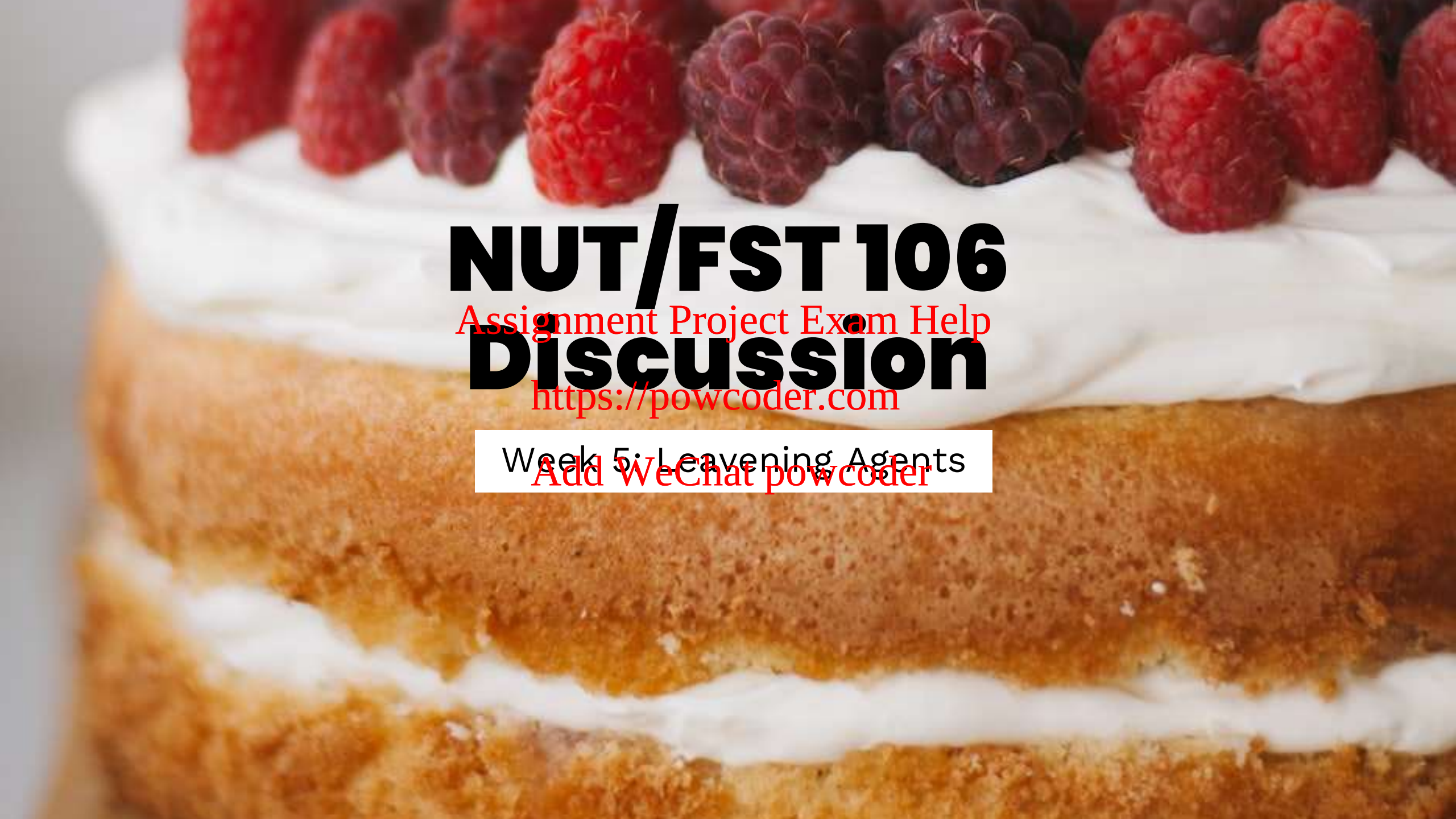


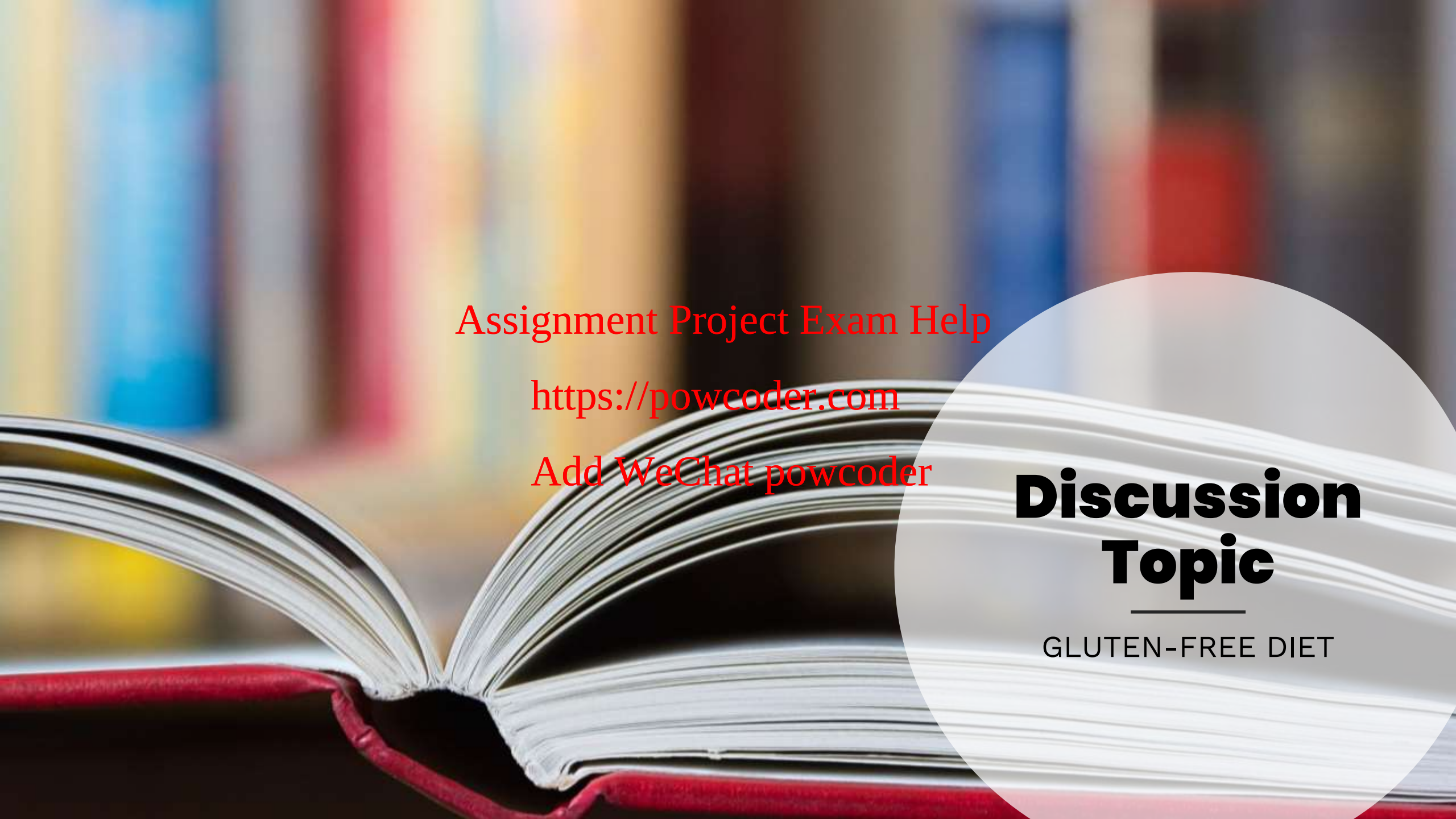
NUT/FST 106

Discussion

Week 5: Leavening Agents

Learning Outcomes

- Explore the proposed health benefits and potential health concerns of a gluten-free diet
- Recall the nutrients that can be low in an improperly formulated gluten-free diet



