

**13** SUSCEPTIBILITY OF URBAN ADOLESCENT OBSTETRICAL POPULATION TO RUBELLA. Sherahe B. Fitzpatrick, Felix P. Heald. Univ of MD Sch of Med, Dept of Ped, Balto, MD.

Recent surveys, following the introduction of the USA rubella immunization program in 1969, have noted that 66-70% of the rubella cases are occurring in individuals 15 yrs. or older. Current estimates are that 20-30% of 10-19 yr. old females are without rubella antibody. A retrospective study was undertaken to document rubella susceptibility in an urban, low-income adolescent obstetrical population ranging in age from 12-16 yrs. Records were reviewed for all 177 patients (97% black) attending the Adol. OB Clinic from 9/73 to 10/80. Forty-six incomplete charts were excluded. Chart assessment included documentation of age; race; gestational age at first visit; rubella immunization history (as determined by prior health records, immunization cards and/or maternal history of immunizations); and rubella titers. Rubella Hemagglutination Inhibition (HI) titers were determined on a two-fold dilution method by the Univ. Serology lab; an HI antibody test of less than 1:10 or non-reactive was considered indicative of susceptibility to rubella.

Of the OB adolescent population, urban and predominantly black, 28% (34/131) were serologically susceptible to rubella. It is unclear whether the critical factor in susceptibility was the duration of vaccine-induced immunity or primary vaccine failure. To increase the level of protection in this high risk group, recommendations include: routine booster immunization with family planning for non-pregnant, seronegative adolescents and/or postpartum vaccination in seronegative teenagers.

**14** EPILEPTIC ADOLESCENTS' DEVELOPING INDEPENDENCE: INFLUENCE ON ATTITUDES TOWARD THEIR PHYSICIANS.

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A teenager's attitudes towards his or her physician are likely to have major impact on the course of treatment and outcome in chronic disease. It has been postulated that some of these attitudes are derived from experiences with significant figures such as parents. This study was designed to test the hypothesis that teenagers' contentment with their developing independence from parents leads to positive attitudes toward their attending physicians. A longitudinal model was constructed to allow this relationship to be tested by multiple regression techniques. Satisfaction with personal freedom (SPF) granted by parents and positive or negative attitudes toward the physician (ATP) were assessed at 6-month intervals by standardized scales in a cohort of 49 epileptic patients aged 9 to 18 years. As hypothesized in the model (1) higher initial SPF was related to positive ATP 6 months later (standardized partial regression coefficient = 0.30, p<0.01) and (2) initial ATP was not associated with SPF 6 months later. These relationships persisted after adjusting for the influence of a potential confounding factor, socioeconomic status. These results indicate that contentment with independence granted by parents affects the attitudes teenagers hold toward their physicians. Counseling parents to attempt to decrease conflicts over emerging independence may have positive effects on the patient-physician relationship and on compliance and outcome in chronic disease.

**15** HEMATOLOGIC ABNORMALITIES IN ADOLESCENTS ON BIRTH CONTROL PILLS.

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Because birth control pills are known to cause alterations in folate metabolism in adult women, this study's purpose was to determine if adolescents on birth control pills are at risk of developing anemia secondary to abnormal folate metabolism. 90 adolescents taking Brevicon or Norinyl 1/50 for longer than 6 months were compared to 90 non-pill users. Intake of folate was evaluated by a dietary history questionnaire. 14% of pill users and 8% of controls had low serum folates (< 3.0 ng/ml) (p>0.1). Low whole blood folates (< 150 ng/ml) were seen in 32% of pill users, but in only 18% of controls. (p<0.1). However, controls were more likely to have low ferritins (< 10 ng/ml) than pill users (21% v 11%; p<0.1), perhaps because of diminished menstrual flow on the pill. Of the low ferritin patients two-thirds had neither low hemoglobin (< 12 g/dl) nor low MCV (< 80 um<sup>3</sup>). No low cobalamins and no significant difference was noted in the Hgb, MCV, or polylobe count in either group. This study indicates that serum folate levels, whole blood folate levels and ferritins are frequently low in adolescents and are often not reflected by CBC's. Although pill use appears to increase slightly the risk of developing cellular folate deficiency, the pill appears to be protective against iron deficiency and is not associated with anemia.

**16** CHILD REARING ATTITUDES, OBSERVED BEHAVIOR, AND PERCEPTION OF INFANT TEMPERAMENT IN ADOLESCENT VERSUS OLDER MOTHERS. John W. Greene, Howard M. Sandler, Wm. A. Altemeier, III, & Susan M. O'Connor. Dept. of Peds., Vanderbilt University, Nashville, Tennessee.

