EVIDENCE FOR HEALTH PROMOTION

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Welcome to Evidence for Health Promotion Newsletter. The Evidence-Based Health Promotion Newsletter is an initiative of the Department of Family Medicine at the Medical College of Georgia to advance Health Promotion. This publication is being produced by the Faculty Development Group to provide evidence-based reviews of current literature regarding practices in health promotion and disease prevention as well as other useful health promotion tips. This newsletter is our effort to provide clinically relevant information to practicing family physicians in Georgia. Please respond to us with any suggestions or questions at (706) 721-2204.

WWW.WEIGHT LOSS PROGRAM

(By Johnathan Gore, MD)

Tate, DF; Wing, RR; Winett, RA. Using Internet Technology to Deliver a Behavioral Weight Loss Program. *JAMA,* 2001 285(9),1172-1177.

Clinical Question: Can using internet technology for education and behavioral modification be effective in weight management?

Background: With more than 50% of adults in America being overweight or obese, great efforts are being made to change behaviors related to obesity. This study compared internet education alone to internet education and behavior modification for obesity. Since more than 50% of American adults use the internet, there is potential for great impact on weight management through computer technology.

Population Studied: Ninety-one healthy participants aged 18-60 with a BMI (Body Mass Index) of 25-36 kg/m^2. Participants worked for a large network of hospitals and had internet and e-mail access. Participants were recruited through e-mails and internet advertisements.

Study Design and Validity: Patients were randomized to receive either (1) education from a "standard" weight loss internet site or (2) education and behavior modification via internet. Both groups were educated in an initial meeting on web-site use, proper diet and exercise. In addition, behavior therapy participants were instructed to report weekly self-monitoring via e-mail. These weekly reports included weight, calories and fat grams consumed, and amount of exercise. Routine e-mails were sent to this group with a variety of weight loss topics. Feedback with encouragement and recommendations were sent to behavior therapy participants on a weekly basis. The control group received only education from the internet. They did not participate in self-monitoring reports nor receive feedback. This was a well-done study that is an exciting first look at using internet technology for weight management. The participants were from a very select population who had both computer and internet ability and access which certainly limits generalizability.

Outcomes Measured: Weight, waist circumference and physical activity were measured at baseline, at 3 and 6 months.

Results: The behavior and education group results below showed significant differences at 3 and 6 months.

		3 months	6 months
Weight loss (kg)	Education	1.7	1.6
	Behavior	4.0	4.1
Waist (cm)	Education	3.0	3.1
	Behavior	6.7	6.4

Under intention to treat analysis, significant group differences were maintained. Participants in both groups reported similar changes in both diet and exercise despite the significant differences in weight and waist circumference.

Recommendations for Clinical Practice: The amount of interaction in each group was considerable and may have resulted in self-selection of much more motivated participants than in a general Family Medicine practice. However, for family practitioners who are interested in treatment innovations, this may be a viable treatment for overweight and obese patients who have internet access.

WHERE'S THE FAT? CHANGING SOURCES OF FAT IN THE AMERICAN DIET

(By Bruce LeClair, MD)

Popkin, BM; Siega-Riz, AM; Haines, P; Jahns, L. Where's the Fat? Trends in U.S. Diets, 1965-1996. *Preventive Medicine* 2001, 32, 245-254.

Clinical Question: What are the sources of dietary fat in the American diet? How have they changed? Has the amount of dietary fat increased, decreased or stayed the same?

Background: Since the 1950's the American Heart Association and others have recommended that dietary cholesterol, saturated fat and total fat be reduced. Since then, there have been documented shifts away from whole fat milk to reduced fat milk products, increased trimming of meat products, and consumption of other lower fat food products. No study, however, has analyzed trends in food sources or fat using individual data over a long period. This study looked at food trends for more than 30 years with a focus on both total fat, specific fatty acid classes, differences in age, sex, race/ethnicity, and whether there was a shift from visible (butter, salad dressing, external fat on meats) to invisible fat (hidden in foods like cheese, nuts, or within a dish such as baked goods, fried foods and ice cream).

Population Studied: This study used data on men and nonpregnant adult women age 18 and older, from four national representative surveys of the US population and included a total of 45,357 persons.

Study Design & Validity: The surveys included at least one in-home, interviewer-administrated, 24-hour dietary recall. If more days were included, the average was used in the analysis. While food codes, the technology to measure nutrients, and the number of nutrients measured have changed over time, the authors developed several ways to account for these differences. Several food codes from the USDA Food Composition Table represented combination foods, such as pizza. The size of the study and the care with which the changes in trend analysis were accounted for strengthens the validity of this study.

Outcomes Measured: The study looked at trends in the proportion of energy derived from fat and the sources of fat from 1965-1996 and differences by age, sex, and race/ethnicity.

