

Spider silk



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A spider's silk is made up of a chain of amino acids. This means that it is a protein. There are two primary amino acids called glycine and alanine. Spider silk is very strong and is about five times stronger than steel and twice as strong as Kevlar, which is the same weight. It also has the ability to stretch to about 30-percent longer than the original length, without even breaking. Spider silk is the number one thing that distinguishes spiders from the rest of the animal kingdom. Spiders have these special glands that secrete the silk proteins, which are then dissolved in a water-based solution.

The spider will push the solution through the long ducts that lead it to the microscopic spigots on the spider's spinnerets. Spiders usually have two to three spinneret pairs on the rear of their abdomen. Spider silk has a wide range of purposes. One of the most common uses is nursery building. Most female spiders will spin a very thick, protective cocoon to protect the developing eggs and sometimes the spiderlings when they've hatched. Some species of spiders will leave the cocoon unattended while the young spiders are developing and others will carry the cocoons around with them.

Another most common use for silk is called the dragline. As most spiders move around from place to place, they lay out a thin dry piece of thread behind them. As a mountain climber would do, the spider uses this thread as a type of safety line. If it approaches any trouble, it can easily use the line to backtrack and get to safety. Many different types of species of spiders have different uses for silk. A purse spider uses the silk to coat a hole in the ground while waiting for prey to pass by. A redback spider can weave a silk-egg sac.

There are so many different ways for us humans to use spider silk. Spider silk can be woven into clothes for us to wear. It is also known that spider silk has been woven into bags, such as the ones that used to carry arrowheads by the natives of New Hebrides. In more technologically advanced places like India and China, Spider silk was regularly woven and worn only by the richest of people. A Chinese delegation to Europe presented Queen Victoria with a spider silk gown in 1896. People also often use spider silk for creating nets for catching butterflies and for fishing.