Discussion Topic

GLUTEN-FREE DIET

Health Benefits and Adverse Effects of a Gluten-Free Diet in Non–Celiac Disease Patients

Benjamin Niland, MD, and Brooks D. Cash, MD

Dr Niland is a clinical instructor in the Department of Medicine in the Division of Gastroenterology at the University of South Alabama School of Medicine in Mobile, Alabama. Dr Cash is a professor of medicine and chief of the Division of Gastroenterology at the University of South Alabama School of Medicine.

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Abstract: Gluten-related diseases such as celiac disease and gluten ataxia are rare conditions, affecting less than 1% of the population in the United States. Despite the rarity of these diseases, there have been significant increases in the adoption of a gluten-free lifestyle and the consumption of gluten-free foods in the United States over the last 3 decades. More than $15.5 billion were spent on retail sales of gluten-free foods in 2016. The gluten-free diet is driven by multiple factors, including social and traditional media coverage, aggressive consumer-directed marketing by many manufacturers and retail outlets, and reports in the medical literature and mainstream press of the clinical benefits of gluten avoidance. Individuals may restrict gluten from their diets for a variety of reasons, such as improvement of gastrointestinal and nongastrointestinal symptoms, as well as a perception that gluten is potentially harmful and, thus, restriction represents a healthy lifestyle. Emerging evidence shows that gluten avoidance may be beneficial for some patients with gastrointestinal symptoms, such as those commonly encountered with irritable bowel syndrome. However, high-quality evidence supporting gluten avoidance for physical symptoms or diseases other than those specifically known to be caused by immune-mediated responses to gluten is neither robust nor convincing. In fact, gluten avoidance may be associated with adverse effects in patients without proven gluten-related diseases.

OPEN ACCESS

Long term gluten consumption in adults without celiac disease and risk of coronary heart disease: prospective cohort study

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Accepted: 4 April 2017

ABSTRACT

OBJECTIVE
To examine the association of long term intake of gluten with the development of incident coronary heart disease.

DESIGN
Prospective cohort study.

SETTING AND PARTICIPANTS
64 714 women in the Nurses' Health Study and 45 303 men in the Health Professionals Follow-up Study without a history of coronary heart disease who completed a 131 item semiquantitative food frequency questionnaire in 1986 that was updated every four years through 2010.

EXPOSURE
Consumption of gluten, estimated from food frequency questionnaires.

MAIN OUTCOME MEASURE
Development of coronary heart disease (fatal or non-fatal myocardial infarction).

RESULTS
During 26 years of follow-up encompassing 2 273 931 person years, 2431 women and 4098 men developed coronary heart disease. Compared with participants in the lowest fifth of gluten intake, who had a coronary heart disease incidence rate of 352 per 100 000 person years, those in the highest fifth had a rate of 277 events per 100 000 person years, leading to an unadjusted rate difference of 75 (95% confidence interval 51 to 98) fewer cases of coronary heart disease per 100 000 person years. After adjustment for known risk factors, participants in the highest fifth of hazard ratio was 1.00 (0.92 to 1.09; P for trend=0.77). In contrast, after additional adjustment for intake of refined grains (leaving the variance of gluten intake correlating with whole grain intake), estimated gluten consumption was associated with a lower risk of coronary heart disease (multivariate hazard ratio 0.85, 0.77 to 0.93; P for trend=0.002).

