

Robinson D S. The function of the plasma triglycerides in fatty acid transport. *Comprehensive Biochem.* 18:51-116, 1970.
[External Staff, Medical Research Council, Department of Biochemistry, University of Oxford, England]

This review brings together the information that was available in 1970 concerning triglyceride entry into the blood in chylomicrons and very low density lipoproteins and triglyceride removal from the blood by lipoprotein lipase action. It particularly emphasizes the action of lipoprotein lipase at the capillary endothelial cell surfaces of specific extrahepatic tissues in determining the sites of removal. [The SCI® indicates that this paper is the most cited for this journal having been cited over 380 times.]

Donald S. Robinson
Department of Biochemistry
University of Leeds
Leeds LS2 9JT
England

July 26, 1985

My main purpose in writing this review was (1) to present in a reasonably concise and comprehensive way the work that had been carried out by the late 1960s on the processes of triglyceride entry into and removal from the circulation in various physiological and pathological states and (2) to interpret the findings in terms of the complex pattern of interrelationships among the plasma lipoproteins that was then unfolding.

Because of its significance in triglyceride removal, the article dealt at some length with the enzyme, lipoprotein lipase (or, as it was termed in the review, clearing factor lipase—the last being, for reasons now too remote to go into, the preferred name in my own laboratory). This enzyme has now intrigued (and infuriated!) me for over 30 years since I first started work in the early 1950s in that splendid institution of the

University of Oxford, the Sir William Dunn School of Pathology. A small group (including such good friends and colleagues as John Poole and the late John French) had been assembled there by the then Sir Howard (later Lord) Florey. As he phrased it in my letter of appointment (somewhat grandly, though perfectly justifiably in the circumstances), he had decided that “now that the infectious diseases are under control, it is time to tackle the degenerative diseases,” meaning, of course, atherosclerosis and its complications, coronary thrombosis, and the like. He was in fact already aware of the evidence linking the plasma lipids to coronary disease but his particular interest had been aroused by the report of a “clearing factor” that appeared in the blood after heparin injection and that “cleared” the alimentary lipaemia resulting from the presence of triglyceride-rich chylomicrons.¹ It was the nature of this factor that initially engaged us. However, once we had shown it to be a lipase, the way was open for investigating its site of action and its role in facilitating and directing triglyceride removal from the blood.²

Subsequently, the group's activities extended into related fields, but my major interest continued to center on plasma triglyceride influx and efflux processes and their control. Thus, when I moved to the Department of Biochemistry in Oxford (following Florey's retirement to become the Provost of Queen's College) and was invited to review the triglyceride transport field, I was happy to accept. What is particularly gratifying, of course, is the fact that the article has been so useful. Presumably the lipoprotein field has now expanded to such an extent that the integrated review that I sought to provide is no longer feasible, while the multiauthored text cannot provide so convenient a reference. In any case, it is noteworthy that Florey's “degenerative diseases” are still very much with us, while the significance of the plasma triglyceride concentration in relation to them remains a disputed issue.

1. Hahn P F. Abolishment of alimentary lipemia following injection of heparin. *Science* 98:19-20, 1943.
(Cited 445 times since 1955.)

2. Robinson D S. The clearing factor lipase and its action in the transport of fatty acids between the blood and the tissues. *Advan. Lipid Res.* 1:133-82, 1963. (Cited 220 times.)