Current Research on Multiple Births

ANNUAL BIBLIOGRAPHY – 1986

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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.

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† Delayed growth and reduced intelligence in 9–17 year old intrauterine growth retarded children compared with their monozygous co-twins. Henrichsen L, et al. **Acta Paediatr Scand** 1986 Jan;75(1):31–5

† Dizygotic twinning, birth weight and latitude. James WH. **Ann Hum Biol** 1985 Sep–Oct; 12(5):441–7

† Genetic factors in moderately severe and mild affective disorders. Torgersen S. **Arch Gen Psychiatry** 1986 Mar;43(3):222–6

† Symptoms of anxiety and depression in a volunteer twin population. The etiologic role of genetic and environmental factors. Kendler KS, et al. **Arch Gen Psychiatry** 1986 Mar;43(3):213–21

† The growth and development of twins compared with singletons at ages 9 and 11. Silva PA, et al. **Aust Paediatr J** 1985 Nov;21(4):265–7

Further evidence for genetic influences on educational achievement. Gill CE, et al. **Br J Educ Psychol** 1985 Nov;55 (Pt 3):240–50

† A twin study of individuals with both schizophrenia and alcoholism. Kendler KS. **Br J Psychiatry** 1985 Jul;147:48–53

† A monozygotic twin pair discordant for anorexia nervosa. Elbadawy MH, et al. **Can J Psychiatry** 1985 Nov;30(7):544–5

† Increased child abuse in twins. Nelson HB, et al. **Child Abuse Negl** 1985;9(4):501–5

† Maternal behavior and attachment in low-birth-weight twins and singletons. Goldberg S, et al. **Child Dev** 1986 Feb; 57(1):34–46

† No significant difference in birth weight for offspring of birth weight discordant monozygotic female twins. Magnus P, et al. **Early Hum Dev** 1985 Oct;12(1):55–9

† Genetic covariation between neuroticism and the symptoms of anxiety and depression. Jardine R, et al. **Genet Epidemiol** 1984;1(2):89–107

† A genetic and environmental analysis of a twin family study of alcohol use, anxiety, and depression. Clifford CA, et al. **Genet Epidemiol** 1984;1(1):63–79

† Genetic factors and fetal growth sex constitution and birthweight in twins. Pilić Z, et al. **Int J Gynaecol Obstet** 1985 Oct;23(5):421–5

† Infantile spasms syndrome in monozygotic twins. A 7-year follow-up. Pavone L, et al. **Ital J Neurol Sci** 1985 Dec;6(4):503–6

Infantile autism in monozygotic twins. Salimi-Eshkevari H. **J Am Acad Child Psychiatry** 1985 Sep; 24(5):643–6

† Gilles de la Tourette's syndrome: tics and central nervous system stimulants in twins and nontwins. Price RA, et al. **Neurology** 1986 Feb;36(2):232–7

† Obstetric management of conjoined twins. Sakala EP. **Obstet Gynecol** 1986 Mar;67(3 Suppl):21S–25S

† Eye findings in twins reared apart. Knobloch WH, et al. **Ophthalmic Paediatr Genet** 1985 Feb; 5(1–2):59–66

† Follow-up study of physical growth of monozygous twins with discordant within-pair birth weights. Keet MP, et al. **Pediatrics** 1986 Mar;77(3):336–44

† Twins' reactions to delayed auditory feedback. Timmons BA. **Percept Mot Skills** 1985 Oct; 61(2):559–65

† Genetic and environmental influences on obsessional traits and symptoms. Clifford CA, et al. **Psychol Med** 1984 Nov;14(4):791–800

†' indicates that an abstract appears with the citation in the author section.

GENETIC TRAITS & METHODS

† Subacute sclerosing panencephalitis in twins. Michałowicz R, et al. **Acta Paediatr Hung** 1985; 26(2):97–9

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† Wiedemann–Beckwith syndrome in one of monozygotic twins. Bose B, et al. **Arch Dis Child** 1985 Dec;60(12):1191–2

† Symptoms of anxiety and depression in a volunteer twin population. The etiologic role of genetic and environmental factors. Kendler KS, et al. **Arch Gen Psychiatry** 1986 Mar;43(3):213–21

† Genetic factors in moderately severe and mild affective disorders. Torgersen S. **Arch Gen Psychiatry** 1986 Mar;43(3):222–6

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Further evidence for genetic influences on educational achievement. Gill CE, et al. **Br J Educ Psychol** 1985 Nov;55 (Pt 3):240–50

† A twin study of individuals with both schizophrenia and alcoholism. Kendler KS. **Br J Psychiatry** 1985 Jul;147:48–53

† A monozygotic twin pair discordant for anorexia nervosa. Elbadawy MH, et al. **Can J Psychiatry** 1985 Nov;30(7):544–5

Acanthosis nigricans in monozygotic twins with post receptor defects causing insulin resistance. Garcier F, et al. **Clin Exp Dermatol** 1985 Jul; 10(4):358–64

† A twin study of structural chromosome aberrations in lymphocytes. Hedner K, et al. **Cytogenet Cell Genet** 1986;41(1):58–9

† Dermatitis herpetiformis in monozygous twins: discordance for dermatitis herpetiformis and concordance for gluten-sensitive enteropathy. Kósnai I, et al. **Eur J Pediatr** 1985 Nov; 144(4):404–5

† Dizygotic twins with 3-*hydroxy*-3-*methylglutaric aciduria*; *unusual* presentation, family studies and dietary management. Stacey TE, et al. **Eur J Pediatr** 1985 Jul;144(2):177–81

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† A genetic and environmental analysis of a twin family study of alcohol use, anxiety, and depression. Clifford CA, et al. **Genet Epidemiol** 1984;1(1):63–79

† Genetic and environmental causes of variation in renal tubular handling of sodium and potassium: a twin study. Whitfield JB, et al. **Genet Epidemiol** 1985;2(1):17–27

† Genetic covariation between neuroticism and the symptoms of anxiety and depression. Jardine R, et al. **Genet Epidemiol** 1984;1(2):89–107

† Infantile spasms syndrome in monozygotic twins. A 7-year follow-up. Pavone L, et al. **Ital J Neurol Sci** 1985 Dec;6(4):503–6

Infantile autism in monozygotic twins. Salimi-Eshkevari H. **J Am Acad Child Psychiatry** 1985 Sep; 24(5):643–6

† Genetic variance in dental dimensions of Punjabi twins. Sharma K, et al. **J Dent Res** 1985 Dec; 64(12):1389–91

Combined sirenomelus and upper limb amelia in a uniovular twin. Biswas BP, et al. **J Indian Med Assoc** 1985 Jul;83(7):245–6

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† Myasthenia gravis in identical twins. Murphy J, et al. **Neurology** 1986 Jan;36(1):78–80

† A case–control study of twin pairs discordant for Parkinson's disease: a search for environmental risk factors. Bharucha NE, et al. **Neurology** 1986 Feb;36(2):284–8

† Gilles de la Tourette's syndrome: tics and central nervous system stimulants in twins and nontwins. Price RA, et al. **Neurology** 1986 Feb;36(2):232–7

† Genetic and environmental effects on the development of myopia in Chinese twin children. Chen CJ, et al. **Ophthalmic Paediatr Genet** 1985 Aug;6(1–2):353–9

† *Eye findings in twins reared apart.* Knobloch WH, et al. **Ophthalmic Paediatr Genet** 1985 Feb; 5(1–2):59–66

† *Identical twins with subretinal neovascularization* complicating senile macular degeneration. Melrose MA, et al. **Ophthalmic Surg** 1985 Oct; 16(10):648–51

† Genetic and environmental influences on obsessional traits and symptoms. Clifford CA, et al. **Psychol Med** 1984 Nov;14(4):791–800

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Familial omphalocele. Steele K, et al. **Ulster Med J** 1985 Oct;54(2):214–5

† Klinefelter syndrome in identical twins. Hatch TR, et al. **Urology** 1985 Oct;26(4):396–7

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OBSTETRICS & PEDIATRICS

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† Delayed growth and reduced intelligence in 9-17 year old intrauterine growth retarded children compared with their monozygous co-twins. Henrichsen L, et al. **Acta Paediatr Scand** 1986 Jan;75(1):31-5

† Birth asphyxia, trauma, and mortality in twins: has cesarean section improved outcome? Bell D, et al. **Am J Obstet Gynecol** 1986 Feb;154(2):235-9

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The holoacardius acephalus twin: prenatal diagnosis. Reuhland RG, et al. **Am J Perinatol** 1986 Jan;3(1):33-4

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† Increased child abuse in twins. Nelson HB, et al. **Child Abuse Negl** 1985;9(4):501-5

† Maternal behavior and attachment in low-birth-weight twins and singletons. Goldberg S, et al. **Child Dev** 1986 Feb; 57(1):34-46

† No significant difference in birth weight for offspring of birth weight discordant monozygotic female twins. Magnus P, et al. **Early Hum Dev** 1985 Oct;12(1):55-9

† Antepartum diagnosis of monoamniotic twin pregnancy. Brzezinski A, et al. **Int J Gynaecol Obstet** 1985 Sep;23(4):335-7

† Genetic factors and fetal growth sex constitution and birthweight in twins. Pilić Z, et al. **Int J Gynaecol Obstet** 1985 Oct;23(5):421-5

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† Internal organs of the conjoined twins. Ichev K, et al. **Anat Anz** 1985;160(3):221–6

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† Successful treatment of a severely burned elderly patient with homografts from her identical twin sister. Westerveld AW, et al. **Br J Plast Surg** 1986 Jan;39(1):136–8

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The transport of conjoined twins. Kilian KM. **Focus Crit Care** 1985 Dec;12(6):8–12

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† Within- and between-zygosity variance in oral traits among US and Punjabi twins. Corruccini RS, et al. **Hum Hered** 1985;35(5):314–8

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AUTHOR SECTION

A

Abrams SL, Callen PW, Anderson RL, Stephens JD: Anencephaly with encephalocele in craniopagus twins: prenatal diagnosis by ultrasonography and computed tomography. J Ultrasound Med 1985 Sep; 4(9):485–8

Ajlouni KM see **Dawod ST**

Alpers CE, Harrison MR: Fetus in fetu associated with an undescended testis. Pediatr Pathol 1985; 4(1–2):37–46
Fetus in fetu is an extremely uncommon cause of an abdominal mass in the neonate; fewer than 30 generally accepted cases are recorded in the literature. We report a case of intraabdominal fetus in fetu, with a unique location within an undescended left testicle. Chromosomal studies of cells from the fetus in fetu and the surviving infant revealed identical 46,XY karyotypes.

Andersen GE see **Henrichsen L**

Anderson RL see **Abrams SL**

Angelico F see **Rona RJ**

Antonini R see **Rona RJ**

Arca M see **Rona RJ**

Arger PH see **Grumbach K**

Ashton RE see **Barth JH**

B

Bakker F see **Derom C**

Bansal VK, Kozeny GA, Fresco R, Vertuno LL, Hano JE: De novo membranous nephropathy following renal transplantation between conjoint twins. Transplantation 1986 Mar;41(3):404–6

Baran R see **Barth JH**

Baras M see **Harlap S**

Barth JH, Dawber RP, Ashton RE, Baran R: Congenital malalignment of great toenails in two sets of monozygotic twins [letter] Arch Dermatol 1986 Apr;122(4):379–80

Barth PG, van der Harten JJ: Parabiotic twin syndrome with topical isocortical disruption and gastroschisis. Acta Neuropathol (Berl) 1985; 67(3–4):345–9
A case of parabiotic twin pregnancy is described with early fetal co-twin loss and topical isocortical disruption and gastroschisis in the surviving twin. We conclude from this case that early fetal parabiotic twin syndrome (before 16 weeks of gestational age) may cause microgyria and neuronal heterotopia. The cerebral and extracranial findings can be explained as the result of multiple vascular obstructions. Whereas most cases of parabiotic twin syndrome with brain damage involve cystic necrosis, focal hypoplasia with disrupted development in the affected part has been found in the present case. The probable reason in discussed. The roentgenographic analysis of the dead twin fetus is consistent with the period of 13–16 weeks as the likely period in which microgyria and neuronal heterotopia originated in the surviving twin. The present case constitutes one of the rare instances in which neuronal migration disturbance in the human could be dated reliably.

Beatty T see **Fogarty EE**

Bell D, Johansson D, McLean FH, Usher RH: Birth asphyxia, trauma, and mortality in twins: has cesarean section improved outcome?
Am J Obstet Gynecol 1986 Feb;154(2):235–9
The outcome of two populations of twins delivered at the same hospital, numbering 554 in 1963 to 1972 and 614 in 1978 to 1984, was reviewed to determine the factors contributing to depression at birth, trauma, and mortality in each period. The cesarean section rate had increased from 3% in the early period to 51% in the later period, with 92% of the later cases in which the first twin presented abnormally being delivered by cesarean section. Among infants of greater than 28 weeks' gestation the incidence of severe depression at birth was not reduced with the increased cesarean rate, remaining at 2% in both populations; none developed encephalopathy or died as a result of birth asphyxia or trauma. Neonatal mortality was markedly reduced in the second period, primarily because of a reduction in deaths resulting from respiratory distress syndrome. It is not possible to show that the marked increase in the rate of cesarean delivery has improved the condition of twin infants at birth.

Berg K see **Magnus P**

Berkovich SY, Bloom S: Probability of monozygotic twinning as a reflection of the genetic control of cell development. Mech Ageing Dev 1985 Jul–Aug; 31(2):147–54
The stability of the incidence of monozygotic twinning (MZT) suggests that its origin is genetically, rather than environmentally, controlled. Available data, though scant, supports our hypothesis that the MZT probability is (1/2)K, where K is a species-specific integer parameter. For humans MZT occurs in about four of 1000 births, which is close to one occurrence in 2(8) births, i.e. K = 8. The environmental factors are not the cause of MZT, but may influence its expression. When this influence is in effect under some extreme experimental conditions the above form of MZT probability is observed. Binary structure of the MZT probability provides insight into genetic control mechanism of cell division.

Bermant MA see **Shively RE**

Bezwoda WR see **Goss GD**

Bharucha NE, Stokes L, Schoenberg BS, Ward C, Ince S, Nutt JG, Eldridge R, Calne DB, Mantel N, Duvoisin R: A case-control study of twin pairs discordant for Parkinson's disease: a search for environmental risk factors. Neurology 1986 Feb; 36(2):284–8
A previous study of twins with Parkinson's disease (PD) revealed low concordance, suggesting that genetic factors play a minor role in the etiology of PD. To identify possible environmental determinants of PD while maximally controlling for hereditary factors, 31 monozygotic twin pairs discordant for PD were interviewed by telephone. Information about possible risk factors was obtained from systematic and uniform interviews with cases and controls. The only statistically significant result was less cigarette smoking by PD patients (p less than 0.05). Thirteen dizygotic discordant twin pairs were evaluated with the same techniques, but there were no statistically significant differences between affected and unaffected twins.

Biswas BP, Dawn TK, Biswas S: Combined sirenomelus and upper limb amelia in a uniovular twin. J Indian Med Assoc 1985 Jul;83(7):245–6

Biswas S see **Biswas BP**

Bjerkedal T see **Magnus P**

Bloom S see **Berkovich SY**

Bose B, Wilkie RA, Madlom M, Forsyth JS, Faed MJ: Wiedemann–Beckwith syndrome in one of monozygotic twins. Arch Dis Child 1985 Dec; 60(12):1191–2
A pair of monozygotic twins discordant for Wiedemann–Beckwith syndrome is described. The probability of monozygosity is 0.995. This observation suggests that the syndrome is unlikely

AUTHOR SECTION

to be under single gene control and genetic counselling should be based on multifactorial inheritance.

Bouchard TJ see **Knobloch WH**

Brenci G see **Rona RJ**

Brousseau DA see **Ross AJ 3d**

Brzezinski A, Mor-Yosef S, Granat M: Antepartum diagnosis of monoamniotic twin pregnancy.
Int J Gynaecol Obstet 1985 Sep;23(4):335–7
A case of monoamniotic twin pregnancy complicated by preeclampsia is presented. Early diagnosis was achieved at the 16th gestational age by ultrasonography. The pregnancy was terminated at term by a cesarean section. Both twins survived with excellent outcome. The importance of antepartum diagnosis of this rare condition is discussed.

Bucholz RD see **Shively RE**

Bucsky P see **Kósnai I**

Bush GH see **Lloyd-Thomas AR**

C

Callen PW see **Abrams SL**

Calne DB see **Bharucha NE**

Chalmers RA see **Stacey TE**

Chee CP see **Wong TJ**

Chen CJ, Cohen BH, Diamond EL: Genetic and environmental effects on the development of myopia in Chinese twin children.
Ophthalmic Paediatr Genet 1985 Aug;6(1–2):353–9
In order to assess the relative and interactive importance of genetic and environmental components on the development of myopia in Chinese school children aged from 10 to 15 years, a population-based sample of 361 same-sexed twin pairs recruited through stratified cluster sampling was studied. Zygosity of twin pairs was determined by Mendelian traits, red cell antigen systems, and continuous dermatoglyphic characteristics; while myopia was diagnosed by both objective and subjective techniques. Studying and reading habit was obtained from cotwins and their parents through a life style questionnaire. Age-sex-adjusted concordance rate derived from multiple regression equation was used in the analysis. Conventional comparison of intrapair concordance between monozygotic (MZ) and dizygotic (DZ) twins was used to assess the importance of a genetic component in the determining of myopia, and a significant genetic influence was observed. Environmental influence on myopia was evaluated through MZ cotwin method, and MZ cotwins with concordant studying and reading habits were significantly more concordant in myopia than those MZ cotwins with discordant habits. The possible effect of gene–environment interaction on myopia was explored, and concordance in myopia was found significantly associated with the interaction between zygosity and habit of studying and reading. These observations suggested that the impact of the environmental factor on the development of myopia may be influenced by genotype, and vice versa.

Chen KT, Van Dyne TA: Familial plantar fibromatosis.
J Surg Oncol 1985 Aug;29(4):240–1
A family in which three siblings developed plantar fibromatosis is described. This occurrence confirms the importance of heredity in the etiology of plantar fibromatosis.

Chi JG see **Seo JW**

Claudy AL see **Garcier F**

Cliffe MJ see **Elbadawy MH**

Clifford CA, Hopper JL, Fulker DW, Murray RM: A genetic and environmental analysis of a twin family study of alcohol use, anxiety, and depression.
Genet Epidemiol 1984;1(1):63–79
Alcohol consumption, anxiety, and depression were measured by questionnaire in 572 twin families ascertained from the Institute of Psychiatry (London) normal twin register, each family consisting of an adult twin pair, their parents, and siblings—a total of 1,742 individuals. A multivariate normal model for pedigree analysis was applied to each variable, with power transformations fitted to maximise the fit with distributional assumptions. The effect of shared twin environment was estimated by considering the measured cohabitation history of twin pairs. For log-transformed alcohol consumption, amongst current drinkers this effect was the same for MZ and DZ pairs but depended on the cohabitation status of pairs. For both anxiety and depression the effect was clearly not the same for MZ and DZ pairs. Therefore the basic assumption of the classical twin method appears to be invalid for all three traits. Estimates of heritability derived from these analyses were compared with those obtained (1) by applying the classical twin method to twin data only, and (2) by a pedigree analysis ignoring the effect of shared twin environment. For all variables there were considerable differences between estimates based on the three models. This study illustrates that data from twins and their relatives which includes information on cohabitation history might distinguish shared genes and shared environment as causes of familial aggregation. In these behavioral traits the effect of shared twin environment may depend on zygosity and play a major role in explaining familial aggregation in twin family data.

Clifford CA, Murray RM, Fulker DW: Genetic and environmental influences on obsessional traits and symptoms. Psychol Med 1984 Nov;14(4):791–800
A biometrical genetic analysis was carried out on the response of 419 pairs of twins to the 42-item version of Leyton Obsessional Inventory. Just under half the variation in both the Obsessional Trait and Symptom Scales was due to heredity. Multivariate analysis revealed a genetic effect on the development of obsessional personality and also the transmission of a general tendency predisposing to neurotic breakdown. Although the influence of heredity was outweighed by that of the environment, the latter effect showed an absence of general factors and, in particular, of any noticeable effect from the common home environment.

Cohen BH see **Chen CJ**

Cohen DJ see ***Price RA***

Coleman BG see **Grumbach K**

Corrao A see **Nasta R**

Corruccini RS, Sharma K: Within- and between-zygosity variance in oral traits among US and Punjabi twins. Hum Hered 1985;35(5):314–8
Cross-cultural comparison of twin variances reveals widespread heterogeneity among zygosities for dental occlusal traits, implying various biases in calculation of genetic variance or heritability estimates. These estimates are fairly robust for dental size traits, however. Differences in pattern between Punjabi (Northwest Indian) and American twins highlight the environmental differences that affect heritability determinations.

