MIND FOUNDATION

How to change your mind — with exercise

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> "An Altered State Of Consciousness Is A Temporary Change In The Overall Pattern Of Subjective Experience So That The Individual Believes That His Psychological Functions Are Markedly Different From Certain General Norms Of His Normal Waking Consciousness."– G.W. Farthing

What do you think of when you hear the phrase "altered state of consciousness"? While they are commonly associated with substance use or the stereotypical Buddhist monk in meditation, altered states of consciousness (ASCs) can arise in a surprisingly wide variety of circumstances.

One of these circumstances is that of exhausting physical activity, which can both train the body and change the mind. This is because alterations in one's subjective experience reflect not only changes in the brain, but also in other parts of the body. Different forms of movement have their unique characteristics which can facilitate various alterations in one's consciousness: everything from running to dance to rock climbing and martial arts can produce a unique mental state.

Upon hearing this, one might wonder whether exercise-induced alterations in consciousness are even desirable. Certainly, one is in a kind of "altered state" when in pain at the end of a long workout and only wanting for it to be over. But though all who have ever been forced into gym class know this state of mind, there are other commonly experienced altered states associated with exercise which have more obvious benefits. Some of these – the runner's high, the "Zone", and the flow of dancing – are not only enjoyable, but are often associated with an increased motivation to exercise and psychological well-being.1–3

Before I take you through how different types of exercise can affect your state of mind, I have one important message: Exercise-induced ASCs are *not* reserved for high-level athletes. Everybody who exercises can access them with enough practice and patience. So whether you're a couch potato or an Olympian, there's an altered state waiting for you at the end of some good, hard exercise.

> “It Doesn’t Matter How You Do It. Just Get Out There And Do It.”– Dean Karnazes

Runners high

A runner’s high is basically what it sounds like: feeling amazing during and after running. Scientists have also defined it more precisely: “*A runner’s high is a subjective sudden pleasant feeling of euphoria, anxiolysis, sedation, and analgesia after prolonged exercise like long-distance running.*“4 Prolonged exercise, in this case, means continuously moving for at least 45 minutes,5 but possibly up to several hours, like in marathons. Similar experiences occur in rowing (“rower’s high”), and they might be linked to the synchrony of movement which is so critical for high performance in rowers’ teams.6 Additionally, both running and rowing involve a specific rhythmic motion and coordinated breathing, which increases focus on the present task. And focus, too, is inherently enjoyable.7

So how does one reach a runner’s high? It likely depends on training status, level of conditioning, and one’s neurobiology. Beginners, for example, may need patience. Experienced runners suggest starting with a moderate running speed as a warm-up, then picking up the pace quickly for a few minutes after the first fatigue sets in. Then comes the hard part: push through any unpleasant sensations as best you can to achieve a consistent pace until you absolutely *must* slow down (and of course: don’t overdo it). If you feel a sudden surge in energy that drives you to speed up – go with it. After a while, you’ll enjoy a euphoric runner’s high.8

Why does this physical exhaustion in the body create such a pleasant state of mind? Studies in mice show that intense exercise makes the body release endorphins, but endorphins alone can’t explain the runner’s high.21 When released into the blood after intense exercise, they act primarily as *local* painkillers. They are unable to cross into the brain, and thus cannot induce euphoria.

Instead, researchers posit that runner’s high might be the result of the action of endocannabinoids, which counteract feelings of stress in the brain.5 These molecules are similar to those that make people feel “high” when they smoke cannabis, but your body produces them naturally. And because they are fat-soluble, they *can* enter the brain, and their concentration in the blood also rises with vigorous exercise.4 A runner’s high, then, might be down to endocannabinoids. In fact, one study found that not only running, but also walking for 45-60 minutes measurably increases endocannabinoid levels. Still, the researchers doubt that a runner’s high can be induced by “just going for a prolonged walk.” They suspect that during prolonged exercise, one eventually reaches a threshold in endocannabinoid levels which must be crossed to reach a runner’s high. And this requires running – not just walking.5

Eat. Train. Sleep. Repeat.

CrossFit is a relatively new training program characterized by *“high intensity, constantly varied, functional movements.”* 9 While running comprises lengthy exercise and repeated cyclical movements, CrossFit is quite the opposite: brief, intense, not cyclical, and much more focused on the variety of weightlifting and functional strength exercises than on conditioning.

