

nutrition

Spotlight

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Dietetic Interns, Saint Louis University

ANHEUSER BUSCH BEERS WITH A NUTRITIONAL TWIST

By: Camille Aschwald and Mallory Zigan

Health isn't a dying fad, and Anheuser Busch wants consumers to drink it up. How do you make an alcoholic beverage such as beer healthier? You add a nutritional twist. It all began with the advent of the light beer, reducing the calories for the calorie-conscience consumer. The next approach was lowering carbohydrates to keep pace with the low carb trend, thus the creation of Michelob Ultra. With each additional nutrition trend in the marketplace, one can almost rely on Anheuser Busch to bring out a hot new product.

The newest trend is antioxidants. They are loaded with flavor and health benefits - a combo that can't seem to fail. A blueberry beer, called Wild Blue, and a pumpkin ale were test marketed last year for public appeal. The pumpkin ale is sold seasonally and Wild Blue is still in the final stages of development. Anheuser Busch is test-marketing other beers flavored with lime, cactus, pomegranate, and blood orange. Another recently developed beverage, Peels, a malt beverage flavored with 100% juice, is mainly targeted to women and other health-conscious individuals. Peels comes in four flavors: blueberry pomegranate, strawberry passion fruit, pear lemon, and cranberry peach.



collection on their website, offering instructions for the most sumptuous flat bread to an exotic casserole.

The ever popular and growing market for energy drinks has become the next niche to crack. June 2006, Anheuser Busch launched Spike, a six ounce high alcohol ginseng-infused energy beverage. It comes in four flavors: mango, melon, lime and chocolate. A popular method of consumption is to mix the Spike with a Budweiser to fuse the different tastes. The chocolate flavor can be enjoyed in beer, or in hot beverages such as coffee or hot chocolate.

As if these products weren't enough, Anheuser Busch is looking to expand its product line further, and its new interest is organic. They have invested in organic fields of barley in Idaho, and are working on the last stages of development of a 100% certified organic beer.



Organic, antioxidants or exotic tropical fruits, is that enough to tempt you? These will probably not be the last health conscious beers we will see in the future. Anheuser Busch is exploring new territory beyond Bud Light.

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THE CALCIUM CONNECTION

By: Kelly Greenstreet and Gina Juenger



To moo or not to moo? Calcium and its role in weight management continue to be an area of active interest. Some research has shown that increased calcium consumption may be beneficial in weight management, while other studies have been unable to show that increased calcium aided in weight management.

In a 12 week study by Zemel et al of 34 obese subjects, those on a high dairy diet (~1100mg/Ca) lost more fat than the control group (~400-500mg/Ca). The two groups lost similar amounts of weight (4.43 vs. 2.75 kg), but the group consuming a high dairy diet lost 61% more total body fat and 81% more abdominal fat than the control group. Each group was on a caloric restriction of 500 calories less than calculated needs. High calcium intake in combination with a reduced calorie diet was shown to stimulate a greater percentage of fat breakdown than low-calorie diets alone. Other studies have had varying results. In a review by Shrager of studies including those by Shapses et al, Thompson et al., and Harvey-Bernio et al, none showed that higher calcium intake with calorie restriction promoted weight loss above diets of calorie restriction alone.

What mechanisms might make it possible for calcium to have this effect on the body? Research suggests different ways this may work. Zemel et al propose that only a small percentage of calcium is stored inside the cells, and this intracellular calcium may be linked to weight gain. As dietary calcium intake decreases, the amount of calcium within the cells rises causing an increase in parathyroid hormone and 1,25-dihydroxy vitamin D, that are linked to fat cell production. On the other hand, high calcium intake has been shown to suppress these hormones and actually increase the amount of fat broken down within the body. Cummings et al has a different mechanistic approach to this idea, suggesting that fat is oxidized at a faster rate after consumption of a high calcium meal.

Besides calcium, other components within dairy products (i.e. whey protein, branched-chain amino acids) may have a greater effect on weight regulation than calcium supplements alone. Whey protein or branched-chain amino acids may work alone or together with calcium to affect fat production, fat breakdown, fat oxidation, and energy disbursement. Whey protein and branched-chain amino acids play specific roles in the development of muscle tissue. The more muscle tissue or lean body mass a person has, the more calories they will burn, resulting in a higher metabolism. However, the methodology in these studies may not control for factors such as overall calorie and protein intake, thus making the results inconclusive.



Although conflicting research exists for the effects of calcium on weight management, it continues to be a popular area of interest. Currently, many studies are being conducted to verify what effects calcium may have on body composition and weight regulation. Overall, a balanced diet with a negative energy balance is still essential for weight loss. However, calcium's overall importance to health (i.e. bone strength and health, muscle contraction, and the transmission of nerve impulses) still makes it a vital dietary nutrient. All adults and children should consume the RDA for calcium regardless of its effect on weight regulation.

