The Awesomely Evolved Human Brain

THE BRAIN'S REWARD SYSTEM
Your brain has evolved to make you feel good when you do things that help you survive. The pleasure you feel is caused by the chemical dopamine, which is released in your brain's reward system. When you enjoy certain activities, dopamine is released, and you are more likely to repeat those activities. This brain system has evolved to help you learn and grow, and to become healthy, happy, and successful.

THAT LOOKS GOOD... The brain has evolved to crave the fattest meats, the sweetest fruits—natural, unprocessed foods that contain the highest energy. Why? Because our evolutionary survival instinct tells us that famine may be just around the corner.

WHAT A RUSH! You live to skateboard. Your friends love it when you complete 360° turns. No doubt you are taking some risk, but it's healthy! Evolution has designed us to learn from new experiences so that we become independent—and find our own place in this world.

CRUSH ALERT When you first met, you couldn't stop flirting with each other. Why? Members of every species are designed to find a partner, and humans are no different.

WHEN TOO MUCH OF A GOOD THING CAN BE BAD
The brain's reward system can go haywire. This is especially true in today's world, where many of the foods we eat are highly processed, and technology invades almost every aspect of our lives, overloading us with information. Because evolution takes millions of years, our brains have not yet caught up with the demands of today. This overload can throw us out of balance and lead to compulsivity—or the inability to stop a behavior, even when it's harmful.

I JUST ATE AN ENTIRE FAMILY-SIZE BAG OF CHIPS."

TRYING DRUGS IN ORDER TO FEEL A RUSH

CHECKING YOUR PHONE FOR TEXTS 100 TIMES AN HOUR

Have you ever thought about how many different things your brain can do? This amazing organ, which scientists are only beginning to understand, has been refined through millions of years of evolution. It helps you process information—often before you are aware of it. And it figures out things fast, even when information is incomplete. Did you know that your brain even controls what you enjoy? The brain evolves to help you survive and to keep your body's internal environment stable and balanced, a state known as homeostasis. The brain is awesomely complex and crucial to who we are and how we live.

The Brain Evolution Timeline

BEGINNING OF TIME

MILESTONES

6,000,000 Years Ago

6,000,000 Years Ago

2,600,000 Years Ago

800,000 Years Ago

3,000 Years Ago

500 Years Ago to TODAY

THE EARLY BRAIN
Focus on Survival—MILLIONS OF YEARS

Rapid Brain Growth
Rise in Innovation—THOUSANDS OF YEARS

THE BRAIN IN THE MODERN AGE
Dramatic Technological Advances—HUNDREDS OF YEARS

INVENTIONS

SCIENCE/MEDICINE

COMMUNICATION

PROCESSED FOODS

TECHNOLOGY

MASS PRODUCTION

From Scholastic and the scientists of the National Institute on Drug Abuse, National Institutes of Health, U.S. Department of Health and Human Services.

More Info: For additional facts about the brain and drugs, visit scholastic.com/headsup and teens.drugabuse.gov.

Dopamine Overload

EVER FEEL LIKE YOU JUST CAN'T STOP? Maybe it's eating potato chips, or maybe it's playing a video game over and over—it can be different things for different people. These experiences overstimulate the brain's natural reward system, causing some people to compulsively repeat certain behaviors, like overeating, which can cause obesity. It also happens with drugs, which overload the brain with dopamine. This is why for some people, experimentation can lead to addiction.