Current Research on Multiple Births

ANNUAL BIBLIOGRAPHY — 1991

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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 may appear in two or three of the specific subject sections.

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Blount's disease in a pair of identical twins. Ikegawa S, et al. **Acta Orthop Scand** 1990 Dec; 61(6):582

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Abi-Dargham A see **Casanova MF**
Agud JL see **Boyano T**
Ahlmén J, Hedman I, Svalander C: Recurrent *IgA-nephropathy in an identical twin transplant.* Clin Transpl 1989;:297
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Aho K see **Järvinen P**
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Alberti KG see ***Beer SF***
Albright SG see **Watson WJ**
Allen CP, Calvert PT: Simultaneous slipped upper femoral epiphysis in identical twins. J Bone Joint Surg [Br] 1990 Sep;72(5):928-9
Allgulander C, Nowak J, Rice JP: Psychopathology and treatment of 30,344 twins in Sweden. I. The *appropriateness of psychoactive drug treatment.* Acta Psychiatr Scand 1990 Dec;82(6):420-6
We studied whether regular treatment with tranquilizing and hypnotic drugs among 30,344 twins in Sweden 15–47 years old was associated with robust indicators of poor health. Longitudinal psychiatric diagnoses and subsequent suicides were analyzed with data from cross-sectional health questionnaires. Women were almost twice as likely to report medication, even those with psychiatric inpatient diagnoses. Within each of mental, somatic, and lifestyle domains, medication was more frequent among those with multiple problems. The partial odds for medication for those with a diagnosis of psychosis were 11.81, affective disorder 10.94, neurotic or personality disorder 11.09, alcoholism 5.00, and drug addiction 13.92. We conclude that reported regular treatment with tranquilizing and hypnotic drugs in young Swedish adults was significantly associated with diagnosed and subjective somatic and mental health problems, and thus largely in agreement with current peer guidelines. The reasons why women were more often treated than men requires further study.
Alma A see **Piton S**
Alvarez M, Lasker MR, Friedman F Jr, Chitkara U, Berkowitz RL, Holzman IR: Sonographic findings in a twin with congenital fetal volvulus. JCU 1991 Feb;19(2):98-100
Anderson A, Anderson B: Toward a substantive theory of mother-twin attachment. MCN 1990 Nov-Dec; 15(6):373-7
Anderson B see **Anderson A**
Anderson RL, Golbus MS, Curry CJ, Callen PW, Hastrup WH: Central nervous system damage and other anomalies in surviving fetus following second trimester antenatal death of co-twin. Report of four cases and literature review. Prenat Diagn 1990 Aug; 10(8):513-8
Four cases of multiple gestation with second trimester death of one fetus and subsequent damage to a survivor are reported. Monochorionic placentation was documented in three of the cases. Central nervous system lesions occurred in all cases, and bowel injury was noted in two of the damaged fetuses. Although rare maternal clotting problems have been reported in similar situations, none was noted in any of these four cases. Prior reports have indicated that losses in the first half of gestation were of no consequence to the surviving fetuses. These four cases contradict this suggestion, and indicate that close sonographic observation of the survivors is important in any multiple gestation where on fetus has died.
Andrews G see **Mackinnon AJ**
Annan B, Hutson RC: Double survival despite cord entwinement in monoamniotic twins. Case report. Br J Obstet Gynaecol 1990 Oct;97(10):950-1
Ansaldi E see **Mele L**
Antonson DL see **Hart MH**
Antti-Poika M see **Hänninen H**
Asami N, Miyahara S, Ueda T, Wakisaka S, Kinoshita K: [Moyamoya disease in fraternal twins] No To Shinkei 1990 Nov;42(11):1093-6 (Eng. Abstr.) **(Jpn)**
The authors have reported here fraternal twins of moyamoya disease. The one has the onset at the age of two years and six months. Then he had suffered from multiple cerebral infarction and resulting in severe neurological deficits. Now he has right hemiparesis, left homonymous hemianopsia, aphasia and mental retardation. The encephalomyo synangiosis was done to the boy bilaterally at the age of five years. The other one has the onset at the age of five years and five months. He had good physical and neurological development. The Superficial temporal artery-Middle cerebral artery anastomosis and Encephalomyo synangiosis were done bilaterally. Now his development has no problems. The twins and their younger sister all have the same HLA type. The hereditary and environmental factors may be completely related to the pathogenesis of this disease.
Ashurst HM see **Ashworth MF**
Ashurst HM see **Crowther CA**
Ashworth MF, Spooner SF, Verkuyl DA, Waterman R, Ashurst HM: Failure to prevent preterm labour and delivery in twin pregnancy using prophylactic oral salbutamol [see comments] Br J Obstet Gynaecol 1990 Oct;97(10):878-82
A double blind, controlled study was performed to see whether the use of prophylactic oral salbutamol would reduce the incidence of preterm labour in twin pregnancy. Of the 144 women studied, 74 took salbutamol and 70 placebo. No difference was found in the length of gestation, birthweight or fetal outcome, although fewer babies suffered from respiratory distress syndrome in the salbutamol group. Women did not experience troublesome side-effects from salbutamol.
Aughton DJ see ***Lang MJ***
Aylsworth AS see **Watson WJ**

B

el-Badramany MH see **Farag TI**
Ball MJ see **Kumar A**
Bannerman C see **Crowther CA**
Baraitser M see **Marini R**
Barisic N, Skarpa D, Jusic A, Jadro-Santel D: Steroid responsive familial neuropathy with liability to pressure palsies. Neuropediatrics 1990 Nov; 21(4):191-2
Autosomal dominant motor and sensory neuropathy with liability to pressure palsies was studied in three members of the same family. Only one of two monozygotic twin sisters was clinically affected. She developed unilateral peroneal palsy twenty minutes following local pressure. Electromyography revealed a weak intermediate innervation pattern with very rapid action potentials in the right anterior lower leg muscle. A 25–70 per cent reduction of motor and sensory conduction velocity was recorded in the clinically unaffected twin sister and in the father. The electrophysiological findings in the

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mother were normal. The sural nerve biopsy revealed "sausage-like" formations. The palsy persisted for two months and disappeared after eight weeks of fluocortolon treatment. It is possible that the myelin sheaths acted as antigen.

Bartels I see **Pruggmayer M**

Barton SM see **Porreco RP**

Barzilai A, Sperling RS, Hyatt AC, Wedgwood JF, Reidenberg BE, Hodes DS: Mother to child transmission of human immunodeficiency virus 1 infection despite zidovudine therapy from 18 weeks of gestation. Pediatr Infect Dis J 1990 Dec; 9(12):931-3

Battistutta D see **Duffy DL**

Beceiro Mosquera J, García-Alix A, López Alonso R, Jiménez García JJ, García de Frías E: [Intrauterine encephalopathy, caused by vascular interruption, in an infant after intrauterine death of a monozygotic twin] An Esp Pediatr 1990 Aug;33(2):153-5 **(Spa)**

Beer SF, Heaton DA, Alberti KG, Pyke DA, Leslie RD: Impaired glucose tolerance precedes but does not predict insulin-dependent diabetes mellitus: a study of identical twins. Diabetologia 1990 Aug; 33(8):497-502

Non-diabetic identical twins of insulin-dependent diabetic patients were studied within five years of the diagnosis of their index twin in order to determine whether changes in intermediary metabolism precede the onset of insulin-dependent diabetes mellitus. Two studies were performed: a cross-sectional study of 12 non-diabetic twins and a prospective study of a separate group of 41 non-diabetic twins. Of the 12 twins tested in the cross-sectional study six developed insulin-dependent diabetes and six did not; the six who developed diabetes were given an oral glucose load a mean of 10 months before diagnosis; they then had normal fasting blood glucose levels but worse glucose tolerance than control subjects (120 min post-load (mean +/- SD) blood glucose 8.5 +/- 3.5 vs 4.9 +/- 0.9 mmol/l respectively, p less than 0.05). However, blood lactate, pyruvate, alanine, glycerol, 3-hydroxybutyrate and serum insulin levels were similar. In contrast, the six twins in this cross-sectional study who did not develop diabetes and are now unlikely to do so, as a group, had no significant changes compared with the control subjects though one had impaired glucose tolerance. To determine the predictive value of impaired glucose tolerance a separate group of 41 non-diabetic twins was studied prospectively for 8 to 22 years having a total of 147 glucose tolerance tests in this period; in this group six developed diabetes. Eight of the 41 had impaired glucose tolerance; impaired glucose tolerance was found in four of the six who developed diabetes as compared with only four of the 35 who did not (p less than 0.01).(ABSTRACT TRUNCATED AT 250 WORDS)

Beischer NA see **Steinberg LH**

Bejar JM, Jul C, Gabilondo FJ: Another example of homografting between monozygous twins [letter] Burns 1990 Dec;16(6):473

Bell MJ see **Shapiro E**

Benifla JL, Pons JC, Saint Léon M, Hajeri H, Papiernik E: [Peritonitis and cerclage of the cervix uteri] J Gynecol Obstet Biol Reprod (Paris) 1990; 19(7):851-5 (Eng. Abstr.) **(Fre)**

Authors report a case of peritonitis following uterine cervical cerclage in a patient with twins. This observation leads to two problems: complications of cerclage and its real indications. Two recent controlled studies conclude that in a singleton pregnancy, there is no advantage in cervical cerclage in prolonging the gestation period and in decreasing the perinatal mortality. However, the last MRC/RCOG study, still in progress, shows that in a preliminary study, there is a small advantage in cervical cerclage in high-risk-pregnancy with two previous mid trimester spontaneous abortions and/or with premature labor. In multiple pregnancies especially in twin pregnancy, the problem remains unsolved.

Benson CB, Doubilet PM: Ultrasound of multiple gestations. Semin Roentgenol 1991 Jan;26(1):50-62 (58 ref.)

Berkowitz RL see **Alvarez M**

Berle P see **Queck M**

Bernard M see **Thomas PA**

Bernay F see **Gürses N**

Berni P see **Mele L**

Bespalova VA see **Kniazev IuA**

Biesecker LG see **Lang MJ**

Bigelow LB see **Casanova MF**

Bigelow LB see **Goldberg TE**

Blakemore KJ see **Perlman EJ**

Blaskiewicz RJ: Transabdominal multifetal pregnancy reduction: report of 40 cases [letter; comment] Obstet Gynecol 1990 Oct;76(4):735-6

Bleyl JL see **Elster AD**

Blickstein I, Weissman A: "Macrosomic" twinning: a study of growth-promoted twins. Obstet Gynecol 1990 Nov;76(5 Pt 1):822-4

We evaluated 56 twin pregnancies representing the tenth decile of the mean twin birth weight distribution to investigate whether larger twins face the same increased perinatal risk as do macrosomic singletons. Compared with pregnancies in the ninth decile, no significant difference was found between the means of maternal age, parity, and gestational age; between the rates of presentation combinations and cesareans; or between the neonatal sex ratios. However, the incidence of growth-discordant pairs was significantly higher in the heavier group ($P = .034$). Compared with the general twin population, the tenth-decile group contained significantly fewer primiparas ($P = .0023$). Maternal obesity and diabetes were infrequent and could not explain the increased birth weight. The neonatal outcome was excellent. Although the comparison revealed insignificant differences, it is possible that the combination of higher parity, malpresentation rate, and male-to-female ratio may be operative in the genesis of large twins.

Blom GP see **Johansen TE**

Blumberg B see **Samn M**

Bollen N, Camus M, Staessen C, Tournaye H, Devroey P, Van Steirteghem AC: The incidence of multiple pregnancy after in vitro fertilization and embryo transfer, gamete, or zygote intrafallopian transfer. Fertil Steril 1991 Feb;55(2):314-8

This retrospective study concerns the incidence of multiple pregnancy after the replacement of three conceptus using different techniques of assisted reproduction. During a 2-year period, 713 in vitro fertilization-embryo transfers (IVF-ETs) with three embryos, 190 gamete intrafallopian transfers (GIFT) with three oocytes, and 161 zygote intrafallopian transfers (ZIFT) with three zygotes were performed. Although we observed significant differences in implantation and pregnancy rates (PRs), the three techniques resulted in high multiple PR. At 20 weeks, 16% of GIFT pregnancies, 27% of ZIFT pregnancies, and 32% of IVF-ET pregnancies were multiple. Therefore we recommend to limit the number of conceptus transferred to a maximum of

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three in all cases.

Bolodár A, Török O, Tóth Z, Papp Z: Invasive intrauterine procedures in twin pregnancies discordant for fetal malformation.
Acta Chir Hung 1990;31(1):39–42
Invasive intrauterine procedures in two twin pregnancies for exencephaly and multiple malformations are reported. In the first case, to ensure the development of the normal fetus, selective feticide of the affected fetus was undertaken by transabdominal intracardial injection of 20% NaCl solution. A healthy newborn infant with normal weight and a fetus papyraceus were delivered at term. In the second case, because of monoamnial placentation, the procedure was regarded too dangerous, therefore, only therapeutic amniocentesis was carried out to decrease the volume of amniotic fluid. The fetuses were delivered in the preterm period. The advantages of the procedure of selective feticide developed by the authors are also discussed.

Børlum KG: Third-trimester fetal death in triplet pregnancies. Obstet Gynecol 1991 Jan;77(1):6–9
During the last decade, 89 sets of triplets were born in Denmark with a gestational age of more than 25 completed weeks. Fifteen pregnancies (16.9%) were complicated by fetal death in the third trimester, with a total of 17 intrauterine deaths. Six neonatal deaths occurred, leaving 22 survivors among these 15 patients. Four triplet gestations were diagnosed as twins until delivery. Eight women conceived spontaneously, two gestations followed assisted fertilization and embryo transfer, and five women had had various forms of ovulation stimulation. The mean maternal age was 27.8 years (range 17–38). Seven women were parous and eight wer nulliparous. Maternal complications included hydramnios (three), preeclampsia/hypertension (three), and anemia (nine). All women delivered preterm. Of the 11 gestations diagnosed as triplets, fetal death was diagnosed at 32.2 +/- 2.9 weeks (mean +/- SD) and delivery occurred at 32.6 +/- 3.0 weeks. Nine of 11 women had cesarean deliveries. Continuation of pregnancy after fetal death could be considered in only three subjects. In eight women, obstetric reasons required immediate delivery. Fetal death was associated with monochorionic or dichorionic placentation, and growth retardation was a frequent complication before fetal death. Anencephaly of one fetus, umbilical cord problems in two, and severe hydrops in two were the only obvious causes of fetal death. Fetal death should not be the sole indication for delivery. In cases with severe prematurity and a stable intrauterine situation, frequent assessments of fetal well-being are recommended, with prompt delivery when indicated.

Borrell A, Pesarrodona A, Puerto B, Deulofeu P, Fuster JJ, Fortuny A: Ultrasound diagnostic features of twin reversed arterial perfusion sequence.
Prenat Diagn 1990 Jul;10(7):443–8
Two cases of twin reversed arterial perfusion (TRAP) sequence with relevant ultrasound features that would help an accurate diagnosis are described. Available management options are proposed and discussed.

Bots RS see **van Heusden AM**

Bouchard C, Tremblay A: Genetic effects in human energy expenditure components. Int J Obes 1990;14 Suppl 1:49–55; discussion 55–8
It is increasingly recognized that variations in human energy expenditure are partly due to an influence of the genotype, even after control for the well established concomitants of energy expenditure. Using the technique of genetic epidemiology, we have found that about 40 percent of the variance in resting metabolic rate, thermic effect of food and energy cost of low to moderate intensity exercise (less than or equal to 5 times the resting metabolic rate) is explained by inherited characteristics. A significant genetic effect has also been reported for the level of habitual physical activity. The existence of a genotype-environment interaction has also been investigated. Thus, we have demonstrated that in response to chronic overfeeding, as well as negative energy balance, changes in the components of energy expenditure are partly determined by one's genotype. Taken as a whole, these observations consistently support the hypothesis that heredity plays a significant role on the variations in the various components of energy expenditure in humans. Further research should now be focused more on the identification of biochemical and molecular markers of these energy expenditure characteristics.

Bouchard C see **Savard R**

Bouchard TJ, Lykken DT, McGue M, Segal N, Tellegen A: When kin correlations are not squared [letter]
Science 1990 Dec 14;250(4987):1498

Bouchard TJ Jr, Lykken DT, McGue M, Segal NL, Tellegen A: Sources of human psychological differences: the Minnesota Study of Twins Reared Apart. Science 1990 Oct 12;250(4978):223–8
Since 1979, a continuing study of monozygotic and dizygotic twins, separated in infancy and reared apart, has subjected more than 100 sets of reared-apart twins or triplets to a week of intensive psychological and physiological assessment. Like the prior, smaller studies of monozygotic twins reared apart, about 70% of the variance in IQ was found to be associated with genetic variation. On multiple measures of personality and temperament, occupational and leisure-time interests, and social attitudes, monozygotic twins reared apart are about as similar as are monozygotic twins reared together. These findings extend and support those from numerous other twin, family, and adoption studies. It is a plausible hypothesis that genetic differences affect psychological differences largely indirectly, by influencing the effective environment of the developing child. This evidence for the strong heritability of most psychological traits, sensibly construed, does not detract from the value or importance of parenting, education, and other propaedeutic interventions.

Bouchard TJ Jr, Segal NL, Lykken DT: Genetic and environmental influences on special mental abilities in a sample of twins reared apart.
Acta Genet Med Gemellol (Roma) 1990; 39(2):193–206
The Minnesota Study of Twins Reared Apart has conducted comprehensive medical and psychological assessments of monozygotic (N = 49) and dizygotic (N = 25) twin pairs, separated early in life (average age of separation = 0.3 and 1.1 years, respectively) and reared apart during the formative years (average age of reunion = 30.3 and 37.2 years, respectively). The twins are administered two special mental ability batteries. The Hawaii Battery (H-B), supplemented by several Educational Testing Service tests, is administered toward the beginning of the assessment week. The Comprehensive Ability Battery (CAB) is administered toward the end of the assessment week. All data are age- and sex-corrected. The average MZA and DZA intraclass correlations for the 15 H-B subtests were 0.45 and 0.34, respectively, and the average MZA and DZA intraclass correlations for the 13 subtests

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of the CAB were 0.48 and 0.35, respectively. Biometric model-fitting of these data indicate an average heritability of about 0.50. Data for groups of subtests in the Verbal, Spatial, Perceptual Speed and Accuracy and Memory domains were compared to a meta-analysis of the special mental ability findings in the ordinary twin literature. The Spatial domain appears to yield the highest and the Memory domain the lowest heritabilities.

Bouchard TJ Jr see **Lykken DT**

Bouchart P see **Vaksmann S**

Boulot P, Hedon B, Deschamps F, Mares P, Laffargue F, Viala JL: [Three cases of spontaneous reduction from quadruple pregnancy to triplet pregnancy (letter)] Presse Med 1990 Sep 1-8;19(28):1326 **(Fre)**

Boyano T, Carrascosa T, Val J, Porta N, Agud JL, Garcia MJ: Urticaria pigmentosa in monozygotic twins [letter] Arch Dermatol 1990 Oct; 126(10):1375-6

Brambati B, Formigli L, Tului L, Simoni G: Selective reduction of quadruplet pregnancy at risk of beta-thalassaemia [letter] Lancet 1990 Nov 24; 336(8726):1325-6

Braniecki M see **Wilson L**

Breitner JC, Murphy EA, Folstein MF, Magruder-Habib K: Twin studies of Alzheimer's disease: an approach to etiology and prevention. Neurobiol Aging 1990 Nov-Dec;11(6):641-8 (71 ref.)

