Current Research on Multiple Births

SEMIANNUAL BIBLIOGRAPHY – 1985

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Subject Sections *

Title, authors, and journal source, alphabetized by journal:

- Behavior and Physiology
- Genetic Traits and Methods
- Obstetrics and Pediatrics
- General

Author Section

Authors, titles, journal source, and abstract (if available), alphabetized and cross-indexed by all authors.

(*) The first three subject sections include other topics related to these headings. Classification is performed automatically on the basis of keywords. Some articles appear only in the General section for lack of appropriate keywords. Some articles may appear in two or three of the specific subject sections.

https://doi.org/10.1017/S0001566000006346 Published online by Cambridge University Press

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AUTHOR SECTION

A

Adams TD, Yanowitz FG, Fisher AG, Ridges JD, Nelson AG, Hagan AD, Williams RR, Hunt SC: Heritability of cardiac size: an echocardiographic and electrocardiographic study of monozygotic and dizygotic twins. Circulation 1985 Jan;71(1):39–44
Because of the uncertainty as to the extent to which cardiac size is determined by exercise training vs genetic endowment, this study investigated familial (genetic plus common family environment) vs nonfamilial influences on cardiac size. College-age monozygotic twins (group 1, 31 sets), dizygotic twins (group 2, 10 sets), siblings of like sex (group 3, six sets), and nonrelated subjects (group 4, 15 sets) underwent echocardiographic and electrocardiographic tests, measurement of maximum oxygen uptake (VO2max), and evaluation of pulmonary and body composition; mean intrapair differences of the four groups were compared. Mean intrapair differences in cardiac size varied as much for subjects in group 1 as for those in groups 2 and 3. However, subjects in groups 1, 2, and 3 had less variation (p less than .05) than those in group 4. After the initial testing, 14 pairs of monozygotic twins, five sets of dizygotic twins, and six sets of siblings underwent 14 weeks of exercise training (both members participated) and all tests were repeated. After exercise training, subjects in group 1 still had as much intrapair variability in cardiac size as those in groups 2 and 3. The data suggest cultural familial influences are more important in determining cardiac size than nonfamilial influences or even genetic influences alone.

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Angel A see **Hegele RA**
Appareti K see **Weingast GR**
Appelbaum FR see **Cheever MA**
Armitage JO see **Cheever MA**
Ashok PP see **Radhakrishnan K**
Ashworth C see **Smith CK**
Axelsson O see **Berglund L**

B

Baker ME, Rosenberg ER, Trofatter KF, Imber MJ, Bowie JD: The in utero findings in twin pentalogy of Cantrell. J Ultrasound Med 1984 Nov;3(11):525–7

Bánkövi G see **Forrai G**
Bartsch F see **Huber J**
Beretsky I see **Greenblatt AM**
Berg K see **Orstavik KH**

Berglund L, Axelsson O: Combined vaginal-abdominal delivery of twins. Ann Chir Gynaecol 1984; 73(4):232–5
During the five-year period 1977–1981, 120 twins were delivered at the University Hospital, Uppsala, Sweden. 6 or 5%, were delivered by the combined vaginal-abdominal route. There was no case of foetal death among the second twins. Only one second twin had an Apgar score of less than eight at five minutes. Four mothers received blood transfusion because of blood loss related to the operation and two mothers developed fever during the puerperium. It is concluded that caesarean section may well be performed for rapid delivery of the compromised second twin, although the maternal morbidity is substantial.

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Berman KF see **DeLisi LE**

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Biscone KA see **Lynch HT**
Bjerkedal T see **Windham GC**

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Am J Obstet Gynecol 1985 Mar 15;151(6):830–1

Blickman JG see **van den Bos RW**
Boice JD Jr see **Harvey EB**
Bouchard C see **Prud'homme D**
Bouchard TJ Jr see **Hanson BR**
Bouchard TJ Jr see **McGue M**
Bowie JD see **Baker ME**
Bowman JM see **Manning FA**
Brett W see **Kennedy M**

Buchsbaum MS, Mirsky AF, DeLisi LE, Morihisa J, Karson CN, Mendelson WB, King AC, Johnson J, Kessler R: The Genain Quadruplets: electrophysiological, positron emission, and X-ray tomographic studies. Psychiatry Res 1984 Sep; 13(1):95–108
Four 51-year-old monozygotic quadruplets concordant for schizophrenia, originally studied at the National Institute of Mental Health 25 years ago, were restudied with topographic electroencephalography (EEG), evoked potentials (EPs), computed tomography (CT scans), polysomnographic sleep recordings, and positron emission tomography (PET) with 18F-2-deoxyglucose. EEG and EP findings were consistent with those from other groups of patients with schizophrenia and showed great similarity within the quadruplets. CT scans revealed uniformly small lateral ventricles. PET scans replicated earlier findings of relatively low glucose use in the frontal lobes but did not show strong familial concordance.

Buchsbaum MS see **DeLisi LE**
Buchsbaum MS see **Mirsky AF**
Buckner CD see **Cheever MA**
Bunjes D see **Frickhofen N**

C

Callen JP, Fowler JF, Kulick KB, Stelzer G, Smith SZ: Neonatal lupus erythematosus occurring in one fraternal twin. Serologic and immunogenetic studies. Arthritis Rheum 1985 Mar;28(3):271–5
Neonatal lupus erythematosus (LE) is a syndrome that is manifested by LE skin lesions and/or congenital heart block, occurring in infants at, or shortly after, birth. The syndrome is believed to be caused by transplacental passage of an IgG antibody, usually the anti-Ro (SS-A) antibody, from the mother to the infant. Although the mother may have a connective tissue disease or may be healthy, the common characteristic is the presence of maternal circulating anti-Ro antibody. It has been believed that the HLA determinants demonstrated in children who have neonatal LE were not a factor in the expression of the syndrome. We report the occurrence of neonatal LE, manifested by photosensitivity and discoid LE skin lesions, in one fraternal twin. HLA studies of this affected twin demonstrated the presence of DR3. Anti-Ro antibody was present in the mother, but was not present in either child at 4 months post-delivery. HLA determinants may be involved in the expression of disease in neonates who have been exposed to the anti-Ro antibody. Furthermore, the

presence of circulating antibodies in the unaffected twin causes us to question the assumption that the anti-Ro antibody is the causative factor for the occurrence of tissue injury in children with neonatal LE.

Campanella G, Idone M, De Michele G, Filla A: Paternal preponderance in familial Parkinson's disease [letter] Neurology (NY) 1984 Oct; 34(10):1398–400

Caton C see **DeLisi LE**

Cefalo RC see **Herbert WN**

Cerda R see **Garza-Chapa R**

Chamberlain PF see **Manning FA**

Chandra P see **Ahram JA**

Chaudhary T see **Cox F**

Chawla HS see **Ahram JA**

Cheever MA, Fefer A, Greenberg PD, Appelbaum FR, Armitage JO, Buckner CD, Sale GE, Storb R, Witherspoon RD, Thomas ED: Identical twin bone marrow transplantation for hairy cell leukemia. Semin Oncol 1984 Dec;11(4 Suppl 2):511–3

Chen MF see **Cramer BC**

Cheng SC see **Lynch HT**

Chernow B see **Eldridge R**

Chervenak FA, Johnson RE, Youcha S, Hobbins JC, Berkowitz RL: Intrapartum management of twin gestation. Obstet Gynecol 1985 Jan;65(1):119–24
Neonatal mortality and morbidity were analyzed in 362 pairs of twins delivered at Yale-New Haven Medical Center during a five-year period. Of the 154 (42.5%) pairs in vertex-vertex presentations, 125 (81.2%) were delivered vaginally. No difference in the occurrence of low five-minute Apgar scores was found in relation to the length of time interval between delivery of the twins. Of the 139 (38.4%) twins in vertex-nonvertex presentations, 99 (71.2%) were delivered vaginally. In the entire series, there was one case of significant birth trauma related to vaginal delivery of a nonvertex second twin. The one instance of neonatal death clearly related to birth asphyxia resulted after cesarean section. A protocol for the intrapartum management of twin gestations is presented based upon intrapartum fetal presentation and sonographically determined estimated fetal weight.

Chervenak FA, Youcha S, Johnson RE, Berkowitz RL, Hobbins JC: Twin gestation. Antenatal diagnosis and perinatal outcome in 385 consecutive pregnancies. J Reprod Med 1984 Oct;29(10):727–30
Three hundred eighty-five gestations were managed in a perinatal center during a five-year interval. Twins were diagnosed antenatally in 90.4% and before delivery in 95.6% of cases. From this study, the value of hospitalization for bed rest after 28 weeks of gestation seems questionable, for 81% of the perinatal mortality in our study occurred prior to that time.

Chervenak FA, Pinto MM, Heller CI, Norooz H: Obstetric significance of fetal craniofacial duplication. A case report. J Reprod Med 1985 Jan; 30(1):74–6
Craniofacial duplication (diprosopus) is a rare form of conjoined twins. Whenever fetal hydrocephalus is diagnosed, a careful search for other anomalies, such as diprosopus, is mandatory. The obstetric management depends upon the time of the diagnosis.

Chew SC: Prenatal diagnosis of cephalo-thoraco-pagus (conjoined twin) by ultrasound. Singapore Med J 1984 Aug;25(4):248–50

Chihara S, Yoneda H, Sakai T: Clinico-genetic study of so-called borderline case. Bull Osaka Med Sch 1983 Oct;29(2):106–20

Clark CF see **Yasuda Y**

Clifford CA see **Murray RM**

Confino E see **Ismajovich B**

Connor JM, Fernandez C: Genetic aspects of hemifacial microsomia [letter] Hum Genet 1984; 68(4):349

Cornelissen G see **Hanson BR**

Cox F, Wray B, Chaudhary T, Karlson K, Sherwood B, Greenberg M: Transfusion-associated acquired immunodeficiency syndrome in a twin infant. Pediatr Infect Dis 1985 Jan-Feb;4(1):106–8

Cramer BC, Jequier S, Chen MF: Sonographic appearance of cytomegalovirus nephritis in a neonate. Pediatr Radiol 1985;15(1):56–7
In adults and children increased renal cortical echogenicity on ultrasound examination is now well recognized as a feature of renal parenchymal disease due to a variety of etiologies. The degree of echogenicity appears related to the severity of the renal disease, histologically. The sonographic renal pattern of the neonate and in particular, of the premature, differs generally from that of the adult in that the renal cortex of the very young may be 'normally' more echogenic than in later life. Marked cortical echogenicity however, is a sign of renal parenchymal disease even in the premature, as illustrated in the case that follows with documented cytomegalovirus nephritis.

Crisp AH see **Holland AJ**

Currao WJ see **Schwartz JL**

D

Daha MR see **Kluin-Nelemans HC**

Danes BS see **Lynch HT**

David MP see **Ismajovich B**

David TJ: Vascular basis for malformations in a twin. Arch Dis Child 1985 Feb;60(2):166–7
A twin is described who was born with ileal atresia and hydranencephaly, the co-twin having died at about 24 weeks' gestation. If a macerated or autolysed twin is found at birth, the paediatrician should be alerted to the possibility of serious and not immediately obvious defects in the surviving infant.

Davis A see **Smith CK**

DeLisi LE, Mirsky AF, Buchsbaum MS, van Kammen DP, Berman KF, Caton C, Kafka MS, Ninan PT, Phelps BH, Karoum F, et al: The Genain Quadruplets 25 years later: a diagnostic and biochemical followup. Psychiatry Res 1984 Sep;13(1):59–76
A biological and clinical followup of the Genain Quadruplets was initiated as a multilaboratory collaborative effort at the National Institute of Mental Health (NIMH). The quadruplets are 51-year-old monozygotic women previously studied with a battery of psychological and physiological tests 25 years ago at the NIMH. The present article (the first of a series of three) details the clinical history and course of the schizophrenic illness in each of the quadruplets and describes the biochemical measures determined. The findings of elevated urinary phenylethylamine excretion, decreased plasma dopamine-beta-hydroxylase activity, and increased alpha-adrenergic receptor concentrations in all quadruplets warrant further genetic studies.

DeLisi LE see **Buchsbaum MS**

DeLisi LE see **Mirsky AF**

Dembroski TM see **Matthews KA**

De Michele G see **Campanella G**

Driscoll SG see **Bieber FR**

Dworkin RH, Lenzenweger MF: Symptoms and the

genetics of schizophrenia: implications for diagnosis. Am J Psychiatry 1984 Dec;141(12):1541–6
To determine whether genetic influences in schizophrenia are related to the symptoms specified by diagnostic criteria, the case histories of 151 pairs of monozygotic twins from five twin studies of schizophrenia were rated for positive and negative symptoms. Concordance rates in monozygotic twins were significantly higher when probands had a greater number of negative symptoms; no evidence of a similar relationship was found for positive symptoms. The data indicate that negative symptoms may be characteristic of schizophrenia in which there is a greater genetic component. The results have important implications for determining diagnostic criteria and understanding the pathogenesis of schizophrenia.

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Eaves LJ, Heath AC, Martin NG: A note on the generalized effects of assortative mating. Behav Genet 1984 Jul;14(4):371–6

Eaves LJ see **Martin NG**

Efstratiadis SS, Kent RL Jr, Lebret LM, Moorrees CF: Spatial position of mandibular third molars in monozygotic twins. Angle Orthod 1984 Oct; 54(4):271–82
Measurement of anterior and medial inclinations of third molars from 10 to 18 years of age in monozygotic twins finds a consistent pattern of uprighting, with high correlations within twin pairs indicative of strong genetic influence.

Eil C see **Smallridge RC**

Eldridge R, Ince SE: The low concordance rate for Parkinson's disease in twins: a possible explanation. Neurology (NY) 1984 Oct;34(10):1354–6

Eldridge R, Ince SE, Chernow B, Milstien S, Lake CR: Dystonia in 61-year-old identical twins: observations over 45 years. Ann Neurol 1984 Sep; 16(3):356–8
We examined 61-year-old identical twin women of Jewish extraction with a probable autosomal recessive form of torsion dystonia. The dystonia in each was relatively mild and discovered only because a young relative developed dystonia. The twins were said to be discordant for dystonia, but personal evaluation led to the diagnosis of dystonia in both. Their slow course, with prolonged spontaneous remission in one twin, is in contrast to that described in most published reports. Although similar in mode of onset and initial course, the twins were dissimilar in age at onset, influence of pregnancy, diurnal variation in symptoms, need for medication, later course, and degree of disability at age 61. Normal plasma levels of norepinephrine and dopamine-beta-hydroxylase are consistent with autosomal recessive hereditary torsion dystonia. The importance of personal evaluation of key family members in establishing the correct genetic basis for a heterogeneous group of disorders, such as the hereditary dystonias, is stressed.

Embry C, Lippmann S: Presumed Alzheimer's disease beginning at different ages in two twins. J Am Geriatr Soc 1985 Jan;33(1):61–2

Escobar MS see **Garza-Chapa R**

Eskola J see **Soppi E**

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Fabsitz R, Feinleib M, Hubert H: Regression analysis of data with correlated errors: an example from the NHLBI twin study. J Chronic Dis 1985;38(2):165–70
Epidemiologic studies often involve genetically related individuals, spouses, or repeat observations on the same individual. When regression analysis is required in such studies, significant correlation of the residuals may affect the estimates of the standard errors of the regression coefficients. Ordinary least squares may not provide the best (minimum variance) estimates of the regression coefficients. Generalized least squares (weighted least squares) is more appropriate when the covariance matrix of the errors is known or can be estimated with some degree of confidence. Data from a twin study of pulmonary function were analyzed by three different regression techniques and comparisons of the coefficients and standard errors are made to illustrate the potential effects of correlated errors.

Farmer AE, McGuffin P, Gottesman II: Searching for the split in schizophrenia: a twin study perspective. Psychiatry Res 1984 Oct;13(2):109–18
The characteristics of two subtypes of schizophrenia (here called 'H' and 'P' types) that were derived in a previous study were further examined using discriminant analysis. The scores on the resultant discriminant function were used to assign Gottesman and Shields' (1972) sample of schizophrenic twins to subtypes. Although there was a tendency for cotwins to be assigned to the same subtype as the proband, the degree of homotypia in monozygotic twins, at 73.3%, was not perfect. A diagnosis of schizophrenia (of either H or P type) was significantly more common in the cotwins of H than P type probands. The findings suggest that the two subtypes are not genetically distinct conditions, but are more likely to represent varieties of disorder that occupy different positions on the same multifactorial continuum of liability.

