JIM WAGNER PERSONAL PROTECTION REALITY-BASED™

KNIFE SURVIVAL MINIMUM

BLEED OUT CHART

FROM CUT OR PUNCTURED ARTERIES

KNIFE JIM WAGNER REALITY-BASED SURVIVAL

This is a non-medical tactical chart to provide general bleed out (*exsanguination*) times of the various arteries of the human body, when completely severed, indicating when the injured person **may no longer be combat effective** (experiencing weakness, unconsciousness, or death) unless the bleeding (*hemorrhaging*) is stopped. Arterial bleeding is recognized by quick, rhythmic spurts of bright red blood (oxygen-rich). The intensity of the blood pressure makes blood clotting difficult, and this is why direct pressure (*a field dressing*) must be immediately applied to the injury, along with indirect pressure (*a tourniquet*) applied above the injury; for the limbs only.

There are 5 liters (5 1/4 US quarts) of blood in the average adult. An adult's heart pumps that entire amout throughout the body in one minute at rest. For blood loss from an injury the formula is:

70 mL (2.36 fluid ounces) per heart beat (from the aorta) x number of beats per minute = stroke volume of blood

An injured person can only lose about 14% of the body's blood before vital signs begin to suffer.

The average time for first responders is 7 to 10 minutes.

5 seconds
carodid artery
subclavian artery

15 seconds
axillary artery

30 seconds
brachial artery

1 to 2 minutes
radial and ulnar arteries

15 seconds
iliac artery

30 seconds
femoral artery

1 to 2 minutes
tibial arteries

FOR A COPY OF THIS CHART