

neous intra- and extrauterine pregnancy; (2) interstitial bilateral pregnancy (either simultaneous or not); (3) multiple pregnancy in the same tube; and (4) simultaneous interstitial and ovarian pregnancy. Interstitial bilateral pregnancy appears to be by far the rarest kind of tubal twin pregnancy, apparently only one case having been reported in the literature, and this referring to a non simultaneous pregnancy. A case is now reported that therefore appears to represent the first observation of simultaneous interstitial bilateral pregnancy.

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HYPOTHESIS OF AN OVULAR REGULATION OF PREGNANCY WEIGHT-GAIN

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A retrospective study of 127 twin pregnancies has been carried out, considering the relation between maternal weight-gain and zygosity of the ovum.

(1) At 28 weeks of gestation, the maternal weight-gain distribution goes on according to a bimodal curve, the analysis of which shows that each pike corresponds to one twin-pregnancy variety.

(2) Whatever the considered term might be (28-32-36 weeks), the maternal weight-gain is higher in DZ than in MZ pregnancies, and we have to point out the fact that toxemic pregnancies, in each group, have nothing to do with this difference.

We consider this maternal weight-gain difference as reflecting the known quality difference between MZ and DZ ova. The data lead us to set up the more general, hypothesis, of an ovular regulation factor of the maternal weight-gain, in addition to classic data such as the own fetal weight, its annexes, and maternal diet.

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PHYSICAL AND INTELLECTUAL EVOLUTION OF MZ COTWINS WITH DISCORDANT BIRTH WEIGHT

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Twinning, when MZ twins with discordant weight are involved, constitutes a privileged way for studying delay of growth in uterus, for it may induce a real, almost experimental, intrauterine malnutrition.

A total of 54 MZ twin pairs and 6 sets of triplets have been followed during two years, and the somatic and psychomotor development of these children has been compared.

The study shows a global tendency towards a stabilization of birth differences, which is also found for three common somatic variables, i.e., weight, height, and skull circumference.

Simply considering the quantitative aspect of the evolution of the development quotient, and in spite of the intervention of numerous socioeconomic factors, it may be concluded that the study of psychomotor development shows that the twin with the smallest birth weight is penalized in his further development and may also more easily show physical or psychomotor handicaps.

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TYPE OF TWINNING IN ITS RELATIONSHIP TO NEUROLOGICAL DEFICITS, COGNITIVE ABILITIES, AND BIRTH WEIGHT

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The present study explored the relationships of the following variables as a function of

twinning type and sex: verbal and nonverbal cognitive abilities, birth weight, and minimal brain injury.

A total of 45 (20 MZ and 25 DZ) twins pairs of both sexes were matched with 90 singletons of the same age, sex, and school class. All subjects were Israeli kibbutz born youngsters, and as such were all of the same social background. The following data were acquired for all subjects: period of gestation, type of delivery, birth weight, and physical development after birth. Additional data in the case of the twins: birth order and type of twinning.

All subjects took the Raven Progressive Matrices, the Kohs Blocks (nonverbal intelligence tests), and the verbal scales of the WISC. The Bender-Gestalt test and neurological examinations (including fine motor coordination, gross motor coordination, motor impersistence, associated movements, equilibrium, different sensory functions) were also given in order to detect indications of possible brain injury.

Hypotheses. MZ twins will have more problems of brain injury than DZ twins, as will males more than females. As the result of organic damage, there would be a decrease in verbal and nonverbal abilities, while in the absence of indications of organic damage, the nonverbal abilities will be normal. However, in the twin group there would be a decrease in verbal abilities even in the absence of such indications, on account of a dependent relationship between the twins.

Results. Most of the hypotheses were verified. Within the twin group, patterns of significant correlations were established: birth weight, twinning types, and sex, with neurological problems and achievements in different tests.

Differences in intrauterine environment between singletons and twins and between types of twins are seen as a possible explanation for differences in birth weight, occurrence of brain injury, and therefore as an explanation of differences in some cognitive abilities.

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WEIGHT INCREASE OF TWINS AND SINGLETONS IN THE FIRST YEAR OF AGE

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Weight increase in the first year of age has been studied on a sample of 25 male and 25 female MZ and 25 male and 25 female DZ twin pairs, as well as on a control sample of 60 male and 60 female single newborns from a similar socioeconomic environment and in the same period (1972-1973). Weight increase in twins, both MZ and DZ, has been shown to be 10% lower than in singletons. Up to the sixth month of life the average weights of twins and singletons are significantly different. In the following months, however, the average weight of twins tends to reach that of singletons. This applies to both MZ and DZ twins and to the two sexes.

Heritability has also been estimated and the h^2 value obtained, approximately 60%, shows a relatively high genetic conditioning of weight increase in the first year of age.

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CONGENITAL MALFORMATIONS IN TWINS

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Among 1195 twins born in the Collaborative Perinatal Project, for whom information was available, 219 (18.33%) were found to have malformations, 179 (14.98%) single and 40 (3.35%) multiple. The frequency of malformations among twins was significantly higher than that among singletons from the same population, but the difference was entirely contributed by MZ twins. This holds true for both major and minor malformations. The frequency among Negro twins was higher than among white, and among male twins higher than among female. Twins had more malformations of the central nervous, musculoskeletal, ear,