Fefer A see **Cheever MA**

Fefer A see **Smith CK**

Feinleib M see **Fabsitz R**

Fernandez C see **Connor JM**

Filla A see **Campanella G**

Fino JJ see **Hughes JR**

Fisher AG see **Adams TD**

Flannery JT see **Harvey EB**

Foley C see **Weingast GR**

Fontaine E see **Prud'homme D**

Forrai G, Bánkövi G: On the food favoritism of twins. Acta Physiol Hung 1984;64(1):25–32
In the present study, there is a continuation of the authors' earlier investigations concerning food preference/refusal patterns in a group of Hungarian adult MZ and DZ twin pairs. A 'Food Like/Dislike Chart' (FLDC), adapted to local nutritional habits, was applied. In order to characterize the degree of intra-pair concordance referring to the food favoritism, the concept of the 'Taste Concordance Point' (TCP) was introduced. On the basis of the comparison of the TCP values obtained for the MZ and DZ pairs the conclusion can be drawn that gustatory habits are presumably influenced also by genetic factors. The results allow the possibility of applying TCP to testing zygosity.

Forrai G, Bánkövi G: Taste perception for phenylthiocarbamide and food choice--a Hungarian twin study. Acta Physiol Hung 1984;64(1):33–40
A total of 98 MZ and 67 like sexed DZ adult twin pairs were studied for taste sensitivity to P.T.C. The MZ pairs were also tested for their food favoritism. A P.T.C. screening test showed a concordance in 'tasting' or 'non-tasting', within the MZ versus the DZ pairs. For the comparison of food choices of the P.T.C. tasters and non-tasters (members of MZ

pairs) a quantity called 'Tastership Test Point' (TTP) was constructed. Based on an analysis of the TTP values it may be suggested that taste sensitivity to P.T.C. and food preferences are not completely unrelated characters. These results serve as a contribution to the authors' previous findings obtained in Hungarian adolescents.

Fowler JF see **Callen JP**

Freeman BJ see **Ritvo ER**

Frickhofen N, Heit W, Bunjes D, Heimpel H: Graft rejection after syngeneic bone marrow transplantation for aplastic anaemia: significance of coculture studies. Br J Haematol 1985 Jan; 59(1):183–5

Frieden JH, Morgenstern L: Sigmoid diverticulitis in identical twins. Dig Dis Sci 1985 Feb;30(2):182–3
Severe sigmoid diverticulitis requiring left colon resection occurred in monozygotic twins during their third decade. An inherited tendency is suggested.

Friedl W see **Gaxiola B**

G

Gabrielli WF Jr, Plomin R: Drinking behavior in the Colorado adoptee and twin sample.
J Stud Alcohol 1985 Jan;46(1):24–31
Using a sample of adult Colorado twins, nontwin sibling pairs and pairs of unrelated adoptees reared together (N = 346), the extent of the similarity in drinking behavior within pairs was estimated. The analyses, which go beyond those possible with a study confined just to twins, suggest that some alcohol-drinking behaviors may be genetically influenced. However, the genetic variance appears to be primarily nonadditive so that it contributes more to differences than to similarities between first-degree relatives. Alternatively, although less likely, these results might suggest a special common environment for identical twins that is not present for fraternal twins, nontwin siblings or unrelated adoptees reared together. Environmental analyses indicate that both types of twins share a special family environmental similarity that is not shared by nontwin siblings. Environmental influences that affect individual differences in drinking behavior appear to contribute more to dissimilarity than to similarity. The results do not support the contention that being raised in the same family contributes substantially to similarity in characteristics of drinking behavior.

Garza-Chapa R, Escobar MS, Cerda R, Leal-Garza CH: Factors related to the frequency of twinning in the State of Nuevo León, Mexico during 1977 and 1978. Hum Biol 1984 May;56(2):277–90

Gauthier R see **Gibb W**

Gaxiola B, Friedl W, Propping P: Epinephrine-induced platelet aggregation. A twin study. Clin Genet 1984 Dec;26(6):543–8
A study in healthy adult male twin pairs (17 MZ, 15 DZ) was devised to examine the genetic influence on epinephrine-induced platelet aggregation. Intraclass correlations of for MZ, 0.43 for DZ, and 0.61 for repetitive experiments in the same subjects point to the influence of genetic factors. The antagonizing effect of phentolamine on platelet aggregation did not prove to be under genetic control. There was no significant correlation between epinephrine concentrations which induce half-maximal aggregation and number of alpha-adrenergic receptors as measured by 3H-yohimbine binding. In one MZ twin pair concordantly, and also in two unrelated persons, epinephrine was unable to induce complete platelet aggregation. This phenomenon is not related to the number of alpha-adrenergic binding sites on platelets.

Giacoia GP: Thoracoabdominal duplication.
Am J Perinatol 1984 Jul;1(4):349–50

Gibb W, Riopel L, Kossmann JC, Lavoie JC, Teasdale F, Gauthier R: Steroid metabolism by human chorion laeve from dichorionic twin pregnancies.
Am J Obstet Gynecol 1985 Mar 15;151(6):792–5
Certain steroid metabolic properties of chorion laeve from dichorionic twin pregnancies were examined to determine whether they were present in chorion not contaminated by decidua or serum. In the chorion situated between the two amniotic sacs and not in contact with decidua, aryl sulfatase, 3 beta-hydroxysteroid dehydrogenase, and aromatase activities were found. This indicates that these reactions are present in chorion laeve and were not previously ascribed to this tissue because of decidual contamination. Specific cortisol binding was also present in this area of chorion laeve, which excludes serum contamination. It is suggested that the specific steroid-binding protein in the membranes may be derived from the transcortin-like protein present in amniotic fluid.

Gilmore NJ see **Parfrey PS**

Glass AR see **Smallridge RC**

Gold PD see **Harrison VL**

Goodwin DW: The role of genetics in the expression of alcoholism. Overview. Recent Dev Alcohol 1983; 1:3–8

Gottesman II see **Farmer AE**

Graham JB see **Orstavik KH**

Graham P, Stevenson J: A twin study of genetic influences on behavioral deviance.
J Am Acad Child Psychiatry 1985 Jan;24(1):33–41

Greenberg M see **Cox F**

Greenberg PD see **Cheever MA**

Greenblatt AM, Beretsky I, Lankin DH, Phelan L: In utero diagnosis of crossed renal ectopia using high-resolution real-time ultrasound.
J Ultrasound Med 1985 Feb;4(2):105–7

Greengart A see **Ozick H**

Griffin JE see **Smallridge RC**

Gurling HM see **Murray RM**

Guttmann RD see **Parfrey PS**

H

Hagan AD see **Adams TD**

Halberg F see **Hanson BR**

Hall A see **Holland AJ**

Hannah MC, Hopper JL, Mathews JD: Twin concordance for a binary trait. II. Nested analysis of ever-smoking and ex-smoking traits and unnested analysis of a 'committed-smoking' trait.
Am J Hum Genet 1985 Jan;37(1):153–65
Twin concordance rates for a binary trait can provide information about causes of trait variation. However, if trait prevalence varies with age (or birth cohort) or between the sexes, trait concordance rates will be artificially inflated because of the matching within pairs of twins. Our previous paper showed how to minimize the effects of such confounding by using logistic regression to model trait prevalence as a function of age and sex and that the binary correlation coefficient was useful as a measure of concordance that can be adjusted for trait prevalence. This method is extended here to allow for nested analyses and is applied to the smoking

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habits of a sample of 3,807 pairs of adult twins. For monozygotic (MZ) twins, the correlation coefficients for the binary trait of 'ever-smoking' (males: .50 +/- .04; females: .60 +/- .02) were significantly greater than for dizygotic (DZ) twins (males: .37 +/- .05; females: .31 +/- .04; unlike-sex pairs: .21 +/- .03). For 'giving-up smoking,' given that both twins were previously smokers, the correlations for MZ twins (males: .37 +/- .07; females: .29 +/- .05) were also greater than for DZ twins (males: .11 +/- .09; females: .26 +/- .08; unlike-sex pairs: .13 +/- .06), although the difference was not statistically significant for females. Current smokers who had been smoking for at least 10 years were arbitrarily defined as 'committed-smokers.' The binary trait of 'committed-smoking' was more strongly correlated in MZ twins (males: .41 +/- .06; females: .41 +/- .04) than in DZ twins (males: .22 +/- .08; females: .18 +/- .05; unlike-sex pairs: .16 +/- .05). These observations suggest that as well as depending on socially determined environmental factors, smoking behavior is influenced by genetic factors and/or by environmental factors unique to the MZ twin environment, which are of particular importance as determinants of 'committed-smoking.' There is a need for further research to investigate the personal characteristics of 'committed-smokers' and to seek intervention strategies that are more suited to the needs of individual smokers.

Hanson BR, Halberg F, Tuna N, Bouchard TJ Jr, Lykken DT, Cornelissen G, Heston LL: Rhythmometry reveals heritability of circadian characteristics of heart rate of human twins reared apart. Boll Soc Ital Cardiol 1984 May-Jun; 29(5-6):267-82

Harris EL see **Matthews KA**

Harrison SD see **Smith CK**

Harrison VL, Keneally JP, Gold PD, Malcolm PS, Overton JH: Anaesthesia for separation of conjoined twins in the neonatal period.
Anaesth Intensive Care 1985 Feb;13(1):82-5

Hartzman RJ see **Richert JR**

Harvey EB, Boice JD Jr, Honeyman M, Flannery JT: Prenatal x-ray exposure and childhood cancer in twins. N Engl J Med 1985 Feb 28;312(9):541-5
We conducted a case-control study to investigate the relation between prenatal exposure to x-rays and childhood cancer, including leukemia, in over 32,000 twins born in Connecticut from 1930 to 1969. Twins as opposed to single births were chosen for study to reduce the likelihood of medical selection bias, since twins were often exposed to x-rays to diagnose the twin pregnancy or to determine fetal positioning before delivery and not because of medical conditions that may conceivably pre-dispose to cancer. Each of 31 incident cases of cancer, identified by linking the Connecticut twin and tumor registries, was matched with four twin controls according to sex, year of birth, and race. Records of hospitals, radiologists, and private physicians were searched for histories of x-ray exposure and other potentially important risk factors. Documented prenatal x-ray exposures were found for 39 per cent of the cases (12 of 31) and for 26 per cent of the controls (28 of 109). No other pregnancy, delivery, or maternal conditions were associated with cancer risk except low birth weight: 38 per cent of the cases as compared with 25 per cent of the controls weighed under 2.27 kg at birth. When birth weight was adjusted for, twins in whom leukemia or other childhood cancer developed were twice as likely to have been exposed to x-rays in utero as twins who were free of disease (relative risk, 2.4; 95 per cent confidence interval, 1.0 to 5.9). The results, though based on small numbers, provide further evidence that low-dose prenatal irradiation may increase the risk of childhood cancer.

Hay D see **Johnston C**

Heath AC see **Eaves LJ**

Hedner K, Iselius L, Mitelman F, Nordén A, Pero RW: A twin study of sister chromatid exchanges in human lymphocytes following carcinogen exposure and DNA repair incubation. Cytogenet Cell Genet 1984; 38(3):189-91
Sister chromatid exchanges (SCEs) were analyzed in peripheral lymphocytes obtained from nine healthy monozygotic (MZ) and nine healthy dizygotic (DZ) pairs of male twins. In addition, increases in SCE rates following in vitro treatment of whole blood with 100 microM N-acetoxy-2-acethylaminofluorene (NA-AAF), and after an 18-h DNA repair incubation period, were analyzed in the same twins. There was no significant intrapair difference in the variance of SCE frequencies among MZ and DZ twins at the baseline level, after NA-AAF treatment, or after a DNA repair incubation period. It was concluded that genetic factors probably do not contribute significantly to the individual variation that has been observed in baseline or NA-AAF-induced SCE rates. Thus, any observed alterations in SCE frequencies are probably caused by environmental influences.

Hegele RA, Angel A: Arrest of neuropathy and myopathy in abetalipoproteinemia with high-dose vitamin E therapy. Can Med Assoc J 1985 Jan 1; 132(1):41-4
A 16-year-old girl, one of dizygotic twins, presented in 1976 complaining of a 1-year history of a lack of coordination and an inability to run. The results of biochemical tests confirmed the diagnosis of classic abetalipoproteinemia. In addition to the recognized neurologic features of this disorder, she had a reduced evoked motor unit potential and markedly elevated serum levels of muscle enzymes, which suggested myositis. The serum vitamin E level was markedly decreased. Oral therapy with vitamin E, 800 mg daily, was begun, and in 1981 the dosage was increased to 3200 mg daily. Over the 7 years of follow-up she improved clinically, there was an increase in the evoked motor unit potential, the serum levels of some of the muscle enzymes decreased to normal, and the serum and tissue vitamin E levels increased significantly. It was concluded that treatment with high doses of vitamin E was responsible for the arrest of the usually progressive neuropathy and myopathy.

Heimpel H see **Frickhofen N**

Heit W see **Frickhofen N**

Heller CI see **Chervenak FA**

Hemrika DJ see **Bleker OP**

Herbert WN, Cefalo RC, Koontz WL: Perinatal management of conjoined twins. Am J Perinatol 1983 Oct;1(1):58-63
Thorough evaluation of all twin pregnancies is necessary if prenatal diagnosis of conjoined twins is to be made more often. Application of sonography, amniography, and amniocentesis is helpful in formulating prognosis, details of delivery, and subsequent assessment. Two-dimensional echocardiography, radionuclide scanning, computed tomography, and sonography are recently developed techniques for evaluation of the neonates. Detailed planning at all stages of care is essential. Interaction among medical personnel and the family is extremely important.

AUTHOR SECTION

I

J

is removed: how about twins? [letter] Obstet Gynecol 1985 Feb;65(2):297-8

Jones G see **McLaughlin JF**

K

Kafka MS see **DeLisi LE**

Kamiyama RI see **Shibuya H**

Kaplan D: The onset of disease in twins and siblings with systemic lupus erythematosus. J Rheumatol 1984 Oct;11(5):648-52

We reviewed both the published cases of systemic lupus erythematosus (SLE) occurring in siblings as well as our own, in regard to the ages of onset and the calendar year of onset in the sibling pairs. These data were compared with the same data in non-consanguineous, noncohabiting matched control pairs of patients with SLE. Compared to the control patients, we found no tendency for cases in siblings to occur at the same age, but a significant tendency to occur close together in time, thereby implicating an environmental agent as either a causal or triggering factor leading to expression of the disease.

Karlson K see **Cox F**

Karoum F see **DeLisi LE**

Karson CN see **Buchsbaum MS**

Keneally JP see **Harrison VL**

Kennedy M, Brett W: Monozygotic twins with alpha 1-antitrypsin deficiency [letter] Lancet 1985 Mar 2; 1(8427):527-8

Kent RL Jr see **Efstratiadis SS**

Kessler R see **Buchsbaum MS**

Kimberling WJ see **Lynch HT**

King AC see **Buchsbaum MS**

Kirkwood JM see **Lerner AB**

Kluin-Nelemans HC, van Velzen-Blad H, van Helden HP, Daha MR: Functional deficiency of complement factor D in a monozygous twin. Clin Exp Immunol 1984 Dec;58(3):724-30

An adult twin with recurrent bacterial infections was found to have a partial functional deficiency of complement factor D. Full restoration of alternative pathway activity and zymosan- or cobra venom factor-induced consumption of C3 and B was found after reconstitution of patient's serum with purified D. Family studies revealed normal D levels in the mother, a brother and another sister. After gel filtration of patient's sera only little D activity could be detected in the fractions, and trypsin activation of the fractions also did not uncover detectable precursor D activity.

Knaack J see **Parfrey PS**

Knuppel RA, Rattan PK, Scerbo JC, O'Brien WF: Intrauterine fetal death in twins after 32 weeks of gestation. Obstet Gynecol 1985 Feb;65(2):172-5

A retrospective review of the outcome in multifetal pregnancies from January 1, 1980 to July 31, 1983 was undertaken to evaluate the role of nonstress test, followed by contraction stress test when indicated, in reduction of intrauterine fetal deaths in twins after 32 weeks of gestation. Of the 90 twin pregnancies managed under the authors' protocol, there were no intrauterine fetal deaths. Intervention leading to delivery occurred in six twin pregnancies with an abnormal nonstress test followed by an equivocal or positive contraction stress test. The authors believe that routine use of weekly nonstress tests after 30 weeks of gestation coupled with contraction stress tests when indicated, and use of other parameters of fetal assessments such as ultrasound, intrauterine fetal death in twin gestation after 32 weeks of gestation, can be significantly reduced.

