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## The Pill gets passing grade

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A ten-year study of more than 16,000 women has failed to find a relationship between oral contraceptive use and circulatory, respiratory or reproductive problems — at least among the young, white, middle class women in the study.

"However, oral contraceptive users in this population tend to have certain personal habits which put them at greater risk of developing possibly serious types of diseases," says research director Savitri Ramcharan of the Kaiser-Permanente Medical Center in Walnut Creek, Calif. Among these habits: intercourse at a young age and multiple sex partners, which have been linked with cervical cancer; significantly higher exposure to sunlight, which is correlated with the increased incidence of malignant melanoma among Pill users in the study; and smoking, which increases the risk of circulatory disease. The researchers also found a lower incidence of nonmalignant cystic breast disease among Pill users.

Ramcharan warns that evaluation of the long-term effects of contraceptives is still in the future: "With respect to certain conditions, such as major cancers and ischemic heart disease, the length of the period is to be counted in decades."

Meanwhile, young women are apparently worried about the Pill. A survey of 2,600 teenagers in metropolitan areas by Johns Hopkins University researchers shows that Pill use dropped from 33 percent in 1976 to 19 percent in 1979. In the same time, the percentage of unmarried teenagers who had sexual intercourse before age 19 jumped from 60 to 70 percent. □

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## Sons and mothers: Infertility and DES

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It's not just daughters of women who took diethylstilbestrol to prevent miscarriage who have cause for concern, according to researchers at the University of Washington in Seattle. Using a new fertility test, the scientists checked 17 DES sons who have not tried to have children and found 14 with infertile sperm, Morton Stenchever told a meeting of the Pacific Coast Obstetrical and Gynecological Society earlier this month.

Rather than using the number, shape and movement of sperm to determine fertility, the researchers used a "sperm penetration assay," a test in which hamster eggs stripped of their outer shell are exposed to semen samples. Sperm are scored on their ability to penetrate the hamster egg. The usual test, notes researcher Lawrence Karp, is not always accurate — some men whose sperm is judged to be normal prove to be incapable

of fathering children.

All the men tested had normal sperm counts, but samples from 14 of the 17 volunteers failed the sperm penetration assay. "It's a small number," says Karp. "We'd want to look at a lot more men before we'd be willing to say there is something there. But it looks very suspicious."

The researchers found some anatomic abnormalities as well, but they found no evidence to indicate that these men are at greater risk of developing cancer.

The discovery that DES daughters are at greater risk for abnormal vaginal tissue growth, which may predispose them to cancer, prompted mass screening and close observation of those women. Until now, the only problems identified in sons had been an excess of abnormalities of the genital tract and possibly the urinary tract (SN: 10/14/78, p. 261). Problems in women showed up early because the abnormal tissue growth is generally rare, but may have gone unnoticed in males because male infertility is much more common, notes Karp. Another reason for the delayed recognition — DES sons are just now reaching an age where they would be likely to want children.

In a related incident, the Supreme Court ruled last week in favor of DES daughters by refusing to hear an appeal by drug manufacturers against a California Supreme Court ruling that divides liability for DES-related claims among DES manufacturers according to their market share. □

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## New fertility technique

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Two scientists from the National Institute of Child Health and Human Development have devised a procedure they hope will provide an alternative to test tube fertilization. The procedure, low tubal ovum transfer, has so far proved successful in five of 55 monkeys whose fallopian tubes were surgically blocked.

Both *in vitro* fertilization and the new procedure are used to bypass blocked fallopian tubes, the most common cause of infertility in women. In test tube fertilization, which has a very low success rate, an egg or eggs are removed from the mother, mixed with sperm and inserted into the mother's uterus after a few days' growth of the embryo outside the body. In low ovum tubal transfer, an egg is removed from the mother right before ovulation and reinserted past the block in the fallopian tube to permit normal fertilization.

Gary D. Hodgen and Olivier Kreitmann, the scientists who developed the procedure, caution that they are a couple of years away from human trials. Among their concerns: a possible increased incidence of tubal pregnancies, removal of the egg at the right time and problems resulting from the removal of cells that develop into the corpus luteum, which secretes hormones needed for pregnancy. □

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## Problems of a nutty diet

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If Ronald Reagan isn't giving President Jimmy Carter enough of a bellyache this month, a report in the Oct. 16 NEW ENGLAND JOURNAL OF MEDICINE by Allen S. Levine and Stephen E. Silvis of the Veterans Administration Medical Center in Minneapolis might. They have found that peanuts (a mainstay of the Carter family in Georgia) are poorly digested by the gut and that this leads to malabsorption of fat and loss of energy. This finding, in fact, suggests that other nutrients in peanuts, such as protein, are not well absorbed.

