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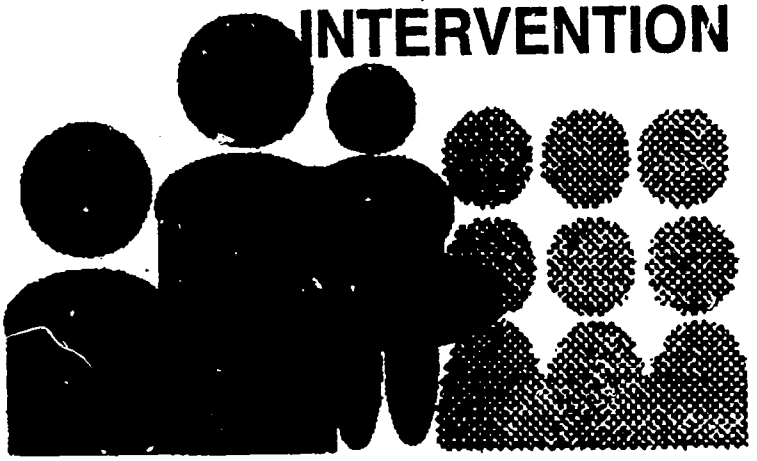
ABSTRACT

Project TIE (Teams in Early Intervention) was conceptualized to meet the need for: (1) involvement of formerly "ancillary" service professionals in early intervention for children with disabilities, (2) high quality family-centered services, and (3) training in the team approach. The project provides training to four groups that might constitute an early intervention team--speech/language pathologists, motor therapists, health care professionals, and family members. The goal of this training module is to have team members understand how health care professionals approach developmental concerns. The module presents reasons for consulting with health care professionals, a framework for effective communication, medical risk factors for developmental problems, the medical work-up of a child with developmental delay, growth parameters, what other team members want from health care professionals, and application of the health care professional's expertise to the Performance Competence Model (which determines how children interact with their environment). The module includes an outline of content in each of these areas and copies of 16 overheads and handouts. (JDD)

TEAMS IN EARLY INTERVENTION



Healthcare Professional Module

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Healthcare Professional Module

TABLE OF CONTENTS

This module was designed to be used in conjunction with the INTRODUCTORY MODULE which includes the background and philosophical framework for the project as well as the essential information needed to use this module effectively. Read the INTRODUCTORY MODULE before using information in this module.

I. REASONS FOR CONSULTING WITH HEALTH CARE PROFESSIONALS (HCP)

CONTENT SUMMARY: Health care professionals may be consulted because of acute medical needs, such as ear infections and sore throats, or for management of chronic health needs, such as seizure control or asthma management. One might also consult a health care professional about medical issues related to a specific disability or to seek a second opinion or more information about a particular diagnosis or treatment plan. Contact with a health care professional may be necessary in order to obtain a prescription or referral for services.

GOAL: Participants will come away with an understanding of how a health care professional might approach a developmental concern. The primary goal of the health care professional is to establish whether the presenting complaint is acute or chronic in nature. Once this is established, a diagnostic work-up can be pursued and a treatment plan initiated.


1


1, 2

A. Presenting Concerns

1. Changes in behavior or deviation of behavior

a. Rule out an acute infectious, pulmonary, neurologic, metabolic, or surgical problem.

b. Neurologic/developmental work-up

c. Possible referrals

2. Motor Delays and Movement Difficulties

a. Rule out acute process

b. Orthopedic/neurologic/developmental/ metabolic work-up

c. Appropriate referrals

3. Feeding Difficulties

   a. Rule out acute process

   b. G.I./neurologic/metabolic/developmental work-up

   c. Appropriate referrals

4. Speech and language difficulties

   a. Rule out hearing loss

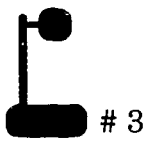
   b. Neurologic/developmental work-up

   c. Appropriate referrals

II. FRAMEWORK FOR EFFECTIVE COMMUNICATION

CONTENT SUMMARY: For the child and family to receive optimum care, effective communication must be established.

GOAL: Participants will understand the role of the medical personnel in the team process.



A. The Evolution of the Medical Role In Early Intervention Services

B. The Medical Team Collaboration with the Family in Caring for the Child

C. The Physician/Nurse Can Provide

1. Interpretation of medical information
2. Medical diagnosis and possible prognosis
3. Etiologic information
4. Anticipatory guidance
5. Information as to how medical diagnosis may relate to specific developmental concern
6. Support

III. MEDICAL RISK FACTORS FOR DEVELOPMENTAL PROBLEMS

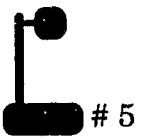
CONTENT SUMMARY: A discussion of prenatal, perinatal and postnatal risk factors that have been related to subsequent developmental problems.

GOAL: Participants will understand the broad etiologic categories that might result in delayed or disordered development.

IV. THE MEDICAL WORK-UP OF A CHILD WITH DEVELOPMENTAL DELAY

CONTENT SUMMARY: The content of a complete medical evaluation of a child with a developmental disability will be discussed.

GOAL: Participants will understand the basic areas covered in the medical evaluation.



A. Perinatal History

B. Medical History

C. Family History

D. Developmental and Growth History

E. Physical Examination

1. General appearance and behavior
2. Growth parameters
3. General physical examination
4. Dysmorphology examination
5. Neurologic examination
6. Vision and hearing screening

V. GROWTH PARAMETERS

CONTENT SUMMARY: The ascertainment of accurate growth data (weight, height, and head circumference) as part of the complete medical evaluation of any child will be discussed, as well as why they are so important. Normal and abnormal growth patterns, both prenatal and postnatal, will be discussed. The accurate measurement of head circumference and the relationship of head circumference to development will be discussed.

GOAL: Participants will understand how growth data is obtained and what variations in growth patterns may indicate.