Corruccini RS see **Sharma K**

Corter C see **Goldberg S**

Crosado B see **Silva PA**

Czeizel A see **Flatz G**

AUTHOR SECTION

D

Dawber RP see **Barth JH**
Dawn TK see **Biswas BP**
Dawod ST, Isseh NM, Kalantar SM, Jorulf HK, Ajlouni KM: Primary empty sella syndrome with panhypopituitarism in a child. Helv Paediatr Acta 1984 Dec;39(5-6):473-9
A 10-year-old boy presented with marked growth retardation. He was found to have an empty sella demonstrated by CT and Metrizamide cisternography. Endocrinological investigation confirmed the diagnosis of panhypopituitarism. This is the first case reported in a twin and the fifth pediatric case with marked endocrine dysfunction reported in the literature.
DeFries JC, Fulker DW: Multiple regression analysis of twin data. Behav Genet 1985 Sep;15(5):467-73
Defrise-Gussenhoven E see **Hauspie RC**
Del Ben M see **Rona RJ**
Derman DP see **Goss GD**
Derom C, Bakker E, Vlietinck R, Derom R, Van den Berghe H, Thiery M, Pearson P: Zygosity determination in newborn twins using DNA variants. J Med Genet 1985 Aug;22(4):279-82
A prerequisite for the optimal use of the twin method in human genetics is an accurate determination of the zygosity at birth. This diagnosis is sometimes hampered by the lack of available specific markers. We report here the use of DNA variants (restriction fragment length polymorphisms) as genetic markers for zygosity determination. We have analysed the placental DNA of 22 twin pairs with known zygosity on Southern blots by hybridisation with polymorphic human DNA probes. We looked at six different polymorphic sites using four restriction enzymes and six DNA probes. Among 10 dizygotic (DZ) pairs, only one was not demonstrably different and seven had at least two discordances. Within each of the 12 monozygotic (MZ) pairs there was complete concordance. Thus, nine of 10 dizygotic and 12 of 12 monozygotic twins were assigned their correct zygosity solely by comparison of six DNA variants. The use of these highly polymorphic DNA probes may have practical importance for antenatal diagnosis and paternity testing.
Derom R see **Derom C**
Desai R see **Naidoo L**
de Sousa C see **Stacey TE**
Diamond EL see **Chen CJ**
Dong QG see **She YX**
Dowling F see **Fogarty EE**
Duvoisin R see **Bharucha NE**

E

Eaves LJ see **Kendler KS**
Eckert ED see **Knobloch WH**
Elbadawy MH, Cliffe MJ, James PT: A monozygotic twin pair discordant for anorexia nervosa. Can J Psychiatry 1985 Nov;30(7):544-5
This case study describes a female monozygotic twinship in which one of the twins presented with anorexia nervosa. The case supports the suggestion from the few such discordant pairs previously reported that the affected twin tends to have been relatively disadvantaged from an early age and to be the less dominant of the pair. A review of previously reported cases suggests a concordance rate for anorexia nervosa of about 50% in female MZ twin pairs. Some methodological problems associated with the derivation of such estimates are noted.
Eldridge R see **Bharucha NE**
Eustace PW see **el Khatib C**

F

Faed MJ see **Bose B**
Feinendegen LE see **Forrai G**
Ferrell RE see **Reuhland RG**
Flannery DB, Holzman GB: Prenatal testing and twinning [letter] Clin Genet 1985 Aug;28(2):180-2
Flatz G, Czeizel A, Métneki J, Flatz SD, Kühnau W, Jahn D: Pulmonary hydrogen and methane excretion following ingestion of an unabsorbable carbohydrate: a study of twins. J Pediatr Gastroenterol Nutr 1985 Dec;4(6):936-41
Pulmonary excretion of hydrogen and methane after administration of an unabsorbable disaccharide (lactulose) was determined in 228 adult Hungarian twins, 60 monozygous (MZ) and 54 dizygous (DZ) pairs. More than 98% of the subjects (224 of 228) excreted large amounts of hydrogen between 90 and 180 min after lactulose administration. Methane excretion in the fasting state was observed in 124 of 228 of the probands (54.4%), and 68 of 228 (29.8%) produced additional methane in response to lactulose ingestion. In contrast to hydrogen production, both methane excretion and production were significantly more frequent in females than in males. In the total group, and more distinctly in females, the correlation between peak hydrogen and methane concentrations was negative. Twin concordance of fasting methane excretion and lactulose-induced methane production was near 70% in both MZ and DZ pairs. Heritability estimates of methane excretion and production based on intrapair correlation and variance were smaller than unity, and intrapair correlation coefficients were larger in twin pairs living apart than in those living in the same household. Methane excretion is comparatively frequent in the Hungarian population, and a substantial proportion of fasting methane excreters (55%) produce additional methane from lactulose. The sex difference of methane excretion appears to be characteristic of European populations. The twin data disprove regular Mendelian inheritance of methane production and are suggestive of genetic effects in a multifactorial system.
Flatz SD see **Flatz G**
Fogarty EE, Beatty T, Dowling F: Spondylocostal dysplasia in identical twins. J Pediatr Orthop 1985 Nov-Dec;5(6):720-1
Identical twins with spondylocostal dysplasia are reported. To our knowledge, this has not been reported previously. Other forms of short trunk dwarfism are discussed.
Forrai G, Kasperek K, Salamon A, Feinendegen LE: Estimation of zinc and other trace elements in the nails of Hungarian adult twin pairs by neutron activation analysis. Acta Biochim Biophys Acad Sci Hung 1984; 19(3-4):299-304
Nail samples of 157 adult Hungarian twin pairs were examined for different trace elements by neutron activation analysis. Comparing the within-pair-concordance for zinc contents of the twins of different zygosity, a much higher concordance in monozygotes than in dizygotes was observed. The authors suggest the idea that the zinc content in the human organism, at least in some organs, may be genetically controlled.

AUTHOR SECTION

Forsyth JS see **Bose B**
Fox OF see **Harley JB**
Fresco R see **Bansal VK**
Fulker DW see **Clifford CA**
Fulker DW see **DeFries JC**

G

Gabbe SV see **Grumbach K**
Garcier F, Claudy AL: Acanthosis nigricans in monozygotic twins with post receptor defects causing insulin resistance. Clin Exp Dermatol 1985 Jul;10(4):358–64
Gatti JE see **Ross AJ 3d**
Gedda L see **Rona RJ**
Gericke GS: Genetic and teratological considerations in the analysis of concordant and discordant abnormalities in twins. S Afr Med J 1986 Jan 18; 69(2):111–4 (44 ref.)
Results from monozygotic (MZ) and dizygotic (DZ) twin research are often used in an attempt to gain a clearer understanding of the 'nature v. nurture' dilemma. Discordance between MZ twins has been considered to be environmental, and greater concordance in MZ compared with DZ pairs to be genetic. Current genetic and teratological theories considerably complicate the interpretation of concordance and discordance of abnormalities. The high rate of discordant intra-uterine death recently demonstrated in twins may profoundly influence the value of epidemiological studies usually performed in later life. Furthermore, indirect zygosity estimations based on sex ratios in DZ twins may be flawed because it is now recognized that increasing numbers of conditions are genetically heterogeneous. Emphasis is laid on problems of interpretation of discordance and concordance for developmental abnormalities in twins, and some possible mechanisms for their induction are discussed. Basic genetic concepts relevant to the expression of abnormalities in twins are outlined.
Gill CE, Jardine R, Martin NG: Further evidence for genetic influences on educational achievement. Br J Educ Psychol 1985 Nov;55 (Pt 3):240–50
Goldberg S, Perrotta M, Minde K, Corter C: Maternal behavior and attachment in low-birth-weight twins and singletons. Child Dev 1986 Feb;57(1):34–46
Early mother–infant interaction and later security of attachment were assessed for 17 pairs of twins, 5 singleton survivors of twin pairs, and 20 singletons, all low-birth-weight preterm infants. Mother and infant behavior during home observations at 6 weeks and 3, 6, and 9 months was rated on scales developed by Ainsworth and Egeland and Brunquell. A, B, and C patterns of behavior in the Strange Situation conformed to the frequencies predicted from prior full-term samples and were not affected by twinship. However, the proportion of B1 and B4 dyads in the B group significantly exceeded that predicted from normative data. Mothers in B2 and B3 dyads were rated more sensitive and responsive than all others at all 4 observations. Contrary to our expectations that mothers in A and C dyads would receive the lowest ratings, this occurred only at 6 weeks. At later observations mothers in B1 and B4 dyads consistently received the lowest ratings. The discussion focuses on possible reasons for this unexpected finding.
Goss GD, Wittwer MA, Bezwoda WR, Herman J, Rabson A, Seymour L, Derman DP, Mendelow B: Effect of natural killer cells on syngeneic bone marrow: in vitro and in vivo studies demonstrating graft failure due to NK cells in an identical twin treated by bone marrow transplantation. Blood 1985 Nov;66(5):1043–6
Bone marrow transplantation for severe idiopathic aplastic anemia was undertaken in a patient, using his monozygotic twin brother as the donor. In spite of the use of syngeneic bone marrow, failure of engraftment occurred on two occasions. In vitro studies demonstrated that natural killer (NK) cells from the recipient markedly inhibited the growth of donor bone marrow granulocyte progenitor cells. On a third attempt, successful bone marrow engraftment was achieved following high-dose cyclophosphamide, which has previously been shown to be inhibitory to NK cells. We conclude that NK cell activity may play an important role in bone marrow failure as well as being responsible for at least some cases of aplastic anemia.
Granat M see **Brzezinski A**
Gruber B see **Harley JB**
Grumbach K, Coleman BG, Arger PH, Mintz MC, Gabbe SV, Mennuti MT: Twin and singleton growth patterns compared using US. Radiology 1986 Jan; 158(1):237–41
Sonography has been used widely in the evaluation of singleton fetal growth. Twin gestations, however, have received less careful attention. In a statistical study of 103 twin pregnancies, the growth patterns of twin biparietal diameter (BPD), fetal femur length (FFL), and abdominal circumference (AC) were compared with those of singletons. The results of the study revealed a decrease in twin BPD growth after 31 to 32 weeks of gestation relative to singletons. Twin AC growth rate decreases after 32–33 weeks of gestation relative to singletons, but the twin FFL growth pattern does not deviate from that of singletons throughout gestation. Because of the significant difference in growth patterns of BPD and AC between twins and singletons in our population, new growth charts for twin BPD and AC are proposed.
Gyódi E see **Kósnai I**

H

Hano JE see **Bansal VK**
Harlap S, Shahar S, Baras M: Overripe ova and twinning. Am J Hum Genet 1985 Nov;37(6):1206–15
Multiple births were studied in a sample of orthodox Jewesses for whom an estimate could be made of the day of ovulation and the earliest possible day of conception. The overall rate of twinning was 14.5/1,000 deliveries, and of triplets, 0.40/1,000. Twinning rates varied significantly from 11.4 in the 5,976 'early' conceptions (day −1 or earlier relative to the estimated day of ovulation) to 26.9 in the 1,498 'late' conceptions (day 0 or later). Triplets varied significantly from 0 to 2.01 in early and late conceptions, respectively, and unlike-sexed multiple sets, 2.8 and 12.8, respectively. The excess of multiple births in late conceptions was seen within different ages and origin groups, in women with different menstrual characteristics, and in those with and without treatment for anovulation. While the excess of unlike-sexed sets seems to lead to the conclusion that late conceptions are associated with dizygosity, polar body twinning and uniovular dispermatic twinning should also be considered.
Harley JB, Kaine JL, Fox OF, Reichlin M, Gruber B: Ro (SS-A) antibody and antigen in a patient with congenital complete heart block. Arthritis Rheum 1985 Dec;28(12):1321–5

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Congenital complete heart block is closely associated with the presence of anti-Ro (SS-A) autoantibodies. Quantitative solid-phase assays for Ro (SS-A) autoantigen and autoantibody have established the presence of Ro (SS-A) in cardiac tissues and have been used to evaluate an informative pedigree. The propositus we describe here had complete congenital heart block and showed anti-Ro (SS-A) binding of 13-fold less than his normal HLA-identical twin sister. Both had identical titers of antinuclear antibody. These data support the hypothesis that anti-Ro (SS-A) may be directly involved in the pathogenesis of congenital complete heart block.

Harrison MR see **Alpers CE**

Hatch TR, Moore RJ: Klinefelter syndrome in identical twins. Urology 1985 Oct;26(4):396-7
A rare case of Klinefelter syndrome in identical twins is reported. Salient features and clinical recognition of the syndrome are discussed.

Hauspie RC, Susanne C, Defrise-Gussenhoven E: Testing for the presence of genetic variance in factors of face measurements of Belgian twins. Ann Hum Biol 1985 Sep-Oct;12(5):429-40
Factor analysis with VARIMAX rotation was used to analyse 15 face measurements in Belgian same-sexed twins, aged 18-25 years: 39 dizygotic and 57 monozygotic male pairs and 42 dizygotic and 67 monozygotic female paris. According to Christian's model, we used the ratio of the within-mean squares of dizygotic and monozygotic pairs to test for the presence of a genetic component in the variance of the facial dimensions and of all the rotated factors were statistically significant (P less than 0.05), suggesting a genetic component in the variance. The probabilities of the F values were generally lower in males than in females. The factor analysis yielded five main factors of which three were well separated: face height, ear size and lips. The two others were breadth factors, but were less clearly defined, probably due to a bad selection of variables. A comparison of the F values of the factors with those of their contributing variables seemed to indicate that well-defined factors may better describe genetically determined structures than the original variables can.

Hayward D see **Rona RJ**

Heath A see **Kendler KS**

Hedner K, Kolnig AM, Strömbeck B, Nordén A, Mitelman F: A twin study of structural chromosome aberrations in lymphocytes. Cytogenet Cell Genet 1986;41(1):58-9
Structural chromosome aberrations were analyzed in peripheral lymphocytes of eight monozygotic (MZ) and seven dizygotic (DZ) pairs of male twins. There was no significant intrapair difference in the variance of aberration frequencies among the MZ and DZ twins. Thus, there was no evidence of a major genetic influence on the development of structural chromosome aberrations. Although a genetic component could not be excluded, it was concluded that any chromosome aberrations observed were probably due mainly to environmental influences.

Heller RF see **Rona RJ**

Heltberg A, Kalland T, Källén B, Nilsson O: A study of some immunological variables in twins, discordant for multiple sclerosis. Eur Neurol 1985;24(6):361-73
11 twin pairs, discordant for multiple sclerosis (MS), were studied: 5 were monozygotic, 6 dizygotic. The mixed leukocyte reaction (MLR) with cells from unrelated patients with MS, the natural killer cell (NK) activity, OKT 4/OKT 8 ratio, and monocyte numbers were studied. The impaired MLR seen in some patients with MS was even more pronounced in the healthy twin, irrespective of the zygosity of the twins. A reduced NK activity and a high OKT 4/OKT 8 ratio is seen in the diseased twin compared to the healthy one, more strongly indicated at monozygosity. The significance of genetics, early environment, and disease is discussed.

Henderson AM see **Sharma K**

Henderson AS see **Jardine R**

Henrichsen L, Skinhøj K, Andersen GE: Delayed growth and reduced intelligence in 9-17 year old intrauterine growth retarded children compared with their monozygous co-twins.
Acta Paediatr Scand 1986 Jan;75(1):31-5
Fourteen pairs of monozygous twins who differed from one another mainly in terms of intrauterine growth the one being greater than or equal to 25% lighter at birth than the other were studied at a mean age of 13 years. There had been no major problems during pregnancy or the neonatal period and no serious diseases during childhood. The twins grew up in the same environment. At follow-up height, head circumference, global IQ and performance IQ were reduced in the originally light twins. Intrauterine growth retardation of a certain magnitude thus has a long-term deleterious effect upon growth and development.

Herman J see **Goss GD**

Hill AV, Jeffreys AJ: Use of minisatellite DNA probes for determination of twin zygosity at birth.
Lancet 1985 Dec 21-28;2(8469-70):1394-5
Minisatellite DNA probes that detect highly polymorphic regions of the human genome were used to examine DNA from twelve sets of newborn twins. In the seven cases where the twins were known to be monozygotic or dizygotic, from sex observation or placental examination, the DNA result agreed with these findings. In the other five twin pairs and in two sets of triplets DNA analysis allowed rapid determination of zygosity. Minisatellite DNA probes provide a single genetic test that should allow positive determination of zygosity in all cases of multiple pregnancy.

Holzman GB see **Flannery DB**

Hopper JL see **Clifford CA**

Hyman PE see **Moore TC**

I

Iacono M see **Nasta R**

Ichev K, Ovtscharoff W, Vankova M, Surchev L: Internal organs of the conjoined twins. Anat Anz 1985;160(3):221-6
Described are the alimentary system, the respiratory system, the urogenital system and the endocrine glands of conjoined female twins. There were found to be present 2 esophagi, 2 stomachs, 2 duodeni, 2 pancreas and one large liver. The intestine is unique from the region of the jejunum to it's end. There were found to be present 2 tracheae and 4 lungs. The urogenital system appeared to be normal. A single deviation was noted with respect to the endocrine glands, in particular, the right adrenal gland had an additional part which entered the thorax through a cleft in the diaphragm.

Ichev K, Surchev L, Vancova M, Ovtscharoff W: Cardiovascular system of the conjoined twins. Anat Anz 1985;160(2):133-9
The cardiovascular system of the dicephalus (2 spines, one pelvis) conjoined twins is being described. The heart consists of 2 atria and 3 ventricles. Various malformations are evident in the

layout systematic and pulmonary circulation. The vascular system can be divided into 3 zones: an upper one--with an almost symmetrical duplication, a middle one--with an atypical pattern, and a lower one--with a normal pattern.

Ignatowicz R see **Michałowicz R**
Ince S see **Bharucha NE**
Incorpora G see **Pavone L**
Iselius L see **McGue M**
Isseh NM see **Dawod ST**

J

Jahn D see **Flatz G**
Jailal I see **Naidoo L**
James PT see **Elbadawy MH**

James WH: Dizygotic twinning, birth weight and latitude. Ann Hum Biol 1985 Sep-Oct;12(5):441-7
In Europe and the USA, both mean birth weight and age-standardized dizygotic twinning rates correlate positively and significantly with latitude. It seems possible that these two sorts of correlation have explanations in common via pituitary action. Factors which may be responsible for such action are total consumption of food and consumption of specific items of diet, for example, milk products and potatoes. Lastly, one might wonder whether the association of photoperiodicity with latitude is relevant.

Jardine R, Martin NG, Henderson AS: Genetic covariation between neuroticism and the symptoms of anxiety and depression. Genet Epidemiol 1984; 1(2):89-107
A genetic analysis of the trait of neuroticism and symptoms of anxiety and depression in 3,810 pairs of adult MZ and DZ twins is reported. Differences between people in these measures can be explained simply by differences in their genes and in their individual environmental experiences. There is no evidence that environmental experiences that are shared by cotwins, such as common family environment or social influences, are important. There are differences between the sexes in gene action affecting neuroticism, and genetic effects become more pronounced with age in females. The lack of evidence for dominance variance affecting neuroticism contrasts well with the detection of considerable genetical nonadditivity for extraversion in the same sample and reinforces the view that these two traits are not only statistically, but also genetically, quite independent. An analysis of the causes of covariation between anxiety, depression, and neuroticism shows that additive gene effects are more important causes of covariation than environmental factors. Genetic variation in symptoms of anxiety and depression is largely dependent on the same factors as effect the neuroticism trait. However, there is also evidence for genetic variation specific to depression.

Jardine R see **Gill CE**
Jaroszewicz AM see **Keet MP**
Jeffreys AJ see **Hill AV**
Johansson D see **Bell D**
Johnston JG see **el Khatib C**
Jörgensen C see **Montan S**
Jorulf HK see **Dawod ST**

K

Kaine JL see **Harley JB**
Kalantar SM see **Dawod ST**
Kalland T see **Heltberg A**
Källén B see **Heltberg A**
Karkowska B see **Michałowicz R**
Kárpáti S see **Kósnai I**
Kasperek K see **Forrai G**

Keet MP, Jaroszewicz AM, Lombard CJ: Follow-up study of physical growth of monozygous twins with discordant within-pair birth weights. Pediatrics 1986 Mar;77(3):336-44
In an attempt to determine the future growth of intrauterine growth-retarded babies, 14 pairs of monozygous twins, showing within-pair birth weight differences of 11% to 48% (median 28%), were followed prospectively for 3 to 9 years. Weight, length, and head circumference were measured biannually for the first 3 years of life and thereafter annually. At birth, the median within-pair percentage differences of weight (28%), length (6.2%), and head circumference (5.2%) were all significant (P less than .01). At 12, 24, and 30 months of age, these median within-pair percentage differences became insignificant for head circumference, length, and weight, respectively. The most rapid catch-up growth of the lighter twins occurred during the first 2 years of life. Analysis of individual pairs, however, showed suboptimal growth in both members of two pairs, although growth became concordant. In four other pairs, the lighter birth weight member remained growth retarded in comparison with the cotwin and showed within-pair differences in weight varying between 8% and 19%, in height between 1% and 6%, and in head circumference between 1.9% and 7%. All children with birth weights above the tenth percentile grew up normally, regardless of the extent of within-pair birth weight differences, with one exception. This exception was a pair in whom there were within-pair differences in child rearing. In the six pairs in which the smaller twin's birth weight was below the tenth percentile, only three pairs showed normal growth. In these six pairs a normal ponderal index in the lighter twin members was associated with poorer growth than a low ponderal index.(ABSTRACT TRUNCATED AT 250 WORDS)

Kendler KS, Heath A, Martin NG, Eaves LJ: Symptoms of anxiety and depression in a volunteer twin population. The etiologic role of genetic and environmental factors. Arch Gen Psychiatry 1986 Mar;43(3):213-21
We examined the etiologic role of genetic and environmental factors in 14 symptoms of anxiety and depression reported by 3,798 pairs of adult twins from the Australian National Health and Medical Research Council Twin Register. Multifactorial multiple-threshold models fit the individual symptom scores well. For a substantial majority of the symptoms, the variance in liability was best explained by only genetic factors and environmental influences specific to the individual, where 33% to 46% of the variance was due to genetic factors. For four symptoms, it was not possible to choose definitively between models that, in addition to specific environment, included genetic vs familial environmental effects. These results provide strong evidence for the role of genetic factors in the etiology of symptoms of anxiety and depression as reported in a general population. Evidence for an etiologic role of familial environmental factors was much weaker. If familial environmental factors play any role in the production of these symptoms, they are more important in symptoms of depression than of anxiety, and the factors that predispose to these symptoms are only modestly correlated in males and

AUTHOR SECTION

females.

Kendler KS: A twin study of individuals with both schizophrenia and alcoholism. Br J Psychiatry 1985 Jul;147:48–53
Substantial evidence suggests that genetic factors contribute to the aetiology of both schizophrenia and alcoholism, when they occur alone. To examine the role of genetic factors in schizophrenia and alcoholism when they occur together in the same individual, the frequency of both conditions was investigated in the co-twins of 34 monozygotic (MZ) and 47 dizygotic (DZ) index twins with a diagnosis of both schizophrenia and alcoholism. Both disorders alone were significantly more common in the MZ than in the DZ co-twins, suggesting that individuals suffering from schizophrenia and alcoholism have a genetic predisposition to both disorders, which is of the same nature as that which causes the two when they occur alone. In the co-twins of the MZ index twins, the diagnoses of schizophrenia and alcoholism were uncorrelated, indicating that the specific environmental factors of causal importance in the two disorders are not closely related.

Kesic V see **Pilic Z**

el Khatib C, Johnston JG, Eustace PW: Identical twins with simultaneous acute appendicitis. Ir Med J 1985 Oct;78(10):288

Kidd KK see **Price RA**

Kirscht J see **Rayburn W**

Klasen HJ see **Westerveld AW**

Knobloch WH, Leavenworth NM, Bouchard TJ, Eckert ED: Eye findings in twins reared apart.
Ophthalmic Paediatr Genet 1985 Feb;5(1-2):59-66
Twenty-six pairs of reared apart twins were evaluated ophthalmologically. Included were 18 monozygotic pairs and eight same sex dizygotic pairs. A high concordance of C/D ratios and esotropia was evident. Though reared apart, three pairs of esotropic MZ twins had almost simultaneous onsets of diagnosis and treatment for their strabismus. Genetic influence on the development of refractive errors was evident by the greater similarity of the refractions in MZ twins when compared to DZ twins.

Kolnig AM see **Hedner K**

Kósnai I, Kárpáti S, Török E, Bucsky P, Gyódi E: Dermatitis herpetiformis in monozygous twins: discordance for dermatitis herpetiformis and concordance for gluten-sensitive enteropathy.
Eur J Pediatr 1985 Nov;144(4):404–5
A monozygous female twin pair discordant for dermatitis herpetiformis and concordant for gluten-sensitive enteropathy is reported. The diagnosis of dermatitis herpetiformis was verified by demonstrating granular IgA deposits in the uninvolved skin. Gluten-sensitive enteropathy was confirmed according to the ESPGAN criteria. Monozygosity was proved by the standard genetic characteristics.

