

# BLOOD TRACE WORKSHEET

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## Student instructions:

A valuable exercise enabling you to understand how blood flows through the cardiovascular system is to trace a few of the routes a red blood cell would take in its journey through the body. In this exercise you will identify the missing structures in each of the four traces provided for you.

It is crucial that you avoid the temptation to get the answers from other students for two reasons: First, other students might make mistakes, which you likely wouldn't recognize if you simply copied from them. Second, the best way to learn these routes is to work through them yourself. Use the arterial and venous system flowchart handouts from the lab website and the figures in your textbook (in chapters 22 and 23) as guides to help you fill in the blanks. If you get stuck, or don't know where to begin, ask an instructor for assistance. The first trace is more completely filled in to give you an idea of how to proceed.

A few more directions:

- You only need to name the arteries and veins listed on the flowchart handouts from the lab website. (EXCEPTION: you will need to include the arteries and veins of the pulmonary circuit, which are NOT shown on the flowcharts.)
- Each trace should **begin and end with the left atrium of the heart.**
- Name all of the **valves** of the heart as they are encountered along the trace.
- Include a **capillary bed** in the target tissue, and another in the lungs, in the trace.
- On the traces to the wrist and ankle, name the *superficial* veins used on the return route to the heart.

Do not be intimidated... these aren't difficult once you get the idea!

**One of these traces will be on the final laboratory practical exam. The trace will be provided with blanks for you to fill in.**

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## Trace 1:

From heart to **medial side left wrist** and back to heart. (Use superficial veins in return to heart). Then to lungs and back to heart:

**Left atrium**

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**Aorta**

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**Left axillary artery**

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**Left ulnar artery**

**Capillary bed in medial side  
of the left wrist**

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**Left axillary vein**

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**Right atrium**

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**Pulmonary semilunar valve**

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**Capillary bed in lung**

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**Left atrium**

## Trace 2:

From heart to **liver**, delivering oxygenated blood to liver, back to heart. Then to lungs and back to heart:

**Left atrium**

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**Capillary bed in liver (hepatic sinusoid)**

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**Right atrium**

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**Left atrium**

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## Trace 3:

From heart to **anterior side of right ankle** and back to heart. (Use the superficial route in leg on return to heart).  
Then to lungs and back to heart:

**Left atrium**

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**Right femoral artery**

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**Right atrium**

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**Left atrium**

## Trace 4:

From the heart to the **distal part of the large intestine (sigmoid colon)**, and back to the heart.  
Then to the lungs and back to the heart:

**Left atrium**

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**Right atrium**

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**Left atrium**