6 - 14

A. Accurate Growth Data Collection and Plotting

1. Weight and height (standing and supine)
2. Head circumference
3. Plotting the data on growth charts

B. Prenatal and Postnatal Growth

1. Newborn growth charts
2. Growth charts for ages 0-36 months (male and female)
3. Growth charts for ages 2-18 years (male and female)
4. Nellhaus growth charts for head circumference

C. Possible Etiologies of Aberrant Growth and Relationship of Head Circumference to Development.

I. SYNOPSIS OF INFORMATION SHARED IN OTHER GROUPS

GOAL: HCPs will learn the information that was shared by each of the other groups of families and professionals.

CONTENT SUMMARY: A condensed version of the major points covered in the HCP content for the other three groups (OT/PT, SLP, and Families) will be discussed.

 # 1

A. Communication Issues Between The HCP and Families or Other Professionals

1. The "medical model"

 # 2

2. Collaboration with others

3. What the HCP can provide for the team

B. Reasons for Consulting With a HCP

C. Medical Risk Factors for Developmental Problems

D. Medical Work-Up of A Child With Developmental Delay

E. Growth Parameters

II. WHAT DO OTHER TEAM MEMBERS WANT FROM HCPs?

GOAL: HCPs will understand what the other team members need from them in order for the team to work effectively with a child. Participants will collaborate and develop suggestions based on what they learned from the other disciplines.

A. Families

B. Occupational/Physical Therapists

C. Speech/Language Pathologists

III. APPLICATION OF THE HCP EXPERTISE TO THE PERFORMANCE COMPETENCE MODEL

CONTENT SUMMARY: Examples of particular medical issues, such as colic and recurrent otitis media, and how these might interfere with a child's performance and competence will be discussed using the Performance Competence Model. The participants in the HCP group will generate other examples of how medical issues could relate to development using the Performance Competence Model.

GOAL: The Performance Competence Model will be used to understand development as a whole. Particular emphasis will be placed on the possible interference of development by medical issues.

A. Givens

1. Predispositions

2. Basic biological drives

B. Underlying Factors for Producing An Efficient Adaptive Response

1. Internal self-regulatory functions

2. Purposive systems

3. Ability to achieve, change, and maintain a state of arousal

4. Freedom and control of movement

5. Orientation to stimulus

6. Discrimination

7. Attention (or sel ctive attention)

C. Developmental Sequence

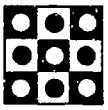
1. Comfort and safety
2. Confidence
3. Risk-taking
4. Competence

D. What We Think, Feel, and Do

1. Spiritual
2. Emotional
3. Intellectual
4. Physical

E. Environment and Culture

1. Quality of life
2. Membership
3. Personal sense of competence



IV. CASE STUDY APPLICATION TO THE PERFORMANCE COMPETENCE MODEL

CONTENT SUMMARY: Participants will discuss specific aspects of three different children's performance in relation to the Performance Competence Model. (See game cards in Introductory Module.)

GOAL: The HCPs will use mini-case studies to practice the use of the model to provide information about the performance of young children for other team members within a common framework.

A. Newborn—A Child Prenatally Exposed to Drugs/Alcohol

B. 1 year old—A Child with Down Syndrome

C. 2 year old—A Child with Delayed Language Development

OVERHEADS

&

HANDOUTS

HCP

Presenting Concerns (acute vs. chronic)	Possible Medical/Organic Causes	Response to Concern When Organic Causes Ruled Out/Parent Perceptions + Responses
-Irritability/lethargy -Hard to console -Sleeping problems -↓ cuddly -colic	-Infectious - meningitis, sepsis -Neurological - autism, FAS, CP, hydrocephalus -Surgical abdomen - intusseuption, volvulus -Pulmonary - pneumonia, FB, asthma -Trauma - skaken baby syndrome -Diet - breast fed, formula, milk intolerance	-Detailed description of circumstances surrounding concerning behavior -Information re: behavior validation of concerns -Anticipatory guidance -Possible referrals: parent support parenting classes/resources family counseling OT for child
-Unusual response to sensory stimuli (slow process, pain)	-R/O visual or auditory deficit -Neurological - autism, CP -Diet	-As above then: further evaluation of development possible referrals: OT/PT early intervention
-Attention (↓'d) -↓ activity level	-Neurological - autism, MR, sensory deficits -Hearing -Vision -Psychological - depressions -Toxins	-Possible referrals: ophthalmology audiology counseling early intervention
-"Too easy" or "too difficult"	-Neurological -Psychological - environmental family	-Referrals: family counseling
-Motor delays	-Neurological - CP, Muscular Dystrophy -Developmental - prematurity -Dysmorphological	-Extensive review of history (has the child been chronically ill?) -Review psychosocial history (child's environment, child neglect or abuse?) -Comprehensive developmental evaluation -Early intervention services -PT/OT

Presenting Concerns (acute vs. chronic)	Possible Medical/Organic Causes	Response to Concern When Organic Causes Ruled Out/Parent Perceptions + Responses
-Muscle tone problems stiffness or floppiness difficulty with head control poor balance poor coordination/awkward	-Neurological - CP, myopathy, neuropathy, hydrocephalus, CNS or spinal cord tumor -Infectious - meningitis -Toxins - lead	-Comprehensive developmental evaluation -Early intervention -PT/OT
-Asymmetry of movement	-Neurological - hemiplegia, neuropathy -Orthopaedic - fracture, joint pain -Infectious - septic joint, osteomyelitis	-PT/OT evaluation -Developmental evaluation
-Toe walking	-Neurological - CP, muscular dystrophy -Orthopaedic - leg length discrepancy, structural abnormality, pain -Rheumatiological - joint pain, swelling	-PT/OT evaluation
-Difficulty with eye-hand coordination	-Neurological -Vision evaluation	-PT/OT evaluation
-Difficulty with self-help skills	-Developmental -Neurological -Vision -Orthopaedic - structural abnormality resulting in ↓'d range of motion	-Comprehensive developmental evaluation -PT/OT
-Feeding difficulties (sucking, chewing, choking)	-Neurological - CP -ENT - structural abnormalities -Gastrointestinal - reflux, dysphagia -Pulmonary - aspiration, asthma infection -Dental - abnormalities, caries	-PT/OT -Speech therapy
-Excessive drooling	-Neurological -ENT - structural abnormality, enlarged tonsils, foreign body -Dental - caries, infections	-Speech therapy -PT/OT
-Picky eater	-Developmental - is it appropriate for developmental age? -Nutrition	-Anticipatory guidance
-Sloppy eater	-Neurological -Dental -ENT	-Speech therapy evaluation -OT evaluation
-Speech difficulties - not talking, hard to understand	-Neurological -Developmental - other areas -Audiological	-Audiological evaluation -Developmental testing -Speech therapy

Medical Risk Factors for Developmental Problems

The following is a list of risk factors associated with an increased risk of later developmental problems. Many children with a history that includes one or more of these risk factors will, fortunately, go on to develop normally.