Epidemiologic studies of environmental factors associated with risk of Alzheimer's disease (AD) have produced inconsistent and disappointing results. By contrast, family/genetic studies and case control investigations suggest that genetic causes of AD are important. The investigation of such genetic causes remains an important aim in all forms of AD including typical, late-onset disease where linkage work is impractical. But the public health burden of AD creates an especially urgent need to identify environment risk factors, if these exist, since they will more likely be susceptible to intervention. Such environmental factors may interact with genetic susceptibility to accelerate or retard disease expression, and environmental interventions that delay onset may constitute an important strategy for prevention. All these issues may be addressed by twin studies of AD, but the few such studies to date have been limited by small samples and other methodologic difficulties. This paper reviews the rationale for twin studies of AD, and describes briefly the work in this area to date. It also discusses a number of suggestions for methodologic improvements. We conclude that the time is ripe for twin studies of AD, and that such work holds considerable potential for the investigation of etiology and, possibly, for the identification of strategies for prevention.

Brezinka C, Huter O, Kirchler H, Hager J, Tötsch M: [Twin pregnancy with discordant abnormalities] Zentralbl Gynakol 1990;112(22):1413-9 (Eng. Abstr.) **(Ger)**

3 cases of severe discordant malformations diagnosed by ultrasound (anencephaly, myelomeningocele, prune belly-syndrome) in multiple pregnancies have been described. Operations have been given up consciously.

Brockerhoff P, Seufert R, Casper F, Riedinger J: [Pregnancy outcome following cerclage. 2. Multiple pregnancy] Zentralbl Gynakol 1990;112(21):1341-4 (Eng. Abstr.) **(Ger)**

In a retrospective study pregnancy and labour after cerclage had been studied in comparison to 160 patients with singleton pregnancies and a matched pair control group of multiple pregnancies without operative cervix closure. Cervical incompetence in multiple pregnancy observed more frequently than in singleton ones is not correlated to obstetric history, but has a bad prognosis because of necessity of tocolysis during pregnancy, marked shortening of duration of pregnancy, lowering of length and weight of newborns. An increase in frequency of amniotic infections had to be calculated following cerclage in multiple pregnancies, too. Our results especially in multiple pregnancies are not so optimistic. This statement is valid also for the indication to its prophylactic use.

Brown T see **Richards LC**

Brown WT see **Schlessel JS**

Burgess VB see **Richards LC**

Buscaglia M see **Sanchioni L**

Byrne P see **Still K**

C

Caballero P, Del Campo L, Ocón E: Cystic encephalomalacia in twin embolization syndrome [letter] Radiology 1991 Mar;178(3):892-3

Callen PW see **Anderson RL**

Calvert PT see **Allen CP**

Camarena Grande C see **Hernández González J**

Camus M see **Bollen N**

Capps SN see **Spitz L**

Carlin JB see **Hopper JL**

Carmelli D see **Christian JC**

Carmelli D see **Selby JV**

Carr AJ: Adolescent idiopathic scoliosis in identical twins. J Bone Joint Surg [Br] 1990 Nov;72(6):1077

Carrascosa T see **Boyano T**

Casanova MF, Zito M, Goldberg T, Abi-Dargham A, Sanders R, Bigelow LB, Torrey EF, Weinberger DR: Shape distortion of the corpus callosum of monozygotic twins discordant for schizophrenia [letter] Schizophr Res 1990 Mar-Apr;3(2):155-6

Casper F see **Brockerhoff P**

Castelli WP see **Christian JC**

Caudle MR see **Good MC**

Centerwall BS see **Roy A**

Chang TH, Jeng CJ, Lan CC: The effect of birth order in twins on fetal umbilical blood gas and apgar score. Chung Hua I Hsueh Tsa Chih 1990 Sep;46(3):156-60

Although recent reports have revealed no difference in perinatal mortality between a set of twins, more sensitive means other than perinatal mortality are necessary to evaluate differences in twins. This study examined differences between 34 twin pairs with respect to Apgar score, umbilical venous and arterial blood gas, and acid-base data. The parameters were measured in paired samples and compared with the paired t test and Fisher's exact probability test. The most coherent findings were a higher umbilical venous PO2 and umbilical arterial PO2 in twin A. Their differences were not due to the route of delivery, interval between twins, presentation or chorionicity. The data suggest that the second-born twin has potentially greater susceptibility to hypoxia and trauma.

Chihara H see **Niwa K**

Chitkara U see **Alvarez M**

Chitty L see **Marini R**

Christian JC, Carmelli D, Castelli WP, Fabsitz R, Grim CE, Meaney FJ, Norton JA Jr, Reed T, Williams CJ, Wood PD: High density lipoprotein cholesterol. A 16-year longitudinal study in aging male twins. Arteriosclerosis 1990 Nov-Dec;10(6):1020-5

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The National Heart, Lung, and Blood Institute Twin Study is a collaborative, longitudinal study of white, male twins who were veterans of World War II and were born between 1917 and 1927. The twins were selected from the National Academy of Sciences/National Research Council Twin Panel and were examined three times (1969–73, 1981–82, and 1986–87). At all three exams, the dizygotic (DZ) twins were found to have a greater total variance for high density lipoprotein cholesterol (HDL-C) than the monozygotic (MZ) twins (p less than 0.05). DZ variance estimates were also larger than the variance of singletons from the second National Health and Nutrition Examination Survey. At the third exam, HDL-C was divided by precipitation into HDL2 and HDL3 fractions, and HDL2 was found to be the primary cause of the greater DZ total variance (DZ/MZ HDL2 variance = 2.22). The DZ/MZ variance ratio decreased 9% after adjustment of HDL2 for correlations with plasma triglycerides, alcohol consumption, smoking, exercise, and body mass index measured at the third exam. Postulated causes of the difference between MZ and DZ total variances include World War II induction screening, environmental influences unique to one zygosity, and genetic factors related to twinning. Further understanding of the etiology of this striking difference between MZ and DZ twin variance for HDL-C fractions could lead to more effective methods of decreasing the complications of arteriosclerosis.

Ciarleglio L see **Rodis JF**
Clayton PJ see **Pickens RW**
Clayton PT see **Hyland K**
Copas PR see **Good MC**
Corbett T see **Still K**
Craffey A see ***Rodis JF***
Crandall BF see **Grau P**
Craven TE see **Elster AD**

Cropanzano R, James K: Some methodological considerations for the behavioral genetic analysis of work attitudes. J Appl Psychol 1990 Aug; 75(4):433–9

In a recent article, Arvey, Bouchard, Segal, and Abraham (1989) argued that about 30% of the variance in job satisfaction was accounted for by workers' genetic make-ups. To demonstrate this, they examined a group of monozygotic twins who had been reared apart. Although this method has been used widely in behavioral genetic research, it contains many hidden threats to validity, which could render suspect numerical estimates of either environmental or genetic effects. We examine some of the threats associated with this type of twin research, emphasizing the problems involved in quantifying the heritability of job satisfaction.

Crow P see **Sargent SK**

Crowther CA, Verkuyl DA, Neilson JP, Bannerman C, Ashurst HM: The effects of hospitalization for rest on fetal growth, neonatal morbidity and length of gestation in twin pregnancy [see comments] Br J Obstet Gynaecol 1990 Oct;97(10):872–7

OBJECTIVE--To test whether a policy of hospitalization for bed rest, from 28–30 weeks gestation until delivery, lengthens the duration of gestation, improves fetal growth and decreases neonatal morbidity in twin pregnancy. DESIGN--A randomized controlled trial. SETTING--Harare Maternity Hospital, Zimbabwe. SUBJECTS--118 women with an uncomplicated twin pregnancy between 28 and 30 weeks gestation. INTERVENTION--Hospitalization for bed rest. Encouraged to rest in bed as much as possible, although voluntary ambulation was allowed. MAIN OUTCOME MEASURES--Gestational age at delivery and number of infants delivered preterm (less than 37 weeks); birthweight and number of small-for-gestational age (SGA) infants; neonatal morbidity was assessed by number of infants requiring admission to the neonatal unit and the length of stay. RESULTS--There was no effect on duration of gestation or the occurrence of preterm delivery. Mean birthweight was greater in the hospitalized group (t = -2.28, df 234, P = 0.02) and there were fewer SGA infants (OR 0.57, 95% CI 0.33–0.96). No differences were found in neonatal morbidity. CONCLUSIONS--Hospitalization for bed rest does not prolong pregnancy but can improve fetal growth, although this was not reflected in improved neonatal morbidity. Whether twin fetal growth can be enhanced similarly in other populations should be investigated.

Cundiff LV see **Gregory KE**
Curole DN see **Dickey RP**
Curry CJ see **Anderson RL**

D

de Gregorio G see **Runge HM**
de la Vega Bueno A see **Hernández González J**
Del Campo L see **Caballero P**
Derrick PL see **Hopper JL**
Deschamps F see **Boulot P**
Desmedt E see **Steinberg LH**
Deulofeu P see **Borrell A**
Devroey P see **Bollen N**
Díaz Fernández MC see **Hernández González J**
Dickerson GE see **Gregory KE**

Dickey RP, Olar TT, Curole DN, Taylor SN, Rye PH, Matulich EM: The probability of multiple births when multiple gestational sacs or viable embryos are diagnosed at first trimester ultrasound. Hum Reprod 1990 Oct;5(7):880–2

The live birth outcome when multiple gestational sacs were diagnosed at first trimester ultrasound was reviewed in 227 twin, 43 triplet and five quadruplet pregnancies. When two gestational sacs were present, the probability of delivering twins was 63% for maternal age less than 30 and 52% for maternal age greater than or equal to 30. With three gestational sacs, the probability of a triplet birth was 45% for maternal age less than 30 and 18% for maternal age greater than or equal to 30. When two viable embryos were present, the probability of a twin birth was 90% for maternal age less than 30 and 84% for maternal age greater than or equal to 30. With three viable embryos, the probability of a triplet birth was 90% for maternal age less than 30 and 44% for maternal age greater than or equal to 30. Two gestations resulting from ovulation induction with clomiphene citrate were more likely to result in twin delivery at term, compared to spontaneous twin gestations (P = 0.012). These findings may be useful in the treatment and management of patients when multiple gestations are diagnosed early in pregnancy.

Doubilet PM see **Benson CB**
Draeger A see **Nerlich A**

Drummond G, Scott P, Mackay D, Lipschitz R: Separation of the Baragwanath craniopagus twins. Br J Plast Surg 1991 Jan;44(1):49–52

A case of craniopagus twins is presented. Large contralateral flaps were used to cover the bony defect and exposed brain. Details of the planning and problems are discussed.

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Duffy DL, Martin NG, Battistutta D, Hopper JL, Mathews JD: Genetics of asthma and hay fever in Australian twins. Am Rev Respir Dis 1990 Dec; 142(6 Pt 1):1351–8

The occurrence of self-reported asthma/wheezing and hay fever among 3,808 pairs of twins from the Australian National Health and Medical Research Council Twin Registry was examined for evidence of genetic transmission by path analytic methods. The cumulative prevalence of asthma or wheezing was 13.2% and of hay fever, 32%. There were significant correlations in liability to reported disease among twins, and these were higher in monozygotic twins (MZ) ($r = 0.65$) than in dizygotic twins (DZ) ($r = 0.25$), and in male MZ twins ($r = 0.75$) compared with female MZ twins ($r = 0.60$). Analysis under the assumptions of the classic twin model suggested that there were genetic factors common to asthma and hay fever, with a correlation in genetic liability to the traits of 0.52 for men and 0.65 for women. These genes acted substantially in a nonadditive fashion in men but not in women. As the genetic correlation was significantly less than unity, this implied additional genetic factors influencing either or both diseases individually. The estimated heritability of these diseases was 60 to 70% in this population. Environmental causes of both diseases also were correlated ($r = 0.53$ for men and 0.33 for women). Cigarette smoking was only weakly associated with wheezing.

Dupriez B see **Facon T**

E

Eaves LJ see **Heath AC**

Eaves LJ see **Silberg JL**

Eberhard G, Ross S, Sääf J, Wahlund B, Wetterberg L: Psychoses in twins. A 10 year clinical and biochemical follow-up study. Schizophr Res 1989 Jul–Oct;2(4–5):367–74

An unbiased sample of monozygotic and dizygotic twins with psychotic or pre-psychotic symptoms has been followed during a 10 year period. The sample was based on 9000 patients, both born in 1930–1946, and hospitalized in Scania, Sweden, during the 1960s. 23 complete pairs were examined in 1972 with regard to a variety of clinical, genetic, and biochemical parameters. A fairly young sample was chosen in order to include a sufficient number of discordant pairs to be followed prospectively, thus making it possible to study a group of individuals with a very high risk of developing psychosis. 18 of the 23 pairs were re-examined by the same clinician 10 years later. The biochemical methods were both partly the same as those used 10 years earlier and partly extended. Very few changes in the clinical diagnoses of the twins were noted during the follow-up period. A highly significant correlation was found between 1972 and 1982 activity both for catechol O-methyltransferase (COMT) and for monoamine oxidase (MAO). The basal levels of MAO, COMT, dopamine beta-hydroxylase (DBH) and serotonin (5-HT) did not show correlations to the presence of pre-psychotic or psychotic symptoms.

Echternkamp SE see **Gregory KE**

Egan JF see **Rodis JF**

Eiberg H see **Nielsen LS**

Eldar-Geva T see **Younis JS**

Elster AD, Bleyl JL, Craven TE: Birth weight standards for triplets under modern obstetric care in the United States, 1984–1989. Obstet Gynecol 1991 Mar;77(3):387–93

Birth data were reviewed on 3321 live-born infants from 1138 triplet pregnancies delivered in the United States between 1984–1989. The three major etiologies for the multiple gestations were fertility drugs (50%), spontaneous (38%), and in vitro methods (9%). The average length of gestation was 33.8 weeks and the mean birth weight was 1911 g. Neonatal birth weight curves for triplet infants born alive in the third trimester were plotted. From 26–35 weeks, the average triplet newborn has a weight corresponding to approximately the 30th percentile level compared with singletons. After 35 weeks, triplet birth weights fall progressively behind those of singletons, reaching the tenth percentile at 38 weeks. Multiple epidemiologic factors were analyzed to determine their effect upon neonatal birth weight and length of gestation. Factors predicting higher than average birth weight included male sex, increasing maternal age, increasing maternal height and weight, maternal weight gain, and maternal parity. The length of gestation was found to correlate with maternal age, weight gain, and parity. No significant association between fertility method and gestational age or weight could be identified. This large data base provides the first comprehensive percentile birth weight rankings for modernly managed triplet gestations in the United States population. A regression equation is presented which accurately predicts mean triplet birth weight in the third trimester and which suggests that a nearly linear weight gain of approximately 150 g per week per fetus should be expected in this period.

Erdman S see **Hart MH**

Eriksson AW see **Fellman JO**

Esrachi A see **Fischbein S**

F

Fabsitz R see **Christian JC**

Fabsitz RR see **Reed T**

Fabsitz RR see **Selby JV**

Facon T, Mannessier L, Lepelley P, Weill J, Fenaux P, Dupriez B, Morel P, Jouet JP: Congenital diserythropoietic anemia type I. Report on monozygotic twins with associated hemochromatosis and short stature. Blut 1990 Oct; 61(4):248–50

We report the first occurrence of congenital dyserythropoietic anemia type I in monozygotic twins and the seventh familial occurrence to our knowledge. Mild hemochromatosis is present in the two children but has not yet required iron chelation. Moderate growth retardation, which seems to be related to pituitary failure, is also present.

Fair WR see **Shapiro E**

Faleyimu BL see **Ogunniyi SO**

Falkenberg K see **Matthews P**

Farag TI, Usha R, Uma R, Mady SA, al-Nagdy K, el-Badramany MH: Phenotypic variability in Meckel-Gruber syndrome. Clin Genet 1990 Sep; 38(3):176–9

Five Bedouin sibs are described with Meckel-Gruber syndrome (MGS), an autosomal recessive disorder with multiple abnormalities. Each affected sib manifested only two of the three cardinal signs of MGS: occipital encephalocele and polycystic kidneys, lacking polydactyly. The phenotypic variability of the MGS pleiotropic gene is briefly discussed.

Farber RA see **Perlman EJ**

Farias M see **Mele L**

Farkas M see **Hernádi L**

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Fasubaa OB see **Ogunniyi SO**
Feingold M see **Georgeson S**
Fellman JO, Eriksson AW: Standardization of the twinning rate. Hum Biol 1990 Dec;62(6):803–16
There is a great interest in comparing twinning rates. These comparisons can be performed between different time periods for a specific population, between different regions within the same country, and between different populations. However, there are several factors (maternal age, parity, urbanization, etc.) that influence the twinning rate. The most dominant one is maternal age, and because the age distribution of the mother varies, it is necessary to standardize the data to make these comparisons. If we want to compare the twinning rates in different countries, we have to face the problem that the composition of the data from different countries may differ to a great extent. The applicable method is determined by the data of the lowest quality. Often the available data do not allow the traditional (direct and/or indirect) methods of standardization. Under such circumstances other methods have to be used. Earlier, Fellman and Eriksson (1987) proposed and successfully applied a new method. In this article we discuss the standardization problem in more detail. We suggest different methods and apply them to different data on twinning from Australia, Finland, and Baden-Württemberg (West Germany). The new standardization methods give standardized twinning rates similar to the rates obtained by traditional methods. It is noted that, irrespective of standardization method, changes in maternal age alone cannot explain temporal or regional variations in the twinning rate. Other factors that may raise or lower the twinning rate are decreasing parity, sociodemographic changes with increased communication, which causes the breakup of isolates, and deteriorating physical condition of mothers as a result of increased industrialization and urbanization.
Fenaux P see **Facon T**
Fenger K see **Nielsen LS**
Fischbein S, Guttman R, Nathan M, Esrachi A: Permissiveness–restrictiveness for twins and controls in two educational settings: The Swedish compulsory school and the Israeli kibbutz.
Acta Genet Med Gemellol (Roma) 1990; 39(2):245–57
In a previous longitudinal twin project a model was developed for studying heredity-environment interaction. One important environmental dimension in this model is permissiveness-restrictiveness. The purpose of the present study has therefore been to investigate perceived and imposed restrictiveness at the societal and classroom level and possible interactional effects on pupil behavior. Results are reported from grade 4 to grade 6 in Israeli kibbutzim and Swedish compulsory school. One major finding is that no systematic differences have been found between twins and controls in the two countries. In both Swedish schools and Israeli kibbutzim permissiveness–restrictiveness will vary depending upon perspective (perceived or imposed) and upon content (type of subject or rule-breaking activity). Preliminary within-pair comparisons for the Swedish twins are reported for different types of test results. In agreement with the model, logical abstract thinking as well as reading and mathematics achievement seem to be less influenced by hereditary factors in a restrictive educational setting than in a permissive one.
Fischbein S, Hallencreutz I, Wiklund I: What is it like to be a parent of twins?
Acta Genet Med Gemellol (Roma) 1990;39(2):271–6
A questionnaire was given to parents of twins concerning their perceptions of dependency and similarity in their twin children. Also, the parents were asked if they tried to influence their children to become more dissimilar. 70 same-sex twin pairs (35 MZ and 35 DZ) were included in the study and a questionnaire was sent both to the mother and the father of the twins. The twins were approximately 12 years old and attended grade 4, 5 or 6 in the Swedish compulsory school. Results indicated that parents consider MZ twins to be dependent upon each other and to spend more time together. This was especially evident for girls. If the twins had a free choice they would also tend to choose similarly. This trend was also more pronounced for the MZ girls. Irrespective of zygosity, most parents reported that they did not try to influence their children. In the case of MZ twins this will probably make them become more similar over time. Differences between maternal and paternal answers tended to be nonsignificant.
Fischbein S see **Lange AL**
Fitzgibbon MN see **Samra JS**
Flander LB see **Hopper JL**
Fleming AD, Rayburn WF, Mandsager NT, Hill WC, Levine MG, Lawler R: Perinatal outcomes of twin pregnancies at term. J Reprod Med 1990 Sep; 35(9):881–5
A review of a two-year experience in our community disclosed that 57% of twin pregnancies (118/207) deliver at term. Little attention has been focused on perinatal outcomes of twin pregnancies remaining undelivered after 36 completed weeks. Therefore, we reviewed our experience to determine whether our practice should change to maximize perinatal care. Nearly all the study pregnancies (115/117, or 97.5%) delivered by the estimated date of confinement. Fetal malpresentation, failure to progress and the patient's lack of desire for a vaginal birth after cesarean delivery were common reasons for the high cesarean rate (62/117, or 52%). The neonatal outcomes were favorable regardless of the route or interval between deliveries. Discordant fetal growth was found in only eight cases (6.8%). No perinatal deaths occurred, and five-minute Apgar scores less than 7 (2/234, or 0.9%) and rates of anomalies (5/234, or 2.1%) were not different from those in singleton pregnancies delivering during the same period. Using the principles of obstetric practice used in our community, we would expect the perinatal outcomes in term twin gestations to be favorable.
Fletcher A see **Nolan R**
Folstein MF see **Breitner JC**
Fonteyne G see **Vaksmann S**
Formigli L see **Brambati B**
Fortuny A see **Borrell A**
Fowler MG see **Kleinman JC**
Fraser GA see **Gunzburg R**
Fraser RD see **Gunzburg R**
Friedman F Jr see **Alvarez M**
Frishman GN, Steinhoff MM, Luciano AA: Triplet tubal pregnancy treated by outpatient laparoscopic salpingostomy. Fertil Steril 1990 Nov;54(5):934–5
To our knowledge, this represents the first case of a laparoscopically treated triplet EP and the first time that a double EP in the same tube was treated conservatively (with preservation of the tube). Multiple EPs may be more common than currently thought, and our report offers an alternative explanation for at least some cases of persistent EP

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after conservative surgical therapy. Finally, given the substantial cost savings and reduced postoperative recovery time associated with operative laparoscopy, when the patient is stable and the surgeon experienced, the laparoscopic approach should be tried, regardless of the number of EPs or their size.