Kozeny GA see **Bansal VK**

Kühnau W see **Flatz G**

Kulkarni V, Shah MD, Parikh A: Goldenhar syndrome (a case report). J Postgrad Med 1985 Jul;31(3):177–9

Kurlej W: The development of twin fetuses.
Folia Morphol (Warsz) 1985;44(1):54–9

L

Leavenworth NM see **Knobloch WH**

Leckman JF see **Price RA**

Lewis B see **Rona RJ**

Li ZC see **She YX**

Lloyd-Thomas AR, Bush GH: All that wheezes is not asthma. Anaesthesia 1986 Feb;41(2):181–5
A case is presented in which the inhalation of a foreign body caused a respiratory arrest and was subsequently diagnosed and treated as an attack of acute asthma. The presentation, diagnosis, investigation and treatment of this condition is discussed and a review of the literature is presented.

Lombard CJ see **Keet MP**

Lucier AC see **Melrose MA**

Lyou YT see **Wong TJ**

M

McGue M, Rao DC, Iselius L, Russell JM: Resolution of genetic and cultural inheritance in twin families by path analysis: application to HDL-cholesterol.
Am J Hum Genet 1985 Sep;37(5):998–1014
A path model and associated statistical method for the analysis of data on twin families are introduced and applied to high density lipoprotein cholesterol (HDL-c) observations in the Swedish Twin Family Study. The proposed path model incorporates both genetic and environmental sources of familial resemblance, maternal environmental effects, intergenerational differences in heritabilities, marital resemblance due to either primary or secondary phenotypic homogamy, and twin residual environmental correlations. Application of the model to HDL-c levels resulted in parameter estimates consistent with those reported in earlier reviews and in the analysis of nuclear family and twin data. Genetic heritability was estimated as h2 = .363 +/- .243, cultural heritability as c2 = .187 +/- .082, and the proportion of phenotypic variance due to residual environmental effects as r2 = .450 +/- .207. Although the parameter estimates were comparable, the statistical tests of hypotheses were, relative to other designs, of low statistical power. It appears that environmental indices are necessary for powerful tests of hypotheses.

McLean FH see **Bell D**

Madlom M see **Bose B**

Magargal LE see **Melrose MA**

Magnus P, Berg K, Bjerkedal T: No significant difference in birth weight for offspring of birth weight discordant monozygotic female twins.
Early Hum Dev 1985 Oct;12(1):55–9
Birth weights of offspring of 105 female, monozygotic twin pairs discordant in birth weight were studied. No significant differences were found when offspring of the larger twin were compared with offspring of the smaller twin. The results do not support the hypothesis that in utero effects on females associated with low birth weight will influence their subsequent chance of having low birth weight offspring.

Mantel N see **Bharucha NE**

Markovic S see **Pilic Z**

Martin CA see **Nelson HB**

Martin NG see **Gill CE**

Martin NG see **Jardine R**

Martin NG see **Kendler KS**

Martin NG see **Whitfield JB**

Melrose MA, Magargal LE, Lucier AC: Identical twins with subretinal neovascularization complicating senile macular degeneration. Ophthalmic Surg 1985 Oct;16(10):648–51
This is the first report, to our knowledge, of proliferative macular degeneration developing in the same eye of identical twins. The concept of a familial predisposition in age related macular degeneration

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is consistent with other known risk factors including race, iris pigmentation, hyperopia and macular drusen which are known to be genetically determined. Monozygotic twins provide ophthalmology with an excellent opportunity to study the hereditary aspects of ocular disease.

Mendelow B see **Goss GD**

Mennuti MT see **Grumbach K**

Métneki J see **Flatz G**

Michalkiewicz J see **Michałowicz R**

Michałowicz R, Karkowska B, Ignatowicz R, Michalkiewicz J, Wyszkowski J: Subacute sclerosing panencephalitis in twins. Acta Paediatr Hung 1985; 26(2):97–9

Development of subacute sclerosing panencephalitis after measles has been observed in twins although the disease seems to be quite exceptional in members of the same family, and no report has been found on its occurrence in twins.

Minde K see **Goldberg S**

Mintz MC see **Grumbach K**

Mistry J see **Stacey TE**

Mitelman F see **Hedner K**

Mollica F see **Pavone L**

Montan S, Jörgensen C, Sjöberg NO: Amniocentesis in treatment of acute polyhydramniosis in twin pregnancies. Acta Obstet Gynecol Scand 1985; 64(6):537–9

A rare complication in twin pregnancy is acute polyhydramniosis. If left untreated, the perinatal mortality is 100%. The clinical courses of two cases treated with ultrasound-guided amniocentesis are presented. In the first case altogether 4875 ml amniotic fluid was drained. Both twins died within the first 24 hours of life after delivery in gestational week 26. In the second case 2150 ml amniotic fluid was drained. Both twins survived and were delivered in good condition in gestational week 35. We recommend ultrasound-guided amniocentesis to be performed in twin pregnancy affected by acute polyhydramniosis.

Moodley J see **Naidoo L**

Moore RJ see **Hatch TR**

Moore TC, Hyman PE: Extrahepatic biliary atresia in one human leukocyte antigen identical twin. Pediatrics 1985 Oct;76(4):604–5

Mor-Yosef S see **Brzezinski A**

Murphy J, Murphy SF: Myasthenia gravis in identical twins. Neurology 1986 Jan;36(1):78–80

The literature records myasthenia gravis in five sets of monozygous twins; we report another pair in which monozygosity was determined by blood group analysis, HLA typing, and mixed lymphocyte culture. Acetylcholine receptor antibodies were strongly positive in both twins. Poor response to anticholinergic medication and thymectomy necessitates low-dose daily maintenance prednisone for a normal life-style. The probability of myasthenia developing in the unaffected monozygotic twin is highest soon after diagnosis in the proband and an unaffected twin should be followed indefinitely.

Murphy SF see **Murphy J**

Murray RM see **Clifford CA**

N

Naidoo L, Jailal I, Moodley J, Desai R: Intravenous glucose tolerance tests in women with twin pregnancy. Obstet Gynecol 1985 Oct;66(4):500–2

Carbohydrate metabolism was evaluated in 20 twin gestations and 20 singleton pregnancies. The groups were matched for age, parity, weight, height, and gestational age. Intravenous glucose tolerance tests were performed on all women in the third trimester of pregnancy using a glucose load of 0.5 g/kg body weight. Venous plasma glucose and insulin level were measured and statistically compared. The glucose disappearance rates (K) were not different in the two groups. No significant differences in the mean insulin or glucose responses were found between singleton and twin pregnancies. Thus, twin gestations are not at higher metabolic risk of gestational diabetes than are singleton pregnancies.

Nasta R, Scibilia G, Corrao A, Iacono M: Surgical treatment of an asymmetric double monstrosity with esophageal atresia, omphalocele, and interventricular defect. J Pediatr Surg 1986 Jan;21(1):60–2

In June 1981, at the Department of Pediatric Surgery, Children's Hospital, Palermo, we successfully operated on a male infant born with a set of accessory lower limbs attached to the sternum, a type IV esophageal atresia, omphalocele, and an interventricular defect (VSD).

Nelson HB, Martin CA: Increased child abuse in twins. Child Abuse Negl 1985;9(4):501–5

Premature birth, neonatal complications, isolation, financial pressures, exhaustion and increased family size increase the risk for child abuse. All these factors may be associated with the birth of twins. Of 310 abused/neglected children under the age of 4 in an abuse and at-risk for abuse/neglect registry, 16 were twins which is a significant increase over the rate of 6.2 predicted by the twin birth rate of 2% (p less than .001). Descriptive data from a chart review are presented.

Nevin NC see **Steele K**

Nilsson O see **Heltberg A**

Nordén A see **Hedner K**

Nutt JG see **Bharucha NE**

O

O'Leary JA see **Reuhland RG**

Olofsson P, Rydhström H: Twin delivery: how should the second twin be delivered?

Am J Obstet Gynecol 1985 Nov 1;153(5):479–81

In a series of 803 pairs of twins born between 1973 and 1982, 0.33% of second twins were delivered by cesarean section after vaginal delivery of the first twin. During the last year the frequency has increased to 7%, calling attention to the problem of declining obstetric skills and experience. This has caused us to update the routines of intrapartum management of twin gestations. In the present program only commonly available obstetric techniques are used. The potentially hazardous twin delivery is excluded from a trial of vaginal delivery. Hopefully, the program will help other obstetricians to decide in favor of vaginal delivery in selected twin gestations.

O'Neill JA Jr see **Ross AJ 3d**

Ovtscharoff W see **Ichev K**

P

Pampiglione G see **Pavone L**

Parikh A see **Kulkarni V**

Pauls DL see **Price RA**

Pavone L, Mollica F, Incorpora G, Pampiglione G: Infantile spasms syndrome in monozygotic twins. A 7-year follow-up. Ital J Neurol Sci 1985 Dec; 6(4):503–6

The Infantile Spasms Syndrome is a fairly common form of seizures in infancy. Many papers and several

books have been published on this syndrome but several aspects are still obscure. In particular, there is some controversy about anticonvulsant treatments and on the question of improvements in mental status. An unusual case of 2 monozygotic twins with by this syndrome, both with clinical manifestations appearing within a few hours on the same day, at 6 months has been followed up for 7 years, giving us the opportunity to understand some aspects of the clinical course of the disease and long term treatment.

Pearson P see **Derom C**

Perrotta M see **Goldberg S**

Piehl E see **Rayburn W**

Pilic Z, Sulovic V, Markovic S, Radosevic R, Kesic V: Genetic factors and fetal growth sex constitution and birthweight in twins. Int J Gynaecol Obstet 1985 Oct;23(5):421–5

Fetal growth is considered a multifactorially-influenced characteristic. Genetic factors were found to play the main role in fetal growth determination, and it is the polygenic inheritance. The paper reviews the birthweights of 360 unlike-sexed two-egg twins, born at the Clinic of Gynecology and Obstetrics, Faculty of Medicine in Beograd, from January 1, 1970 through June 30, 1984. The mean birthweight differences between the male (2954.94 +/- 704.28 g) and female (2313.19 +/- 651.32 g) fetuses, amounted to 141.75 g. The difference is highly significant (P less than 0.01); variation coefficient shows that the examined groups were homogenous (VC was below 30%). The results were discussed from the genetic point of view, and particularly from the point of view of sex constitution, with special respect to the effect of Y chromosome on fetal growth. It has been known that human somatic development, body weight, bone maturation and teeth development are influenced by variety of factors. In addition to nutritional and other factors of the external environment, genetic and humoral factors are leading. The fact that fetuses with XY male constitution are heavier at birth than female fetuses with XX constitution, made us consider the correlation between genotype-phenotype, and the mentioned characteristics. This study was aimed at finding out the role of genetic factors in fetal growth, with respect to sex constitution, particularly to chromosome effect on fetal growth in unlike-sexed two-egg twins.

Pollard R: Twinning rates in Fiji. Ann Hum Genet 1985 Jan;49 (Pt 1):65–73

The incidence of twins in Fiji has been investigated using birth registrations for the years 1976–81. The twinning rate for the indigenous Fijians is found to be 9.4 per 1000 live maternities, (based on 407 sets of twins), and for Indians, descendants of immigrants who began to arrive in Fiji in 1879, 6.2 per 1000 (based on 350 twins). After standardizing for maternal age, the difference between the two ethnic groups decreases slightly, but the Fijian rate remains almost 40% above that of the Indians. This difference is consistent over the 6 years of the study, is found for mothers of all age groups under 40 and at all levels of parity. An analysis of hospital records in Fiji produces higher twinning rates for both Fijians and Indians, but a similar difference is found between the two ethnic groups. Although the twinning rate for Fijians is lower than that reported for other Melanesian people, it is well above reliable rates found for Mongoloid races from whom the Fijian is descended. The sparse information on twinning rates among Polynesians suggests rates not dissimilar from Melanesians, so that no support for the hypothesis of low twinning rates in the Pacific is evident. The twinning rate for Indians in Fiji is lower than rates reported from the Indian subcontinent.

Price RA, Leckman JF, Pauls DL, Cohen DJ, Kidd KK: Gilles de la Tourette's syndrome: tics and central nervous system stimulants in twins and nontwins. Neurology 1986 Feb;36(2):232–7

Thirty-four of 170 surveyed individuals with Tourette's syndrome (TS) were treated with CNS stimulants before age 18. In 24% of treated individuals, persistent exacerbation of tics was closely associated with treatment. In 3%, tic response was transient, and in 24%, tics were not obviously associated with treatment. Six pairs of monozygotic twins were discordant for stimulant treatment, and all untreated co-twins also developed TS. The number of individuals in whom stimulants permanently exacerbate tics may be small, but the risk appears to be real. Genetic vulnerability and duration and timing of treatment may mediate response.

R

Rabson A see **Goss GD**

Radosevic R see **Pilic Z**

Rao DC see **McGue M**

Rayburn W, Piehl E, Schork MA, Kirscht J: Intravenous ritodrine therapy: a comparison between twin and singleton gestations. Obstet Gynecol 1986 Feb;67(2):243–8

The purpose of this study was to determine whether or not guidelines for intravenous ritodrine therapy for singleton pregnancies in premature labor also apply for twin gestations. Between January 1982 and March 1985, 43 (18%) of 239 women admitted in premature labor had twin fetuses. Intravenous ritodrine therapy was used for four or more hours in 23 of these pregnancies. Compared with a matched group of 23 singleton pregnancies, increases in maternal and fetal heart rates and decreases in maternal diastolic blood pressures were not significantly different. Undesired cardiovascular effects were no more common and usually occurred during the initial infusion period when the dose was increased most rapidly. The averaged doses, duration of therapy, and delays in delivery were also similar between the twin and singleton groups.

Reichlin M see **Harley JB**

Reuhland RG, O'Leary JA, Ferrell RE: The holoacardius acephalus twin: prenatal diagnosis. Am J Perinatol 1986 Jan;3(1):33–4

Rona RJ, Angelico F, Antonini R, Arca M, Brenci G, Del Ben M, Gedda L, Hayward D, Heller RF, Lewis B, et al: Plasma cholesterol response to a change in dietary fat intake: a collaborative twin study. J Chronic Dis 1985;38(11):927–34

The rise of plasma cholesterol in response to an increase from 8 to 22.3% in saturated fatty acid of total intake was studied by comparing the concordance of change in pairs of young English and Italian monozygotic (33 pairs) and dizygotic (22 pairs) twins. LDL and total cholesterol rose about 0.6 mmol/l. All methods of analyses showed a marked genetic component influencing total and LDL cholesterol level. However, the genetic component of the increase in LDL and total cholesterol levels was small in Italy and absent in England. These results suggest that the response of plasma cholesterol to this dietary change is largely

determined by environmental factors rather than inheritance.

Ross AJ 3d, O'Neill JA Jr, Silverman DG, Brousseau DA, Gatti JE, Templeton JM Jr: A new technique for evaluating cutaneous vascularity in complicated conjoined twins. J Pediatr Surg 1985 Dec; 20(6):743–6

Ischiopagus tripus conjoined twins were recently encountered. All organ systems were thoroughly evaluated using radiographic, angiographic, radionuclide, and CT imaging techniques. None of these studies were capable of accurately assessing the vascular territories of the skin at the level of the pelvis, the most critical area in terms of separation. Qualitative visual assessment of tissue fluorescein delivery under ultraviolet illumination is subject to subjective errors. Perfusion fluorometry is a recently developed technique whereby tissue fluorescence can be quantitated over time in very small amounts, even with repeated injections. In these conjoined twins, using sequential fluorescein injections in each twin, it was possible to accurately determine which portions of the pelvis and the shared leg belonged to which twin and exactly where the skin incisions should be made. Additionally, during operation it was possible to accurately predict the viability of skin flaps used for closure. Both twins survived. This is the first time it has been possible to accurately assess vascular territories of the skin in a complicated form of conjoined twinning. The technique is also useful in the evaluation of flow patterns in various other parts of the body.

Russell JM see **McGue M**

Rydhström H see ***Olofsson P***

S

Sakala EP: Obstetric management of conjoined twins. Obstet Gynecol 1986 Mar;67(3 Suppl):21S–25S

Three cases of conjoined twins are presented: two thorocopagus and one craniopagus. The diagnosis of conjoining varied from late second trimester to time of term delivery. Delivery mode was both by vaginal and cesarean routes, and occurred at both level one and level three hospitals. Antenatal diagnostic procedures and issues in obstetric management are discussed. A suggested obstetric management sequence for conjoined twins is proposed.

Salamon A see **Forrai G**

Salimi-Eshkevari H: Infantile autism in monozygotic twins. J Am Acad Child Psychiatry 1985 Sep; 24(5):643–6

Sauer EW see **Westerveld AW**

Schoenberg BS see **Bharucha NE**

Schork MA see **Rayburn W**

Scialli AR: Intrapartum management of twin gestation [letter] Obstet Gynecol 1986 Jan;67(1):149–50

Scibilia G see **Nasta R**

Segal NL: MZ or DZ? Not even their hairdresser knows for sure [letter] J Forensic Sci 1986 Jan; 31(1):10–1

Seo JW, Shin SS, Chi JG: Cardiovascular system in conjoined twins: an analysis of 14 Korean cases. Teratology 1985 Oct;32(2):151–61

A new classification of cardiovascular system in conjoined twins is introduced. A special effort has been made to analyze the degree of fusion and symmetry of hearts and great vessels, based on 14 pairs of conjoined twins. The degree of cardiovascular union of the twins is classified into five types. Cases with no vascular union in cardiac, aortic, and inferior vena caval levels were grouped into type I (four cases). Cases with separate hearts and union between aortas or inferior venae cavae were grouped into type II (three cases). Cardiac fusion at the atrial level was grouped into type III (three cases). All of the three cases showed fusion between right atria (subtype IIIa). The theoretical fusion between the left atria or between the left and right atria is put into subtype IIIb. The type IV represents fusion of both atria and ventricles regardless of the number of the chambers (three cases). Type V represents single heart in one of the twins (one case). The external morphologic type and the situs of each twin pair were closely related to the cardiac abnormalities. Dicephalus and thoracopagus were more likely to be associated with abnormal situs and complex cardiac fusion. Abnormal situs was seen in seven out of 14 cases. Three cases with polysplenia and a case with asplenia showed more complex cardiac abnormalities than those with normal situs or situs inversus.

Seymour L see **Goss GD**

Shah MD see **Kulkarni V**

Shahar S see **Harlap S**

Sharma K, Corruccini RS, Henderson AM: Genetic variance in dental dimensions of Punjabi twins. J Dent Res 1985 Dec;64(12):1389–91

Genetic variance analysis of 56 tooth size traits was based on a sample of 58 pairs of twins (23 MZ and 35 DZ) from Chandigarh, India. Results of a t-test for equality of means showed no association of zygosity with any of the traits. Heterogeneity of total variance was found in 18 traits, which invalidates conventional genetic variance estimates and reveals considerable hidden environmental determinance. In contrast to other studies, Indian MZ twins had higher variance than did DZ twins, in most instances. There was also evidence of stronger environmental covariance for MZ and DZ twins. The study revealed substantial, complex environmental determination for some dental dimensions, especially of incisors and second molars.

Sharma K see ***Corruccini RS***

She YX, Li ZC, Song LC, Dong QG: Successful separation of xiphoomphalopagus twins. Z Kinderchir 1985 Aug;40(4):237–40

A pair of female xiphoomphalopagus twins were delivered by Caesarean section at 35th week of gestation on March 2, 1982, their combined weight being 4,800 g. Examinations revealed that they were conjoined from the xiphoid process down to the umbilicus. Infant A also had congenital heart defect (VSD). X-ray and echography showed that they had a fused liver and two independent biliary systems and alimentary tracts. After 6 weeks, the twins gained weight up to 7,000 g. The separation operation was performed at 1 1/2 months of age. During operation it was demonstrated that the xiphoid process and costal cartilages were fused together and the peritoneal cavities were of free communication above the umbilicus, and the livers merged into a single common liver. The large single liver was divided by electrocautery, resulting in a section surface of 8 X 7.5 cm. After separation, the closure of the abdominal wall in both infants presented some difficulties which were resolved by making relaxation incisions on either flanks. In the post operative period, the ventral wounds of both infants were disrupted for several centimetres and infant B had wound infection. The granulating area of skin defect on either relaxation incision of the flanks and ventral denuded wound were covered

AUTHOR SECTION

with full-thickness dead-foetus homografts. The wounds were well healed. Eventually both infants were discharged in good condition at 2 1/2 months after operation. Now they live well at 2 1/2 years of age.

Shin SS see **Seo JW**

Shively RE, Bermant MA, Bucholz RD: Separation of craniopagus twins utilizing tissue expanders. Plast Reconstr Surg 1985 Nov;76(5):765–73
An example of craniopagus Siamese twins is presented. The methods used in their separation using skin expanders and scalp flaps to achieve primary closure of the wounds with hair-bearing scalp are outlined. A detailed discussion of the planning and the mathematical considerations of these skin expanders and scalp flaps is included.

Silva PA, Crosado B: The growth and development of twins compared with singletons at ages 9 and 11. Aust Paediatr J 1985 Nov;21(4):265–7
The growth and development of 9 and 11-year old twins who have been studied at birth, and at ages 3, 5, and 7 years was compared with that of a large group of singletons. The twins were not significantly different to the singletons in language development, reading, spelling or Performance IQ. They remained significantly shorter, lighter and had smaller head circumferences. This difference was shown to have been fairly consistent from age 3. The twins had significantly lower Verbal and Full Scale IQ, but in view of a lack of disadvantage in educational progress this was not considered to be of any practical importance.

Silverman DG see **Ross AJ 3d**

Sjöberg NO see **Montan S**

Skinhøj K see **Henrichsen L**

Song LC see **She YX**

Stacey TE, de Sousa C, Tracey BM, Whitelaw A, Mistry J, Timbrell P, Chalmers RA: Dizygotic twins with 3-hydroxy-3-methylglutaric aciduria; unusual presentation, family studies and dietary management. Eur J Pediatr 1985 Jul;144(2):177–81
A 4-month-old infant with hypotonia and macrocephaly was diagnosed as having 3-hydroxy-3-methylglutaric aciduria, using gas chromatography and mass spectrometry and confirmatory enzyme studies. The same diagnosis was made on his asymptomatic non-identical twin. Examination of the pedigree is consistent with an autosomal recessive mode of inheritance. Dietary treatment improved the symptoms of the propositus, but did not prevent episodes similar to Reye's syndrome in both twins. One such episode closely followed immunisation and our experience suggests that children with this disorder should be observed carefully following immunisation. These episodes were accompanied by an overflow of a wide range of abnormal metabolites. Examination of the urine for organic acids should be considered in infants with unexplained hypotonia and macrocephaly, especially if accompanied by abnormal biochemical indices.

Steele K, Nevin NC: Familial omphalocele. Ulster Med J 1985 Oct;54(2):214–5

Stephens JD see **Abrams SL**

Stokes L see **Bharucha NE**

Strömbeck B see **Hedner K**

Sulovic V see **Pilic Z**

Surchev L see **Ichev K**

Susanne C see **Hauspie RC**

T

Tan KC see **Wong TJ**

Templeton JM Jr see **Ross AJ 3d**

Thiery M see **Derom C**

Timbrell P see **Stacey TE**

Timmons BA: Twins' reactions to delayed auditory feedback. Percept Mot Skills 1985 Oct;61(2):559–65
10 pairs of identical and 10 pairs of fraternal twins, matched by age, spoke under conditions of 0.0-, 100-, 200-, 300-, 400-, and 500-msec. delayed auditory feedback. Length of spoken passages was controlled. Product-moment and intraclass correlations were calculated for speaking times and disfluencies. Significant Pearson rs for times were noted at 0.0 and 300 msec. for both groups and at 100, 200, and 400 msec. for identical twins, while fraternal twins' times were significantly correlated at 500 msec. Difference scores were significantly correlated at 100, 200, 300, and 400 msec. for identical twins. Disfluencies were significantly correlated for identical twins at 400 msec. Data were combined with those of Timmons' (1969) study, increasing subjects to 21 pairs per group. Intraclass correlations supported the contention that responses of identical twin pairs to delayed auditory feedback were more highly correlated than those for fraternal twin pairs.