Prenatal Risks

1. Hereditary Disorders
    a. inborn errors of metabolism (ex.: Tay Sachs, PKU)
    b. single gene abnormalities (ex.: tuberous sclerosis, neurofibromatosis)
    c. chromosomal aberrations (ex.: fragile X, translocations)
    d. polygenic familial syndromes or traits
2. Chromosomal changes including trisomy (ex.: Down Syndrome)
3. Multiple congenital anomalies, brain anomalies
4. Intrauterine infections (ex.: CMV, syphilis)
5. Teratogens, drugs, alcohol
6. Placental insufficiency
7. Fetal malnutrition

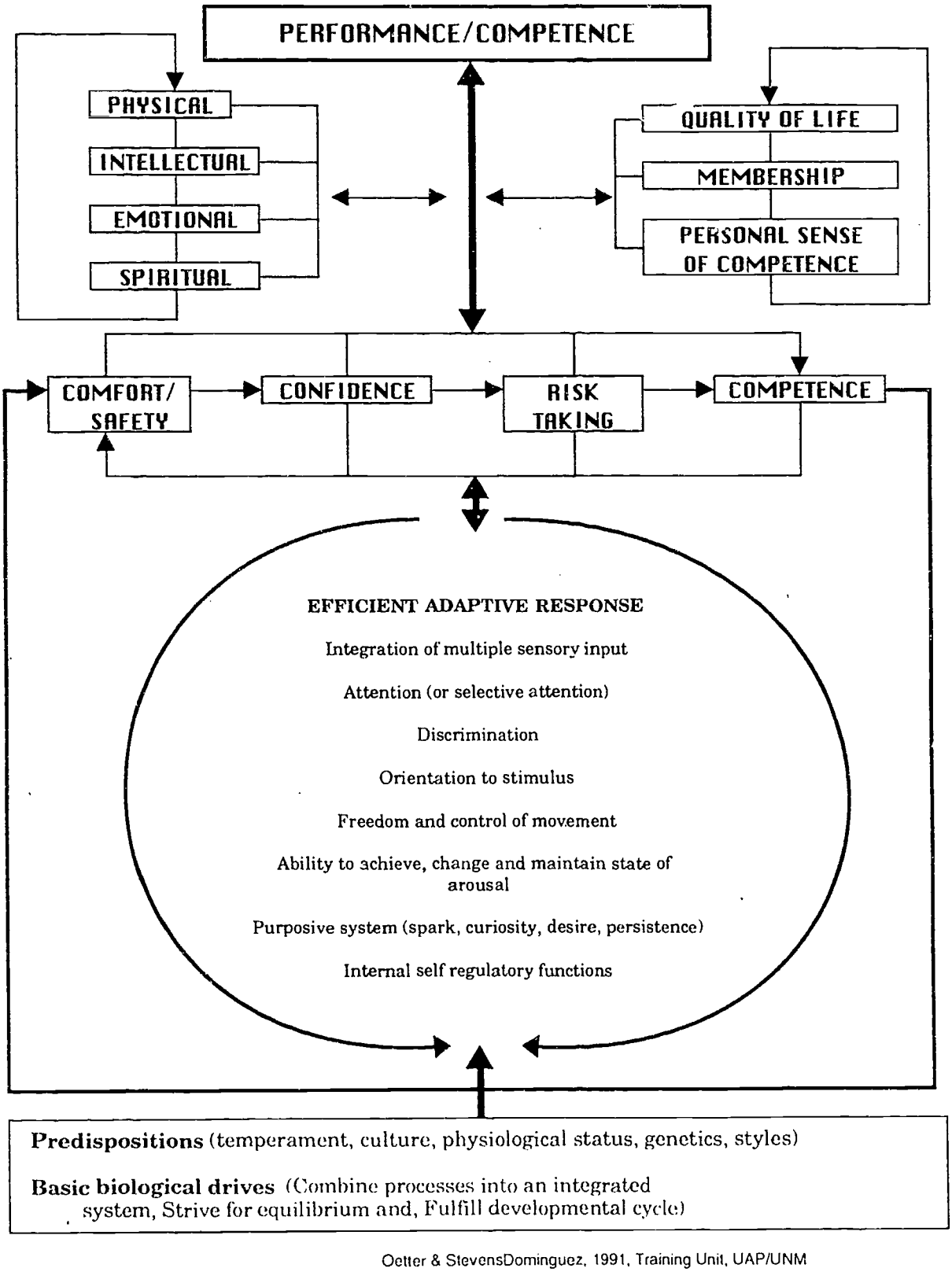
Perinatal Risks

1. Asphyxia, hypoxia
2. Prematurity
3. Infection
4. Metabolic (ex.: hypoglycemia, hyperbilirubinemia, hyperosmolarity)
5. Birth trauma
6. Intraventricular/periventricular hemorrhage

Postnatal Risks

1. Infections (ex.: meningitis, otitis media, pulmonary)
2. Trauma (ex.: motor vehicle accidents, bicycle accidents, child abuse)
3. Asphyxia (ex.: near drowning)
4. Poisoning

Dr. Cate McClain, 1992; UAP/UNM



Oetter & StevensDominguez, 1991, Training Unit, UAP/UNM

Developmental Characteristics, Developmental Concerns and Intervention Guidelines: 0-3