Koontz WL see **Herbert WN**

Kopecký A see **Jirous J**

Kossmann JC see **Gibb W**

Kulick KB see **Callen JP**

L

Laffey P see **Ahram JA**

Lake CR see **Eldridge R**

Lament C, Wineman I: A psychoanalytic study of nonidentical twins. The impact of hemophilia on the personality development of the affected child and his healthy twin. Psychoanal Study Child 1984; 39:331-70

Landry F see **Prud'homme D**

Lane AT see **Schwartz JL**

Lange IR see **Manning FA**

Langmark F see **Windham GC**

Lankin DH see **Greenblatt AM**

Lavoie JC see **Gibb W**

Leal-Garza CH see ***Garza-Chapa R***

Leblanc C see **Prud'homme D**

Lebret LM see **Efstratiadis SS**

Lehtonen A see **Soppi E**

Lenzenweger MF see **Dworkin RH**

Lerner AB, Kirkwood JM: Vitiligo and melanoma: can genetically abnormal melanocytes result in both vitiligo and melanoma within a single family? J Am Acad Dermatol 1984 Oct;11(4 Pt 1):696-701

We found twelve families with melanoma who had close family members with halo nevi, early graying of hair, a halo primary melanoma, or ordinary vitiligo. On the basis of these findings and the observation of others in fish, horses, and pigs with melanomas, we suggest that the melanocytes of people with vitiligo or with a genetic background for vitiligo are predisposed to undergo a malignant transformation. The presence of vitiligo appears as a manifestation of host suppression of malignant melanocytes.

Leslie RD see **Hoskins PJ**

Lichstein E see **Ozick H**

Lidor A see **Ismajovich B**

Lippmann S see **Embry C**

Lykken DT see **Hanson BR**

Lynch HT, Schuelke GS, Wells IC, Cheng SC, Kimberling WJ, Biscone KA, Lynch JF, Danes BS: Hereditary ovarian carcinoma. Biomarker studies. Cancer 1985 Jan 15;55(2):410-5

Three ovarian-cancer-prone kindreds were studied, two of which contained identical twin sisters concordant for ovarian carcinoma. In one kindred, both identical twin sisters had daughters with ovarian carcinoma. In another kindred, one of the identical twin sisters had an ovarian-cancer-affected daughter. Ovarian carcinoma showed vertical transmission in all three families in a pattern consonant with an autosomal dominant mode of inheritance. Medical-genetic survey of each family included detailed questionnaires with retrieval of primary medical and pathology documents on cancer of all anatomic sites. Putative biomarker determinations included: (1) in vitro hyperdiploidy in dermal monolayer cultures; and (2) lower serum levels of alpha-L-fucosidase (less than or equal to 275 IU/ml) in all cancer-affected patients and statistically significant lower levels in 50% risk individuals when compared to spouse and published controls ($P = 0.04$ and $P = 0.0002$, respectively). These findings are discussed in context with the eventual development of a risk factor profile which,

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given acceptable sensitivity and specificity, would enable identification of individuals who would be prime candidates for intensive surveillance/management programs.

Lynch JF see **Lynch HT**

Lyons MJ, Matheny AP: Cognitive and personality differences between identical twins following skull fractures. J Pediatr Psychol 1984 Dec;9(4):485–94

M

MacDougall JM see **Matthews KA**

McFarland HF see **Richert JR**

McFarlin DE see **Richert JR**

McGue M, Bouchard TJ Jr: Adjustment of twin data for the effects of age and sex. Behav Genet 1984 Jul;14(4):325–43

McGuffin P see **Farmer AE**

McLaughlin JF, Marks WM, Jones G: Prospective management of exstrophy of the cloaca and myelocystocele following prenatal ultrasound recognition of neural tube defects in identical twins. Am J Med Genet 1984 Dec;19(4):721–7

We describe identical twins concordant for exstrophy of the cloaca and myelocystocele. Their management and subsequent course was strongly influenced by prenatal ultrasound recognition of neural tube defects in both twins and severe renal dysplasia in one of the fetuses. The genetic aspects of this case are consistent with existing causal theories of exstrophy of the cloaca.

MacMahon B: Prenatal x-ray exposure and twins [editorial] N Engl J Med 1985 Feb 28;312(9):576–7

Magnus P: Further evidence for a significant effect of fetal genes on variation in birth weight. Clin Genet 1984 Oct;26(4):289–96

The contribution of fetal and maternal genes to the variation in birth weight was estimated in a sample of 5,625 grandchildren of monozygotic and dizygotic twins. Fetal and maternal genetic effects were separated by comparing the covariance structure for offspring of daughters of twins with that for offspring of sons of twins. Only insignificant amounts (3.0%) of the total variance in birth weight could be accounted for by maternal genes, while fetal genes seemed to account for the major part (69.4%) of the variation. Environmental factors common to sibs could explain 8.6% and random environmental factors 19.0% of the total variance. The findings are consistent with the results of an earlier study of birth weight in the same population but differ from findings in other populations.

Magnus P see **Orstavik KH**

Maiorana A see **Preziosi P**

Malcolm PS see **Harrison VL**

Maniscalco WM see **Schwartz JL**

Mann L see **Mirsky AF**

Manning FA, Bowman JM, Lange IR, Chamberlain PF: Intrauterine transfusion in an Rh-immunized twin pregnancy: a case report of successful outcome and a review of the literature. Obstet Gynecol 1985 Mar; 65(3 Suppl):2S–6S

Fifteen sets of twins have been reported among 2331 pregnancies complicated by Rh alloimmunization of sufficient severity to warrant intrauterine transfusions. Four of the 15 sets were managed in Winnipeg, Canada. One of the four is described in detail in the present report. Serial amniocenteses (N = 15) and intrauterine transfusions (N = 8) were used in the management of the dizygous affected twin fetuses with a favorable outcome. Factors contributing to the survival of the twins are described.

Marks WM see **McLaughlin JF**

Martin NG, Jardine R, Eaves LJ: Is there only one set of genes for different abilities? A reanalysis of the National Merit Scholarship Qualifying Test (NMSQT) data. Behav Genet 1984 Jul;14(4):355–70

Martin NG see **Eaves LJ**

Martin NG see **Jardine R**

Mason-Brothers A see **Ritvo ER**

Matheny AP see **Lyons MJ**

Mathews JD see **Hannah MC**

Matthews KA, Rosenman RH, Dembroski TM, Harris EL, MacDougall JM: Familial resemblance in components of the type A behavior pattern: a reanalysis of the California type A twin study. Psychosom Med 1984 Nov–Dec;46(6):512–22

Rosenman and colleagues reported no heritability of global Type A behavior assessed by the Structured Interview (SI) method, although some of the self-report scales correlated with global Type A behavior did have heritable components. Recent factor analyses of coded SI responses revealed four independent dimensions: clinical ratings, primarily of speech stylistics; and self-reports of pressured drive, anger, and competitiveness. It may be that some of these dimensions have a heritable base, whereas others do not. We report here reanalyses of the available SI responses from the Rosenman sample. In this subsample, tape recorded interviews with 80 monozygotic and 80 dizygotic twin pairs were scored for the extent of self-reported Type A behaviors, the major speech stylistics considered to be indicative of Pattern A, and the observable Type A behaviors (e.g., signs of hostility). Then scores for the major dimensions measured by the SI were calculated and scores for which there were sufficient data were subjected to twin analyses by the method of Christian et al. These analyses showed that individual differences in the clinical ratings factor and certain ratings loading on it—specifically, loudness of speech, competition for control of the interview, and potential for hostility—might have a heritable component. These results are discussed in the context of the importance of hostility as a predictor of subsequent coronary heart disease events as well as of total mortality, other data on the heritability of emotionality, and a temperament approach to understanding the origins of the Type A behavior pattern.

Meadow SR, Scott DG: Berger disease: Henoch–Schönlein syndrome without the rash. J Pediatr 1985 Jan;106(1):27–32

Identical 7-year-old twin boys each had a proved adenovirus infection at the same time. A few days later one developed florid Henoch–Schönlein purpura, severe alimentary tract symptoms, and transient joint symptoms. He had an acute nephritic syndrome, which progressed to nephrotic syndrome and renal insufficiency. Biopsy showed severe proliferative glomerulonephritis with crescents and marked deposition of IgA, IgG, C3, and fibrin. The second twin had hematuria and abdominal pain but no rash. Biopsy showed mesangial proliferative glomerulonephritis with mesangial deposits of IgA and, to a lesser extent, IgG and C3. The appearance was characteristic of Berger disease, and the subsequent clinical course has been that of symptomless microscopic hematuria and recurrent macroscopic hematuria with normal renal function. Immunologic studies have not revealed why these identical twins responded differently to the same provocation. Perhaps Berger disease may be considered a variant of Henoch–Schönlein nephritis.

AUTHOR SECTION

Medici D see *Preziosi P*
Mendelson WB see **Buchsbaum MS**
Milstien S see **Eldridge R**
Mirsky AF, DeLisi LE, Buchsbaum MS, Quinn OW, Schwerdt P, Siever LJ, Mann L, Weingartner H, Zec R, Sostek A, et al: The Genain Quadruplets: psychological studies. Psychiatry Res 1984 Sep; 13(1):77–93
A series of behavioral studies is reported on the Genain Quadruplets. These monozygous women, all of whom have suffered or are suffering from schizophrenia, were studied previously at the National Institute of Mental Health (1955–1958) and were the subject of an extensive report by Rosenthal (1963). Although the Genains are genetically identical, the expression of the schizophrenic disorder is unequal among the quads, and this circumstance has led to speculation about the relative contributions of nature and nurture (or *diathesis and stress in Rosenthal's terminology*) in the development of this disease. Two goals were pursued in this investigation: one concerned a comparison of the status of the Genains in 1981 as compared with 1958; the other concerned whether data from the armamentarium of newer behavioral and neurobiological techniques invented and employed since 1958 might shed some light on the unequal expression of schizophrenia among the quadruplets. We conclude that the Genains are functioning about as well as they ever have in their adult lives, and scores on attentional tests show improvement as compared to 1958 measures. This is probably attributable to the medication (primarily neuroleptics) and other supportive treatments they have received over the years. With respect to the varying degrees of illness seen in the Genains, scrutiny of the biochemical, physiological, neuroradiological, immunogenetic, and behavioral *test data leads to speculation that certain unique* biochemical findings interacting with differing types and amounts of cerebral pathology constitute a major cause of the variable expression of the schizophrenic diathesis.
Mirsky AF see **Buchsbaum MS**
Mirsky AF see **DeLisi LE**
Mitelman F see **Hedner K**
Mo A see **Ritvo ER**
Montano D see **Smith CK**
Moody LO see **Horger EO 3d**
Moorrees CF see **Efstratiadis SS**
Morgenstern L see **Frieden JH**
Morihisa J see **Buchsbaum MS**
Moskalenko VD: Differences in ontogeny, premorbid personality, and severity of schizophrenia in twins. Neurosci Behav Physiol 1984 Nov-Dec;14(6):444–8
Mostoufi-zadeh M see **Bieber FR**
Mráz J see **Jirous J**
Mulcahy MT, *Roberman B, Reid SE:* Chorion biopsy, cytogenetic diagnosis, and selective termination in a twin pregnancy at risk of haemophilia [letter] Lancet 1984 Oct 13;2(8407):866–7
Müller F, O'Rahilly R: Cerebral dysraphia (future anencephaly) in a human twin embryo at stage 13. Teratology 1984 Oct;30(2):167–77
Cerebral dysraphia was studied histologically and by graphic reconstruction in a twin at stage 13, and comparisons were made with the normal (discordant) twin. The normal, bidirectional closure of the rostral neuropore was investigated in several embryos, from which it was concluded that the situs neuroporicus is represented by the future commissural plate rather than by the (adult) lamina terminalis. In the abnormal twin the neural tube was *open over part of the midbrain and forebrain,* although the situs neuroporicus was closed. The experimental production of anencephaly by Giroud and co-workers was reviewed, and comparisons between embryonic staging systems in the rat, mouse, and human were made. Three corresponding phases are found in the human: 1) cerebral dysraphia, occurring before or during Carnegie stage 11 (approximately 23–25 days); 2) exposure of a highly developing and well-differentiated brain during the remainder of the embryonic period; and 3) degeneration of the exposed brain throughout the fetal period, resulting in anencephaly. Hence the abnormal twin described here is believed to represent a precursor of typical anencephaly, and is the earliest example of purely cerebral dysraphia so far recorded.
Murray R see **Holland AJ**
Murray RM, Clifford CA, Gurling HM: Twin and *adoption studies. How good is the evidence for a* genetic role? Recent Dev Alcohol 1983;1:25–48 (44 ref.)
Research into the possibility that heredity may influence drinking habits is still in its infancy, and the conclusions that can be reached from a number of the available twin and adoption studies are limited by their methodological deficiencies. Nevertheless, the balance of evidence suggests a modest genetic effect on both normal drinking and alcoholism in men, though similar evidence for women is so far lacking. Further studies are required to assess the significance of the genetic contribution, to elucidate exactly what is inherited, and to examine the nature of gene–environment interactions.

N

Nance W see **Orstavik KH**
Nash RM, Stein L, Penno MB, Passananti GT, Vesell ES: Sources of interindividual variations in acetaminophen and antipyrine metabolism.
Clin Pharmacol Ther 1984 Oct;36(4):417–30
Our goal was to compare and contrast in the same normal twins the relative contribution of genetic and environmental factors to large interindividual *variations in the metabolism of acetaminophen* (APAP) and antipyrine. These drugs were selected because they are biotransformed by different mechanisms. A single oral dose of APAP (10 mg/kg) *was given to six sets of monozygotic (MZ) and six* sets of dizygotic (DZ) twins. All were normal, nonsmoking, nonmedicated, and male. Among these 24 subjects, there were 300% interindividual variations in rate constants for formation of the sulfate and glucuronide conjugates, as well as in the overall rate constant for APAP elimination. Intratwin variations for each measurement were as large within MZ as within DZ twinships, suggesting that predominantly environmental rather than genetic factors maintained interindividual variations. Two other observations support this conclusion: Intraindividual variations were frequently as large as interindividual variations, and regardless of zygosity for twins living together, intratwin correlation coefficients were almost twice those of twins living apart. Quite different results were obtained when these twins received antipyrine. After a single oral dose of antipyrine (18 mg/kg), 500% *interindividual variations in rate constants for* formation of the three main oxidative metabolites of antipyrine appeared to be mainly under genetic control. Also for antipyrine and its principal

metabolites, intraindividual variations were much smaller than interindividual variations. In contrast to the results with APAP, regardless of zygosity, intratwin correlation coefficients for antipyrine were similar for twins living apart and twins living together. This comparison between APAP and antipyrine metabolism in the same carefully selected normal twins under apparently uniform environmental conditions reveals that interindividual variations in APAP metabolism arise from certain unidentified environmental factors, whereas genetic factors cause the large interindividual variations that occur in antipyrine disposition.

Nawab RA: Fatal ECHO virus 11 infection in one of newborn twins. Indian J Pathol Microbiol 1984 Jan; 27(1):19-26

Nelson AG see **Adams TD**

Ninan PT see **DeLisi LE**

Nordén A see **Hedner K**

Norooz H see **Chervenak FA**

O

O'Brien WF see **Knuppel RA**

Ohtsuki H see **Yasuda Y**

Okajima M, Usukura K: Quantitative and genetic features of epidermal ridge minutiae on the palm of twins. Hum Hered 1984;34(5):285-90

The total minutia count (TMC) and fork index (FI), i.e., the proportion of forks in total minutiae, were examined in palm prints of 20 pairs each of monozygotic and dizygotic Japanese twins. No bilateral difference was found in either trait. The mean of the TMC was higher in males than in females, but the FI showed no sex difference. Both traits presented relatively high intraclass correlation coefficients between monozygotic twins, and genetic control of these traits is suggested. However, no correlation was observed between these two traits. A slight correlation was observed between the TMC and the total palmar interdigital ridge count. Some methodological problems concerned with classification criteria were discussed.

O'Rahilly R see **Müller F**

Orstavik KH, Magnus P, Reisner H, Berg K, Graham JB, Nance W: Factor VIII and factor IX in a twin population. Evidence for a major effect of ABO locus on factor VIII level. Am J Hum Genet 1985 Jan;37(1):89-101

In order to establish the relative importance of genetic factors on the variation in plasma concentration of coagulation factors VIII and IX, these parameters were determined in 74 monozygotic and 84 like-sexed dizygotic twin pairs. The twins belonged to two age groups: 33-39 years and 57-62 years. Factor VIII was determined as factor VIII coagulant antigen (VIIICAg) and as factor VIII-related antigen (VIIIRAg). Factor IX was determined as factor IX antigen (IXAg). A higher value for each coagulation factor was found in the older-age group compared to the younger group, whereas no difference was found between the sexes. A significant correlation was found between values for VIIIRAg and VIIICAg (r = .56). For VIIICAg, it could be demonstrated that the age effect was secondary to the age effect on VIIIRAg. The concentration of VIIICAg and VIIIRAg varied among ABO blood types, being lowest in type O individuals, higher in A2 individuals, and highest in A1 and B individuals. The effect of the ABO locus on VIIICAg was secondary to an effect on VIIIRAg. Analysis of variance revealed a significant genetic influence on the variance of VIIICAg and VIIIRAg with a heritability estimate of .57 for VIIICAg and .66 for VIIIRAg. This is in agreement with a previous hypothesis of an effect of several autosomal genes on factor VIII concentration. Thirty percent of the genetic variance of VIIIRAg was due to the effect of ABO blood type. The ABO locus is therefore a major locus for the determination of factor VIII concentration. No significant genetic effect on the variation in plasma concentration of IXAg could be detected.