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WAITING TO INHALE

INHALED INSULIN NOW AVAILABLE

By: Julie Cappelletti and Allison Bennett

For most of us, years of multiple injections and finger pricks seem like torture. For 20.8 million Americans, this is a way of life. Now, with the introduction of inhaled insulin, many individuals with diabetes may have a painless alternative.



With the inconvenience and pain of multiple injections, diabetes research has turned to alternative routes of insulin. Inhaled insulin has recently been approved in both Europe and the United States. This insulin form has been well studied and been proven to work effectively in adults with Type 1 or Type 2 diabetes. Currently, the only

inhaled insulin available on the market is Exubera, a product of Pfizer.

Inhaled insulin works similar to an inhaler. It is packaged in powder blisters of 1 and 3 mg, and a single administered dose delivers the equivalent of approximately 3 or 8 IU of subcutaneous insulin. It is rapid acting insulin that should be inhaled by the mouth within 10 minutes prior to eating. The insulin passes through the lung wall and enters the bloodstream. Due to the permeability and large surface area of the lungs, it is a fast and efficient way to get insulin into the bloodstream.

Because of the unique inhaled administration method, it is not recommended for smokers or patients with unstable or poorly controlled lung disease, such as asthma, COPD, or emphysema. It is also not recommended for children.

Studies comparing the effectiveness of inhaled insulin to subcutaneous insulin have been conducted in both Type 1 and Type 2 diabetes. In these studies, the efficacy of both methods is comparable. Reductions in HbA1c were comparable. However, patients using the inhaled insulin showed better reductions in fasting glucose and had fewer



hypoglycemic episodes. Studies also show the long-term efficacy of inhaled insulin is slightly better than subcutaneous insulin. At 2 years, inhaled insulin users had better reductions in HgA1c when compared with subcutaneous. This efficacy is expected to be maintained up to four years.

Inhaled insulin does carry some adverse effects. Although few episodes of hypoglycemia were reported with inhaled insulin users, the episodes were more severe than with subcutaneous. A mild to moderate cough was reported in up to 25% of patients using inhaled insulin. The cough, however, was resolved with continued treatment.

The largest concern with inhaled insulin seems to be lung function. Most short-term studies have reported changes in FEV1 (forced expiratory volume in 1 second), a method to assess airway obstruction, and DLCo (carbon monoxide diffusion capacity), a method used to determine how well gases pass from the lungs into the bloodstream. However, these changes are small and clinically insignificant. In other studies, these changes were reversed following discontinuation of inhaled insulin use. Long-term studies suggest that inhaled insulin is safe and that changes in lung function are not clinically relevant.



Exubera is now available on the market. It is covered through most insurance companies, but it is considered a tier three drug (highest co-pay on most insurance plans). Without insurance, it will cost the patient two to three times that of subcutaneous insulin.

Overall, inhaled insulin such as Exubera is an effective alternative to subcutaneous insulin in adult individuals with diabetes who yearn for relief from their insulin needle.

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BARIATRIC SURGERY FOR KIDS: EASIER TO COME BY, HARDER TO COMPLY

By: Jennifer Bartlett and Rachel Wittenauer

The prevalence of overweight among the pediatric population has tripled over the last 30 years. Research shows that about 16.1% of adolescents in the United States are overweight. Pediatric bariatric surgery is not common, but the need is becoming more apparent as the epidemic spreads. Few medical centers in the United States perform this surgery. The University of Cincinnati is well known in the Midwest for its success with pediatric bariatric surgery. The selection criteria for adolescents being considered for bariatric surgery are very specific because of the controversial components of growth, nutrition, and medical complications.

Adolescents must:

- Have failed 6 months of organized attempts at weight management
- Have attained or nearly attained physiological maturity
- Be very severely obese (BMI ≥ 40) with serious obesity-related co-morbidities
- Be capable of and willing to adhere to nutritional guidelines post-operatively
- Have a supportive family environment

Dietary Considerations

Long term dietary compliance is extremely important to a successful outcome of bariatric surgery. A successful outcome is considered by age appropriate, rate, and amount of weight loss while maintaining appropriate nutrition status. The usual dietary recommendations following bariatric surgery are low calorie, low fat, high protein, high fluid, and daily vitamin and mineral supplementation. These recommendations are due to the challenge of providing adequate nutritional calorie and volume restrictions.

The University of Cincinnati has set specific dietary guidelines to ensure patient success after bariatric surgery. Adherence to a hypocaloric diet (≤ 1000 kcals/day) during the first 3 months after surgery is recommended due to reduced capacity of the new stomach. Fluids are initiated immediately following surgery and should be introduced slowly in very small amounts (30cc/hour). Fluids are then increased to 180cc/hour with the ultimate fluid goal being 270cc/day to maintain adequate hydration. Carbonated, caffeinated beverages and citrus drinks should be avoided to prevent stomach discomfort. The next emphasis is on a low-fat, high protein diet (1.0-1.5 g/kg body weight) for healing purposes after surgery and long term

maintenance of lean body mass. Therefore, high-protein drinks are the first food that is introduced.

