but then increased and decreased the speed of the same song by 10 percent. The small change was not enough to be noticed, but its effect on performance was significant. Speeding up the music increased the distance covered by 2.1% and slowing the music resulted in a fall of 3.8%. The cyclists clearly increased or decreased their effort and pace to match the tempo of the music.

Social factors may significantly influence a listener's response to music. Previous exposure to a song impacts its effect and for some, a particular piece of music might inspire while for others it may relax. We may also associate music with particular experiences and that's why the song "Eye of the Tiger" is so popular, as it makes us think of Rocky running up the steps to prepare for his fight.

So selecting workout music is not as simple as lining up fast, high-energy songs. You also need to consider the memories, emotions and associations that different music evokes. The more you identify with the music's emotions or perspective, the more it becomes motivational. Karageorghis also found that the right song increases periods of high alpha-wave activity – basically the "runners high"; so music may induce this effect that we have all felt at some time.

In a practical sense, how will all this translate to your running/walking? If we look at the stride rate of elite runners it is found to be similar to the rate of average runners, usually 170 to 200 steps per minute (spm) when running most distances other than sprints. Where elite runners prevail is in extra stride length. Race walkers are a little different in that many world class race walkers take well over 200 steps a minute and some Chinese have been clocked at 240 spm and faster. For

Masters runners and race walkers, an average of 180 spm is not unreasonable. This is also the figure that distance running coach Jack Daniels determined from his analysis of the 800m to marathon in the 1984 Olympics. Karageorghis also found a link between heart rate and preferred beats per minute and that at above 80% of maximum heart rate a level of around the 180 was preferred.

So if we take a base of 180 spm as the optimum – how can we use it? If it is optimal then the longer we can sustain that level, the more efficient we will be, and music may be the best way to do this, especially for the non-elite runners and walkers. Beyond that, extra fitness and endurance will allow the longer stride which then leads to faster times. Therefore choose music with 180 beats per minute and then consider all the other social, cultural and association factors to develop your best motivational playlist.

If you are really serious about running to music then you may want to travel to London where Karageorghis has helped create the “Run to the Beat” half marathon. Music is played along the course to maintain both the spm and motivation for the entrants.

To assist in adding music to your training or long races there are several phone apps that can help. “TempoRun”, “Tangerine”, “PaceDJ-Run”, “Synchstep” and “Cruise Control” are just some of them. Depending on which app, you can build a custom playlist based on the beats per minute range you provide, have the music chosen to match your pace, have the app download appropriate songs or have the app adjust the tempo of your playlist to match. Songs can be arranged to include warm-ups and warm-down tempos. For an mp3 player there are several sites that you can get music lists from – [jojTunes](#) has many playlists with beats from 80 to 190 and they can be sorted by genre.

Wearing headphones is a personal choice and as with most things care needs to be taken. Never have the music so loud that you are not aware of your surroundings particularly in heavily trafficked areas. Also never forget that in some races being aware of your competitors and reacting to them may be more important than running/walking to a music plan. Enjoy and benefit from music but also learn to workout without music so that you can push yourself in silence when necessary.