

# Research in Progress 1974

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Centro Latinoamericano de Parasitología  
y Desarrollo Humano (CLAP)

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**PAN AMERICAN HEALTH ORGANIZATION**  
**Department of Research Development and Coordination**

**WORLD HEALTH ORGANIZATION**

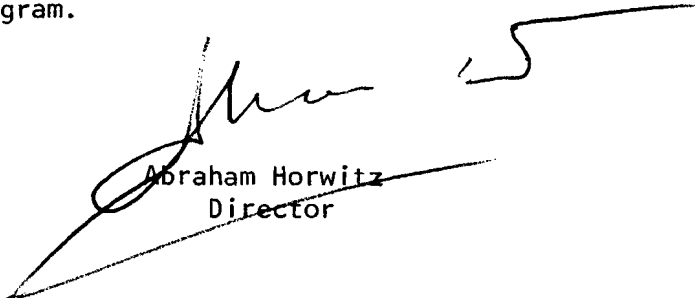
## FOREWORD

In 1961 the Pan American Health Organization established a then quite modest program to support research in biomedical areas of significance to Latin America. In the past 13 years the program has appreciably expanded, both in the size of its financial support and in areas of investigative interest. Much of this expansion may be traced to the increasing interest in biomedical research of the governments of Latin America and the Caribbean, which are becoming ever more aware that the future welfare of their peoples rests on scientific and technologic advances. The development of an adequate research infrastructure has therefore become of great importance in the Americas, and the Organization is pleased that it has been able to further that development.

In addition to advising the governments of the Hemisphere on national research efforts and supporting an increasing number of independent investigators and research teams, the Organization also conducts its own research program. It supports a network of research centers concerned with biomedical problems such as the zoonoses, foot-and-mouth disease, perinatology, nutrition, and health planning, operates a rapidly expanding Regional Library of Medicine and the Health Sciences to coordinate and strengthen the provision of bibliographic and audiovisual materials to the Hemisphere's health workers, two centers on the technology of education in health, sponsors scientific meetings and conferences that present invaluable opportunities for exchanges among specialists in specific fields, and undertakes a sizable scientific publishing program.

The Organization believes, as reflected in the following pages, that it has contributed to foster new knowledge in the health sciences; it also believes that much remains to be done. Thus, in the years ahead, it will give particular attention to priority areas, including the administration and delivery of health services as a system, Chagas' disease, mycotic infections, tuberculosis, venereal diseases, heart disease and cancer, environmental problems, and human reproduction and development.

This volume, compiled by the Department of Research Development and Coordination, summarizes the information available on 154 projects which the Organization is now sponsoring and provides a panoramic view of our research program.



Abraham Horwitz  
Director

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# ESTIMATION OF GESTATIONAL AGE BY CLINICAL EXAMINATION OF THE NEWBORN INFANT

## PROBLEM

The purpose of this study is to develop a quantitative method for the determination of gestational age, using somatic and neurologic parameters of clinical examinations of the newborns.

The method must be painless and easily performed so as to be routinely employed.

## METHOD

A group of newborns with the following characteristics were examined, using 21 parameters of the Dubowitz method: the babies were vigorous at birth (Apgar score > 6) and they were borne of healthy mothers who knew accurately the date of their last menstrual period. All examinations were performed between 12 to 48 hours after birth when there was no depression of the newborn (condition III of the Prechtl classification).

A group of 115 newborns of mothers who had had from 205 to 296 days of amenorrhea at birth was studied. Neonatal weights oscillated between 790 g and 4,500 g.

Data from somatic and neurologic examinations were processed by multiregressional analysis. Parameters not significantly related to amenorrhea were eliminated.

Finally only six parameters, four somatic and two neurologic, were selected. The corresponding regression coefficients were used to establish a quantitative score for each parameter.

All data were processed by computer machine (Digital model PDP12).

## RESULTS TO DATE

Days of amenorrhea (gestational age) were calculated in function of: skin texture, breast size, ear form, plantar creases, scarf sign, and head lag.

The precision of this method was similar to that of Dubowitz with 21 parameters (SE 8, 4 days).

An optional method using only somatic parameters was developed to permit gestational age determinations when neurologic alterations were present.

The accuracy of the method was tested by different members of the staff in another group of 230 newborns; estimations of amenorrhea were made with similar precision to that of the first group.

## SIGNIFICANCE

Knowledge of the newborn's gestational age is extremely useful for the prevention, diagnosis, and treatment of neonatal conditions.

Neonatal mortality and morbidity are directly related to gestational age. The newborn's degree of maturity, per se, determines the type and intensity of care he is to receive. Gestational age is unknown in about 10 to 30 percent of deliveries performed in most centers.

A practical, simple, and inexpensive method to determine gestational age, would be widely used in medical practice.

## PUBLICATIONS

1. Capurro, H. Estimation of the gestational age by the clinical exam of the newborn. Doctoral thesis presented to the School of Medicine, Universidad de la República, Montevideo, Uruguay. Printed and distributed by CLAP, 1973.
2. ----- and G. Lieutier. Estimation of the gestational age by the clinical exam of the newborn. Proceedings of the XIV Argentinian Congress of Obstetrics and Gynecology. October 1973, in press.

## OTHER DATA

Grantee: Dr. Haroldo Capurro, Latin American Center of Perinatology and Human Development, Montevideo, Uruguay.

Funded by: Pan American Health Organization.

Timetable: 1972-1975.