Overton JH see **Harrison VL**

Ovtscharoff W, Ichev K, Surchev L, Vankova M: Peculiarities of the bones, muscles, and nervous system of the conjoined twins. Anat Anz 1984; 157(1):83-90

The peculiarities of the skeletal, muscular, and nervous systems of conjoined female twins (2 spines, one pelvis) is described judging from the examination of the 2 skulls, 2 vertebral columns, shoulder girdle of the intermediate connection between the trunks, deep muscles of the back, 2 separate central nervous systems, lack of changes in the muscles, of the anterior aspect of the thorax and anterolateral muscles of the abdomen; from what we have observed it is suggested that this is a case of uniovary twins whose separation began in the superior dorsal side but was incomplete in the ventral inferior parts. It is possible that this arose from accidents of fusion or fission of embryos.

Ozick H, Hollander G, Greengart A, Shani J, Lichstein E: Dilated cardiomyopathy in identical twins. Chest 1984 Dec;86(6):878-80

Identical twins had dilated cardiomyopathy and evidence of an autoimmune process involving both the heart and thyroid gland. An inherited abnormality of immune regulation is suggested as a possible basis for these unusual findings.

P

Pal SK, Saha PK: Ischiopagus tetrabrachius tripus. J Indian Med Assoc 1984 Oct;82(10):373-4

Parfrey PS, Hollomby DJ, Gilmore NJ, Knaack J, Schur PH, Guttmann RD: Glomerular sclerosis in a renal isograft and identical twin donor. A family study. Transplantation 1984 Oct;38(4):343-6

Loss of renal mass has been associated with the development of glomerular sclerosis in animals and human beings. The pathophysiology of this renal injury is unknown, but glomerular sclerosis in animals can be aggravated or accelerated following exposure to nephrotoxic antibodies, puromycin aminoglycoside or renal irradiation. We describe here the outcome of the first renal transplant performed in the British Commonwealth. Glomerular sclerosis occurred in identical twins who were kidney donor and recipient, renal failure occurring 14 and 16 years after transplantation, respectively. Examination of these twins and all living immediate family members showed that six of the seven family members (both twins, their mother, and three sisters) had increased concentrations of circulating immune complexes, decreased total hemolytic complement, and low or borderline concentrations of C4. Only twins with single kidneys had detectable renal disease. Other preexisting causes of renal disease in these twins that would account for the glomerular sclerosis could not be identified. We suggest that a familial immune defect contributed to the development of glomerular

sclerosis in these twins who were predisposed to renal disease due to loss of renal mass.

Passananti GT see **Nash RM**

Patel DN see **Shah SB**

Penno MB see **Nash RM**

Pero RW see **Hedner K**

Phelan L see **Greenblatt AM**

Phelps BH see **DeLisi LE**

Philippe P: Genetic epidemiology of twinning: a population-based study. Am J Med Genet 1985 Jan; 20(1):97-105

We report on kinship analysis of mothers with twins and a study of their ancestors and inbreeding. A pair-matched case-control design supports the analyses. Nearly as high a number of ancestors was found at the origin of cases as in control individuals. Study cases were less inbred than control subjects, but their kinship was higher, especially for unlike-sex twins born after age 30 years of mothers and, but less so, for like-sex twins born to mothers younger than 30 years. The results indicate a genetic origin of both types of twins and possibly a highly spread gene with dominant or co-dominant expression.

Pinto MM see **Chervenak FA**

Pisani M, Ruocco V: 'Twin' psoriasis in monozygotic twins [letter] Arch Dermatol 1984 Nov; 120(11):1418-9

Plomin R see **Gabrielli WF Jr**

Porreco RP see **Weingast GR**

Pretorius DH see **Weingast GR**

Preziosi P, Medici D, Maiorana A: Sonographic findings in cephalothoracopagus-conjoined twins. Pediatr Radiol 1984;14(6):453-4

Antepartum diagnosis of syncephalus thoracopagus-conjoined twins was made at the 27th week of gestation. The authors stress the need for early recognition of this fetal malformation.

Prior M see **Johnston C**

Propping P see **Gaxiola B**

Prud'homme D, Bouchard C, Leblanc C, Landry F, Fontaine E: Sensitivity of maximal aerobic power to training is genotype-dependent.

Med Sci Sports Exerc 1984 Oct;16(5):489-93

Ten pairs of monozygotic twins of both sexes were submitted to a 20-wk endurance-training program, four and five times per week, 40 min per session, at an average of 80% of the maximal heart rate reserve. Testing and training were performed on cycle ergometers. Maximal aerobic power (MAP in ml O2 X min-1 X kg-1) and ventilatory aerobic (VAT) and anaerobic (VANT) thresholds (ml O2 X min-1 X kg-1) were measured before and after the training program, as well as during the 7th and 14th week to adjust training to changes in maximal heart rate. Considering the 20 individuals as a group, training significantly (P less than or equal to 0.01) increased MAP (from 44 +/- 6 to 50 +/- 6), VAT (25 +/- 3 to 30 +/- 4), and VANT (36 +/- 5 to 42 +/- 6). Thus, MAP improved by 12% of the pre-test value, while mean changes in VAT and VANT reached 20% and 17%, respectively. There were, however, considerable interindividual differences in training gains as exemplified by a range of about 0% to 41% for MAP. Differences in the MAP response to training were not distributed randomly among the twin pairs. Thus, intraclass correlations computed with the amount of improvement in MAP (ml O2 X min-1 X kg-1) reached 0.74 (P less than 0.01) indicating that members of the same twin-pair yielded approximately the same response to training. The same coefficient reached 0.43 and 0.24 for VAT and VANT, respectively (P greater than 0.05). These results suggest that there are considerable individual differences in the adaptive capacity to short-term endurance training. Moreover, sensitivity of maximal aerobic power to such training is largely genotype-dependent.

Pyke DA see **Hoskins PJ**

Q

Quinn OW see **Mirsky AF**

R

Radhakrishnan K, Sridharan R, Ashok PP: Duchenne's muscular dystrophy in monozygotic twins. Indian J Pediatr 1984 Mar-Apr;51(409):251-3

Radocha K see **Jirous J**

Rattan PK see **Knuppel RA**

Reid SE see **Mulcahy MT**

Reisner H see **Orstavik KH**

Rettig H, Rutten AP: Perforated duodenal ulcer in a six-month-old quadruplet baby [letter] Neth J Surg 1984 Oct;36(5):143-4

Richert JR, McFarland HF, McFarlin DE, Johnson AH, Woody JN, Hartzman RJ: Measles-specific T cell clones derived from a twin with multiple sclerosis: genetic restriction studies. J Immunol 1985 Mar;134(3):1561-6

The association between multiple sclerosis (MS) and HLA-DR2 suggests that the disease may be associated with an aberrant immune response, likely directed against an antigen of either viral or host origin. We have used measles virus-specific T cell clones derived from a patient with MS to study genetic restriction patterns of antigen presentation by macrophage-enriched (E-) populations. Twenty-two clones proliferated in response to measles-infected Vero cells but not to mumps-infected or uninfected Veros. E- cells from both the autologous subject and her healthy, measles nonresponder identical twin were capable of presenting antigen to all clones. Studies with E- cells obtained from a panel of cell donors demonstrated clones which recognized antigen in association with D2/DR2, DR4, subgroups of DR4, and SB3. Three clones recognized antigen only in association with the autologous or twin's cells, but not with other sets of HLA-matched E-cells obtained from healthy donors or from other patients with MS. These studies indicate that the differing responses to measles virus demonstrated by these two identical twins are not explained by alterations in the interactions between antigen-presenting cells and T cells. Furthermore, at the clonal level, no preferential role is seen for HLA-DR2 as the restricting element for presentation of measles virus to these clones.

Ridges JD see **Adams TD**

Riopel L see **Gibb W**

Ritvo AM see **Ritvo ER**

Ritvo ER, Freeman BJ, Mason-Brothers A, Mo A, Ritvo AM: Concordance for the syndrome of autism in 40 pairs of afflicted twins. Am J Psychiatry 1985 Jan;142(1):74-7

The UCLA Registry for Genetic Studies in Autism was established in 1980 to test the hypothesis that genetic factors may be etiologically significant in subsets of patients. To date 61 pairs of twins have enrolled and 40 meet research diagnostic criteria for autism. The authors found a concordance for autism in these 40 pairs of 95.7% in the monozygotic twins (22 of 23) and 23.5% in the dizygotic twins (four

AUTHOR SECTION

of 17).

Roberman B see **Mulcahy MT**

Ronan SG, Solomon LM: Benign neonatal eruptive hemangiomatosis in identical twins.
Pediatr Dermatol 1984 Apr;1(4):318–21
Two cases of neonatal hemangiomatosis occurred in identical twins. Work-up for internal hemangiomas were performed on both infants and were negative. Twin no. 1, with extensive lesions, is currently taking oral prednisone, 2 mg/kg/day, with gradual resolution of the lesions. So far, no new hemangiomas have developed in twin no. 2.

Rosenberg ER see **Baker ME**

Rosenberg P see **Shapiro DL**

Rosenman RH see **Matthews KA**

Roy M: Anaesthesia for separation of conjoined twins.
Anaesthesia 1984 Dec;39(12):1225–8
Anaesthetic procedures for successful separation of pygopagus twins are described. A bony union in the sacral region and communication of the subarachnoid space in this region were the main abnormalities. Various anaesthetic problems during the operation and in the immediate postoperative period are discussed.

Ruocco V see **Pisani M**

Russell GF see **Holland AJ**

Rutten AP see **Rettig H**

Rydnert J, Holmgren G, Sigurd J: Intra-uterine diagnosis of an acardiac monster.
Acta Obstet Gynecol Scand 1984;63(6):569–70

S

Sadlowski RW see **Sidebottom RA**

Saha PK see **Pal SK**

Sakai T see **Chihara S**

Sale GE see **Cheever MA**

Scerbo JC see **Knuppel RA**

Schuelke GS see **Lynch HT**

Schur PH see **Parfrey PS**

Schwartz JL, Maniscalco WM, Lane AT, Currao WJ: Twin transfusion syndrome causing cutaneous erythropoiesis. Pediatrics 1984 Oct;74(4):527–9
Two cases of twin transfusion syndrome are described in which the donor twin exhibited blueberry muffin-like macules and papules associated with cutaneous erythropoiesis. No evidence was found in either case for intrauterine viral infection, the most common cause of cutaneous erythropoiesis. Cutaneous erythropoiesis is these two cases is considered to be due to persistence or reactivation of fetal dermal erythropoiesis secondary to prolonged, severe intrauterine anemia.

Schwerdt P see **Mirsky AF**

Scott DG see **Meadow SR**

Segal N: Asymmetries in monozygotic twins [letter]
Am J Psychiatry 1984 Dec;141(12):1638

Shah SB, Patel DN: Twinning and structural defects.
Indian Pediatr 1984 Jun;21(6):475–8

Shani J see **Ozick H**

Shapiro DL, Rosenberg P: The effect of federal regulations regarding handicapped newborns. A case report. JAMA 1984 Oct 19;252(15):2031–3

Sherwood B see **Cox F**

Sherzer A see **Ismajovich B**

Shibuya H, Tsukada K, Takagi M, Horiuchi JI, Suzuki S, Kamiyama RI: Synchronous Hodgkin's disease in monozygotic twins. Acta Radiol [Oncol] 1984; 23(6):425–8
Identical Hodgkin's disease (HD) in monozygotic twins is presented together with a review of five previously reported pairs. The 12 reported cases of concordant HD in monozygotic twins had three characteristic features: a younger age than HD patients in general, a short interval between the onset of the disease in the two twins, and a similar histologic pattern in both twins. These rare cases may suggest that genetic and environmental factors are responsible for the occurrence of HD.

Sidebottom RA, Sadlowski RW: Bilateral ureteropelvic junction obstructions in newborn identical twins.
Urology 1984 Oct;24(4):379–81
Identical twin black females were born with bilateral ureteropelvic junction obstructions. Dismembered pyeloplasties performed in the neonatal period have apparently been successful. Although a tendency for bilaterality is more frequently reported in early infancy, the authors are unaware of a similar occurrence reported in identical twins.

Siever LJ see **Mirsky AF**

Sigurd J, Joelsson I: Sinusoidal fetal heart rate pattern. An indicator of fetal anemia in iso-immunization.
Acta Obstet Gynecol Scand 1984;63(5):463–6

Sigurd J see **Rydnert J**

Smallridge RC, Vigersky R, Glass AR, Griffin JE, White BJ, Eil C: Androgen receptor abnormalities in identical twins with oligospermia. Clinical and biochemical studies. Am J Med 1984 Dec; 77(6):1049–54
Identical twin brothers presented with oligospermia, small testes, normal male phenotypes, elevated serum luteinizing hormone levels, and normal or elevated serum testosterone levels. Both men had low to low-normal cytosol androgen receptor binding capacity in cultured fibroblasts from pubic skin biopsy specimens. Qualitative abnormalities of cellular androgen receptors were suggested by low-normal or low nuclear androgen uptake in fibroblasts from both brothers as well as abnormal thermolability and subnormal molybdate stabilization of androgen receptors from one brother. In vivo androgen sensitivity was assessed in one twin following administration of testosterone or the non-aromatizable androgen fluoxymesterone. Fluoxymesterone suppressed serum luteinizing hormone and serum testosterone/estradiol-binding globulin, and although testosterone suppressed both serum luteinizing hormone and serum follicle-stimulating hormone, the suppression of serum luteinizing hormone by testosterone was subnormal. Both subjects showed marked exaggeration of the serum 17-hydroxyprogesterone increase after administration of human chorionic gonadotropin, despite normal serum testosterone increases, suggesting a block in testicular 17,20-desmolase, which converts 17-hydroxyprogesterone to testosterone. These studies suggest that oligospermia and block of the enzyme 17,20-desmolase may be the earliest manifestations of androgen resistance, and the finding of the syndrome of oligospermia, normal male phenotype, and androgen receptor abnormalities in identical twins indicates a genetic etiology of this disorder.

Smith CK, Harrison SD, Ashworth C, Montano D, Davis A, Fefer A: Life change and onset of cancer in identical twins. J Psychosom Res 1984; 28(6):525–32
The relationship of life change to the onset of cancer was studied in 22 pairs of HLA-identical siblings who were discordant for hematologic malignancies. The twin pairs were hospitalized for bone marrow transplantation. Life change was measured using a well-validated instrument, the Schedule of Recent Experiences (SRE). Contrary to our expectations,

we were unable to document increased life changes in the sick twins. The timing of administration of the SRE with respect to the transplant did influence reporting of life events. However, regardless of timing of administration, in the period antedating the diagnosis of malignancy the healthy donor twins had increased or equivalent life changes when compared to their sick twins.

Smith SZ see **Callen JP**

Solomon LM see **Ronan SG**

Soppi E, Eskola J, Lehtonen A: Evidence against HLA and immunological dependence of disease outbreak in SLE. Immunological characterisation of identical twins clinically discordant for SLE.
Ann Rheum Dis 1985 Jan;44(1):45-9
Identical female twins clinically discordant for 20 years for SLE were studied. Their HLA-haplotype was A1,28; B8w6,w35; Cw3,w7; Dr3,4. Both twins had a raised erythrocyte sedimentation rate, autoantibodies, and circulating immune complexes. The diseases sibling had a reversed OKT4/OKT8 ratio (0.43), decreased helper T cell number, defective pokeweed mitogen (PWM) induced plasma cell differentiation, and overactive hydrocortisone sensitive suppressor cells. Immunological abnormalities may be only partly HLA related (B8; Dr3), but are most probably secondary to the disease process in the sibling with SLE. Exogenous and/or endogenous factor(s) other than genetic or immunological are suggested as being operative in the predisposition to and expression of SLE.

Sostek A see **Mirsky AF**

Sridharan R see **Radhakrishnan K**

Stein L see **Nash RM**

Stelzer G see **Callen JP**

Stephens TD: Muscle abnormalities associated with the twin reversed-arterial-perfusion (TRAP) sequence (acardia). Teratology 1984 Dec;30(3):311-8
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Stevenson J see **Graham P**

Storb R see **Cheever MA**

Surchev L see **Ovtscharoff W**

Suzuki S see **Shibuya H**

T

Takagi M see **Shibuya H**

Teasdale F see **Gibb W**

Thomas ED see **Cheever MA**

Toaff ME see **Ahram JA**

Tomoyoshi E see **Yasuda Y**

Torii S see **Yasuda Y**

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van Kammen DP see **DeLisi LE**

Vankova M see **Ovtscharoff W**

van Velzen-Blad H see **Kluin-Nelemans HC**

Vesell ES see **Nash RM**

Vielvoye GJ see **van den Bos RW**

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twins (13.0/100,000) were close to expected. However, twins had a significantly increased rate of renal cancer (rate ratio = 4.1). The documented associations between cancers and congenital malformations are suggestive of some common etiologic factors which warrant further studies for their identification and for elucidating possible means of prevention.

