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# Current Medical Research

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## Natural Family Planning Diocesan Activity Report SUPPLEMENT

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**"Pre-Natal Exposure to Parents' Smoking and Childhood Cancer,"** M. John, DA Savitz, and DP Sandler. *American Journal of Epidemiology* January 15, 1991, Vol 133:123-132.

A case-controlled study from Denver, Colorado of childhood cancer found a strong correlation between parents' tobacco smoking prior to birth in children age 0-14 years. The most frequently encountered cancers were acute lymphocytic leukemia, lymphoma, and brain tumors. Not only active smoking by the mother, but passive smoking were implicated. Speculative evidence suggests that the father's sperm may have been damaged by smoking.

all of the tar in direct smoking is in the particulate phase. Particulate phase smoke tends to be cleared into the mouth and swallowed while vapor phase constituents absorb into the blood and lymph systems.

A third study by Ann T. Berg in the above journal found that children whose parents smoke are three to four times as likely as other children to develop serious infections requiring hospitalizations. *[It is well known that children who are exposed to smoke in their homes are infinitely more susceptible to respiratory illnesses and asthma than children who are raised in non-smoking environments. These children are also far more subject to common colds. -Ed.]*

have been detected earlier in life thus inflating the prevalence. -Ed.] This study came from the School of Public Health, Boston University School of Medicine, Brookline, Massachusetts.

A second study, **"Vasectomy and Prostate Cancer Risk,"** C Mettlin, N Natarajan, and R. Huben, *American Journal of Epidemiology* 1990, 132: 1056-61, carried out at Roswell Park Memorial Institute, Buffalo, New York, found an overall increased risk of -1.7 for prostate cancer with antecedent vasectomy at any age. If the interval was 13- 18 years between vasectomy and the diagnosis, the relative risk was 2.2. Metlin et al. conclude that the risk increases with age. Further studies are indicated.

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**"Breast Cancer, Cigarette Smoking, and Passive Smoking,"** A.J. Wells, *American Journal of Epidemiology*,

Letters to the Editor, 133:208-210 January 15, 1991, alerts researchers to the increased risk of breast cancer for women who are exposed not only to their husband's cigarette smoke but even to ambient smoke. While not asserting the magnitude of the risks, he alerts researchers to the possibility. He points out that while lung cancer is thought to be due to the particulate elements in cigarette smoke; breast cancer appears to relate more to the vapor phase constituents. Seventy percent (70%) of the tar in environmental tobacco smoke is in the vapor phase while

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**"Vasectomy and the Risk of Prostate Cancer."** Rosenberg, et al. *American Journal of Epidemiology* 1990;132:1051-1055.

Finding an unexpectedly high risk (5.3) for the development of cancer of the prostate in men who had undergone vasectomy caused considerably concern. The magnitude of the relative risk was not related to the interval act of vasectomy. However, the investigators had no information on the level of testosterone or of sexual activity among the patients. Men who were under medical surveillance were more likely to have had asymptomatic cancers detected which may have increased the apparent relative risk *[the cancers may*

A commentary on these studies, (**"Invited Commentary: Vasectomy and Prostate Cancer,"** H. Guess, Editorial, *American Journal of Epidemiology* 1990, 132: 1062-1065), considers them to be within the limits of possible error because they fall within the "confidence limits" of other studies which found no increase in relative risk.

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**"Tubal embryo successfully transferred in utero,"** *American Journal of Epidemiology*, Letters to the Editor, 163:2026-2027, December 1990.

Landrum Shettles, whose research in sex selection and *in vitro* fertilization is well known, reports that he operated on a woman who had a tubal ectopic pregnancy of 40 days. The pregnancy

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was viable, the chorion still covered the entire embryonic mass. He was able to remove the entire embryonic sac intact and transfer it into the uterine cavity through a plastic tubing. The pregnancy continued and a normal infant was delivered at term. This occurred in 1980 in Vermont. Two additional cases have now been reported which are cited by Dr. Shettles. In the rare cases when a tubal pregnancy has not ruptured and is found early enough so that the chorionic villi completely surround the embryonic sac, transfer into the uterus is possible. [Since the trend toward medical treatment of ectopic pregnancy has been initiated (see DDP Report, Fall 1990) treatment may need to be fine-tuned so that it will only be applied to ectopic pregnancies whose embryos are already dead. -Ed.]

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**"Evaluation of Endocrine Parameters in Clinical Trials with B-hCG Vaccine,"** S Shahani, KL Patel, and P Merchant. *Contraception* 43:67-75 January 1991.

