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Michael Andrew explains his unique training system

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Michael Andrew is only 19, but he has been an outlier for years. In 2013, after breaking more than 30 U.S. age-group records, he turned professional at age 14. No American swimmer had ever turned pro that young. And by doing so, he forfeited a chance to compete for an American university. Instead, Andrew continued to train at home in Kansas, in a two-lane pool, coached full-time by his father, Peter, using a highly-unconventional training method.

It's called Ultra-Short Race-Pace Training (or USRPT), which involves very low volume, all at race pace.

"You can just look at his results and see that it works," said Russian sprint star Vladimir Morozov.

After the first four stops of the 2018 FINA World Cup, Andrew was the only man to win medals in all four strokes, plus two in the IM, yielding a total of 16 medals. He also won four U.S. national titles in July.

Recently, Michael and his parents explained why they believe in USRPT, how it works, and what Michael does with his free time since he's not slaving away endlessly racking up mileage. Three Olympic medallists also weighed in on what they think of USRPT and whether it would work for them.



WHY USRPT?

Peter Andrew: When I saw Michael had talent, I thought, 'Now what do we do?' We can't just decide: Let's do X. There's got to be a reason. I interviewed scientists. I heard Dr. Brent Rushall speak about USRPT. It was amazing. So in 2009, [when Michael was 10] we started doing short training at race speed.

Michael Andrew: The idea is: our body codes our movements, so to code movements that are slower than race speed is counterproductive.

Peter: It's really about specificity. To train something unspecific then expect to do something specific in a race, doesn't make any sense. Right away, Michael responded. He broke national junior records in every stroke. There's no doubt it works. We've been doing that ever since.

Michael: The biggest thing in the last two years is my ownership of it. When I was little, I basically did everything that my

dad told me to do. Last year, I kind of came along his side and we worked together intently. Now when I show up to race or train, it's not a chore. I'm grateful for the pain that comes from training. I think that's why I've been doing so well this past year.



HOW IT WORKS:

Peter: At home, we train short-course [25] metres. We don't have a long course [50m] pool, first and foremost. Also, he

couldn't hold [100m] pace for a 50-metre [lap] because his pace is too fast; he'd get tired too quickly. So let's say we're training for 100 free. We take his best time and divide by it four so we know what he has to hold for 25 metres. If his best time was 60 seconds, he has to hold 15 seconds [per lap]. If he goes 15.5, that's a fail. [If he fails too much], we walk away.

Michael: Either that or we'll adjust. Say we're failing at six repeats. Okay, let's push as hard as we can to make the next four or six.

Peter: If he can make 16 repeats, we are golden. Once he's consistently making 16 repeats at 100m pace with 15 seconds rest in between, we need to bring the 'make-time' down.

Michael: But sometimes [after too many fails] we do have to get out of the pool, or we'll focus on the starts or on overspeed

which is 25 metres all-out, off the blocks. It's what we do to train for the 50.

Peter: If you don't train overspeed your body doesn't recognise what it feels like to go really-really fast. To get better, you have to stress your body and recover. Yardage doesn't mean anything.

Michael: Our evening session is focused on speed, so that's where we do 100m pace or overspeed. But a typical morning session would be three sets [or strokes] at 200m pace. We usually start with our hardest one, like 200 fly, then do like a 200 free or a 200 IM. It's much the same set-up as 100 pace, but instead of it being 25m repeats at 15-seconds rest, the goal is to make twenty 50m repeats at 20-seconds rest. The times I hold now in training are dictated by my best times in a race. After this season, I have to adjust my times because my 100 backstroke got faster, my 100 breaststroke got faster...

Tina Andrew, Michael's mother: If he does two sessions a day, the actual time he's training is about 45 minutes [at race pace].

Michael: But we're in the pool for about two hours each session.

Peter: Because it's like a race, right? You train, you race, and the 15 minutes afterwards is rest or active recovery, where you flush out lactate, the acid that locks the whole muscle down.

Tina: Because it's so intense, it's really important to do everything he can to recover, and speed up recovery. One of the

things that Michael is using is Kaatsu, a Japanese technology.

Michael: I put bands over my arms and legs. They inflate and restrict the blood flow from a certain point. It's all measured

so there's very low risk of creating blood clots. We'll do a couple sprints with the bands on to trick your body into an extreme amount of fatigue without physical break down. The moment you take the bands off, the blood flows back in and you recover. But your body is sending these growth hormones and white blood cells to repair a muscle that hasn't been broken down. So essentially you're getting growth without as much work and tear.

[Otherwise, with all that free time], I get a rubdown. My mom's a trained massage therapist, which is awesome, so I don't have to pay for a massage. Or I'll roll out on a foam roller. Simple stuff: Ice baths, breathing, showers, napping, or Kaatsu for maybe 25 minutes on my arms and 25 minutes on my legs.

Peter: We put him back in his bubble and just roll him around. (haha!)

Tina: The bottom line is: USRPT has to be coached.

Peter: Because everyone's individual. One swimmer may fail at 10 [repeats] and [someone else] wants to stop and rest at four. You're training to what YOUR body can handle.

Tina: The dilemma that we have right now is that a lot of Olympians and professionals are asking to train with us. Peter's like, 'How am I to do that?'

IS USRPT RIGHT FOR EVERYONE? 3 OPINIONS

Mitch Larkin (AUS), 2015 World champion in 100/200 backstroke: I actually tried it, in 2017, with coach Simon

Cusack who predominantly trains freestyle sprinters Cate and Bronte Campbell. I had some reservations within the first three months. I thought, 'Aw, this is really different from what I've grown up doing and the work that got me to the top. I don't have any regrets because I wanted to try something new, but after Budapest [World Championships] last year, I said, 'It was awesome. I love it. You challenged me in fantastic ways. I've learned a lot, but I'd like to go back to some stuff that I'm a lot more familiar with and that works with me.' In the end, I think you really have to match the training with the athlete. Physiologically, Michael Andrew is a different athlete to what I am. My strengths are my aerobic system. So I train 60 to 70km a week, average, which is long for my events. And just before a meet, we look at adding speed - whereas Michael would find the speed early-season and create fitness just by repeating that speed.

Vladimir Morozov (RUS) short-course World Record holder in the 100m IM: For me, I don't think it would work. If I

were to focus only on the 50, then I would definitely give USRPT a shot. But I have to swim the 100, 50's, and medley relays. That's a lot of racing. And if you only do 20 laps - even though it's high-pace - you're not going to be able to do six 100s, all-out speed. At least I won't be able to.

Blake Pieroni (USA) 100/200m freestyle specialist: I think USRPT is great for some people: for people that don't want to

swim six-grand straight, or even people who like the long stuff - just to have some variety. I do it a couple times a month, maybe. I've never put a whole season towards it. I just like it for the variety. I kind of go crazy if I'm just doing long swims every day. I think whatever an individual believes is going to help the most, that's what's going to be the best thing for that swimmer.