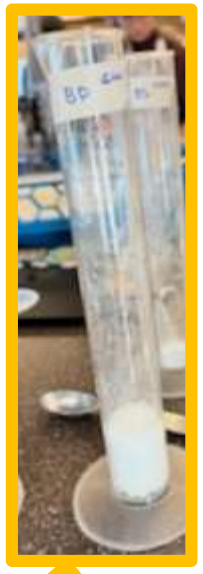
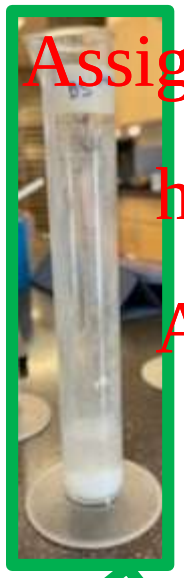
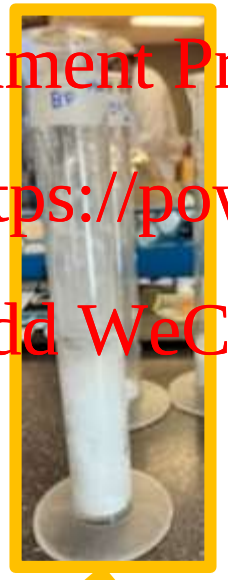
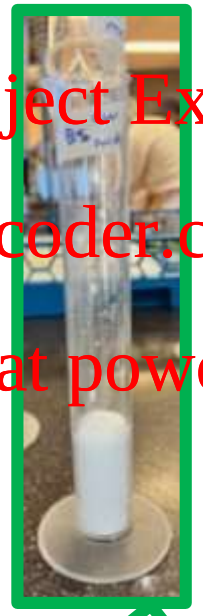
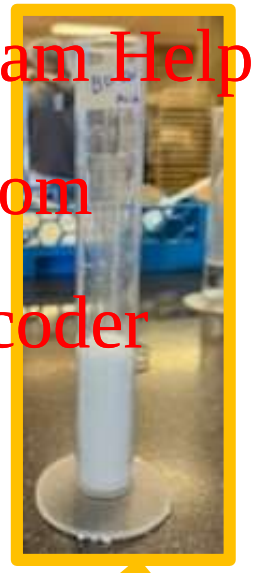
CONCLUSION
Long term dietary intake of gluten was not associated with risk of coronary heart disease. However, the avoidance of gluten may result in reduced consumption of beneficial whole grains, which may affect cardiovascular risk. The promotion of gluten-free diets among people without celiac disease should not be encouraged.

Introduction

Gluten, a storage protein in wheat, rye, and barley, triggers inflammation and intestinal damage in people with celiac disease.[1] People with intestinal or extra-intestinal symptoms triggered by gluten but who do not meet formal criteria for celiac disease may have non-celiac gluten sensitivity, a clinical entity with an as yet uncharacterized biological basis.[2] Celiac disease, which is present in 0.7% of the US population,[3] is associated with an increased risk of coronary heart disease, which is reduced after treatment with a gluten-free diet.[4]

On the basis of evidence that gluten may promote inflammation in the absence of celiac disease or non-celiac gluten sensitivity,[5] concern has arisen in the medical community and lay public that gluten may increase the risk of obesity, metabolic syndrome, neuropsychiat-

Leavening Agents

Cold + No Acid	Hot + No Acid	Cold + Acid	Hot + Acid
 	 	 	 

Baking Soda
Baking Powder
Baking Soda
Baking Powder
Baking Soda
Baking Powder
Baking Soda
Baking Powder

