

DAIRY
NOURISHES LIFE

Helping people thrive at every age

WEBINAR SERIES

Reminders for today's webinar:

- Please test your computer by using the link provided in the chat window to ensure that you can hear the speakers via streaming audio.
- We recommend downloading and/or updating to the latest version of **Google Chrome** or **Firefox** to minimize the chance of system issues during the live webinar.
- Continuing education certificates and handouts will be emailed within 24 hours.

#DairyNourishesLife



Get Cultured on Fermented Dairy Foods

September 17, 2019

NDC
NATIONAL DAIRY COUNCIL
#DairyNourishesLife

Webinar Reminders

During the webinar

- Preferred browsers for optimal viewing and audio: Google Chrome or Firefox
- Please type questions into the chat window
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After the webinar

- Continuing education certificates, handouts and a reference list will be emailed within 24 hours
- Webinar recording will be available next week on www.nationaldairyCouncil.org

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NATIONAL DAIRY COUNCIL™

Bringing to life the dairy community's shared vision of a healthy, happy, sustainable world, with science as our foundation

The U.S. Dairy Stewardship Commitment. <http://commitment.usdairy.com/>

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Greatest Challenge of Our Generation:
Nourishing a Growing Global Population with Limited Natural Resources

World Population: 1950-2050

Year	Population (Billions)
1950	2.5
1960	3.0
1970	3.7
1980	4.4
1990	5.3
2000	6.1
2010	7.0
2020	7.8
2030	8.5
2040	9.2
2050	9.8

Food production will need to increase by 70% to feed the world by 2050

70% of the world population will live in cities by 2050

Global middle class will triple by 2030

52% of world population could have severe water scarcity by 2050

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2008 FAO Director General on How to Feed the World in 2050. Population and Development Review, 35, 637-659
2010 OECD Development Centre Working Paper No. 2010 The Emerging Middle Class in Developing Countries.
The Water Footprint Network. Water Stress to Affect 52% of World's Population by 2050.

Search "webinar" on NationalDairyCouncil.org

A World Well-Nourished: Dairy's Role in Health and Sustainable Food Systems
February 7, 2019
NDC

dietitianconnection
PODCAST

Connecting agriculture, food and sustainable nutrition with Katie Brown
<https://dietitianconnection.com/>

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Americas

Hawaii
Poi



Mexico
Pozol



Colombia
Guarapo



Peru
Champus



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Asia

Korea
Kimchi



Japan
Natto



Tibet
Jun



India
Lassi



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Africa

Ethiopia
Injera



Ethiopia
Ayib



South Africa
Incwancwa



Nigeria
Iru



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Europe

Germany
Sauerkraut



Eastern Europe
Smetana



Iceland
Skyr

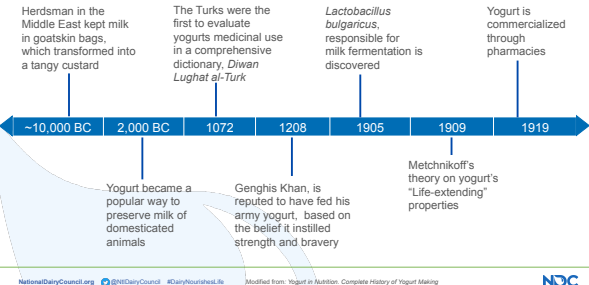


Central Europe
Kefir



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The History of Yogurt



~10,000 BC: Herdsman in the Middle East kept milk in goatskin bags, which transformed into a tangy custard.

2,000 BC: Yogurt became a popular way to preserve milk of domesticated animals.

1072: The Turks were the first to evaluate yogurt's medicinal use in a comprehensive dictionary, *Diwan Lughat al-Turk*.

1208: Genghis Khan, is reputed to have fed his army yogurt, based on the belief it instilled strength and bravery.

1905: *Lactobacillus bulgaricus*, responsible for milk fermentation is discovered.

1909: Metchnikoff's theory on yogurt's "Life-extending" properties.

