Observable Human Characteristics

We are all unique. Even though we share some characteristics with our peers and our family members, every one of us has a unique combination of traits.

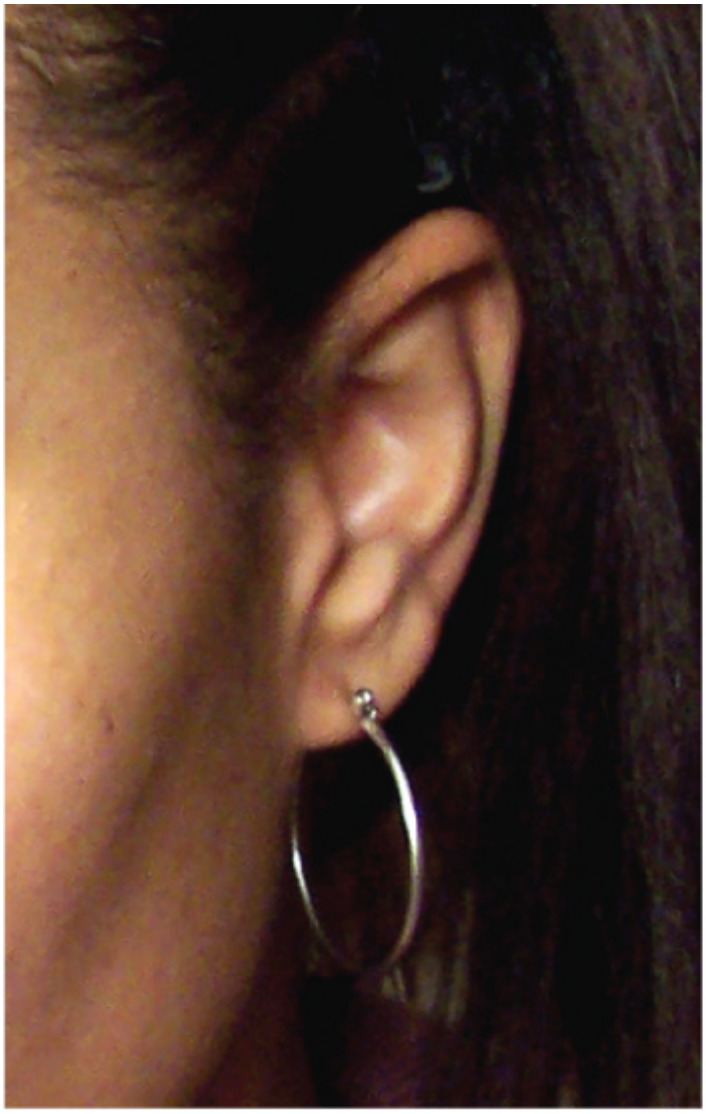
Some traits are controlled by genes that pass from parent to child. Others are acquired through learning. But most are influenced by a combination of genes and environmental factors. Below are some examples of variable traits that are easy to observe.

To learn more about traits see What are Traits?

Earlobe attachment

If earlobes hang free, they are detached. If they connect directly to the sides of the head, they are attached. Earlobe attachment is a continuous trait: while most earlobes can be neatly categorized as attached or unattached, some are in-between.

Although some sources say that this trait is controlled by a single gene, with unattached earlobes being dominant over attached earlobes, no published studies support this view. Earlobe attachment and shape are inherited, but it is likely that many genes contribute to this trait. As such, its pattern of inheritance is difficult to predict.



Attached earlobe

Unattached earlobe

Tongue Rolling

Some people can curl up the sides of their tongue to form a tube shape. In 1940, Alfred Sturtevant observed that about 70% of people of European ancestry could roll their tongues and the remaining 30% could not.

Many sources state that tongue rolling is controlled by a single gene. However, as Sturtevant observed, people can learn to roll their tongue as they get older, suggesting that environmental factors—not just genes—influence the trait. Consistent with this view, just 70% of identical twins share the trait (if tongue rolling were influenced only by genes, then 100% of identical traits would share the trait).

Dimples

Dimples are small, natural indentations on the cheeks. They can appear on one or both sides, and they often change with age. Some people are born with dimples that disappear when they’re adults; others develop dimples later in childhood.

Dimples are highly heritable, meaning that people who have dimples tend to have children with dimples—but not always. Because their inheritance isn't completely predictable, dimples are considered an “irregular” dominant trait. Having dimples is probably controlled mainly by one gene but also influenced by other genes.

Handedness

Handedness describes our preference for using either our left or right hand for activities such as writing and throwing a ball. Overall, about 10% of people are left-handed, but the number varies among cultures from 0.5% to 24%.

Some have reported that handedness is controlled by just one or two genes, but this is not the case. Multiple studies present evidence that handedness is controlled by many genes—at least 30 and as many as 100—each with a small effect; many are linked to brain development. Environment also plays an important role: some cultures actively discourage left-handedness.

Freckles