Wineman I see **Lament C**
Witherspoon RD see **Cheever MA**
Woody JN see **Richert JR**
Wray B see **Cox F**

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Yasuda Y, Ohtsuki H, Torii S, Tomoyoshi E, Clark CF: Epigastrius with omphalocele—report of a case. Teratology 1984 Dec;30(3):297–309

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Yoneda H see **Chihara S**
Youcha S see **Chervenak FA**

Z

Zec R see **Mirsky AF**

https://doi.org/10.1017/S0001566000006346 Published online by Cambridge University Press

Current Research on Multiple Births

SEMIANNUAL BIBLIOGRAPHY – 1985

Produced by a MEDLARS search of the worldwide medical literature received by the National Library of Medicine, U.S. Public Health Service between July 1 and December 10, 1985. Sponsored by the Center for the Study of Multiple Birth, Chicago, Illinois.

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Title, authors, and journal source, alphabetized by journal:

- Behavior and Physiology
- Genetic Traits and Methods
- Obstetrics and Pediatrics
- General

Author Section

Authors, titles, journal source, and abstract (if available), alphabetized and cross-indexed by all authors.

(*) The first three subject sections include other topics related to these headings. Classification is performed automatically on the basis of keywords. Some articles appear only in the General section for lack of appropriate keywords. Some articles may appear in two or three of the specific subject sections.

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Bouchard TJ Jr see **Kohler PF**
Bowman JM: Alloimmunization in twin pregnancies. Am J Obstet Gynecol 1985 Sep 1;153(1):7-13
Of 118 twins born of 59 alloimmunized mothers from 1944 to 1984, 65 were Rh-positive and six died. One twin in one of the 59 sets and four sets of twins referred from elsewhere underwent intrauterine fetal transfusion. The Manitoba twin and two pairs of the four referred sets survived. Fetal transfusions were begun at 22 2/7 and 24 1/7 weeks' gestation in one surviving set and 23 3/7 weeks in both twins of the other surviving set. Three twins of the four who died were hydropic at referral. There would have been a 62.5% chance of survival if they had been referred at 23 weeks' gestation. ABO incompatibility in one twin of three sets had no effect on the amelioration of severity of Rh disease. In three sets, gross hemoglobin disparities were due to twin-to-twin transfusion. Differences in degree of severity of disease in the other four dichorionic sets may have been due to differences in sex, Rh constitution, amount of fetal erythropoiesis, and fetal hepatocellular function.
Brereton RJ see **McNicholas T**
Brin I see **Zilberman Y**
Broomhall J see **Kalra D**
Brown DL, Holubec DM, Towle DJ, Bodary AK, Patterson AR, Mack J: Anesthetic management of thoracopagus twins undergoing cardiopagus separation. Anesthesiology 1985 May;62(5):679-82
Bundey SE see **Tuckerman E**
Bustabad S see **Gonzalez T**
Byard PJ, Poosha DV, Satyanarayana M, Rao DC, Russell JM: Path analysis of family resemblance for cranio-facial traits in Andhra Pradesh nuclear families and twins. Ann Hum Biol 1985 Jul-Aug; 12(4):305-14
Path analysis of 12 cranio-facial measurements from a sample of nuclear families and twins from Andhra Pradesh, India is used to test hypotheses about the familial transmission of these traits. For bigonial breadth and ear dimensions, the transmission from parent to child is consistent with simple autosomal polygenic inheritance, but length, breadth and circumference of the head, facial breadth and nose dimensions show evidence of transmission in excess of polygenic expectations. Additional non-transmissible resemblance of sibling pairs is not significant for any of the variables, but twin pairs do exhibit significant additional resemblance for head circumference, head length, minimum frontal breadth, bizygomatic breadth and ear dimensions. The effect of interobserver measurement differences can be detected for head breadth, minimum frontal breadth, bigonial breadth, total facial height and nose dimensions.

C

Callan NA see **Maggio M**
Calvo M see **Fernández MM**
Campostrini R, Zaccara G, Rossi L, Paganini M, Dorigotti A, Zappoli R: Valproate-induced hyperammonaemia in two epileptic identical twins. J Neurol 1985;232(3):167-8
The cases of two epileptic identical twins are described, one of whom had presented an episode of valproate (VPA)-induced stupor associated with very high blood ammonia (NH_3) concentrations. Both twins showed a similar marked increase of venous NH_3 concentrations after the administration of a single loading dose of VPA (800 mg).
Caputo AR see **Constad WH**
Chandra M, Kumari CK: Prenatal diagnosis of twins with anencephaly with gray scale ultrasound [letter] Indian Pediatr 1985 Mar;22(3):249-50
Chervenak FA see **Chitkara U**
Chin AJ see **Sanders SP**
Chitkara U, Berkowitz GS, Levine R, Riden DJ, Fagerstrom RM Jr, Chervenak FA, Berkowitz RL: Twin pregnancy: routine use of ultrasound examinations in the prenatal diagnosis of intrauterine growth retardation and discordant growth.
Am J Perinatol 1985 Jan;2(1):49-54
A prospective study was undertaken in 42 normal twin pregnancies to determine the value of routine ultrasound evaluation in the prenatal diagnosis of intrauterine growth retardation (IUGR) and intra-pair growth discordancy in twin gestations. Use of multiple sonographic parameters significantly improved diagnostic accuracy when compared with the use of single parameters, such as biparietal diameter (BPD) alone in the prepartum diagnosis of these two entities.
Cohen DJ see **Price RA**

AUTHOR SECTION

Colan SD see **Sanders SP**
Coln CD see **Strickland AD**
Connors MH, Styne DM: Familial functional anorchism: a review of etiology and management. J Urol 1985 Jun;133(6):1049–51
Identical male twins with small penes and bilateral unpalpable gonads were unresponsive to human chorionic gonadotropin stimulation. Both infants had elevated levels of gonadotropins. The size of the penis did not meet fully the criteria for micropenis and the organ was responsive to testosterone therapy. The use of primary human chorionic gonadotropin stimulation followed by testosterone measurements is indicated for children with cryptorchidism in whom the etiology of micropenis is in doubt. We report the first observation of anorchism in identical twins.
Constad WH, Wagner RS, Caputo AR: Aicardi syndrome in one dizygotic twin. Pediatrics 1985 Sep; 76(3):450–3
The Aicardi syndrome consists of infantile spasms, defects of the corpus callosum, dorsal vertebral anomalies, and chorioretinal lacunar defects. The etiology is, as yet, unknown. The most likely cause, however, is an X-linked mutational event that is lethal in males. The first case of the Aicardi syndrome known to occur in one twin is reported. The patient was female and her unaffected sibling was male. This provides strong evidence to support the theory of an X-linked mutational event as the cause of this condition. The typical chorioretinal defects, often difficult to document because these children die at an early age, are clearly illustrated in this report.
Cook CM see **Giles WB**
Corbeel L see **Jaeken J**
Corey LA see **Heath AC**
Cornelissen G see **Hanson BR**
Creighton RE see **James PD**
Cunha AG see **de Almeida JC**

D

Dallapiccola B, Stomeo C, Ferranti G, Di Lecce A, Purpura M: Discordant sex in one of three monozygotic triplets. J Med Genet 1985 Feb; 22(1):6–11
A case is reported of monozygotic triplets, discordant for phenotypic sex, in which the female presented at birth with the features of Turner's syndrome. Chromosomal analyses showed homogeneous 46,XY karyotypes in the lymphocytes of the three sibs, while a 45,X non-mosaic chromosome constitution was detected in skin fibroblasts of the female triplet. It is suggested that mitotic non-disjunction or anaphase lag occurring early during embryonic development accounted for the occurrence of monosomy X in one cell line of the affected triplet. Previous observations of monozygotic twin pairs discordant for chromosome constitutions are reviewed.
Dambrozia J see **Woyciechowska JL**
Dane TE see **Martin WM**
Daw E, Toon P: Identical twins with uterus didelphys and duplex kidneys. Postgrad Med J 1985 Mar; 61(713):269–70
de Almeida JC, Llerena JC Jr, Rita Martins R, Jung M, Reis DF, Cunha AG, Molina Gomes D: Monozygotic twins with Turner's syndrome and mos 45,X/46,X,r,(Y). Ann Genet (Paris) 1985;28(1):32–6
A pair of monozygotic twins with Turner's syndrome was studied using combined cytogenetic techniques and a mos 45,X/46,X,r(Y) was demonstrated in both. One of the twins presented clitoral hypertrophy. Surgery was performed and uterus, bilateral Fallopian tubes, bilateral epididymis and bilateral streak gonads with a small nodule of testicular tissue containing numerous seminiferous tubules were found in both.
Devoe LD: Simultaneous antepartum testing of twin fetal heart rates. South Med J 1985 Apr;78(4):380–3
Assessment of twin gestation in the antepartum period has been a problem because most methods either fail to distinguish twins individually or require serial study over several weeks before reaching diagnostic end points. Electronic monitoring of the fetal heart rate (FHR) allows individual focus on each twin with a high degree of specificity and permits immediate status evaluation. In this study 44 sets of twins had simultaneous Doppler monitoring in an outpatient testing center. Transducer position was aided by real-time ultrasonic location of each fetal heart; 198 tests were satisfactory, each patient receiving 3.9 +/- 2.9 (mean +/- SD) studies. The rate of unsatisfactory tests was 15.4%, though each fetus was satisfactorily tested within one week of delivery. Testing was begun at 32.9 +/- 2.9 weeks and delivery occurred at 36.8 +/- 2.6 weeks. Perinatal mortality was 22.7/1,000, significant morbidity 15.9%, and cesarean section rate 18.1%. Reactive (R) patterns were seen in 69 fetuses and nonreactive (NR) in 19. Although there were no significant differences in gestational age at delivery between R and NR groups, (36.9 vs 36.2 wk) NR fetuses had significantly lower birth weights and higher rates of neonatal depression, perinatal mortality, and retarded intrauterine growth. Similarities in FHR patterns within twin pairs were frequently observed (30/44). Twins exhibiting dissimilar patterns had significant differences in birth weight and tended to have separate rather than common placentas. Simultaneous FHR testing of twins appears to be an effective means of providing immediately accessible data on the comparative well-being of each twin.
Diaz-Flores L see **Gonzalez T**
Di Lecce A see **Dallapiccola B**
Donnenfeld AE, Dunn LK, Rose NC: Discordant amniotic band sequence in monozygotic twins. Am J Med Genet 1985 Apr;20(4):685–94
Multiple congenital anomalies were identified at 16 weeks gestation in one fetus of an unsuspected twin pregnancy while ultrasound examination was performed before routine genetic amniocentesis. Further sonographic studies documented the amniotic band sequence (ABS) and transient oligohydramnios in the affected fetus. The latter finding supports the theory of amnion rupture followed by amniotic fluid leakage through an ineffective chorion barrier as the pathogenesis of compression related anomalies in this syndrome. Extensive craniofacial involvement including hydrocephalus, encephalocele, and multiple facial clefts in the affected fetus, combined with an erroneous ultrasound diagnosis of ABS in the unaffected twin, created an extremely difficult management and counseling situation. A review of ABS, the embryology of placental membrane development, and a discussion of selective termination procedures are presented.
Dorigotti A see **Campostrini R**
Dunn LK see **Donnenfeld AE**
Duschenes EA see **Rosenblatt DS**
Duvoisin RC: Parkinson's disease: intrauterine

influence in twins? [letter] Neurology 1985 May; 35(5):774–5

E

Eaves LJ see **Heath AC**
Eckert ED see **Kohler PF**
Eeckels R see **Jaeken J**
Eggermont E see **Jaeken J**
Elbert T see **Fehm-Wolfsdorf G**
Eldridge R see **McFarland HF**
Elfenbein JL see **Bentler RA**
Elgie SM see **Whitton JL**

Enbom JA: Twin pregnancy with intrauterine death of one twin. Am J Obstet Gynecol 1985 Jun 15; 152(4):424–9
The antepartum death of one twin is a rare obstetric complication. Two cases are presented, accompanied by a review of the current literature. The premature and neonatal death rates are high in the surviving twins. Toxemia, fetal distress, abnormal presentation, and dystocia are also increased. Maternal disseminated intravascular coagulation has been demonstrated without a concomitant fetal coagulation defect. A more unique finding is fetal disseminated intravascular coagulation with a monochorionic placenta. The common circulation between the live and dead twins may result in fetal cerebral, renal, and cutaneous lesions, usually without demonstrable maternal disease. High-risk obstetric management is reviewed and a careful pediatric follow-up is recommended with monozygotic twins.

Epstein MF see **Sanders SP**

Erkkola R, Ala-Mello S, Piiroinen O, Kero P, Sillanpää M: Growth discordancy in twin pregnancies: a risk factor not detected by measurements of biparietal diameter. Obstet Gynecol 1985 Aug;66(2):203–6
Among 460 twin pregnancies delivered at the University Central Hospital of Turku from 1970 to 1981, there were 41 (8.9%) with a weight difference of 25% or more between twins when calculated from the weight of the larger twin. The perinatal death rate in the first group (9.7%) was significantly higher (P less than .01) than the perinatal death rate (3.7%) in the group with the weight difference of less than 25%. The intrauterine mortality rate, in particular, was significantly increased (P less than .001) in the group with 25% or more difference being 6.5-fold when compared with the more difference being 6.5-fold when compared with the group with the lower weight difference. Among 271 twin pregnancies examined by ultrasound one to two weeks before delivery, there were 31 (11.4%) pairs of twins with a 3-mm or more difference in biparietal diameter, 11 (4.1%) with a 4-mm or more difference, and seven (2.6%) with a 5-mm or more difference. The sensitivity of measurements of biparietal diameter to detect the growth discordancy was 9 to 35%, the specificity 90 to 98%, and the positive predictivity 23 to 29%. This study indicates that a divergent growth pattern in twin pregnancy carries an elevated risk of intrauterine death, especially for the smaller twin. Measurement of biparietal diameter is not a method sensitive enough to detect these high-risk twin pregnancies.

Eskes TK, Timmer H, Kollée LA, Jongsma HW: The second twin. Eur J Obstet Gynecol Reprod Biol 1985 Mar;19(3):159–66
Perinatal data on 76 twin pregnancies demonstrated a significantly (P less than 0.01) lower Apgar score and acidemia in the umbilical artery for the second twin. Factors such as female sex, prematurity, low birth-weight and instrumental delivery accounted for this difference (P less than 0.05 or P less than 0.01). These differences were not found for parity, pregnancy complications and time interval. Using electronic fetal surveillance, expert personnel and rapid resuscitation the neonatal depression could be reversed rapidly, as demonstrated in capillary heel blood. Perinatal mortality was 2–3-times higher than for singletons but perinatal morbidity fell in the range for singletons and was not due to the short-lasting asphyxia during birth.

F

Fagerstrom RM Jr see Chitkara U
Fehm HL see **Fehm-Wolfsdorf G**

Fehm-Wolfsdorf G, Born J, Elbert T, Voigt KH, Fehm HL: Vasopressin does not enhance memory processes: a study in human twins.
Peptides (Fayetteville) 1985 Mar-Apr;6(2):297–300
Behavioral effects of lysin-vasopressin (LVP) were investigated applying two paradigms from human experimental psychology. The first task was designed to simulate amnesic symptoms in normals. The second task addressed the emotional value of the items to be processed. Additionally, EEG recordings were used as indicators of the central nervous system effectiveness of LVP. Blood pressure and heart rate measured peripheral arousal. The co-twin control method was employed to increase experimental power. Contrary to the prediction of the vasopressin memory hypothesis none of the specific memory parameters was improved by LVP treatment. Changes in the electrical activity of the brain, but not in blood pressure and heart rate indicated central nervous system actions of LVP. However, interpretation of LVP effects in terms of memory processing seems not to be justified.

Ferguson JE 2d see Seifer DB

Fernández MM, Calvo M, Sánchez-Ibarrola A, Oehling A: HLA in allergic twins.
Allergol Immunopathol (Madr) 1985 Mar-Apr; 13(2):105–10
Interest in the study and determination of the influence of a genetic factor in the etiology of bronchial asthma was initiated by Cook. This is a study of 13 pairs of twins that were seen in our department presenting some kind of allergic illness. Each pair of twins underwent a complete clinical history and physical examination, routine laboratory analysis and radiography. In addition, they were also tested for the following: skin test, serum immunoglobulins, total IgE, histamine release test, hemagglutination test, histocompatibility antigen (HLA). Statistical analysis was done using the Chi square test, with significant results found in 4 antigens, namely A2, A30 + 31, B5 and B12.