1919: Yogurt is commercialized through pharmacies.

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Fermented Foods: Topping the Trends Lists

Pickled, fermented foods are great for gut health

Who Knew? Fermented Ingredients Also Do Amazing Things for Your Skin Care



TOP 10 SUPERFOODS

Fermented foods remain at the #1 spot, likely for their powerful anti-inflammatory health benefits.

HEALTHY: Health Beat: Fermented food boosts health

Source: Pollock Today's Dietitian, What's Trending in Nutrition, 2019

Go with your gut: Why fermented foods could be next superfood trend



NationalDairyCouncil.org @NDC DairyCouncil #DairyHourishLife <https://www.food52.com/news/> <https://www.kimondietitian.com/news/2019/09/news.html> **NDC**

What are fermented foods?
A fermented food or beverage is a type of food made by extensive microbial growth. These foods are nothing new. They've been around for thousands of years. To understand how fermented foods are made, let's look at yogurt.

Yogurt is a fermented food made from milk. During yogurt fermentations, lactic acid-producing bacteria grow on the sugars and other nutrients in milk. As they multiply, the bacteria produce compounds that change the flavor, texture, and nutrients in the milk to give us what we know as yogurt.

The value of fermented foods

- Source of live, active microbes
- Improve food taste, texture, and food digestibility
- Increase concentrations of vitamins and bioactive compounds in foods
- Remove/reduce toxic or anti-nutrients in raw foods
- Increase food safety and shelf-life

NationalDairyCouncil.org @NDCDairyCouncil #DairyHourishLife https://www.issueline.org/en/fermentation/2017/01/16/issue-health_benefits_of_fermented_foods/@NDC-iss-17.pdf NDC

NationalDairyCouncil.org @NDCDairyCouncil #DairyHourishLife <https://www.discovernutritiondairy.com/um/colum> NDC

Fermented Food or Probiotic?

Fermented Foods	Probiotics
<ul style="list-style-type: none"> ✓ Made with microorganisms ✓ May or may not contain live active cultures at a level to confer a health benefit ✓ Most cheeses are fermented foods 	<ul style="list-style-type: none"> ✓ Should meet FAO definition: "Probiotics are <i>live microorganisms</i> that, when administered in <i>adequate amounts</i> confer a <i>health benefit</i>" ✓ Yogurts can be considered probiotic for people with lactose intolerance because traditional cultures, <i>Lactobacillus bulgaricus</i> and <i>Streptococcus thermophilus</i>, have been well studied for their ability to help with lactose digestion

Live & Active Cultures

The voluntary Live & Active Culture seal indicates a significant amount of the good bacteria remain alive after the fermentation process is complete.

NationalDairyCouncil.org @NDCDairyCouncil #DairyHourishLife H&I, C, et al. Nat Rev Gastroenterology Hepatology. 2014;11:508-514. NDC

Pickling Non-Dairy Foods	Fermentation Non-Dairy Foods	Fermentation Dairy Foods
<p>Pickled but not fermented</p> <ul style="list-style-type: none"> • Uses vinegar, salt and heat • Pasteurized and shelf stable • No live cultures purposefully • Examples: cucumber pickles, sauerkraut, okra, cauliflower • Provide no gut health benefits from active live cultures 	<p>Fermented and pickled</p> <ul style="list-style-type: none"> • Fermentation is a "method" of pickling • Uses saltwater + time • Unpasteurized has natural cultures • Microbes can enhance micronutrient content • May infer gut health benefits 	<p>Fermented not pickled</p> <ul style="list-style-type: none"> • Added bacteria + time "culturing" • Examples: cheese, yogurt, kefir, buttermilk • Culturing of product changes flavor, nutrient profile, texture • Live culture component depends on how product is finished
<p>NationalDairyCouncil.org @NDC DairyCouncil #DairyNutritionLife <small>1. Reiss, S. et al. <i>Nutrients</i>. 2012;4(12):2097-2120. 2. Prada, M.F. et al. <i>Food & Bioprocess Technology</i>. 2015;8:1177</small> NDC</p>		

