



Orange, onion, milk and olive oil: all substances that **Harriette Chick** analysed for vitamin content.

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Vitamins and nutrition

The early twentieth century witnessed a transformation in how scientists comprehended the relationship between diet and nutrition. Previously, nineteenth-century scientists had viewed carbohydrates, fats and proteins as sufficient for human and animal health. Harmke Kamminga and Andrew Cunningham have identified the 1900s in particular as the decade when this 'consensus began to break down'. Nutritional tests in the emergent UK and US biochemistry departments such as Cambridge and the Lister Institute found evidence of hitherto unsuspected dietary components that were essential to health.¹

Harriette Chick had begun her research career working on bacterial disinfection. Chick's Law (1908) provided an equation to measure (through the Chick-Martin Test: 1908) the effectiveness of disinfection in reducing the lethality of bacteria.² Chick thereafter worked on the physical chemistry of proteins until c.1914, when her collaborator (and Lister Institute Director) **Charles Martin** (1866-1955) suggested she turned her attention to nutrition.

Key work included her post-war Viennese research (1919-1922) with **Elsie Dalyell** and **Margaret Hume** on hunger osteomalacia. This provided the biochemical proofs that rickets was non-transmissible, but rather a nutritional disorder caused by the absence of fat-soluble vitamins.³ Earlier, Chick had investigated the antiscorbutic (anti-scurvy) properties of a variety of foodstuffs, from milk and onions to cabbage and fruit juice. After 1922, she followed up her antirachitic (anti-rickets) research. From the early 1930s, Chick turned her attention to the relationship between pellagra and maize.

¹ Harmke Kamminga and Andrew Cunningham, 'Introduction', in H. Kamminga and A. Cunningham (eds), *The Science and Culture of Nutrition, 1840-1940* (Amsterdam and Atlanta, GA: Rodopi, 1995), pp. 8-9.

² Harriette Chick, Margaret Hume and Marjorie MacFarlane, *War on Disease: A History of the Lister Institute* (London: Andre Deutsch, 1971), p. 92.

³ Kamminga and Cunningham, 'Introduction', in *Science and Culture*, p. 320.