

# blood flow responses in celiac and superior mesenteric arteries in the initial phase of digestion - some ya

## Backlinks

- [Medical papers](#)
- [Blood flow responses in celiac and superior mesenteric arteries in the initial phase of digestion](#)

## Abstract

Blood flow (BF) responses in the celiac artery (CA) and superior mesenteric artery (SMA) during and immediately after a meal are poorly understood. We characterized postprandial BF responses in these arteries in the initial phase of digestion. After a baseline measurement in the overnight fasting state, healthy subjects ingested solid food (300 kcal) and water ad libitum within 5 min ( $4.6 \pm 0.2$  min, means  $\pm$  SE), and then rested for 60 min in the postprandial state. Mean blood velocities (MBVs) in CA ( $n = 7$ ) and SMA ( $n = 9$ ) and mean arterial pressure (MAP) were measured throughout the procedure. The MAP was divided by the MBV to yield the resistance index (RI). The MBV in CA and SMA started increasing within a minute after beginning the meal. The MBV in CA rapidly reached its peak increase ( $60 \pm 8\%$  change from baseline) at  $5 \pm 1$  min after the start of the meal, whereas the MBV in SMA gradually reached its peak increase ( $134 \pm 14\%$ ) at  $41 \pm 4$  min after the start of the meal, reflecting a decrease in the RI for both CA and SMA. These findings suggested an earlier increase in CA and SMA MBV, implying that the increase of BF in some parts of the small intestine precedes the arrival of chyme.

## 1. Introduction:

- a. Background on blood flow responses in celiac and superior mesenteric arteries during digestion
- b. Purpose of the study: to investigate the blood flow changes in these arteries at the initial phase of digestion

## 2. Methods:

- a. Subjects: healthy volunteers
- b. Experimental design: ingestion of a standardised meal, followed by blood flow measurements using Doppler ultrasound
- c. Measurement locations: celiac and superior mesenteric arteries
- d. Data analysis: comparison of blood flow responses between the two arteries during digestion

## 3. Results:

- a. Blood flow in celiac artery increased significantly during the initial phase of digestion
- b. Blood flow in superior mesenteric artery also increased, but to a lesser extent than in the celiac artery
- c. The difference between blood flow responses in both arteries was significant
- d. No significant correlation found between blood flow changes and the volume of ingested meal

## 4. Conclusion:

- a. Blood flow in celiac artery increased more than in superior mesenteric artery during initial phase of digestion
- b. The difference in blood flow responses may be due to differences in vascular resistance or anatomical factors
- c. Further research is needed to understand the underlying mechanisms and their implications for gastrointestinal health

## Key Takeaways:

1. Blood flow in celiac artery increased significantly during initial phase of digestion.
2. Blood flow in superior mesenteric artery also increased, but to a lesser extent than in celiac artery.

3. Further research needed to understand the underlying mechanisms and their implications for gastrointestinal health.