

# When do we become adults?

## Brain science and the passive voice

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### 1. What makes an adult?

Discuss the following questions with a partner.

1. In your country, what is the legal age of adulthood (e.g., for voting, driving, drinking alcohol)? Do you think these ages are appropriate?
2. What are some signs that a person has become mature? Think about responsibilities, behaviors, and attitudes.
3. Is there a difference between being a "legal" adult and a "mature" adult? Explain your view.

**Teacher's note:** Answers will vary. This section is designed to activate prior knowledge and generate discussion.

### 2. Key vocabulary: The science of maturity

Match the vocabulary words from the video with their correct definitions.

|                                         |                                                                                          |
|-----------------------------------------|------------------------------------------------------------------------------------------|
| 1. <b>Arbitrary</b> (f)                 | a. The process of removing underused connections in the brain to make it more efficient. |
| 2. <b>Eligible</b> (d)                  | b. Likely to be influenced or harmed by something.                                       |
| 3. <b>Consensus</b> (e)                 | c. Done without careful thought about the possible negative results.                     |
| 4. <b>Pruning</b><br>(neurological) (a) | d. Having the necessary qualities or meeting the conditions required.                    |
| 5. <b>Susceptible</b> (b)               | e. A general agreement shared by a group.                                                |
| 6. <b>Rash</b> (decision) (c)           | f. Based on random choice or personal preference, not on reason or a system.             |

### 3. Video: When are you actually an adult?

Watch the video to understand the main ideas and then answer the questions below.

[Watch the video on YouTube](#)

#### Part A: General understanding

Watch the video and answer the following general questions.

1. What are the two main scientific approaches mentioned in the video for defining adulthood?

The video mentions defining adulthood by 1) when the brain is fully grown (brain structure) and 2) by measuring cognitive development (mental abilities).

2. What is the video's final conclusion about when we become adults?

The video concludes there is no exact age. Instead, maturity comes in "waves," and each person's journey to adulthood is unique, influenced by genetics, environment, and experience.

## Part B: Detailed comprehension

Watch the video again. Are the following statements true (T) or false (F)? Correct the false ones.

1. A reduction in gray matter during adolescence is a sign of unhealthy brain development. (F)

Correction: A reduction in gray matter is a normal, healthy process called pruning, which makes the brain more efficient.

2. White matter helps different parts of the brain communicate quickly over long distances. (T)

3. In tests of reasoning and problem-solving, 16-year-olds perform much worse than older adults. (F)

Correction: Sixteen-year-olds perform just as well as older adults on these tests.

4. Social and emotional pressure can make 18-21 year olds behave more like younger teenagers. (T)

5. The video suggests that everyone reaches each "wave of maturity" at exactly the same age. (F)

Correction: The video states that not everyone will reach each wave of maturity at the same age; the journey is unique.

## 4. Grammar focus: The passive voice

The **passive voice** is often used in scientific and formal contexts, like the video. We use it when the person or thing doing the action (the agent) is unknown, unimportant, or obvious from the context. The focus is on the action itself or the result.

**Structure:** Subject + form of 'to be' + past participle (+ by + agent)

**Example from the video:** *"Connections that are used **are kept and strengthened**, while under-used ones **are weeded away**..."*

Here, the focus is on the connections, not on what (the brain) is keeping or weeding them away.

## Practice 1: Identify the passive

Read the following sentences from the video script and underline the passive verb forms.

1. "...cultural coming-of-age ceremonies **are often celebrated** at different ages."
2. "White matter refers to connections that **are myelinated**, **coated** in a layer of insulation..."
3. "...this allows emerging adults to better explore their identities..." (Is this active or passive?)  
**Active.** The subject 'this' is performing the action 'allows'.
4. "...the emerging adult brain is still changing." (Is this active or passive?)  
**Active (present continuous).** The subject 'brain' is performing the action 'is changing'.

## Practice 2: Transform the sentences

Rewrite the following active sentences into the passive voice. You may need to remove or rephrase the agent.

1. Scientists use imaging studies to show changes in the brain.  
→ Imaging studies **are used by scientists** to show changes in the brain.
2. Peer pressure strongly influences the decisions of young adults.  
→ The decisions of young adults **are strongly influenced** by peer pressure.
3. Most countries' laws recognize 18 as the start of adulthood.  
→ Eighteen **is recognized** as the start of adulthood by the laws of most countries.

4. Genetics, environment, and experience influence each person's journey.  
→ Each person's journey **is influenced** by genetics, environment, and experience.
5. Selective pruning fine-tunes the brain to its environment.  
→ The brain **is fine-tuned** to its environment by selective pruning.

## 5. Useful phrases for debate and discussion

The video starts with a debate. Here are some useful phrases for discussing different viewpoints. Can you find who said them in the video?

### Expressing strong disagreement:

- "I firmly disagree!" (The older brother and the younger sister)
- "No way..." (The older brother)

### Pointing out a flaw in logic:

- "That's so unfair!" (The older brother)
- "Then by that same logic..." (The younger sister)

### Acknowledging another's point:

- "I think you both make valid points." (The adult narrator)

### Introducing a scientific perspective:

- "Perhaps science can give us a clearer answer." (The adult narrator)
- "One way neuroscientists have looked to define..." (The adult narrator)

### Summarizing or rephrasing an idea:

- "In other words..." (The adult narrator)

## 6. Speaking practice: The debate

Work in small groups to debate the following topic:

**"The legal age for driving should be raised to 21."**

### Instructions:

1. Divide your group into two teams: one team will argue **FOR** raising the age, and the other will argue **AGAINST** it.
2. Take 5 minutes to prepare your arguments. Use ideas and vocabulary from the video (e.g., **susceptible to pressure, rash decisions, cognitive development, brain pruning**).
3. Try to use at least one phrase from the "Useful phrases" section.
4. Use the **passive voice** where appropriate (e.g., "It is argued that...", "Young drivers are often influenced by...").
5. Each team will present its main points, followed by a chance to respond to the other team's arguments.

**Teacher's note:** This is a practice activity. Monitor groups for use of target vocabulary, discussion phrases, and the passive voice. Provide feedback and facilitate discussion as needed.