

## Harvesting the health promise of conjugated linoleic acid

# New health-boosting power found in dairy foods

*'Nature's most perfect food' just keeps getting better with new knowledge from science. Research into natural dairy fatty acids 'CLA' and 'VA' is the latest example.*

If experts were to determine nature's most perfect food, milk would be a tough candidate to beat. Today, as scientists learn more about the components of milk, through research, they're finding more reasons to back that up.

It's well known that milk products such as milk, cheese and yogurt are naturally nutrient-rich foods, containing up to 16 essential nutrients. These nutrients help build body tissue and are a factor in energy metabolism. Milk products also help to prevent osteoporosis and evidence has shown they may also play a role in the prevention of other diseases, including colon cancer and hypertension.

Now research into milk fat is producing a growing body of evidence of even further health benefits. The latest promise is emerging from new research into conjugated linoleic acid (CLA) – a type of natural fatty acid found in milk that is drawing rising and increasingly positive attention from health researchers and nutritionists.

CLA in its natural form is produced only by ruminant animals such as dairy and beef cattle. It is also found naturally in the milk and meat products from these animals.

Until recently, little has been known about the health implications of natural CLA. However, research led in part by Canadian scientists is helping to uncover a growing body of evidence that points to natural CLA as a healthy fatty acid with broad potential benefits.

"The health enhancing potential natural CLA has shown in the studies to date is very promising and what we would consider quite rare for a natural food component," says Dr. Spencer Proctor of the University of Alberta,

who has led several of the key recent studies in this area of research. "We truly believe we are on to something special."

### 'Quite significant health benefits'

Proctor, director of the Metabolic and Cardiovascular Diseases Laboratory located on the university campus, is also science lead of the CLA Network. This Canada-based network of researchers, food industry representatives, health professionals and communicators, devoted to exploring the health potential of natural dairy and beef CLA and other beneficial dairy and beef fatty acids or lipids.

The CLA Network has driven much of the current research progress and has plans to make further major advances over the next five years.

Most recently, this research effort has also helped to unveil similar health enhancing promise for vaccenic acid (VA), an additional natural fatty acid found naturally in milk and meat products from ruminant animals. CLA and VA are closely related – VA actually has the capacity to convert to CLA after it is ingested (the transformation takes place when VA interacts with a particular type of human enzyme, and current evidence indicates this commonly occurs).

In one key recent study, in a 16 week animal model trial at the University of Alberta, Proctor and colleagues found that increases in VA showed no negative effect. In fact, increased VA was associated with a major lowering of triglyceride levels and a modest lowering of both total cholesterol and LDL or "bad" cholesterol, which are key risk factors for cardiovascular disease, metabolic syndrome and other health threats.



"Four years ago we didn't know whether VA was good or bad," says Proctor. "Now we are realizing it is not bad and is likely very good. It shows strong potential to result in quite significant health benefits."

### Shedding a light on fat misconceptions

One person versed both in the scientific literature, as well as in fielding questions from fellow nutritionists and health professionals related to natural dairy fats and their implications for nutrition and health, is Isabelle Neiderer, Director of Nutrition for the Dairy Farmers of Canada. She says the new knowledge flowing from CLA and vaccenic acid studies is of tremendous importance to both the image of dairy fat and its dietary implications.

"The emerging knowledge about the potential benefits of CLA and vaccenic acid indicates that dairy fat is much more complex than many people realize," says Neiderer. "It indicates that dairy fat is a complex mixture of various fatty acids, some of which may have beneficial effects on health."

Most of the research to date on the health potential of natural CLA and VA has been conducted using animal models as well as cell culture approaches.

## Key findings in model studies

Among key findings, these studies have indicated that:

- CLA and VA are “good fats” – i.e. they show health enhancing properties and an absence of health reducing properties.
- CLA and VA show antioxidant activity
- CLA and VA show anti-tumor activity
- Potential benefits of CLA and VA supported in non human trials that require further study include the potential to prevent or fight cancer, heart disease, obesity, diabetes, kidney disease and metabolic syndrome, and to improve bone density.

The findings are remarkable not only because they show previously undiscovered health potential, but because they challenge major misconceptions about the health implications of animal-based dietary fat.



In short, not all animal based fat is bad. In fact, some of it, such as CLA and VA, may actually be very good for you.

## Unveiling an inconvenient truth

What makes these findings even more myth-jarring is the fact that CLA and VA are actually technically classified as trans fats – the boogeyman behind many negative public health perceptions.

They show that not only are not all fats created equal, not all trans fats are created equal. Like good and bad cholesterol, there is good and bad trans fat.

The CLA and VA research is shedding much needed light on the fact that natural animal-based trans fats are not like artificial, industrially processed ones, and they are not the enemy. This may be an inconvenient truth for some now well entrenched marketing language that prefers black and white to more nuanced messages on nutrition, however it is excellent news for consumers who enjoy dairy and beef products as part of a balanced diet.

“The research in this area adds to the current evidence on ruminant trans fats that shows that, unlike industrial trans fats, trans fats from ruminant sources do not have adverse effects on health and may in fact offer health benefits,” says Neiderer.

A more sophisticated understanding of this type of distinction will come with further study, she says. “Ongoing and future research will help confirm the role that CLA and vaccenic acid can play in optimal health and will help health professionals better advise consumers on the role of dairy fat in a healthy diet.”

## Paving the path to human trials

Studies by the CLA Network and others have now laid the ground work toward human

clinical trials and researchers are aiming to secure funding support to conduct these potentially breakthrough studies over the next several years.

Hinging on the outcome is the potential to firmly improve the perception of natural dairy and beef trans fats – with broad implications for everything from nutrition advice to product labels.

In the case of natural CLA, growing recognition of this fatty acid as a “good” fat is a reason why health authorities in Canada, the U.S., and numerous other countries have decided not to include CLA in the trans fat calculations that appear on food labels. Vaccenic acid, however, is currently included in the food label trans fat calculations, in part because there has been less knowledge until recently.

## Changing perceptions, changing labels

Vaccenic acid is estimated to contribute 70 to 80 percent of ruminant-based trans fat in the North American diet. If vaccenic acid is eventually afforded the same recognition as CLA and not included in food label trans fat calculations, this change could have a profound impact on helping shift consumer perceptions to a more accurate health image of dairy and beef products, observes Proctor.

“It is clear that ruminant trans fatty acids in the context of their actual consumption level do not induce the specific potentially harmful properties associated with industrially processed trans fat. As more research knowledge emerges, our hope is there will be improved health information available to consumers, including labeling information, that reflects the critical distinction between natural trans fat and industrial forms.”

More information on the CLA Network is available at [www.clanetwork.com](http://www.clanetwork.com).

Visit [www.CLANetwork.com](http://www.CLANetwork.com) for more articles on activity and progress.

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