Fermented Food and Gut Health

- The human digestive tract contains approximately 100 trillion bacterial cells = gut microbiota¹
- An imbalance between "good" bacteria and "bad" bacteria = dysbiosis²
- Factors influencing the gut microbiota composition²
 - Vaginal birth vs. Cesarean
 - Breast vs. formula feeding infants
 - Diet and intake of fiber
 - Antibiotic use
 - Hygiene levels
 - Genetic background
- Some diseases are characterized by microbial colonization patterns that differ from healthy controls³
- Fermented foods *may* contain living cultures that can add beneficial bacteria to the digestive tract³
- Eating fermented foods helps maintain a balance between good and bad bacteria → contributing to a healthier microbiota³

NationalDairyCouncil.org @NDC DairyCouncil #DairyNutritionLife 1. Turnbaugh P.J. et al. *Nature*. 2007;449:804-810.
2. Gajer, A. et al. *PLoS One*. 2010;5(12):1-15.
3. McCR and Hubers R. *Research Review*. 2018;7(8):14-15 **NDC**

Dairy Foods & Health Outcomes

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Cheese*:
6 essential nutrients

- Protein
- Calcium
- Phosphorus
- Vitamin B12
- Niacin
- Vitamin A

Milk:
9 essential nutrients

- Protein
- Calcium
- Vitamin D
- Phosphorus
- Vitamin A
- Riboflavin
- Pantothenic acid
- Niacin
- Vitamin B12

Yogurt:
7 essential nutrients

- Protein
- Calcium
- Phosphorus
- Vitamin B12
- Pantothenic Acid
- Riboflavin
- Zinc

*Nutrients based on USDA Database for Cheddar #03000. This Photo by Unknown Author is licensed under CC BY-SA-NC.

NationalDairyCouncil.org @NDCouncil #DairyHowItWorksLife NDC

2005, 2010, 2015* Dietary Guidelines recommend 3 daily servings of dairy foods for those >9 years

DIETARY GUIDELINES FOR AMERICANS 2015-2020 EIGHTH EDITION

The 2015 DGA states that healthy eating patterns, including low-fat or fat-free dairy foods, are associated with **reduced risk** for several chronic diseases, including cardiovascular disease (strong evidence) and **type 2 diabetes** (moderate evidence). Research has also linked dairy intake to **improved bone health**, especially in children and adolescents.

*3 servings for Americans 9 years and older in the Healthy U.S.-Style and Healthy Vegetarian Eating Patterns.

NationalDairyCouncil.org @NDCouncil #DairyHowItWorksLife Dietary Guidelines for Americans, 2015-2020 NDC

Fermented Dairy Foods & Health Outcomes

NationalDairyCouncil.org @NDCouncil #DairyHowItWorksLife NDC

Fermented Dairy Foods & Type 2 Diabetes

Visit Science Summaries at nationaldairyCouncil.org

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SCIENCE SUMMARY: Cheese & Health
 Cheese is a nutrient-dense food that provides a variety of nutrients, including calcium, protein, and vitamins. Research suggests that consuming cheese may be associated with a lower risk of type 2 diabetes.

SCIENCE SUMMARY: Yogurt & Health
 Yogurt is a fermented dairy product that contains probiotics, which may have beneficial effects on gut health and metabolism. Studies indicate that yogurt consumption is linked to a reduced risk of type 2 diabetes.

SCIENCE SUMMARY: Type 2 Diabetes
 Dairy products, including milk, cheese, and yogurt, are associated with a lower risk of type 2 diabetes. This is likely due to their high protein and calcium content, as well as their low glycemic index.