Fuglseth KN see **Orstavik KH**

Fuks MA: [The prenatal diagnosis of congenital developmental defects in a multiple pregnancy] Akush Ginekol (Mosk) 1990 Sep;(9):15-7 (Eng. Abstr.) **(Rus)**

Fuster JJ see **Borrell A**

Futschik M see **Gaertner HJ**

G

Gabilondo FJ see **Bejar JM**

Gadwood KA see **Lavery JP**

Gaertner HJ, Schuh D, Futschik M, Schwarze R: [Endophlebitis hepatica obliterans. Unusual cause of liver insufficiency in early childhood in a dizygotic twin] Zentralbl Allg Pathol 1990;136(5):459-65 (Eng. Abstr.) **(Ger)**
Findings recorded from obliterative hepatic endophlebitis are described in this paper and are compared with international literature. They had been obtained from a male twin who had died with clinical symptoms of hepatic failure. Differential diagnosis of liver insufficiency in early childhood is discussed in some detail. Also recorded was obliterative angiitis of intramural blood vessels in the ileum. Systemic vasculitis is postulated, possibly developed on the basis of an immunological reaction. Intra-uterine infection had probably been the most likely cause.

Gandini S see **Sanchioni L**

Garcia MJ see **Boyano T**

García-Alix A see **Beceiro Mosquera J**

García de Frías E see **Beceiro Mosquera J**

Gaughan B see **O'Connor RA**

Gauthier S see **Lal S**

Geisler P see **Pollmächer T**

Genet S see **Marini R**

Georgeson S, Sonnenberg FA, Feingold M, Pauker SG: Twisted sisters: when is the optimal tme for delivery? Med Decis Making 1990 Oct-Dec;10(4):294-302

Giles GG see **Hopper JL**

Gleeson C, Hay DA, Johnston CJ, Theobald TM: "Twins in school". An Australia-wide program. Acta Genet Med Gemellol (Roma) 1990; 39(2):231-44
The multiple birth family is more likely to have a dispute with the education system than with any other service. So many potential areas of conflict exist over the abilities and behaviour of multiples and over such issues as separation or keeping back one twin. One reason for disputes is the lack of good data to adequately reflect the different perspectives of parents and teachers and the differing needs of families: the same solution does not apply to all. To provide the first large-scale data base and building upon an initial survey of 85% of all primary school teachers in South Australia, the LaTrobe Twin Study and AMBA worked with Education Departments to set-up in each state Education Research Teams (ERTs) of parents of multiples who were also teachers. The ERTs were crucial in three phases. 1) Developing and circulating questionnaires and publicising the nationwide survey. 784 families and 1264 teachers of their children completed these questionnaires, many reporting that simply having to address the issues raised in the questionnaire was a valuable learning experience. 2) Exploring the data base. Issues arising included the very different bases on which parents and teachers judged separation desirable, with teachers emphasising the unsubstantiated claim that separation is essential to individual development. Separation became more common over the first three years of schooling but 20-25% of twins separated one year were back together the next. 3) Running regional meetings of parents, teachers and administrators to discuss the results and to pool experiences and plan policies at the local level. A need clearly exists to improve the level of consultation between families and school personnel and to ensure the widespread availability of information which identifies key issues in making decisions for that multiple birth family.

Golbus MS see **Anderson RL**

Gold JM see **Goldberg TE**

Goldberg T see **Casanova MF**

Goldberg TE, Ragland JD, Torrey EF, Gold JM, Bigelow LB, Weinberger DR: Neuropsychological assessment of monozygotic twins discordant for schizophrenia. Arch Gen Psychiatry 1990 Nov; 47(11):1066-72
A comparison of monozygotic twins discordant for schizophrenia controls for genetic variance and reduces variance due to environmental circumstances, thus serving to highlight differences due to phenotypic-related variables. In this study, we assessed 16 such twin pairs on a wide range of neuropsychological tests. The affected twins tended to perform worse than their unaffected counterparts on most of the tests. Deficits were especially severe on tests of vigilance, memory, and concept formation, suggesting that dysfunction is greatest in the frontotemporal cortex. While manifest symptoms were not highly associated with neuropsychological scores, global level of functioning was. To address the issue of genetic liability, we also compared the sample of discordant unaffected twins with a sample of seven pairs of normal monozygotic twins. No significant differences between the groups were found for any neuropsychological test. In fact, the results suggest that neuropsychological dysfunction is a consistent feature of schizophrenia and that it is related primarily to the clinical disease process and not to genetic or nonspecific environmental factors.

Goldsmith HH see **McArdle JJ**

Goldstein I see **Zimmer EZ**

Gómez de Terreros I see **Rufo Campos M**

González de Dios J see **Hernández González J**

Good MC, Copas PR, Kleinman GE, Caudle MR: Vasa previa. J Tenn Med Assoc 1990 Oct;83(10):499-501
Diagnosis of vasa previa requires a high index of suspicion. Vasa previa must be included in the differential diagnosis of all cases of third trimester bleeding. When pulsatile vessels are palpated preceding the fetal vertex, vasa previa should be considered along with cord prolapse. Early diagnosis and intervention result in a favorable fetal outcome in this rare condition.

Grady CL see **Kumar A**

Graham SG: Dose response to pancuronium in identical twins [letter] Acta Anaesthesiol Scand 1991 Jan; 35(1):91

Grau P, Robinson L, Tabsh K, Crandall BF: Elevated maternal serum alpha-fetoprotein and amniotic fluid alpha-fetoprotein after multifetal pregnancy reduction. Obstet Gynecol 1990 Dec;76(6):1042-5
Forty patients underwent fetal reduction at approximately 12 weeks' gestation for multiple

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pregnancy. Twenty-two had maternal serum alpha-fetoprotein (MSAFP) determinations and all but one was elevated, with a mean value of 9.41 multiples of the median (MOM). A total of 53 amniotic fluid specimens were evaluated for AFP; 25% were elevated above 2.0 MOM and one sample was positive for acetylcholinesterase. None of these elevations were associated with a neural tube defect, although two neural tube defects were detected by other means. Routine MSAFP is not recommended for patients with multifetal pregnancy reduction.

Greenstein RM see **Rodis JF**

Gregory KE, Echternkamp SE, Dickerson GE, Cundiff LV, Koch RM, Van Vleck LD: Twinning in cattle: III. Effects of twinning on dystocia, reproductive traits, calf survival, calf growth and cow productivity. J Anim Sci 1990 Oct;68(10):3133–44
An evaluation of natural twinning in beef cattle revealed that cows birthing twins had shorter (P less than .01) gestation lengths, more (P less than .01) retained placentas, more (P less than .01) dystocia, more (P less than .01) days to estrus, lower (P less than .01) conception rates and more (P less than .01) days to pregnancy than cows birthing singles. Days to estrus, conception rate and days to pregnancy were not affected by number of calves reared (1 vs 2) in cows birthing twins. Survival at birth was greater (P less than .01) for single- than for twin-born calves, but twins and singles did not differ (P greater than .05) in postnatal survival. When dystocia was experienced, calf survival at birth was 95% vs 73% for singles vs twins compared with 99% vs 92% when no dystocia was experienced. Calves born twins were lighter (P less than .01) at birth, 100 d and 200 d, but twins and singles did not differ in postweaning gains. Total calf weights at 100 d per cow calving were 12% greater (P less than .01) in cows birthing twins vs singles when twin calves reared by foster dams were excluded. The potential increase in cow productivity for total calf weight at 100 d is 40% if calf survival rates of twins with dystocia relative to survival rates of twins without dystocia were comparable to survival rates of singles with and without dystocia, and if cows birthing twins were fed and managed to obtain conception rates equal to those of cows birthing singles. Identification of cows gestating twins to provide for their higher prepartum nutritive requirements and calving assistance at parturition is necessary to make twinning in cattle an economically viable technology.

Grim CE see **Christian JC**

Grundy SM see **Uauy R**

Gunzburg R, Fraser RD, Fraser GA: Lumbar intervertebral disc prolapse in teenage twins. A case report and review of the literature.
J Bone Joint Surg [Br] 1990 Sep;72(5):914–6 (19 ref.)
We report the cases of teenage twin girls presenting within months of each other with severe symptoms from lumbosacral disc prolapses, requiring laminectomy in one and chemonucleolysis in the other. CT scans showed similarities in spinal configuration, including the presence of disc bulges at the L4–5 level. This suggests a strong hereditary factor in prolapse of intervertebral discs, but a review of the literature showed little information on that aspect.

Gürses N, Gürses N, Bernay F: Twin fetuses in fetu and a review of the literature. Z Kinderchir 1990 Oct;45(5):319–22 (14 ref.)

Gürses N see **Gürses N**

Guttman R see **Fischbein S**

H

Hager J see **Brezinka C**

Hajeri H see **Benifla JL**

Hall MH: Rest in hospital and twin pregnancy [comment] Br J Obstet Gynaecol 1990 Oct; 97(10):869–71 (21 ref.)

Hallencreutz I see **Fischbein S**

Hampton N see **Samra JS**

Hannah MC see **Hopper JL**

Hänninen H, Antti-Poika M, Juntunen J, Koskenvuo M: Exposure to organic solvents and neuropsychological dysfunction: a study on monozygotic twins. Br J Ind Med 1991 Jan; 48(1):18–25
Twenty one monozygotic twins exposed to organic solvents were compared with their non-exposed cotwins by performance in psychological tests. A further 28 monozygotic twin pairs were examined as a reference group. The study used 11 tests, 10 of which had shown an effect in previous studies on the results of exposure to solvents. Paired comparisons of the test scores showed the exposed twins to have lower performance in associative learning, digit span, and block design. These results agree with two previous studies that used a similar set of tests. Contrary to some other studies, psychomotor speed was not affected, but the results indicated a marginal effect on the control of hand movements. Further comparison of subgroups with a low and a high exposure showed the prevalence of subtle neuropsychological dysfunction to be greater among the more exposed twins.

Hart MH, Kaufman SS, Vanderhoof JA, Erdman S, Linder J, Markin RS, Kruger R, Antonson DL: Neonatal hepatitis and extrahepatic biliary atresia associated with cytomegalovirus infection in twins. Am J Dis Child 1991 Mar;145(3):302–5
Prenatally acquired cytomegalovirus infection in twins was temporally associated with a discordant development of neonatal hepatitis and extrahepatic biliary atresia. This case presents evidence suggesting an association between perinatal cytomegalovirus infection and selected extrahepatic biliary atresia and neonatal hepatitis. Congenital cytomegalovirus infections and cytomegalovirus hepatitis are also discussed.

Harzer W, Ullmann J: [The dentition and jaw growth of 60 mono- and dizygotic twins between the ages of 10 and 18] Fortschr Kieferorthop 1990 Oct; 51(5):293–6 (Eng. Abstr.) **(Ger)**
60 twins were investigated between the age of ten and 18 years to obtain information about inheritance of tooth-crown size and growth of alveolar bone. The results suggest genetically controlled interaction between tooth germs during their formation. The intrapair differences decrease between ten and 18 years for the alveolar bone diameters. This is an advise for stronger genetically influences in higher age and an etiological factor for relapse after orthodontic treatment.

Hastrup WH see **Anderson RL**

Hattori K see **Lynn R**

Haugstvedt S: [Separation of Siamese twins. Neither child was given preference] Lakartidningen 1990 Aug 22;87(34):2579–82 **(Swe)**

Haverkamp AD see **Porreco RP**

Haxby JV see **Kumar A**

Hay DA see **Gleeson C**

Hayashi N see **Sunami K**

Heath AC, Kendler KS, Eaves LJ, Martin NG: Evidence for genetic influences on sleep disturbance

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and sleep pattern in twins. Sleep 1990 Aug; 13(4):318–35
The etiologic role of genotype and environment in sleep pattern (daytime napping, habitual bedtime, and sleep duration) and subjective sleep quality and sleep disturbance was examined using a general population sample of 3,810 adult Australian twin pairs, aged 17–88 years. Genetic differences accounted for at least 33% of the variance in sleep quality and sleep disturbance and 40% of the variance in sleep pattern. There was no evidence for a decline in the importance of genetic predisposition with age. Short-term environmental fluctuations accounted for as much as 30% of the variance, and more stable nonfamilial environmental effects accounted for the remainder. No effect of shared family environment on sleep characteristics was found.

Heath AC see **Silberg JL**
Heaton DA see **Beer SF**
Hedman I see **Ahlmén J**
Hedon B see **Boulot P**
Henderson AS see **Mackinnon AJ**
Henderson D see **Petterson B**
Henry CJ, Piggott SM, Rees DG, Priestley L, Sykes B: Basal metabolic rate in monozygotic and dizygotic twins. Eur J Clin Nutr 1990 Oct; 44(10):717–23
The basal metabolic rate (BMR) was determined in 14 pairs of monozygotic (MZ; 11 females, 3 males) and 12 pairs of dizygotic (DZ; 10 females, 2 males) twins, with mean ages of 22.7 and 26 years. Zygosity was confirmed using DNA fingerprinting. When BMR was expressed as kJ/d, kJ/kg/d and kJ/kg FFM/d significant intra-class correlation coefficients were observed in the MZ twins of 0.82, 0.79 and 0.85, respectively. The DZ twins showed much lower intra-class correlations coefficients of 0.1, 0.07 and –0.04. Although the results of the study suggest a likely genetic component to the variation in BMR, they should be interpreted with caution as heritability estimates vary with the method of calculation. These will be critically discussed in the paper.

Herlicoviez M see **Piton S**
Hernádi L, Megyaszai L, Farkas M: [Prenatal ultrasonic diagnosis of a dicephalic fetus in the 18th week of pregnancy] Orv Hetil 1990 Sep 2; 131(35):1921–3 (Eng. Abstr.) **(Hun)**
The authors report a case of conjoined twins (dicephalus) detected antenataly in the 18–th week of pregnancy by routine ultrasound screening. The pregnancy was terminated because this congenital malformatión is incompatible with extrauterin life. The embriopathological examination confirmed the prenatal diagnosis. The ultrasonographic criteria are discussed and the importance of early diagnosis is stressed.

Hernández González J, González de Dios J, Díaz Fernández MC, Hierro Llanillo L, de la Vega Bueno A, Camarena Grande C, Jara Vega P: [Crigler-Najjar syndrome type II occurring in twins]
An Esp Pediatr 1990 Oct;33(4):376–80 (20 ref.) **(Spa)**

Heston LL see **Pickens RW**
Hickok DE see **Mahony BS**
Hierro Llanillo L see **Hernández González J**
Hill WC see **Fleming AD**
Hillemanns HG see **Runge HM**
Hirsch B: Cytogenetic investigations of DNA damage in aging: a twin study. Basic Life Sci 1990;53:303–13
Hirsch JH see **Mahony BS**
Hitschold T see **Queck M**
Hodes DS see **Barzilai A**
Holzman IR see **Alvarez M**
Honore RL see **Weston PJ**
Hopper JL: Twin registry [letter]
Aust Fam Physician 1990 Sep;19(9):1452
Hopper JL, Carlin JB, Macaskill GT, Derrick PL, Flander LB, Giles GG: Incorporation of twins in the regressive logistic model for pedigree disease data. Acta Genet Med Gemellol (Roma) 1990; 39(2):173–80
Segregation and twin disease concordance analyses have assumed a theoretical underlying liability following a multivariate normal distribution. For reasons of computation, of incorporation of measured explanatory variables, and of testing of fit and assumptions, newer analytical methods are being developed. The regressive logistic model (RLM) relies on expressing the pedigree likelihood as a product of conditional probabilities, one for each individual. In addition to logistic regression modelling of measured epidemiological variables on disease prevalence, there is modelling of vertical transmission, of transmission of unmeasured genotypes and of sibship environment. This paper discusses methods for the analysis of binary traits in twins and in pedigrees. Some extensions to the RLM for pedigrees which include twins are proposed. These enable exploration of twin concordance in the context of the twins' common parenthood, the sibship similarities within the family, and the twins' similarity in age, sex, genes and environment.

Hopper JL, Hannah MC, Macaskill GT, Mathews JD: Twin concordance for a binary trait: III. A bivariate analysis of hay fever and asthma.
Genet Epidemiol 1990;7(4):277–89
Self-reported histories of hay fever and asthma were obtained from 3,808 pairs of adult twins 18 years and over registered with the Australian National Health Medical Research Council Twin Registry (1232 MZF, 567 MZM, 751 DZF, 352 DZM, 906 DZO). The prevalence of hay fever and asthma was 0.32 and 0.13, respectively, with little variation with zygosity, sex, and age. The associations between twin pairs for these two traits were analysed, under the assumption of constant prevalences, as a special case of a log-linear model for binary traits in pedigrees using the statistical package GLIM. The model assumption that there are no second- or higher-order interactions was tested in the 2 X 2 X 2 X 2 table of twin by disease outcomes without revealing strong evidence of departure, even in this large data set. The log-linear modelling showed that only three first-order interactions, namely 1) between hay fever in a twin pair, 2) asthma in a twin pair, and 3) hay fever and asthma in the same twin, were necessary to describe the data. The first two interaction terms were significantly larger in identical pairs; the third was independent of zygosity. Under this parsimonious model, there was a significant difference between identical and fraternal pairs in marginal correlation, both in asthma and hay fever, and in the cross-correlation between hay fever in one twin and asthma in the other. This suggests that genetic factors are implicated in both hay fever and asthma and that some of these genetic factors are common (at least among a subgroup of individuals) to both traits.

