What is the dairy matrix?

The dairy matrix is the idea that the combined nutrients and bioactive constituents of dairy work together to produce greater health outcomes than what the single nutrients or bioactive compounds are known to provide. The different processing methods and textures of dairy foods – such as fermentation and liquid, solid and gel – have been shown to influence health properties differently.

The dairy matrix may offer more health benefits than just the single nutrient effects. Research has shown some of these benefits include:

- Solid dairy products have longer gut residence times and suppress appetite
- Milk fat globule membranes reduce cholesterol absorption
- No matrix effect was shown on calcium absorption, but may have effects on regulator response (parathyroid hormone), lowering LDL cholesterol and insulin sensitivity
- Specific dairy products may lower risk of certain chronic diseases, but there are few comparison studies, especially randomized controlled trials.

What unanswered questions do we have and need more research on regarding the dairy matrix theory?

- Does the dairy matrix or dairy form affect disease risk?
- Does dairy matrix affect the gut microbiome composition and function?
- Does dairy matrix affect gastric emptying (appetite), inflammation, etc.

Based on the current research and data, how should we advise our patients/clients about dairy consumption?

- Three servings of dairy products daily are recommended for most people to provide recommended nutrients
- Choose more options that do not add empty calories – such as dairy over sugar sweetened beverages
- Prioritize your choices to fit in good sources of dairy
  - Added sugar – dairy only contributes 4% of added sugar in US diets
  - Saturated fat - dairy provides only 13% of added saturated fat in US diet
- Much more research is needed before public health recommendations can be made based on the dairy matrix
References:


Ercili-Cura, D. Thesis for the degree of Doctor of Food Sciences to be presented with due permission for public examination and criticism in Lecture Hall L2 2 (Raisio Oy:n Tutkimussäätiön Sali), B-building, Latokartanonkaari 7, at Faculty of Agriculture and Forestry, University of Helsinki, on the 23rd November 2012.