Age Range	Behavior	Developmental Risks: What Can Go Wrong	Assoc. Conditions	Possible Therapy Approaches
Birth to 2 months	Regulation and interest in world Can terminate interaction Shows response to mother's voice Mutual eye gaze Differentiated cry Efficient sucking Primitive reflexes	Lack of self-regulation No mutual eye gaze Lack of response to voice Strange cry/much crying Difficult consoling/poor soothability Resists cuddling Problems with suck/seal	Frematurity Syndromes (Down, Cri du Chat, etc.) Poor vision/poor oculomotor control Poor head control Poor hearing Poor sensory processing	Focus on caregivers' reading and responding to early cues
2 - 4 months	Preferential response to smiles Cooing and gooing Repeats pleasant behavior Can start and stop interactions Tracks objects	Lack of clear cues/lack of affect Lack of sense of preference Minimal vocalization Inability to calm self Doesn't start and stop interactions	As above Intubation/gastrostomy Respiratory distress Deficits in sensory/motor integration Developmental delay Failure to thrive Abuse and neglect	Continue above Health and motor development for facilitating stronger signalling cues
4 - 8 months	Through generalized movements, indicates desire for repetition of activity Reaches toward or moves toward desired object Turns to mother's voice Laugh triggered by touch Babbling/vocal play (increased variety of sounds-influenced by body posture) Variety of facial, gestural expressions Interest/exploration of objects	Minimal/uncoordinated movement Not achieving motor milestones Baby avoids or doesn't respond to touch Lack of/limited sound play Minimal expression of emotion Decreased exploration	As above Begin diagnosing specific motor disorders Parents begin to suspect a problem Otitis media	As above Caregiver begins to follow child's lead Modulate nonverbal expressions and vocalizations (reduce or intensify)
8 - 12 months	Specific means to achieve goals Variety of actions on objects/exploration Joint attention Comprehension of "no" and familiar words Intentional communication for variety of purposes Beginning adult-like intonation Imitates new sounds that are simlar to those already produced Turn-taking routines (verbal/nonverbal) Some imitation of familiar facial expression	Limited exploration of toys Limited intentional communication/few purposes for communication Lack of interest in people or objects Decrease in sound production/imitation of new sounds Noted lack of affect	As above Deafness Blindness Specific communication impairment Questions of possible autistic-like behavior might arise	As above Caregiver follows child's lead Turn-taking routines Verbally code child's intentions Use of simple familiar language (imitation/ expansion) Simple oral activities Positioning for play and vocal interaction

Age Range	Behavior	Developmental Risks: What Can Go Wrong	Assoc. Conditions	Possible Therapy Approaches
12 - 17 months	Refine and integrate 8-12 month activities Directed protests/tantrums Points to desired object Starts to use words to communicate/increase of communicative functions Jargoning May show preference for words that have certain sounds Functional use of objects Initiates routines More sophisticated use of objects to get attention and interact	(Continue issues of 8-12 months) Frequent intense, lengthy tantrums (escalation of tantrums) Overly compliant as compared to others in the culture Failure to follow directions/ failure to understand names Different quality of interactions	Same as above	Same as above
17 - 24 months	Symbolic behavior (play and language) Marked increase of vocabulary Stability of vocabulary Expression of semantic relationships Responds to speech with speech Conventionalized forms of behavior to refer Use of alternative strategies to achieve goals Comprehension of words when referent not present Child can get most messages across Speech simplification strategies (i.e., final consonant delation, syllable reduction, consonant cluster reduction, prevocalic voicing, consonant harmony) Substantial increase in imitation of facial expression	Refining oral motor skills Can't get message across Unintelligible to parents Easily frustrated in communicative attempts Use of unusual or overly frequent use of speech simplification strategies (i.e., deletion of initial consonants, vowel distortion, glottal replacement, backing) Inconsistency in articulatory production Limited vocabulary Slow speed in learning vocabulary Not using a variety of semantic relationships Doesn't follow directions Extreme "shyness"	Specific language disorder Dyspraxia Motor speech disorder Speech sound disorder/ phonological process disorder	Can continue earlier strategies More structured activities designed to meet goals (in context of play); create opportunity to use targeted language and speech sounds Specific language teaching strategies (imitation, expansion, parallel, talk, waiting, modeling) Need direct involvement of speech pathologist Possibility of joint treatment

Age Range	Behavior	Developmental Risks: What Can Go Wrong	Assoc. Conditions	Possible Therapy Approaches
2 - 3 years	Beginning reference to past and immediate future Development of play events that are of less frequent experiences or in which child was not an active participant Development of play sequences Increasing sentence length Asks and answers what, where, who...doing questions Use of morphological markers and auxiliary verbs Adult speech can inhibit child's action Beginning associative play	Doesn't play like other children Doesn't interact with other children Maintains "baby-talk" Doesn't understand questions Unintelligible	Same as above Autistic/"autistic-like"	Same as above

Sources: Cohen & Donnellon, 1987
Dunst, 1980
Greenspan & Greenspan, 1985
Khan & Lewis, 1986
Patterson & Westby, in press
Schlefelbusch, 1980
Westby, in press

Westby & Laurel, 1992, Training Unit, UAP/UNM

Diagnosis

Prognosis

Interpretation

Anticipatory Guidance

Support

Medical Risk Factors for Developmental Problems

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3. Infection
4. Metabolic (ex.: hypoglycemia, hyperbilirubinemia, hyperosmolarity)
5. Birth trauma
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1. Infections (ex.: meningitis, otitis media, pulmonary)
2. Trauma (ex.: motor vehicle accidents, bicycle accidents, child abuse)
3. Asphyxia (ex.: near drowning)
4. Poisoning