Hopper JL see **Duffy DL**
Horgan J: Double trouble. When identical twins are not identical [news] Sci Am 1990 Dec;263(6):25, 28
Hovig T see **Orstavik KH**
Hurley V see **Kovacs GT**

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Hurley VA see **Steinberg LH**
Hutchins GM see **Perlman EJ**
Huter O see **Brezinka C**
Hutson RC see **Annan B**
Hutton RD see **Standen GR**
Hyatt AC see **Barzilai A**
Hyland K, Clayton PT: Aromatic amino acid decarboxylase deficiency in twins.
J Inherited Metab Dis 1990;13(3):301-4

I

Ikegawa S, Nakamura K, Kawai S, Nishino J: Blount's disease in a pair of identical twins.
Acta Orthop Scand 1990 Dec;61(6):582
Ironside W see **Munro JM**
Ives EJ see ***Weston PJ***

J

Jadro-Santel D see **Barisic N**
Jahoda MG see **Pijpers L**
Jakobi P see **Weissman A**
Jakubovic HR see **Katz AM**
James K see **Cropanzano R**
Jamison PL see **Meier RJ**
Jansen CA see **Schats R**
Jara Vega P see **Hernández González J**
Järnerot G see **Tysk C**
Järvinen P, Aho K: Fibromyalgia in a pair of identical twins [letter] Clin Exp Rheumatol 1990 Nov-Dec; 8(6):615-6
Jeanty P, Shah D, Roussis P: Single-needle insertion in twin amniocentesis. J Ultrasound Med 1990 Sep; 9(9):511-7
Amniocentesis in twin gestation is an uncommon event for most medical centers. The current technique used for this procedure includes two or more needle insertions and the introduction of dye into the first sac. A new approach that consists of a single insertion is proposed. The advantages of this alternate technique are that it requires only one insertion, it is a swifter procedure, it does not require the injection of dye, and it offers positive proof of tapping the two gestational sacs. Although this technique may have some potential risks, in our judgment the advantages outweight the potential risks, and this technique should be considered and its feasibility evaluated in cases of twin gestation requiring two-sac tapping.
Jeng CJ see **Chang TH**
Jiménez García JJ see **Beceiro Mosquera J**
Johansen TE, Blom GP: Absence of processus vaginalis in a stillborn twin with unilateral testicular retention.
Andrologia 1990 Jul-Aug;22(4):327-30
A one day old full term twin boy presented with an abdominal left testis and a scrotal right testis both of which had a normal histological appearance. A gubernaculum with normal macroanatomy and histology was found in the left inguinal canal but no processus vaginalis could be detected. Both of his brother's testes were normally descended. It is suggested that the abdominal position of the left testis was caused by a failing gubernacular reaction due to a local hormone insensitivity.
Johnston CJ see **Gleeson C**
Johnston DI see **Trounce JQ**
Jones JS, Newman RB, Miller MC: Cross-sectional analysis of triplet birth weight.
Am J Obstet Gynecol 1991 Jan;164(1 Pt 1):135-40
Parameters of fetal growth in triplet gestations are poorly studied and controversial. A cross-sectional analysis of triplet birth weight was performed to elucidate fetal growth patterns. Birth weight and gestational age data were analyzed on 580 infants in 196 triplet sets (eight stillborn infants excluded) between 1985 and 1988. Ovulation induction was used in approximately one half the gestations and early obstetric and ultrasonographic dating was available in all pregnancies. The mean triplet set and individual triplet weights versus gestational age were calculated with distinctly linear growth displayed between 22 to 38 weeks' gestation. Mean intratriplet differences at all gestational ages were determined. A comparison of singleton and triplet growth curves was constructed to show the distinct growth characteristics of triplets.
Jouet JP see **Facon T**
Jul C see **Bejar JM**
Juntunen J see **Hänninen H**
Jusic A see **Barisic N**

K

Kaplan LC see **Keusch CF**
Kaprio J see **Rose RJ**
Kaprio J see **Turula M**
Kasahara M see **Niwa K**
Katz AM, Rosenthal D, Jakubovic HR, Pai RK, Quinonez GE, Sauder DN: Langerhans cell histiocytosis in monozygotic twins.
J Am Acad Dermatol 1991 Jan;24(1):32-7
Langerhans cells histiocytosis, one of a group of histiocytosis syndromes characterized by Langerhans cell infiltration, has many clinical manifestations. In the past 30 years, numerous cases of presumed Letterer-Siwe disease, the acute multiorgan variant, have been reported in twins and siblings. Only recently has the Histiocyte Society established a criterion for a "definitive diagnosis" of Langerhans cell histiocytosis--the presence of Birbeck granules within the cells of the histiocytic infiltrate. We report the fatal outcome of Langerhans cell histiocytosis in monozygotic twin infants. There is no satisfactory explanation why Langerhans cell histiocytosis occurs concurrently in twins. We suggest that cytokines may provide an endogenous signal that triggers the pathologic proliferation of Langerhans cells.
Katz VL see **Watson WJ**
Kaufman SS see **Hart MH**
Kawai S see **Ikegawa S**
Kawasaki Y, Shimizu Y, Sasaki H: Epilepsy in autistic children: cases of monozygotic autistic twin with EEG abnormality. Jpn J Psychiatry Neurol 1990 Jun;44(2):358-9
Kendler KS see **Heath AC**
Kendler KS see **Silberg JL**
Kessel SS see **Kleinman JC**
Kessler R see **Silberg JL**
Keusch CF, Mulliken JB, Kaplan LC: Craniofacial anomalies in twins. Plast Reconstr Surg 1991 Jan; 87(1):16-23
Studies of twins provide insight into the relative contribution of genetic and environmental factors in the causality of structural anomalies. Thirty-five affected twin pairs were identified from a group of 1114 patients with congenital craniofacial deformities evaluated from 1972 to 1989.
Forty-three of these 70 twins exhibited one or more craniofacial anomalies; these were analyzed for dysmorphic characteristics, zygosity, concordance, and family history. The anomalies were categorized into two groups: malformations and deformations.

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The malformations (n = 36) included hemifacial microsomia (n = 10), cleft lip and palate (n = 8), cleft palate (n = 4), rare facial cleft (n = 2), craniosynostosis (n = 2), Binder syndrome (n = 2), Treacher Collins syndrome (n = 2), craniopagus (n = 2), CHARGE association (n = 1), frontonasal dysplasia (n = 2), and constricted ears (n = 1). The deformations (n = 7) included plagiocephaly (n = 5), hemifacial hypoplasia (n = 1), and micrognathia (n = 1). Twenty-one monozygotic and 14 dizygotic twin pairs were identified. The concordance rate was 33 percent for monozygotic twins and 7 percent for dizygotic twins.(ABSTRACT TRUNCATED AT 250 WORDS)

Key J see **Rodin A**

Kiely EM see **Spitz L**

Kiely JL: The epidemiology of perinatal mortality in multiple births. Bull N Y Acad Med 1990 Nov-Dec; 66(6):618-37

The epidemiology of perinatal mortality in multiple pregnancies was investigated from data on 16,831 multiple births from New York City's computerized vital records for 1978-1984. Twins had a sixfold higher rate of neonatal death and a threefold higher rate of fetal death during labor than had singleton infants. Much of this excess mortality can be explained by the lower birthweight distribution in twins: between 1,001 and 2,500 grams twins had birthweight-specific death rates equivalent to or substantially less than singletons. However, in infants of normal birthweights, twins had more than three times the mortality risk of singletons. For twins in vertex presentation between 1,001 and 3,000 grams, cesarean section did not appreciably reduce neonatal mortality risk. For twins in vertex presentation who weighted more than 3,000 grams the neonatal mortality rate was more than four times higher in vaginal deliveries than in cesarean sections (exact p = 0.034). Efforts to prevent intrapartum and neonatal mortality in multiple births should aim at reducing the incidence of low birthweight twins. More research is needed on the etiology of perinatal problems in normal birthweight twins (greater than or equal to 2,501 grams), especially on the effects of different modes of delivery.

Kiely ME see **Lal S**

Kinoshita K see **Asami N**

Kirchler H see **Brezinka C**

Kiss E see **Pollmächer T**

Kleinman GE see **Good MC**

Kleinman JC, Fowler MG, Kessel SS: Comparison of infant mortality among twins and singletons: United States 1960 and 1983. Am J Epidemiol 1991 Jan 15; 133(2):133-43

Infant mortality among US black and white twins and singletons was compared for 1960 and 1983 using the Linked Birth/Infant Death Data Sets from the National Center for Health Statistics. Both twin and singleton infant mortality rates showed impressive declines since 1960 but almost all of the improvement in survival for both twins and singletons was related to increased birth weight-specific survival rather than improved birth weight distribution. One-half of white twins and two-thirds of black twins weighed less than 2,500 g at birth, and 9% of white twin births and 16% of black twin births were in the very low (less than 1,500g) birth weight category. In 1983, twin infant mortality rates were still four to five times that of singletons. However, twins had a survival advantage in the 1,250-3,000 g range, which persisted after adjustment for gestational age. Cause-specific mortality among twins was considerably higher for every major cause of death: twin mortality risks due to newborn respiratory disease, maternal causes, neonatal hemorrhage, and short gestation/low birth weight were six to 15 times that of singletons. The lowest twin-to-singleton mortality ratios observed were for congenital anomalies and sudden infant death syndrome with relative risks twice that of singletons. The data underscore the need to develop effective strategies to decrease infant mortality among twins.

Kloster R see **Orstavik KH**

Kniazev IuA, Sen'kevich OA, Bespalova VA, Saliaeva MV: [Course of the early neonatal period and hormonal indicators in newborn infants from multiple pregnancies (twins)] Pediatriia 1990; (10):24-9 (Eng. Abstr.) **(Rus)**

Overall 22 neonates born due to plural pregnancy (twins, gestation 38-40 weeks) were examined for the clinical characteristics of the early neonatal period. Blood samples were analyzed, measurements were made of blood serum cortisol, immunoreactive insulin (IRI) and somatotropic hormone (STH). The findings were correlated to those obtained in controls, namely in 57 healthy neonates born due to single pregnancy. Alterations in the IRI content in twins turned out similar to those obtained by the authors in neonates with intrauterine hypotrophy. Cortisol was discovered to fall within the first day of life. The mean STH in twin children was much lower. The data obtained enable the neonate twins to be classified with the group at risk for development of hormonal abnormalities during the neonatal period.

Kobayashi N see **Tanimura M**

Koch RM see **Gregory KE**

Kohn G see **Shamir R**

Kolatat T see **Still K**

Kometani K see **Niwa K**

Kono T, Tsunoda Y, Nakahara T: Production of identical twin and triplet mice by nuclear transplantation. J Exp Zool 1991 Feb;257(2):214-9

Transplantation of a single nucleus from two- or four-cell embryos into one of the enucleated blastomeres of a two-cell embryo resulted in successful production of identical triplet and twin mice. The proportion of reconstituted embryos that developed in blastocysts was 71% (84/118) when four-cell embryos were used as donors of nuclei; 10 sets of quadruplet and nine sets each of triplet and twin blastocysts were obtained by this technique. After transfer to recipients, 30% (18/61) developed to term, and one set of identical triplet and four sets of identical twin mice were obtained. When two-cell embryos were used as donors of nuclei, 79 (95%) sets of twin embryos developed to blastocysts. Of 38 twin blastocysts transferred to recipients, 21 sets (55%) developed to term as identical twin mice. These results demonstrate that the enucleated two-cell embryo develops in vitro after transfer of a nucleus from a two- or four-cell embryo and the resultant blastocyst has high potential for development to term after transfer to a recipient.

Kopecký A see **Lebl J**

Koskenvuo M see **Hänninen H**

Koskenvuo M see **Turula M**

Kovacs GT, Shekleton P, Hurley V, Leoni M: A case of multiple (5) ectopic pregnancies, ultimately resulting in a twin pregnancy after in vitro fertilization and embryo transfer.

Aust N Z J Obstet Gynaecol 1990 Aug;30(3):272-4

The history of a woman with anovulation, tubal disease and 5 ectopic pregnancies is presented. She finally succeeded in having a family by conceiving twins in her eighth attempt at in vitro fertilization.

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Kovar IZ see **Saini J**
Kruger R see **Hart MH**
Kumar A, Schapiro MB, Grady CL, Matocha MF, Haxby JV, Moore AM, Luxenberg JS, St George-Hyslop PH, Robinette CD, Ball MJ, et al: Anatomic, metabolic, neuropsychological, and molecular genetic studies of three pairs of identical twins discordant for dementia of the Alzheimer's type. Arch Neurol 1991 Feb;48(2):160–8
Three pairs of twins, each with proved monozygosity, were shown to be discordant for dementia of the Alzheimer's type and to have remained discordant for periods of 8 to 11 years. Dementia of the Alzheimer's type was demonstrated by history; serial clinical examinations; serial measurements of cerebral glucose utilization using positron emission tomography and of cerebral ventricular volumes and of rates of change of volumes using quantitative computed tomography; and by serial neuropsychological tests. The results of each of these measures showed no evidence of clinical abnormality in any unaffected twin. DNA markers from the proximal long arm of chromosome 21 did not distinguish between the affected and the unaffected member of any pair of identical twins. Family pedigrees were negative for Alzheimer's disease. The results suggest that environmental or other nongenetic factors contribute to Alzheimer's disease in discordant monozygotic twins, or that some cases arise by a postzygotic somatic mutation.
Kuroda M see **Niwa K**
Kustermann A see **Sanchioni L**

L

Laffargue F see **Boulot P**
Lahey JM see **Vestal KP**
Lal S, Gauthier S, Wood PL, Kiely ME, Waserman J, Vasavan Nair NP: Red cell choline in spasmodic torticollis and in a monozygotic twin pair with Tourette's syndrome.
Prog Neuropsychopharmacol Biol Psychiatry 1990; 14(5):785–9
1. Alterations in cholinergic function may play a role in the pathophysiology of idiopathic spasmodic torticollis (ST) and Gilles de la Tourette's syndrome (GTS). We measured red blood cell (RBC) choline in (i) ST (n = 24) and paired controls matched for age and gender (ii) a 20-year old pair of monozygotic twins with GTS, one of whom was moderately affected (CV) and the other virtually recovered (DV) (iii) both parents of the GTS twins, using gas chromatography–mass spectrometry. 2. RBC choline decreased with age in control men (r = -0.76; p less than 0.01) but not in control women. 3. RBC choline (nmol/ml) was higher in control men (18.3 +/- 4.8, X +/- SD) vs control women (13.1 +/- 4.3) (p = 0.025). 4. There was no significant difference in RBC choline (nmol/ml) between ST patients (16.6 +/- 5.0) and controls (15.5 +/- 5.2). 5. The RBC choline values (nmol/ml) in the twins and parents were: 56.6 (CV), 58.3 (DV), 89.8 (father), 38.3 (mother) and in the controls (age 20–24) (n = 5) 18.2 +/- 3.6. 6. These data suggest (i) RBC choline is affected by age and gender (ii) RBC choline is unchanged in ST (iii) the regulation of RBC choline is under genetic control (iv) elevated RBC choline is not a state marker for GTS.
Lan CC see **Chang TH**
Lang MJ, Aughton DJ, Riggs TW, Milad MP, Biesecker LG: Dizygotic twins concordant for truncus arteriosus. Clin Genet 1991 Jan;39(1):75–9
Persistent truncus arteriosus (TA) is an uncommon congenital cardiovascular malformation, which comprises between 0.4% and 4% of all congenital heart defects. Occurrence of TA in siblings has been reported infrequently. Twins concordant for isolated TA appear to have been reported only once previously. In this paper, we describe dizygotic twin females who were concordant for isolated TA.
Lange AL, Fischbein S: Qualitative and quantitative aspects on mathematics achievement in MZ and DZ twins. Acta Genet Med Gemellol (Roma) 1990; 39(2):221–30
Mathematics achievement test results have been collected for 22 MZ and 24 DZ same-sex twin pairs in the Swedish compulsory school. The twins were approximately 11–13 years of age and attended grades 4, 5, or 6. The twin pairs were part of a larger collaborative study between Israel and Sweden (the KAM-project). Teachers were asked how they planned and evaluated their work in the subjects Swedish and Mathematics. In addition to this, results for the twins on Maths tests given by the teachers in their regular work were collected. These tests were thus used by the teachers as an instrument to evaluate the educational process. Intrapair similarity for MZ and DZ twins has been compared for qualitative and quantitative aspects of the Maths tests. Different tests were used by the teachers but the same criteria have been used in the comparison. MZ twins are somewhat more similar than DZ twins for both the qualitative and quantitative aspects. Only one quantitative aspects, however, percentage of correct answers, shows a significant difference between the twin categories. A comparison was also made of intrapair similarity in classes, where the teachers differed according to planning and evaluation of their education. Irrespective of that, the MZ twins seemed to be more similar than the DZ twins in number of correct answers on the Maths tests. Educational implications are discussed.
Langlotz H see **Nolan R**
Lasker MR see **Alvarez M**
Lavery JP, Gadwood KA: Amniography for confirming the diagnosis of monoamniotic twinning. A case report. J Reprod Med 1990 Sep;35(9):911–4
In a case of monoamniotic twinning, amniography was used to confirm the diagnosis. This modality, old but now employed infrequently, helps establish the absence of a dividing membrane and complements currently used ultrasound diagnostic methods. A successful outcome resulted. Amniography should be considered a useful diagnostic modality in the management of twin gestations and not be relegated to the past.
Lawler R see **Fleming AD**
Lebl J, Zemková D, Kopecký A, Zikán J, Marček P: [The effect of increased production of androgens on the development of body build morphology. Case report of an androgen-active tumor in a monozygotic twin] Cesk Pediatr 1990 Jul; 45(7):408–10 (Eng. Abstr.) **(Cze)**
The authors present an account on monozygotic twins where in one girl an androgen-active adenoma of the adrenal cortex during early puberty led to the development of the Morphogram of Body Build (Case-report of throughout the period of investigation intact from the hormonal aspect. Four years after resection of the tumour endocrine and anthropometric characteristics of the two sisters were evaluated: the hormonal status of both is normal, the somatic differences are manifested by a different final height, biacromial width and chest circumference. The results are conceived as a

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precedent for evaluation of risks associated with administration of anabolic steroids in children.