Ferranti G see Dallapiccola B

Filion R, Grignon A, Boisvert J: Antenatal diagnosis of ipsilateral multicystic kidney in identical twins. J Ultrasound Med 1985 Apr;4(4):211–2

Fink HW: Simultaneous Kawasaki disease in identical twins: case report. Va Med 1985 Apr;112(4):248–51

Fiszbein A see **Kay SR**

Fitzgerald A, Russell AS: Identical twins discordant for S.L.E. Clin Exp Rheumatol 1983 Jan-Mar; 1(1):73–4
In two identical twins, one developed dermatomyositis and the other systemic lupus erythematosus. The presence of different connective tissue diseases in identical twins might support the

theory that one or more genes underly a basic predisposition to developing autoimmune responses, while other genes or environmental factors may influence the expression of a specific disease category.

Friberg L see **Pedersen NL**

Frigoletto FD see **Sanders SP**

G

Gantes M see **Gonzalez T**

Garneau RR see **Joishy SK**

Gibson JB see **Martin NG**

Giles WB, Trudinger BJ, Cook CM: Fetal umbilical artery flow velocity-time waveforms in twin pregnancies. Br J Obstet Gynaecol 1985 May; 92(5):490-7

The umbilical artery flow velocity-time waveforms were studied in 76 twin pregnancies. The ratio of peak systolic (A) to least diastolic (B) velocity was calculated for each fetus as an index of umbilical placental flow resistance. Seventy-one sets of twins were studied within 14 days before delivery. In 65 cases both twins were alive at the time of study. In 32 pregnancies both fetuses were of birthweight appropriate for gestational age (AGA) and had A/B ratios within the normal singleton range. In 33 pregnancies one or both of the liveborn infants were small for gestational age (SGA) and in 78% of these at least one fetus had an elevated A/B ratio. Discordancy in birthweight and A/B ratio was associated with growth retardation. Clinically manifest twin-to-twin transfusions occurred in five of the ten pregnancies resulting in an SGA infant (eight with discordant weight) associated with a normal and concordant A/B ratio. Two twin-to-twin transfusions were associated with perinatal death. The placentas were examined in 61 patients. In 43 dichorionic pairs the A/B ratio was elevated in 12 of the 18 where there was at least one SGA infant. There was a greater incidence of growth retardation in the monochorionic pairs (12 of 18). Only seven of these were identified by an elevated A/B ratio. In 10 of these 18 pairs vascular anastomoses were demonstrated on placental inspection and in a further two there was evidence of twin-to-twin transfusion by haemoglobin discrepancy.(ABSTRACT TRUNCATED AT 250 WORDS)

Glaser JH see **Hyams JS**

Goetz FC see **Steffes MW**

Goetz FC see **Sutherland DE**

Golick MS see **Rosenblatt DS**

Gonzalez T, Gantes M, Bustabad S, Diaz-Flores L: Acne fulminans associated with arthritis in monozygotic twins [letter] J Rheumatol 1985 Apr; 12(2):389-91

Gottesman II see **Berenbaum H**

Gransberg L see **Larsson L**

Grauaug AA see **Yovich JL**

Greene MF see **Sanders SP**

Greenstein J see **McFarland HF**

Greenstein JI, Jacobson S, Richert JR, McFarland HF: Characterization of antigen-specific T cells in multiple sclerosis twins with elevated responses to measles virus. Ann NY Acad Sci 1984;436:511-2

Grignon A see **Filion R**

Groothuis JR: Twins and twin families. A practical guide to outpatient management. Clin Perinatol 1985 Jun;12(2):459-74

Little has been written of a practical nature to guide the health professional in providing advice and support to families with twins in the practice setting. This article provides an overview of issues and concerns specific to twins and provides practical guidelines for caring for twins and their families.

Grunnet N see **Schultz Larsen F**

Guze SB: Genetic aspects of alcoholism. Prog Clin Biol Res 1985;177:479-87 (18 ref.)

Guze SB: The significance of genetic factors in psychiatric disorders. Prog Clin Biol Res 1985; 177:449-59

H

Haden R, Penn C: The twin situation and its effects on syntax and interactional language over time. Br J Disord Commun 1985 Apr;20(1):19-29

Halberg F see **Hanson BR**

Hamod KA see **Maggio M**

Hansen PK see **Secher NJ**

Hanson BR, Halberg F, Tuna N, Bouchard TJ Jr, Lykken DT, Cornelissen G, Heston LL: Rhythmometry reveals heritability of circadian characteristics of heart rate of human twins reared apart. Cardiologia 1984 May-Jun;29(5-6):267-82

Hayden MR see **Wilson RD**

Heath AC, Berg K: Effects of social policy on the heritability of educational achievement. Prog Clin Biol Res 1985;177:489-507

Heath AC, Berg K, Eaves LJ, Solaas MH, Sundet J, Nance WE, Corey LA, Magnus P: No decline in assortative mating for educational level. Behav Genet 1985 Jul;15(4):349-69

Hellstrom FV see **Rosenblatt DS**

Helson L see **Kushner BH**

Hershlag A, Vinograd I, Nissan S, Atlan H: Cardiac assessment by first-pass angioscintigraphy in conjoined thoracopagus twins. Eur J Nucl Med 1985;10(1-2):84-5

Dynamic computerized heart studies using 99Tc-DTPA demonstrated a joined heart in conjoined thoracopagus twins. In the case presented, the electrocardiogram, dynamic radioactive study, and the cardiac catheterization all gave basically the same results and correlated well with the postmortem examination. The dynamic study is presented in detail, stressing its advantage as a noninvasive and reliable procedure in the primary cardiac assessment of conjoined twins.

Heston LL see **Hanson BR**

Heston LL see **Kohler PF**

Ho NK: A ten-year study of twins in Toa Payoh Hospital 1973-1982. Singapore Med J 1985 Feb; 26(1):73-81

Hofmann RJ: Monozygotic twins concordant for bilateral Duane's retraction syndrome. Am J Ophthalmol 1985 May 15;99(5):563-6

Duane's retraction syndrome applies to a wide spectrum of motility disturbances associated with retraction of the globe and narrowing of the palpebral fissure. Although many different anatomic and physiologic disturbances of the oculomotor system are implicated, the underlying cause remains obscure. Twin studies are often useful in determining the contribution of genetics or heredity to disease, but the occurrence of Duane's retraction syndrome in twins is rare. One of a pair of monozygotic twins concordant for bilateral Duane's retraction syndrome developed a 12-diopter esotropia in primary gaze but the other has not. Neither child has a head tilt and both can fix and follow with either eye.

Hollingsworth P see **Yovich JL**

AUTHOR SECTION

Holm NV see **Schultz Larsen FV**
Holubec DM see **Brown DL**
Howard N see **McLean R**
Huisjes HJ see **Kragt H**
Hyams JS, Glaser JH, Leichtner AM, Morecki R: Discordance for biliary atresia in two sets of monozygotic twins. J Pediatr 1985 Sep;107(3):420–2

J

Jacobson S see **Greenstein JI**
Jaeken J, van Eijk HG, van der Heul C, Corbeel L, Eeckels R, Eggermont E: Sialic acid-deficient serum and cerebrospinal fluid transferrin in a newly recognized genetic syndrome. Clin Chim Acta 1984 Dec 29;144(2-3):245–7
Identical twin-sisters with evidence of a demyelinating disease showed multiple serum glycoprotein abnormalities. The association of a low serum iron level and a normal blood haemoglobin suggested an abnormality of transferrin too. This was confirmed by finding a sialic acid-deficiency of this glycoprotein in serum as well as in cerebrospinal fluid.
James PD, Lerman J, McLeod ME, Relton JE, Creighton RE: Anaesthetic considerations for separation of omphalo-ischiopagus tripus twins. Can Anaesth Soc J 1985 Jul;32(4):402–11
Anaesthesia for the separation of conjoined twins requires a multi-disciplinary team approach. We describe the anaesthetic management of a single-stage separation of 2 1/2-year-old omphalo-ischiopagus tripus conjoined twins. The successful 17 1/2-hour operation was conducted by five anaesthetists and 38 surgeons and nurses. Two major problems were encountered: massive blood loss in both twins (requiring transfusions of more than five and seven times their blood volumes) and a transient decrease in core temperatures after separation.
James WH: Sib risk and the dizygotic twin concordance rate for multiple sclerosis. J Epidemiol Community Health 1985 Mar; 39(1):39–43
Data have been reviewed on sib risk and the dizygotic twin concordance rate in multiple sclerosis. Even when rigorous criteria are applied, the dizygotic twin concordance rate for multiple sclerosis is apparently higher (perhaps 10 times higher) than could be explained by the sib risk. In contrast, twins with Parkinson's disease have low concordance rates even when ascertainment is by informal methods. It is concluded that such methods of ascertainment are not as biased as has been suggested, and that the high concordance rates reported for multiple sclerosis are a characteristic of the disease rather than an artifact of the ascertainment. Three hypotheses are considered which might, in principle, explain this high dizygotic twin concordance rate in multiple sclerosis: 1 One is certainly false, viz, that it is due to an excessive liability of dizygotic twins to the disease. 2 It is possible that a pathogen occurs in early infancy or in pregnancy itself. 3 It seems more likely that the high concordance rate may be explained in terms of age related events or sequences of events. (If such events were pathogenic for one member of a sibship, they would be pathogenic for another only if it were a co-twin).
Johnson CA see **Zadnik K**
Joishy SK, Pillai VV, Garneau RR: Carcinoma of the breast. Identical twins differing in time of onset and severity implicate non-genetic factors influencing clinical course. Indiana Med 1985 Jul;78(7):596–9
Jongsma HW see **Eskes TK**
Judson IR, Wiltshaw E, Newland AC: Multiple myeloma in a pair of monozygotic twins: the first reported case. Br J Haematol 1985 Jul;60(3):551–4
A pair of monozygotic twins both developed multiple myeloma within a 2 year period. The first patient is alive with stable disease 4 years later, his twin brother died within a year of diagnosis. Monozygosity is well established and in both cases the paraprotein was IgG kappa. The relative influence of environmental and hereditary factors on the aetiology of myeloma is discussed. We believe this to be the first case of myeloma in twins to be reported.
Jung M see **de Almeida JC**

K

Kaeru J see **Secher NJ**
Kalra D, Broomhall J, Williams J: Horseshoe kidney in one of identical twin girls. J Urol 1985 Jul; 134(1):113
We report on a 5-month-old female twin who presented with urinary tract infection and was found to have a horseshoe kidney. Her identical twin had a normal renal anatomy. There have been only 2 other reports of a horseshoe kidney in monozygotic twins: in 1 instance both twins were affected, while in the other there was discordance.
Kawakami Y, Yamamoto H, Yoshikawa T, Shida A: Age-related variation of respiratory chemosensitivity in monozygotic twins. Am Rev Respir Dis 1985 Jul;132(1):89–92
To examine age-related variations in respiratory chemosensitivity to hypoxia and hypercapnia, the magnitudes of within-pair variances for ventilatory responses to hypoxia and hypercapnia were measured in 38 pairs of male monozygotic twins. Mean values for the slope factor of end-tidal PO2-ventilation hyperbola (A) were larger in Group I (13 pairs with a mean age of 16.3 +/- SD 0.9 yr) than those in Group II (12 pairs with a mean age of 29.8 +/- 6 yr), and Group III (13 pairs with a mean age of 46 +/- 7.2 yr). The slope factors for end-tidal PCO2-ventilation line (S) were similar among the 3 groups. Within-pair variances for A, A/body surface area (BSA), and Vo (asymptote for ventilation when end-tidal PO2 is infinite) were larger in Groups II and III than in Group I. Within-pair variances for S and S/BSA were also larger in Groups II and III than in Group I, whereas within-pair variances for B (intercept with end-tidal PCO2) were similar among the 3 groups. These results indicate that variations for respiratory chemosensitivity to hypoxia increase during the period from adolescence to adulthood and stay at a similar level thereafter. Variations of hypercapnic chemosensitivity also increase during this period, attenuating thereafter; however, the variation is 7 times larger than that of hypoxic chemosensitivity in the third and fourth decades.
Kawakami Y, Shida A, Yamamoto H, Yoshikawa T: Pattern of genetic influence on pulmonary function. Chest 1985 Apr;87(4):507–11
Whether genetic factors influence small airway function and lung volume was examined in 20 adolescent (mean age, 16.2 +/- SD 1.1 years) monozygotic twin pairs, 11 adolescent (mean age, 16.7 +/- 0.7 years) dizygotic twin pairs, and 20 adult (mean age, 38.7 +/- 9.3 years) monozygotic twin

pairs. Within-pair variances of adolescent dizygotic twins for height, FVC, FEV1/FVC, V50, V25, V50/FVC, FRC, and delta N2 were significantly larger than those of adolescent monozygotic twins, indicating that these pulmonary function variables are influenced predominantly by genetic factors in adolescence. Within-pair variances of adult monozygotic twins were similar to those of adolescent monozygotic twins in terms of V50 and V25, indicating that these pulmonary function variables are influenced predominantly by genetic factors in adulthood. These results indicate that small airway dynamics, in terms of V50 and V25, are influenced in larger part by genetic factors in adolescence as well as adulthood, whereas lung volumes in terms of FRC and FVC are controlled by genetics only in adolescence.

Kay SR, Opler LA, Fiszbein A: Genetics of schizophrenia and the positive-negative dimension [letter] Am J Psychiatry 1985 Aug;142(8):994-6

Kero P see **Erkkola R**

Khoo BH see **Paramsothy M**

Kidd KK see **Price RA**

Knutsson E see **Larsson L**

Kohler PF, Rivera VJ, Eckert ED, Bouchard TJ Jr, Heston LL: Genetic regulation of immunoglobulin and specific antibody levels in twins reared apart. J Clin Invest 1985 Mar;75(3):883-8

We studied the effect of the same genetic but different environmental factors on total immunoglobulin and specific antibody levels in twins reared apart. Sera were analyzed from 26 monozygotic (MZ) and 10 dizygotic (DZ) twin pairs, who were separated on average 2 mo after birth and reared apart. Total IgM, IgG, and IgA were measured by single radial diffusion. Specific antibodies of each isotype to tetanus toxoid, and to polyvalent and type 14 pneumococcal capsular polysaccharides were measured by a solid-phase antigen-enzyme-labeled anti-Ig immunoassay. One-way analysis of variance showed intrapair total Ig and antibody levels to be more highly correlated in MZ compared with DZ twins. Our results indicate that genetic factors are more important than environment in regulating these humoral immune responses.

Kollée LA see **Eskes TK**

Koontz WL, Layman L, Adams A, Lavery JP: Antenatal sonographic diagnosis of conjoined twins in a triplet pregnancy. Am J Obstet Gynecol 1985 Sep 15;153(2):230-1

Presented is the case of a triplet pregnancy with conjoined twins diagnosed antenatally with sonography. Prenatal diagnosis has the potential to improve outcome for the normal infant.

Kragt H, Huisjes HJ, Touwen BC: Neurological morbidity in newborn twins.

Eur J Obstet Gynecol Reprod Biol 1985 Feb; 19(2):75-9

Forty-six twins were compared with an equal number of singletons, matched for gestational age, birthweight and mode of delivery. The neurological findings in the neonatal period were similar in the matched groups, but twins were significantly more often deviant than a large unselected sample of singletons. It is concluded that both in twins and in singletons growth retardation, preterm birth and birth trauma are important causes of neonatal neurological abnormality, but that twins are not more susceptible to the effects of these variables than singletons.

Krebs H see **McFarland HF**

Kugel H see **Whitton JL**

Kumari CK see **Chandra M**

Kushner BH, Helson L: Monozygotic siblings discordant for neuroblastoma: etiologic implications. J Pediatr 1985 Sep;107(3):405-9

Although rarely reported, neuroblastoma in monozygotic siblings merits attention because study of its features may aid in elucidating mechanisms of tumorigenesis. We describe disseminated neuroblastoma in one of monozygotic triplets, including both documentation of monozygosity and long-term follow-up of the unaffected co-twins. Information from reports of monozygotic twins concordant and discordant for neuroblastoma reinforces the hypothesis that hereditary factors may be predominant in neuroblastoma diagnosed in infants, whereas nonheritable random mutational genetic events may be more important in neuroblastoma diagnosed after infancy.

L

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Lisk CH, Wilding RP: Torsion of the testicle in homozygous twins. Br J Urol 1984 Oct;56(5):544-5

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McCleery JT see **Showers J**

McEwan HP see **Mortimer G**

McFarland H see **Woyciechowska JL**

McFarland HF, Greenstein J, McFarlin DE, Eldridge R, Xu XH, Krebs H: Family and twin studies in multiple sclerosis. Ann NY Acad Sci 1984; 436:118-24 (14 ref.)

