Name: _____ Date: _____

Why Do We Have Wisdom Teeth?

Reading level 10 (6th grade) · 1043 words

At the dentist's office, Petra stared at a gray picture of her own mouth on the screen. It was an X-ray. Deep in the bone, behind her back teeth, sat four pale lumps, one in each corner, with no roots at all yet. "Those are your wisdom teeth," said the dentist. "They have started to form, but they won't come through for years." Petra was eleven. Her brother Corin, who was nineteen, had a wisdom tooth coming in crooked, and he was grumpy about it. So why do we have wisdom teeth at all?

Wisdom teeth are molars, the wide, bumpy grinding teeth at the back of the mouth. Petra had already met the first set. Her six-year molars had come in behind her baby teeth when she was small, without any baby tooth falling out to make room. Her twelve-year molars were due soon. Wisdom teeth are the third and last set of molars, and they usually arrive somewhere between seventeen and twenty-five. A full adult mouth has thirty-two teeth, which is twelve more than the twenty baby teeth a child starts with.

The name is very old. The ancient writer Aristotle noted that the last teeth to come in, the molars called wisdom teeth, appear at about the age of twenty. The idea is that they arrive once a person is older and, with luck, a little wiser. Corin said he did not feel any wiser. He felt sore, and he was eating his cereal on one side of his mouth. Petra wanted to know something better than the name. Why would a body grow teeth that it seems to have no room for?

Here is the first clue. Gorillas, chimpanzees and monkeys all have wisdom teeth, too, and for them the extra molars are no trouble. They still crunch a lot of tough food. A chimpanzee spends almost half of its day chewing, and it chews with much more force than we do. For such an animal, a third set of grinders is useful. Our ancestors were built for that work. Lucy, a famous fossil skeleton, belonged to a species that lived three to four million years ago. It had bigger, thicker jaws than ours, with three big molars and thick enamel.

So what changed? Mostly, our food did. Between two and three million years ago, our ancestors began eating more meat and using stone tools to slice and pound their food before they ate it. In one test, volunteers chewed raw goat meat and vegetables while sensors measured the work. The scientists worked out that a diet one-third meat, with the meat sliced and the vegetables pounded, would take almost 20 percent less chewing. Cooking, farming and food storage later made meals softer still. Over time, our faces grew flatter, our jaws shorter and our teeth smaller.

A jaw also grows in answer to the work it does. In one experiment, scientists raised young rock hyraxes on either raw and dried food or cooked food. The ones on cooked food grew about 10 percent less in the lower and back parts of the face, just where chewing pushes

hardest. Human skulls point the same way. One scientist compared eleven groups of people around the world. Those who lived by hunting and gathering had longer, narrower lower jaws, with more room for teeth. Farming people had shorter, broader jaws, which makes crowded teeth more likely.

Now picture a jaw that grows a little short but still has to hold the same set of thirty-two teeth. Something has to give, and it is usually the teeth at the end of the line. A wisdom tooth with no space can get stuck inside the jawbone. Dentists call that impacted, and it happens more often in the lower jaw. Stuck wisdom teeth were fairly rare in the distant past. After factories brought soft, processed food, they became about ten times more common. Corin's crooked tooth might not be just bad luck. It is a very modern problem.

Julia Boughner, a Canadian scientist who studies teeth and jaws, thinks soft food is part of the story. Without much hard chewing, she says, children's jawbones may not get the push they need to grow to their full size. And there is a deadline. Jaw growth stops toward the end of puberty, so a person has only about fifteen years for chewing to shape it. That is her idea about how jaws grow, not a rule about what to eat. Petra bit into her soft sandwich and wondered.

Not everyone even gets wisdom teeth. About one person in four or five is missing at least one, because that tooth simply never formed. Scientists are not sure why, though the genes we inherit from our parents may play a part. Some scientists have argued that growing fewer wisdom teeth could be an advantage for people with smaller jaws, since there are fewer teeth to squeeze in. Petra's X-ray showed all four. Corin had all four, too. Their dad, it turned out, had never had a single one, and he thought that was very funny.

Do wisdom teeth always have to come out? No, not always. If a wisdom tooth comes all the way in, stands straight and stays healthy, it usually does not need to be removed. Trouble comes mostly when a tooth is stuck or only partly through. That can lead to pain, decay or sore, swollen gums. Dentists use X-rays like Petra's to see how the teeth are growing. Experts still disagree about one question: should stuck teeth that cause no problems come out just in case? There is not enough good evidence yet to say.

So why do we have wisdom teeth? Because our long-ago relatives needed every grinder they could get for a life of tough, raw meals. The plan for those teeth is still in us, even though our food and our faces have changed. Corin's crooked tooth was a leftover from that older world. Here is something to try. Stand in front of a mirror, open wide and count the big, flat molars at the back. If you are about six, look for a new one where no tooth fell out. Then work out which set you are waiting for next.

Questions

1. What did Petra see on her X-ray?

A. A cavity in a baby tooth
B. Four wisdom teeth starting to form
C. A broken jaw

2. Why are wisdom teeth less useful now than they were long ago?

A. Our food is softer, so we need less chewing
B. Teeth are bigger now
C. People eat more raw meat

3. What happened to the hyraxes that ate cooked food?

A. They grew extra teeth
B. Their faces grew a little less
C. They lost their wisdom teeth

4. In the book, what does "impacted" mean?

A. Stuck inside the jawbone
B. Brushed very hard
C. Grown in straight

5. What does Julia Boughner think soft food may do to children's jaws?

A. Make them grow too long
B. Keep them from growing to full size
C. Make wisdom teeth fall out

6. What do experts still disagree about?

A. Whether people have molars
B. Whether chimpanzees chew
C. Whether stuck wisdom teeth that cause no trouble should come out

Words to know

molars: back grinding teeth
impacted: stuck in bone
ancestors: long-ago relatives
enamel: hard tooth coating
puberty: growing-up years

Answer key: Why Do We Have Wisdom Teeth?

1. B. Four wisdom teeth starting to form
2. A. Our food is softer, so we need less chewing
3. B. Their faces grew a little less
4. A. Stuck inside the jawbone
5. B. Keep them from growing to full size
6. C. Whether stuck wisdom teeth that cause no trouble should come out