Dr. Cate McClain, 1992; UAP/UNM

Medical Evaluation

A. Perinatal History

B. Medical History

C. Family History

D. Developmental History

E. Physical Examination

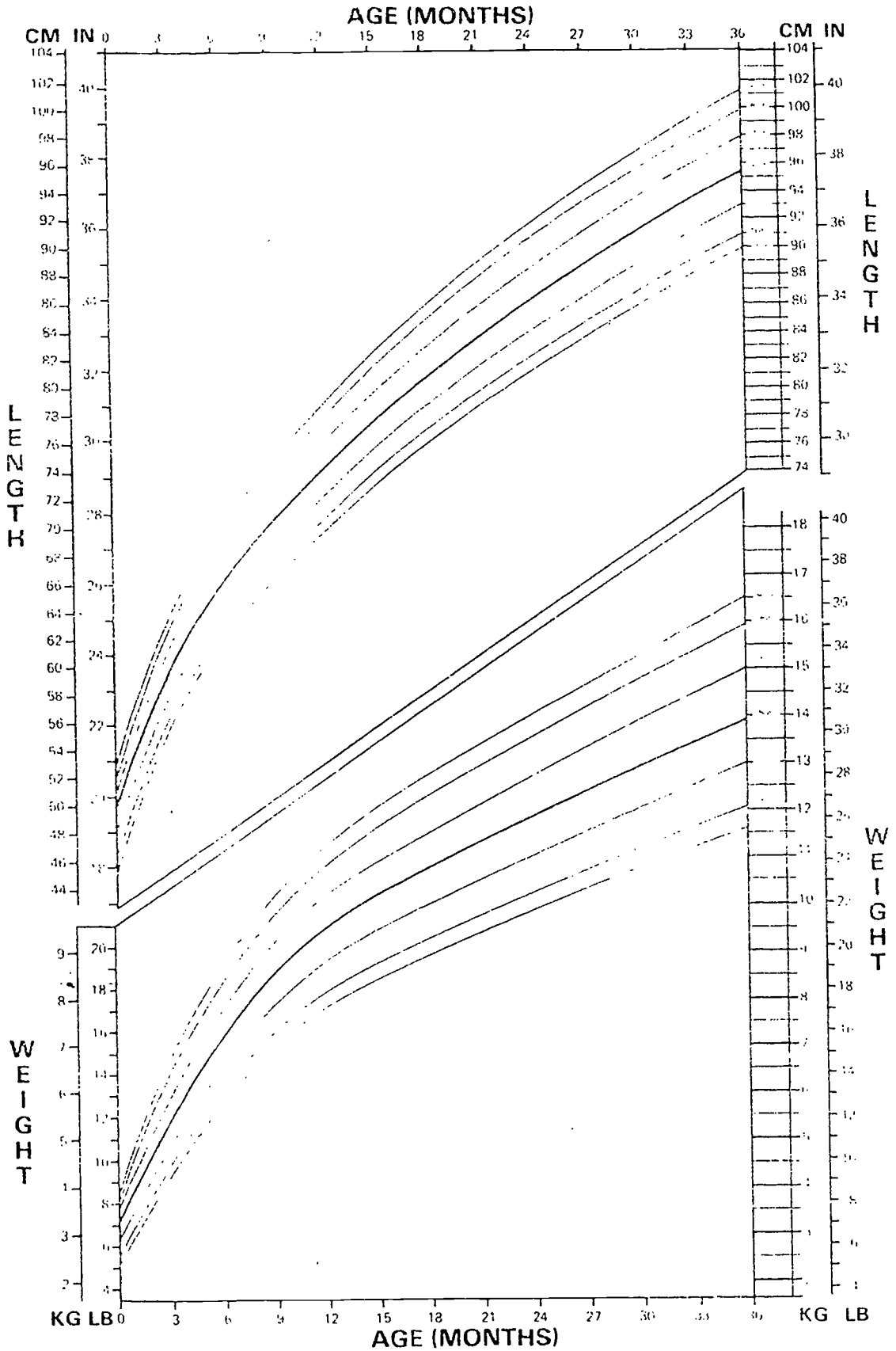
1. General appearance and behavior
2. Growth parameters
3. General physical examination
4. Dysmorphology examination
5. Neurologic examination
6. Vision and hearing screening

GIRLS BIRTH TO 36 MONTHS
WEIGHT FOR AGE & LENGTH FOR AGE

NAME _____ RECORD # _____

6

HCP



Date	Age in Months	Recumbent Length	Weight	Head Circumference

Date	Age in Months	Recumbent Length	Weight	Head Circumference

BOYS BIRTH TO 36 MONTHS

LENGTH FOR AGE & WEIGHT FOR AGE

NAME _____ RECORD# _____

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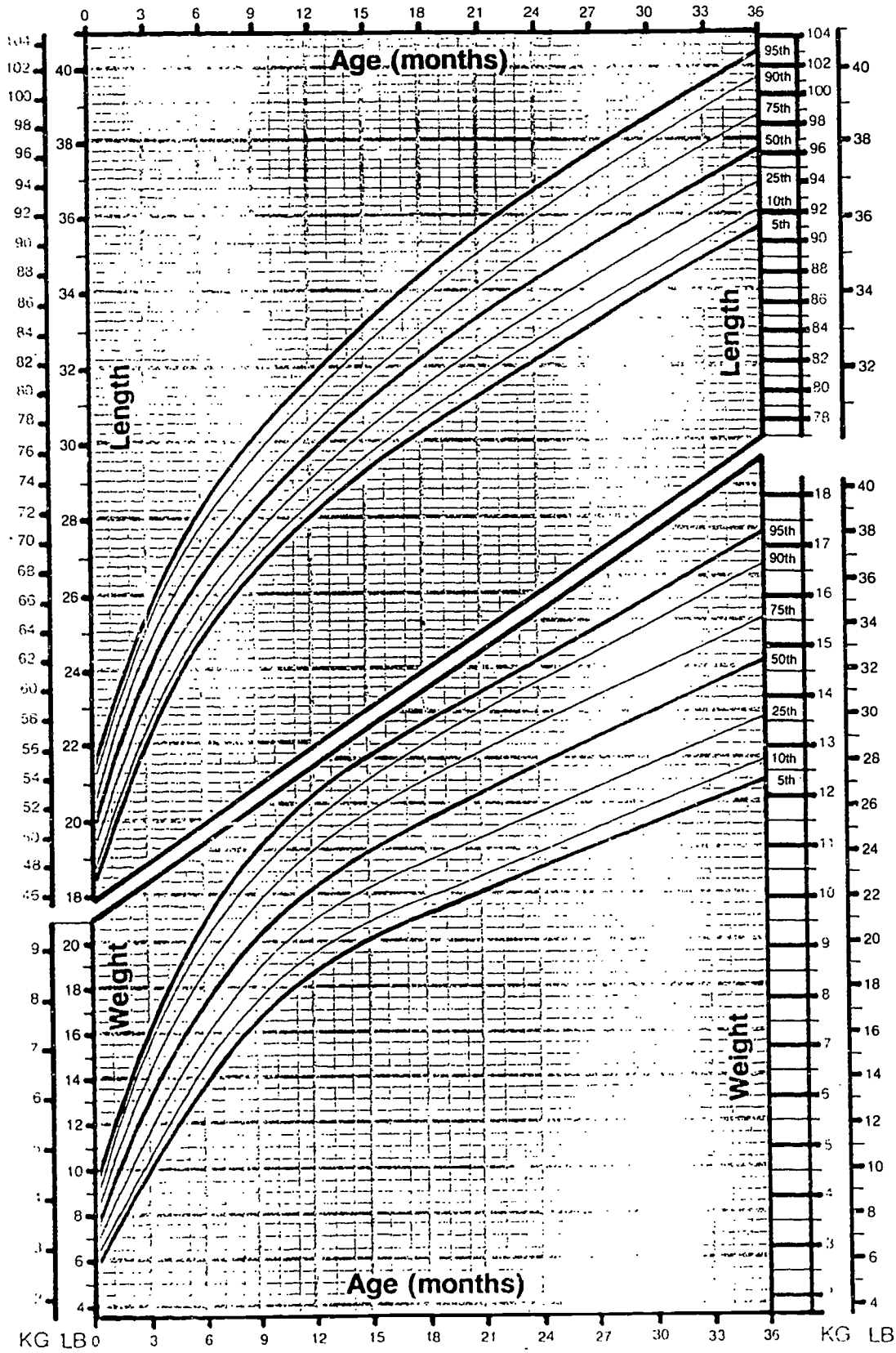


