

# N-3 FATTY ACID SUPPLEMENTATION AND CHEMOTHERAPY-INDUCED TOXICITY: SCOPING REVIEW

C. MATEUS<sup>1,2</sup>, M. G. BRANCO<sup>2</sup>, P. M. NEVES<sup>2</sup>, T. SANTOS<sup>2,3</sup>, M. L. CAPELAS<sup>2</sup>, A. MÄKITIE<sup>2,4,5,6</sup>, P. RAVASCO<sup>2,7,8</sup>

1. Iberhealth Tejo Exploração de Health Clubs, SA 2. Universidade Católica Portuguesa, Centre for Interdisciplinary Research in Health (CIIS), Institute of Health Sciences, Portugal 3. European University, Lisbon, Portugal 4. Department of Otorhinolaryngology – Head and Neck Surgery, Helsinki University Hospital and University of Helsinki, Helsinki, Finland 5. Research Program in Systems Oncology, Faculty of Medicine, University of Helsinki, Helsinki, Finland 6. Division of Ear, Nose and Throat Diseases, Department of Clinical Sciences, Intervention and Technology, Karolinska Institute and Karolinska University Hospital, Stockholm, Sweden 7. Universidade Católica Portuguesa, Católica Medical School, Portugal 8. Centre for Interdisciplinary Research in Health Egas Moniz (CiiEM), Almada, Portugal.

## INTRODUCTION

Omega-3 fatty acids have an anti-inflammatory role and have been studied for their influence on cancer prevention and on the treatment of cancer cachexia. Toxicity has a high prevalence in patients during chemotherapy and influence on the patients' quality of life.

## AIM

This scoping review explore the effects of N-3PUFA in the reduction chemotherapy-induced toxicity (CIT) in cancer patients.

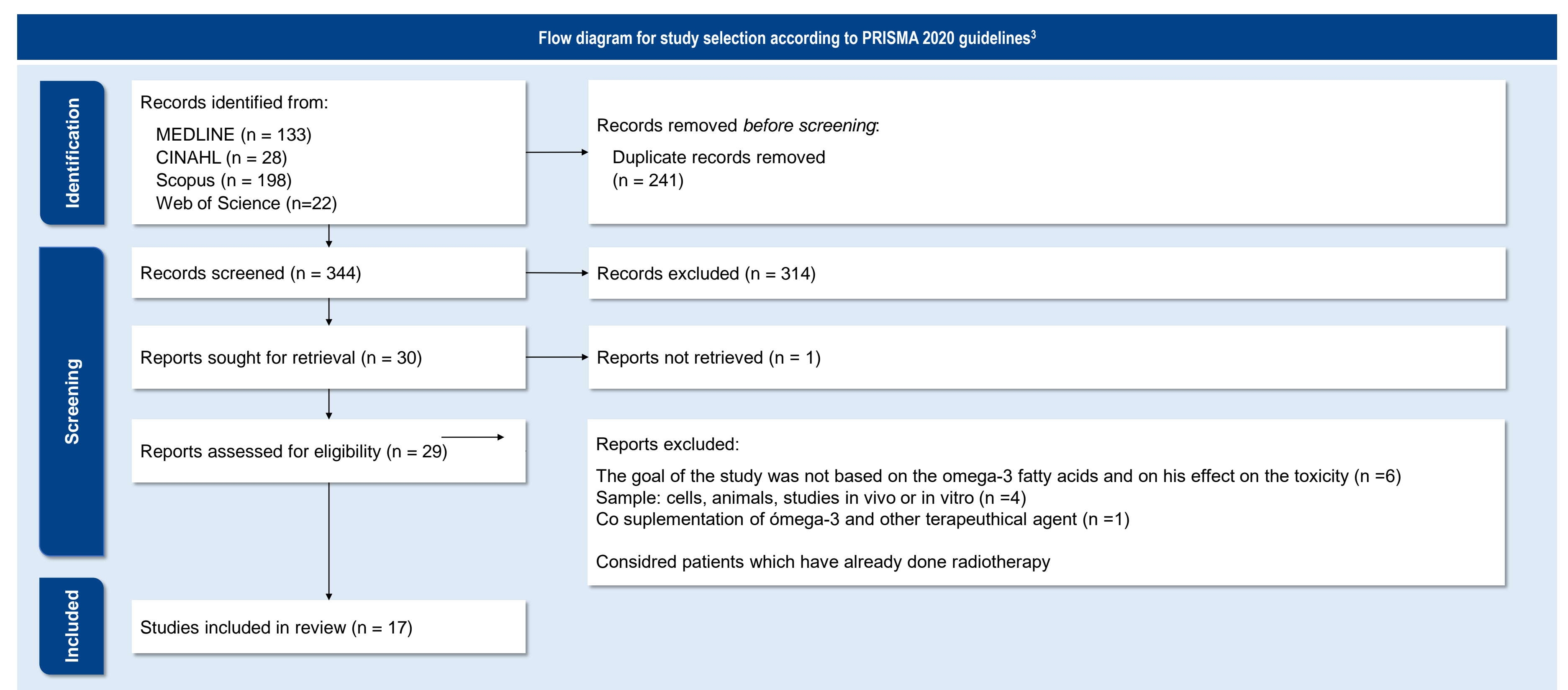
## METHOD

MEDLINE, CINAHL, Scopus and Web of Science databases were searched, following the PRISMA guidelines.

