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

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On Wed, 23 Feb 2005 10:14:27 −0700, Rich Travsky
<traRvEsky@hotmMOVEail.com> wrote:

>
> http://www.newscientist.com/article.ns?id=dn7035
>
> Crooked and disordered teeth may be the result of people having evolved
> to eat relatively mushy cooked food, suggests new research.
>
> 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.
>
> By animal standards, human dentition is extraordinarily disordered, says
> anthropologist Peter Lucas of George Washington University in Washington
> DC, US.
>
> "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.
>
> 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.
>
> 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.*
>
> *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.*
>
> *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.*
>
> *"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.*

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