perplexity

Do Advanced Glycation End Products come from food? If so, what type

Advanced Glycation End Products (AGEs) can indeed come from food. These compounds are formed when sugars react with proteins or fats, a process that is accelerated by high-temperature cooking methods such as grilling, frying, roasting, and broiling[1] [2] [3]. This reaction is also known as the Maillard reaction, which is responsible for the browning and flavor development in foods.

Foods High in AGEs

- **Animal-derived foods:** Meat (especially red meat), poultry, fish, eggs, and dairy products like cheese, butter, and cream cheese are particularly high in AGEs, especially when cooked using dry heat methods[3] [4] [5].
- **Fatty and processed foods:** Oils, nuts, seeds, margarine, mayonnaise, and processed foods (such as crackers, chips, and cookies) also tend to be high in AGEs, particularly if they have been heat-processed[3] [6] [5].
- **Cooking methods:** Dry-heat cooking methods (grilling, frying, roasting, broiling) produce significantly more AGEs than moist-heat methods (boiling, steaming, poaching)[3] [4] [5].

Foods Low in AGEs

- **Plant-based foods:** Vegetables, fruits, whole grains, legumes, and milk generally contain relatively low levels of AGEs, even after cooking[3] [6] [5].
- **Cooking with moist heat:** Using methods like boiling, steaming, or stewing helps keep AGE formation low[3] [5].

Summary Table: Food Sources of AGEs

High-AGE Foods	Low-AGE Foods
Red meat, poultry, fish	Vegetables, fruits
Eggs (especially fried)	Legumes, whole grains
Cheese, butter, cream cheese	Milk (especially low-fat)
Oils, nuts, seeds	
Processed snacks (chips, etc.)	

In summary, dietary AGEs mainly come from animal-derived, fatty, and processed foods, especially when cooked at high temperatures. Plant-based foods and moist-heat cooking methods are associated with lower AGE content[3] [4] [5].

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1. https://www.healthline.com/nutrition/advanced-glycation-end-products
2. https://en.wikipedia.org/wiki/Advanced_glycation_end-product
3. https://pmc.ncbi.nlm.nih.gov/articles/PMC3704564/
4. https://www.medicinenet.com/what_are_ages_advanced_glycation_end_products/article.htm
5. https://www.drclara.com/blog/2021/12/8/why-you-should-know-about-ages-in-food
6. https://deannaminich.com/how-to-eat-an-anti-inflammatory-diet-by-reducing-advanced-glycation-endproducts-ages/