NDC

Dairy Foods are Linked to Reduced Risk of Type 2 Diabetes and Neutral Outcomes

The American Journal of CLINICAL NUTRITION

Dairy products and the risk of type 2 diabetes: a systematic review and dose-response meta-analysis of cohort studies^{1,2}

PLOS ONE
A peer-reviewed open-access journal

Dairy Products Consumption and Risk of Type 2 Diabetes: Systematic Review and Dose-Response Meta-Analysis

17 Cohort Studies
~426,000 participants

Total Dairy Analysis:
15 Cohort Studies
~450,000 subjects

Cheese Intake Analysis
7 Cohort Studies
~176,000 subjects

Total dairy intake associated with a 7% reduced risk of type 2 diabetes per 400 g serving daily
Beneficial associations also found with low-fat dairy products, low-fat or skim milk, **cheese & yogurt**

Total dairy intake associated with a 6% reduced risk of type 2 diabetes per 200 g serving daily
Beneficial associations also found with 30g/d **cheese** and 50g/d **yogurt**

¹For reference: 8 fl oz (1 cup) fluid milk = 245 g; 1 oz (slice) cheese = 28g; 1, 6-oz (container) yogurt = 170 g
 (US Department of Agriculture (USDA), Agricultural Research Service, Nutrient Data Laboratory, USDA National Nutrient Database for Standard Reference, Legacy, Version Current: April 2018; Internet: <http://www.ars.usda.gov/nutrientdata/>).

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Aune D et al. *Am J Clin Nutr*. 2013; 98(4):1088-93.
 Guo D et al. *PLoS One*. 2013; 8(9):e73965.

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Dairy Foods are Linked to Reduced Risk of Type 2 Diabetes and Neutral Outcomes

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What does 400g of dairy a day look like?

1 cup fluid milk = 245g
 1 oz cheese = 28g
 1, 6-oz container yogurt = 170g
TOTAL = 443g or 3 servings

¹For reference: 8 fl oz (1 cup) fluid milk = 245 g; 1 oz (slice) cheese = 28g; 1, 6-oz (container) yogurt = 170 g
 (US Department of Agriculture (USDA), Agricultural Research Service, Nutrient Data Laboratory, USDA National Nutrient Database for Standard Reference, Legacy, Version Current: April 2018; Internet: <http://www.ars.usda.gov/nutrientdata/>).

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Aune D et al. *Am J Clin Nutr*. 2013; 98(4):1088-93.
 Guo D et al. *PLoS One*. 2013; 8(9):e73965.

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Consistent Evidence Demonstrates Eating Yogurt is Associated with Reduced Risk of Type 2 Diabetes

BMC Medicine | **The American Journal of CLINICAL NUTRITION**

Dairy consumption and risk of type 2 diabetes: 3 cohorts of US adults and an updated meta-analysis
 Consumption of dairy foods and diabetes incidence: a dose-response meta-analysis of observational studies

14 Prospective Cohort Studies >450,000 participants
 22 Cohort Studies >570,000 individuals

Yogurt intake (one serving/day) associated with a 17% reduced risk for type 2 diabetes.
 14% reduced risk per 80 g/day (~1/3-1/2 cup per day) compared to 0 g/day yogurt intake

NationalDairyCouncil.org | @NDC DairyCouncil | #DairyInYourLife | Chen et al. BMC Med. 2014; 12:215. | DiBerni et al. Am J Clin Nutr. 2016;103(4):1111-24. | NDC

Changes in Diet and Lifestyle and Long-Term Weight Gain in Women and Men

The NEW ENGLAND JOURNAL of MEDICINE

3 Cohort Studies (NHS I & II, HPFS) >120,000 women and men

Each serving of yogurt/d was associated with -0.82 lb. weight change over a 4 year period

NationalDairyCouncil.org | @NDC DairyCouncil | #DairyInYourLife | Mozaffarian D et al. NEJM. 2011; 364:2362-2404. | NDC


Fermented Dairy Foods & Cardiovascular Disease

Visit Science Summaries at nationaldairyCouncil.org

SCIENCE SUMMARY: Cheese & Health | SCIENCE SUMMARY: Yogurt & Health

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2005, 2010, 2015* Dietary Guidelines recommend 3 daily servings of dairy foods for those >9 years




The 2015 DGA states that healthy eating patterns, including low-fat or fat-free dairy foods, are associated with **reduced risk for several chronic diseases, including cardiovascular disease** (strong evidence) and **type 2 diabetes** (moderate evidence). Research has also linked dairy intake to **improved bone health**, especially in children and adolescents.

