

alcohol bans in place. During this time, no significant change in other prenatal substance abuse was evident.

The initial success just described is in sharp contrast to what has been written in the literature to date.³ The alcohol ban appears to be a very successful intervention and should be considered as a potential public health intervention in areas where fetal alcohol syndrome incidence is high. It will be of interest to see whether this early benefit of the ban is maintained. □

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Research

Public and Private Academic Medical Partnerships in Improving Nutritional Management in Phenylketonuria

The Genetics and Nutrition Programs of the State of Louisiana Office of Public Health recently collaborated with the Human Genetics Program of Tulane Medical School in a study involving care of phenylketonuria patients. This study evaluated the effect of improving the delivery of nutritional services on dietary compliance of school-aged phenylketonuria patients. The impetus for carrying out this project came from a review of patient plasma phenylalanine laboratory results showing that more than 50% of Louisiana

phenylketonuria patients 5 to 19 years of age maintained phenylalanine levels over the recommended treatment range of 700 $\mu\text{mol/L}$.¹

Phenylketonuria is an autosomal recessive disorder characterized by deficient activity of the hepatic enzyme phenylalanine hydroxylase, which converts the essential amino acid phenylalanine to tyrosine.² If a newborn remains untreated within the first few months of life, neurological problems, including mental retardation and seizures, can occur.³ Treatment includes a diet restricted in phenylalanine. As recommended by Koch and Wenz and practiced by most metabolic centers, we encourage patients to maintain the diet for life.⁴ This new standard of continuing the diet for life has major implications for dietary compliance, especially during the school years.⁴ Factors influencing dietary compliance include peer pressure, growing independence from the family, social events, the inconvenience of preparing special meals/snacks, and financial limitations.^{5,6}

Newborns detected through the state-mandated newborn screening program are referred to the Tulane Human Genetics Program for a quantitative determination of phenylalanine/tyrosine levels.^{7,8} Medical and dietary management is provided by a biochemical medical geneticist and a licensed nutritionist at Tulane University. State regional nutritionists coordinate the treatment and management of the patient at the local level with the Tulane Center nutritionist.

Of the 60 phenylketonuria patients currently managed, 28 between the ages of 5 and 19 years were evaluated in this study. Questionnaires were sent to the regional nutritionists to identify problems in dietary compliance. Findings suggested that nutritionists and nurses needed guidance on age-specific counseling topics and clarification on specific actions and responsibilities assigned to each staff position within the care system. These findings and recommendations were reviewed with staff at a workshop and incorporated into a policy memorandum distributed statewide.

Monthly plasma phenylalanine values for each patient were reviewed 1 year before and 1 year after application of the new policies. A highly significant ($P = .005$) improvement was achieved in plasma phenylalanine levels in this group.

This study showed that the management of phenylketonuria can be significantly improved by establishing protocols

for staff at all levels providing dietary management. □

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Research

Bottled Water Use in an Immigrant Community: A Public Health Issue?

In response to the increasing prevalence of dental fluorosis, a change in fluoride supplementation guidelines for children¹ would reduce the recommended fluoride dosage by 0.25 mg/day in several age groups. However, the focus of the guidelines remains on the fluoridation level of the water ingested by the child.

At the same time, awareness of potential problems, such as cryptosporidiosis,^{2,3} with public (and usually fluoridated) water supplies has decreased public confidence in them. Although of unproven safety, bottled water has gained in popularity. However, bottled water varies in fluoride content; 1994 data from manufacturers' self-reports and the Massachusetts and Rhode Island Departments of Public Health show most domestic and

TABLE 1—Fluoride Content of All Bottled Water Sources Licensed for Sale in Rhode Island or Massachusetts in 1994

Fluoride, Parts per Million	Rhode Island (n = 84), %	Massachusetts (n = 76), %
<0.3	79	87
0.3–0.7	14	11
0.71–1.0	6	1
>1.0	1	1

foreign bottled waters licensed for sale to be fluoride deficient, with concentrations ranging up to 1.60 parts per million in Massachusetts and 2.68 parts per million in Rhode Island (Table 1).

