

## Inherited Traits

“Who did you get your red hair from, your mother or your father?” People often ask questions like this, because they are aware that hair color and other physical traits are passed on from parents to children. But what about other traits, such as personality and talents? Are those traits inherited too?

### PHYSICAL TRAITS

There is no question that children inherit many of their physical traits from their parents. Some of these traits include:

- Blood type
- Eye color and shape
- Hair texture and color
- Skin color
- Freckles
- Dimples
- Shape and size of ears, hands, and feet

Although it is known that these traits are inherited, it isn’t always easy to tell why people have the specific traits that they do. This is because of the way genetics work. At conception, each person inherits two genes for each specific inherited trait. One gene comes from the mother and the other one from the father. However, the mother and father also have two genes for each trait, but can pass on only one, randomly determined. That’s why the specific genes a baby will receive can’t be predicted.

Some genes are stronger than others. They are called *dominant genes*. If a baby receives one gene for blue eyes from one parent and one for brown eyes from the other, the child will have brown eyes because the gene for brown eyes is dominant.

The gene for red hair is an example of how a *recessive gene* works. A person must inherit two recessive red-hair genes—one from each parent—in order to have red hair. If the person only inherits one red-hair gene, his or her hair color will not be red. However, that person with one gene can still pass on that recessive red-hair gene when he or she has children. That’s why a child can have red hair, even if neither parent does.

Not all physical traits are determined solely by heredity. For example, a person’s physical build and height are determined by environmental factors, as well as heredity. Although genes may place limits on how tall a person can become, factors such as nutrition, exercise, and health ultimately affect the person’s adult height.

### OTHER TRAITS

Research indicates that other nonphysical traits are also influenced by a person’s genes. For example, children can inherit a predisposition for talents, such as musical or athletic ability, from their parents. Revealing studies of twins seem to indicate that even some personality traits may be inherited.

Many twins not only look alike, but also have similar personalities and interests. If the twins were raised together, it could be argued that the similarities were largely because of their shared environment.

However, researchers have found that these similarities often exist even if identical twins were raised apart. In fact, it’s not unusual for twins who meet each other after being raised apart to discover that they have much in common. They often share the same hobbies, wear similar clothes, like the same colors, and may even have had many of the same life experiences, including divorce, illnesses, and accidents.

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However, it is clear that environment also plays an important role in the development of talents and personality traits. If environment didn't play a role, then identical twins would be

exactly the same in every way, even if they were raised apart. However, no two people are exactly alike, not even identical twins.

**Taking Action**

The chart below lists some common physical traits that are inherited. For each trait, circle the phrase that best describes *you*. Then write a paragraph, summarizing what dominant and recessive genes you have.

Inherited Physical Traits		
Trait	Dominant	Recessive
Earlobes	Your earlobes are not attached at the bottom, but hang free.	Your earlobes are attached to your head at the bottom.
Dimples	You have dimples.	You do not have dimples.
Freckles	You have freckles.	You do not have freckles.
Widow's peak	Your hairline is shaped in a downward "v" above your forehead.	Your hairline is not shaped in a downward "v" above your forehead.
Tongue rolling	You can roll your tongue into a U-shape.	You cannot roll your tongue into a U-shape.
Little fingers	Your little finger bends toward your ring finger.	Your little finger does not bend toward your ring finger.
Hand clasping	When you clasp your hands together by interlocking your fingers, your left thumb is on top.	When you clasp your hands together by interlocking your fingers, your right thumb is on top.