Torgersen S: Genetic factors in moderately severe and mild affective disorders. Arch Gen Psychiatry 1986 Mar;43(3):222–6
The aim of this study was to investigate the contribution of hereditary factors in the development of affective and depressive adjustment disorders. I interviewed 151 index twins with moderately severe and mild affective illness, as well as their co-twins. The analysis of concordance rates indicates that hereditary factors may be important in the development of bipolar disorder and in major depression, except in non-psychotic, hysterical individuals. Furthermore, hereditary factors may not play any role in dysthymic disorder and depressive adjustment disorder. These findings are tentative and should be viewed against the methodologic limitations of this study, which include small sample size of the subgroups and the use of the Present State Examination as the basis for the DSM-III diagnoses.

Török E see **Kósnai I**

Tracey BM see **Stacey TE**

U

Usher RH see **Bell D**

V

Vancova M see **Ichev K**

Van den Berghe H see **Derom C**

van der Harten JJ see **Barth PG**

Van Dyne TA see **Chen KT**

Vankova M see **Ichev K**

Vertuno LL see **Bansal VK**

Vlietinck R see **Derom C**

W

Ward C see **Bharucha NE**

Westerveld AW, Sauer EW, Klasen HJ: Successful treatment of a severely burned elderly patient with homografts from her identical twin sister. Br J Plast Surg 1986 Jan;39(1):136–8
A case is reported of the permanent survival of split skin homografts from the twin sister of a 65-year-old women with 50% burns. This is the first time this

has been reported in the elderly. As the homo- and autografts demonstrated the same survival pattern, the conclusion was drawn that the patient and her sister were very probably monozygotic twins. This was confirmed later by the results of the tests for HLA-typing, mixed lymphocyte studies and red blood cell antigens.

Whitelaw A see **Stacey TE**

Whitfield JB, Martin NG: Genetic and environmental influences on the size and number of cells in the blood. Genet Epidemiol 1985;2(2):133–44

The heritabilities of human blood cell characteristics were estimated in a study of 206 pairs of young adult twins, male and female. White cell numbers, indices related to circulating red cell mass (haemoglobin, red cell count, and haematocrit), and platelet numbers and size all appeared to be accounted for by genetic and nonshared environmental influences only. Mean cell volume (of the erythrocytes) appeared to be influenced by environmental factors shared by siblings as well as the other two sources of variation. Correlation between red cell count and haemoglobin is modulated by both genetic and environmental factors, but the negative correlation between red cell numbers and size is due mainly to genetic factors independent of those influencing haemoglobin. A significant negative correlation also exists between platelet numbers and size. In males, alcohol consumption increased mean cell volume, and genetic factors influencing alcohol consumption are partly responsible for the correlation between them.

Whitfield JB, Martin NG: Genetic and environmental causes of variation in renal tubular handling of sodium and potassium: a twin study. Genet Epidemiol 1985;2(1):17–27

We have conducted a study of renal sodium and potassium reabsorption in 205 pairs of twins on freely chosen diets; 89 of the subjects were studied on more than one occasion. Renal tubular sodium and potassium handling, as measured by the fractional excretions FENa and FEK, show repeatable differences between individuals. Siblings (in this case monozygotic and dizygotic pairs of twins) are more alike in this respect than unrelated individuals. Comparison of monozygotic and dizygotic twin pairs indicates that genetic, rather than shared environmental, factors are probably responsible for this similarity, with heritability estimates of 0.5 for sodium and 0.6 for potassium. There are indications of sex differences in the sizes of the genetic and environmental effects for both variables and indications that the genetic effects may be qualitatively different for FEK. Such findings need further investigation.

Wilkie RA see **Bose B**

Wittwer MA see **Goss GD**

Wong TJ, Lyou YT, Chee CP, Tan KC: Management of xiphopagus conjoined twins with small bowel obstruction. J Pediatr Surg 1986 Jan;21(1):53–7

A set of xiphopagus conjoined twins with prematurity, exomphalos, and intestinal obstruction was separated successfully. Preoperative evaluation included computerised axial tomography, 99mTc-HIDA scan, and barium enema. Major hepatobiliary and gastrointestinal anomalies were encountered. One twin is alive and well today. The other twin died one week postoperatively from sepsis. Postmortem studies showed she had a severe cardiac anomaly incompatible with normal life.

Wyszkowski J see **Michałowicz R**

Current Research on Multiple Births

SEMIANNUAL BIBLIOGRAPHY – 1986

Produced by a MEDLARS search of the worldwide medical literature received by the National Library of Medicine, U.S. Public Health Service between June and November 1986. 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
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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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BEHAVIOR & PHYSIOLOGY

Adaptation to maximal effort [letter] Bouchard C. **Acta Genet Med Gemellol (Roma)** 1986; 35(1-2):119-20

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† Validating an experiential measure of parental style: the use of a twin sample. Parker G. **Acta Psychiatr Scand** 1986 Jan;73(1):22-7

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† Cyclic neutropenia in identical twins. Chusid MJ, et al. **Am J Med** 1986 May;80(5):994-6

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† A twin study of mortality in schizophrenia and neurosis. Kendler KS. **Arch Gen Psychiatry** 1986 Jul;43(7):643-9

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† Plasma prostaglandin E2 metabolite--measured as 11-deoxy-15-keto-13,14-dihydro-11 beta,16 xi-cyclo-PGE2--in twins with schizophrenic disorder. Mathé AA, et al. **Biol Psychiatry** 1986 Sep;21(11):1024-30

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† The relationship between alcoholism and neurosis: evidence from a twin study. Mullan MJ, et al. **Br J Psychiatry** 1986 Apr;148:435-41

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Twin talk: manifestations of twin status in the speech of toddlers. Malmstrom PM, et al. **J Child Lang** 1986 Jun;13(2):293-304

† Similarity of monozygotic and dizygotic twins in level and lability of subclinically depressed mood. Wierzbicki M. **J Clin Psychol** 1986 Jul; 42(4):577-85

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Individual differences in sensitivity and tolerance to alcohol. Wilson JR, et al. **Soc Biol** 1985 Fall-Winter;32(3-4):162-84

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Abel M, Greiner P, Fiedler L, Farthmann EH, Schümichen C, Struwe FE, Reinwein H, Pringsheim W, Künzer W: Diagnostic procedures leading to successful separation of xipho-omphalopagus twins. Helv Paediatr Acta 1986 May;41(1-2):41-8
Xipho-omphalopagus twins with a pericardial bridge, extended liver tissue union and considerable intestinal herniation from one abdominal cavity to the other were separated successfully at the age of three months. Special diagnostic procedures including cardiac and abdominal sonography, catheterism of the umbilical vein with portal angiography, radionucleotide liver and bile duct imaging and separate oral glucose tolerance tests provided important information for perioperative and surgical patient management. Relevant items for determination of the favourable data and method of surgery are discussed.

Abelman DJ see **Graubard Z**

Adelman MB, Siemon M: Communicating the relational shift: separation among adult twins. Am J Psychother 1986 Jan;40(1):96-109
In reviewing the literature on twin separation, the authors argue that achieving a 'relational shift' (the ability to separate yet retain feelings of closeness), may be problematic for this sibling group. A descriptive communication framework is presented using the concepts of relational redefinition and types of verbal and nonverbal codes. Implications are presented for twins developing third-party relationships, inseparable twins, therapy, and research.

Ahmad S see **Faridi MM**

Allen G, Hrubec Z: Zygosity partitioning of small twin samples. Acta Genet Med Gemellol (Roma) 1985; 34(3-4):167-74
When the Weinberg estimate of the proportion of monozygotic pairs is quite deviant from that in the source population, it is likely to be wrong because Weinberg's difference is much less stable than the zygosity proportions. A formula is proposed for the probability distribution of possible compositions of a small sample of twins based on sex concordance in the sample and zygosity proportions in the source population.

Alviggi L see **Millward BA**

Anastassiades OT see **Kontogeorgos G**

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Antoine C, Kirshenbaum NW, Young BK: Biochemical differences related to birth order in triplets. J Reprod Med 1986 May;31(5):330-2
This is the first report to date on biochemical parameters in triplets. Umbilical artery and venous pH, PO2, PCO2, lactate and base deficit were measured in seven sets of triplets. Other parameters compared were route of delivery, one- and five-minute Apgar score, birth weight, relative birth order and sex. Twenty-one viable infants were born from three induced and four spontaneous pregnancies. Female: male sex ratio was 1.6:1.0. All triplets within a set were delivered by the same route--six sets by cesarean section and one set vaginally. There were no significant differences, according to Student's t-test, in birth weight, Apgar scores and biochemical parameters related to birth order. Comparison of umbilical artery and umbilical venous pH, PO2, PCO2, lactate and base deficit differences did not demonstrate evidence of acidosis or significant base deficit in the third triplet when compared with the first two, suggesting that the duration in utero after deliver of the firstborn is not associated with metabolic acidosis or hypoxia in the absence of any obstetric complication or anesthetic problem.

Anton-Guirgis H, Culver BD, Kurosaki T, Elston R: A study of multiple biological markers in twins. Acta Genet Med Gemellol (Roma) 1985; 34(3-4):153-65
Genetic and environmental influences on the phenotypic expressions of several biological markers were studied in 18 monozygous (MZ) and 8 dizygous (DZ) twin pairs. Zygosity was determined using ABO, Rh, and HLA. The biomarkers studied included: T & B lymphocytes, suppressor and helper T lymphocytes (T gamma, T mu), T cell (PHA) mitogen activation (MA), serum immunoglobulins (IgA, IgM, and IgG), plasma carcinoembryonic antigen (CEA), aryl-hydrocarbon hydroxylase (AHH) and sister chromatid exchange (SCE) in lymphocytes. Temporal variation of markers over a 6-month period was not significant. The mean absolute differences between levels from first and second blood draws were less than one standard deviation. Variability associated with age was not significant. Females had higher levels of T lymphocytes than males. A gender related association was observed for the IgM immunoglobulin test: females had a higher mean level of IgM. Smoking was found to influence the levels of SCE, T helper lymphocytes and mitogen activation. The variability of these biomarkers within and between twin pairs was quantified. Immunoglobulin levels, particularly that of IgM, showed statistically greater similarity within MZ twins than within DZ twins. Several other markers suggested heritability.

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After reviewing the work of a number of authors on the specific problems of identification of twins, the author examines the difficulties met with in the establishment of good symbiotic relationship with a maternal object when a twin is always interposed between the mother and the child. It is very much up to the mother to ensure that the constant presence of a third individual is not experienced as parasitism by the other twin. The disastrous consequences of such a situation in an adult patient are illustrated by a clinical example.

Atkinson DE: Frequency of dizygotic twinning [letter] Nature 1986 Aug 28-Sep 3;322(6082):780

Al-Awadi SA see **Farag TI**

B

Bahn RS, Scheithauer BW, van Heerden JA, Laws ER Jr, Horvath E, Gharib H: Nonidentical expressions of multiple endocrine neoplasia, type I, in identical twins. Mayo Clin Proc 1986 Sep;61(9):689-96
We studied 25-year-old HLA- and blood group-identical male twins who had multiple endocrine neoplasia, type I (MEN I). At the time of initial examination, one twin (case 1) had epigastric pain and diarrhea; he was cushingoid in appearance. Further evaluation revealed primary hyperparathyroidism, Zollinger-Ellison syndrome, Cushing's disease, and hyperprolactinemia. Immunostaining of a resected pituitary specimen

AUTHOR SECTION

demonstrated both prolactin and, to a lesser extent, growth hormone reactivity. The nontumorous adenohypophysis showed corticotropic hyperplasia. In contrast, the other twin (case 2) was asymptomatic. He had only primary hyperparathyroidism and hyperprolactinemia. An invasive pituitary adenoma was resected and showed similar proportions of cells with immunoreactive prolactin and those with growth hormone; no nontumorous gland was available for study. Apparently, factors other than heredity may play a role in the expression of MEN I.

Balogh A see **Forrai G**

Bartlett DJ see **Willatt LR**

Bateman JB see **Spooner SN**

Bates SR see **Croall GB**

Batzer FR see **Landy HJ**

Benkov KJ see **Sirlin SM**

Bennebroek Gravenhorst J see **Kanhai HH**

Bennett MJ see **Pollock MA**

Berg K see **Kessling AM**

Bergman F see **Rydnert J**

Bergman P, Hulanicka B, Gizler M: Quantitative hematological characteristics in MZ and DZ twins. Anthropol Anz 1986 Mar;44(1):77–85
The level of several biochemical hematological characteristics was determined--using colorimetric methods--in a group of 111 twins, aged 16–22 years. Significant variance differences between MZ and DZ twin pairs were observed in metabolites and serum enzyme levels. The intrapair differences of the variance of ions and protein levels were comparable in MZ and DZ twins. The validity of quantitative determination of heterability of biochemical characteristics is discussed.

Betti RT see **Zatz M**

Bhargava SK see **Faridi MM**

Birnbaum G, Kotilinek L, Schwartz M, Sternad M: Disparate responses of lymphocyte clones to cells of monozygotic twins discordant for multiple sclerosis. J Neuroimmunol 1986 May;11(3):237–43
Spinal fluid and peripheral blood lymphocytes from patients with multiple sclerosis (MS) and other neurologic diseases (OND) were stimulated with a pool of allogeneic MS lymphocytes. Responding cells were cloned and assayed for their proliferative responses to peripheral blood lymphocytes from monozygotic twins discordant for MS. As expected, most (greater than 90%) responding clones proliferated equally well to cells from both members of a twin set. However, some clones were noted that responded to cells from one but not the other of the twin set. These differences could not be explained on the basis of a decreased stimulatory capacity of the twin cells. We cannot definitively explain our observations but they may suggest that environmental factors, perhaps exposure to a virus, could have altered the antigenic phenotypes of cells from identical twins discordant for MS. Further evaluation of the nature of these differences may lead to an understanding of the pathogenesis of the disease.

Blom L, Dahlquist G: Epidemiological aspects of the natural history of childhood diabetes.
Acta Paediatr Scand [Suppl] 1985;320:20–5
Studies in identical twins have shown only a 50% concordance for type 1 diabetes, indicating that environmental factors are of major importance. Prospective studies in twins and siblings of type 1 diabetics provide evidence of a long prediabetic phase. Environmental factors, inducing a pathological immune response in genetically susceptible individuals, may thus act long before the clinical onset. In Sweden a high and increasing incidence of childhood diabetes has been shown, with peak incidence rates at puberty in both boys and girls. The incidence rate is higher for boys than for girls. Significant geographical and seasonal variations are clearly indicated. The epidemiology of lost beta-cell function shortly after clinical onset differs significantly from the epidemiology of clinical onset as to sex and geographical and seasonal distribution. Environmental factors that affect the clinical onset of type 1 diabetes may thus differ from factors affecting the beta-cell function after onset. Factors affecting the peripheral insulin sensitivity should therefore be taken into consideration also when discussing the natural history of type 1 diabetes.

Blum D see **Kahn A**

Blum E, Pearlman M, Graham D: Early second-trimester sonographic diagnosis of thoracopagus twins. JCU 1986 Mar–Apr;14(3):207–8

Bochner A see **Kahn A**

Bocian M see **Reid CO**

Bohlen J see **Eckert ED**

Bolognese RJ see **Landy HJ**

Börger G see **Börsch G**

Börsch G, Pusch H, Börger G: Perforated sigmoid diverticulitis in identical twins [letter]
Dig Dis Sci 1986 May;31(5):558

Bottazzo GF see **Millward BA**

Bouchard C: Adaptation to maximal effort [letter]
Acta Genet Med Gemellol (Roma) 1986; 35(1–2):119–20

Bouchard C see **Poehlman ET**

Bouchard TJ see **Eckert ED**

Bouropoulou V see **Kontogeorgos G**

Bove KE see **Croall GB**

Brand M see **Pollock MA**

Braunstein E see **Wojtys E**

Brenci G see **Gedda L**

Brihaye C see **Kaiser MC**

Brochu P see **Sinnassamy P**

Brown FE see **Graham JM Jr**

Brown S: Wiedemann–Beckwith syndrome in one of monozygotic twins [letter] Arch Dis Child 1986 Jul; 61(7):717

Bryan EM: The death of a newborn twin: how can support for parents be improved?
Acta Genet Med Gemellol (Roma) 1986; 35(1–2):115–8
The experiences and needs of mothers who lose a newborn twin were explored by sending semistructured questionnaires to 14 bereaved mothers. All mothers continued to think of the surviving child as a twin. Six had feelings of resentment towards the survivor. All felt their loss had been underestimated. Support could be improved by acknowledging the mother's grief and encouraging her to talk about the dead baby. Zygosity should be determined and reminders, such as photographs (of the babies together) and ultrasound scans, provided. All parents should be offered counselling and the opportunity to meet similarly bereaved parents.

Buekens P, Lagasse R, Puissant F, Leroy F: Do breech presentations in twins and singletons run different risks? Acta Genet Med Gemellol (Roma) 1985; 34(3–4):207–11
We have compared breech twins and breech single births in a population recorded between 1974 and 1978 in 10 Belgian maternity centers. In 190 twin pregnancies, 38 first and 65 second twins were delivered in breech presentation. These twins were compared to 853 singleton breeches, of which 95

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delivered by cesarean section were excluded. Data were stratified according to birthweight. No significant difference between twins and singletons was found in terms of perinatal mortality rates. However, Apgar scores below 7 at 5 minutes were significantly less numerous among first twins than among singletons. Therefore, first twins in breech presentation might be at lower risk of fetal distress. This difference should be taken into account in the management of first twins presenting by the breech.

C

Callen PW see **Hashimoto B**
Camitta BM see **Chusid MJ**
Campbell AJ see **Campbell DM**
Campbell DM, Haites N, MacLennan F, Rawles J: Cardiac output in twin pregnancy.
Acta Genet Med Gemellol (Roma) 1985; 34(3–4):225–8
No significant difference has been found in either stroke volume or cardiac output between twin pregnancies and singleton pregnancies. Cardiac output is less in preeclamptic twin pregnancies.
Campbell DM, Campbell AJ: Arterial blood pressure—the pattern of change in twin pregnancies.
Acta Genet Med Gemellol (Roma) 1985; 34(3–4):217–23
An epidemiological study of all primigravid twin pregnancies delivered in Aberdeen between 1950 and 1969 was performed to determine the pattern of arterial blood pressure changes. There is a greater fall from non-pregnant levels in diastolic blood pressure by mid pregnancy and a greater rise of diastolic pressure by delivery. These changes are independent of age, body size and rate of weight gain during pregnancy. The expected increased incidence of proteinuric pre-eclampsia is also independent of rate of weight gain when defined for twin pregnancies.
Campbell WA see **Lodeiro JG**
Carey J see **Reid CO**
Carnevale P see **Guaschino S**
Casper JT see **Chusid MJ**
Cetrulo CL see **Feingold M**
Chasnoff IJ: Fetal alcohol syndrome in twin pregnancy. Acta Genet Med Gemellol (Roma) 1985; 34(3–4):229–32
In recent years, it has been realized that some infants of frankly alcoholic mothers escape the stigmata of fetal alcohol syndrome (FAS) and others have only a few of the characteristics. These infants are thought to display fetal alcohol effects (FAE). The controversy regarding the amount of alcohol a woman can safely drink during pregnancy and the effects of timing and individual physiology on producing FAS vs FAE in the infant are important questions which can perhaps be partially answered through examining twin pregnancies and offspring. Data are presented regarding the long-term growth and development of a set of dizygotic twins, one with FAS and one with FAE, delivered to a mother who drank moderate amounts of alcohol during pregnancy. The variation in the degree of abnormality found in dizygotic twins exposed to similar amounts of alcohol at the same time during gestation indicates that differences in fetal susceptibility to ethanol dysmorphogenesis are of prime importance to the expression of the fetal alcohol syndrome.
Chaturachinda K see **Prasertsawat PO**
Chawla H see **Samm M**
Cheever MA see **Fefer A**
Church JA see **Fleischmann J**
Chusid MJ, Casper JT, Camitta BM, McCreadie SR: Cyclic neutropenia in identical twins. Am J Med 1986 May;80(5):994–6
Cyclic neutropenia developed in identical twin girls. The onset of neutropenia in these children occurred three years apart. Neutrophil cycling diminished, and symptoms decreased in the initially affected twin during a five-year follow-up. Some cases of cyclic neutropenia may be genetically determined; however, the onset and clinical manifestations may be modified by other internal and external factors. There may also be a prodromal period during which neutrophils cycle, but the patient is neither neutropenic nor symptomatic.
Clifford CA, Hopper JL: The Australian NHMRC Twin Registry. A resource for the Australian scientific community [editorial] Med J Aust 1986 Jul 21;145(2):63–5
Collins TL see **Gilstrap LC 3d**
Congdon PJ see **Pollock MA**
Connelly J see **Dib S**
Connor JM see **Green ST**
Cook CM see **Giles WB**
Corey L see **Kramer AA**
Corey LA, Eaves LJ, Mellen BG, Nance WE: Testing for developmental changes in gene expression on resemblance for quantitative traits in kinships of twins: application to height, weight, and blood pressure. Genet Epidemiol 1986;3(2):73–83
Height, weight, and blood pressure measurements on identical and fraternal twins and their families were analyzed to assess the degree to which genetic effects may change with age. The blood pressure data were based on the total sample of 1,767 individuals, while height and weight were available on 1,640 individuals in 204 monozygotic twin kinships. The results of testing alternative hypotheses about developmental changes in gene expression indicate that different mechanisms may be operative for these traits. While there was no evidence that developmental effects are a significant source of the observed variation in systolic or diastolic blood pressure, there was strong evidence that genetically determined developmental changes are an important factor in the determination of body weight. Age-related changes in weight appeared to be best explained by the cumulative developmental effects of a single set of genes, rather than by the expression of new genes at different stages of development.
Cornelio F see **Uziel G**
Corruccini R see **Sharma K**
Corruccini RS, Sharma K, Potter RH: Comparative genetic variance and heritability of dental occlusal variables in U.S. and Northwest Indian twins.
Am J Phys Anthropol 1986 Jul;70(3):293–9
Genetic variance analysis of 15 dental occlusal and arch variables is based on cross-cultural comparison of twin variances (U.S. Whites and Northwest Indian Punjabis). Both samples exhibit high genetic versus environmental partition of variance. However, monozygotes and dizygotes have unequal variance, which invalidates conventional genetic variance ratios. The pattern of environmental biases on the zygosities is quite different in the two groups. Revised estimates that acknowledge zygosity heterogeneity (hence unequal environmental influences) are generally much lower for occlusal traits, whereas arch size measurements are unaffected.
Corson SL see **Landy HJ**
Costa T see **Reid CO**

