

# Fingerprints

Fingerprints ridges can be divided into three basic patterns:

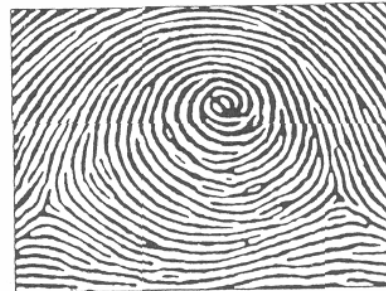
ARCH The ridges run from one side of the finger to the other.



LOOP The ridges come in from one side of the finger, loop around, and leave on the same side. If the beginning side is closer to the pinkie finger, it's called an "ulnar loop"; if it's closer to the thumb, it's called a "radial loop".



WHORL The ridges in the center make a complete circle, without ever going out to the side of the finger.



Some fingerprint patterns are a combination of the above patterns – they each have a special name, although they are more rare than the three basic patterns.

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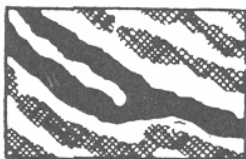
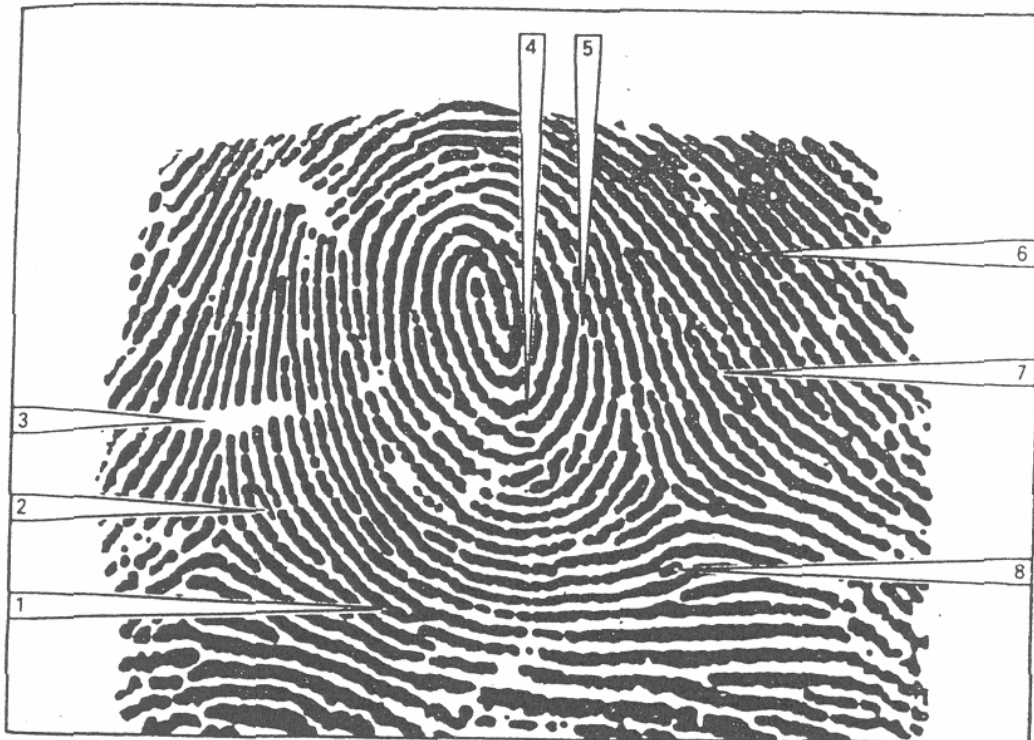
Most fingerprints that are left behind at a crime scene are "latent" prints – they are invisible prints made up of sweat and oils from your skin. These prints must be processed or developed in order for us to see them and determine their patterns. There are many ways to develop latent fingerprints, depending on the surface that they're on. Some methods won't work on some surfaces, so you need to choose your method wisely.

Powder dusting can use standard fingerprint powder OR magnetic powder – you must choose a powder color that will show up on your evidence! Powdered prints can be lifted with tape and preserved. Developed prints are also photographed.

Prints can also be developed by chemical methods. Fuming with cyanoacrylate (SuperGlue) gives a hardened white crusty version of the print on your evidence. If the evidence is white, the print can then be stained with fluorescent dyes so that it can be seen more easily.

# Minutiae

Minutiae (mih-NU-shuh) are the specific patterns in the ridge detail that can be used to uniquely identify (individualize) the fingerprint. Below is a print with all the ridge detail shown and then close-ups of the individual minutiae along with their names. Examine your own fingerprints – what minutiae can you see?



1 Bifurcation



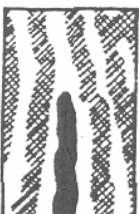
2 Hook



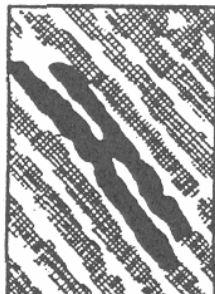
3 Scar



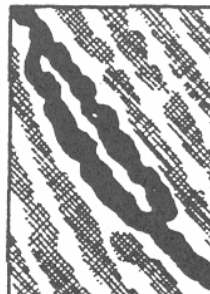
4 Downthrust  
ridge ending



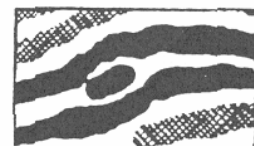
5 Upthrust  
ridge ending



6 Ridge crossing



7 Enclosure (eye)



8 Island (short ridge)