Immediately post surgery, the stomach can only accommodate $\frac{1}{2}$ cup of food at a meal, but over time 1-1 $\frac{1}{2}$ cups can be consumed at each meal. Small frequent meals, at 3-5 hr intervals, should be consumed for a duration of 15-20 minutes. Foods need to be eaten slowly and chewed well to avoid blockage or obstruction. The transition of foods should be done slowly to avoid displacement of protein. New foods need to be introduced every 3-5 days to identify specific food intolerances.

Following bariatric surgery, there is a high risk for developing nutritional deficiencies because of the restricted food capacity leading to a large reduction in food-related micronutrients. Also increasing the risk for nutritional deficiencies is lack of ability to absorb micronutrients and the reduction of a variety of food items as a result of possible food intolerances. Some of the micronutrient deficiencies reported after bariatric surgery are vitamin B12, folate, iron, and calcium. These nutrients need to be supplemented into the patients' diets throughout their life to ensure they are receiving adequate amounts.

In a 6-year follow-up retrospective study of 34 adolescents who had undergone bariatric surgery, only 13% of patients took vitamin and mineral supplements and 97% snacked on high fat, empty calorie foods in between meals. In addition, only twenty-nine percent of patients reported exercising at least once a month. This study supports the concern that diet and behavioral change is difficult to achieve, thus compromising nutrient intake. Consideration for pediatric bariatric surgery should be approached very carefully due to patient compliance to diet changes and daily vitamin/mineral supplementation.

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MNT: HOW TO GET MORE COVERAGE

By: Grace McGuire and Lara Boutin

An obese man dines on a large breakfast of bacon, sausage, fried eggs, and heavily-buttered toast, then drinks a cup of coffee to wash down his cholesterol-lowering drugs. Although it seems ridiculous, this scene is pretty typical in the United States. But why? Perhaps it's because medications are readily covered by health insurance, whereas preventative therapies that result in positive lifestyle changes, like Medical Nutrition Therapy (MNT), are not. According to the American Dietetic Association (ADA), "Medical Nutrition Therapy is an essential component of comprehensive health care services...MNT can increase consumer's health and well-being, and increase productivity and satisfaction levels through decreased doctor visits, hospitalizations and reduced prescription drug use."

There are 3 major reasons why health care professionals should lobby for expansion of Medicare MNT Benefits. Number 1: MNT is an effective treatment method that has virtually no side effects. Many medications carry the risk of several side effects. Number 2: Expanded MNT coverage by Medicare would supply more people in need with nutrition education, thus preventing the development of other health complications, improving quality of life, and lowering health care costs for the individual and the public. Number 3: Including MNT in health care protocol will acknowledge RD's expertise and identify RD's as the only provider of effective MNT.

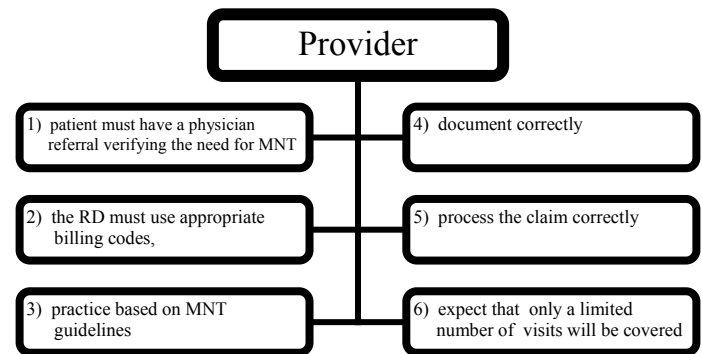
Medicare rarely covers MNT because an item or service has to first be deemed "reasonable and necessary". Thus, it must be demonstrated that MNT is a necessary evidence-based therapy for a variety of diseases. Other barriers include the requirement of proper codes and MD-referral. Most importantly, RDs must become providers and get involved in MNT legislation in Congress.



In order to become a provider for MNT Benefits, a licensed dietitian must fill out the appropriate enrollment forms, which can be found on the Centers for Medicare and Medicaid Services (CMS) website

<http://www.cms.hhs.gov/MedicareProviderSupEnroll/>.

The enrollment process, usually completed within 60 days, enables you to receive a Medicare provider identification pin. See Figure 1.



(Figure 1)

Currently, MNT is reimbursed for treatment of Type I and II diabetes, gestational diabetes, non-dialysis renal disease, and post transplant renal patients (Medicare MNT Provider Information). Telehealth services were recently added to the list of reimbursable services. There are several diseases where MNT is effective, i.e. CVD and obesity.

As RD's, we need to make it clear that *we* are the qualified professionals who need to provide nutritional services. But RD's can only obtain third-party reimbursement if they apply for it. Therefore, in order to get expanded Medicare MNT coverage, RD's must: Know the law; Develop/use your resources; Assert yourself; Ask for change; Follow-up.

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