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Croall GB, Bates SR, Iannaccone ST, Bove KE, Vogler C: Paucifascicular congenital sensory neuropathy in identical twins. Am J Dis Child 1986 Jun; 140(6):589–95
A male infant had sensory and autonomic dysfunction, and his identical twin had a similar clinical finding. One twin was extensively studied, utilizing sural nerve, skin, and conjunctival biopsy specimens, to evaluate the status of peripheral sensory axons. The results support an antenatal neurodevelopmental disturbance in axonal growth that affects sensory neurons and limits their distal extension. Neuropathologic studies of this patient closely resemble findings in hereditary sensory neuropathy type II; clinically, however, this patient resembles patients with congenital autonomic dysfunction and universal pain loss. Investigation of proximal and distal sural nerve, skin, and/or conjunctival biopsy specimens is recommended in patients with sensory and autonomic dysfunction to help differentiate these patients to assist in genetic counselling, treatment, and prognosis. It is possible that clinical overlap in such patients may result from a common neuropathic process, but with varying degrees of involvement.
Culver BD see **Anton-Guirgis H**
Cumberbatch M see **Pollock MA**
Curry C see **Reid CO**
Curtis-Cohen M see **Samm M**

D

Dahlquist G see **Blom L**
Dalby JT, Morgan D, Lee ML: Schizophrenia and mania in identical twin brothers.
J Nerv Ment Dis 1986 May;174(5):304–8
Each of a pair of identical twin brothers was independently remanded for mental health assessment. The results of the assessment reliably revealed schizophrenia in one twin and mania in the other. The implications for genetic models of mental disorder are discussed.
Dallaire L see **Lavergne L**
Davis TN see **Turner RJ**
DeFries JC see **Vogler GP**
Defrise-Gussenhoven E see **Weltens R**
Delagree EH see **Kahn A**
Descamps P see **Kaiser MC**
Després JP see **Poehlman ET**
Dib S, Vardi P, Connelly J, Eisenbarth GS, Soeldner JS: Immune changes associated with insulin dependent diabetes may remit without causing the disease: a study in identical twins [letter]
Br Med J [Clin Res] 1986 Jun 21;292(6536):1670
DiDonato S see **Uziel G**
Dische MR see **Sirlin SM**
Djurkovic-Djakovic O see **Sibalic D**
Doherty JD, Lancaster PA: The secular trend of twinning in Australia, 1853–1982.
Acta Genet Med Gemellol (Roma) 1986; 35(1–2):61–76
The incidence of twinning in Australia from 1853 to 1982 is described. The overall trend was determined by changes in the dizygotic rate and, for more than a century, it has been similar to that found in Finland and the South of Italy. It is not explained by demographic changes and there is no clear relationship with industrialisation or psychosocial factors. Monozygotic twinning has increased, most markedly in the 1970s. No adequate explanation has been given for this increase, so continuing surveillance in many different populations is necessary.
Dolgin S see **Sirlin SM**
Dueholm M see **Vejerslev LO**
Duncan WK see **Helpin ML**
Durrell DE see **Nahata MC**

E

Eaves LJ see **Corey LA**
Eberhard G see **Mathé AA**
Eckert ED, Bouchard TJ, Bohlen J, Heston LL: Homosexuality in monozygotic twins reared apart.
Br J Psychiatry 1986 Apr;148:421–5
We describe six pairs of monozygotic twins, in which at least one member of five pairs were homosexual, and one of the remaining pair was bisexual, from a series of 55 pairs, reared apart from infancy; all the female pairs were discordant for homosexual behaviour. This and other evidence suggest that female homosexuality may be an acquired trait. One male pair was concordant for homosexuality, while the other was not clearly concordant or discordant; this suggests that male homosexuality may be associated with a complex interaction, in which genes play some part.
Edman G see **Oxenstierna G**
Edwards RG, Mettler L, Walters DE: Identical twins and in vitro fertilization.
J In Vitro Fert Embryo Transfer 1986 Apr; 3(2):114–7
Eisenbarth GS see **Dib S**
Elston R see **Anton-Guirgis H**
Esterly JR: Pathogenesis of biliary atresia [letter]
Pediatrics 1986 Jul;78(1):182–3
Eysenck HJ see **Rushton JP**

F

Fakeye OO: Twin birthweight in Nigeria and the effect of sex-pair and parity. Trop Geogr Med 1986 Sep; 38(3):265–70
In a retrospective study the mean birthweight, mean birthweight sum and their variation within parity and sex-pair are determined for 622 consecutive twin pairs among 17.726 deliveries conducted over an 18-month period at the University of Ilorin Teaching Hospital, Ilorin, Nigeria. Overall mean birthweight 2.5 +/- 0.5 kg, and birthweight sum 4.9 +/- 1.1 kg are obtained. First twin weighed 2.52 +/- 0.5 kg, slightly heavier than second twin, 2.48 +/- 0.5 kg. 55% of all twins weighed 2.5 kg or less. Male twins were heavier than females in unlike-sex pairs. Male co-twins weighed more than female co-twins, and unlike-sex twins weighed more than like-sex twins. Mean birthweight, and mean birthweight sum were lowest in para: 1, increasing gradually to a plateau in para: 4 and above. Several factors including preponderance of maleness and unlike-sex pairs in the twinning incidence in Nigeria, and the high proportion of our patients registered for antenatal care, may have positively influenced the overall mean birthweight.
Farag H see **Ibrahim AW**
Farag TI, Teebi AS, Al-Awadi SA: Nonsyndromal anencephaly: possible autosomal recessive variant.
Am J Med Genet 1986 Jul;24(3):461–4
The recurrence of anencephaly in families has been explained on a multifactorial basis. We present two unrelated families with three sibships of several nonsyndromal anencephalics including two pairs of concordantly affected like-sex twins. A rare autosomal recessive variant is proposed and

inheritance is discussed in view of parental consanguinity among the two affected sibships in one family.

Faridi MM, Ahmad S, Moonis R, Ansari Z, Bhargava SK: Goldenhar syndrome (oculo-auriculo-vertebral dysplasia) in a twin new born baby.
Indian J Pediatr 1986 Mar-Apr;53(2):291-4

Farran DC see **Yoder PJ**

Farthmann EH see **Abel M**

Fefer A, Cheever MA, Greenberg PD: Identical-twin (syngeneic) marrow transplantation for hematologic cancers. JNCI 1986 Jun;76(6):1269-73
The Seattle Marrow Transplant Team treated about 130 patients (age 4–68 yr) for hematologic cancer with supralethal chemoradiotherapy and bone marrow transplantation (BMT) from the normal genetically identical twin. The procedure was well tolerated. The principal problem was tumor resistance. Nevertheless, BMT for acute leukemia in relapse still cured about 20% of the patients. Moreover, BMT performed while in complete remission cured about 50% of patients with acute lymphocytic leukemia or acute nonlymphocytic leukemia. Sixteen patients received transplantation in the chronic phase of Ph1+ chronic granulocytic leukemia (CGL). All showed disappearance of all Ph1+ cells. Two died of pneumonitis. Of the 14 who are alive, 3 continue to have CGL 37–76 months after BMT and 11 remain in complete hematologic and cytogenetic remission without any Ph1+ metaphases at 31–108 months (median = 68) after BMT. Thus the Ph1-positive clone can be ablated and blast crisis prevented. BMT in the accelerated or blastic phase was far less effective. Syngeneic BMT also benefited or cured patients with lymphoma, hairy-cell leukemia, and multiple myeloma. Therefore, BMT should be considered for every patient who has a hematologic cancer and an identical twin.

Feingold M, Cetrulo CL, Newton ER, Weiss J, Shakr C, Shmoys S: Serial amniocenteses in the treatment of twin to twin transfusion complicated with acute polyhydramnios.
Acta Genet Med Gemellol (Roma) 1986; 35(1-2):107-13
Twin to twin transfusion, complicated by acute polyhydramnios in a monozygous twin pregnancy, is a difficult clinical problem. A precipitous course usually results in termination of the pregnancy within a few days and often is associated with a high perinatal mortality rate. Two cases are presented that were treated with repeated amniocenteses for the relief of extreme abdominal discomfort and to prevent imminent premature labor. The amount of amniotic fluid removed each time varied from 300 cc to 1200 cc, which was enough to relieve symptoms but not enough to induce uncontrolled uterine activity. A total of 3500 cc and 4750 cc of amniotic fluid were removed from the first and the second patient, respectively. The procedure was found to be safe and resulted in prolonging the pregnancies by 14 and 11 days, respectively. This management, with the addition of tocolysis and close fetal surveillance can offer some hope in an otherwise hopeless situation.

Feinstein SJ see **Lodeiro JG**

Ferreira MM see **Franca-Martins AM**

Fiedler L see **Abel M**

Fikrig SM see **Menez-Bautista R**

Filly RA see **Hashimoto B**

Findlay J, Kjellstrom T, Veale A: The development of a New Zealand twin register.
Community Health Stud 1986;10(2):181-8

Fleischmann J, Church JA, Lehrer RI: Primary Candida meningitis and chronic granulomatous disease. Am J Med Sci 1986 May;291(5):334-41
The occurrence of two rare entities in a single patient can be fortuitous or may signify some deeper relationship. A young boy was recently treated for primary Candida meningitis. Autopsy findings suggested to an experienced pathologist the presence of chronic granulomatous disease (CGD), unrecognized during his life. The patient's identical twin brother was tested and found to have the typical laboratory features of CGD. The literature on Candida meningitis was reviewed and 15 cases were discovered that apparently arose in the absence of recognized predisposing causes. All but one of these cases occurred in males, and most occurred during the first three decades of life. The case reports and literature review presented herein suggest that CGD should be suspected when a case of 'primary' Candida meningitis is encountered.

Foch TT see **Stunkard AJ**

Fontaine E see **Poehlman ET**

Forrai G, Antal J, Balogh A: Sneezy twins.
Acta Paediatr Hung 1985;26(4):323-6
A curious monozygous pair of twins producing sudden and vehement nose blowing and/or sneezing during/after eating and drinking, when their stomach had achieved a certain stage of fullness, has been observed. The sneezing reflex could be registered in 4 male members of the family. Since there were neither neurological disorders nor significant alterations in their electroencephalographic activity, the phenomenon may be regarded as a special type of hereditary vegetative sensitivity. The trait seems to follow either an autosomal dominant or perhaps a Y-linked mode of inheritance.

Forrest JA see **Green ST**

Franca-Martins AM, Graubard Z, Ferreira MM, Margolius K: Unilateral tubal twin gestation. A case report. S Afr Med J 1986 May 10;69(10):628
A case of unilateral tubal twin gestation is presented and the literature reviewed. No satisfactory explanation exists for the rarity of this condition relative to the incidence of intra-uterine multiple gestation.

Frangipane WL see **Polin JI**

Frota-Pessoa O see **Zatz M**

Fujiwara A see **Ohama K**

Fujiyoshi Y see **Nakamura Y**

Fukuda S see **Nakamura Y**

Fulker DW see **Rushton JP**

G

Gajraj HA: Slipped capital femoral epiphyses in identical twins. J Bone Joint Surg [Br] 1986 Aug; 68(4):653-4

Gallup DG see **Harper RH**

Gattey PH, Wedge JH: Unilateral posterior dislocation of the radial head in identical twins.
J Pediatr Orthop 1986 Mar-Apr;6(2):220-1
Congenital dislocation of the radial head, particularly bilateral, is seen in association with many syndromes affecting the musculoskeletal system. The consensus in the literature suggests that all isolated unilateral dislocations are posttraumatic in origin. Recent reports, therefore, recommend that unilateral dislocation be treated by open reduction, despite the benign natural history of the anomaly. We report on identical twins with isolated unilateral posterior dislocation in whom there is little doubt about the

presence of the dislocation at birth.

Gedda L, Parisi P: Gregor Mendel and twins. Acta Genet Med Gemellol (Roma) 1985; 34(3–4):121–4

Gedda L, Brenci G: Possible mechanism of the heredity of twinning. Acta Genet Med Gemellol (Roma) 1986;35(1–2):3–5

Gellera C see **Uziel G**

Gharib H see **Bahn RS**

Gibson JB see **Martin NG**

Giles WB, Trudinger BJ, Cook CM: Umbilical waveforms in twin pregnancy. Acta Genet Med Gemellol (Roma) 1985; 34(3–4):233–7

Continuous wave Doppler ultrasound was used to study the twin fetus in 76 multiple pregnancies. The technique is not difficult and allowed the identification of the small for gestational age twin in both intrauterine growth failure and twin to twin transfusion syndrome.

Gilstrap LC 3d, Hankins GD, Collins TL, Pierson W: Serial biparietal diameter and femur length measurements in twin gestations. Am J Perinatol 1986 Jul;3(3):183–6

Biparietal diameter and femur length measurements from 60 twin pairs were used to construct fetal twin growth tables. From 18 through 38 weeks of gestation the biparietal diameter measurements were accurate within +/- 1.9 weeks, and the femur length within +/- 2.1 weeks in the prediction of gestational age. Since this data was obtained from a predominantly white middle class population it may prove more reliable in similar groups for predicting the adequacy of fetal growth and gestational age than prior data obtained using indigent populations.

Gilstrap LC 3d see **Turner RJ**

Gizler M see **Bergman P**

Goh JY, Sivanesaratnam V, Ng SC, Looi LM: An acardius amorphus in a twin pregnancy. Singapore Med J 1986 Apr;27(2):167–9

Gordo J see **Mishalany H**

Gottesman II see **McGue M**

Gottlieb K, Manchester DK: Twin study methodology and variability in xenobiotic placental metabolism. Teratogenesis Carcinog Mutagen 1986;6(4):253–63

The present study assesses the contribution of genetic and environmental factors to variability in placental aryl hydrocarbon hydroxylase and glutathione transferase activities using twin study methodology. Twin placentas were collected at the time of delivery. The placenta, except for a single layer of maternal decidua, consists of fetal tissue exhibiting fetal genotype. Microsomal and cytosolic fractions were prepared under stringent protocols to prevent enzyme activity loss. There were two monozygotic–monochorionic pairs, five monozygotic–dichorionic pairs, and 21 dizygotic–dichorionic pairs that showed measurable aryl hydrocarbon hydroxylase activity using the direct fluorometric assay. Most of the mothers were smokers. Aryl hydrocarbon hydroxylase activity was measured with two different substrates, benzo(a)pyrene and 7–ethoxyresorufin. Glutathione transferase activity was measured using glutathione and 1–chloro–2,4–dinitrobenzene as substrates for a spectrophotometric assay that follows the conversion of the aromatic substrate. Twin pair similarity was calculated with intraclass correlation coefficients. There is a high correlation between the activities of the two aryl hydrocarbon hydroxylase substrates (r = .814), but no correlation between aryl hydrocarbon hydroxylase and glutathione transferase activity levels. There is little evidence of genetic variability underlying the variation in the enzyme activities because monozygotic–dichorionic twins are no more similar to each other for the three substrate activities than are the dizygotic twins. To delineate the prenatal environmental influences on placental enzyme variability, dichorionic placentation was subdivided further into contiguous and noncontiguous placental position. Lower intraclass correlation coefficients are obtained for the dizygotic twins whose placentas were noncontiguous compared with dizygotic twins with contiguous placentas. The results suggest that most of the variability seen in these placental enzyme systems is due to environmental differences within uteri, rather than genetic variability in the population. This does not negate the possibility that between–pair, or population, variability may have a genetic component, because even dizygotic twins share a large proportion of their genes. This study points out that a significantly variable environment exists within the human uterus.

Graham D see **Blum E**

Graham JM Jr, Brown FE, Struckmeyer CL, Hallowell C: Dominantly inherited unilateral terminal transverse defects of the hand (adactylia) in twin sisters and one daughter. Pediatrics 1986 Jul; 78(1):103–6

Most previous cases of unilateral terminal transverse defects of the hand have not been familial. Several previously reported cases of apparent autosomal dominant inheritance of such defects have subsequently been reclassified as type B brachydactyly. We report a pair of adult twin women with unilateral terminal transverse defects affecting the left hand in one woman and the right hand in the other woman. The latter woman has one daughter with a unilateral terminal transverse defect affecting the left hand. The hand anomaly is characterized by absence of the terminal portions of digits 2 to 5 with a mildly hypoplastic thumb (adactylia). Tiny nail remnants are evident on the remaining digital stumps, and no soft tissue syndactyly is apparent. At 2 years of age, the daughter has hypoplastic first, fourth, and fifth metacarpals with no ossification of the second or third metacarpals or any of the phalanges. The affected mother has hypoplastic metacarpals for digits 2 to 4 and a vestigial fifth proximal phalanx on the affected hand, with no other phalanges evident by roentgenogram other than those of the thumb. The mother's twin sister has similar findings, except the ossified phalangeal remnant is on her second and third fingers rather than her fifth finger. Doppler flow arterial patterns appeared normal in each hand of affected family members. The other hand and both feet are clinically and radiologically normal in each case, and the family history is negative for any other individuals with limb anomalies. A review of the literature suggests that this family may very well be unique.

Graubard Z, Polon C, Abelman DJ: Combined vaginal and caesarean delivery of twins [letter] S Afr Med J 1986 Sep 13;70(6):374–5

Graubard Z see **Franca–Martins AM**

Gray RG see **Pollock MA**

Gray S see **Pollock MA**

Green ST, Natarajan S, Connor JM, Forrest JA: Monozygous twins concordant for duodenojejunal villous atrophy and dermatitis herpetiformis. Gut 1986 Aug;27(8):970–1

A pair of monozygous twins concordant for both duodenojejunal villous atrophy and dermatitis herpetiformis are described, the first example to be

reported in the literature. The observation provides strong support for the concept of an underlying genetic component being involved in the pathogenesis of these two conditions.

Greenberg F see **Reid CO**

Greenberg PD see **Fefer A**

Greene I see **LeBoit PE**

Greenstein JI, McFarland HF, Richert JR: Characterization of antigen-specific T cells in multiple sclerosis twins with elevated proliferative responses to measles virus. J Immunol 1986 Jul 15; 137(2):546–50

The proliferative response to measles virus in normal individuals is low compared with the response to mumps virus. This is probably due to a low precursor frequency of OKT4+, IL 2-secreting helper cells. The presence of a measles high-responder state has previously been identified in some twin individuals with multiple sclerosis. Further characterization of the measles response in these high-responder individuals has demonstrated that the enhanced measles responses are due to a greater response by OKT4+ cells, which secrete higher levels of IL 2; this contrasting with the low levels of IL 2 secretion and OKT4+ cell proliferation seen in the unaffected twins. No evidence for suppression by either accessory or T cells, which would account for the quantitative differences between the high responders with multiple sclerosis and their unaffected low-responder twin siblings, was detected. The results indicate that a clonally expanded population of measles-specific responder cells is responsible for the high-responder state in these twins with multiple sclerosis. The mechanism producing this state may have relevance to possible immunoregulatory abnormalities producing autoimmunity in multiple sclerosis.

Greiner P see **Abel M**

Gross WL see **Schlegelberger T**

Guaschino S, Spinillo A, Carnevale P, La Penna O, Pesando PC, Rondini G: Assessment of peri-neonatal mortality and morbidity risk in twin pregnancy. Clin Exp Obstet Gynecol 1986;13(1–2):18–25

A case control study on peri-neonatal mortality and morbidity rates in 154 twin pregnancies has been performed. The mortality rates along with main neonatal morbidity factors were evaluated in relation to the birth weight and gestational age. The risk of death in peri-neonatal period was 17 times greater (relative risk 17.30) (p less than .00005) in newborns weighing less than 2000 g and about 15 times (r.r. 14.53) (p less than .00005) in twins born before 34th week of gestational age with respect to the controls. The Apgar score of the 2nd twin was lower than that of the 1st, both at 1' (p less than .05) and 5' (p less than .025). The development of HMD was strongly influenced by the gestational age when less than 34th week (r.r. 15.89) (p less than .00005). No difference in incidence was found between the newborns with gestational age between 34–37 weeks and those at term. The potential implications of these findings on obstetric and neonatologic treatment of LBW and VLBW twins was discussed.

Gurling HM, Murray RM, Ron MA: Increased brain radiodensity in alcoholism. A co-twin control study. Arch Gen Psychiatry 1986 Aug;43(8):764–7

Significantly increased brain density was found in the frontal lobes and caudate and thalamic nuclei of monozygotic twins who were severely dependent on alcohol when compared with their normal-drinking co-twins. No significant differences in brain radiodensity were found in a group of identical twins who were discordant for less severe alcoholism. Hemispheric differences in brain density were also examined. Right-handed normal twins had greater density in the left caudate than in the right caudate region; this difference was reduced but still present in alcoholics.

Gurling HM see **Mullan MJ**

H

Haites N see **Campbell DM**

Hall JG see **Reid CO**

Hallowell C see **Graham JM Jr**

Hankin F see **Wojtys E**

Hankins GD see **Gilstrap LC 3d**

Hankins GD see **Turner RJ**

Harper RH, Gallup DG, Phelan JP: Clinical findings and ancillary studies on identical twins exposed to diethylstilbestrol in utero. A case report. J Reprod Med 1986 Mar;31(3):217–8

Diethylstilbestrol (DES) exposure in utero in twin gestations has been reported on infrequently. In this case, both twins had colposcopically proven and biopsy-proven evidence of cervical adenosis. Infertility was discordant.

Hartikainen-Sorri AL: Is routine hospitalization in twin pregnancy necessary? A follow-up study. Acta Genet Med Gemellol (Roma) 1985; 34(3–4):189–92

During the years 1979–1980, a prospective study was carried out to evaluate the value and efficacy of routine hospital bed rest in the prevention of premature birth and pregnancy complications in twin gestation. This was done by comparing hospital bed rest to special antenatal care at outpatient clinic. Since the results did not support the idea of using routine hospital bed rest, this was abandoned. Because the material was rather small, the results of the changed policy of management were controlled in the present follow-up study. The material consists of 102 twin pregnancies diagnosed during the years 1982–1983. The number of deliveries before the 34th gestational week and of less than 1500 g weighing infants were still decreasing (9.0% and 3.0%). Perinatal mortality after the 24th gestational week was 2.0%. The follow-up study confirmed the unefficacy of routine hospital bed rest. Early diagnosis is the basis of the management of twin pregnancy. This allows counselling of the pregnant women, regular examinations to detect pregnancy complications, and also planning of the delivery.

Hashimoto B, Callen PW, Filly RA, Laros RK: Ultrasound evaluation of polyhydramnios and twin pregnancy. Am J Obstet Gynecol 1986 May; 154(5):1069–72

We analyzed the ultrasound examinations and medical records of 75 pairs of twins who were delivered between January, 1983, and December, 1984, to study the relationship between increased amniotic fluid volume, fetal abnormalities, and preterm labor. Ten of these 75 twin pregnancies demonstrated elevated amniotic fluid volume that persisted throughout pregnancy. Total intrauterine volumes were elevated in these cases, and nine of the ten pregnancies were abnormal. In addition, it was noted that elevation of the amniotic fluid volume alone did not explain the high rate of preterm labor and delivery in twin gestations.