Lees GM see **Weston PJ**
Leoni M see **Kovacs GT**
Lepelley P see **Facon T**
Leslie RD see **Beer SF**
Levene MI: Assisted reproduction and its implications for paediatrics. Arch Dis Child 1991 Jan;66(1 Spec No):1-3 (18 ref.)
Levine MG see **Fleming AD**
Lewis K see **Samn M**
Liberto L see **Sherer DM**
Lindberg E see **Tysk C**
Linder J see **Hart MH**
Ling F see **Nolan R**
Lippestad C see **Orstavik KH**
Lipschitz R see **Drummond G**
Lloyd BW see **Trounce JQ**
Logue JP, Slevin NJ: Nasoethmoidal adenocarcinoma in woodworking twins.
Clin Oncol (R Coll Radiol) 1990 Sep;2(5):298-9
The occurrence of nasoethmoidal adenocarcinoma in twins has not previously been reported. This paper describes the concurrent presentation in twins over 50 years after their first occupational exposure to hardwoods. There was a remarkable similarity in presentation.
López Alonso R see **Beceiro Mosquera J**
López Barrío AM see **Rufo Campos M**
Los FJ see **Pijpers L**
Lowe J see **Trounce JQ**
Luciano AA see **Frishman GN**
Luthy DA see **Mahony BS**
Luxenberg JS see **Kumar A**
Lykken DT, McGue M, Bouchard TJ Jr, Tellegen A: Does contact lead to similarity or similarity to contact? Behav Genet 1990 Sep;20(5):547-61
Evidence from the Finnish Twin Registry (e.g., Rose et al., 1988) shows that adult monozygotic (MZ) twins are more similar, within pairs, in personality if the cotwins are presently cohabiting or in frequent contact than if they are seldom in contact. Results of a follow-up study led Kaprio et al. (1990) to conclude that "changes in social contact between monozygotic cotwins precede (and causally contribute to) changes in their intrapair similarity" (p. 9). If true, this conclusion has important theoretical implications, e.g., many heritability estimates would have to be revised downward. We adduce evidence suggesting that similarity leads to contact, rather than the other way around. Low correlations between twins' frequency of contact and their absolute within-pair difference on all traits thus far studied indicates that, whichever the direction of causality, the relationship between MZ within-pair similarity and their frequency of contact is very weak.
Lykken DT see **Bouchard TJ**
Lykken DT see **Bouchard TJ Jr**
Lykken DT see **Pickens RW**
Lynn R, Hattori K: The heritability of intelligence in Japan. Behav Genet 1990 Jul;20(4):545-6
Japanese data for 543 monozygotic (MZ) twins and 134 dizygotic (DZ) twins tested for intelligence at the age of 12 give correlation coefficients of .782 and .491, respectively, indicating a heritability of .582. Heavier twins at birth have significantly higher IQs at the age of 12, suggesting that prenatal nutrition exerts a significant effect on intelligence.
Lysikiewicz A see **Schlessel JS**

M

McArdle JJ, Goldsmith HH: Alternative common factor models for multivariate biometric analyses. Behav Genet 1990 Sep;20(5):569-608
In prior research we have shown how linear structural equation models and computer programs (e.g., LISREL) may be simply and directly used to provide alternatives for the traditional biometric twin design. We use structural equations and path models to define biometric group differences, we write traditional common-factor models in the same way, and then we take a detailed look at some alternative multivariate and biometric models. We contrast the biometric-factors covariance structure approach used by Loehlin and Vandenberg (1968), Martin and Eaves (1977), and others with the psychometric-factors approach used by McArdle et al. (1980) and others. We use the multivariate primary mental abilities data on monozygotic (MZ) and dizygotic (DZ) twins from Loehlin and Vandenberg (1968) to detail fundamental differences in model specification and results. We extend both multivariate biometric approaches using exploratory and confirmatory multiple-factor models. These comparisons show that each alternative multivariate methodology has useful features for empirical applications.
Macaskill GT see **Hopper JL**
McGue M see **Bouchard TJ**
McGue M see **Bouchard TJ Jr**
McGue M see **Lykken DT**
McGue M see **Pickens RW**
Mackay D see **Drummond G**
Mackinnon AJ, Henderson AS, Andrews G: Genetic and environmental determinants of the lability of trait neuroticism and the symptoms of anxiety and depression. Psychol Med 1990 Aug;20(3):581-90
A genetic analysis was conducted on trait neuroticism and symptoms of anxiety and depression in a five-wave study of 462 twin pairs. Models that assessed the relative importance of genetic and environmental factors to the lability (within-individual variability over time) of these measures were fitted to the data. Previous results concerning the substantial genetic involvement in the level of neuroticism and symptoms were confirmed. However, it was found that neither genes nor the shared environment of the twins was a significant cause of lability of these measures. An attempt was therefore made to identify aspects of individuals' environments that might be responsible for lability of neuroticism and symptoms. Adverse life events were found to predict variability of symptoms, but not of neuroticism. The availability of close social ties or having affectionless control in childhood did not contribute to lability.
Madjar H see **Prömpeler HJ**
Mady SA see **Farag TI**
Magruder-Habib K see **Breitner JC**
Mahony BS, Petty CN, Nyberg DA, Luthy DA, Hickok DE, Hirsch JH: The "stuck twin" phenomenon: ultrasonographic findings, pregnancy outcome, and management with serial amniocenteses.
Am J Obstet Gynecol 1990 Nov;163(5 Pt 1):1513-22
Thirteen consecutive twin pregnancies affected by the "stuck twin" phenomenon were reviewed to determine the potential benefit of serial amniocenteses. The fetal survival rate for the eight pregnancies that underwent serial amniocenteses was 69% (11 of 16 fetuses). This is significantly improved compared with a fetal survival rate of 20% among

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the five preceding pregnancies managed without serial amniocenteses at the same institution ($p = 0.01$). It is also markedly improved compared with a combined fetal survival rate of 16% among 48 previously reported pregnancies with the stuck twin phenomenon managed without serial amniocenteses (p less than 0.0001). Survival correlated with the absence of concomitant pregnancy complications (i.e., maternal hypertension or intractable labor) and with the absence of severe fetal structural abnormalities. Procedural complications occurred in three of eight pregnancies (37.5%) managed with serial amniocenteses and was attributed as a cause of fetal death in one case. Two of 11 survivors (18%) had complications after serial amniocenteses including brain infarction and renal tubular necrosis. Serial amniocenteses may significantly improve the survival rate of twin gestations affected by the stuck twin phenomenon but may be associated with complications among survivors.

Makinde OO, Ogunniyi SO: Bilateral tubal and twin pregnancies in Ile-Ife, Nigeria.
Int J Gynaecol Obstet 1990 Dec;33(4):365-7
Three cases of unilateral tubal twin pregnancies and four cases of simultaneous bilateral tubal pregnancy recorded in a Nigerian University Teaching Hospital were reviewed. The incidences were 1 in 68 and 1 in 51 ectopic pregnancies respectively. High twinning rates within the environment and tubal damage from pelvic infections were considered as possible etiologic factors.

Mandsager NT see **Fleming AD**
Manley CB see **Shapiro E**
Mannessier L see **Facon T**
Marček P see **Lebl J**
Marcoux GS see **Matthews P**
Mares P see **Boulot P**
Marie E see **Piton S**

Marini R, Temple K, Chitty L, Genet S, Baraitser M: Pitfalls in counselling: the craniosynostoses.
J Med Genet 1991 Feb;28(2):117-21
We describe three families to highlight the variability of expression and penetrance that can occur in the craniosynostoses. In two of the families, gene carriers were only identified in retrospect by looking at photographs of other family members. In the third family, identical twins were initially thought to be discordant for sagittal craniosynostosis until early skull x rays were examined and both were found to be affected. The dilemmas faced when counselling these families are discussed.

Markin RS see **Hart MH**
Martin NG see **Duffy DL**
Martin NG see **Heath AC**

Martius G: [Comments on the survey in "Zentralblatt für Gynäkologie" 111 (1989) issue 20, p. 1390 on delivery of the second twin] Zentralbl Gynakol 1990; 112(17):1125-7 **(Ger)**

Mathews JD see **Duffy DL**
Mathews JD see **Hopper JL**
Mathieson J see **Rísquez F**
Matocha MF see **Kumar A**

Matsui H, Tsuji H, Terahata N: Juvenile lumbar herniated nucleus pulposus in monozygotic twins.
Spine 1990 Nov;15(11):1228-30

Matsui I see **Tanimura M**

Matthews P, Quinn D, Marcoux GS, Falkenberg K: Fluoxetine and neuroleptic synergistic effects [letter]
J Am Acad Child Adolesc Psychiatry 1991 Jan; 30(1):154-5

Matulich EM see **Dickey RP**
Maunoury-Lefebvre C see **Vaksmann S**
Meaney FJ see **Christian JC**
Meaney FJ see **Selby JV**
Megyaszai L see **Hernádi L**

Meier RJ, Jamison PL: Assortative mating in monozygotic twins. Soc Biol 1990 Spring-Summer; 37(1-2):128-36
This study investigated assortative mating in a series of monozygotic twins in terms of anthropometric variables. Initially the twins were analyzed independent of each other, and the results showed fairly clear homogamy among female MZ twins and their spouses, after correcting for age. Further, when stature was partialled out, several anthropometric measures remained significantly correlated. The results for male MZ twins and their spouses were not nearly so clear-cut. A second analysis treated the co-twins together, and once again, the female MZ sets tended to show assortative mate choice for stature while the male MZ twins/spouses were not significantly correlated. A follow-up analysis investigated whether husbands of the female twins were correlated to each other, and negative results were found for all of the 46 anthropometric variables. An apparent contradiction was resolved in the case of stature by regressing spouse stature against that of the co-twins. It was found that although each of the twins was assortatively mating, one member of the twin set consistently married a taller husband, but the difference was not constant. This had the effect of producing divergent regression lines.

Mele L, Farias M, Nanni S, Ansaldi E, Troielli F, Scaglione L, Berni P, Pino G: [Changes in feeding behavior in anorexic individuals. Description of 2 clinical cases] Minerva Med 1990 Jul-Aug;81(7-8 Suppl):27-34 (Eng. Abstr.) **(Ita)**
The change in the eating behaviour of anorexic individuals has been studied with particular attention to the case of two biovular heterozygotic twins. It is observed that dietetic treatment backed by careful psychiatric therapy is a decisive factor in the resolution of the pathology.

Metlay LA see **Sherer DM**
Metzker A see **Shamir R**
Meulyzer P see **Van den Veyver IB**
Meyer JM see **Silberg JL**
Milad MP see **Lang MJ**
Mildwidsky A see **Younis JS**
Miller MC see **Jones JS**
Miyahara S see **Asami N**
Mizoguchi Y see **Niwa K**
Mohr J see **Nielsen LS**

Moilanen I, Rantakallio P: Living habits and personality development of adolescent twins: a longitudinal follow-up study in a birth cohort from pregnancy to adolescence.
Acta Genet Med Gemellol (Roma) 1990; 39(2):215-20
The living habits of 289 twins in a one-year birth cohort beginning during pregnancy and followed up to adolescence were compared with those of 11,623 singletons and two sets of controls matched either by maternal factors and place of residence only or by these and perinatal morbidity, all from the same cohort. The twins went in for sports more often than the singletons or any kind of controls. A nonsignificant trend was found indicating that twins smoked less often than their matched controls. The twins also used alcohol less often than their controls. The intrapair similarities of twins were higher than the similarities of twins and either type of controls in all four variables tested: sports, smoking, use of alcohol, as well as having been drunk.

Monnier JC see **Vaksmann S**

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Moore AM see **Kumar A**
Morel P see **Facon T**
Morgan JB see **Saini J**
Morikawa S see **Niwa K**
Morotti R see **Sanchioni L**
Mühlbauer W: Plastic surgery on identical twins.
Ann Plast Surg 1991 Jan;26(1):30-9
Four pairs of identical female twins have undergone a variety of plastic surgery procedures, including rhinoplasties, rhytidectomies, augmentation mammaplasties, and trochanteric liposuction. Performing plastic surgery on identical twins implies special considerations: the extent of preoperative phenotypic identity, the behavior of each twin (dominant or recessive), the twins' personal interdependence and individual expectations, the operative strategy (simultaneous versus sequential operations), the eventual complications, and the extent to which the operative results and postoperative appearance are identical. In general, counseling, operative technique, and responsibility for producing good results place greater demands on surgeons when performing plastic surgery on identical twins than on singletons. Still, the results have been gratifying.
Mulliken JB see **Keusch CF**
Munro JM, Ironside W, Smith GC: Psychiatric morbidity in parents of twins born after in vitro fertilization (IVF) techniques.
J In Vitro Fert Embryo Transf 1990 Dec;7(6):332-6
A matched comparison was made of 158 parents of preschool twins conceived under three conditions; spontaneously, after infertility workup including drug treatment, and after in vitro fertilization (IVF). Indications of probable psychiatric caseness were obtained using the 60-item General Health Questionnaire. IVF parents' mean scores were similar to those of parents who spontaneously conceived, and both were significantly greater than those who conceived after an infertility workup. Mothers and fathers overall had similar scores, contrary to previous community findings of higher rates of psychiatric disorder among females. The prevalence of probable psychiatric caseness was less for IVF and spontaneously conceiving mothers, but greater for the respective fathers, than in an English community sample and greater than in an Australian community sample. The extent to which the self-reports of current psychiatric disturbance can be ascribed to any preexisting psychopathology is unknown. Indications of increased psychiatric disturbance found in this investigation warrant further prospective investigations, especially of the difficulties of rearing twins when couples are vulnerable in having this degree of psychiatric morbidity.
Murphy EA see **Breitner JC**

N

Nagata T see **Niwa K**
al-Nagdy K see **Farag TI**
Nakahara T see **Kono T**
Nakamura K see **Ikegawa S**
Nanni S see **Mele L**
Nathan M see **Fischbein S**
Nathrath W see **Nerlich A**
Nawrocki MN see **Sherer DM**
Neale MC see **Silberg JL**
Neilson JP see **Crowther CA**
Nerlich A, Wisser J, Draeger A, Nathrath W, Remberger K: Human acardiac anomaly: a report of three cases.
Eur J Obstet Gynecol Reprod Biol 1991 Jan 4; 38(1):79-85
We report on three cases of acardia, all of which had to be classified as acardius anceps. The degree of cardiac malformation ranged between a completely missing heart and a malrotation of a relatively well-developed heart. One fetus showed an intermediate form of cardiac malformation with a hypoplastic cor triloculare. Our findings suggest that the defect in cardiac development may take place at different times in early embryogenesis, resulting in differing degrees of cardiac malformation.
Neuman WL see **Perlman EJ**
Newell SJ see **Peters H**
Newman B see **Selby JV**
Newman RB see **Jones JS**
Ngô GH see **Nguyen VH**
Nguyen VH, Vu LC, Ngô GH: [Urological problems in separating conjoined twins. Ischiopagus tripus type] J Urol (Paris) 1990;96(4):231-5 **(Fre)**
Nielsen LS, Eiberg H, Fenger K, Mohr J: An MHC (HLA-A, -B, C2, BF, HLA-DR, GLO1) haplotype study of 497 Danish normal families with 1970 children including 97 twin pairs. Tissue Antigens 1990 Oct;36(4):141-8
Extended MHC haplotypes comprising HLA-A, -B, -DR, C2, BF and GLO1 loci observed in the parents of 497 Danish normal families are presented, with particular regard to the haplotypes that include BF variants or the C2*2 allele. The known association of HLA-B35, -DR1 with both -A3 and -A11 appeared to depend upon the BF type: HLA-B35, BF*S, -DR1 is strongly associated with -A11, whereas -B35,BF*F,-DR1 is strongly associated with -A3. Further, in the present material DZ twins of the same sex shared HLA-haplotypes more often than did twin pairs of different sex.
Nishino J see **Ikegawa S**
Niwa K, Watanabe A, Morikawa S, Chihara H, Nagata T, Kometani K, Mizoguchi Y, Kuroda M, Kasahara M, Sumi T: [A case of fetal conjoined twins diagnosed prenatally by ultrasound]
Nippon Sanka Fujinka Gakkai Zasshi 1990 Oct; 42(10):1345-8 **(Jpn)**
Nolan R, Ling F, Langlotz H, Fletcher A: Cephalothoracopagus janiceps disymmetros twinning. J Ultrasound Med 1990 Oct;9(10):593-8
Norton JA Jr see **Christian JC**
Nowak J see **Allgulander C**
Nyberg DA see **Mahony BS**
Nzeh DA: The "string-sign" in sonographic diagnosis of diamniotic twin pregnancy. Cent Afr J Med 1990 Feb;36(2):52-4
A consistent echogenic line, the "String-sign" resulting from opposed amniotic membranes in diamniotic twin pregnancy as seen at sonography is reported. The string sign is especially useful in the detection of unsuspected twinning in late pregnancy and it should be taken as a definite pointer to multiple pregnancy whenever its presence is established at any stage in pregnancy.

O

Obhrai M see **Peters H**
Obhrai MS see **Samra JS**
Obremski K see **Rose RJ**
Ocón E see **Caballero P**
O'Connor RA, Gaughan B: Cesarean section for the birth of the second twin [letter; comment]

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Br J Obstet Gynaecol 1990 Oct;97(10):964

O'Donnell R see **Thomas PA**

Ogunniyi SO, Fasubaa OB, Faleyimu BL: Retained second twin: management and outcome in 108 cases. *Trop Doct 1990 Oct;20(4):178*

Ogunniyi SO see **Makinde OO**

Olar TT see **Dickey RP**

Orchard JA see **Standen GR**

Orstavik KH, Kloster R, Lippestad C, Rode L, Hovig T, Fuglseth KN: Emery–Dreifuss syndrome in three generations of females, including identical twins. Clin Genet 1990 Dec;38(6):447–51

Emery-Dreifuss syndrome is characterized by early contractures, slowly progressing muscle wasting and cardiomyopathy, often presenting as heart block. The syndrome is usually inherited as an X-linked recessive. We present a family with four affected females in three generations, including a pair of identical twins. All patients developed elbow contractures, scoliosis, and stiffness of the spine and neck from the age of about 10, with little progression in later years. The proband developed cardiomyopathy at the age of 45, whereas her mother died at 41 without a confirmed diagnosis of cardiomyopathy. The twin daughters of the proband had no unequivocal signs of cardiomyopathy at the age of 21 years. Early recognition of this syndrome is important because of the possible development of heart block.

Osmers R see **Pruggmayer M**

P

Pai RK see **Katz AM**

Panzini B see **Tysk C**

Papiernik E: Financing multiple births: a personal point of view [editorial] Int J Fertil 1990 Nov-Dec; 35(6):330–2

Papiernik E see **Benifla JL**

Papp Z see **Bolodár A**

Parmentier JL see **Piton S**

Patey-Savatier P see **Vaksmann S**

Pauker SG see **Georgeson S**

Peco NE see **Sherer DM**

Perkkiö M see **Riikonen P**

Perlman EJ, Stetten G, Tuck-Müller CM, Farber RA, Neuman WL, Blakemore KJ, Hutchins GM: Sexual discordance in monozygotic twins.

Am J Med Genet 1990 Dec;37(4):551–7 (42 ref.)

We report on monozygotic (MZ) twins who were discordant for phenotypic sex and Ullrich–Turner syndrome (UTS). The nonviable female was hydropic with cystic hygromas, ventricular septal defect, bicuspid aortic valve, polysplenia, intestinal malrotation, and small ovaries. The male was phenotypically normal. The monochorionic, diamniotic placenta had hydropic changes limited to the UTS infant's side. Skin samples from the infants and blood from their parents were obtained for cytogenetic and molecular analysis. Karyotypes of the twins were 45,X and 46,XY. Quinacrine polymorphisms on 7 chromosomes and RFLP analysis at 8 loci showed complete identity. MZ twins discordant for phenotypic sex have been described previously. Most of these show evidence of mosaicism in a 45,X patient with a normal 46,XY cell line, and a normal 46,XY male. While the issue of mosaicism in our case cannot be fully resolved, no mosaicism was found in 50 cells analyzed cytogenetically from each culture or by PCR analysis of a Y-specific sequence. The twins probably originated from either postzygotic nondisjunction or anaphase lag, followed or accompanied by twinning. The discordant placental morphology suggests an embryonic origin of at least part of the placental mesenchymal core.