Two hospitals in Bombay, India have experimented with a vaccine against human chorionic gonadotropin, the hormone produced by the membrane surrounding the embryo which later forms part of the placenta. Eighteen (18) immunized women were examined for changes in thyroid stimulating hormone (TSH) prolactin (PRL), ACTH, progesterone, cortisol, and T3 and T4 (thyroid hormones). The urinary estrogen, progesterone, LH and FSH levels were also measured in six women as well as in controls. None of the vaccine formulations changed the pituitary peptide or steroid hormone levels. The vaccine did not interfere with ovulation, confirming that the vaccine would only act to prevent development of the pregnancy, an early abortifacient. This study is part of a multicentric phase-I clinical trial of the anti-chorionic vaccine in India.

Opiate addiction in adult offspring through possible imprinting after obstetric treatment, B Jacobson, K Nyberg,

L Groenbladh, G Eklung, M Bygeman, U Rydberg. *British Medical Journal* 1990;301:1067-70, 10 Nov.

To test the hypothesis that opiate addiction in adults may be related to imprinting during labor if the mother received certain drugs, the labor records of 139 opiate addicts born in Stockholm during 1945-66 were reviewed and compared with 230 records of their (non-addicted) siblings. If the mothers of addicts had received nitrous oxide for longer duration, or more frequent doses of barbiturates or opiates within 10 hours of birth, the relative risk of addiction was 4.7 for 3 doses of barbiturates or opiates, or nitrous oxide, compared to none for the non-addicted sibling. The results suggest that analgesics which cross the placenta may imprint the baby. Therefore methods of obstetric pain relief such as regional anesthesia (epidural) or prepared childbirth, are preferable.

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**"Six School-Based Clinics: Their Reproductive Health Services and Impact on Sexual Behavior,"** D Kirby, C Waszak, and J Ziegler. *Family Planning Perspectives* 1991 23:6-16 January/February.

Six school-based clinics were studied. The authors were present or former members of the Center for Population Options, (the agency which heavily promotes the development of school-based clinics.) Clinics were in Gary, Indiana; San Francisco, California; Muskegan, Michigan; Jackson, Mississippi; Quincy, Illinois; and Dallas, Texas. All clinics were on school grounds and served low-income populations with a large proportion of minority students. Clinics varied somewhat in their emphasis on either pregnancy-prevention or AIDS prevention. All clinics offered other health services as well. The proportion of already sexually experienced students was similar at the study and control schools, but certain differences emerged in sub-groups: in San Francisco, the significantly higher number of

females initiated sex after the school clinic opened than before. Overall, the frequency of sex did not change pre- and post-clinic. While demand for contraceptive supplies increased in certain clinic populations, contraceptive use did not change. The increase in utilization was due to "provider substitution." Students were getting their supplies in school, rather than going to the health clinic. Pregnancy rates were not lower in any of the clinic sites. In Dallas, the proportion of females who had ever been pregnant was higher at the clinic school than at the comparison school. In San Francisco, condom but not pill use increased significantly over time, co-terminus with a strong AIDS education and peer education program which encouraged it. The authors recommended continuation of the program, but wanted to make it available to much younger students, since the majority of students became sexually experienced before high school.

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**"Tailoring Family Planning Services to the Special Needs of Adolescents,"** L Winter and LC Breckenmaker. *Family Planning Perspectives* 1991 23:24-30 January/February.

A separate clinic program tailored to under-18 females was developed to serve their special needs. The program divided the initial clinic visit into two appointments two weeks apart, the first visit provided only education and counseling while examination and prescription were reserved for the second visit. Twelve hundred sixty-one (1,261) study subjects were matched with control subjects from the regular clinic population and tested for retention of knowledge from the education session, patient satisfaction, continued use of contraceptives, and pregnancy. The experimental group scored slightly better on their knowledge post-tests. Patient satisfaction was similar for both groups. The experimental group only retained 73% of their original sample of 1,010. Evidently, over 200 were lost to begin with. Those who persevered were more likely

han the control group to have used their original method and were also more likely to have continued to use any family planning method for one year. The authors report the 45 known pregnancies in the study group 5.4%, but also state that this would comprise 4.5% of the original sample. [Since one-fourth of the original sample was lost and could not be accounted for, it would be more valid to presume that their reason for non-return might have been pregnancy, which would compute to a pregnancy rate of 7.2%. The teen pregnancy rate in the US population is 8.8%, suggesting that the additional treatment afforded the sexually experienced car-seekers in the clinic may have been only marginally effective. - Ed.]