Hashimoto T see **Nakamura Y**

Hathorn IS: The value of height records in orthodontics--a case report. Br J Orthod 1986 Apr; 13(2):119–23

AUTHOR SECTION

Heaton D see **Millward BA**

Heintel H, Schalt E, Vogel F: The 4–5 cycles per second rhythm--changes in time.
Eur Arch Psychiatry Neurol Sci 1986; 235(5):299–300
The 4–5 cycles per second (c/s) rhythm is a relatively rare, individual EEG variant. Age distribution of subjects carrying this variant and longitudinal studies over many years have indicated that it may sometimes disappear during middle age. Observations on female monozygotic twins at 15, 23 and 45 years of age suggest that disappearance of this trait might also be under genetic control.

Helpin ML, Duncan WK: Ankylosis in monozygotic twins. ASDC J Dent Child 1986 Mar–Apr; 53(2):135–9
In this case report, Twin A had four teeth ankylosed and Twin B had five teeth involved; there was a nearly identical pattern of distribution and severity of ankylosis.

Henley WL: Failure to thrive due to fear of AIDS [letter] Lancet 1986 Jul 12;2(8498):112–3

Hens L see **Weltens R**

Heston LL see **Eckert ED**

Holloway SM see **Sofaer JA**

Holm NV see **Kendler KS**

Holmgren G see **Rydnert J**

Hopper JL see **Clifford CA**

Horton W see **Reid CO**

Horvath E see **Bahn RS**

Hoskins PJ see **Millward BA**

Hours C see **Lavergne L**

Hrubec Z see **Allen G**

Hrubec Z see **Stunkard AJ**

Huch A see **Schneider KT**

Huch R see **Schneider KT**

Hughes HE, Miskin M: Congenital microcephaly due to vascular disruption: in utero documentation.
Pediatrics 1986 Jul;78(1):85–7
Death in utero of one member of a monozygotic twin pair has been associated with vascular disruptive phenomena in the surviving twin. It has been hypothesized that this event initiates clot formation in the surviving twin with consequent necrosis of tissues distal to the occluded vessels. This case report describes onset in utero of multicystic encephalomalacia and microcephaly in a surviving twin whose brain appeared normal on ultrasound scanning before death of the cotwin at 21 weeks' gestation. The case provides further support for the hypothesized pathogenetic sequence and illustrates the importance of reviewing all prenatal ultrasound scans in infants with congenital microcephaly.

Hulanicka B see **Bergman P**

Humphries SE see **Kessling AM**

Hurst R, Lenn NJ: Partial seizures in monozygous twins. Epilepsia 1986 Mar–Apr;27(2):121–3
Identical twins concordant for partial epilepsy, with onset at 8 and 11 years of age, are presented. Their course has been benign on anticonvulsant therapy. It is suggested that these cases of presumed genetic epilepsy support current concepts of cortical origin and genetic determinants in several subtypes of focal epilepsy of childhood.

Hyland K see **Pollock MA**

I

Iannaccone ST see **Croall GB**

Ibrahim AW, Farag H, Naguib M, Ibrahim E: Neuroepithelial (colloid) cyst of the third ventricle in identical twins. Case report. J Neurosurg 1986 Sep;65(3):401–3
Colloid cysts of the third ventricle are described in middle-aged twin brothers. One of them presented with recurrent attacks of headache. In this patient the cyst had reached a size large enough to obstruct the cerebrospinal fluid pathway, resulting in hydrocephalus. The twin brother, although asymptomatic, was suspected of the anomaly and investigated because of the similarity of his ocular signs. The diagnosis was confirmed by computerized tomography in both the patient and his brother. The latter proved to have a smaller colloid cyst situated anteriorly in the third ventricle with no obstructive hydrocephalus. The patient was successfully operated on, while the brother is still under observation. Both brothers have had bilateral cataracts, retinal detachments, and left lateral rectus palsies. The familial occurrence of colloid cysts and their association with these ocular findings have apparently not been described before.

Ibrahim E see **Ibrahim AW**

Iselius L see **Oxenstierna G**

Iskra MK see **Maggi JC**

J

Jankovic J, Reches A: Parkinson's disease in monozygotic twins. Ann Neurol 1986 Apr; 19(4):405–8
Recent studies of twins have demonstrated an unexpectedly low concordance of Parkinson's disease in monozygotic twins. Only two monozygotic twin pairs concordant for it have been reported. However, both pairs were atypical because of an early age at onset and other unusual features. We studied a monozygotic twin pair concordant for typical Parkinson's disease. The brothers have lived apart for forty years. The onset of tremor occurred three months apart, at age 71. The progression of the symptoms has been identical. Although one of the twins is more severely affected, both have typical manifestations of Parkinson's disease that respond well to dopaminergic medication. The occurrence of Parkinson's disease in these monozygotic twins suggests that genetic susceptibility is important in the tremor-dominant variety of Parkinson's disease.

Janus ED see **Nye ER**

Joelsson I see **Rydnert J**

Johnston C see **Millward BA**

Jones M see **Reid CO**

Jordheim O see **Knudtzon J**

K

Kahn A, Blum D, Muller MF, Montauk L, Bochner A, Monod N, Plouin P, Samson-Dollfus D, Delagree EH: Sudden infant death syndrome in a twin: a comparison of sibling histories. Pediatrics 1986 Jul; 78(1):146–50
To determine possible characteristics of infant victims of sudden death, we examined 114 items related to the pre- and postnatal histories of 42 pairs of twins one of whom died of sudden infant death syndrome (SIDS) leaving a surviving sibling. Interviews with the parents were conducted after the occurrence of SIDS, and the data were checked with records held by gynecologists and pediatricians. To evaluate the specificity of any factors, we studied a control group of 42 age- and sex-matched pairs of twins, both of whom survived the first year of life. Only 11 of 114 characteristics were significantly related to SIDS: future victims had a smaller weight

and height at birth, stayed longer in the nursery, and followed a moving object with their eyes, had head control, and smiled at a later age than their surviving siblings. They also fatigued more often during feeding (11/42) and had reduced arm and neck tonus (9/42). They were described as longer sleepers than their surviving siblings. During sleep, some SIDS twins, but no surviving twin, were found to be cyanotic at least once or pale (4/42) and were repeatedly covered with abundant sweat (8/42). In the control group of normal twins, the occurrence of most of these characteristics was found with a frequency comparable to that seen in the SIDS infants; the specificity of these characteristics is thus considered doubtful. The mean birth weight and height were significantly greater in the control group, and no control infant had an episode of cyanosis or pallor or repeated episodes of profuse sweating observed during their sleep.(ABSTRACT TRUNCATED AT 250 WORDS)

Kaiser MC, Veiga-Pires JA, Descamps P, Brihaye C: CT in the diagnostic work-up of hypogenetic lung syndrome (HLS) in homozygotic twins. ROFO 1986 Apr;144(4):476-8

Kamphorst W see **Roelvink NC**

Kanhai HH, van Rijssel EJ, Meerman RJ, Bennebroek Gravenhorst J: Selective termination in quintuplet pregnancy during first trimester [letter] Lancet 1986 Jun 21;1(8495):1447

Katsui T, Okuda M, Usuda S, Koizumi T: Kinetics of 3H-serotonin uptake by platelets in infantile autism and developmental language disorder (including five pairs of twins). J Autism Dev Disord 1986 Mar; 16(1):69-76

The kinetics of 5-HT uptake by platelets was studied in cases of infantile autism and developmental language disorder (DLD) and normal subjects. Two patients of the autism group were twins, and the seven patients of the DLD group were members of four pairs of twins. The Vmax values (means +/- SD) for autism and DLD were 6.46 +/- .90 pmol 5-HT/10(7) cells/min and 4.85 +/- 1.50 pmol 5-HT/10(7) cells/min, respectively. These values were both significantly higher than that of 2.25 +/- .97 pmole 5-HT/10(7) cells/min for normal children. The Km values of the three groups were not significantly different. Data on the five pairs of twins examined suggested that the elevated Vmax of 5-HT uptake by platelets was determined genetically.

Kaufer H see **Wojtys E**

Kawakami Y, Kusaka H, Nishimura M, Abe S: Trachea and lung dimensions in nonsmoking twins: morphological and functional studies. J Appl Physiol 1986 Aug;61(2):495-9

To compare genetic and environmental factors that determine lung function and dimensions, chest radiographs and pulmonary function were measured in 17 pairs of nonsmoking twin adolescent boys (12 monozygotic pairs and 5 dizygotic pairs). Genetic factors dominated in tracheal width and lung dimensions (height, width, and apicofissural and fissurodiaphragmatic distances) at residual volume. Genetic factors also affected forced vital capacity, functional residual capacity, forced expiratory volume in 1 s, maximum expiratory flow at 25% vital capacity, and maximum flow at 50% vital capacity-to-forced vital capacity ratio. Peak expiratory flow correlated with tracheal width at residual volume. Age correlated with lung dimensions (width and depth) but not with tracheal width. These results indicate that genetic factors determine the dimensions and function of central airways, peripheral airways, and lung parenchyma in adolescent males. The effects of genetic factors on some functional measurements (airway resistance, closing volume-to-vital capacity ratio, and phase III in single-breath N2 washout) may be masked because of poor reproducibility of the tests.

Kazlow P see **Sirlin SM**

Kekow J see **Schlegelberger T**

Keller M see **Samm M**

Kendall CH see **Young ID**

Kendler KS: A twin study of mortality in schizophrenia and neurosis. Arch Gen Psychiatry 1986 Jul; 43(7):643-9

This report examines mortality rates in the National Academy of Sciences--National Research Council Twin Registry for twins with recorded diagnoses of schizophrenia or neurosis. The standardized mortality ratio for schizophrenia was 1.77 and resulted from elevations in both traumatic and disease-related deaths. In neurosis, the standardized mortality ratio was 1.30 and was due nearly entirely to elevated rates of disease-related deaths. The pattern of mortality in monozygotic and dizygotic pairs discordant for schizophrenia and neurosis was consistent with the following hypotheses: mortality in both disorders cannot be due to the disease state per se; disease-related mortality in schizophrenia results largely from environmental factors shared by twin pairs; and mortality from trauma in schizophrenia and from diseases in neurosis results largely from genetic factors. These findings must be interpreted in the context of the limitations of the registry, which include lack of standardization and incomplete ascertainment of psychiatric disorders. A review of a subsample of records indicates that schizophrenia in the registry is broadly defined and differs considerably from the narrow DSM-III concept of the disorder.

Kendler KS, Robinson G, McGuire M, Spellman MP: Late-onset folie simultanée in a pair of monozygotic twins. Br J Psychiatry 1986 Apr;148:463-5

A case-report is presented of folie simultanée in a pair of female monozygotic twins with onset at the remarkable age of 81. The twins demonstrated no evidence of dementia or other psychopathology apart from delusions. Folie simultanée in monozygotic twins provides a model example of the potential role of genotype-environment correlation in the etiology of psychiatric illness.

Kendler KS, Holm NV: Differential enrollment in twin registries: its effect on prevalence and concordance rates and estimates of genetic parameters. Acta Genet Med Gemellol (Roma) 1985; 34(3-4):125-40

In the NAS-NRC Registry, all major diseases are more common in DZ than in MZ twins. Furthermore, concordance rates for most disorders are lower in the registry than would be expected. In this article we propose a general model which seeks to explain these phenomena. The model explores the impact of traits which increase or decrease the probability of enrollment of individuals given that the registry, like the NAS-NRC, includes only pairs where both members are enrolled. If the trait decreases the probability of selection into the registry, both the prevalence of and concordance for the trait in the registry will be lower than that found in the population. A trait which increases the probability of selection has the opposite effects. However, the magnitude of these effects are a function of the population concordance. If population concordance differs in MZ and DZ twins, the effect of differential enrollment will not be the same for the two zygosity groups. The article

examines the impact of differential enrollment on estimates of heritability and common environment and explores ways in which estimates of prevalence and concordance rates can be obtained which are free of the bias introduced by selection.

Kennedy CT see **Meyrick Thomas RH**

Kessling AM, Berg K, Mockleby E, Humphries SE: DNA polymorphisms around the apo AI gene in normal and hyperlipidaemic individuals selected for a twin study. Clin Genet 1986 Jun;29(6):485–90
We have investigated the allele frequencies, in a Norwegian population, of two restriction fragment length polymorphisms (RFLPs) in the apolipoprotein (apo) AI–CIII–AIV gene region. The study group consisted of clinically well twins and their unrelated spouses. In the normotriglyceridaemic individuals tested, the frequency of the rare allele (S2) of the RFLP detected using the restriction enzyme Sst I was 0.17; for the RFLP detected with the enzyme Xmn I, the rare allele (X2) frequency was 0.06. The frequency of the S2 allele was lower in individuals with serum triglyceride levels above 1.7 mmol l–1, but this was not statistically significant. Conversely, the frequency of the X2 allele was higher in individuals with raised serum triglyceride levels, but similarly, did not reach statistical significance. Taken together with the data from our previous study on UK individuals, these results support the suggestion that inherited variations in this apolipoprotein gene cluster are involved in the determination of serum triglyceride levels.

Kirsch–Volders M see **Weltens R**

Kirshenbaum NW see **Antoine C**

Kjellstrom T see **Findlay J**

Knudtzon J, Jordheim O, Smedsrud B: Twins discordant for vater association. Obstructed labor of the second twin due to ascites and persistent cloaca without communication to the exterior. Acta Obstet Gynecol Scand 1986;65(2):185–6
The unusual delivery of a dead second twin with rare malformations is presented. The first twin, born live following a normal labor, had no malformations. The birth of the second twin was obstructed by massive ascites, and its abdomen had to be perforated before delivery. The sex could not be determined due to lack of the internal genitalia and the fetal appearance of the external genitals. The left kidney and ureter were hypoplastic. The right ureter and distal part of the colon were dilated and opened into a large primitive cystic cloaca without communication to the exterior. The ascites was probably caused by the urinary obstruction. These malformations probably represent one of the earliest arrested developments of the embryonic hindgut. The presence of a tracheo–esophageal fistula and a single umbilical artery, together with the anal atresia and the renal anomalies, could indicate that the anomalies formed part of the VATER association.

Knuppel RA see **O'Brien WF**

Kohl S see **Vogler C**

Koizumi T see **Katsui T**

Koller W, O'Hara R, Nutt J, Young J, Rubino F: Monozygotic twins with Parkinson's disease. Ann Neurol 1986 Apr;19(4):402–5
A pair of monozygotic twins concordant for Parkinson's disease are described. The issue of genetic factors in Parkinson's disease is discussed.

Kontogeorgos G, Anastassiades OT, Bouropoulou V, Papamichales G: Tubal conjoined twin pregnancy. Pathol Res Pract 1986 Jun;181(3):327–30
A unique case of tubal conjoined twin pregnancy is reported. The embryos presented a lateral type of conjunction, which also is extremely rare, and were classified as symmetrical iliothroacopagus conjoined twins.

Kotilinek L see **Birnbaum G**

Kramer AA, Corey L: The offspring of twins as sampling units in pedigree analysis of congenital anomalies. Acta Genet Med Gemellol (Roma) 1986; 35(1–2):35–48
A statistical model was developed to determine the likelihood of a twin kinship, that is, the offspring of a pair of monozygotic or dizygotic twins under three types of inheritance: sporadic, single locus fetal genetic, and single locus maternal genetic. Samples of 8,000 kinships were simulated for a discrete trait under various hypotheses, and the likelihood determined for each type of etiology. The results indicated that the pedigree analysis procedures formulated here could efficiently detect sporadic or single locus effects with a power approaching 100%, although the parameter estimates obtained were slightly biased. Further analyses revealed that the type of pedigree analysis formulated in this study was found to have equivalent power for equal or unequal frequencies of kinships by the sex and zygosity of the twin parent. It was suggested that further studies be carried out that included the twins and spouses in the likelihood equations, as well as tests of more sophisticated models.

Kringlen E: Status of twin research in functional psychoses. Psychopathology 1986;19(1–2):85–92
After briefly reviewing the main findings of twin research in functional psychoses, the author focuses the attention on neglected aspects of twin research, such as the study of co-twins of monozygotic (MZ) subjects with functional psychosis, and the study of life histories of discordantly affected twins. Through a thorough investigation of the nonpsychotic co-twins of MZ subjects, one might be able to identify vulnerability factors. By studying the life course of the twins in a pair, discovery of environmental etiological factors are possible. By including twins with both schizophrenic, manic-depressive and reactive psychotic symptomatology, one should be able to discover whether the environmental factors are of a specific kind.

Künzer W see **Abel M**

Kurosaki T see **Anton–Guirgis H**

Kusaka H see **Kawakami Y**

L

La Penna O see **Guaschino S**

Labuda D see **Lavergne L**

Lagasse R see **Buekens P**

Lancaster PA see **Doherty JD**

Landy HJ, Weiner S, Corson SL, Batzer FR, Bolognese RJ: The 'vanishing twin': ultrasonographic assessment of fetal disappearance in the first trimester. Am J Obstet Gynecol 1986 Jul;155(1):14–9
Review of the sonographic findings of 1000 pregnancies with viable gestations in the first trimester revealed a minimum incidence of twinning of 3.29%. Of these, 21.2% demonstrated the 'vanishing twin' phenomenon, often with associated bleeding, but with a good prognosis for the remaining fetus. Ovulation induction did not appear to alter these data. The sonographic criteria for 'vanishing twin' are discussed. The incidence of multiple gestation is 3.29% to 5.39%, higher than previously believed.

AUTHOR SECTION

Laplace AC see **Webb TE**
Laros RK see **Hashimoto B**
Larsson L see **Selbing A**
Lavergne L, Melançon SB, Dallaire L, Potier M, Sinnett D, Hours C, Labuda D: Prenatal diagnosis using DNA probes in twins at risk for Duchenne muscular dystrophy [letter] Lancet 1986 Jul 26; 2(8500):216–7
Laws ER Jr see **Bahn RS**
Lazarus A: Folie à deux in identical twins: interaction of nature and nurture. Br J Psychiatry 1986 Mar; 148:324–6
LeBoit PE, Greene I: Primary cutaneous amyloidosis: identically distributed lesions in identical twins. *Pediatr Dermatol* 1986 Jun;3(3):244–6
Male HLA-identical twins with numerous congenital abnormalities were discovered to have lichen amyloidosus in similar distribution on their chests and abdomens. Pruritus was absent in both. The finding of identical distribution of nonpruritic lesions was previously reported in familial lichen amyloidosus. This suggests that a subset of these patients have a nevoid condition in which a circumscribed patch of keratinocytes undergoes filamentous degeneration and may appear in identical distribution in family members in the absence of pruritus.
Lee ML see **Dalby JT**
Lehrer RI see **Fleischmann J**
LeLeiko NS see **Sirlin SM**
Lenn NJ see **Hurst R**
Leroy F see **Buekens P**
Leslie RD see **Millward BA**
Lester D: The relation of twin infanticide to status of women, societal aggression, and material well-being. J Soc Psychol 1986 Feb;126(1):57–9
Linasmita V see **Prasertsawat PO**
Lindhout D see **Roelvink NC**
Lodeiro JG, Vintzileos AM, Feinstein SJ, Campbell WA, Nochimson DJ: Fetal biophysical profile in twin gestations. Obstet Gynecol 1986 Jun;67(6):824–7
The fetal biophysical profile (nonstress test, fetal breathing movements, fetal movements, fetal tone, amniotic fluid volume, placental grading) was assessed in 49 consecutive referred high-risk patients with twin gestations. The relationship between the last fetal biophysical profile score before delivery was compared with the pregnancy outcome—as reflected by the presence of fetal distress and perinatal death. These data suggest that the fetal biophysical profile is a useful tool for observing fetal status in patients with twin gestations, and could be reliably used as a means of follow-up of nonreactive nonstress testing in these patients.
Loehlin JC: Heredity, environment, and the Thurstone Temperament Schedule. Behav Genet 1986 Jan; 16(1):61–73
Loevy HT, Miller M, Rosenthal IM: Discordant monozygotic twins with trisomy 13. Acta Genet Med Gemellol (Roma) 1985; 34(3–4):185–8
Monozygotic twins with typical trisomy 13 are reported. Despite an identical karyotype, the twins were dimorphic for the presence of an omphalocele. Reasons for the rarity of MZ twins with trisomy 13 are presented. It is suggested that the presence of a chromosomal abnormality in MZ twins may predispose to dimorphism.
Looi LM see **Goh JY**
Lowe TW see **Turner RJ**
Lumme RH, Saarikoski SV: Monoamniotic twin pregnancy. Acta Genet Med Gemellol (Roma) 1986; 35(1–2):99–105
The course and outcome of 23 monoamniotic (MA) twin pregnancies, delivered in Tampere University Central Hospital during the years 1964–1984, were studied retrospectively and compared to 1056 diamniotic (DA) twin pregnancies. The frequency of MA twins was 2.1% of twin pregnancies. Polyhydramnion complicated the pregnancy in 26% of MA vs 6% of DA pregnancies. Two cases were defined as acute polyhydramnion. Preterm labour was stated in 70% of MA pregnancies and deliveries before the 34th week were 4 times more common in MA than DA pregnancies. The cesarean section rate was more than double in MA pregnancies (39%). Entanglement of the umbilical cords was noted four times, and prolapse of the cord in three vaginally delivered cases. Perinatal mortality was 28% in MA vs 5% in DA twins. The most common causes of death were respiratory distress syndrome, congenital malformation and feto-fetal transfusion.

M

McCreadie SR see **Chusid MJ**
McFarland HF see **Greenstein JI**
McGue M, Gottesman II, Rao DC: The analysis of schizophrenia family data. Behav Genet 1986 Jan; 16(1):75–87
McGuire M see **Kendler KS**
MacLennan F see **Campbell DM**
Maggi JC, Iskra MK, Nussbaum E: Severe clonidine overdose in children requiring critical care. Clin Pediatr (Phila) 1986 Sep;25(9):453–5
Magnus P see **Tambs K**
Manabe A see **Nakamura Y**
Manchester DK see **Gottlieb K**
Margolius K see **Franca-Martins AM**
Martin NG, Perl J, Oakeshott JG, Gibson JB, Starmer GA, Wilks AV: A twin study of ethanol metabolism. Behav Genet 1985 Mar;15(2):93–109
Mathé AA, Eberhard G, Sääf J, Wetterberg L: Plasma prostaglandin E2 metabolite—measured as 11-deoxy-15-keto-13,14-dihydro-11 beta,16 xi-cyclo-PGE2—in twins with schizophrenic disorder. Biol Psychiatry 1986 Sep;21(11):1024–30
Blood samples were obtained from 18 twin pairs, and the major prostaglandin E2 (PGE2) plasma metabolite 15-keto-13,14-dihydro-PGE2 was measured by RIA after its conversion to 11-deoxy-15-keto-13,14-dihydro-11 beta,16 xi-cyclo-PGE2. Significant positive correlations were found in all the twin pairs, in 11 pairs diagnosed as DSM-III schizophrenic disorder and schizoid/schizotypal personality disorder, and in the 5 nonschizophrenic pairs. These results indicate that synthesis of prostaglandins (PGs) is in part genetically determined. With regard to absolute PGE2 metabolite levels, the data did not support *the hypothesis of increased PGE2 in schizophrenia.* Thus, seven of eight schizophrenic probands had lower metabolite concentrations than their healthy twin siblings, and in one pair they were similar. Furthermore, schizophrenic probands and their healthy sibling controls, taken as a group, had lower PGE2 metabolite levels than the group comprised of affective disorder probands and their respective controls. These findings raise the possibility that a change in PGE2 may be associated with schizophrenic and also possibly with affective disorders.
Matsunaga T see **Nakamura Y**
Meerman RJ see **Kanhai HH**
Melançon SB see **Lavergne L**

AUTHOR SECTION

Melis K see **Van Acker KJ**

Mellen BG see **Corey LA**

(Mendel G), Gedda L, Parisi P: Gregor Mendel and twins. Acta Genet Med Gemellol (Roma) 1985; 34(3–4):121–4

Menez-Bautista R, Fikrig SM, Pahwa S, Sarangadharan MG, Stoneburner RL: Monozygotic twins discordant for the acquired immunodeficiency syndrome. Am J Dis Child 1986 Jul;140(7):678–9
Monozygotic twin girls discordant for acquired immunodeficiency syndrome were born to parents with antibodies to human T-cell lymphotropic virus type III. One twin had clinical evidence of the syndrome with tests positive for antibody, whereas the other at the age of 3 years was clinically, serologically, and virologically normal.