Levine and Silvis assigned five healthy subjects to a vegetarian diet that contained 80 grams of fat, with 76 of those grams coming from whole peanuts. The subjects were observed for six days, and bowel movement samples were collected on days four through six for fat analysis. The subjects were found to excrete large amounts of dietary fat in their stools (up to one-third in one case), indicating that their gastrointestinal tracts were not absorbing much fat from the peanuts.

If Carter has to return to farming peanuts after the Nov. 4 presidential election, though, all isn't lost for him. The same study also monitored eight subjects whose dietary fat consisted mostly of peanut butter and four whose dietary fat consisted mostly of peanut oil. Stool analysis indicated a high degree of fat absorption from these foods, particularly the peanut oil. Because simple grinding (to make peanut butter) resulted in better fat absorption, the researchers say there may be some truth in Upton Sinclair's assertion that "Nature will castigate those who don't masticate." □

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## Draize test may be made more humane

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Remember shampoo commercials hawking "no more tears"? Most data on whether or not a product is an eye irritant have emerged from Draize testing. Named for the Food and Drug Administration researcher who developed it during World War II, the test involves dropping a substance directly onto the cornea of an albino rabbit. Reactions — such as blistering, lesions or other tissue damage — are scored by comparing the tested eye against the rabbit's other, unexposed eye. Many rabbits undergo intense pain in order to validate suspicions that bleaches and other goods shouldn't make eye contact.

A coalition spearheaded by the Humane Society of the United States, however, has for some time canvassed members — now representing more than 400 organizations and 3.5 million individuals — to pressure

industrial and government animal-testing laboratories for more humane alternatives to the Draize test. Signs are now emerging in Washington that the coalition has been successful in catalyzing changes in federal policy—at least within the Environmental Protection Agency—for determining when and how to apply the test.

"It's a fairly inhumane test," admits EPA's Jim Roloff. Technicians hate to do it, he says, because "if you get a very corrosive chemical, it's really cruel."

Roloff says that pending results of a Consumer Product Safety Commission (CPSC) study, his agency may recommend anesthetizing rabbits during tests; it is hoped results of this study, expected to be released next month, will afford policymakers a feel for the degree to which anesthesia might invalidate test results. EPA is also considering limiting the need for eye tests. For instance, Roloff says, it is hardly necessary to test for eye irritancy once skin tests establish a substance as highly caustic; in these cases eye irritancy can be presumed.

Since August, EPA has banned in-house Draize testing. And except to support litigation, CPSC is still observing a ban it enacted in April. FDA also awaits CPSC results for its policy implications. □

## Hyperactivity diet panned

The controversial Feingold diet, said to eliminate hyperactivity in children, last week received a failing grade from the Nutrition Foundation, an organization financed by 50 food or food-related companies. But the value of the diet is still undetermined.

In 1974, pediatric allergist Benjamin Feingold published *Why Your Child is Hyperactive*, an account of an additive-, coloring- and salicylate-free diet that he said was at least 40 percent successful in treating hyperactive children. The Nutrition Foundation reacted by commissioning a study to review the evidence connecting hyperactivity with food.

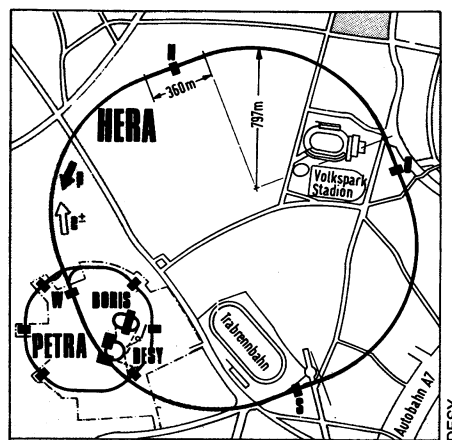
The panel, which reviewed independent and Foundation-sponsored studies, reports that "the studies already completed provide sufficient evidence to refute the claim that artificial food coloring, artificial flavoring and salicylates produce hyperactivity and/or learning disability." Since the diet is not harmful, they see no reason to discourage families interested in pursuing it, but the success of the diet is related to the placebo effect, they say.