Pesarrodona A see **Borrell A**

Peters H, Newell SJ, Obhrai M: Impact of assisted reproduction techniques on neonatal care [letter] Lancet 1991 Mar 30;337(8744):797

Petterson B, Stanley F, Henderson D: Cerebral palsy in multiple births in Western Australia: genetic aspects. Am J Med Genet 1990 Nov;37(3):346–51 (27 ref.)

A study of cerebral palsy in multiple births was undertaken to test genetic involvement and assess the impact of the special conditions of pregnancy and parturition in these cases. Complete ascertainment of cerebral palsy in multiple gestations that occurred in Western Australia between 1956 and 1985 was obtained from the Western Australian Cerebral Palsy Register. There were 74 twins and 5 triplets. Data on sex, birth order, motor handicap, outcome in co-twins and triplets, zygosity, and pedigree information was obtained from the Register, hospital records, and, where possible, by interview of the parent(s) of the propositi. There was a significantly higher ($P = 0.0026$) concordance rate in MZ than in DZ twin pairs. However, pedigree studies showed no other relatives with a motor handicap similar to that of the propositi. This is consistent with a multifactorial cause in at least some of the cases. The sex ratio of affected twins was found to be 2.1 compared to 1.3 for singletons and all 5 affected triplets were boys. The trend of increasing sex ratio with increasing plurality was significant at the 1% level.

Petty CN see **Mahony BS**

Pickens RW, Svikis DS, McGue M, Lykken DT, Heston LL, Clayton PJ: Heterogeneity in the inheritance of alcoholism. A study of male and female twins. Arch Gen Psychiatry 1991 Jan; 48(1):19–28

Genetic influence on risk for alcoholism was examined in a US treatment sample of 50 monozygotic (MZ) and 64 dizygotic (DZ) male and 31 MZ and 24 DZ female same-sex twin pairs. For the DSM-III composite diagnosis of Alcohol Abuse and/or Dependence, statistically significant MZ/DZ differences in concordance were found with male, but not female, twins. For specific diagnoses, MZ/DZ differences were found in male subjects for both Alcohol Abuse and Alcohol Dependence, while MZ/DZ differences in female subjects were found only for Alcohol Dependence. The male MZ/DZ concordance difference for composite diagnosis but not for Alcohol Dependence could be accounted for statistically by differences in age of onset between MZ and DZ probands. As with alcohol, differences in MZ/DZ concordance were found for DSM-III composite diagnoses of Other Substance Abuse and/or Dependence with male, but not female, twins. Using Epidemiological Catchment Area data to estimate the population base rates of both alcohol and other substance use disorders allowed for heritability analyses that showed genetic factors to have only a modest influence on overall risk in both sexes (heritability estimates of approximately 0.35 for male subjects and 0.24 for female subjects). However, evidence for heterogeneity in the pattern of inheritance was also found, suggesting forms of alcoholism that may be moderately to highly heritable.

Piggott SM see **Henry CJ**

Pijpers L, Jahoda MG, Reuss A, Sachs ES, Los FJ,

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Wladimiroff JW: Selective birth in a dyzygotic twin pregnancy with discordancy for Down's syndrome. Fetal Ther 1989;4(1):58–60
The discovery of a twin pregnancy by ultrasound at the intake procedure for chorionic villus sampling or amniocentesis is not unusual because of the raised incidence of dizygotic twins at increased maternal age. Since the conception of dizygotic twins is genetically a separate and unrelated event, the risk of abnormalities in each twin is independent, but additive. In advanced maternal age, the risk of chromosomal aneuploidy in one of both fetuses varies between 2 and 6% [1]. This case report discusses the early prenatal diagnosis of twins discordant for Down's syndrome.

Pilka L, Texl P, Veselý J, Ventruba P: [Aspiration of a gestational sac controlled by vaginal ultrasound in multiple pregnancy for the purpose of selective abortion] Zentralbl Gynakol 1990;112(13):849–52 (Eng. Abstr.) **(Ger)**
A case of an infertile married couple by whom the cause of infertility was oligoasthenospermia of man is described. The couple was treated by intrauterine insemination by capacitated spermatozoa in a cycle stimulated by clomiphene. The ultrasonography revealed a pregnancy of triplets. The patient refused a multiple pregnancy and asked for its interruption. As an alternative we proposed the selective abortion by means of an ultrasound-guided aspiration of two gestational sacs. Description of this method and the result are the theme of our paper.

Pino G see **Mele L**

Piton S, Alma A, Marie E, Herlicoviez M, Parmentier JL: [Fetal thoracopagus. Echographic diagnosis at 26 weeks] Rev Fr Gynecol Obstet 1990 Jul–Sep; 85(7–9):483–6 (Eng. Abstr.) **(Fre)**
The authors report on one case of thoracopagus discovered by echography carried out after 26 weeks of amenorrhoea. The pregnancy was terminated therapeutically by hysterotomy when common viscera were identified (heart and liver). Echographic diagnosis during the first part of pregnancy allows evacuation to be carried out by the vaginal approach. The authors summarize the criteria for echographic diagnosis and also the epidemiological and embryological data required for assessing the prognosis.

Podolsky D see **Tysk C**

Pollmächer T, Schulz H, Geisler P, Kiss E, Albert ED, Schwarzfischer F: DR2-positive monozygotic twins discordant for narcolepsy. Sleep 1990 Aug; 13(4):336–43
Narcolepsy runs in families, and recent research has revealed the human leukocyte antigen (HLA) DR2 to be a genetic marker closely associated with the disease. But, as indicated by family studies, other factors contribute to the pathogenesis of narcolepsy. The investigation of monozygotic twins is the most specific research tool for distinguishing between a multigenetic and a multifactorial pathogenetic model. We present clinical and sleep polygraphic data from two pairs of monozygotic twins, and in addition, from some of their first-degree relatives. In both pairs only one twin suffered from the clinical symptoms of narcolepsy/cataplexy. Only in these subjects did night sleep recordings and a multiple sleep latency test reveal both multiple sleep onset rapid-eye-movement periods (SOREMPs) and short mean sleep onset latencies. However, in two of the asymptomatic, HLA DR2+ relatives, short mean sleep onset latencies during the multiple sleep latency test (MSLT) were observed, and one, HLA DR2- relative showed REM sleep two times during the MSLT. Our results strongly favor a multifactorial pathogenetic model for narcolepsy.

Pons JC see **Benifla JL**

Porreco RP, Barton SM, Haverkamp AD: Occlusion of umbilical artery in acardiac, acephalic twin. Lancet 1991 Feb 9;337(8737):326–7
In the acardiac, acephalic twin malformation the normal co-twin is put at risk because of the extra cardiac work-load. Surgical procedures may be hazardous to the mother. We describe a novel approach--the insertion of a helical metal coil to induce thrombosis in the umbilical artery of the acardiac twin--which immediately interrupted flow. The co-twin was delivered at 39 weeks and his neonatal course has been normal.

Porta N see **Boyano T**

Presti C see **Sanchioni L**

Priestley L see **Henry CJ**

Prömpeler HJ, Wilhelm C, Madjar H, Wieacker P, Schillinger H: [Prognosis of triplet pregnancies] Geburtshilfe Frauenheilkd 1990 Sep;50(9):701–9 (Eng. Abstr.) **(Ger)**
31 triplet pregnancies (DG), treated during 1975–1989, were analysed retrospectively. 13 DG (D10) were registered up to the end of the 10th week of pregnancy, 16 (DG) (D16) were intact between the 11th and the 16th gestational week. 3 DG resulted from the reduction of high grade multiple pregnancies. 18 DG (62%) of the initial 29 DG had previously been treated for sterility. The spontaneous foetal loss (DF) in group D10, including the perinatal mortality, amounted to 26% (10 of 39 DF). In one case of this group, a previously vital DF died. In another case, a partial bi-phasic abortion occurred followed by a premature birth of the surviving 3rd DF. The mortality rate in group D16, including the perinatal mortality (4 DF), was 25% (12 of 48 DF). 30 DG were still intact after the 16th week of pregnancy. 2 DG (7%) suffered from EPH-gestosis. In 4 DG (13%) a foeto-foetal transfusion syndrome occurred. 5 DF (6%) had some of the serious malformations. 27 DG were completed. 7 DG (26%) ended before the 32nd gestational week. In 13 DG (48%), a Caesarean section was performed. The perinatal mortality amounted to 11% (9 of the 81 DF) including all the births from the 25th gestational week upwards. On comparing these results with the data in the literature, a significant improvement in the prognosis of DG in recent years can be observed. This is due to the progress in antenatal and neonatal care.

Pruggmayer M, Bartels I, Rauskolb R, Osmers R: [Risk of abortion following genetic amniocentesis in the 2d trimester in twin pregnancies] Geburtshilfe Frauenheilkd 1990 Oct;50(10):810–2 (Eng. Abstr.) **(Ger)**
Though the risk of abortion after amniocentesis in singleton pregnancies is well known, that for twin pregnancies is still unclear. A retrospective study was performed during December 1985 to May 1989 on all twin pregnancies that had undergone an amniocentesis, because of advanced maternal age. Out of the 33 patients aged greater than or equal to 35 years with viable and sonographically normal foetuses at the time of amniocentesis, three aborted spontaneously within 28 weeks of gestation, representing a risk of abortion after amniocentesis of 9.1%; using a cut-off at 20 weeks of gestation, only two patients aborted, giving a risk figure of 6.1%. This is 3.6 times higher than in singleton pregnancies (1.7%). However, to evaluate the procedure-related risk of amniocentesis, the age-dependent spontaneous abortion risk in twin

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pregnancies has to be considered. Accepting a spontaneous abortion risk of 4.5% after 16 weeks of gestation we have to calculate an amniocentesis-dependent risk of 1.6% up to the 20th week of gestation. It is essential, that the obviously higher genetic risk in twin pregnancies and the risk of procedure should be discussed carefully, before a patient with a twin pregnancy is advised to undergo genetic amniocentesis.

Puerto B see **Borrell A**
Pyke DA see **Beer SF**

Q

Queck M, Hitschold T, Berle P: [Breech presentation of the second twin. Effect on early morbidity and perinatal mortality] Geburtshilfe Frauenheilkd 1990 Nov;50(11):856–60 (Eng. Abstr.) **(Ger)**
Twin delivery is often complicated by breech presentation of the second twin. To investigate the influence of breech presentation of the second twin, we reviewed all 259 twin deliveries from the 18,404 deliveries at our institution over 11 years between 1978 to 1989. The neonatal morbidity of the second twin in breech presentation (pH less than 7,15; 1-minute-Apgar less than 7, transfer to newborn hospital) was significantly higher in comparison to vertex presentation of the second twin. A dependence of neonatal morbidity on the time interval was not found. Where the second twin was in vertex presentation, a higher neonatal morbidity rate with increasing interval was seen. No significant differences were noted for neonatal morbidity between vaginal and caesarean delivery by breech presentation to the second twin.

Quesenberry CP Jr see **Selby JV**
Quinn D see **Matthews P**
Quinonez GE see **Katz AM**
Quiroga J see **Reed T**

R

Rädestad A, Thomassen PA: Acute polyhydramnios in twin pregnancy. A retrospective study with special reference to therapeutic amniocentesis.
Acta Obstet Gynecol Scand 1990;69(4):297–300
Acute polyhydramnios in monozygotic twin pregnancy causes severe maternal discomfort and carries a high risk of premature labor. During the years 1980 to 1987, 36 patients with this complication were delivered in Sweden, giving an incidence of 1/20,000 births, or 1/200 twin births. In 18 patients (group A) who were treated with one or more amniotic taps, the delivery was postponed by 2 weeks, as compared with one week in 18 conservatively treated patients (group B). The peri- and neonatal death rate was 47% in group A and 58% in group B. Our own experience is that amniotic taps are safe if the amniotic fluid is removed slowly under prophylactic tocolysis. It gives symptomatic relief to the mother and may postpone labor until the gestational age of the twins is more compatible with survival.

Ragland JD see **Goldberg TE**
Ralston SJ see **Thomas PA**
Rantakallio P see **Moilanen I**
Rao KW see **Watson WJ**
Rauskolb R see **Pruggmayer M**
Rayburn WF see **Fleming AD**
Razzaque A, Ahmed K, Wai L: Twinning rates in a rural area of Bangladesh. Hum Biol 1990 Aug; 62(4):505–14
In this study we investigate the incidence of twin births over a period of 16 years in a rural area of Bangladesh using data from the Demographic Surveillance System of the International Centre for Diarrhoeal Disease Research. Over the study period twinning rates fluctuated between 7.8 and 11.2 per 1000 live births. The twinning rate was strongly correlated with maternal age; the rate for mothers over 35 years of age was about 3 times higher than for mothers younger than 20 years. The variation in twinning rate with maternal age is due to the variation in dizygotic twinning; the rate of monozygotic twinning is almost constant for all ages. Twinning rates were higher in the treatment area than in the comparison area after controlling for maternal age and parity. The rates were lower for monozygotic twinning and higher for dizygotic twinning in the treatment area than in the comparison area. Seasonality was observed for both twins and singletons, but the peak for twinning precedes that for singleton births by more than a month.

Reed T, Fabsitz RR, Quiroga J: Family history of ischemic heart disease with respect to mean twin-pair cholesterol and subsequent ischemic heart disease in the NHLBI twin study.
Genet Epidemiol 1990;7(5):335–47
This study examines the independent and interactive effects of family history scores (FHxS) for the prevalence of ischemic heart disease with plasma lipids and subsequent morbidity and mortality from ischemic heart disease. FHxS were calculated for 514 sets of middle aged male twins who participated in the entry examination of the NHLBI Veteran twin study in 1969–1973. Comparison of the FHxS with the level of plasma total cholesterol and HDL cholesterol (HDLc) paralleled earlier reported findings in young adults; individuals with high total cholesterol in two exams 8–12 years apart had significantly (P less than .01) higher FHxS. The same relationship was noted when using the mean twin-pair cholesterol level at the initial exam when the twins were in their 40s. Using the pair means over two exams as the cotwins aged into their 50s, the association of FHxS with total cholesterol declined and pairs with HDLc persistently in the highest quintile at both exams had significantly (P less than .01) lower FHxS. The changes in the pattern of association of lipid fractions with FHxS with age parallel the reported age decline of total cholesterol as a risk factor for heart disease. Assessment of ischemic heart disease events up to January 1988 revealed a highly significant association (P less than .0001) of later ischemic heart disease events with FHxS. At each level of lipid categorization pairs who later had events had higher FHxS than those without any subsequent heart disease; these differences were significant in all but the low risk lipid groups (low total cholesterol, high HDLc, and low total cholesterol/HDLc ratio). We conclude that FHxS is related to total cholesterol and HDLc but also is an independent predictor of subsequent ischemic heart disease after 14–18 years of follow-up.

Reed T see **Christian JC**
Rees DG see **Henry CJ**
Reidenberg BE see **Barzilai A**
Remberger K see **Nerlich A**
Reuss A see **Pijpers L**
Rice JP see **Allgulander C**
Richards L see **Townsend G**
Richards LC, Townsend GC, Brown T, Burgess VB: Dental arch morphology in south Australian twins.

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Arch Oral Biol 1990;35(12):983-9
Fourth-order polynomials were used to represent dental arch morphology in 29 monozygous and 19 dizygous like-sexed twin pairs, and in 45 unrelated individuals. The polynomial coefficients provided an accurate description of dental arch morphology with the quadratic (chi 2) and quartic (chi 4) terms reflecting arch shape and the linear (chi) and cubic (chi 3) terms summarizing asymmetry. There were no significant differences between the groups in either the quadratic or quartic terms. Values of correlations between polynomial terms indicated that there was no consistent relationship between maxillary and mandibular arch shape or asymmetry. Intraclass correlations between twins suggested that genetic factors contributed to variation in maxillary arch shape and to a lesser extent to variation in mandibular arch shape but not to arch asymmetry.

Riedesel H see **Tysk C**

Riedinger J see **Brockerhoff P**

Riese ML: Genetic influences on neonatal temperament. Acta Genet Med Gemellol (Roma) 1990;39(2):207-13
The genetic contribution to temperament was assessed during the neonatal period in 172 newborn infants from 47 pairs of monozygotic (MZ) and 39 pairs of same-sex dizygotic (DZ) twins. Zygosity was not related to the neonatal temperament variables. Examination of the scores for twin concordance indicated significant within-pair concordance in temperament ratings, but MZ twins were not more like each other than DZ twins. The results suggested that neonatal temperament was influenced by environmental factors. Further analyses indicated that neonatal temperament was influenced by perinatal variables such as birth weight, 1- and 5-minute Apgar scores, and number of days spent in the hospital. It was concluded that there was no clear pattern of genetic influence on neonatal temperament, and that nonshared environmental factors were an important source of variance for temperament during this period.

Riese ML: Neonatal temperament in monozygotic and dizygotic twin pairs. Child Dev 1990 Aug; 61(4):1230-7
To determine if neonatal temperament was influenced by genetic factors, temperament was assessed in 316 newborn twins from 47 pairs of monozygotic (MZ) twins, 39 pairs of same-sex dizygotic (DZ) twins, and 72 pairs of opposite-sex dizygotic twins. The neonatal assessment focused on irritability, resistance to soothing, activity level, reactivity, and reinforcement value. Examination of intraclass correlations for MZ and DZ twins and the results of model-fitting analyses indicated that heritability estimates for neonatal temperament were not significantly different from zero, and that there was substantial environmental influence on neonatal temperament. Specific perinatal indicators of risk were found to account for some of the intrapair differences observed for the behavioral variables. It was concluded that there is no clear pattern of genetic influence on temperament in the neonatal period.

Riggs TW see **Lang MJ**

Riikonen P, Tuominen L, Seppä A, Perkkiö M: Simultaneous hepatoblastoma in identical male twins. Cancer 1990 Dec 1;66(11):2429-31
Identical male twin infants who in 1987 presented with hepatoblastoma at the age of 7 months are reported. Twin B was admitted for investigation due to enlarged liver and spleen. He was found to have an inoperable hepatoblastoma of fetal type and was treated with chemotherapy and local irradiation. However, 7 months after the chemotherapy the tumor recurred. The asymptomatic twin A was examined because of the known familial cases, and he proved to have an identical tumor. He was successfully radically operated on and 2 years after the chemotherapy is still doing well with no evidence of tumor. As the mother and the maternal grandmother had polyps in the colon, quite probably the hepatoblastomas of the twins were associated with familial adenomatous polyposis.

Risquez F, Mathieson J, Zorn JR: Twin pregnancy after diagnosis and treatment of ectopic implantation by retrograde selective salpingography and intraluminal methotrexate injection. Fertil Steril 1990 Dec;54(6):1168-70
In this case report, a patient with a right tubal pregnancy was managed by a new procedure combining retrograde salpingography and local MTX injection. A twin pregnancy occurred shortly after treatment. We conclude that retrograde tubal cannulation may provide an alternative method for the diagnosis and treatment of selected EPs.

