

Nota de prensa de Nature.

And finally... How the penis lost its spines

The human penis is, thankfully, spineless thanks to the evolutionary loss of a non-coding chunk of DNA, suggests a Nature paper, which describes how regulatory DNA deletions have helped sculpt the evolution of human-specific traits.

Gill Bejerano and colleagues used comparative genomics to identify 510 human-specific deletions — sequences that are highly conserved between chimpanzees and other species, but absent in the human genome. The deletions represent regulatory chunks of DNA — sequences that can influence the expression of nearby genes — and they lie almost exclusively in non-coding DNA stretches, close to genes involved in hormone signaling and neural function.

One deletion removes a neural regulatory sequence near a tumor suppressor gene, a loss that correlates with the expansion of specific brain regions in humans. Another eliminates a regulatory sequence near the human androgen receptor gene, a molecular change linked to the human anatomical loss of sensory whiskers and keratinized penile spines. Penile spines are commonly found in other animals, including chimpanzees, macaques and mice, but a more simplified morphology tends to be associated with the monogamous behavior of certain primates.

Many studies have tried to address the question of what makes us human by searching for extra features that we have in comparison with our close relatives, but Bejerano and colleagues have found interesting, human-specific characteristics by looking for what we have lost over the course of evolution.