Department of Health, Education, and Welfare, Public Health Service
Health Resources Administration, National Center for Health Statistics, and Center for Disease Control

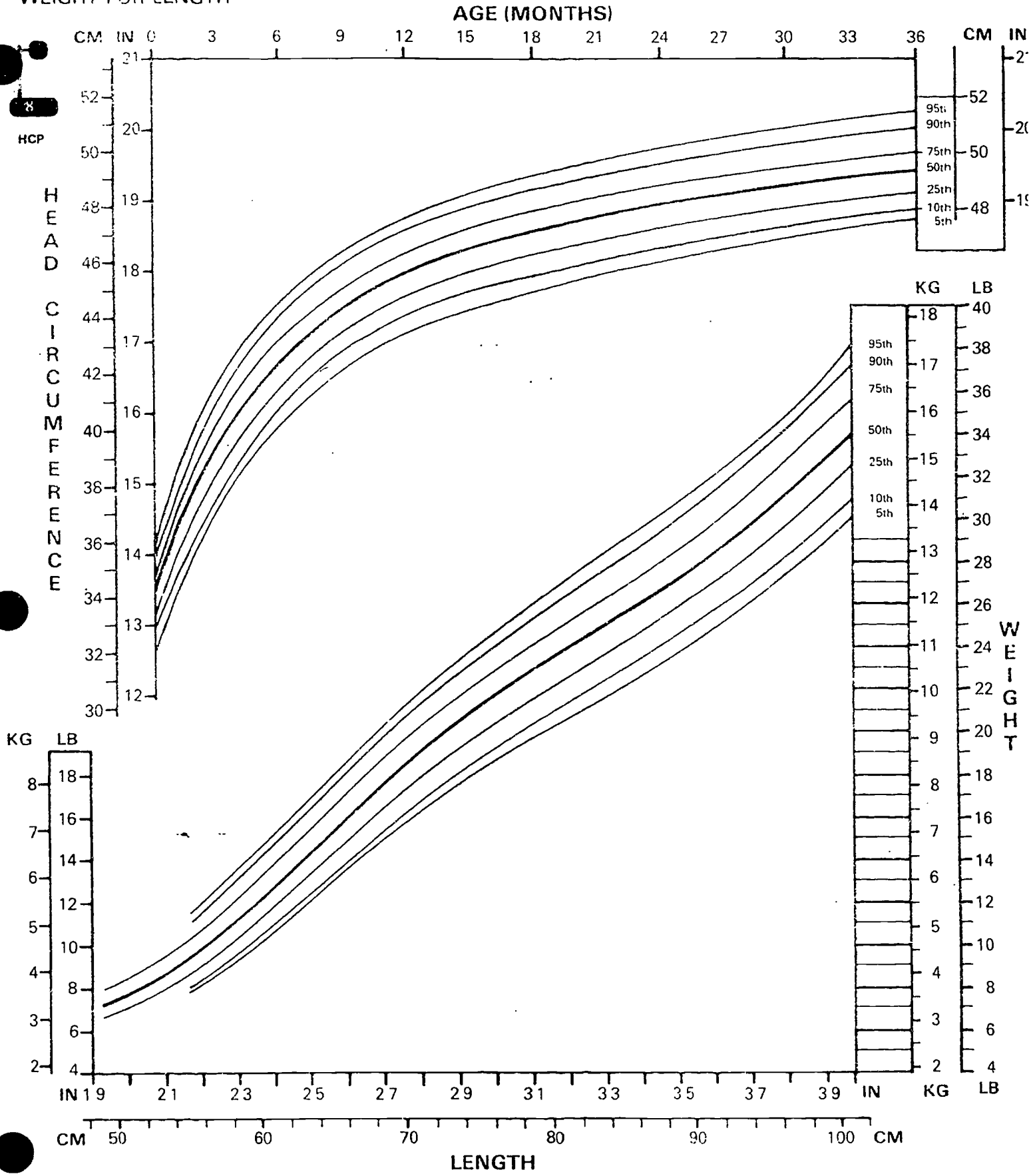
Date	Age in Months	Recumbent Length	Weight	Head Circumference