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Machin GA, Sperber GH, Wootliffe J: Monozygotic twin aborted fetuses discordant for holoprosencephaly/synotia. Teratology 1985 Apr; 31(2):203-15

A pair of monozygotic twin fetuses aborted at 15 weeks were found to be discordant for holoprosencephaly and synotia. They were studied grossly, radiologically, and histologically. Features of first brancial arch dysplasia (synotia, agnathia, and astomia) and holoprosencephaly (absent ethmoid bone and Rathke's pouch) observed in one twin were contrasted with minimal dysmorphology in the co-twin. Some evidence of the twin transfusion syndrome was also apparent, perhaps contributing to the twins' spontaneous abortion.

Mack J see **Brown DL**

McLean R, Howard N, Murray IP: Thyroid dysgenesis in monozygotic twins: variants identified by

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scintigraphy. Eur J Nucl Med 1985;10(7-8):346-8
The unusual occurrence of neonatal hypothyroidism in monozygotic twins is reported. Scintigraphy demonstrated that permanent hypothyroidism in one resulted from an ectopic suprahyoid thyroid, while in the other, the transient hypothyroid state was associated with thyroid hemiagenesis. These findings suggest that the anomalies represent variants of the same developmental aberration.

McLeod ME see **James PD**

McNicholas T, Brereton RJ, Raafat F: Lymphoid polyps of the rectum.
J Pediatr Gastroenterol Nutr 1985 Apr;4(2):297-302
In children lymphoid polyps of the rectum are uncommon benign lesions with a good prognosis following local treatment. We report a girl in whom a cluster of lymphoid polyps occurred 9 months following removal of a single lymphoid polyp. All of the polyps, including the original lesion, displayed a monoclonal nature on immunocytochemical examination.

Maggio M, Callan NA, Hamod KA, Sanders RC: The first-trimester ultrasonographic diagnosis of conjoined twins. Am J Obstet Gynecol 1985 Aug 1;152(7 Pt 1):833-5
The prenatal ultrasonographic diagnosis of conjoined twins in the first trimester is described. The ultrasonographic criteria are discussed together with implications for management.

Magnus P, Berg K, Bjerkedal T, Nance WE: The heritability of smoking behaviour in pregnancy, and the birth weights of offspring of smoking-discordant twins. Scand J Soc Med 1985;13(1):29-34
Questionnaire information on smoking habits in pregnancy was collated in 341 monozygotic (MZ) and 321 dizygotic (DZ) female twin pair cases from a population-based Norwegian Twin Panel. In a multifactorial model, the intra-pair correlation in smoking was 0.797 (+/- 0.042) in monozygotic (MZ) and 0.443 (+/- 0.075) in dizygotic (DZ) twin pairs, indicating a substantial genetic influence on liability to smoke in pregnancy. The questionnaire information was linked with birth records in the Medical Birth Registry of Norway, and birth weights of offspring of 62 MZ and 100 DZ smoking-discordant twin pairs were studied. Offspring of smoking MZ twins weighed 127 g less than birth order matched offspring of the non-smoking co-twins. This finding is additional evidence that smoking is a direct cause of reduced birth weight in offspring.

Magnus P, Berg K: New information on the effect of genes on the variation in birth weight.
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Acta Paediatr Hung 1985;26(1):61-4
In newborn twins at three hours of age adrenal calcification has been detected. In addition to hepatomegaly, vomiting and diarrhoea, characteristic radiological findings confirmed the diagnosis of the rare heritable lipidosis, Wolman's disease.

Martin NG, Oakeshott JG, Gibson JB, Starmer GA, Perl J, Wilks AV: A twin study of psychomotor and physiological responses to an acute dose of alcohol. Behav Genet 1985 Jul;15(4):305-47

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Martin WM, Dane TE: Testicular germ cell tumors in monozygotic twins: case report and review of the literature. J Urol 1985 Oct;134(4):765-7
We report the eleventh instance of testicular germ cell tumors in monozygotic twins. The tumors were concomitant but of different histology. The comparable lymphography and computerized tomography scan findings, tumor response to chemotherapy and side effects are discussed. We conclude that there is no definite evidence for an increased risk in relatives of patients with this disease.

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Nance WE see **Magnus P**

Neri A see **Simon A**

Newland AC see **Judson IR**

Nichols VB see **Sherowsky RC**

Niebuhr E see **Wulf HC**

Nissan S see **Hershlag A**

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O'Donovan P, O'Brien N: Group B beta haemolytic disease in preterm twins associated with the ingestion of infected breast milk--a case report.
Ir J Med Sci 1985 Apr;154(4):158-9

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Ohel G see **Simon A**

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Pal SK, Raha A, Mukherjee K: Locked twins.
J Indian Med Assoc 1985 Jan;83(1):23-5

Paramsothy M, Wong TJ, Woon ST, Khoo BH: Technetium-99m-diethyl-IDA sequential hepatobiliary scintigraphy in the pre-operative evaluation of omphalopagus conjoined twins. Australas Radiol 1984 Nov;28(4):358-61

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Paterson RA, Tousignant M, Skene DS: Caesarean section for twins in a patient with myotonic dystrophy. Can Anaesth Soc J 1985 Jul;32(4):418-21
The management of a patient with myotonic dystrophy undergoing Caesarean section for delivery of twins in breech position is reported. Anaesthetic management must reflect the multi-system nature of the disease in addition to the implications of

pregnancy. Known triggers of myotonic crisis (succinylcholine, shivering) must be avoided. Attention to respiratory reserve is necessary in view of the restrictive defect this disease can impose. Cardiomyopathy and conduction system disturbances may be features. Upper gastrointestinal incoordination can superimpose the added risk of aspiration on the pregnant myotonic. Ineffective uterine contraction can cause vigorous post partum haemorrhage. Endocrine disturbances, especially diabetes mellitis, may be present. There may be increased sensitivity to sedative and narcotic agents. The newborn myotonic will need the expertise of neonatal care.

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Pedersen NL, McClearn GE, Plomin R, Friberg L: Separated fraternal twins: resemblance for cognitive abilities. Behav Genet 1985 Jul;15(4):407–19

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Price RA, Kidd KK, Cohen DJ, Pauls DL, Leckman JF: A twin study of Tourette syndrome. Arch Gen Psychiatry 1985 Aug;42(8):815–20

In 43 pairs of same-sex twins, in which at least one co-twin had Tourette syndrome (TS), 30 pairs were probably monozygotic (MZ) and 13 were probably dizygotic (DZ). Concordances for TS were 53% and 8% for MZ and DZ pairs, respectively. When diagnostic criteria were broadened to include any tics in co-twins, concordance rates were 77% and 23% for MZ and DZ pairs, respectively. These concordances are consistent with genetic etiology. However, the fact that only 53% of MZ twins were fully concordant indicates nongenetic factors affect expression of TS. Presence of tics in discordant co-twins and timing of onset in partially concordant co-twins support an association between TS and tics in families with TS present. The data are inconclusive on whether some MZ twins with discordant co-twins are etiologically different from those who are concordant.

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Putz B, Rehder H: Anencephaly in one monoamniotic-monochorionic twin and encephalocele in the other. Am J Med Genet 1985 Aug;21(4):631–5

This is a report of monoamniotic-monochorionic (ie, probably MZ) twins, one of which had anencephaly, whereas the co-twin died of complications of prematurity. Autopsy in this seemingly nonmalformed twin showed a small encephalocele. The literature on MZ twins with discordant anencephaly is often contradictory. It is suggested that this might be due to the difficulty of determining zygosity on the one hand and identifying discordance or concordance on the other. This case is presented as an example of this difficulty; it is discordant with respect to anencephaly, but concordant in the sense of 'dysraphic' disturbances.

R

Raafat F see **McNicholas T**

Raha A see **Pal SK**

Rao DC see **Byard PJ**

Rawlings PC see **Weir MR**

Redford DH, Whitfield CR: Maternal serum alpha-fetoprotein in twin pregnancies uncomplicated by neural tube defect. Am J Obstet Gynecol 1985 Jul 1;152(5):550–3

The maternal serum alpha-fetoprotein concentration was measured between 16 and 20 weeks in 145 twin pregnancies in which neither fetus had a neural tube defect. When the maternal serum alpha-fetoprotein concentration was less than two multiples of the singleton median, pregnancy outcome was good; the extended perinatal mortality rate was 32.6/1000, mean birth weights for the first and second twins were 2507 and 2443 gm, respectively, and mean gestation at delivery was 36 weeks, 6 days. When the maternal serum alpha-fetoprotein concentration was greater than four multiples of the singleton median, the outcome was poor; the extended perinatal mortality was 400/1000, mean birth weights were 1963 and 1523 gm, and mean gestation at delivery was 32 weeks, 4 days. The negative correlations of maternal serum alpha-fetoprotein concentration with birth weight and gestation at delivery were highly significant. Maternal serum alpha-fetoprotein concentration in midpregnancy is a useful predictor of outcome in twin pregnancy, independent of the occurrence of neural tube defect, and it appears to be related to the timing of delivery rather than fetal growth.

Rehder H see **Putz B**

Reinberg A, Touitou Y, Restoin A, Migraine C, Levi F, Montagner H: The genetic background of circadian and ultradian rhythm patterns of 17-hydroxycorticosteroids: a cross-twin study. J Endocrinol 1985 May;105(2):247–53

Circadian and ultradian rhythms in urinary excretion of 17-hydroxycorticosteroids were documented individually during an 8-day span in two pairs of young male twins. Studies were performed once at the age of 6 years for dizygotic twins and twice at the ages of 4.3 and 10.3 years for monozygotic twins. Four different methods were used for time-series analyses: chronograms (raw data), best-fitting curves resulting from cosinor analyses, power spectra and correlations of time-qualified data. Estimates of rhythm parameters (prominent periods, acrophases, etc.) as well as shapes of curves were closer in monothan in dizygotic twins. Both similarities and small differences in rhythm characteristics of monozygotic twins were detected at both ages considered.

Reis DF see **de Almeida JC**

Relton JE see **James PD**

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Rich SS see **Steffes MW**

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Rimoin DL, Rotter JI: Progress in understanding the genetics of diabetes mellitus. Prog Clin Biol Res 1985;177:393–412 (74 ref.)

Rita Martins R see **de Almeida JC**

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Rosenblatt DS, Duschenes EA, Hellstrom FV, Golick MS, Vekemans MJ, Zeesman SF, Andermann E: Folic acid blinded trial in identical twins with fragile X syndrome. Am J Hum Genet 1985 May; 37(3):543–52

Monozygous twin 14-year-old mentally retarded boys with the fragile X syndrome were treated either with 10 mg folic acid by mouth daily or with a placebo for three test periods of 3-month duration each in a blind study. For each twin, tests of cognitive functioning, reading, spelling, and math

skills, and linguistic and perceptual skills were compared. Although there was considerable variation in performance on these tests during the two baseline periods, there were no observable beneficial effects of therapy. The routine use of folic acid in patients with established mental retardation and the fragile X syndrome is not indicated.

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Ruocco V, Peluso G, Pisani M: Pemphigus vulgaris in only one of two monozygotic twins [letter] J Am Acad Dermatol 1985 Mar;12(3):587–9

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Sanders SP, Chin AJ, Parness IA, Benacerraf B, Greene MF, Epstein MF, Colan SD, Frigoletto FD: Prenatal diagnosis of congenital heart defects in thoracoabdominally conjoined twins. N Engl J Med 1985 Aug 8;313(6):370–4

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Schultz Larsen F, Grunnet N: Lymphocyte transformation tests and subpopulations of lymphocytes in a population-based material of atopic dermatitis in twins. Scand J Immunol 1985 Apr; 21(4):375–81

Lymphocyte function and lymphocyte subpopulations in the peripheral blood have been studied in a population-based material of 47 twins with atopic dermatitis (AD) (31 with a history of AD, 10 with mild AD, and 6 with moderate AD) and in 47 age- and sex-matched non-atopic control twins. Lymphocyte transformations to phytohaemagglutinin, concanavalin A (Con A), pokeweed mitogen, and purified protein derivative of tuberculin were investigated. Lymphocyte subpopulations were characterized by EAET rosettes and the monoclonal antibodies OKT3, OKT4, and OKT8. None of these in vitro tests showed any statistically significant differences between patients and controls. In the rather few individuals with moderate AD there was a statistically insignificant tendency to a decreased Con A stimulation in suboptimal concentration and a reduction of the OKT8+ cells. However, there were definitely no alterations in the immunological variables between patients with a history of AD and controls. Our results indicate that the investigated variables could be related to disease activity. We suggest that they represent epiphenomena rather than pathogenetic mechanisms of importance for the development of AD.

Schultz Larsen FV, Holm NV: Atopic dermatitis in a population based twin series. Concordance rates and heritability estimation. Acta Derm Venereol [Suppl] (Stockh) 1985;114:159

Schum RL see **Bentler RA**

Secher NJ, Kaern J, Hansen PK: Intrauterine growth in twin pregnancies: prediction of fetal growth retardation. Obstet Gynecol 1985 Jul;66(1):63–8

In 80 consecutive twin pregnancies, prenatal measurements of fetal biparietal diameter (BPD) and abdominal diameter were made and growth curves were calculated using routine ultrasound examinations. Nineteen percent of the infants were growth retarded. Growth retardation was found in both fetuses in four pregnancies and in one fetus in 22 other pregnancies. Linear regression analysis between birth weight and gestational age showed the standard deviation of birth weight to be proportional to gestational age. A more linear growth curve also was found when the mean fetal weight was calculated by use of the BPD and abdominal diameter measurements in the formula developed for singletons. The estimated weight compared with birth weight in 62 twins who had ultrasound examinations less than seven days before delivery showed a significant correlation ($r = 0.89$, P less than .001) with a coefficient of variation of 12.4%. The identification of intrauterine growth retardation (IUGR) in twin pregnancies by ultrasound had a sensitivity of 62%, a specificity of 98%, and a predictive value of positive and negative test of 93% and 83%, respectively.

Seifer DB, Ferguson JE 2d, Behrens CM, Zemel S, Stevenson DK, Ross JC: Nonimmune hydrops fetalis in association with hemangioma of the umbilical cord. Obstet Gynecol 1985 Aug;66(2):283–6

Nonimmune hydrops fetalis is becoming the predominant form of fetal hydrops due to the declining frequency of Rh isoimmunization. Reported is the preterm delivery of a hydropic twin with umbilical cord and cutaneous hemangiomata. The unusual umbilical angiomatous malformation was associated with marked edema of the cord. This produced an ultrasonographic abnormality detected antenatally as a multicystic mass in close approximation to the fetal abdomen. The hydropic twin responded to aggressive neonatal management. It appears that hemangiomata of the umbilical cord may be causally related to fetal hydrops and may represent another entry in the differential diagnosis of this disorder.

Sequeiros J, Sack GH Jr: Linear skin atrophy, scarring alopecia, anonychia, and tongue lesion: a 'new' syndrome? Am J Med Genet 1985 Aug;21(4):669–80

One of a pair of female monozygotic twins showed skin atrophy with linear alternation of depressed scarlike areas and intervening ridges of normal or nearly normal skin. She was born with friable skin and a vesicular-bullous eruption which was followed by gradual scabbing. Hypohidrosis in the affected areas, heat intolerance, and febrile convulsions were noted in infancy and childhood. No new skin lesions developed, and the existing ones, the sweating disturbance, and the heat intolerance gradually improved with time. Scarring alopecia, congenital absence of three toenails, and a scarlike lesion of the tongue were also present. Their absence in the other twin supports the view that 1) these manifestations all are part of the same syndrome, and 2) this syndrome is nongenetic. Histologically, there were no diagnostic or consistent findings, but the number of skin appendages was diminished, and the elastic fibers were reduced in number and size in one biopsy. The calculated probability for the twins being monozygotic was 0.9998. This family was also remarkable for the presence of alopecia areata in three successive generations with only one instance of apparent nonpenetrance. We conclude that this may represent a previously undescribed syndrome of congenital fragility of connective tissue which predisposed to damage of the elastica, possibly caused by an early inflammatory phase.