Can someone reach an altered state through CrossFit? Approaching this as a sports psychologist, CrossFit athletes of various levels often experience what they call “The Zone.” This refers to the “individual zone of optimal functioning” – when everything comes together perfectly, only the task at hand has the light of attention, and you *just go.*

According to the sports psychologist and former rugby player Adam Dehaty, who works with CrossFit Athletes’ on their mindsets, the Zone has eight characteristics:10

This zone of optimal functioning is mainly determined by the balance of challenge and ability. When someone's ability to deal with a challenge is too low, they will be overwhelmed and likely fail. The reverse is also true: when something is not challenging enough, people get bored and don't perform at their best. The Zone is the happy medium: a challenging, but not overwhelming balance between task difficulty and individual ability. This is what makes The Zone an *individual* zone of optimal functioning. And indeed, it is not unique to CrossFit. The Zone is a type of flow state, in which someone is fully immersed in an activity with an enjoyable, energized focus.7 Although CrossFit culture particularly emphasizes it, one can be "in the zone" during practically any type of exercise – or indeed, any challenging enough task.

With the right mindset and a well-calibrated task difficulty, entering The Zone just happens if you are prepared. In CrossFit, this state partially stems from a strong commitment to reaching a goal with a rigorously planned workout: Counting repetitions, focusing on the movement in the moment, and anticipating what comes next to make a smooth transition from one task to another. All of this creates a feeling of a painless flow and performance with perfect technique, which saves energy and breath. Alison Moyer, a CrossFit coach, bodybuilder, and athlete from Pennsylvania, sums it up:

> "So many times in CrossFit, I'm in tune with the pain – with the shortness of my breath, the difficulty of movement, the tightness in my limbs. But then, every once in a while, I discover those rare moments ... that make me feel unstoppable, unbeatable. I'm aware of what I'm doing, and aware that I'm moving, but I've found the place right beneath my redline where my body just takes over and goes. It doesn't matter that I'm tired, that my mouth is dry, that I can't breathe, or that my legs are going numb. ... That feeling, the incredibly superhuman sensation, is what keeps me coming back for more."

Many CrossFit athletes strive for exactly this feeling of painless, concentrated flow during a workout. After all, the intense workouts like CrossFit aren't only about what happens in the body, but also in the mind.

Connecting body and mind – flow through music

> "When a body moves, it's the most revealing thing. Dance for a minute, and I'll tell you who you are."– Mikhail Baryshnikov, Ballet Dancer

Dance movement therapy has been investigated as an adjunctive clinical practice in psychiatry and neurology,12–14 yet therapists by no means invented it. Trance and shamanic dances have been used for thousands of years in different cultures all around the world, and they are still practiced by many, such as the Sufi Dervishes.15

Of course, the purpose of dance-related sports is very different from trance dance and therapeutic dancing, but they all share the connection between the dancer's internal state and the outer, visual performance. Perfecting both is crucial in professional dancing. One beautiful example is the Olympic gold medal performance in pairs free figure skating by A. Savchenko and B. Massot in 2018.

Music on its own is certainly a powerful inducer of altered states, but the movement of dancing adds another element to it. Music leads through rhythm and style. Dancing then, means to translate rhythm and style into a flow of movement. The synergy between music and movement can create a state of flow in which people not only forget about time and their surroundings, but also feel more connected to themselves:

> "Music and beats are like a lighter that is switched on: the warmth and the brightness expand in my whole body: my head moves, my body moves, my mind moves. When I dance, all of me starts melting into the sound, thoughts disappear. I feel like being out of the system, out of time and out of space. I am in my own and I feel myself in every single cell of my body."–Anna, From Cologne

Conclusion

Whether you call it “The Zone,” a certain “high,” “flow,” or something else: physical exercise and movement – especially in combination with an open but focused mindset – can induce an altered state of consciousness which may come both during and after the exercise. These altered states share movement as their basis, as well as the experience of an intrinsically rewarding state of mind.

Movement is one of our basic needs and it is crucial for a healthy mind and body, as well as a healthy connection between them.2 Because physical exercise and movement have the potential for enhancing valuable states of consciousness, we can easily see them as part of a *culture of consciousness* – a Bewusstseinskultur. Physical exercise both decreases and prevents suffering, creating a valuable state of consciousness which may even enhance our capacity to live well and connect to other people. In turn, healthier relationships with others can lead to further valuable states of consciousness and reciprocal, enriching relationships.

As a sports psychologist, here’s my advice: If you’re feeling down, especially when you’re not sure why, it won’t hurt to move. If you are stressed or overwhelmed, focusing on moving can pull you out of that mindset, allowing you to return to your challenges later with a refreshed brain. If you are feeling lonely, movement may boost your mood – especially if you can find others who share that interest. If you are really suffering mentally, you may need to see a mental health care professional – but still don’t forget to move, because it is one of many things that might help.2,22

Movement is not the ultimate solution for everything, but I suggest that natural movements and their potential to increase the awareness and knowledge of one’s body should be cultivated in everyone’s life. Integrating movement into psychotherapeutic treatment plans may even create additional benefit beyond psychotherapy and medication.22 Furthermore, a culture that values movement and valuable states of mind has the potential to prevent mental and bodily suffering in children, youths, and adults.

It does not matter what kind of physical exercise you do. Just move. Consciously.

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