The inclusion criteria included studies whose methodology involved the supplementation of omega-3 fatty acids (regardless of the form of supplementation) in cancer patients who were complying with chemotherapy antineoplastic therapy and the consequence that this would have on the toxicity experienced by the patients. Studies that used supplementation for other diseases or that supplemented another type of nutrient in addition to omega-3 fatty acids, were excluded.

## RESULTS

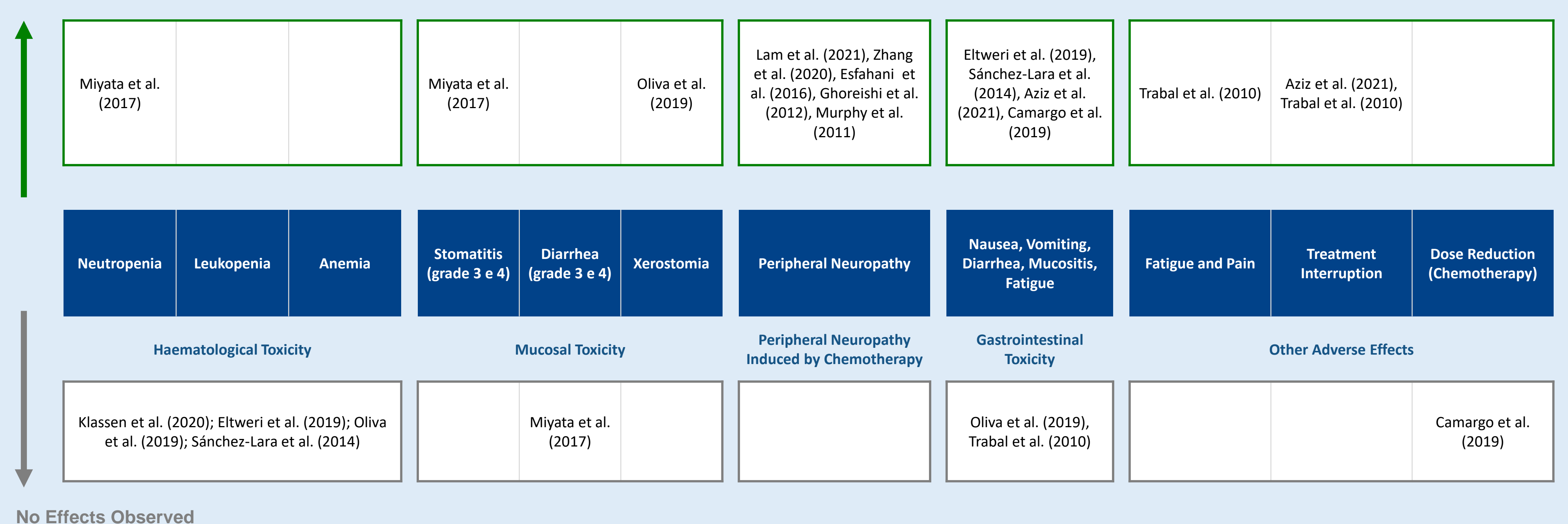
Overall, 381 records were initially identified, of which, 17 studies were included (5 systematic reviews and 12 randomized controlled trials).



Cancer diagnoses were: gastrointestinal (n=8; colorectal, esophageal, gastroesophageal, gastric), breast (n=2), lung (n=2). As shown in the figure, nine intervention studies showed improvement in haematological toxicity with less severe neutropenia/leukopenia, less intense peripheral neuropathy complaints, reduced severity of GI symptoms (anorexia, nausea) and lesser fatigue. Three studies with 53 patients with breast cancer, 41 with GI cancer and 13 with advanced colorectal cancer, did not show improvements in haematologic toxicity, nausea and anorexia, or differences between groups were not statistically significant.

### Omega-3 supplementation impact on toxicity

#### Positive Effect



## CONCLUSIONS

N-3 PUFA ameliorated late peripheral neuropathy complaints, as well as neutropenia/leukopenia during active chemotherapy. Positive impact was also reported on GI symptoms. Research is warranted to clarify adjuvant administration integrated during active chemotherapy treatments, as well as dose, duration of supplementation, and form of delivery.

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