

'The Scars of Human Evolution' briefing explores physical fallout from 2-footed walking

February 15 2013

From sore feet to backaches, blame it on human evolution. "Because we are the only mammals to walk on two feet," says Bruce Latimer, an anthropologist from the Case Western Reserve University School of Dental Medicine.

"If an engineer were given the task to design the human body, he or she would never have done it the way humans have evolved," Latimer said. "Unfortunately, we can't go back to walking on four feet. We've undergone too much evolutionary change for that—and it is not the answer to our problems."

But applying Darwinian evolutionary theory to the human condition offers a window to why humans suffer from physical ailments that no other animals do, said Latimer, who is on the faculty in the Department of Orthodontics at Case Western Reserve.

Evolving from four-footed walking has created issues from flat feet and bunions to slipped discs, hernias and fallen pelvic floors. And as bizarre as it sounds, rising from four to two feet resulted in reshaping the face and head, which is why humans suffers with such dental problems as wisdom teeth with no room to grow.

Latimer will present "A Backache of Longstanding: An [Evolutionary Perspective](#) on the Human Vertebral Column" at the 2013 [American](#)

[Association for the Advancement of Science](#)'s annual meeting in Boston, Feb. 14-18.

Latimer's talk will focus on physical problems of the spine, which developed into an S-shaped structure as humans shifted from quadrupedal walking to bipedal walking. But changes to the spine also resulted in protecting the body's most important area, the birth canal, which allowed the species to procreate.

As the spine developed in curves, it became stressed at certain points, resulting in such conditions as lordosis (swayed backs), kyphosis (rounded upper back or hunch back) and scoliosis (sideway curve).

The spine also takes a beating from how people walk—one foot forward at a time with the opposite side arm swinging in step.

"This creates a twisting motion that, after millions of twists over time, the discs between the vertebrae begin to wear out and break down resulting in herniated discs. In addition, age related bone loss (osteoporosis, the brittle bone disease,) also a human condition, further complicates problems, Latimer explained.

Few early species of ancient human hominids lived beyond 50 years. Most died between 30 and 40, Latimer said. The human body really takes a physical beating, and most people will struggle with some kind of pain as the body ages.

"The original design specs for the [human body](#) were designed to last about 40 years," he said.

Provided by Case Western Reserve University

Citation: 'The Scars of Human Evolution' briefing explores physical fallout from 2-footed walking (2013, February 15) retrieved 28 April 2024 from <https://phys.org/news/2013-02-scars-human-evolution-explores-physical.html>

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