

Banging the drum for music as an instrument for athletic improvement

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Serena Williams

COOL HEADS PREVAIL: Serena Williams blocks out the distractions as she walks on court at the US Open. But music can aid sportsmen and women on many levels, not solely as a relaxation technique and means of reducing tension

- **Listening to your favourite music and cutting yourself off from distractions in the build-up to competition is a technique that professional athletes swear by.**
- **Evidence-based research backs up the view that music can not only influence preparation but also markedly improve competitive performances.**
- **It can boost strength, endurance and energy efficiency.**
- **‘It gets you in the mood and gives you that bit of edge when you take the field’, says professional rugby player Ben Foden.**

There are people out there – quite a lot of people in actual fact – who view sports stars as a bunch of antisocial so-and-sos.

It is a totally unfair assessment, but it is easy to see why they may have come to that misguided conclusion.

After all, television viewers witness the same scene every time a team coach pulls into a stadium. The players filter out, hopping into view one by one, and, would you believe it, nearly all of them are sporting headphones, withdrawn in their own personal headspace.

It is not just team sports like rugby and football. You see it in road and track cycling, when riders warm up on their turbo trainers outside the team coach or inside the safety zone of the velodrome before a race – seemingly lost in their own thoughts, cut off from the outside world.

Or in boxing, when the cameras are allowed access to the dressing room prior to a fight. An entourage as long as a Brazilian carnival conga is packed into a tight space, but the main man is invariably huddled up in a corner with his headphones on, eyes closed, unaware of the hullabaloo going on around him.

Contrary to what your eyes are telling you, use of headphones in a sport and physical activity context is not representative of a wider societal problem, whereby face-to-face human interaction is being slowly terminated due to the social scourge of modern technology – people tap, tap, tapping away relentlessly on a mobile phone keypad, or tap, tap, tapping away with their foot to the beat of a song.

The simple fact is that many sportsmen and women choose to be reclusive in the minutes or hours before competition because listening to their favourite music is a performance-enhancing technique that works every time. What's more, it is legal, free from any side effects, and backed up by years of evidence-based research.

Go with the Flow

England and Northampton Saints rugby union player Ben Foden is one of the new headphone-wearing brigade who finds listening to music a valuable tool.

‘Literally, when everyone steps off the bus, they’ve all got their headphones on, and you can see it in their eyes – it gets you in the mood and gives you that bit of edge when you take the field,’ he told talkSPORT.

‘The England conditioning coach used to be in charge of the music in the dressing room, and there was all sorts going on. It’s very much headphones now because everyone chooses to listen to their own songs.’

Brunel University’s Dr Costas Karageorghis is one of the world’s leading authorities on the incredible power of music to improve performance.

In a 2008 article with fellow Brunel lecturer David-Lee Priest, entitled ‘[Music in Sport and Exercise: An Update on Research and Application](#)’, they explain in detail how ‘dissociation, arousal regulation, synchronisation, acquisition of motor skills, and attainment of flow are the five key ways in which music can influence preparation and competitive performances’.

Without delving too deeply into the technical aspects of the study, suffice to say the strong evidence cannot be ignored by athletes, or indeed coaches charged with discovering marginal gains for their performers that will give them a competitive edge over their rivals.

Sports psychologist Dr Karageorghis put Foden through a series of rigorous tests to promote a new algorithm-powered music selection tool called Flow – from subscription music service Deezer. The app chooses a customised playlist to match the mood of the listener based on its knowledge of their music library.

Foden – who was put through his paces to a backdrop of tracks from Drake, [Kanye West](#), Lil Wayne and [Eminem](#) during the one-day study – says: ‘Rugby is a team game, and you need to involve your teammates, but at a certain point, you’ve got to take yourself away, run your nerves down, make sure you are getting in the zone, focused.’

‘For me, I can just click on Flow and it will pick the music that is right for me at that moment. I know that I’m going into battle, and I can zone my mind into what I am going to do out there on the field.’

Listen up then!

The tests carried out at Brunel University covered strength, endurance and energy efficiency, and the results were emphatic.

In a hand grip test, Foden's performance increase was 29% – 59kg of force exerted while not listening to music, compared with 76kg when the riffs and rhythms were pulsing through his earphones.

Dr Karageorghis found that Foden's oxygen intake was reduced when he ran on the treadmill at a moderate pace while listening to music – 6% more energy efficient than when the only sound accompanying his every stride was the thump and creak of the equipment under his strapping 15-stone frame. The result: he was able to run further when the music was playing.

Performance cycling, hurdle drills and leg extension tests were also undertaken and yielded similar concrete improvements.

A [previous study](#) by Dr Karageorghis, this time with colleague Stuart Simpson, showed that 'motivational synchronous music' (uptempo songs with a strong beat that match the repetitive movements of a particular sport, such as the stride pattern of a runner or cadence of a cyclist) improved running speed by 0.5 seconds in a 400-metre sprint.

The research speaks volumes for the power of music.

It helps to psych you up and get you in the zone so you are on song when it matters.

It should be music to the ears of everyone who enjoys physical activity of any sort, from elite athlete to park runner.

But all puns aside, the knowledge that advancements in technology and music can combine with such phenomenal effect could result, in the not-too-distant future, in coaches rushing to create playlists for every sporting occasion, personalised to each participant's musical tastes.

I know getting to know your participants as individuals is an important part of being a coach, but this will be taking things to a whole new level – an example of harnessing the power of technology and innovation with research.

Apparently, the greatest improvements are seen if you listen to a music tempo exceeding 120bpm. But, for goodness' sake, tell your participants not to launch straight into Firestarter from the Prodigy in their warm-up or in the relaxed run-up to a big match; they must remember to match the music to their mood and build the beats per minute slowly to coincide with the increase in their heart rate.

Music gives you an extra gear

That music is a mental and physical stimulant is certainly not a new concept in professional sport.

Opposition teams have always known to their cost that Liverpool players get an almighty boost from listening to the Kop roar You'll Never Walk Alone before kick-off. Just as Ricky Hatton's rivals accepted that one of Manchester's favourite sons would have an extra spring in his step after his ring walk at the MEN Arena as Blue Moon belted out through the loudspeakers.

For athletics coach and ConnectedCoaches member [Ian Mahoney](#), it is the beat that is the main driving force: 'It's not rocket science, the crowd play their part in banging the advertisement boards on a world record attempt. The crowd clap when jumps are attempted.'

Whatever combination works for you – the beat, the melody, the rhythm, the harmony, the instrumental riffs and licks, the tone of the artist's voice – music undoubtedly stirs the soul and gets your blood pumping like few other motivational and inspirational stimuli can.

It is 10 years ago now that USA Track & Field (USATF), the American national governing body for distance racing, got wise to the effects music has on performance, going so far as to ban the use of headphones at races 'to prevent runners from having a competitive edge'.

And neuroscientists have been measuring and observing brain activity patterns, and isolating the different regions of the brain that are spontaneously stimulated when listening to different types of music, for as long as some of us have been alive.

But we are only just beginning to learn to what extent music can help alleviate pre-competition nerves, increase strength and endurance levels, boost confidence and help establish an optimal mental state of mind.

It is only in recent years that we have begun to learn to what extent music can divert attention and focus during exercise away from internal sensations of fatigue, pain and tension.

And, therefore, it is only in recent years that we have begun to learn to what extent music can truly enhance athletic performance.

Did you find this article helpful? Do you agree or disagree with the points raised? Please share your thoughts on how music can help with preparation and performance.

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