Meshkova TA: Interhemispheric asymmetry on the electroencephalogram of twins. Hum Physiol 1985 Jul–Aug;11(4):254–60

Mettler L see **Edwards RG**

Meyrick Thomas RH, Kennedy CT: The development of lichen sclerosus et atrophicus in monozygotic twin girls. Br J Dermatol 1986 Mar;114(3):377–9
The development of vulval lichen sclerosus et atrophicus in monozygotic twins is described. This is the first report of the occurrence of lichen sclerosus et atrophicus in two genetically identical individuals, and is considered to provide further evidence that inherited factors are of relevance in the aetiology of this disorder.

Miller M see **Loevy HT**

Miller MA see **Nahata MC**

Millward BA, Alviggi L, Hoskins PJ, Johnston C, Heaton D, Bottazzo GF, Vergani D, Leslie RD, Pyke DA: Immune changes associated with insulin dependent diabetes may remit without causing the disease: a study in identical twins.
Br Med J [Clin Res] 1986 Mar 22;292(6523):793–6
Activation of T lymphocytes and islet cell antibodies were studied in two groups of insulin dependent diabetics and their non-diabetic identical cotwins. Group 1 comprised 12 'short term' twin pairs (diabetic twin diagnosed less than five years previously) in whom only a third of the cotwins were likely to develop diabetes; 10 of the 12 non-diabetic cotwins showed increased values of activated T lymphocytes, islet cell antibodies, or both. Group 2 comprised 10 'long term' twin pairs (diabetic twin diagnosed more than 11 years previously) in whom none of the non-diabetic cotwins was likely to develop diabetes; these pairs were selected because all the non-diabetic cotwins had shown islet cell antibodies at some time in the past, but only two still did so (one with an increased value of activated T cells). There was relative glucose intolerance in the cotwins of the short term group but not in those of the long term group. Non-diabetic cotwins of diabetics may show the immune changes associated with insulin dependent diabetes and relative glucose intolerance, but these changes may remit without leading to diabetes.

Mishalany H, Gordo J: Congenital diaphragmatic hernia in monozygotic twins. J Pediatr Surg 1986 Apr;21(4):372–4
This is the third reported instance of identical twins, each with left-sided posterolateral congenital diaphragmatic hernia (CDH) (Bochdalek type), who have been operated upon successfully. The associated anomalies were mirror image undescended testicles. Comparative review of familial and sporadic cases of CDH revealed that males were more commonly affected in the former, while females were more commonly affected in the latter. There was no known etiology in either type. Both familial and sporadic cases shared a high incidence of associated anomalies (40% to 50%). Three anomalies were equally found in both types, mainly pulmonary hypoplasia, intestinal malrotation, and patent ductus arteriosus. Central nervous system anomalies were highly prevalent in the sporadic cases (55% to 75%), while cardiovascular and genitourinary anomalies (30% each) were the more common anomalies encountered in the familial cases.

Miskin M see **Hughes HE**

Mockleby E see **Kessling AM**

Monod N see **Kahn A**

Montauk L see **Kahn A**

Moonis R see **Faridi MM**

Morgan D see **Dalby JT**

Morton R: Congenital cytomegalovirus infection presenting as massive ascites with secondary pulmonary hypoplasia [letter] Hum Pathol 1986 Jul; 17(7):760

Mullan MJ, Gurling HM, Oppenheim BE, Murray RM: The relationship between alcoholism and neurosis: evidence from a twin study. Br J Psychiatry 1986 Apr;148:435–41
The twin register of the Maudsley Hospital was used to select a series of monozygotic (MZ) and same-sexed dizygotic (DZ) twins who had been given an ICD8 diagnosis related to alcoholism. They and their co-twins were traced. Medical and drinking histories were compiled (from records and by interview) for 56 twin-pairs, to permit current and retrospective diagnosis of any neurotic disorders. RDC diagnoses of panic disorder, generalised anxiety disorder, obsessive-compulsive disorder and phobias were more common in the alcoholic probands and the co-twins who were also alcoholics than in the normal-drinking co-twins. The Eysenck Personality Questionnaire (EPQ) and the Severity of Alcohol Dependence Questionnaire (SADQ) were completed by 54 individuals. Neuroticism scores were significantly higher for both male and female alcoholics than for their normal-drinking co-twins; and intra-pair differences in neuroticism were significantly correlated with intra-pair differences in severity of dependence. These results suggest that both clinically diagnosed neurotic illness and high neuroticism scores are more often a consequence than a cause of alcoholism.

Muller MF see **Kahn A**

Murray RM see **Gurling HM**

Murray RM see **Mullan MJ**

Mussy MA see **Papiernik E**

N

Naguib M see **Ibrahim AW**

Nahata MC, Durrell DE, Miller MA: Tobramycin pharmacokinetics in premature identical twins during newborn period. Dev Pharmacol Ther 1986; 9(3):178–82
Tobramycin is frequently used in premature infants but little is known about its pharmacokinetics in identical twins during the newborn period. We studied 6 twin infants (gestational age 29–31 weeks; postnatal age 3–4 days; birth weight 1.0–1.3 kg) receiving tobramycin 2.5 mg/kg i.v. over 20 min every 12–18 h. Steady-state peak and trough serum concentrations of tobramycin were in the range of 5.3–8.4 and 1.2–2.0 micrograms/ml, respectively. Total clearance (CIT) ranged from 0.74 to 1.19 ml/min/kg, distribution volume (V) from 0.74 to 0.94 liter/kg, and elimination half-life (t1/2) from

8.2 to 12.8 h. Comparison of data between infants in three identical twin pairs showed that despite a similar infusion method: (a) the time to achieve peak serum concentration ranged from 0.5 to 2.0 h; (b) the peak and trough concentrations normalized for dose varied from 0 to 50%, and (c) the CIT, V and t1/2 varied from 3 to 20%. These data should be considered in therapeutic drug monitoring of tobramycin in premature, identical twins during the newborn period.

Nakamura Y, Fujiyoshi Y, Fukuda S, Matsunaga T, Hashimoto T, Manabe A, Nakashima T: Cystic brain lesion in utero. Acta Pathol Jpn 1986 Apr; 36(4):613–20

Two autopsy cases of cystic brain lesion in utero are reported. One of them was a donor infant of twin transfusion syndrome. The baby died immediately after birth and showed multicystic encephalomalacia in the distribution of the anterior cerebral artery. The second baby was a stillborn infant with thanatophoric dwarfism with associated chronic periventricular leukomalacia (PVL). It was suggested that the multicystic encephalomalacia and chronic PVL found in the first and second cases were caused by persistent circulatory disturbances in utero.

Nakashima T see **Nakamura Y**

Nance WE see **Corey LA**

Natarajan S see **Green ST**

Nation JE, Wetherbee MA: Cognitive–communicative development of identical triplets, one with unilateral cleft lip and palate. Cleft Palate J 1985 Jan; 22(1):38–50

Identical male triplets, one with a complete unilateral cleft, were studied developmentally from 16 to 25 months of age and tested with several cognitive–communicative developmental measures. Measures of hearing and motor and behavioral development also were obtained. The triplets did not differ from normative data or from each other on hearing, motor, behavioral, and for the most part, cognitive–mental measures. All of the children were within normal limits on receptive communication measures; however, all were delayed on expressive measures. The triplet with the cleft was more delayed than his brothers. Discussion centers on the interaction of variables that may account for this differential effect in expressive measures in relation to the structural anomaly.

Neale MC see **Rushton JP**

Newton ER see **Feingold M**

Ng SC see **Goh JY**

Nias DK see **Rushton JP**

Nielsen FH see **Vejerslev LO**

Nielsen K see **Rydnert J**

Nikolic R see **Sibalic D**

Nishimura M see **Kawakami Y**

Nochimson DJ see **Lodeiro JG**

Nussbaum E see **Maggi JC**

Nutt J see **Koller W**

Nye ER, Sutherland WH, Janus ED: Familial type V hyperlipoproteinaemia in identical twins homozygous for apoliprotein variant E2: report. NZ Med J 1986 Mar 12;99(797):146–9

Hyperchylomicronaemia and elevated very low density lipoproteins were found in relatively obese 47 year old identical twin brothers. Lipoprotein apoprotein studies showed the presence of apoprotein CII, the activator of lipoprotein lipase, and both men were homozygous E2/2. Studies on the ability of the brothers to clear triglyceride rich particles showed some impairment of post heparin lipase activity, and a slower clearance of infused fat emulsion. The values improved after weight loss. There was some evidence of impaired capacity of the patients' high density lipoprotein to activate post heparin lipoprotein lipase.

O

Oakeshott JG see **Martin NG**

O'Brien WF, Knuppel RA, Scerbo JC, Rattan PK: Birth weight in twins: an analysis of discordancy and growth retardation. Obstet Gynecol 1986 Apr; 67(4):483–6

Sonographic estimation of fetal weight offers the potential of antenatal diagnosis of discordancy and growth retardation in twins. Although standards for intertwin birth weight percent differences in infants over 2500 g are available, similar norms are not available at lower weights. Intertwin birth weight percent differences in live-born twins above 500 g in 500-g increments were analyzed. Intertwin birth weight differences, expressed as a percentage of the weight of the larger twin, were relatively uniform across a wide range of birth weights. Differences above 15% were increasingly more likely to be associated with growth retardation in one of the infants.

Ohama K, Ueda K, Okamoto E, Fujiwara A: Two cases of dizygotic twins with androgenetic mole and normal conceptus. Hiroshima J Med Sci 1985 Dec; 34(4):371–5

O'Hara R see **Koller W**

Okamoto E see **Ohama K**

Okuda M see **Katsui T**

Olcay I, Yücesan S, Zorludemir U: Conjoined ischiopagus twins. Turk J Pediatr 1985 Oct–Dec; 27(4):241–6

Olofsson P, Rydhström H: Management in second stage of labour in term twin delivery. Acta Genet Med Gemellol (Roma) 1985; 34(3–4):213–6

A simple program for management of term twin delivery in the second stage of labor is presented. Provided that given selection criteria are met, twins at term are delivered by the vaginal route.

Oppenheim BE see **Mullan MJ**

O'Regan S see **Sinnassamy P**

O'Reilly KM see **Young ID**

Oreland L see **Oxenstierna G**

Osbourne GK, Patel NB: An assessment of perinatal mortality in twin pregnancies in Dundee. Acta Genet Med Gemellol (Roma) 1985; 34(3–4):193–9

An analysis of all perinatal deaths occurring in twin pregnancies in Dundee women from 1956 to 1983 was performed. The uncorrected perinatal mortality rate fell from 116/1000 births in 1956–60 to 16/1000 births in 1981–83, this fall almost entirely taking place after 1975. Causes of death were identified using the Aberdeen Classification and a reduction in deaths in all cause groupings occurred. About half of the deaths were in the Premature, Cause Unknown group and a marked decrease in deaths in this group made the largest contribution to the improved perinatal mortality rate. This fall was partly due to a reduction in the incidence of extreme prematurity and low birth weight. Changes in obstetric management which may have influenced outcome included the introduction of routine early pregnancy ultrasound scanning, the use of tocolytic drugs, intrapartum fetal monitoring, epidural analgesia and an increase in Caesarean section rate from 2% in 1956–60 to 39% in 1981–83.

AUTHOR SECTION

Oxenstierna G, Edman G, Iselius L, Oreland L, Ross SB, Sedvall G: Concentrations of monoamine metabolites in the cerebrospinal fluid of twins and unrelated individuals—a genetic study.
J Psychiatr Res 1986;20(1):19–29
The concentrations of the major monoamine metabolites, homovanillic acid (HVA), 3-methoxy-4-hydroxyphenylethylene glycol (MOPEG), and 5-hydroxyindoleacetic acid (5-HIAA) in the cerebrospinal fluid (CSF), of platelet monoamine oxidase (MAO) and of dopamine beta-hydroxylase (DBH)-activity in serum and CSF were determined in pairs of healthy mono- and dizygotic twins, brothers and unrelated individuals. Intraclass correlations were calculated for each category of pairs. Of the monoamine metabolites, only MOPEG was found to be under any major genetic influence. Genetic heritability for MOPEG was 0.74 with no evidence of cultural heritability or environment common to twins. For HVA and 5-HIAA, a familial influence was found, where the cultural heritability was higher than the genetic. As in previous studies of MAO in blood platelets and of DBH activity in serum, there was strong evidence for a genetic component. The genetic heritability for MAO was 0.78. For DBH in serum the genetic component was 0.98, and for DBH in CSF, 0.83. The demonstration of a familial influence on 5-HIAA and HVA in CSF requires a more detailed analysis of the character of such environmental and genetic influences, using more direct techniques.

Oyieke JB: A two and a half year review of some aspects of twin delivery at the Kenyatta National Hospital. East Afr Med J 1985 Nov;62(11):802–6

P

Pahwa S see **Menez-Bautista R**

Palella T see **Wojtys E**

Papamichales G see **Kontogeorgos G**

Papiernik E, Mussy MA, Vial M, Richard A: A low rate of perinatal deaths for twin births.
Acta Genet Med Gemelloi (Roma) 1985; 34(3–4):201–6
A specific prenatal care program is proposed to prevent preterm deliveries in twin pregnancies, with ultrasound scanning, early work leave and home visits by midwives. A four-year study has been conducted on 197 pregnancies (160 early followed and booked and 37 late referred). It can be shown that early preterm births and very low birth weights are less frequent in the followed group than in published data, as well as in the late referred pregnancies. The total perinatal mortality rate is 25.6 per 1000 total births.

Parisi P see **Gedda L**

Parker G: Validating an experiential measure of parental style: the use of a twin sample.
Acta Psychiatr Scand 1986 Jan;73(1):22–7
A study of monozygotic (MZ) and dizygotic (DZ) twins was undertaken to assess further the properties of the Parental Bonding Instrument (PBI), a self-report measure of parental care and overprotection, to examine for associations between PBI and mood (trait anxiety and depression) scores, and to assess the genetic contribution to anxiety and depression scores. Mean correlations on the PBI scales were high and strikingly similar for the MZ and DZ twin pairs, supporting the construct validity of the PBI as a measure of parental characteristics. Higher mood scores were linked with less parental care and greater parental protection, the associations being stronger with anxiety than depression. Finally, methodological limitations in estimating heritability are noted.

Patel NB see **Osbourne GK**

Pearlman M see **Blum E**

Perego C see **Uziel G**

Perl J see **Martin NG**

Pérusse L see **Poehlman ET**

Pesando PC see **Guaschino S**

Phelan JP see **Harper RH**

Pierson W see **Gilstrap LC 3d**

Pitts-Tucker T see **Pollock MA**

Plomin R see **Wilson JR**

Plouin P see **Kahn A**

Poehlman ET, Tremblay A, Després JP, Fontaine E, Pérusse L, Thériault G, Bouchard C: Genotype-controlled changes in body composition and fat morphology following overfeeding in twins.
Am J Clin Nutr 1986 May;43(5):723–31
This study investigated the effects of overfeeding on the body composition and fat morphology characteristics of 6 pairs of male monozygotic twins. Each participant was submitted to a 22-day overfeeding period, supplemented by an additional 1000 kcal/day. Significant changes were observed in body composition and fat morphology as shown by increases in body weight, fat mass, sum of 9 skinfolds, and fat cell diameter. Significant within-pair resemblance for absolute changes was observed for body weight, percent body fat, fat mass, sum of skinfolds, trunk skinfolds, and extremity skinfolds, suggesting a role for the genotype in determining the sensitivity of the response to an energy surplus. Significant within-pair resemblance was noted for the biceps, triceps, and thigh with less resemblance noted in the subscapular, abdomen, suprailiac, calf, axillary, and chest sites, suggesting a variation in genotype dependency for subcutaneous fat. The results suggest that changes in body fat following short-term overfeeding appear to have a genetic basis.

Polin JI, Frangipane WL: Current concepts in management of obstetric problems for pediatricians. II. Modern concepts in the management of multiple gestation. Pediatr Clin North Am 1986 Jun; 33(3):649–61
The fetus in a multiple gestation is intrinsically at extreme risk. Modern obstetric management recognizes that cesarean section may lessen the risks associated with labor and delivery. A substantial percentage of cases, however, can safely deliver vaginally.

Pollock MA, Cumberbatch M, Bennett MJ, Gray RG, Brand M, Hyland K, Congdon PJ, Pitts-Tucker T, Gray S: Pyruvate carboxylase deficiency in twins.
J Inherited Metab Dis 1986;9(1):29–30

Polon C see **Graubard Z**

Ponssen H see **Roelvink NC**

Pool RD: Congenital scoliosis in monozygotic twins. Genetically determined or acquired in utero?
J Bone Joint Surg [Br] 1986 Mar;68(2):194–6
The term 'congenital scoliosis' contributes little to our understanding of aetiology, for 'congenital' simply means 'to be born with' and is applicable to deformities present at birth whether these are genetically determined or acquired in utero. The presentation of monozygotic twins, one of whom has congenital scoliosis (vertebral anomalies) while the other is normal, provides a rare opportunity to study the cause of this deformity. Three pairs of monozygotic twins, previously unreported, are presented with a review of the previous literature. These cases add weight to the argument that

AUTHOR SECTION

congenital scoliosis may be acquired in utero rather than being genetically determined.

Potier M see **Lavergne L**

Potter RH see **Corruccini RS**

Prasertsawat PO, Linasmita V, Sirimongkolkasem R, Chaturachinda K: The perinatal mortality of twins at Ramathibodi Hospital: 1981–1984. J Med Assoc Thai 1986 Jun;69(6):336–40

Preston H see **Szymonowicz W**

Pringsheim W see **Abel M**

Puissant F see **Buekens P**

Pusch H see **Börsch G**

Pyke DA see **Millward BA**

R

Rao DC see **McGue M**

Rattan PK see **O'Brien WF**

Rawles J see **Campbell DM**

Reches A see **Jankovic J**

Reid CO, Hall JG, Anderson C, Bocian M, Carey J, Costa T, Curry C, Greenberg F, Horton W, Jones M, et al: Association of amyoplasia with gastroschisis, bowel atresia, and defects of the muscular layer of the trunk. Am J Med Genet 1986 Aug;24(4):701–10

We reviewed 225 cases of amyoplasia, and the association of amyoplasia with gastroschisis and with monozygotic twinning was confirmed. In addition, an apparently increased association of bowel atresia and defects in the muscular layer of the trunk wall with amyoplasia was observed. The association of amyoplasia, monozygotic twinning, and these trunk wall defects strongly suggests that the pathogenesis of amyoplasia is linked to some type of vascular compromise.

Reinwein H see **Abel M**

Richard A see **Papiernik E**

Richert JR see **Greenstein JI**

Rimoldi M see **Uziel G**

Robinson G see **Kendler KS**

Roelvink NC, Kamphorst W, Lindhout D, Ponssen H: Concordant cerebral oligodendroglioma in identical twins. J Neurol Neurosurg Psychiatry 1986 Jun; 49(6):706–8

A case of concordant oligodendroglioma in monozygotic twins is reported. The twins were also concordant for uterine leiomyoma and one twin partner had fibroadenoma and lipoma of the breast and myelofibrosis. As very few cases of concordant glioma in monozygotic twins have been published and no such cases in dizygotic twins, a genetic influence in the aetiology of glioma can only be suggested.

Ron MA see **Gurling HM**

Rondini G see **Guaschino S**

Roodhooft AM see **Van Acker KJ**

Rosenberg HS see **Vogler C**

Rosenthal IM see **Loevy HT**

Ross SB see **Oxenstierna G**

Rubino F see **Koller W**

Rushton JP, Fulker DW, Neale MC, Nias DK, Eysenck HJ: Altruism and aggression: the heritability of individual differences. J Pers Soc Psychol 1986 Jun; 50(6):1192–8

Five questionnaires measuring altruistic and aggressive tendencies were completed by 573 adult twin pairs of both sexes from the University of London Institute of Psychiatry Volunteer Twin Register. The questionnaires measured altruism, empathy, nurturance, aggressiveness, and assertiveness. The intraclass correlations for the five scales, respectively, were .53, .54, .49, .40, and .52 for 296 monozygotic pairs, and .25, .20, .14, .04, and .20 for 179 same-sex dizygotic pairs, resulting in broad heritability estimates of 56%, 68%, 70%, 72%, and 64%. Additional analyses, using maximum-likelihood model-fitting, revealed approximately 50% of the variance on each scale to be associated with genetic effects, virtually 0% with the twins' common environment, and the remaining 50% with each twins' specific environment and/or error associated with the test. Correcting for the unreliability in the tests raised the maximum-likelihood heritabilities to approximately 60%. Age and sex differences were also found: altruism increased over the age span from 19 to 60, whereas aggressiveness decreased, and, at each age, women had higher scores than men on altruism and lower scores on aggressiveness.

Rydhström H see **Olofsson P**

Rydnert J, Holmgren G, Nielsen K, Bergman F, Joelsson I: Prenatal diagnosis of conjoined twins (diprosopus) with myelomeningocele. Acta Obstet Gynecol Scand 1985;64(8):687–8

Conjoined twins (diprosopus) with a neural tube defect were diagnosed by ultrasound, alphafetoprotein and acetylcholinesterase in the 18th week of gestation.

S

Sääf J see **Mathé AA**

Saarikoski SV see **Lumme RH**

Samm M, Curtis-Cohen M, Keller M, Chawla H: Necrotizing enterocolitis in infants of multiple gestation. Am J Dis Child 1986 Sep;140(9):937–9

We examined the records of ten pairs of twins and one set of triplets among whom one or more infants had necrotizing enterocolitis (NEC). Perinatal asphyxia and respiratory distress were less common in the firstborn infants. It might, therefore, be anticipated that necrotizing enterocolitis was less common in this group. We found the reverse to be true. In all of the twin pairs twin A had NEC, and in no case did only twin B have NEC. The disease developed in triplet B but not in triplets A or C. Examination of associated risk factors revealed that the firstborn infants were more stable, were fed sooner, and had feedings advanced somewhat more rapidly than their counterparts. We re-emphasize that there are unrecognized risk factors in the pathogenesis of NEC and that a high index of suspicion should be maintained for all premature infants despite their apparent stability.