Results: Between 1965 and 1996, there was a consistent decline in the proportion of energy from total fat (from 39.1% to 33.1%). Associated with this was a marked shift in the sources of fat. In 1965, meats (non-poultry), dairy and eggs accounted for 50% of total fat, while in 1994-96, they made up only 42%. In contrast, there was an increase in fat from grain-based mixed dishes (pizza, Mexican foods, pastas).

Younger adults are more likely to obtain their fat from french fries, snacks (chips, etc.), cheese, pizza and hamburgers, while older adults consume more fat from desserts, margarine and milk. African-American adults obtain more fat from high fat luncheon meats, bacon, fried poultry, eggs, and seafood. White adults obtain more fat from pizza, pasta, cheese, higher fat desserts and salad dressing. Hispanic adults obtain more fat from pasta, rice and cooked cereal dishes. Not surprisingly the ratio of visible fat changed from 1:10 to 1:5. There were no differences by sex.

Recommendations for Clinical Practice: While the total fat intake percentage of the American diet has decreased over the last 30 years, the sources of fat have changed. Fat in foods has moved from visible to invisible fat. Additionally, the food sources of fat differ based on age and race/ethnicity. It will be important to take these differences into account when counseling our patients to reduce fat in their diets.

BE WARY OF PORK BARBECUE

(By Jerry Lambert, MD)

Wootton, SH. Foodborne outbreaks associated with eating Pork Barbecue -- Georgia 1996-2000. *Georgia Epidemiology Report*, 2001,17:01,1-3.

Clinical Question: What are common factors involved in outbreaks of GI illness, and what are associated symptoms?

Background: Since 1996, the Georgia Division of Public Health (GDPH) has investigated nine outbreaks associated with pork barbecue (BBQ). Together these nine outbreaks involved 815 cases of gastrointestinal (GI) illness resulting in 52 hospitalizations.

Population Studied: While patient demographics were not detailed, patients were those who presented along with others with GI illness, and who were determined to have become ill as a result of BBQ ingestion. These nine groups each included 20 to 380 cases. Isolated cases of BBQ-related GI illness were not discussed.

Study Design and Validity: This article summarized the retrospective findings of the GPDH investigations into five of the nine outbreaks. Methods varied but included chart review, telephone interviews with persons eating at specific meals containing tainted BBQ, and an electronic questionnaire that was e-mailed to attendees at a company picnic.

Results: Each of the five outbreaks was discussed individually. In, Outbreak 1 (Bleckley County, 8/1998) 51 patients experienced GI illness over a 2-month period, 45 of whom recalled having eaten BBQ at a particular restaurant. Stool cultures and studies of BBQ specimens yielded *Salmonella*. Outbreak 2 (Habersham County, 7/1999) affected 20 patients who became ill after eating at a particular BBQ restaurant in a 3-day period. Twenty cases of salmonellosis were identified in a 3-day period. *Salmonella* was identified in stool and BBQ specimens. Outbreak 3 (Hart County, 9/1999) involved 58 patients who ate at a local BBQ restaurant during a single weekend. Of the 600 attendees at a BBQ luncheon surrounding Outbreak 4 (Fannin County, 9/2000), 87 (49%) of the 179 who were contacted by phone reported having at least one symptom (vomiting, nausea, diarrhea or cramps) within 24 hours of eating the BBQ. Stool and BBQ specimens yielded enterotoxin-producing *Staphylococ-*

BE WARY OF PORK BARBECUE (CONT'D)

(By Jerry Lambert, MD)

cus aureus. Outbreak 5 (Catoosa County, 9/2000) involved 380 of approximately 900 people who attended a company BBQ picnic at an amusement park.

In each of the outbreaks discussed, the only food statistically associated with illness was barbecue pork. While infected food handlers or contaminated equipment may have contributed, several food preparation and handling methods were probably more significant causes of the illnesses. In some instances, reported cooking times were 12-24 hours but thermometers were not used to confirm the temperature of the cooking pork. Sometimes the cooked meat was allowed to cool in the pit (for additional smoke flavor), with no monitoring of the temperature of the meat. After cooking, the pork was sometimes stored in containers >4 inches deep, too deep to allow rapid cooling or heating of the meat. In others, the pork was at room temperature for hours during preparation (pulling it from the bone, slicing and chopping, serving, etc.) or storage (an entire night at 60^0F). When contaminated meat is stored between 41^0F and 140^0F Salmonella continues to multiply and S. aureus continues to multiply and to produce enterotoxin.