Cocoa powder

Dutch (alkali) process

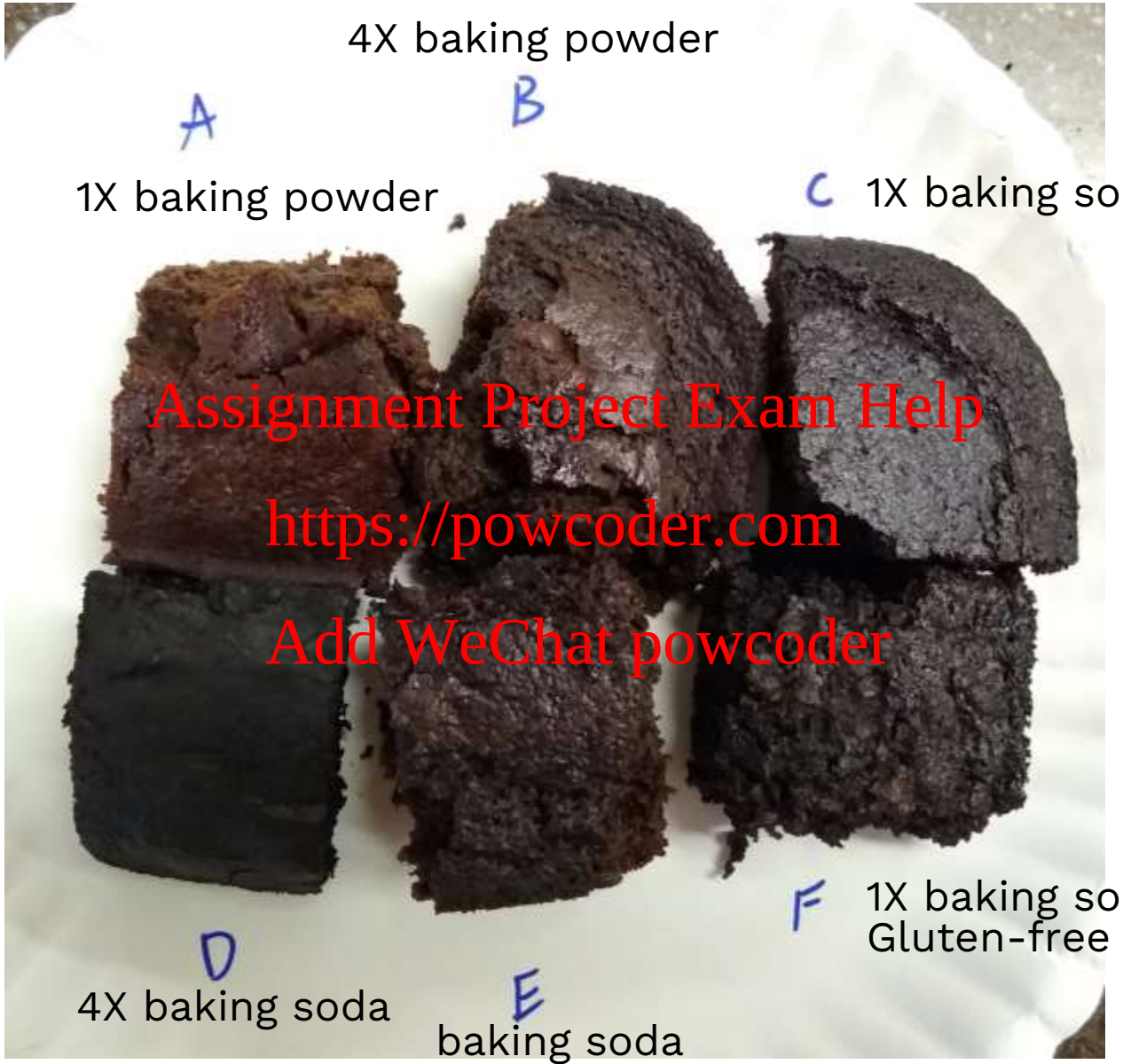
- Treat with alkalizing agent = less acidic