Rissanen A see **Turula M**

Robinette CD see **Kumar A**

Robinette CD see **Roy A**

Robinson L see **Grau P**

Rode L see **Orstavik KH**

Rodin A, Key J: Janiceps twins. Ohio Med 1990 Sep; 86(9):666

Rodis JF, Egan JF, Craffey A, Ciarleglio L, Greenstein RM, Scorza WE: Calculated risk of chromosomal abnormalities in twin gestations. Obstet Gynecol 1990 Dec;76(6):1037-41
Genetic counseling concerning the risks of chromosomal abnormalities in twin gestations can be difficult; the risk of amniocentesis is weighed against that of chromosomal abnormalities in either one or both of the twins. Because most twins are dizygotic (each with a risk a priori of aneuploidy), the chance that one of the fetuses is affected is greater than would be expected for a singleton. Only three possibilities would result in either one or both twin's being affected: 1) dizygotic twins with one fetus affected, 2) dizygotic twins with both fetuses affected, and 3) monozygotic twins with both fetuses affected. Using existing tables of estimated risks of chromosomal abnormalities in singleton gestations and mathematically derived formulas, we created tables defining the age-related risks of chromosomal abnormalities in twin gestations. According to these tables, a patient at 33 years of age with a twin gestation has a risk of Down syndrome in at least one of her twins equivalent to that of a 35-year-old with a singleton. Prenatal genetic testing should be considered for women with twins at a younger age than the traditional 35.

Rose RJ, Kaprio J, Williams CJ, Viken R, Obremski K: Social contact and sibling similarity: facts, issues, and red herrings. Behav Genet 1990 Nov; 20(6):763-78
We consider evidence that shared experience is associated with sibling resemblance and report new analyses of our earlier data to assess the magnitude and meaning of that association. We cite recent Swedish studies of early separated twins and present new data from reared-apart twins in Finland. Results of these analyses confirm our earlier conclusion that, for some dimensions of personality and life-style, twins who cohabit longer into adulthood and twins who retain closer contact after separation are more alike. Further, new analyses here reported are consistent with our earlier inference that, for

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neuroticism and consumption of alcohol, cotwin differences in contact precede, and causally contribute to, differences in behavioral similarity.

Rosenthal D see **Katz AM**

Ross S see **Eberhard G**

Roussis P see **Jeanty P**

Roy A, Segal NL, Centerwall BS, Robinette CD: Suicide in twins. Arch Gen Psychiatry 1991 Jan; 48(1):29–32

Suicide appears to cluster in families, suggesting that genetic factors may play a role in this behavior. We studied 176 twin pairs in which one or both twins had committed suicide. Seven of the 62 monozygotic twin pairs were concordant for suicide compared with two of the 114 dizygotic twin pairs (11.3% vs 1.8%). The presence of psychiatric disorder in the twins and their families was examined in a subsample of 11 twin pairs, two of whom were concordant for suicide. Eleven of these 13 twin suicide victims had been treated for psychiatric disorder, as had eight of their nine surviving cotwins. In addition, twins in 10 pairs had other first- or second-degree relatives who had been treated for psychiatric disorder. Thus, these twin data suggest that genetic factors related to suicide may largely represent a genetic predisposition for the psychiatric disorders associated with suicide. However, they leave open the question of whether there may be an independent genetic component for suicide.

Rufo Campos M, López Barrio AM, Gómez de Terreros I: [Multicystic encephalomalacia in twins: echographic diagnosis] An Esp Pediatr 1990 Dec; 33(6):579–81 (18 ref.) **(Spa)**

Runge HM, de Gregorio G, Hillemanns HG: [Cesarean section in multiple pregnancy especially with triplets and quadruplets--preparation and execution] Z Geburtshilfe Perinatol 1990 Sep–Oct;194(5):214–8 (Eng. Abstr.) **(Ger)**

The frequency of multiple pregnancies has increased in perinatal centers during the last years. The result is a rise in perinatal risk. Because of prematurity and abnormal presentations and positions, cesarean section rate is high in this group. This paper discusses the intra- and perioperative problems that may occur in cesarean section of multiple pregnancies, advices are given for perioperative management. In the discussion of surgical techniques, the amnion preserving incision according to Hillemanns is described as a reliable procedure, especially in multiple pregnancies combined with prematurity.

Rye PH see **Dickey RP**

S

Sääf J see **Eberhard G**

Sachs ES see **Pijpers L**

Sadovsky E see **Younis JS**

Saini J, Morgan JB, Teale D, Kovar IZ: Twin very low birth weight infants: a study of nutritional and hormonal status. JPEN J Parenter Enteral Nutr 1990 Nov–Dec;14(6):657–9

Nonidentical twin male infants (twin 1,950 g birth weight, twin 2,970 g) had their nutritional and hormone status studied for up to 59 days. Both infants received parenteral nutrition up to 32 days postnatally; enteral feeding was then established in twin 1; in twin 2 parenteral feeding was recommenced on day 35, for the remainder of the study. Serial 72-hr metabolic balances were performed in both infants at 4, 32, 45, and 56 days postnatally. Insulin-like growth factor I (IGF-I) and growth hormone were assayed on day 2 of each balance. During the course of the study growth was similar in each infant. Overall mean daily energy intakes were 90 kcal/kg/day and 84 kcal/kg/day and percentage nitrogen retention was 62% and 55% in twin 1 and twin 2, respectively. No differences were observed between the two infants in IGF-I or growth hormone. Despite low energy intakes incremental weights were within an acceptable range for both infants.

Saint Léon M see **Benifla JL**

St George-Hyslop PH see **Kumar A**

Saliaeva MV see **Kniazev IuA**

Samn M, Lewis K, Blumberg B: Monozygotic twins discordant for the Russell-Silver syndrome. Am J Med Genet 1990 Dec;37(4):543–5

Russell–Silver syndrome is a disorder of unknown cause. A number of familial cases have suggested autosomal dominant inheritance. We report on monozygotic twins discordant for the Russell–Silver syndrome. Our findings suggest that the cause of Russell–Silver syndrome is not explained entirely by genetic factors. The possible role of the intrauterine environment as an etiologic component of Russell–Silver syndrome is discussed.

Sampson J see **Thornton JG**

Samra JS, Hampton N, Fitzgibbon MN, Obhrai MS: The second twin [letter] Lancet 1990 Oct 6; 336(8719):883

Sanchioni L, Presti C, Morotti R, Zuliani G, Kustermann A, Buscaglia M, Gandini S: [Twin pregnancy with acephalic acardiac fetus. Anatomo-clinical description of 2 cases] Ann Ostet Ginecol Med Perinat 1990 May–Jun; 111(3):174–80 (Eng. Abstr.) **(Ita)**

Two cases are reported of acardiac–acephalic twin pregnancy, a rare malformation of multiple gestations with large placental vascular anastomosis. In both cases, respectively 25 and 30 weeks of gestation, ultrasound scan revealed a first normal fetus and a nonviable twin without cardiac activity and head, but increasing in size at serial scans. The authors describe the obstetric management, the Rx details and the anatomo-pathological findings emphasizing the analogies between the two acardiac fetuses.

Sanders R see **Casanova MF**

Sapronenkov PM: [HLA antigens in monozygotic twins with the concordance of appendicitis and complicated duodenal ulcer] Klin Med (Mosk) 1990 Jun;68(6):128–9 **(Rus)**

Sargent SK, Young W, Crow P, Simpson W: CT amniography: value in detecting a monoamniotic pair in a triplet pregnancy. AJR Am J Roentgenol 1991 Mar;156(3):559–60

Sasaki H see **Kawasaki Y**

Sauder DN see **Katz AM**

Savard R, Bouchard C: Genetic effects in the response of adipose tissue lipoprotein lipase activity to prolonged exercise. A twin study. Int J Obes 1990; 14(9):771–7

Our laboratory has reported large inter-individual differences in the metabolic response of adipose tissue to prolonged exercise in humans. The present study investigated the contribution of heredity in the metabolic changes of adipose tissue to prolonged exercise in 11 monozygotic and 10 dizygotic pairs of male twins, 18 to 27 years of age, studied immediately before and after a 90 min bout of exercise. The sum of 7 skinfold thicknesses and percent of fat from underwater weighing were used as body fat indicators (BFI). Subcutaneous adipose tissue was excised and fat cell weight (FCW) determined. The activity of adipose tissue lipoprotein

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lipase (LPL) released with heparin was also measured. BFI and FCW were identical in both types of twins. As previously reported, LPL activity was increased by exercise (P less than 0.01) in both type of twins. The changes observed for LPL activity were more similar in monozygotic twins than in dizygotic twins resulting in a significant level of inheritance (P less than 0.05). A genetic component for LPL activity supports the hypothesis that adipose tissue LPL could be genetically determined not only in its basal activity but also in response to stresses such as exercise.

Scaglione L see **Mele L**

Schapiro MB see **Kumar A**

Schats R, Jansen CA, Wladimiroff JW: Asynchronous appearance of embryonic cardiac activity in multiple pregnancies following in-vitro fertilization [letter] Ultrasound Med Biol 1990;16(7):728-30

Schatteman E see **Van den Veyver IB**

Schiff D see **Weston PJ**

Schiff R see **Schlessel JS**

Schillinger H see **Prömpeler HJ**

Schlessel JS, Brown WT, Lysikiewicz A, Schiff R, Zaslav AL: Monozygotic twins with trisomy 18: a report of discordant phenotype. J Med Genet 1990 Oct;27(10):640-2

The predicted incidence of liveborn monozygotic trisomy 18 twins is one per million births. The first case of liveborn monozygotic trisomy 18 twins was reported in 1989 and we report a second case in which striking phenotypic discordance existed. The probability of monozygotic trisomy 18 twinning and the mechanisms for phenotypic discordance in trisomic twins is discussed.

Schuh D see **Gaertner HJ**

Schulz H see **Pollmächer T**

Schwarze R see **Gaertner HJ**

Schwarzfischer F see **Pollmächer T**

Scorza WE see **Rodis JF**

Scott P see **Drummond G**

Seba Júnior A see **Zerati E**

Segal N see **Bouchard TJ**

Segal NL see **Bouchard TJ Jr**

Segal NL see **Roy A**

Seiff SR see **Vestal KP**

Selby JV, Newman B, Quesenberry CP Jr, Fabsitz RR, Carmelli D, Meaney FJ, Slemenda C: Genetic and behavioral influences on body fat distribution. Int J Obes 1990 Jul;14(7):593-602

Genetic and environmental influences on four measures of body fat distribution - subscapular/triceps ratio (STR), waist/hip ratio (WHR), and regression-adjusted subscapular skinfold and waist circumference indices - were examined in 265 pairs of white male twins, ages 59 to 70 years, who participated in the third examination of the National Heart, Lung, and Blood Institute's Twin Study. Skinfold indices of fat distribution were not highly correlated with indices based on body circumferences (r = 0.26-0.37 for the four possible correlations). After adjustment for overall obesity, the heritability of the adjusted subscapular skinfold index was substantial (h2 = 0.60, P less than 0.001), as were estimates for both subscapular and tricep skinfolds individually. By contrast, heritability of the STR was low and of borderline statistical significance (h2 = 0.24, P = 0.06). Heritability for the WHR (h2 = 0.31, P = 0.07) was also low. Although higher estimates were observed for the adjusted waist circumference index (h2 = 0.46, P = 0.02) and for the component circumferences, these were not clearly due to genetic influences. Among behavioral influences, cigarette smoking was strongly related to the WHR and adjusted waist circumference index (P less than 0.0001). A crude measure of total physical activity was weakly, inversely related to WHR (P = 0.06), and slightly more strongly related to the adjusted waist circumference index (P = 0.01). Skinfold indices were unrelated to either behavior. We conclude that: (1) skinfold indices measure a different dimension of fat distribution than circumference indices; (2) there is evidence for a genetic influence on subcutaneous fat distribution, but less evidence for such an influence on the WHR; (3) behavioral factors appear to be more important in determining the WHR than subcutaneous fat patterning.

Seller MJ: Conjoined twins discordant for cleft lip and palate. Am J Med Genet 1990 Dec;37(4):530-1

Female thoraco-omphalopagus twins were of equal size and had similar abnormalities related to the twinning site. However, one twin was more severely affected and also had cleft lip and palate which the co-twin did not have. The implications of this are discussed.

Sen'kevich OA see **Kniazev IuA**

Seppä A see **Riikonen P**

Seufert R see **Brockerhoff P**

Shah D see **Jeanty P**

Shamir R, Kohn G, Metzker A: Nevus flammeus. Discordance in monozygotic twins. Am J Dis Child 1991 Jan;145(1):85-6

Nevus flammeus has been described as an inherited vascular anomaly. We report two cases of nevus flammeus, each appearing in one of two monozygotic twins. This finding supports the idea that nevus flammeus results from embryologic mishap rather than genetic transmission.

Shapiro E, Fair WR, Ternberg JL, Siegel MJ, Bell MJ, Manley CB: Ischiopagus tetrapus twins: urological aspects of separation and 10-year followup. J Urol 1991 Jan;145(1):120-5

Conjoined twins occur once in 50,000 births. Only 6% of conjoined twins are of the ischiopagus type in which the twins are joined symmetrically at the pelvis and fusion begins at the level of the common umbilicus. The longitudinal axis extends in a straight line in opposite directions and the genitourinary and gastrointestinal tracts are shared. Tetrapus is a subtype in which all 4 lower extremities are present and oriented at right angles to the axis of the common trunk. Two sets of female ischiopagus tetrapus twins were born in 1977 and successfully separated at the St. Louis Children's Hospital in the following year. We describe the genitourinary and associated anomalies, surgical separation and long-term urological followup of these 2 sets of ischiopagus tetrapus twins.

Shekleton P see **Kovacs GT**

Sherer DM, Nawrocki MN, Peco NE, Metlay LA, Woods JR Jr: The occurrence of simultaneous fetal heart rate accelerations in twins during nonstress testing. Obstet Gynecol 1990 Nov;76(5 Pt 1):817-21

A prospective study was performed of 152 pairs of nonstress tests (NSTs) obtained simultaneously from both members of 52 twin gestations. Fifty-seven percent of the total fetal heart rate (FHR) accelerations occurred simultaneously in both twins. Between twins, the incidence of simultaneously occurring FHR accelerations was independent of gestational age, growth discordancy, or the type of placenta. For each twin, the number of FHR accelerations remained constant with increasing gestational age. These results may suggest that tactile communication exists in utero between twins.

Sherer DM, Liberto L, Woods JR Jr: Preoperative

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sonographic diagnosis of a unilateral tubal twin gestation with documented fetal heart activity. J Ultrasound Med 1990 Dec;9(12):729-31

Shimizu Y see **Kawasaki Y**

Siegel B see **Vukicevic J**

Siegel MJ see **Shapiro E**

Silberg JL, Heath AC, Kessler R, Neale MC, Meyer JM, Eaves LJ, Kendler KS: Genetic and environmental effects on self-reported depressive symptoms in a general population twin sample. J Psychiatr Res 1990;24(3):197-212

To determine the etiology of self-reported depressive symptoms and their co-occurrence in the general population, multivariate genetic models were fitted to the responses of 771 female twin pairs (463 MZ, 308 DZ) to a 20-item epidemiological depression inventory (CES-D scale). A model which contained one common genetic factor, one shared environmental factor, and four unique environmental factors provided a useful account of symptom covariation. Under this model, the four non-shared environmental factors explained the largest proportion of variance in response to the CES-D scale, whereas a single common genetic factor explained substantially less of the variation in symptomatology. Consistent with previous findings (Kendler, Heath, Martin, & Eaves, Archives of General Psychiatry 43, 213-221, 1986) shared environmental influences were found to play a relatively minor role in the report of depressive symptoms. These results suggest that while genetic factors do contribute to the covariation among symptoms of depression, it is the largely non-shared environmental factors that account for the co-occurrence of symptoms in the general population.

Simoni G see **Brambati B**

Simpson W see **Sargent SK**

Sinclair DB see **Weston PJ**

Skarpa D see **Barisic N**

Slemenda C see **Selby JV**

Slevin NJ see **Logue JP**

Smith GC see **Munro JM**

Sonnenberg FA see **Georgeson S**

Sperling RS see **Barzilai A**

Spitz L, Capps SN, Kiely EM: Xiphoomphaloischiopagus tripus conjoined twins: successful separation following abdominal wall expansion. J Pediatr Surg 1991 Jan;26(1):26-9

A case of xiphoomphaloischiopagus tripus conjoined twins is reported. Particular emphasis was paid to the large abdominal wall defect that would be produced by separation, and the complications resulting from the use of intraperitoneal Silastic tissue expanders are described. As a result of adequate tissue expansion and the use of a vascularized pedicle graft from the fused limb, primary abdominal wall and pelvic closure was possible without complications of wound healing. The consistent finding of a shared lower urinary tract with one ureter from each infant entering each bladder should be anticipated in this type of twinning.

Spooner SF see **Ashworth MF**

Staessen C see **Bollen N**

Standen GR, Orchard JA, Hutton RD: Wiskott-Aldrich syndrome: fatal consequences of splenectomy in an unrecognised attenuated variant. Br J Clin Pract 1990 Aug;44(8):338-9

Monozygotic twin males with an attenuated variant of the Wiskott-Aldrich syndrome (WAS) are described. Diagnostic features included moderate thrombocytopenia with small platelet size and abnormal platelet aggregation responses, chronic eczema, depressed serum IgM and low isoagglutinin titre. Splenectomy was performed on one twin at age seven years who survived a complicating pneumococcal septicaemia ten days after the procedure, but who succumbed to fulminating infection three years later. The importance of recognising the attenuated variants of WAS is discussed.

Stanley F see **Petterson B**

Steinberg LH, Hurley VA, Desmedt E, Beischer NA: Acute polyhydramnios in twin pregnancies. Aust N Z J Obstet Gynaecol 1990 Aug; 30(3):196-200

This paper reports the experience with acute polyhydramnios complicating twin pregnancies at the Mercy Maternity Hospital for the 10-year and 2-month period from January, 1979 to February, 1989 during which time there were 13 such cases, an incidence of 1 in 4,044 pregnancies. Acute polyhydramnios complicated 1.7% of all twin pregnancies. The perinatal mortality rate was 88.5% and accounted for 16.7% of the perinatal deaths in twins. No major fetal malformations were found. One case of acute polyhydramnios was successfully managed with ultrasonographically guided serial amniocenteses. The management of this rare condition is considered.

Steinhoff MM see **Frishman GN**

Stetten G see **Perlman EJ**

Still K, Kolatat T, Corbett T, Byrne P: Early third trimester selective feticide of a compromising twin. Fetal Ther 1989;4(2-3):83-7

We report successful selective feticide of an anomalous, comprising twin by using intracardiac potassium chloride injection at 26 weeks gestation. This was associated with later delivery and survival of a very low birth weight infant with normal neurodevelopmental follow-up at 2 years. We suggest that selective feticide in such cases may have an important role to play in management.

