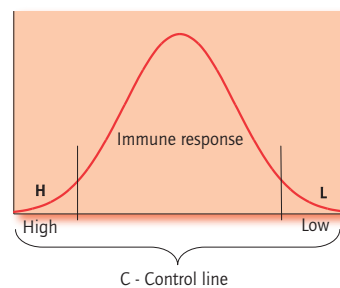


# Enhanced catch-up growth after a challenge in animals on organic feed

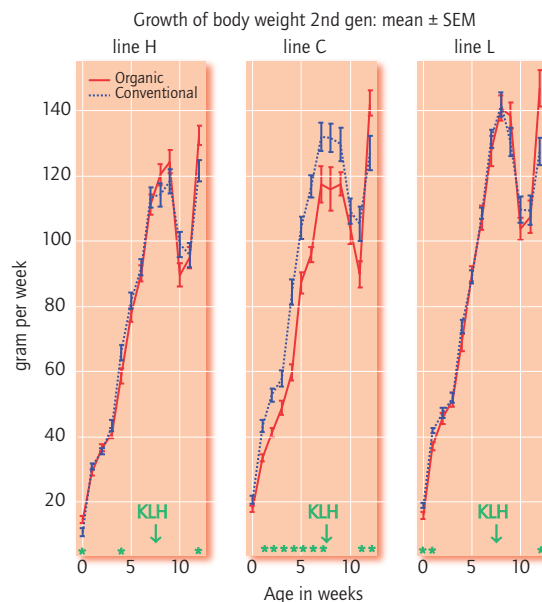
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**Background & Study design** Consumers expect products from organic agriculture to be healthier, but limited research is available about health effects of organic food products. Our study *Organic More Healthy?* aimed to identify relevant biomarkers of health to enable future studies in humans. A feeding experiment was performed in two generations of three groups of chickens with different immune responsiveness. All groups were fed identically composed feeds from either organic or conventional production. In the young animals of the second generation an immune challenge was imposed. Feed and ingredients were analysed on macromicronutrients, i.e. vitamins, minerals, trace elements, heavy metals and microbes. The health of the chickens was studied by general health, immune parameters, metabolomics, genomics and post-mortem evaluation.



**Results** Only slight differences in nutrient content in the feeds were observed. The conventional feeds had a 10% higher protein content; metabolizable energy of the feeds was comparable. All animals were healthy, yet differences between the feed groups occurred. The chickens fed conventional feed showed overall a higher weight gain, whereas feed intake of the groups was similar. The animals on organic feed showed an enhanced immune reactivity, a stronger reaction to the immune challenge, as well as an enhanced 'catch-up-growth' after the challenge. Concerning health no conclusions were drawn, as an operationalized definition of health was at the time lacking<sup>1</sup>.



**What is 'health'?** Thus a discussion was initiated about the definition of health, resulting in a proposed functional concept: 'Health as the ability to adapt and to self manage'<sup>2</sup>. In this perspective the enhanced 'catch-up growth' of the animals on organic feed is a sign of healthiness.

**References**

- 1. Machteld Huber et al. Effects of organically and conventionally produced feed on biomarkers of health in a chicken model. *Br J Nutr* 2010, 103:663-676
- 2. Huber M., Knottnerus J.A. et al. How should we define health? *BMJ* 2011, 343:235-237