A survey at two community health centers in Rhode Island during 10 days in March 1994 showed that, of all 124 patient households responding, 55% used only bottled water for drinking, and 59% of households with children did so. The response rate was admittedly low. The patient population is largely immigrant (42% Hispanic), with only 20% non-Hispanic and non-Portuguese Whites. Most were either on public assistance (60%) or uninsured (20%), yet 52% of children on public assistance and 36% of the uninsured used bottled water. Reasons cited included health and safety concerns (50%) and taste (43%). Only 7 families (11 children) were receiving fluoride supplements.

Because the fluoride content of bottled waters varies and manufacturers can freely change the source of water bottled under a particular label, it is nearly impossible for parents and health care providers to ascertain the fluoride content of the water ingested by a child. This poses a serious obstacle for complying with guidelines on fluoride supplementation. I believe this is a public health issue that should be addressed at the regulatory level. □

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Outercourse as a Safe and Sensible Alternative to Contraceptives

Anke Ehrhardt's editorial, "Our View of Adolescent Sexuality,"¹ in the November 1996 issue of the *Journal*, together with the article in the same issue by Schuster et al.,² carries a very important hidden message for the overpopulated world: that there is a largely unadvertised, cost-free, natural, and effective way for teenage and adult couples to prevent unwanted pregnancy and sexually transmitted disease while making love. It requires no equipment or medication and is evidently harmless. Ehrhardt and others suggest that it may be psychologically better for adolescents than trying, usually unsuccessfully, to suppress sexual activity out of fear of pregnancy or disease. It may even help in developing normal, healthy sexuality.

Schuster et al. report that, in a study of more than 2000 Los Angeles high school students, almost half claimed never to have had vaginal intercourse; surprisingly, about 30% said they were already making love using this natural method. One has to wonder whether, if this natural method were properly publicized and widely taught in school sex education classes (with appropriate emphasis on it being natural and healthy, both physiologically and psychologically), one would see a substantial reduction of both unwanted pregnancies and sexually transmitted diseases. Why has this natural method not been widely promoted? Is it because there is no money to be made from it? Are authorities afraid of promoting it? Perhaps both.

This natural method has been called heterosexual "outercourse." It consists simply of heavy petting with mutual manual masturbation to orgasm of both partners, without penile penetration of the vagina and avoiding getting any semen into the vulva or vagina. (Now that human immunodeficiency virus/acquired immu-

nodeficiency syndrome infection is to be feared, the couple must also avoid getting semen or vaginal fluid into any open cut or sore. Also, of course, anal or oral intercourse is to be avoided.)

The historical censure of masturbation by a few traditional religions probably harks back to the time, many centuries ago, when the world was so underpopulated that it appeared important to urge people to "be fruitful and multiply." Perhaps a different message is appropriate today.

Historically, prevention of unwanted pregnancy was attempted by trying to keep pubescent and adolescent girls away from all contact with pubescent boys and men until marriage. In some cultures, including most Muslim countries, child marriages may still be arranged by the parents, female genital mutilation may still be practiced, and many women still are in purdah.

As the age of menarche has dropped from about 17 years in Northern Europe in the late 19th century to about 12 years today,^{3,4} as education of women has become popular and desirable in coeducational schools and colleges, and as the age of marriage has risen through the 20s and even into the 30s, it has become increasingly difficult to suppress sexual activity for the 10 to 20 years between puberty and marriage. It simply does not work for the vast majority of normal young people.

There is reason to be concerned that psychosexual development may be warped, or worse, as a result of attempts to suppress normal sexual urges during adolescent years. Ehrhardt points out that "the unintended consequences of a narrow focus on fear and disease may lead to increased rates of sexual inadequacies, sexual distortions, and interpersonal problems for an entire generation."

Twenty-five years ago, my presidential address to the American Association of Planned Parenthood Physicians was titled "Non-Procreative Sexuality as an Alternative to Contraception."⁵ This paper recommended "outercourse" as a healthier, simpler, safer, and more natural method, but it fell on the deaf ears of that group of physicians whose chief interest was developing newer and better contraceptives. Our society was evidently not ready, then, to condone it. Perhaps it is now time for us to listen to the "teenagers" and give them encouragement and credit for working out this sensible solution, in spite of the old-fashioned attitudes of many in our society.