

Editorial

The end of a marathon?

This special edition of the International Journal of Pharmaceutics is dedicated to Professor J. Michael Newton, who was an Editor of the journal between 1993 and 1999. Recently, Professor Newton retired from his position as Head of Department of Pharmaceutics at the School of Pharmacy, University of London.

Professor Newton started his career in Pharmacy as an apprentice at the Royal Albert Edward Infirmary in Wigan. He then studied Pharmacy at the School of Pharmacy, University of London (Fig. 1). He holds, in addition to his first honours degree, a fellowship of the Royal Pharmaceutical Society of Great Britain, and is a qualified person under the Medicines Act. Professor Newton did his Ph.D. at the Department of Pharmacy, University of Nottingham between 1958 and 1962 under the direction of the late Dr W.B. Hugo, investigating the use of non-ionic surfactants to enhance the effectiveness of iodine as an antiseptic. After completing his Ph.D., Professor Newton held teaching positions at Sunderland Technical College and The University of Manchester, followed by a period as senior research scientist at Eli Lilly (1968–1972). After a further teaching period at Nottingham University, he was appointed as Professor of Pharmaceutics at Chelsea College London, and from 1979 to 1983, he was Head of the Department of Pharmacy at this College. In January 1984, Professor Newton moved to the School of Pharmacy, University of London as Professor of Pharmaceutics and Head of the Department of Pharmaceutics.

The indebtedness of all of us working in the area of powder technology and solid dosage forms to Professor Newton is considerable, as he has introduced and ensured that modern physical, engineering and mathematical-statistical methods became the gold standard in good pharmaceutical science. As an Editor of the International Journal of Pharmaceutics, he aimed for the removal of malpractice of ‘poor science’ in papers. He also assured that not only colleagues from the pharmaceutical community reviewed papers, but also



Fig. 1. Professor Newton as a student operating a tabletting machine.

physicists, engineers, statisticians, physical chemists etc. working in the area of research submitted. As a result, the quality of the publications in the area of Pharmaceutical Technology in the International Journal of Pharmaceutics increased markedly.

Professor Newton's own research is not only outstanding in its quality, but also in the variety of topics studied, which cannot all be named here. In 1969, he introduced the 'Brazilian Test' (determination of the tensile strength of tablets using diametral compression) into the tableting research. This test is now the standard procedure for the characterisation of tablets and has even found its way into the European Pharmacopoeia. This early publication is one of the most frequently cited works in the pharmaceutical literature. The work with Professor Peter Stanley on the mechanical properties of compacts and the work on the fracture mechanics of materials opened a new dimension in our understanding of compacts and tableting technology. Another area of Professor Newton's work covers the development and manufacture of powder-filled hard shell capsules. Work on this dosage form is rather rare due to the complex nature of the powder properties and their relationship to the technology involved, and Professor Newton and his former colleague at Eli Lilly, Brian Jones, are the two leading experts in the world on this topic. Professor Newton's interest in fundamental principles is reflected in his extensive work on extrusion and spheronisation. Here, all aspects from paste rheology to the mechanical properties of extrudates and pellets plus the scientific definition of their shape are covered extensively. The performance of such dosage forms is of considerable importance, and hence, it is not surprising that Professor Newton spent a larger proportion of his research time on their *in vivo*-evaluation, employing state of the art techniques such as Gamma-Scintigraphy and Electrical Impedance Tomography to monitor the movement of the dosage forms in the gastrointestinal tract, and Quantified Maximum Entropy to evaluate the pharmacokinetics of the incorporated drug substances. Film coating of pellets has also been investigated, and Professor Newton holds several patents on colon delivery,



Fig. 2. Professor Newton after completing the Flora London Marathon in 2001.

which are being exploited by the pharmaceutical industry. Recently, he showed that one can incorporate self-emulsifying systems into pellets, and that in this way, the bioavailability of insoluble, low permeability drugs could be enhanced significantly in solid oral dosage forms. In this sense, his research has completed a full circle, as his Ph.D. thesis also involved the use of non-ionic surfactants. Thus, Professor Newton has demonstrated persistence and endurance needed to complete a marathon (Fig. 2).

Professor Newton holds 12 patents and is the author/co-author of over 350 research publications. He has also contributed to several books. To date, he has supervised 70 Ph.D. students from 15 different countries of the world. With respect to the high standard of his work, he was awarded

a D.Sc. from the University of London in 1990 and an honorary doctorate from Uppsala University in Sweden (1995). Professor Newton was awarded the Harrison Memorial Medal of the Royal Pharmaceutical Society of Great Britain (1996) and the Nagai Foundation (Japan) Distinguished Lectureship (1997) demonstrating international recognition of his work.

When I started assembling this special issue of the *International Journal of Pharmaceutics*, Professor Newton's wish was to have papers from his former Ph.D.-students, and colleagues and co-authors from industry and academia. I am very grateful to those people, who responded to my request for a contribution and who were willing to make all the efforts involved in such a task. As a result, all papers of this special issue have at least one author, who has published with Professor Newton in the past. The broad range of topics presented reflects the wide areas, which have impinged on Professor Newton's approach to Pharmaceutics.

I should also like to thank all reviewers, who helped to achieve the high standard of the papers, and who responded quickly and in a fair and constructive manner in order that the authors and myself could meet the tight deadlines required for publishing this issue.

I sincerely hope that Professor Newton will be able to continue his exceptional research work as an Emeritus Professor, and that he will enjoy still being around for us as our mentor, teacher, colleague and friend.

London, in May 2001.

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