

Re: Article: Human 'dental chaos' linked to evolution of cooking

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I dont know about acclusion issues but I do know most of our ancestors had far less tooth decay. I also know that the dates for the domestication of the horse were pushed back due to research on denture and jaw bone patterns in early horse fossils – bridling of horses changes both the jaw structure and dental patterns in horses and other domesticates. Seems pretty simple and straightforward once you think of it! I know major research in this area was done in the UK (Oxford) in the 80's ? Nova may have touched on this also –

jw

Rich Travsky wrote:

> <http://www.newscientist.com/article.ns?id=dn7035>

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> *Crooked and disordered teeth may be the result of people having evolved to eat relatively mushy cooked food, suggests new research.*

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> *The disarray may have developed because evolutionary pressures affecting the size and shape of both the front teeth and jaw conflict with those influencing the back teeth. This means that there is often not enough space in the human jaw to accommodate all our teeth.*

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> *By animal standards, human dentition is extraordinarily disordered, says anthropologist Peter Lucas of George Washington University in Washington DC, US.*

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> *"The only body parts requiring regular surgery are the teeth," says Lucas.*

> *"It is extraordinary that the normal development of human teeth routinely*

> *fails to produce 'ideal' dentition," he says – and no one has yet been*

> *able to offer an explanation for this phenomenon.*

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> *Human teeth are often spatially disarrayed or "maloccluded", accounting for the huge number of people who seek treatment from orthodontists. This*

> *disarray can lead to periodontal and gum disease, because it becomes more*

> *difficult to clear food particles from the mouth.*

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- > *Teeth can also be missing – wisdom teeth simply do not have enough space to*
- > *fit into the jaw, and sometimes do not form at all. In contrast most other*
- > *mammals – including our close relatives, the great apes – have very low*
- > *frequencies of malocclusion, Lucas told New Scientist.*
- >
- > *Lucas's theory is that human dentition began to go haywire soon after our*
- > *early Homo ancestors learnt to chop and process food with simple tools and,*
- > *later, to cook it. These processes greatly decrease the size and toughness*
- > *of food. Lucas estimates, for example, that molars can be between 56% and*
- > *82% smaller when eating cooked potato rather than raw.*
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- > *The front teeth and jaws are primarily occupied with reducing food to a*
- > *small enough size to consume, whereas the molars and premolars at the back*
- > *of the mouth are used to grind down tough particles.*
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- > *Lucas, speaking on Saturday at the American Association for the Advancement of*
- > *Science meeting in Washington, DC, US, argued that since the advent of cooking*
- > *these two processes have fallen out of sync.*
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- > *"The size of particles has reduced more rapidly than the rate at which the*
- > *[toughness] of food has changed," he says. In response the human jaw may have*
- > *shrunk beyond the point where it can hold all the molars required to*
- > *successfully chew tough food. Lucas will now test the idea by measuring the*
- > *particle size and toughness of food eaten by different animals and correlating*
- > *these with tooth and jaw measurements.*
- > ...
- > *Anthropologists have not been able to agree on when our earliest ancestors*
- > *started to prepare food. Current estimates place the advent of cooking anywhere*
- > *between 2 million and 300,000 years ago.*