* 3 servings for Americans 9 years and older in the Healthy U.S.-Style and Healthy Vegetarian Eating Patterns. Dietary Guidelines for Americans, 2015-2020

NationalDairyCouncil.org @NDCDairyCouncil #DairyHoursLive Source: NDC Science Brief on [Whole and Reduced-Fat Dairy Foods and Cardiovascular Disease](#) NDC

2005, 2010, 2015* Dietary Guidelines recommend 3 daily servings of dairy foods for those >9 years




The 2015 DGA states that healthy eating patterns, including low-fat or fat-free dairy foods, are associated with **reduced risk for several chronic diseases, including cardiovascular disease** (strong evidence) and **type 2 diabetes** (moderate evidence). Research has also linked dairy intake to **improved bone health**, especially in children and adolescents.

At least 10 systematic reviews/meta-analyses & 13 cohort studies published between 2009-2017 suggest dairy food consumption – regardless of fat content – is not linked with higher risk for CVD, CHD or stroke incidents.

* 3 servings for Americans 9 years and older in the Healthy U.S.-Style and Healthy Vegetarian Eating Patterns. Dietary Guidelines for Americans, 2015-2020

NationalDairyCouncil.org @NDCDairyCouncil #DairyHoursLive Source: NDC Science Brief on [Whole and Reduced-Fat Dairy Foods and Cardiovascular Disease](#) NDC

Cheese Consumption does not Impact Cholesterol Levels



2 or more risk factors for MetS

139 Subjects

- Regular Cheese 80 g/d: 14% kcal from SFA
- Reduced Fat Cheese 80 g/d: 11% kcal from SFA
- Control: 9% kcal from SFA

1 oz cheese = 28g; 80g cheese = ~3 oz

Randomized Controlled Trial 139 subjects

Results: No differences in total, LDL and HDL cholesterol

Conclusion: "A high daily intake of regular-fat cheese for 12 weeks did not alter LDL cholesterol or metabolic syndrome risk factors."

The American Journal of CLINICAL NUTRITION. High intake of regular-fat cheese compared with reduced-fat cheese does not affect LDL cholesterol or risk markers of the metabolic syndrome: a randomized controlled trial.^{1,2} Bastani et al. AJCN 2016; 104(4):873-81

NDC sponsored study

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Fermented Dairy Foods & Inflammation

Inflammation

- ✓ Eating dairy foods does not seem to be linked to increased inflammation
- ✓ In some cases eating dairy foods has been linked to reduced indicators of systemic inflammation

Critical Reviews in Food Science and Nutrition
Dairy products and inflammation: A review of the clinical evidence
 Alessandra Bordini, Francesca Damesi, Dominique Dardevet, Didier Dupont, Aida S. Fernandez, Doreen Gillet, Claudia Nunes-dos-Santos, Paula Pinto, Roberta Re, Didier Rémond, Danit R. Shahrar & Guy Vergères

Systematic Review of 52 Clinical Trials

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Eating Yogurt Linked to Reduced Inflammation and Improved Markers of Gut Integrity

Change in TNF-alpha (pg/ml)

Group	Change
Yogurt-NW	-0.09
Yogurt-OB	-0.1
Control-NW	0.11
Control-OB	-0.02

Change in Endotoxin (pg/ml)

Group	Change
Yogurt-NW	6
Yogurt-OB	3.5
Control-NW	-1.7
Control-OB	-0.7

Randomized Controlled Trial
128 premenopausal women

12 ounces (1.5 servings) of low-fat yogurt/day x 9 weeks = reduced biomarkers of chronic inflammation and improved markers for gut integrity - compared with a non-dairy control food

