Belly Buttons and Athletic Performance

An article came out yesterday (July 13, 2010) on a site that I've never heard of quoting new research by people who I *have* heard of (but just barely).

Here: *http://www.theage.com.au/sport/bellybuttons-key-to-success-in-sport-20100713-1089b.html*

In case the link stops working, the article is titled "Belly-buttons key to success in sport."

And this is the article (which I don't have permission to reproduce; my hope is that forgiveness will be easier gained):

> *Scientists have found the reason why blacks dominate on the running track and whites in the swimming pool - it's in their belly-buttons.*
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> *What's important is not whether an athlete has an innie or an outie but where his or her navel is in relation to the rest of the body, says the study published in the International Journal of Design and Nature and Ecodynamics.*
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> *The navel is the centre of gravity of the body, and given two runners or swimmers of the same height, one black and one white, "what matters is not total height but the position of the belly-button, or centre of gravity," Duke University professor Andre Bejan said.*
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> *"It so happens that in the architecture of the human body of West African-origin runners, the centre of gravity is significantly higher than in runners of European origin", which puts them at an advantage in sprints on the track, he said.*
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> *Individuals of West African-origin have longer legs than European-origin athletes, which means their belly-buttons are three centimetres higher than whites', said Bejan.*

That means the black athletes have a "hidden height" that is three per cent greater than whites', which gives them a significant speed advantage on the track.

"Locomotion is essentially a continual process of falling forward, and mass that falls from a higher altitude, falls faster," Bejan explained.

In the pool, meanwhile, whites have the advantage because they have longer torsos, making their belly-buttons lower in the general scheme of body architecture.

"Swimming is the art of surfing the wave created by the swimmer," said Bejan.

"The swimmer who makes the bigger wave is the faster swimmer, and a longer torso makes a bigger wave. Europeans have a three-per cent longer torso than West Africans, which gives them a 1.5-per cent speed advantage in the pool," he said.

Asians have the same long torsos as Europeans, giving them the same potential to be record-breakers in the pool.

But they often lose out to whites because whites are taller, said Bejan.

Many scientists have avoided studying why blacks make better sprinters and whites better swimmers because of what the study calls the "obvious" race angle.

But Bejan said the study he conducted with Edward Jones, a professor at Howard University in Washington, and Duke graduate Jordan Charles, focused on the athletes' geographic origins and biology, not race, which the authors of the study call a "social construct".

Bejan is white, originally from Romania, and Jones is black, from South Carolina.

They charted and analysed nearly 100 years of records in men's and women's sprinting and 100m freestyle swimming for the study.

While this is interesting, it doesn't sound believable. I don't doubt that a few-centimeter difference in belly button height does exist (on average) between black sprinters and white swimmers, however:

A) This doesn't strike me as a huge difference. Usain Bolt's height is 195 (and a half) centimeters. Displacing three of those centimeters in either direction is unlikely to alter world records.

And B) There's exactly as much correlation in very dark, very short, very tightly curled hair. That seems to produce Olympic sprinters too. And I could make up some explanation about aerodynamics, but, again, it's a matter of magnitude.

Concerning magnitude, the big ticket item in this case is muscle properties, fiber typing not least among those properties. You won't see a gold medalist sprinter with a type II fiber composition of less than 80%. Likewise, each of them will have a really prominent Achilles with tendon attachments closer to the joint (etc.).

If you take a white guy with 68% type II fibers and a belly button in his chest, the 80% guy is still going to beat him. Even if his belly button is on his perineum.

I don't know enough about swimming mechanics to say that a three centimeter difference in belly button height doesn't result in a larger wave (which apparently results in a faster swimmer), but I have a hunch there's a lot more to it than that.

These chaps (researchers) did make a clever observation, but I'm pretty sure it's just an interesting correlation. And it comes in a package deal with the athletes who have 80% type II fibers (and advantageous joint angles and tendon attachments and other things that actually matter).

– Courtney