

Can nitrite-free recipes of cured meat products prevent the formation of nitroso-compounds during digestion?

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(1) Chazelas et al. (2022). Int. J. Epidemiol. 1-14

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INTRODUCTION

The presence of nitrite in cured meat products can lead to the formation of nitroso-compounds (NOCs), some of which have been linked to a higher risk of developing colon cancer¹. The objective was to study the formation mechanism of NOCs in nitrite-free cured meat products during *in vitro* dynamic digestion.

RESULTS

Nitrosylheme

Nitrosylheme was <15% in products without added nitrite (NC) and YE.





MATERIALS AND METHODS

1200

14

12

10

20%

11%





NC PC YE VS Prosur

NC PC YE VS Prosur

NC PC YE VS Prosur

Figure 1. Nitrosylheme content was assessed after A) 40 min, B) 120 min, and C) 200 minutes of digestion. NC = negative control, PC = positive control, YE = yeast extract, VS = vegetable stock.



CONCLUSIONS

Nitrite-free recipes can reduce NOCs formation in cured meat products *in vitro*. However, lipid oxidation in nitrite-free products is important in the intestinal phase, and could lead to the development of colorectal cancer. Studies *in vivo* are required to validate the results presented herein, and their impact on colon mucosa.

Nitrite-free recipes:



NOCs / lipid oxidation

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