Adolescent motherhood is now common but little is known about its consequences. To study this, 139 primiparous women divided by age (< 15 yrs.; 16 - 17 yrs.; 18 - 19 yrs.; > 20 yrs.) were compared for: adaptivity of prenatal childrearing attitudes using Cohler's Maternal Attitude Scale; postnatal behavior with their infants by direct observation; perception of their infants' temperaments using Carey's Survey of Infant Characteristics. Older mothers had more adaptive attitudes on each of the five Cohler subscales. Significant differences were found in subscales for maternal attitude toward encouragement versus discouragement of reciprocity (p = .001), appropriate versus inappropriate closeness (p = .01), and acceptance versus denial of emotional complexity in child-care (p = .05). Postnatally, the amount of time mothers looked at and spoke to their children during interaction was measured at 1, 3, 6, 12 & 18 months; older mothers vocalized to their infants more at 3 (p = .02) and 6 months (p = .04). Carey's scale given at 1, 3, & 6 months revealed that older mothers viewed their children as having easier temperaments at 6 months (p = .04). These findings emphasize the need for educational and supportive services for adolescent mothers.

**17** ORAL CONTRACEPTIVES IN ADOLESCENTS: LONGITUDINAL EVALUATION OF SERUM LIPIDS AND BLOOD PRESSURE. John W. Greene and Michael Artman (Sponsored by Robert C. Boerth), Dept. of Peds, Division of Adolescent Medicine, Vanderbilt University Hospital, Nashville, Tennessee.

Oral contraceptive (OC) use has been associated with multiple metabolic effects in adult women. Similar data for adolescents are incomplete, however, even though OC use is increasing among teenagers. We examined serum cholesterol (CH, mg/dl), serum triglyceride (TG, mg/dl), and blood pressure (BP) in 131 adolescents, ages 12 to 22 yrs. (mean 17.8). Initial studies were done before beginning OC's with follow-up evaluations after 6-30 months (mean 13.5) of OC use. Mean results before (BOC) and during (DOC) OC use are tabulated below.

	(n)	CH		TG		BP Syst.		BP Diast.	
		BOC	DOC	BOC	DOC	BOC	DOC	BOC	DOC
All pts.	(131)	168	176*	93	102	113	115	66	71**
Black	(74)	172	178	87	92	112	114	66	70**
White	(50)	161	176*	96	112	114	117	68	72**

\* Significant at p<0.05 \*\* Significant at p<0.01  
During OC use, CH increased significantly in whites, and diastolic BP increased in all groups. Systolic BP increased significantly (p<0.01) only in pts. using OC's for greater than 20 months. No significant changes in TG were found. Age, weight, smoking, OC strength, and family history were unrelated to the observed changes. The increases in CH and BP found in this study are small but statistically significant. The long term effect of these changes on the subsequent health of adolescents on OC's must be determined.

**18** HASHIMOTO'S THYROIDITIS IN PUBERTAL GIRLS: SUBNORMAL GONADOTROPIN SECRETION. Carol A. Huseman, Jane A. Kugler, Shashi P. Singh (Spon. by Carol R. Angie) Univ of Nebraska College of Medicine, Dept. of Ped., Omaha, Nebraska.

Elevated basal gonadotropins in primary hypothyroidism (pHT) and restoration to normal values by L-thyroxine replacement have been reported by us and others in prepubertal girls. We now report GnRH responses in 4 of these girls after 1 y L-thyroxine 0.1 mg/d given orally (Rx). All are euthyroid, pubertal stage P<sub>2</sub> and  $\bar{x}$  Bone Age (BA)=10.3±0.7 y. Mean basal and area under curve LH and FSH responses ( $\bar{x}$ ±SE) to GnRH 2.5 ug/kg IV bolus were compared with responses of 7 normal prepubertal P<sub>1</sub> girls  $\bar{x}$  BA=6.5±1:

Patients	LH		FSH		Estradiol		Prolactin	
	Basal	120' Area	Basal	120' Area	Basal	Basal	Basal	Basal
PreRx $\bar{x}$ BA	mIU/ml	mIU-min	mIU/ml	mIU-min	pg/ml	pg/ml	ng/ml	ng/ml
8.3±1 (n=5)	11±2.0	2399±325	4.8±1.0	1593±456	11±0.7	11±0.7	12.3±4.0	12.3±4.0
6 wks (n=5)	3±0.8	1463±319	4.7±1.0	1550±350	16±0.1	16±0.1	3.6±0.4	3.6±0.4
1 y (n=4)	1.8±0.2	1599±650	1.7±0.4	712±209	32±0.5	32±0.5	11.0±0.8	11.0±0.8

NI (n=7) 3.3±0.2 1630±330 3.1±0.3 2642±474 11±0.1 11±0.1 4.0±1.0  
FSH responses to GnRH were pubertal but the expected increase in basal and GnRH induced LH secretion did not occur. Thyroxine Rx 1) restored estradiol secretion to pubertal values in absence of pubertal LH secretion, and 2) increased the LH disappearance rate post GnRH infusion. Possibly thyroxine alters the metabolic clearance rate of either or both gonadotropins or estradiol. Clear elucidation of these interesting observations of abnormal mechanisms of pubertal development warrant further study.