The report drew immediate reaction. Feingold says that children generally ingest more food dye than was administered in the double-blind trials; the Center for Science in the Public Interest says the studies on which the panel reported were inconclusive. And Sanford Miller, director of the Bureau of Foods and Drug Administration, says that there is still not enough evidence to reach a conclusion. □

## HERA in Hamburg: A goddess of physics

The future of particle physics in Europe appears to be based on two projected pieces of experimental apparatus, the Large Electron-Positron colliding beam facility (LEP) (SN: 1/20/79, p. 42) and now HERA, a machine for colliding beams of accelerated protons with beams of either electrons or positrons. These two choices have been recommended by the European Committee on Future Accelerators (ECFA), which represents physicists from most of the non-socialist countries. So confident are the physicists that their governments will accept ECFA's recommendations that they are meeting Oct. 24 and 25 in Munich to discuss what experiments they will want to do with HERA.

HERA is projected for the Deutsches Elektronen-Synchrotron laboratory (DESY) at Hamburg. According to the current plans, protons will be brought to a maximum energy of 820 billion electron-volts (greater than in any existing proton accelerator) before they are penetrated by an electron or positron coming in the opposite direction. It is hoped thereby to achieve extremely deep penetration and study the nature and doings of the quarks and the force that holds the quarks together in the proton's very small volume. A report in the DESY JOURNAL even expresses a hope of disintegrating the quarks



HERA's planned tunnel is 6.4 km around.

contained in the proton (*die im Proton vorhandenen Quarks zu zertrümmern*).

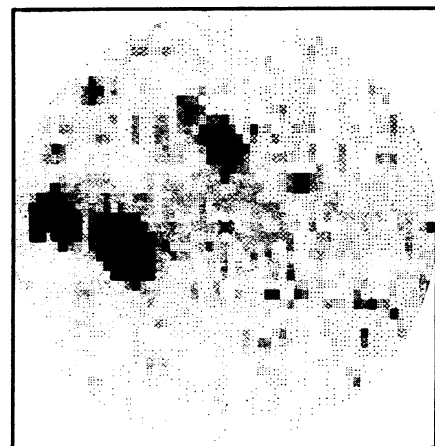
HERA's storage rings are projected to lie in a squared-off circle, 6.4 kilometers around. The site plan locates the circle adjacent to DESY's present site in the suburbs of Hamburg. The HERA rings would enclose both a sports stadium and a trotting racetrack with space left over. Some U.S. physicists express the opinion that HERA may never be built for the same political and budgetary reasons that have put American accelerator building plans into a kind of Sargasso Sea, but it is the response of the European governments that will tell. DESY's past speed record for building these things has abraded the nerves of not a few Americans. □

## LGS-3: A far out satellite galaxy

Sometimes you can't see the trees for the forest. This is especially true if the forest is a sky full of bright attention-getting objects, and the tree is a dwarf galaxy intrinsically no brighter than a single supergiant star and apparently only one percent brighter than the background glow of an ideal night sky. Such a one is LGS-3, which may be the most distant member of the local subgroup of galaxies, the satellites of the Milky Way.

LGS-3 was discovered in 1978 by astronomers working at Palomar Mountain. It is so faint that it could not be studied intensively by photographic methods. Astronomers of the Smithsonian Astrophysical Observatory decided to try the relatively new charge-coupled devices (CCD's), electro-optic sensors that generate digital information in response to light falling on them and put the information into a computer's memory. The CCD camera was put on the 61-inch reflecting telescope on Mt. Hopkins in Arizona.

This technique obtained data that could be analyzed to learn some details about LGS-3. The analysis was done by Rudy Schild of the Smithsonian. He found that LGS-3 contains a large population of red stars that seem to have a luminosity characteristic of the red giant stars found



X marks LGS-3 on CCD camera printout.

in globular clusters near our galaxy. On this assumption Schild can calculate the distance of these stars to be 720,000 light-years. This distance raises the question whether LGS-3 is gravitationally bound to our Milky Way or to the nearest other subgroup, M33. The distance and the apparent luminosity of the whole galaxy gives an intrinsic luminosity no larger than a single supergiant star. Nevertheless, it takes about 300,000 dim old red giants to produce that brightness. □