

AGROMEDICINE PROGRAM UPDATE

The Newsletter of the Clemson University / MUSC Agromedicine Program

MUSC DEPARTMENT OF FAMILY MEDICINE – DIVISION OF PUBLIC HEALTH AND PUBLIC SERVICE
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Program Notes

➤ NAAC Meeting Final Reminder

The 14th Annual Meeting of the North American Agromedicine Consortium will be held November 4 - 6, 2001 in Charleston, S.C. Telephone JoAnn Stukes at 843-792-2281 for further information.

➤ Clemson Faculty

On October 10, Drs. Merle Shepard and James Rushing, Coastal Research and Education Center, made a joint presentation to the MUSC first year medical students enrolled in the agromedicine selective. Dr. Shepard spoke on integrated pest management and pesticide misuse in de-

veloping countries while Dr. Rushing addressed food quality issues. The lectures were well received by the students and provided excellent examples of the benefits of teamwork between agricultural and medical science.

The previous week, Ms. Shani Gouridine, a Clemson University graduate student in entomology, lectured on insects and medicine.

Growing Up on Farms Reduces Asthma, Hay Fever, and Atopy

There have been a series of articles in the medical literature reporting that early life farm exposures protect children against allergic sensitization and from developing allergic diseases (see the July

2001 issue of the APU). Exposure to endotoxin in dust and to other microbial compounds is thought to be protective. These factors regulate processes in the immune system including the production of cells that counteract allergic sensitization. A new study¹ was undertaken to determine if the timing of exposure to farm environments affects the protective nature of the exposures.

A cross-sectional survey of farms in Austria, Germany, and Switzerland identified 3,504 farm children in grades 1 - 6. Their parents were asked to complete questionnaires on respiratory and allergic diseases and on environmental factors on their farms. 2,618 questionnaires were completed.



The Volume 7, Number 3 - 2001 issue of the *Journal of Agromedicine* was published last week. Editorials include pesticides for human health and field studies in agromedicine. Articles include agricultural emergency response training, delivering health messages to part-time farmers, IPM and reduction in pesticide usage, treatment of occupational low back pain, and physicians' perceptions regarding farmers' health.

Parents gave permission for 1,406 children to be measured for specific serum IgE antibodies. 901 non-farm children were randomly selected from the same region as controls. Study results include:

- Exposure (to stables and consumption of farm milk) of children younger than 1 year, when compared to those age 1 -5 years, was associated with lower frequencies of asthma, hay fever, and atopic sensitization.
- Exposure of the children to stables until age 5 was associated with the lowest frequencies of asthma, hay fever, and atopic sensitization.
- Farm children had significantly lower asthma and hay fever symptoms than non-farm children.

"Long-term and early-life exposure to stable and farm milk induces a strong protective effect against development of asthma, hay fever, and atopic sensitization."

¹Riedler J et al. *Exposure to farming in early life and development of asthma and allergy: a cross-sectional survey. Lancet 2001; 358: 1129-1133.*

Biologic Superiority of the Female Confirmed? by Dr. Stanley Schuman

Early last summer *Lancet* published an editorial on the decline of cancer and cancer deaths in the U.S. "For all cancers in the USA - lung, breast, colo-

rectal, and prostate - incidence has decreased by 1.1% per year from 1992 to 1998, and for cancer deaths by 1.4% per year from 1994 to 1998."

Dr. P.H. Jongbloet, in a letter¹ to the editor of *Lancet*, commented on the editorial. He suggested that screening, early detection and treatment alone do not explain the fall in the incidence of new cancer cases. Could the gradual decline in the male/female ratio of births in the U.S. and in European developed countries along with a gradual decline in reproductive damage (intrauterine mortality, stillbirths, infant mortality, and congenital anomalies) contribute to the decline in the incidence of new cancer cases?

Dr. Jongbloet reports long-term birth records provide evidence that the decline in reproductive damage preceded the introduction of hormonal drugs, the widespread use of pesticides, and medical advances in prenatal screening, cancer detection, and treatment. He cites improved nutrition, women's health, education and improved socioeconomic conditions as key factors in the decline in sex-ratio and in reproductive and neoplastic disorders. Years of reproductive studies in humans and animals prove that nutrition and stress affect embryos.² Simply put, he ar-

gues that healthier pregnancies have long term benefits on cancer rates in developed countries.

A challenging theory, but welcome news to balance the concerns of environmental doomsday fears. Perhaps the credit belongs to "Mother, not Father, Nature?"

¹Jongbloet PH. *Incidence of cancer. Lancet 2001; 358:1098.*

²Jongbloet PH et al. *Secular trends in male-female ratio at birth in postwar industrialized countries. Env Health Perspective 2001; 109:749-752.*

Rural Life Promotes Mental Health by Dr. Stanley Schuman

A random sample¹ of 7,076 people aged 16 to 64 years were interviewed for signs of psychotic disorder. 1.5% positive "cases" for the standardized DSM III-R diagnosis of psychotic disorders were identified. Psychosis-like "symptoms" were more prevalent in this study at 4.2% (delusions, hallucinations). "Level of urbanicity" was clearly associated with excess risk of severe symptoms, with odds ratio of 1.46; 95% C.I. of 1.25-1.72. The authors conclude that urban living predisposes to the development of "abnormal mental status" which is evidently less prevalent among rural residents.

¹van Os J et al. *Prevalence of psychotic disorder and community level of psychotic symptoms: an urban-rural component. Arch Gen Psych 2001; 56:663-668.*