Sethi RS see **Mishra RK**

Sever J see **Woyciechowska JL**

Shannon K see **Strickland AD**

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Sharf M see **Shapiro I**
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Sherowsky RC, Williams CH, Nichols VB, Singh KB: Prenatal ultrasonographic diagnosis of a sacrococcygeal teratoma in twin pregnancy. J Ultrasound Med 1985 Mar;4(3):159-61
Shida A see **Kawakami Y**
Showers J, McCleery JT: Research on twins: implications for parenting.
Child Care Health Dev 1984 Nov-Dec; 10(6):391-404 (57 ref.)
A review of the literature on twins is provided regarding bonding, parent preference, temperament and personality, the separation-individuation process, cognitive development, and child abuse. practical suggestions are given for successfully parenting twins toward optimal growth and development.
Sibley R see **Sutherland DE**
Sillanpää M see **Erkkola R**
Silverman F see **Young BK**
Simon A, Ohel G, Neri A, Schenker JG: Familial occurrence of mature ovarian teratomas.
Obstet Gynecol 1985 Aug;66(2):278-9
It has been suggested that genetic predisposing factors play a role in the development of ovarian teratomas. Familial occurrence of these tumors would support this view. Reported herein are identical twins, both of whom had a right ovarian mature teratoma. In both cases the presenting symptoms were acute torsion. The diagnosis was confirmed at laparotomy and subsequent histopathologic examination. The origin of ovarian teratomas seems to be linked to the process of parthenogenesis. This process probably involves a germ cell after its first meiotic division.
Singh KB see **Sherowsky RC**
Skene DS see **Paterson RA**
Solaas MH see **Heath AC**
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Srikanta AM see **Sutherland DE**
Stanger JD see **Yovich JL**
Starke ID: Asthma and allergic aspergillosis in monozygotic twins. Br J Dis Chest 1985 Jul; 79(3):295-300
Monozygotic twins are reported; both had bronchial asthma with type I hypersensitivity to Aspergillus fumigatus but only one had type III hypersensitivity, together with pulmonary infiltrations compatible with the diagnosis of allergic bronchopulmonary aspergillosis. It is suggested that non-inherited factors other than the intensity of exposure to antigen may be important in determining the development of allergic bronchopulmonary aspergillosis.
Starmer GA see **Martin NG**
Steffes MW, Sutherland DE, Goetz FC, Rich SS, Mauer SM: Studies of kidney and muscle biopsy specimens from identical twins discordant for type I diabetes mellitus. N Engl J Med 1985 May 16;312(20):1282-7
To distinguish metabolic from genetic factors in the development of microangiopathy in diabetes, we evaluated biopsy specimens of kidney and quadriceps muscle from seven pairs of identical twins who were discordant for Type I (insulin-dependent) diabetes mellitus. Two of the diabetic patients had clinical diabetic nephropathy, including hypertension, marked albuminuria, and a substantially reduced creatinine clearance; the other five had normal renal function and only minor clinical indications of complications. All the twins of the diabetic patients had normal glomerular basement membrane widths and normal fractional volumes of the glomerular mesangium. Values for glomerular basement membrane width, tubular basement membrane width, and mesangial volume in each diabetic twin exceeded the values in the respective sibling (P less than or equal to 0.0035), even if the value in the diabetic twin lay within established normal ranges. Values for muscle capillary basement membrane width in the diabetic twins did not differ from those in their siblings (P = 0.5). Our observations suggest that the metabolic abnormalities of diabetes are necessary, if not sufficient, for the development of glomerular abnormalities. We also conclude that in diabetic patients, alterations in muscle capillary basement membrane width do not necessarily accompany pathologic lesions in the kidney.
Stevenson DK see **Seifer DB**
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Strickland AD, Shannon K, Coln CD: Biliary atresia in two sets of twins. J Pediatr 1985 Sep;107(3):418-20
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Sutherland DE, Sibley R, Xu XZ, Michael A, Srikanta AM, Taub F, Najarian J, Goetz FC: Twin-to-twin pancreas transplantation: reversal and reenactment of the pathogenesis of type I diabetes.
Trans Assoc Am Physicians 1984;97:80-7
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Taub F see **Sutherland DE**
Tay JS, Yip WC, Wong HB: Computers in paediatrics: 13. Computer programme to calculate heritability and its standard error from family or twin studies. J Singapore Paediatr Soc 1985;27(1-2):89-92
Timmer H see **Eskes TK**
Toon P see **Daw E**
Torgersen S: Hereditary differentiation of anxiety and affective neuroses. Br J Psychiatry 1985 May; 146:530-4
One hundred and fifty anxiety neurotic and neurotic depressive twin probands were differentiated into three groups by means of discriminant analysis, 50 in each group. The groups were named: pure anxiety neurosis, mixed anxiety-depression, and pure neurotic depression. Analysis of concordance rates indicated that only pure anxiety neurosis seemed to be influenced by hereditary factors.
Touitou Y see **Reinberg A**
Tousignant M see **Paterson RA**
Touwen BC see **Kragt H**
Towle DJ see **Brown DL**
Trudinger BJ see **Giles WB**
Tuckerman E, Webb T, Bundey SE: Frequency and replication status of the fragile X, fra(X)(q27-28), in a pair of monozygotic twins of markedly differing intelligence. J Med Genet 1985 Apr;22(2):85-91
Chromosome analysis using conventional staining, G banding, and, after BUdR incorporation, two R banding methods, one using Hoechst and one acridine orange, were performed on lymphocytes from a pair of female monozygotic twins. The culture conditions were designed to show the presence of the fragile X (q27-28) which had previously been found to be segregating in the family. One twin was of higher than normal intelligence and the other had been diagnosed as

mentally retarded. The frequency of the occurrence of the early/active fragile X compared to the overall total of informative fragile X was determined using both methods described above and was also compared with previous published data in the form of a graph showing percentage of early/active fragile X against intelligence.

Tuna N see **Hanson BR**

V

van der Heul C see **Jaeken J**
van Eijk HG see **Jaeken J**
Vekemans MJ see **Rosenblatt DS**
Vinograd I see **Hershlag A**
Voigt KH see **Fehm-Wolfsdorf G**

W

Wagner RS see **Constad WH**
Wallen W see **Woyciechowska JL**
Wasserman J see **Young BK**

Watson RG: Wilson's disease in one identical twin and treatment by triethylene tetramine 2HCl in another case. Ulster Med J 1983;52(1):48–53

Webb T see **Tuckerman E**

Weir MR, Salinas JA, Rawlings PC: Intrauterine twin demise and oligomeganephronia. Nephron 1985; 40(4):482–4
Oligomeganephronia, characterized clinically be early renal failure and histologically by large, sparse glomeruli, is of undetermined etiology. This is the first documented report of an intrauterine fetal demise of one twin in association with oligomeganephronia in the other, and suggests that these two conditions may be related etiologically. The suggested mechanism is a renal vascular insult, late in the pregnancy, as the precipitating event.

Whitfield CR see **Redford DH**

Whitfield JB, Martin NG: Individual differences in plasma ALT, AST and GGT: contributions of genetic and environmental factors, including alcohol consumption. Enzyme 1985;33(2):61–9
The causes of individuality of the plasma enzymes alanine aminotransferase (ALT; EC 2.6.1.2), aspartate aminotransferase (AST; EC 2.6.1.1) and gamma-glutamyl transferase (GGT; EC 2.3.2.2) were investigated in a study of 206 pairs of twins. Between-person variance was greater in men than women, while within-person variation was similar in both sexes. Plasma ALT and AST levels were affected by genetic factors, while GGT was affected by some environmental factor shared by co-twins. In the men, alcohol intake had a significant but small effect on all three enzyme levels, and since alcohol consumption was highly heritable, this appeared as a genetic influence on enzyme activities. The major factors involved in the observed correlations between these enzymes were a non-shared environmental factor other than alcohol affecting ALT, AST and GGT, and a genetic factor affecting only ALT and AST.

Whitton JL, Elgie SM, Kugel H, Moldofsky H: Genetic dependence of the electroencephalogram bispectrum. *Electroencephalogr Clin Neurophysiol* 1985 Apr;60(4):293–8
The resting electroencephalogram of monozygotic twins and genetically unrelated controls was analyzed with the ordinary spectrum and with the bispectrum. Both the ordinary spectrum which measures linear EEG wave activity and the bispectrum which detects non-linear and correlated frequency activity had evidence for a genetic basis. It is suggested that there is a genetic basis for the process of EEG generation.

Wilding RP see **Lisk CH**
Wilks AV see **Martin NG**
Williams CH see **Sherowsky RC**
Williams J see **Kalra D**

Wilson RD, Hayden MR: Bilateral renal agenesis in twins. Am J Med Genet 1985 May;21(1):147–52, 167–9
We present the second report of like-sex twins concordantly affected with bilateral renal agenesis (BRA). Mode of inheritance is proposed to be autosomal dominant. Screening of first-degree relatives of the BRA proband by ultrasound of the GU system is recommended. Prenatal diagnosis with second-trimester ultrasound screening is recommended when a previous fetus has been affected by bilateral renal agenesis.

Wiltshaw E see **Judson IR**
Wong HB see **Tay JS**
Wong TJ see **Paramsothy M**
Woon ST see **Paramsothy M**
Wootliffe J see **Machin GA**

Wortis J: Psychiatric tidbits from teratopagi. Biol Psychiatry 1985 Jun;20(6):589–91

Woyciechowska JL, Dambrozia J, Leinikki P, Shekarchi C, Wallen W, Sever J, McFarland H, McFarlin D: Viral antibodies in twins with multiple sclerosis. Neurology 1985 Aug;35(8):1176–80
Viral antibodies to measles, rubella, corona, vaccinia, and mumps viruses in serum and CSF (and to Epstein-Barr virus in serum only) were studied in 24 twin pairs, both discordant and concordant for clinical MS. In pairs, CSF antibody titers for rubella in MS monozygotic and dizygotic twins and for vaccinia in dizygotic twins were higher than for unaffected twins. Increased CSF titers among MS twins existed for measles, rubella, and vaccinia when pairing was ignored. Among MS twins, serum rubella and measles and CSF measles antibody titers, and CSF:serum ratios for measles virus, were higher in those who were DW2 positive.

Wu GY see **Zhang JW**

Wulf HC, Niebuhr E: Different sister chromatid exchange rates in XX and XY cells of a pair of human chimeric twins. Cytogenet Cell Genet 1985; 39(2):105–8
To explore the influence of sex on sister chromatid exchange (SCE) level, a pair of chimeric twins was examined for differences in SCE frequency between the XX and XY cells present in each individual. By this method, the influence of possible differences in environmental exposure was eliminated. SCE levels were varied by growing the cells in media containing 0, 1.3 X 10(-7), or 6.5 X 10(-7) M melphalan. XX cells showed a higher SCE count than XY cells. This difference increased with increasing SCE level and ranged from 5.4% to 7.8% ($P = 0.0003$) of the SCE counts. Only about 2% of the difference could be explained by the higher amount of DNA present in the XX cells than in the XY cells. In this case XX cells seemed to be more sensitive to SCE-inducing agents than XY cells.

X

Xu XH see **McFarland HF**
Xu XZ see **Sutherland DE**

AUTHOR SECTION

Y

Yamamoto H see **Kawakami Y**
Yang TY see **Zhang JW**
Yang XY see **Zhang JW**
Yasuda Y, Mitomori T, Matsuura A, Tanimura T: Fetus-in-fetu: report of a case. Teratology 1985 Jun; 31(3):337-44
A 5 month-old female was brought to our clinic because of diarrhea and abdominal distension. A plain radiograph demonstrated a mass with a vertebral column in the right upper quadrant of the abdomen. At operation a mass was found to be retroperitoneal, well encapsulated, and connected to the abdominal aorta of the host by two small vessels; no other connections and adhesions were seen between the mass and the host. The ovaries, uterus, and other pelvic and abdominal viscera of the host were normal. The mass was diagnosed as a fetus-in-fetu. The fetus-in-fetu, encapsulated with an amniotic capsule, was covered with skin and had a top with long hair, two protuberances, an amniotic hernial sac, upper limbs with syndactylic fingers, a gluteal region, and lower limbs with polysyndactylic toes. A brain mass and a spinal cord were identified in the cranial cavity and the vertebral canal. Several spinal ganglia and a nerve plexus were found. A noselike structure, upper lip, maxillalike bone with teeth, tonguelike structure, intestines, ribs, bones of the extremities, and skeletal muscles were also identified. A cloacalike cyst was observed to have an opening in the external female genitalia. Microscopically, a small number of motor neurons were seen in the brain mass and the anterior horn of the spinal cord. In the spinal ganglia, ganglion cells were differentiated. The submucosal and myenteric plexuses were seen in the intestinal wall. Well-differentiated muscle fibers were often accompanied with myelinated nerve fibers. Hematopoiesis was observed in the cranial bone marrow. The presence of the sex chromatin was confirmed in the nuclei of motor neurons and polymorphonuclear leukocytes. Thus, the present fetus-in-fetu, which was connected to the abdominal aorta of the host by two vessels, was a monozygotic twin which developed within its own amniotic cavity.
Yates JR see **Mortimer G**
Yip WC see **Tay JS**
Yoshikawa T see **Kawakami Y**
Young BK, Suidan J, Antoine C, Silverman F, Lustig I, Wasserman J: Differences in twins: the importance of birth order. Am J Obstet Gynecol 1985 Apr 1; 151(7):915-21
Despite the clinical impression that firstborn twins do better than second-born twins, recent reports have shown no difference in perinatal mortality between them. In order to evaluate differences in twins, more sensitive means than perinatal deaths are necessary. This study examines differences between 80 firstborn and second-born twin pairs with respect to Apgar score, umbilical venous and arterial blood gas, and acid-base data. The umbilical venous and arterial blood PO2, PCO2, base deficit, pH, and lactic acid concentration were measured in paired samples and compared with the paired t test and chi 2 when applicable. Statistically significant differences favoring twin A, the firstborn, were found in 1-minute Apgar score, umbilical venous pH, PO2, and PCO2, and umbilical arterial PO2. The other factors in umbilical venous and arterial blood did not show statistically significant differences. When these parameters were examined with respect to route of delivery, monochorionic and dichorionic twins, interval between twins, and vertex twins only, with the possible effects of malpresentation eliminated, the results persistently favored the firstborn twin. Thus it is unequivocally demonstrated that there are substantial differences at birth favoring the first twin, despite similar perinatal mortality for both. The data suggest that the second-born twin has potentially greater susceptibility to hypoxia and trauma.
Yovich JL, Stanger JD, Grauaug AA, Lunay GG, Hollingsworth P, Mulcahy MT: Fetal abnormality (Goldenhar syndrome) occurring in one of triplet infants derived from in vitro fertilization with possible monozygotic twinning.
J In Vitro Fert Embryo Transfer 1985 Mar; 2(1):27-32
Of 36 infants delivered following conception by in vitro fertilization (IVF), 1 case of significant fetal abnormality has been detected. The infant is one of male triplets exposed to medroxyprogesterone acetate (MPA) in utero and demonstrates abnormalities of the ear, vertebral column, and ribs which fit clearly into the oculoauriculovertebral syndrome described by Goldenhar and which have been reported in monozygotic twins with discordance. Marker studies including eight blood groups, HLA haplotype assignments, and banding studies of the chromosomes indicate that the infant and one of his brothers may well be identical (P less than 0.001 for dizygosity) except for the Fy(a) antigen. It is deduced that the fetal abnormality is not causally related either to MPA exposure or to the techniques applied during fertilization and early embryo culture, and furthermore, if the infant is the monozygotic twin of one of his brothers, the two phenomena are unrelated, as each was likely to have occurred at different stages of embryonic development.

Z

Zaccara G see **Campostrini R**
Zadnik K, Mannis MJ, Johnson CA: An analysis of contrast sensitivity in identical twins with keratoconus. Cornea 1984;3(2):99-103
We studied a pair of 36-year-old identical twins with keratoconus, one of whom had undergone bilateral penetrating keratoplasties. Both patients had final best corrected Snellen visual acuity of approximately 20/20. However, contrast sensitivity functions for the unoperated twin were abnormal when compared to the operated twin. In addition, contrast sensitivity data for the operated twin during and after a graft rejection indicate that corneal graft opacity and distortion can significantly alter the contrast sensitivity function. The unusual occurrence of identical twins with keratoconus afforded the unique opportunity to explore the visual and psychophysical aspects of keratoconus in a genetically controlled setting.
Zappoli R see **Campostrini R**
Zeesman SF see **Rosenblatt DS**
Zemel S see **Seifer DB**
Zhang JW, Wu GY, Yang XY, Yang TY: Triplicated alpha-globin gene loci in a Chinese family.
Sci Sin [B] 1985 Jun;28(6):626-31
Utilizing restriction endonuclease mapping and blot hybridization, we have determined the arrangement of the alpha-globin genes in a Chinese family. The father and mother had no obvious alpha-thalassemia

symptoms, but their twin daughters suffered from HbH disease. The gene analysis showed that the mother had three alpha-globin genes in one chromosome and no alpha-globin gene in the other (alpha alpha alpha/--), the father was a heterozygote of alpha-thal2 (alpha alpha/-alpha). Their twin daughters were double heterozygotes of alpha-thall and the rightward deletion genotype alpha-tha12 (--/-alpha).

***Zilberman* Y, *Brin* I, *Mahler* D:** *Quintuplets with clefts:* follow-up at 5 years. Cleft Palate J 1985 Jul; 22(3):205-11

Follow-up observations are presented of a set of quintuplets at 5 years of age. Three of the children were born with different degrees of oral clefting. Height and weight comparisons between siblings with clefts and those without reveal that the most severely affected children lagged in their height measurements at the age of 5 years. This may indicate need for special awareness when caring for such children. A relative constriction of the anterior segment of the maxillary dental arch in two of the affected siblings may reflect a possible effect from previous surgical intervention.