The mean incubation time for Salmonellosis was 19 hours, but only 2.7 to 6 hours for the enterotoxin-producing *S. aureus*. The most common symptoms in salmonellosis were diarrhea, abdominal pain, fever, nausea, chills, vomiting, and headache. Patients ill with enterotoxin-producing *S. aureus* complained mostly of nausea, vomiting, diarrhea and abdominal cramps. In Outbreak 4, persons >65 years of age were 2.57 times more likely than younger persons to be ill, while persons who reported an underlying medical condition were 24 times more likely to be ill. In Outbreak 2, one woman pregnant with twins became ill, went into premature labor and two days after BBQ ingestion delivered twins via cesarean section at 35 weeks gestation. Both infants were treated with IV antibiotics but required readmission and had *Salmonella* isolated from stool specimens.

Recommendations for Clinical Practice: Family physicians should help educate our communities and local food handlers on the inherent risks of GI illness involving barbecue pork. This risk increases when large batches are made because of the extended cooking time, smoking, and handling. Cooking the meat at temperatures >140^0F and storing it in shallow pans at <41^0F reduces the likelihood of illness. We must also combat the complacence of cooks who have used the same techniques for many years without being aware of associated GI illness.

PERCHANCE TO SLEEP

(By Peggy J. Wagner, PhD)

Edinger, JD; Wohlgemuth, WK; Radtke, RA; Marsh, GR; Quillian, RE. Cognitive Behavioral Therapy for Treatment of Chronic Primary Insomnia. *JAMA*, 2001, 285(14),1856-1864.

Clinical Question: Is cognitive behavioral therapy (CBT) more effective in the reduction of persistent primary insomnia than placebo therapy or relaxation therapy?

Background: Previous studies suggest that CBT is effective in treatment of sleep-onset and maintenance problems and is more effective than both pharmacotherapy (temazepam) and drug placebo. The question remains as to which elements of non-pharmaceutical therapies provide this benefit. This study compared CBT to relaxation training and to a modified desensitization program (placebo).

Population Studied: 75 adults (35 women, mean age 55.3) were screened and assessed by interview for chronic primary insomnia (mean duration of symptoms 13.6 years).

Study Design & Validity: Randomized, double blind, placebo-controlled trial conducted at one academic medical center. One male and one female therapist were used and supervised by the primary author. Extensive therapeutic manuals and protocols were utilized and posttreatment verification of treatment purity was made via tape reviews by an independent, blinded judge. Further, compliance of subject to therapy was made via covert monitoring of subjects' practice tapes.

Outcomes Measured: Outcomes included polysomnogram results as measured by total sleep time, cumulative time awake between sleep onset and final morning awakening, sleep-efficiency (total sleep time/total time in bed X 100%), and related measures, as well as results of self-report sleep logs, and assorted questionnaires including Insomnia Symptom Questionnaire, Self Efficacy Scale, and Beck Depression scale.

Results: CBT produced larger improvements across the majority of outcome measures than either the relaxation or placebo therapies. Clinical significance was summarized as the proportion of each group achieving at least a 50% reduction in pretreatment Wake After Sleep Onset time. Sleep logs showed that 64% of CBT subjects met this criterion, 12% in the relaxation group and 8% in the placebo (p<.001). CBT subjects could expect to achieve a mean sleep time slightly over 6 hours (5.5 hours at pre treatment), an amount of sleep that is reported as minimally normative/sufficient based on current estimates of human sleep requirements. This moderate effect size is similar to that reported from other behavioral studies, but smaller than that typically reported for short-term pharmacotherapy. However, this modest effect appears enduring at least as measured at a 6 month follow-up interval whereas pharmacotherapy long-term effects have not yet been reported.

PERCHANCE TO SLEEP (CONT'D)

(By Peggy J. Wagner, PhD)

Recommendations for Clinical Practice: For patients in which there may be clinical concern for long-term use of pharmacotherapies, CBT may be an appropriate solution. Clinicians may want to seek appropriate referral options or become familiar with the short-term CBT protocols used in this study.

BOOTZIN'S STIMULUS CONTROL THERAPY FOR INSOMNIA

1. Lie down, intending to go to sleep, only when you are sleepy.
2. Do not use your bed for anything except sleep. Sexual activity is the only exception. On such occasions, follow these instructions afterwards, when you intend to go to sleep.
3. If you find yourself unable to sleep easily, get up and go to another room. Stay up as long as needed and return to the bedroom only when you feel like you really can fall asleep. Remember, the goal is to associate your bed with falling asleep quickly. Although clock watching should be avoided, if you are in bed more than about 10 minutes without falling asleep and have not gotten up yet, you are not following these instructions.
4. Repeat step 3 as often as necessary.
5. Set the alarm and get up at the same time every morning, no matter how you slept. That helps maintain circadian cycling.
6. No naps during the day.

Hauri, PJ; 1998, Sleep Disorders, Insomnia, *Clinics in Chest Medicine*, 19:01,166.

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