Low-fat yogurt consumption reduces biomarkers of chronic inflammation and inhibits markers of endotoxin exposure in healthy premenopausal women: a randomised controlled trial
 Pei et al. *Br J Nutr* 2017; 118: 1043-51
 NDC sponsored study

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Economic Model Predicts Increased Yogurt Consumption Could Reduce Health Care Costs

Estimated UK population cost savings

Years	Estimated Cost Savings (£)
5	~£500,000,000
10	~£1,000,000,000
15	~£1,500,000,000
20	~£2,000,000,000
25	~£2,500,000,000

RESEARCH ARTICLE

An economic model for the use of yoghurt in type 2 diabetes risk reduction in the UK

Patient Simulation Model

Increasing average yogurt consumption by 100g/d could result in 388,000 fewer people developing T2D, which could save the UK £2.3bn

Larsen-Wijkamp et al. *BMC Nutrition* (2016) 2:77
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Dairy Foods Matrix

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Dairy Foods' Matrix is Unique: Whole is Greater than the Sum of its Parts

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Fermented Dairy Foods Matrix

PRODUCTION OF BIOACTIVE COMPOUNDS

- + Several peptides or peptidic fractions have been investigated for their bioactive properties such as anti-hypertensive, anti-thrombotic, safety, opioid, immunomodulatory, osteogenic, and antioxidant activities^{1,2}.
- + Free amino acids can also have immunomodulatory functions³.
- + Exopolysaccharides (EPS) might serve as anti-adhesins, prevent adhesion of pathogens to the intestinal mucosa, or confer immune-stimulatory or hypocholeraemic activities⁴.
- + Conjugated linoleic acid (CLA) is a fatty acid with putative antihypertensive⁵, anti-inflammatory, immune-modulatory, anticancer, antidiabetic, and antiobesogenic properties^{6,7,8,9}.

INCREASED CONCENTRATIONS OF VITAMINS

- + The B vitamins, including biotin, riboflavin, and B12, are synthesized from various non-vitamin precursors by certain bacteria¹⁰.

CHANGES IN YOGURT MATRIX PROPERTIES

- + Taste: typical acidic flavor of yogurt.
- + Texture: EPS production and increase of viscosity¹¹.
- + Improved shelf-life¹².

DELIVERY OF LIVE FERMENTS TO THE GI TRACT

- + Microorganisms in the diet: The consumption of living fermented foods potentially increases the numbers of microorganisms by up to 10-fold¹³. It could be equivalent to introducing new, albeit transient, bacteria into the indigenous, intestinal microbiota¹⁴.
- + Practical vehicle: The delivery of microorganisms to the GI tract is supported by the food matrix, which promotes the long-term survival of microorganisms during distribution and storage¹⁵. The consumption of "live" yogurt cultures in yogurt contributes to improve digestion of lactose in individuals with lactose maldigestion¹⁶.

For full list of references, visit: <http://www.yogurtinstitute.com/live-ferments-fermentation-of-milk-into-yogurt>

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From Research to Resources and Recipes

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Safety & Storage to Minimize Food Waste

Cheese	Yogurt
Do not leave at room temperature for ≥ 2 hours, 1 hour if $\geq 90^\circ\text{F}$ Keep refrigerator at $35\text{--}40^\circ\text{F}$	
<p>Factor 20-30 minutes to come to room temp</p> <ul style="list-style-type: none"> Soft Cheeses: Toss after 2 hours Hard Cheeses: Can sit out for 2 hours then wrap well; refrigerate to use again <p>Mold?</p> <ul style="list-style-type: none"> Soft Cheeses: Don't eat Hard Cheeses: Cut $\geq 1"$ around and below the mold spot, re-cover the cheese in fresh wrap <p>What about freezing?</p> <ul style="list-style-type: none"> Softer cheese freeze well when shredded Aged cheese may become crumbly Thaw 24-28 hours in refrigerator 	<p>Stored properly, shelf-life: 7-14 days</p> <p>Store tightly covered in original container on top shelf of refrigerator</p> <p>Eating only a portion of a carton? Spoon out what you intend to eat and return the carton to the refrigerator</p> <p>If separation occurs, stir the liquid (aka: whey) back into the yogurt</p> <p>What about freezing?</p> <ul style="list-style-type: none"> Changes texture. May lose active cultures Won't significantly impact nutritional value