Date	Age in Months	Recumbent Length	Weight	Head Circumference

GIRLS: BIRTH TO 36 MONTHS

HEAD CIRCUMFERENCE FOR AGE &
WEIGHT FOR LENGTH

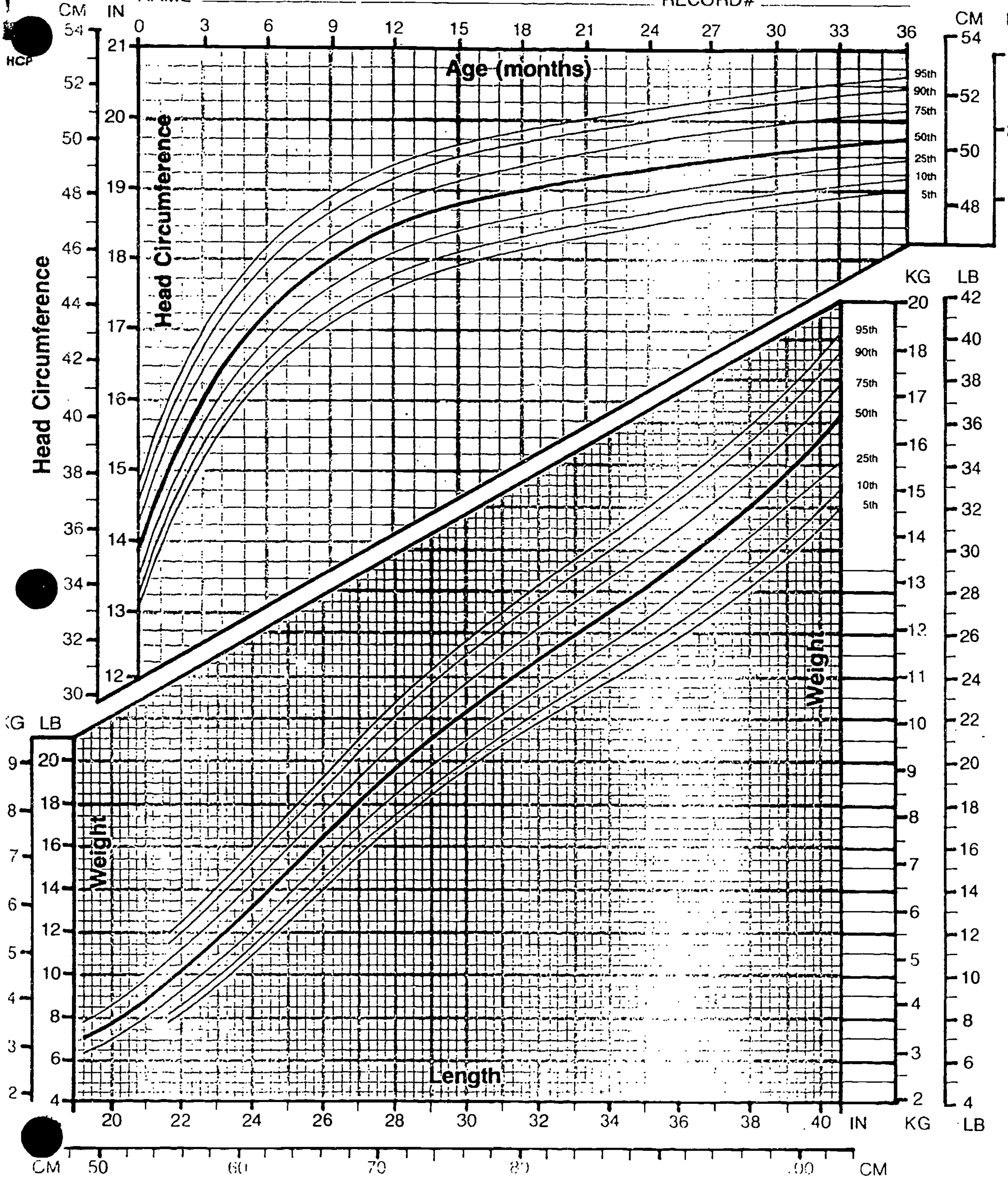
NAME_____ RECORD#_____



BOYS FROM BIRTH TO 36 MONTHS

HEAD CIRCUMFERENCE FOR AGE & WEIGHT FOR LENGTH

NAME ______________________ RECORD# __________



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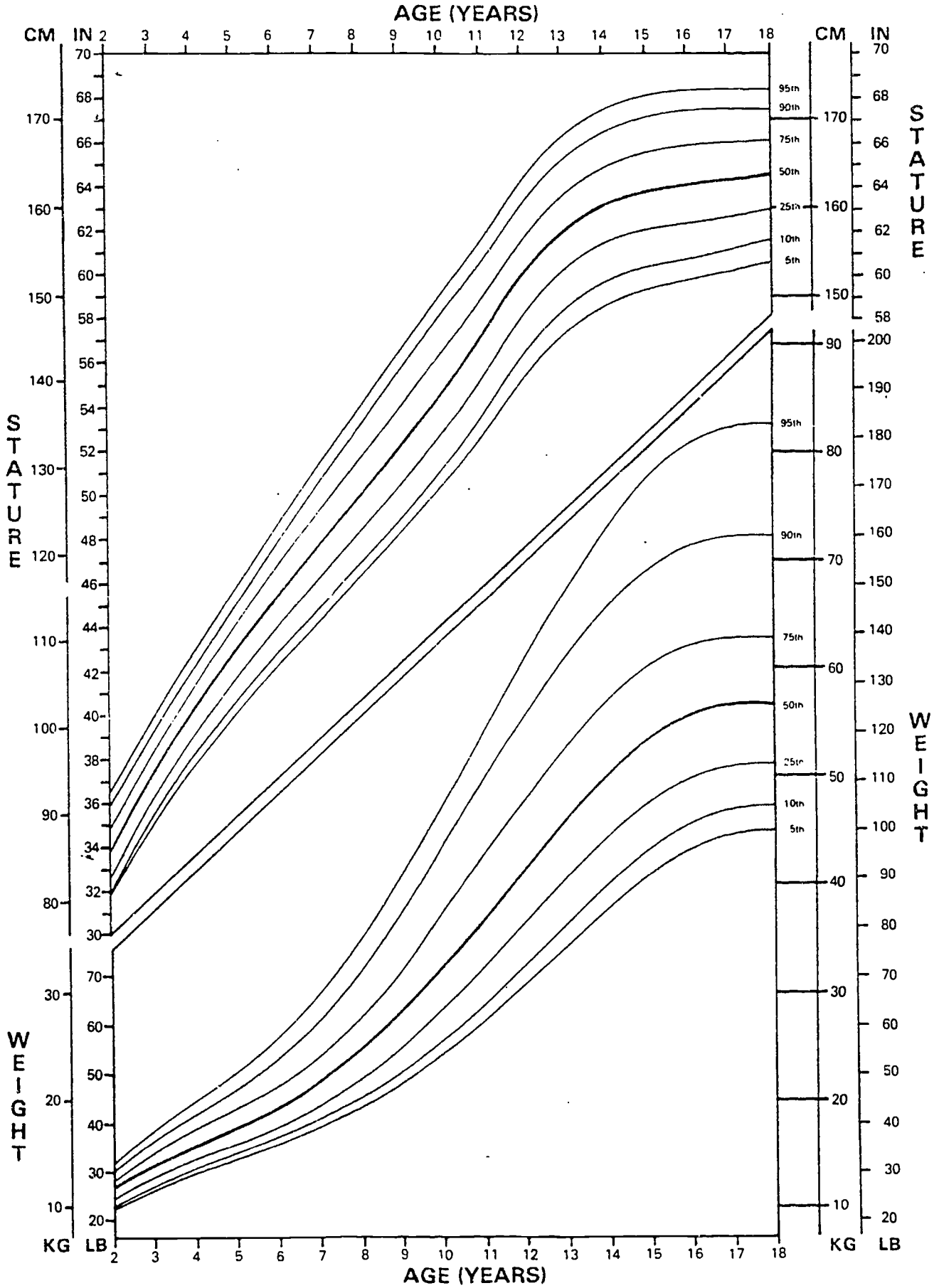
GIRLS: 2 TO 18 YEARS
STATURE FOR AGE & WEIGHT FOR AGE