Sumi T see **Niwa K**

Sunami K, Hayashi N: Prophylactic effects of acetaminophen suppository on febrile convulsions: an epidemiologic and twin study. Jpn J Psychiatry Neurol 1990 Jun;44(2):351-3

Svalander C see **Ahlmén J**

Svikis DS see **Pickens RW**

Sykes B see **Henry CJ**

T

Tabsh K see **Grau P**

Tanimura M, Matsui I, Kobayashi N: Child abuse of one of a pair of twins in Japan. Lancet 1990 Nov 24;336(8726):1298-9

A nationwide survey in Japan on child abuse and neglect revealed that 10% of the victims were products of multiple births. None of the victims who were singletons had multiple-birth siblings, and only in a few cases were both twins abused. The findings indicated that one rather than both of a pair of twins was likely to be abused in Japan. Abuse of both twins was likely when there were serious parental or family problems, whereas abuse of one twin was associated with the child's medical problems or non-home care. There was no instance of abuse of a pair of twins when both were handicapped. Comparisons of the abused twin with the non-abused co-twin and examination of the abuser's attitude to the victim suggested that the difference between twins in their development or in their response to

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parents increased the stress of child-rearing and encouraged favouritism, which resulted in abuse of only one twin. Comparison by parents of children with their siblings may be a common factor in general child abuse because it is a natural thing for parents to do.

Tas RF: [Multiple births in The Netherlands, 1900–1988] Ned Tijdschr Geneeskd 1990 Nov 10; 134(45):2189–95 (Eng. Abstr.) **(Dut)**
There are an estimated 120,000 twins and other multiples (all still alive) in The Netherlands. The age of this population (i.e. a quarter of a million persons, 1.6% of the total population) is slightly lower compared with The Netherlands as a whole. Alterations in the structure of mother's age and birth order can only partly explain the observed changes in multiple birth frequencies. The recent increase may be due to medical treatment of women with fertility problems. In addition dizygotic twin births appear to be largely responsible for the total development in multiple births. The changes in birth patterns which relate to the demographic variables age of mother and birth order, are hardly responsible for the decline of stillbirths, perinatal and infant mortality among twins and other multiples. This improvement can be ascribed mainly to progress in medical care. In spite of this improvement, the differences compared with singles are still considerable: the stillbirth rate for twins and other multiples is 2.5 times that for singles; the perinatal mortality rate and the infant mortality rate are about four times as high. However, in the first few years of life of twins and other multiples the age-specific mortality risk declines at such a rate that as early as the third year after birth there is hardly any difference with respect to the singles.

Taylor SN see **Dickey RP**
Teale D see **Saini J**
Tellegen A see **Bouchard TJ**
Tellegen A see **Bouchard TJ Jr**
Tellegen A see **Lykken DT**
Temple K see **Marini R**

Tenorio G, Whitaker JN: Steroid-dependent postvaricella encephalomyelitis. J Child Neurol 1991 Jan;6(1):45–8
Postinfectious encephalomyelitis is an acute demyelinating illness that usually has its onset 3 to 7 days after the onset of a viral exanthem and has a monophasic course over 2 to 4 weeks. Recurrent bouts of postinfectious encephalomyelitis have been described that have resolved spontaneously or with short courses of steroid therapy. We report a patient who developed a chronic, steroid-dependent encephalomyelitis secondary to a varicella infection at 5 months of age.

Terahata N see **Matsui H**
Ternberg JL see **Shapiro E**
Texl P see **Pilka L**
Theobald TM see **Gleeson C**

Thomas PA, Ralston SJ, Bernard M, Williams R, O'Donnell R: Pediatric acquired immunodeficiency syndrome: an unusually high incidence of twinning. Pediatrics 1990 Nov;86(5):774–7
Surveillance data on incidence of twins among reported cases of pediatric AIDS in New York City are presented. Most pairs are concordant for HIV infection. Three discordant pairs have been described elsewhere. Possible reasons for the association are discussed, including the most likely explanation that twins show symptoms early and are overrepresented in the early years of surveillance of pediatric AIDS.

Thomassen PA see **Rådestad A**

Thornton JG, Sampson J: Genetics of pre-eclampsia [letter; comment] Lancet 1990 Nov 24; 336(8726):1319–20
Tomita T see **Wilson L**

Torfs C: Early identical twin studies [letter] Am J Public Health 1991 Jan;81(1):112–3
Török O see **Bolodár A**

Torrey EF: Offspring of twins with schizophrenia [letter; comment] Arch Gen Psychiatry 1990 Oct; 47(10):976–8
Torrey EF see **Casanova MF**
Torrey EF see **Goldberg TE**
Tóth Z see **Bolodár A**
Tötsch M see **Brezinka C**
Tournaye H see **Bollen N**

Townsend G, Richards L: Twins and twinning, dentists and dentistry. Aust Dent J 1990 Aug;35(4):317–27 (52 ref.)
Comparisons of physical features within identical (monozygous) and non-identical (dizygous) twin pairs have provided valuable insights into the relative contributions of genetic and environmental influences to observed variability. The special nature of the twinning process itself also provides an opportunity to learn more about early human development, including how body symmetry is determined. The mechanisms of twinning, mortality and morbidity in twins, determination of body symmetry including the phenomenon of mirror-imaging, postnatal growth and development of twins, and zygosity determination are discussed. Twin studies with direct relevance to clinical dentistry are reviewed and illustrated by examples from an ongoing investigation of dentofacial morphology in South Australian twins.

Townsend GC see **Richards LC**
Tremblay A see **Bouchard C**
Troielli F see **Mele L**

Trounce JQ, Lowe J, Lloyd BW, Johnston DI: Haemorrhagic shock encephalopathy and sudden infant death. Lancet 1991 Jan 26;337(8735):202–3
In 2 pairs of non-identical twins, haemorrhagic-shock encephalopathy syndrome developed in 1 co-twin while the other died of sudden infant death syndrome. The twin pairs were aged 3 and 4 months, respectively, and no cause was identified. We suggest that stress protein deficiency may underlie both syndromes.

Tsuji H see **Matsui H**
Tsunoda Y see **Kono T**
Tuck-Müller CM see **Perlman EJ**
Tului L see **Brambati B**
Tuominen L see **Riikonen P**

Turula M, Kaprio J, Rissanen A, Koskenvuo M: Body weight in the Finnish Twin Cohort.
Diabetes Res Clin Pract 1990;10 Suppl 1:S33–6
We estimated genetic and environmental variance of BMI among 7245 non-pregnant MZ and DZ pairs of the same sex from the population-based Finnish Twin Cohort. The contributions of additive genetic effects, shared and non-shared environmental effects on age-adjusted BMI-variance were estimated by LISREL structural equation models. Genetic effects contribute 72% in men and 66.4% in non-pregnant women of total variance, while 27.8% of variance among men and 33.6% among women is due to non-shared environmental effects. Shared environmental effects were nonsignificant (0% for women and 0.2% for men). Similar values were obtained for hereditary and non-shared environmental effects, when shared environmental effects were not included in the model. The inclusion of pregnant women did not substantially change

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heritability estimates.

Tysk C, Riedesel H, Lindberg E, Panzini B, Podolsky D, Järnerot G: Colonic glycoproteins in monozygotic twins with inflammatory bowel disease. Gastroenterology 1991 Feb;100(2):419–23
Colonic glycoprotein composition was evaluated in monozygotic twins with inflammatory bowel disease using ion-exchange chromatography. Fifty-three individuals, 12 pairs and 1 single twin with ulcerative colitis and 14 pairs with Crohn's disease, were evaluated. Seven twin pairs were concordant for the presence of ulcerative colitis or Crohn's disease, whereas twin siblings of 10 ulcerative colitis probands and 9 Crohn's disease probands were not known to have inflammatory bowel disease. Content of one chromatographically defined component of colonic mucin, designated HCM species IV, was reduced in both patients with ulcerative colitis (1040 +/- 300 cpm/10,000 cpm total HCM) and their apparently healthy twins (1340 +/- 540 cpm/10,000 cpm total HCM) compared with control subjects (4030 +/- 1,000 cpm/10,000 cpm total HCM). Composition of mucin in Crohn's disease patients and their nonaffected twins was not significantly different than in controls. These observations suggest that altered profiles of mucin glycoprotein may be present before the onset of ulcerative colitis and may be genetically defined. Conversely, it appears that alterations in glycoproteins only are not sufficient to initiate mucosal inflammation.

U

Uauy R, Vega GL, Grundy SM: Coinheritance of two mild defects in low density lipoprotein receptor function produces severe hypercholesterolemia.
J Clin Endocrinol Metab 1991 Jan;72(1):179–87
A family is described in which the probands, twin girls, had severe hypercholesterolemia suggestive of familial hypercholesterolemia (FH). The mother of the twins had normal plasma cholesterol levels, and the father had only moderate hypercholesterolemia. Moreover, low density lipoprotein (LDL) binding studies in cultured fibroblasts and isolated lymphocytes in the parents failed to reveal significantly reduced LDL receptor activity that is typical of FH heterozygotes. Turnover studies of LDL in the parents, however, revealed low fractional clearance rates (FCRs) for LDL. In cultured fibroblasts and isolated lymphocytes from the twin probands, binding of normal LDL was half normal or less. LDL turnover studies in the twins revealed a marked reduction in FCRs for LDL. When the twins were treated with lovastatin, however, FCRs for LDL increased significantly, suggesting enhancement of LDL receptor activity. This finding along with LDL binding studies in the cultured cells infer that the twins did not have homozygous FH. In addition, all family members tested negative for familial defective apolipoprotein-B-100, and LDL isolated from the mother and twins showed normal binding to normal fibroblasts. The overall data suggest that the severe hypercholesterolemia in the offspring was due to inheritance of mild to moderate defects of LDL receptor function from both parents. Although the latter defects could not be detected with certainty by in vitro tests in each parent, they were evident from LDL turnover tests. Coinheritance of these defects apparently produced severe hypercholesterolemia in the offspring.

Ueda T see **Asami N**

Ullmann J see **Harzer W**
Uma R see **Farag TI**
Usha R see **Farag TI**

V

Vaksmann S, Bouchart P, Fonteyne G, Patey-Savatier P, Maunoury-Lefebvre C, Vinatier D, Monnier JC: [Multiple pregnancies. III. Therapeutic, psychologic and social aspects]
J Gynecol Obstet Biol Reprod (Paris) 1990; 19(6):667–76 (76 ref.) (Eng. Abstr.) **(Fre)**
The authors analyse a series of 23 multiple pregnancies (19 triplet pregnancies, 3 quadruplets and 1 quintuplet). The first objective is to fight prematurity. Over and above all use of drugs as tocolytics (beta-mimetic drugs and progesterone) should routinely be advised and as soon as there is any threat of premature labour hospitalisation is needed. Twenty one of the 23 patients had prophylactic cerclage (Shirodkar's stitch). In 77% of the cases respiratory distress in the newborn was avoided by using cortico-therapy. Vaginal delivery can be carried out under certain conditions in triplet pregnancies. If certain precautions are taken there does not seem to be any immediate difference in the post delivery period of these children if they are born vaginally or by caesarean. Perinatal mortality is raised (at 5.6% for triplets and 58.3% for quadruplets). The psychological implications of these pregnancies are important. Problems appear as soon as the diagnosis is made and continue for years afterwards. On the social level, help given by the social services are usually inadequate. If the couples belong to the National Association for Mutual Aid of Parents of Children of Multiple Births, a system of mutual support is available. We recommend that these pregnancies should be looked after by several disciplines. These consist not only of obstetricians, paediatricians, anaesthetists, those who resuscitate together, but also psychologists, dietitians, social workers, community workers and physiotherapists.

Val J see **Boyano T**

Van den Veyver IB, Schatteman E, Vanderheyden JS, Van Wiemeersch J, Meulyzer P: Antenatal fetal death in twin pregnancies: a dangerous condition mainly for the surviving co-twin; a report of four cases. Eur J Obstet Gynecol Reprod Biol 1991 Jan 4;38(1):69–73 (31 ref.)
The outcome of four twin pregnancies with fetal death of one twin during the late second and the third trimester is described. A review of the complications occurring after antepartal fetal death of one twin is presented. A management plan for this rare complication of pregnancy is established.

Vanderheyden JS see **Van den Veyver IB**

Vanderhoof JA see **Hart MH**

van Heusden AM, Bots RS: Delayed interval delivery in a triplet pregnancy; a case report.
Eur J Obstet Gynecol Reprod Biol 1991 Jan 4; 38(1):75–8 (10 ref.)
A case report is presented in which a triplet pregnancy ended in an immature delivery of triplet A at 20 weeks gestation, followed by a successful delay in delivery of 49 days of triplets B and C by means of a cervical cerclage and tocolysis. This is the first reported case in which two living infants could be vaginally delivered after a preceding vaginal delivery of the third infant in a triplet pregnancy.

Van Steirteghem AC see **Bollen N**

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Van Vleck LD see **Gregory KE**
Van Wiemeersch J see **Van den Veyver IB**
Vasavan Nair NP see **Lal S**
Vega GL see **Uauy R**
Ventruba P see **Pilka L**
Verkuyl DA see **Ashworth MF**
Verkuyl DA see **Crowther CA**
Veselý J see **Pilka L**
Vestal KP, Seiff SR, Lahey JM: Congenital ptosis in monozygotic twins. Ophthal Plast Reconstr Surg 1990;6(4):265–8
A case of concordance for unilateral congenital ptosis in monozygotic twins is presented. The literature on genetics and congenital ptosis is reviewed. A heritability index is calculated for congenital ptosis, based on all current twin data including the present report. A value for the heritability index of 0.75 is found, suggesting a strong hereditary influence for congenital ptosis. We conclude that twin data strongly support a transmissable genetic defect as contributing to the development of congenital ptosis.
Viala JL see **Boulot P**
Viken R see **Rose RJ**
Vinatier D see **Vaksmann S**
Vu LC see **Nguyen VH**
Vukicevic J, Siegel B: Pervasive developmental disorder in monozygotic twins.
J Am Acad Child Adolesc Psychiatry 1990 Nov; 29(6):897–900
Monozygotic twin brothers were diagnosed as having pervasive developmental disorder, not otherwise specified (DSM-III-R). They show different levels of cognitive and behavioral impairment, consistent with a greater number of suboptimal pre-, peri-, and postnatal factors present in one of the twins. This case study lends support to the hypothesis that genetic factors are of importance in the expression of a pervasive developmental disorder, but that degree of developmental delay, its severity, and certain clinical features may be determined by nongenetic suboptimal pre-, peri-, and postnatal events.

W

Wahlund B see **Eberhard G**
Wai L see **Razzaque A**
Wakisaka S see **Asami N**
Waserman J see **Lal S**
Watanabe A see **Niwa K**
Waterman R see **Ashworth MF**
Watson WJ, Katz VL, Albright SG, Rao KW, Aylsworth AS: Monozygotic twins discordant for partial trisomy 1. Obstet Gynecol 1990 Nov;76(5 Pt 2):949–51
A 25-year-old primigravida delivered monozygotic twins discordant for multiple anomalies and partial trisomy 1 mosaicism. The phenotype of partial trisomy 1 includes craniofacial, central nervous system, and ocular anomalies. The most likely explanation for these findings is that the translocation occurred after twinning occurred. This observation emphasizes that monozygotic twins are not necessarily genetically identical. They are identical at conception, but subsequent mutation and rearrangement of the genome may cause substantial phenotypic differences.
Wedgwood JF see **Barzilai A**
Weill J see **Facon T**
Weinberger DR see **Casanova MF**
Weinberger DR see **Goldberg TE**
Weissman A, Jakobi P: Triplet pregnancies--are we really doing better? [letter; comment]
Am J Obstet Gynecol 1990 Nov;163(5 Pt 1):1716–7
Weissman A see **Blickstein I**
Weston PJ, Ives EJ, Honore RL, Lees GM, Sinclair DB, Schiff D: Monochorionic diamniotic minimally conjoined twins: a case report. Am J Med Genet 1990 Dec;37(4):558–61
We present the second case of monochorionic diamniotic (MC/DA) conjoined twins. There was minimal conjunction, which was predominantly extrafetal and confined to the periumbilical ventral region. The omphalopagus twins, attached to a single forked umbilical cord, were connected by a shared umbilical hernia containing the ileum of twin B. The only visceral conjunction, located just within the belly of twin A, was midileal with the 2 separate ileums converging toward a short segment of shared muscularis propria and of side-to-side fistulization. Gastrointestinal and musculoskeletal anomalies were present in both twins with severe amyoplasia and arthrogryposis multiplex in twin A. Possible mechanisms underlying this unusual form of MZ twinning are discussed.
Wetterberg L see **Eberhard G**
Whitaker JN see **Tenorio G**
Wieacker P see **Prömpeler HJ**
Wiklund I see **Fischbein S**
Wilhelm C see **Prömpeler HJ**
Williams CJ see **Christian JC**
Williams CJ see **Rose RJ**
Williams R see **Thomas PA**
Wilson L, Tomita T, Braniecki M: Fatal pulmonary hypertension in identical twins with systemic lupus erythematosus. Hum Pathol 1991 Mar;22(3):295–7
Identical twins were simultaneously diagnosed with systemic lupus erythematosus (SLE) at the age of 12. Later, both developed pulmonary involvement of SLE including pleural effusions, pleuritis, and recurrent bronchopneumonia. In their last year of life, their pulmonary condition deteriorated and they died of severe pulmonary hypertension at the age of 20. At autopsy, small to large pulmonary arterial walls were markedly thickened. There was no SLE renal involvement. Pulmonary hypertension in SLE without pulmonary parenchyma involvement is extremely rare, with only 18 such cases reported. This is the first report of pulmonary hypertension observed in identical twins with a similar clinical course. This case may suggest the possible genetic fate of pulmonary involvement of SLE.
Wisser J see **Nerlich A**
Wladimiroff JW see **Pijpers L**
Wladimiroff JW see **Schats R**
Wood PD see **Christian JC**
Wood PL see **Lal S**
Woods JR Jr see **Sherer DM**

Y

Young W see **Sargent SK**
Younis JS, Sadovsky E, Eldar-Geva T, Mildwidsky A, Zeevi D, Zajicek G: Twin gestations and prophylactic hospitalization.
Int J Gynaecol Obstet 1990 Aug;32(4):325–30
The study evaluates the benefit of elective hospitalization in preventing premature deliveries of twin gestations. Three groups of women with twin gestations, having no other complications of pregnancy which could cause premature delivery, were evaluated. The study group was comprised of 43 women who were electively hospitalized between

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30–32 and 36 weeks of gestation. Control group 1 was comprised of 55 women who were not hospitalized but were instructed to rest at home. Control group 2 was comprised of 53 women who were not hospitalized and were not instructed to rest at home. Our results showed that elective hospitalization did not significantly affect the gestational duration or the prematurity rate. However the mean birthweight difference between the study group and the two control groups were 143 +/- 83 g and 205 +/- 84 g, respectively. This result was more significant in multiparous women. The slight increase in birthweight of the hospitalized women compared to the controls, does not seem to justify the cost of hospitalization.

Z

Zajicek G see **Younis JS**
Zaslav AL see **Schlessel JS**
Zeevi D see **Younis JS**
Zemková D see **Lebl J**
Zerati E, Seba Júnior A: [West syndrome in monozygotic twins] Arq Neuropsiquiatr 1990 Sep; 48(3):351–4 (Eng. Abstr.) **(Por)**
The authors report the cases of two identical male twins, 6 months old, with flection spasms. Their EEG were identical, and showed hipsarrhythmia. ACTH was used in daily doses of 2 units during three weeks, and both patients responded well. The spasms ceased three days after beginning treatment with ACTH. At present, treatment is continued with clonazepam.
Zikán J see **Lebl J**
Zimmer EZ, Goldstein I: The occurrence of simultaneous fetal heart rate accelerations in twins during nonstress testing [letter] Obstet Gynecol 1991 Mar;77(3):491–2
Zito M see **Casanova MF**
Zorn JR see **Risquez F**
Zuliani G see **Sanchioni L**

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