<https://dairygood.org/news/2019/06/19/how-long-can-cheese-sit-out>
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Safety & Storage to Minimize Food Waste

Cheese

Hard and Soft Cheese


- Wrap in paper like parchment or wax then wrap with plastic
- Can store in tight lidded storage container
- Store in vegetable crisper
- Keep refrigerator at $35\text{--}40^\circ\text{F}$

Fresh Cheese

- Mozzarella, chevre, ricotta
- Store in original packing
- If in brine don't drain to help with preservation

Rind and Moisture

- Storage is based on rind and moisture content
- Softer the cheese shorter the life
- Hard rind cheese loses protection when rind is cut / broken



<https://dairygood.org/news/2019/06/19/how-long-can-cheese-sit-out>
<https://dairygood.org/news/2019/06/19/how-long-can-cheese-sit-out>
<https://dairygood.org/news/2019/06/19/how-long-can-cheese-sit-out>

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Quick Tips for Adding More Fermented Dairy to Your Plate

Breakfast


- Add yogurt, kefir or buttermilk to your smoothies, granola or oatmeal
- Create a savory breakfast bowl and top with yogurt and shredded cheese

Lunch/Dinner

- Use yogurt in place of mayonnaise on your sandwiches
- Try a yogurt-based salad dressing or make your own ranch using buttermilk
- Top salads with flavorful cheeses to add depth

Snacks

- Create your own dips using buttermilk or yogurt as the base
- Create yogurt parfaits by layering yogurt with granola & fresh fruit


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Yogurt: A Culinary Powerhouse



Dip/Spread

Soup

Sauce/Dressing

Marinade

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Cajun Yogurt Remoulade

INGREDIENTS:


- 1 Cup 2% or whole fat plain Greek yogurt
- 1 Teaspoon sweet paprika
- 1 Tablespoon finely chopped flat leaf parsley
- 1 Lemon juiced (about 1 tablespoon)
- 2 Tablespoons Dijon mustard
- 2 Teaspoons Tabasco or red-hot sauce
- 1 small clove garlic, crushed and minced
- 1 Tablespoon capers, rough chopped
- 1/4 Teaspoon kosher salt
- Dash of Worcestershire sauce
- Pinch black pepper

HOW TO:

- Combine all ingredients into food processor or large bowl. Mix well.
- Cover lightly. Refrigerate for 1 hour minimum. Best flavor achieved if chilled over-night.



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Avocado Yogurt Soup

INGREDIENTS:

- 1 Cup Greek yogurt 2%
- 1 Cup buttermilk
- 2 Large ripe avocados
- 2-3 Dill sprigs, rough chopped
- 2 Tablespoons mint, rough chopped
- 1/2 Lemon freshly squeezed (add more to taste)
- 1/2 Teaspoon Kosher Salt (adjust to taste)
- 1/3 Cup Milk – or more as needed

HOW TO:

- Cut avocado in half. Remove pit. Scoop out flesh with spoon into blender
- Combine all remaining ingredients in blender with avocado. Blend until smooth.
- Adjust consistency of soup by blending in milk as desired. Remember that the soup will thicken slightly after being chilled.
- Chill and serve.
- Garnish with fresh mint and dill.

Optional Yogurt Swirl: Combine 2 Tablespoons of yogurt in a small bowl with small amounts of cold water until the yogurt looks like the consistency of heavy cream. Using a spoon swirl the thinned yogurt on top of the soup. Garnish with herbs.

