

Erythrocyte aggregation:

Erythrocyte aggregation refers to the reversible phenomenon of red blood cell agglomeration occurring when the blood is subjected to low shear. In the case of some diseases, including inflammatory disorders, the attraction force between erythrocytes increases to create larger aggregates.

One goal of our laboratory is to use the ultrasound signal of the blood for in vivo and real-time detection of inflammatory process for

clinical use. Our laboratory develops physical models that predict ultrasound fingerprints of red cell aggregates to better characterize them. This characterization may reveal useful information about the disease causing the disproportionate aggregation. Also, clinical and preclinical experiments are done to further understand the aggregation phenomenon in a clinical context. Finally, optimization and inverse problems are undertaken to relate the experimental measurements with theoretical predictions.