**"Antibiotics: Potential hazards to male fertility PN Schlegel,"** TSK Chang, and FF Marshall. *Fertility and Sterility* 55:235-242 February 1991. The adverse effects of antibiotics on sperm production or function are well known in the animal kingdom. In man, a few agents have been implicated, including nitrofurans, macrolides, aminoglycosides, tetracyclines, and sulfa drugs. Nitrofurans caused arrest of the development of the sperm and also decreased sperm counts. These drugs are frequently used for urinary tract infection. Similar effects have been found with the macrolides, which include erythromycin and chloromycetin. Aminoglycosides which are used in humans, include gentamicin and neomycin, while tetracycline and chlortetracycline have been found to have similar effects in humans as in animals, as have sulfa drugs. Penicillins affect sperm production adversely in rats and chickens, but apparently not in humans. Prolonged use of the complicated antibiotics by the male partner of an infertile couple must be evaluated.

**"Condom Use and Breakage Among Women in a Municipal Hospital Family Planning Clinic,"** AE Albert, RA Hatcher, and W Graves. *Contraception* 43:167-176 February 1991.

Condom breakage was investigated by a questionnaire administered to women attending a Municipal Hospital Family Planning Clinic (Grady Memorial Hospital, Emory University School of Medicine, Atlanta, Georgia). More than one-third of the respondents had experienced at least one condom breakage. Breakage occurred in 1 of 100 acts of intercourse with a lifetime breakage rate of 10 per 1000 and a past year breakage rate of 8 per 1000 uses. There was no age difference, 5% of the women's unplanned pregnancies were attributed to broken condoms. Factors associated with most recent breakage experience included vaginal intercourse, minimal foreplay, and breakage prior to ejaculation.

**"A Study of the Relationship between Tensile Testing of Condoms and Breakage in Use,"** J Gerofi, G Shelley, and B Donovan. *Contraception* 43:177-185 February 1991.

International standards prescribed three criteria for condom testing: 1) Freedom from holes (fewer than .4% holes are necessary to pass the test); 2) An inflation test which determines that no more than a specified proportion of condoms burst below a certain volume (burst pressure when inflated with air). This has been advocated because it tests the entire condom rather than a small piece which is stretched in tensile testing. It is sensitive both to localized flaws and to the more generalized stretchable properties. Deteriorating performance has been shown to correlate with ultra-violet deterioration of the condom and aging as well as breakage in use, and 3) Tensile (stretch) testing of condoms, adopted as a test in many

countries to measure the strength of the rubber film. A sample of the condom is cut and stretched until it breaks. The present study looks at relations between stretching properties and condom failure of condoms which had broken during anal intercourse. There was no difference in tensile properties between those condoms which had broken and those which had not. (The authors do not believe that tensile testing is sufficient to ensure strong products.)

**"The Efficacy and Acceptability of a Low-Dose Levonorgestrel Intravaginal Ring for Contraception in a UK Cohort,"** MG Elder, JP Lawson, M Elstein, and ID Nuttall. *Contraception* 43:129-137 February 1991.

Intravaginal rings made of silicone rubber contained a core into which levonorgestrol had been loaded for sustained release. The ring was inserted on day 5 of a menstrual cycle; rings were changed at the end of every third month. Gynecologic exams, breast exams were performed every three months. Of the 150 women recruited, 59 discontinued the use of the ring before the end of the year, a rate of 39.9%. The pregnancy rate was 3 (Life Table). Menstrual disturbance, vaginal problems, and involuntary expulsions also contributed to the discontinuation rate. Nevertheless, the authors conclude that the method is acceptable and effective as a method of contraception. One of the pregnancies was ectopic, a rate similar to the range seen with copper IUDs and progesterone-only oral contraceptives. [The authors do not distinguish between contraceptive and interoceptive action of these agents. -Ed]

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## Of Interest:

The comparative study of the Billings Method, the Modified Mucus Method, and the traditional method which was discussed in the Summer 1990 *Science Notes* has now been published: **"Efficacy of Three Variations of Period Abstinence for Family Planning in Indonesia."** S Thapa, MV Wonga, PG Lampe, H Pietojo, and A Soejoenes. *Studies in Family Planning* 21:327-334, November/December 1990.

Published paper reiterates the one-year lifetable unplanned pregnancy rates of 2.5 per 100 women for the Billings Method, 10.5 for the Modified Mucus Method and 11.5 for the traditional method. Overall discontinuations were: Billings Method - 10.4; Modified Mucus Method - 18.8; and local method - 26.5.

Current Medical Research, a supplement of the NFP Diocesan Activity Report, is published quarterly. Dr. Hanna Klaus, M.D. is the editor. This supplement's purpose is to serve the Roman Catholic diocesan NFP programs of the United States through providing them with up-to-date information on research within the field of fertility, family planning, and related issues. The Diocesan NFP teacher should be equipped to understand the various methods of contraception and be able to explain their incompatibility with the practice of the natural methods of family planning.

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