

Misconceptions and Non-scientific Concepts on Free Radicals

Oliveira, R.S.A.P.¹; Torres, B.B.¹

¹Biochemistry Department, Institute of Chemistry, University of São Paulo, Brazil

INTRODUCTION: Misconceptions or alternative conceptions are defined as conceptions that are somewhat different from the scientifically accepted ones and are known to be highly resistant to changes. Free radicals are a widely publicized subject in the media due to their putative importance in human aging and health. Free radicals are a subject susceptible to misconceptions widely spread by the media supporting prejudicial advertising inducing antioxidant consumption. **OBJECTIVES:** Identify and categorized different free radicals misconceptions published in printed media. **METHODOLOGY:** *Revista Veja* (Digital Archive), the weekly magazine with the largest circulation in Brazil, was selected for this investigation. Period analyzed: from 01/01/2000 to 31/07/2014 with search terms *Free radicals* and *antioxidants*. Passages selected were classified as: Right Concept (RC), Wrong Concept (WC), Misconception (MC), Inadequate generalization (IG), Inductive [to misconceptions] Concept (IC), Inductive [to misconceptions] Information (II), and Not fit the inclusion criteria (NFIC). Each one of these categories were further subdivided. **RESULTS AND DISCUSSION:** 79 magazine articles, advertisements and information materials were found which led to 293 text passages. 56.3% were MC, 21.4% II, 8.8% IC, 5.4% IG, 3.4% RC, 2.7% WR, 2.0% NFIC. The most frequently subcategory in each category was: MC: *x [something] combats free radicals* (22.6%); II: *x [substance] is antioxidant* (54.0%); IC: *x [something] increases free radicals production* (34.6%); IG: *antioxidant x [substance] combats cancer* (56.3%); RC: *too much vitamins and minerals is harmful to health* (30.0%); WR: *free radicals are formed during oxygen conversion to energy process* (25.0%). **CONCLUSION:** Magazine analysis reveal non-scientific concepts (MC, II, IC and IG) to be highly frequent, notably misconceptions. Moreover, non-scientific concepts together reach 91.8% of all concepts while right concepts respond for only 2.7%. Scientists and specialists must be concerned about this large amount of free radicals misconceptions presented by printed media and the consequences of their dissemination.

Keywords: misconceptions, free radicals, antioxidants

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