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Cucumber Raita

Adapted from My Indian Table courtesy of Vandana Sheth, RDN, CDE, FAND

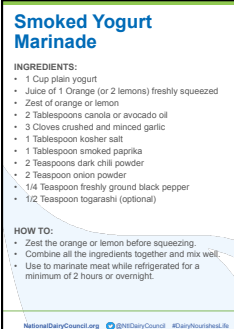
INGREDIENTS:

- 1 Cup plain yogurt or Greek
- 1/2 Cup cold water
- 1 Cup cucumber (diced or grated)
- 2-3 Tablespoons cilantro or mint or both, finely chopped
- 1/2 Small serrano chili, deseeded and minced (optional)
- Salt to-taste

HOW TO:

- In bowl, whisk yogurt and water to a smooth consistency
- Fold in remaining ingredients
- Cover and chill before serving

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Smoked Yogurt Marinade

INGREDIENTS:

- 1 Cup plain yogurt
- Juice of 1 Orange (or 2 lemons) freshly squeezed
- Zest of orange or lemon
- 2 Tablespoons canola or avocado oil
- 3 Cloves crushed and minced garlic
- 1 Teaspoon kosher salt
- 1 Teaspoon smoked paprika
- 2 Teaspoons dark chili powder
- 2 Teaspoon onion powder
- 1/4 Teaspoon freshly ground black pepper
- 1/2 Teaspoon togarashi (optional)

HOW TO:

- Zest the orange or lemon before squeezing.
- Combine all the ingredients together and mix well.
- Use to marinate meat while refrigerated for a minimum of 2 hours or overnight.

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Bringing Science to the Table

Visit www.nationaldairyCouncil.org/recipes for inspiration on how to bring the benefits of fermented dairy foods to the table

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Conclusions

- Current Dietary Guidelines for Americans (DGA) 9 years and older recommend 3 daily servings of dairy foods as part of healthy diet patterns
- Fermented dairy food consumption is on the rise and is associated with lower risk of type 2 diabetes and cardiovascular disease as part of healthy diet patterns
- Emerging evidence suggest a reduction in post-meal and chronic inflammation may be one of the mechanisms mediating these beneficial effects
- Foods are more than just the sum of their individual nutrients; the dairy foods/ fermented dairy matrix is unique and needs to be considered collectively when looking to understand these health benefits
- Fermented dairy foods – like cheese and yogurt – are a delicious way to meet DGA recommendations for 3 daily servings of dairy foods

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Host of Resources on www.nationaldairyCouncil.org

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Dairy Nourishes
— NETWORK —

- Quarterly updates
- Advance notice of webinars
- Recipe ideas/meal tips
- Engaging contests
- Opportunities to be highlighted on NDC's social
- In-person educational and networking events

To join
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Update on Whole Milk Dairy Foods within Healthy Eating Patterns



Archived CEU webinar:
<http://www.nationaldairyCouncil.org/content/70/fat-or-fiction-the-science-of-whole-milk-dairy-foods-and-healthy-eating-patterns>



Heart Healthy Eating Patterns

"We have removed our restriction for healthy Australians on eating full-fat milk, cheese and yogurt. While the evidence was mixed, this type of dairy was found to have a neutral effect, in that it doesn't increase or decrease your risks for heart disease or stroke. Given this, we believe there is not enough evidence to support a restriction on full-fat milk, yogurt and cheese for a healthy person, as they also provide healthy nutrients like calcium."

- National Heart Foundation of Australia, [Press Release](#) on [Position Statement on Heart Healthy Eating Patterns](#), August 2019.

NationalDairyCouncil.org @NDCouncil #DairyNourishesLife Position Statement: https://www.heartfoundation.org.au/images/uploads/HealthyEatingPatterns_PositionStatement_-_NHF_FINAL_3.pdf Press Release: <https://www.heartfoundation.org.au/newsroom/press-releases/the-heart-foundation-revises-dairy-and-does>

Questions?

Please enter your questions into the chat window.

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Continuing education certificates and handouts will be emailed within 24 hours of the webinar's conclusion



The full webinar recording will be available next week on www.nationaldairyCouncil.org

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