



performance, and focussing on performance equals flow. Added to this, a good fight with the weather can have a similar effect to competing.

This brings us onto another neurotransmitter in the flow cocktail: norepinephrine, which speeds up heart rate, muscle tension, respiration and production of energy, making you feel more aroused and focussed. It's a natural version of speed, basically designed to help you get it right when you put your mind to something.

ANTI-DEPRESSANT ALTERNATIVE

If you're not into racing or socialising, or training long or hard, don't worry. It seems there are other ways to increase intensity. Like turning the temperature down. Way down.

"I'm nervous," says Sarah, shivering in her cossie on the edge of a dismal-looking British lake. I'm watching a BBC documentary, *The Doctor Who Gave Up Drugs*. Sarah, a dark-haired 24-year-old single mum who has been on anti-depressants since she was 16, is about to try wild swimming as an alternative. As she swims, something clicks "I'm on top of the world!" she yells.

What was going on? Well, your skin has far more cold receptors than warm ones, so exposure to chilled water sends an overwhelming flurry of electrical impulses from your nerve endings to your brain. All this stimulation, combined with the neurotransmitters produced anyway when you exercise, equals a potent anti-depressant.

When Sarah gets out she feels an even bigger rush, which points to another neurotransmitter in the flow cocktail - serotonin. Researchers have dubbed this molecule the body's Prozac. It helps people "cope with adversity" Oxford University's Philip Cowen told the *New York Times*, "To keep going and try to sort everything out."

You get serotonin at the end of a workout as a

reward for returning to homeostasis (equilibrium). It's what gives you that "afterglow" effect. You know how you get that lovely rosy feeling after exercising in the cold on land? After exercising in water it's much more intense. That's because heat loss in water occurs much faster - water conducts heat about 25 times better than air.

Next I invite Vivienne Rickman-Poole, an expert wild swimmer who is trying to tick off all the lakes in Snowdonia, round for a cuppa. I'm interested in how she gets into the flow. Here she is describing a dip in the dark (picture a sensitively-spoken blonde):

"I love the darkness for the heightened awareness it gives you. The wind on the surface and the blackness all around me was filling my head with overwhelming joy. I felt euphoric, blissfully happy and totally alive."

It sounds very similar to Carlton's flow experience, doesn't it? Yet Vivienne cares "little for distance, times, temperatures." She's an artist by trade and by nature. She's not interested in pushing hard. Instead, she's sought out other aspects of swimming that inspire her, and she focusses intensely on these.

For example, Vivienne enjoys feeling the seasons change, "It's almost as if it's inside, not just on the skin" - and seeking out isolation above deep water - "I'm always searching for that ultimate abyss of nothingness. It gives you a real clarity of thought." She also likes photographing the female form, her own body, underwater, "It doesn't matter what size or shape you are, there's some kind of graceful beauty in it and I find that really interesting."

It makes sense that the form intensity takes is personal. In order to intensely absorb yourself in something, it helps if you enjoy what you are doing. However, I notice that there's a key element running through Vivienne's

swimming. In fact, it's apparent in all my case studies, in one way or another...

COCAINE VS NATURAL HIGHS

Exploration. This theme brings us onto probably the most important neurotransmitter in the flow cocktail. The first of the five to be discovered, dopamine was isolated in a lab in Sweden in 1953. This neurotransmitter "rewards exploratory behaviour", explains journalist Stephen Kotler in his brilliant book, *The Rise of Superman: Decoding the Science of Ultimate Human Performance*.

Dopamine makes you feel engaged, excited, creative, keen to investigate and find meaning. It's the body's secret cocaine-esque stash, and the main reason "human beings are hard-wired for exploration," says Kotler.

So there you have it. Heroin, cocaine, prozac, speed and cannabis. I wonder: how does the high you get from natural drugs compare to that of the manmade versions? Lance Dalleck from Colorado University emails back, "Sometimes the high you get is the same."

However, if you've experienced flow state, you'll know that it can be elusive. That's because there's a final paradox. Because your body doesn't think perpetual bliss is good for you, natural highs are short-lived, compared to the highs you get from taking drugs.

Once they've done what they intended - make you do more or less of what you were doing - the pleasure-giving neurotransmitters break down. Added to this, your body plays another sneaky trick to keep you away from nirvana, and so maintain your equilibrium - there's a rule of diminishing returns, so you have to keep working harder for your kicks.

So whatever works for you - training hard, going long distance, cold water, exploring, well, you're just going to have to go back out there and do more of it, I'm afraid.