Samson-Dollfus D see **Kahn A**

Sarangadharan MG see **Menez-Bautista R**

Scerbo JC see **O'Brien WF**

Schalt E see **Heintel H**

Scheithauer BW see **Bahn RS**

Schlegelberger T, Kekow J, Gross WL: Impaired T-cell-independent B-cell maturation in systemic lupus erythematosus: coculture experiments in monozygotic twins concordant for Klinefelter's syndrome but discordant for systemic lupus erythematosus. Clin Immunol Immunopathol 1986 Aug;40(2):365–70

In a case of monozygotic twins discordant for systemic lupus erythematosus (SLE), coculture experiments with isologous (i.e., genetically identical) lymphocytes were performed. Adequate T-helper-cell function in the SLE twin was demonstrated. Lack of B-cell responsiveness to T-cell-dependent and T-cell-independent

AUTHOR SECTION

polyclonal activators points to a T-cell-independent B-cell maturation defect in the SLE twin.

Schneider KT, Vetter K, Huch R, Huch A: Acute polyhydramnios complicating twin pregnancies.
Acta Genet Med Gemellol (Roma) 1985; 34(3-4):179-84
Acute polyhydramnios in the second trimester is a typical complication in monozygous twin pregnancies. It is caused by a feto-fetal transfusion with anemia on the donor and polycythemia on the recipient twin. Contrary to the chronic hydramnios, there is no increase in malformations. In view of the high mortality rate (100%, according to most authors), the clinical management has to be reconsidered. During the years 1979 to 1983, 10 cases of acute polyhydramnios have been observed at the University Hospital in Zurich. This corresponds to an incidence of 9% in our twin population. All cases investigated were MZ twin pregnancies. With the exception of one patient, who underwent an abortion, all women were hospitalized, had bed rest and received recurrent removals of amniotic fluid and prophylactic tocolysis. The mean gestational age at the time of diagnosis was 23 4/7 weeks and at delivery 30 3/7 weeks. In two cases--one of which is presented in detail--with an unintentional puncture of a placental vessel, the recurrence of the hydramnios did not appear. Eight of 18 newborns survived. No malformations were found. Bed rest, tocolysis and recurrent amniocenteses seem to have a positive influence on the prolongation and outcome of the gestation in acute polyhydramnios.

Schneider KT, Huch A, Huch R: Premature contractions: are they caused by maternal standing?
Acta Genet Med Gemellol (Roma) 1985; 34(3-4):175-8
In 33 out of 51 women studied in late gestation, the uterus was found to phasically compress the pelvic vessels and impede the venous blood flow during quiet standing. This caused a reduction of the cardiac stroke volume with resultant reduction of systemic blood pressure and a compensatory increased heart rate (range of increases 9-51 beats/min). In all cases uterine contractions (mostly subclinical) coincided with the phase of circulatory readjustment. Apparently, the contracting uterus, by changing its position and/or shape, relieves the venous obstruction and prevents decompensation. In the women displaying the uterine compression syndrome (UCS), uterine activity was markedly increased in standing compared to the left recumbent position. It was also investigated whether the UCS appeared more often and earlier in gestation in women with twins. In all 9 women with twin pregnancies (mean gestational age 28 5/7 weeks) the UCS associated with uterine contractions was apparent in the standing posture. Although at present no definite conclusions can be reached on the effect on the cervix of these contractions, quiet standing especially in twin pregnancies seems to provoke an increased uterine activity and should therefore be avoided.

Schümichen C see **Abel M**

Schwartz M see **Birnbaum G**

Sedvall G see **Oxenstierna G**

Selbing A, Larsson L: Acetylcholinesterase activity in amniotic fluid of normal and anencephalic fetus in diamniotic twin pregnancy.
Acta Obstet Gynecol Scand 1986;65(1):93-4

Shakr C see **Feingold M**

Sharma K, Corruccini R: Genetic basis of dental occlusal variations in northwest Indian twins.
Eur J Orthod 1986 May;8(2):91-7

Sharma K see **Corruccini RS**

Shmoys S see **Feingold M**

Sibalic D, Djurkovic-Djakovic O, Nikolic R: Congenital toxoplasmosis in premature twins.
Folia Parasitol (Praha) 1986;33(1):1-6
In the course of the study 'Toxoplasmosis and Prematurity' 330 blood samples from twins were examined. Our findings in a series of 21 premature twins (maternal sera were also examined) are reported in this paper. Toxoplasma antibodies were detected by the Sabin-Feldman test and specific IgM antibodies by the Remington test. The classical form of congenital toxoplasmosis was present in five pairs of twins, while toxoplasmosis was subclinical at birth in both twins of three pairs. The pattern of disease varied very much in seven pairs of twins. In one twin of two pairs signs of disease were present, while his cotwin appeared unaffected but with strongly positive result of SFT. The most interesting observation, however, is that in three pairs, one twin was infected and had evident congenital toxoplasmosis, while his cotwin was not, as proven by the disappearance of the Toxoplasma antibodies. This finding undoubtedly indicates the importance of whether the placenta is intact or not for the transmission of the infection.

Siemon M see **Adelman MB**

Singleton CR see **Webb TE**

Sinnassamy P, Yazbeck S, Brochu P, O'Regan S: Renal anomalies and agenesis associated with total intestinal aganglionosis. Int J Pediatr Nephrol 1986 Jan-Mar;7(1):1-2
Four patients with total aganglionosis of the intestine had renal abnormalities. Two patients had cortical subcapsular cysts, one had unilateral renal agenesis and one other had unilateral renal dysplasia. The consistency of renal anomalies with total aganglionosis suggests the presence of a common genetic origin.

Sinnett D see **Lavergne L**

Sirimongkolkasem R see **Prasertsawat PO**

Sirlin SM, Benkov KJ, Kazlow P, Dolgin S, Dische MR, LeLeiko NS: Identical twins concordant for Crohn's disease. J Clin Gastroenterol 1986 Jun;8(3 Pt 1):290-4
Identical twin adolescent girls developed Crohn's disease within 15 months of each other. Clinical symptoms, growth retardation, barium studies, disease course, and pathologic findings at the time of resection were remarkably similar. Seventeen pairs of twins concordant for Crohn's disease have now been reported, but only four discordant pairs. Such observations lend support to a considerable genetic influence on the development and course of Crohn's disease.

Sivanesaratnam V see **Goh JY**

Smedsrud B see **Knudtzon J**

Smialek JE: Simultaneous sudden infant death syndrome in twins. Pediatrics 1986 Jun;77(6):816-21
Nine cases of twin infants dying suddenly and simultaneously are described, two of which the author examined personally. A review of this phenomenon described in other literature is also presented. It is hoped that increased awareness of this phenomenon will decrease the profound suspicions of both lay and professional persons that the deaths were due to criminal instrumentality.

Soeldner JS see **Dib S**

Sofaer JA, Holloway SM: Heritability estimation from concordant twin pairs alone.
Acta Genet Med Gemellol (Roma) 1986; 35(1-2):49-60
Heritability estimation is possible from concordant twin pairs alone, based on the proportion of

AUTHOR SECTION

like-sexed pairs among all concordant affected pairs. The method is limited to conditions found in both sexes in the prevalence range 0.1% to 10%, and a relatively large population size is required to give an adequate sample of twin pairs. However, the method has the considerable advantage that zygosity determination is not required and that any bias due to incomplete diagnosis/ascertainment is likely to be small. The method is particularly suited to diseases where registration is obligatory and computerised so that the register can be scanned for pairs of individuals with the same date of birth, place of birth and birth surname.

Soma H see **Yoshida K**

Spellman MP see **Kendler KS**

Spinillo A see **Guaschino S**

Spooner SN, Bateman JB, Yee RD: Congenital nystagmus in identical twins: discordant features. J Pediatr Ophthalmol Strabismus 1986 May–Jun; 23(3):115–9

Identical twins with congenital nystagmus were examined and studied with eye movement recordings and videotaping. The nystagmus differed in its location of the null zone, its frequency and amplitude, the degree of persistence in the dark, and the degree of impairment of pursuit and optokinetic nystagmus. As the two boys have the identical genetic constitution, we postulate that the discordant features of the nystagmus represent variable expressivity or, alternatively, the influence of environmental factors.

Starmer GA see **Martin NG**

Sternad M see **Birnbaum G**

Stoneburner RL see **Menez-Bautista R**

Struckmeyer CL see **Graham JM Jr**

Struwe FE see **Abel M**

Stunkard AJ, Foch TT, Hrubec Z: A twin study of human obesity. JAMA 1986 Jul 4;256(1):51–4

Height, weight, and body mass index (BMI) were assessed in a sample of 1974 monozygotic and 2097 dizygotic male twin pairs. Concordance rates for different degrees of overweight were twice as high for monozygotic twins as for dizygotic twins. Classic twin methods estimated a high heritability for height, weight, and BMI, both at age 20 years (.80, .78, and .77, respectively) and at a 25-year follow-up (.80, .81, and .84, respectively). Height, weight, and BMI were highly correlated across time, and a path analysis suggested that the major part of that covariation was genetic. These results are similar to those of other twin studies of these measures and suggest that human fatness is under substantial genetic control.

Sundet JM see **Tambs K**

Susanne C see **Weltens R**

Sutherland WH see **Nye ER**

Szymonowicz W, Preston H, Yu VY: The surviving monozygotic twin. Arch Dis Child 1986 May; 61(5):454–8

It has been suggested that because of vascular interchange between the monozygous twins vascular disruptions from a deceased cotwin with disseminated intravascular coagulation causes embolisation in the surviving twin. This study reports six cases in which all the surviving monozygous twins had central nervous system infarcts and three had multiple organ infarcts, including pulmonary and hepatic infarcts, which have not been reported previously. Fetal death in utero occurred 1–11 weeks before the live birth of the monozygous survivor. In three cases there was pathological confirmation of a continuing process with infarcts ranging in age from a few days to eight weeks. Four infants died in the early neonatal period, and the remaining two survived with considerable handicap. A review of the published reports confirmed the high risk of vascular disruption affecting many organ systems and the extremely poor prognosis for subsequent death or handicap. We recommend that after detection of fetal death in utero in a suspected monozygous twin pregnancy careful consideration should be given to prompt delivery of the survivor and investigations should be carried out to rule out infarction in the central nervous system and other organs that are at risk.

T

Tambs K, Sundet JM, Magnus P: Genetic and environmental contributions to the covariation between the Wechsler Adult Intelligence Scale (WAIS) subtests: a study of twins. Behav Genet 1986 Jul;16(4):475–91

Teebi AS see **Farag TI**

Thériault G see **Poehlman ET**

Tilney NL: Renal transplantation between identical twins: a review. World J Surg 1986 Jun;10(3):381–8 (18 ref.)

Torgersen S: Genetics of somatoform disorders. Arch Gen Psychiatry 1986 May;43(5):502–5

I investigated the contribution of hereditary factors in somatoform disorders. Fourteen monozygotic and 21 dizygotic index twins and their co-twins were personally interviewed. The results showed a concordance of 29% in monozygotic and 10% in dizygotic pairs. However, similarity in childhood experience seemed to influence the concordance rates. Thus, even if somatoform disorders appear familial, the transmission may be environmental. Furthermore, the study showed a high frequency of anxiety disorders, especially generalized anxiety disorders, in the co-twins of somatoform-disordered twins.

Tremblay A see **Poehlman ET**

Trudinger BJ see **Giles WB**

Turner RJ, Hankins GD, Weinreb JC, Ziaya PR, Davis TN, Lowe TW, Gilstrap LC 3d: Magnetic resonance imaging and ultrasonography in the antenatal evaluation of conjoined twins.

Am J Obstet Gynecol 1986 Sep;155(3):645–9

Magnetic resonance imaging and sonography were used as diagnostic aids in the antepartum evaluation of two sets of conjoined twins. Magnetic resonance imaging was performed at 20 weeks' estimated gestational age on thoracopagus/omphalopagus twins and on omphalopagus twins at 20 and 30 weeks. Magnetic resonance imaging is a complementary adjunct to ultrasonography and provides additional anatomically precise clinical data. The advantages of this noninvasive technique include a large diagnostic window allowing total fetal imaging with excellent resolution of tissue composition. Unlike computerized tomographic imaging, there is no associated radiation exposure. The principal disadvantages of magnetic resonance imaging at this time are the cost of the equipment and the lack of real-time imaging capability.

U

Ueda K see **Ohama K**

Usuda S see **Katsui T**

Uziel G, Cornelio F, Gellera C, Perego C, Rimoldi M, DiDonato S: Myoadenylate deaminase deficiency in twins with recessive olivopontocerebellar atrophy.

AUTHOR SECTION

Ital J Neurol Sci 1986 Feb;7(1):107–12
Two adult non-identical twins with autosomal recessive olivopontocerebellar degeneration (OPCA) had markedly deficient adenylate deaminase in skeletal muscle homogenates. Ischemic exercise failed to increase the blood ammonia, while lactate increased normally. Glutamate dehydrogenase and NADP-dependent malic enzyme activities in muscle mitochondria of both patients were normal. The significance of adenylate deaminase deficiency in these twins with OPCA is discussed.

V

(Vadenberg SG), Zonderman AB: Twins, families, and the psychology of individual differences: the legacy of Steven G. Vandenberg. Behav Genet 1986 Jan; 16(1):11–24

Van Acker KJ, Roodhooft AM, Melis K: Monozygotic twins non-concordant for oligomeganephronic renal hypoplasia: artery-vein placental shunting as a possible pathogenetic mechanism. Clin Nephrol 1986 Mar;25(3):165–8
The etiology and pathogenesis of oligomeganephronic renal hypoplasia (OMN) are not known. In the present paper a second case of monozygotic twins non-concordant for OMN is described. It is hypothesized that one of the mechanisms which have been proposed to explain structural defects in monozygotic twins, namely placental artery-vein shunting, may have been involved in the pathogenesis of OMN in these patients. In OMN in general vascular abnormalities may have to be considered as a pathogenetic mechanism.

VanDevere CA see **Webb TE**
van Heerden JA see **Bahn RS**
van Rijssel EJ see **Kanhai HH**
Vardi P see **Dib S**
Veale A see **Findlay J**
Veiga-Pires JA see **Kaiser MC**

Vejerslev LO, Dueholm M, Nielsen FH: Hydatidiform mole: cytogenetic marker analysis in twin gestation. Report of two cases. Am J Obstet Gynecol 1986 Sep;155(3):614–7
A hydatidiform mole associated with a fetus proved to be the result of twin gestation. On microscopic examination of the placenta the case was classified as a partial hydatidiform mole. Chromosomal markers were, however, consistent with a normal conception and a mole of diploid androgenetic origin. Chromosome analysis of a morphologic complete molar specimen yielded two cell lines, one consistent with a normal conception and one with diploid androgenesis. Twinning in molar specimens must therefore be considered, regardless of macroscopic appearance. The prenatal diagnosis of a coexisting fetus and molar placenta poses a real clinical problem; analyses must distinguish between a partial mole plus a triploid fetus and a normal fetus occurring with a partial or a complete mole. The distinction is important for decisions made during pregnancy and may be of prognostic significance after termination. The usefulness of chromosome marker analysis in distinguishing between the various origins is pointed out, and it is suggested that twin pregnancy with hydatidiform mole is more frequent than its description in the literature would suggest.

Vergani D see **Millward BA**
Vetter K see **Schneider KT**
Vial M see **Papiernik E**
Vintzileos AM see **Lodeiro JG**
Vogel F see **Heintel H**

Vogler C, Kohl S, Rosenberg HS: Cytomegalovirus infection and fetal death in a twin. A case report. J Reprod Med 1986 Mar;31(3):207–10
In a diamnionic-dichorionic male twin pregnancy, one twin was stillborn, with disseminated cytomegalovirus (CMV) identified morphologically, and the other was liveborn, without clinical or laboratory evidence of CMV infection. The placenta of the affected twin had chronic villitis; that of the liveborn was normal. Although the discordance went unexplained, it illustrates the clinical variability of congenital CMV infection. Dissimilar immune responses between the affected and unaffected twin or direct extension of uterine CMV infection to only one twin may have been responsible for the discordance.

Vogler C see **Croall GB**

Vogler GP, DeFries JC: Multivariate path analysis of cognitive ability measures in reading-disabled and control nuclear families and twins. Behav Genet 1986 Jan;16(1):89–106

W

Walters DE see **Edwards RG**

Webb TE, Singleton CR, Laplace AC, VanDevere CA: Genetic influence in the expression of affectivity: twin study of children and adolescents. J Genet Psychol 1986 Jun;147(2):279–81

Wedge JH see **Gattey PH**
Weiner S see **Landy HJ**
Weinreb JC see **Turner RJ**
Weiss J see **Feingold M**

Weltens R, Kirsch-Volders M, Hens L, Defrise-Gussenhoven E, Susanne C: NOR variability in twins. Acta Genet Med Gemellol (Roma) 1985; 34(3-4):141–51
The number of AgNOR (NOR+) and the amount of AgNOR (NORM+) were analysed by means of two multilevel analyses of variance in a total of 12 twin pairs: 3 female and 4 male MZ and 5 male DZ pairs. In the first analysis, only zygosity was controlled; in the second, chromosome types D and G were controlled as well as the interaction between chromosome type and zygosity. For NOR+ and NORM+, when chromosome types D and G are not distinguished, the within-pair variance is greater, though not significantly, in DZ than in MZ pairs; but it is highly significantly greater when chromosome type (D or G type) is under control. This confirms an important genetic determination of NOR+ and NORM+ when in the ANOVA model the D and G types are controlled. However, nongenetic factors also influence the Ag-NOR patterns, but not enough to conceal the genetically defined rDNA pattern. Indeed, about 50% of the cells transcribe their rDNA in a way not closely dependent on the rDNA background and significant intrapair differences of NOR+ pattern exist in MZ twins.

Wetherbee MA see **Nation JE**
Wetterberg L see **Mathé AA**

Wierzbicki M: Similarity of monozygotic and dizygotic twins in level and lability of subclinically depressed mood. J Clin Psychol 1986 Jul; 42(4):577–85
Ninety-two adult twin-pairs were recruited through advertisements in the local media. Twin zygosity was determined by use of the self-report inventory developed by Nichols and Bilbro (1966). The level and lability of subclinical depression were assessed.

Mood level was assessed by the Beck Depression Inventory and by the MMPI D, D30, and DR Scales. Mood lability was assessed by daily administrations over a 2-week period of the Depression Adjective Check List (DACL) and the Wessman–Ricks Elation–Depression Mood Scales. Monozygotic twins resembled one another more than dizygotic twins in most measures of both level and lability of mood, which provides modest evidence for a genetic influence on subclinical levels of depression. Implications of these findings for the continuity hypothesis of depression are discussed.

Wilks AV see **Martin NG**

Willatt LR, Bartlett DJ: Testis size and dizygotic twins [letter] Nature 1986 Jun 12–18;321(6071):658

Wilson JR, Plomin R: Individual differences in sensitivity and tolerance to alcohol. Soc Biol 1985 Fall–Winter;32(3–4):162–84

Wojtys E, Hankin F, Braunstein E, Kaufer H, Palella T: Discordance for ankylosing spondylitis in a B27 negative monozygotic twin. J Rheumatol 1986 Feb; 13(1):205–7

A case in which only one sibling of an identical, HLA-B27 negative, twin pairing is affected by ankylosing spondylitis is reported. While endogenous variables may predispose certain populations to ankylosing spondylitis, the discordance illustrated in these seronegative monozygotic twins indicates that exogenous factors may certainly influence the development and course of this disease.

Y

Yazbeck S see **Sinnassamy P**

Yee RD see **Spooner SN**

Yoder PJ, Farran DC: Mother–infant engagements in dyads with handicapped and nonhandicapped infants: a pilot study. Appl Res Ment Retard 1986; 7(1):51–8

The purpose of this study was to investigate the effect of a handicapping condition on mother–infant interactions and, to investigate the conditions under which coordinated attention to an object and a person is demonstrated. This study provides a unique opportunity to make across-mother and within-mother comparisons of mother–infant interactions in two sets of fraternal twins. In each set, one infant was handicapped whereas the other was nonhandicapped. Microanalyses of several aspects of mother–infant free-play sessions showed that handicapped infants emitted fewer object-directed behaviors, had fewer instances in which their leads were followed, and spent relatively little time in joint attention with mother. The data also suggest that repetitive sequences with an object may be an important context in which coordinated attention is demonstrated.

Yoshida K, Soma H: Outcome of the surviving cotwin of a fetus papyraceus or of a dead fetus. Acta Genet Med Gemellol (Roma) 1986; 35(1–2):91–8

Serial ultrasound examinations have demonstrated that one of two gestational sacs in a twin pregnancy may often disappear. When it disappears at an early stage of gestation, the pregnancy may advance without any disturbance and the cotwin can be delivered well developed and lively. When the intrauterine death occurs in the second trimester, the dead fetus usually results in a fetus papyraceus and the cotwin continues to be alive near term. However, when death occurs in the last trimester, the viable twin may be spontaneously delivered soon and be premature. In some cases of late fetal death, the dead fetus may induce intravascular thromboses in many organs of the surviving cotwin, so that the living infant may develop cerebral palsy later after birth.

Young BK see **Antoine C**

Young ID, O'Reilly KM, Kendall CH: Etiological heterogeneity in sirenomelia. Pediatr Pathol 1986; 5(1):31–43

Two babies with sirenomelia are described. Case 1, one of twins, showed the full sirenomelia sequence in conjunction with atelencephaly and cebocephaly. Case 2 had malformations consistent with a diagnosis of the VATER association. Review of the literature indicates that the basic defect in sirenomelia and the VATER association lies in the formation and differentiation of mesodermal tissue and that sirenomelia, the VATER association, and monozygotic twinning show a complex etiological interrelationship.

Young J see **Koller W**

Yu VY see **Szymonowicz W**

Yücesan S see **Olcay I**

Z

Zatz M, Betti RT, Frota-Pessoa O: Treatment of Duchenne muscular dystrophy with growth hormone inhibitors. Am J Med Genet 1986 Jul; 24(3):549–66

A controlled, double-blind therapeutic trial with the drug mazindol, a growth hormone inhibitor, was performed in a pair of 7 1/2 year-old monozygotic twins, with Duchenne muscular dystrophy (DMD). The rationale for this trial was based on a patient (reported previously) affected simultaneously with DMD and growth hormone (GH) deficiency, who is showing a benign course of the dystrophic process and is still walking at 18 years. One of the twins received 2 mg of mazindol daily, while the other received a placebo. The assessment, repeated every 2 months, included weight and height measurements, functional and motor ability tests, ergometry and determinations of serum enzymes and GH levels. After one year of trial the code was broken and it was seen that the twin under placebo treatment was strikingly worse than his brother, the progression of whose condition was practically arrested. These results strongly suggest that treatment with a GH inhibitor is beneficial for DMD patients.

Ziaya PR see **Turner RJ**

Zonderman AB: Twins, families, and the psychology of individual differences: the legacy of Steven G. Vandenberg. Behav Genet 1986 Jan;16(1):11–24

Zorludemir U see **Olcay I**