Natural process

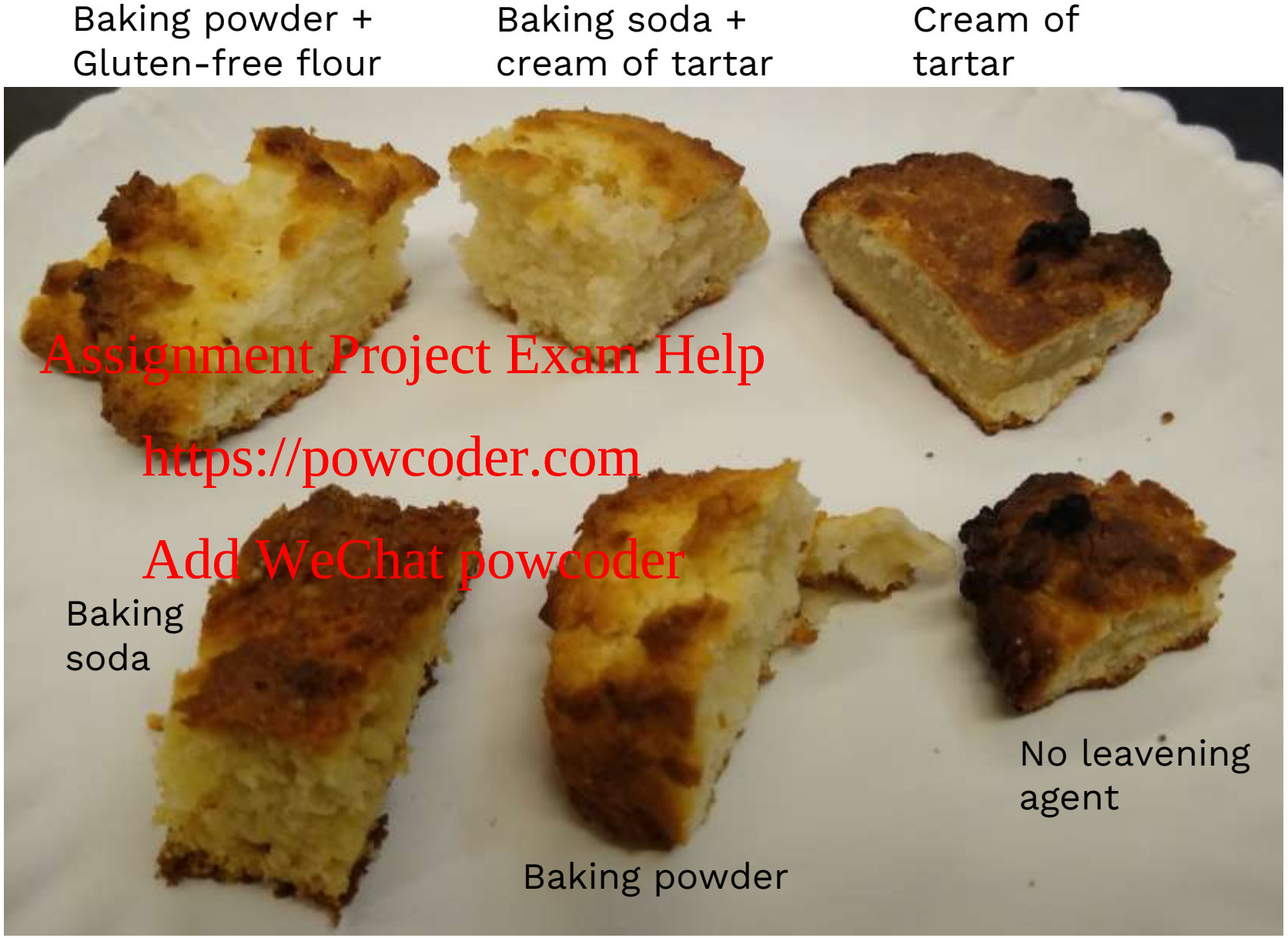
- More acidic
- More fruity flavors

Cook's Illustrated: https://www.americastestkitchen.com/cooksillustrated/articles/663-which-cocoa-powder-should-you-buy

Cake



Scones


Baking powder + Gluten-free flour
Baking soda + cream of tartar
Cream of tartar
Assignment Project Exam Help
https://powcoder.com
Add WeChat powcoder
Baking soda
Baking powder
No leavening agent

Reminders

- Office Hours: Today, 11 AM – 12 noon, Meyer 1154
- Full, formal lab reports going forward