NAME _____

RECORD # _____



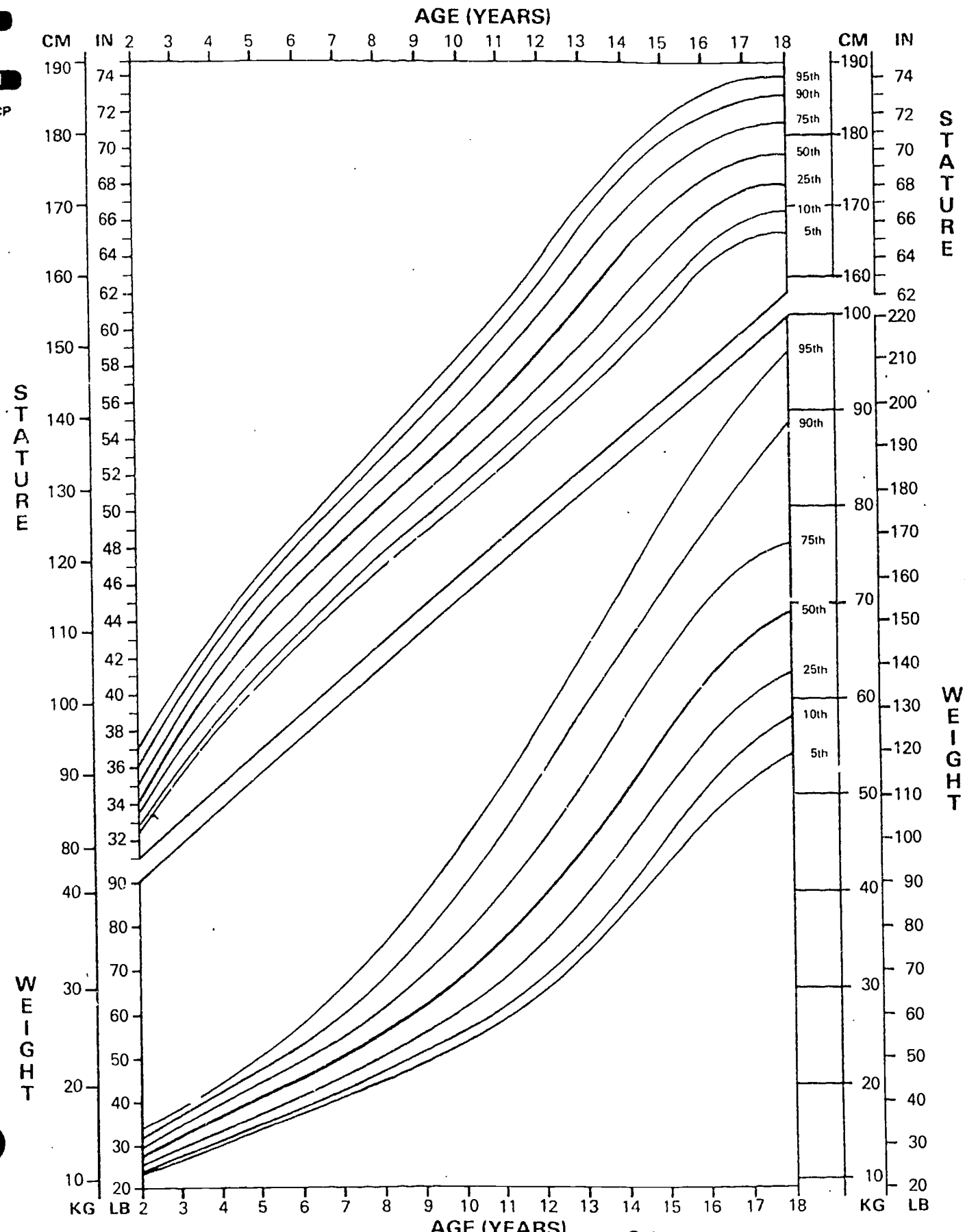
Department of Health, Education and Welfare, Public Health Resources Administration,
National Center for Health Statistics and Center for Disease Control

BOYS: 2 TO 18 YEARS

STATURE FOR AGE &
WEIGHT FOR AGE

NAME _____

RECORD # _____



HCP

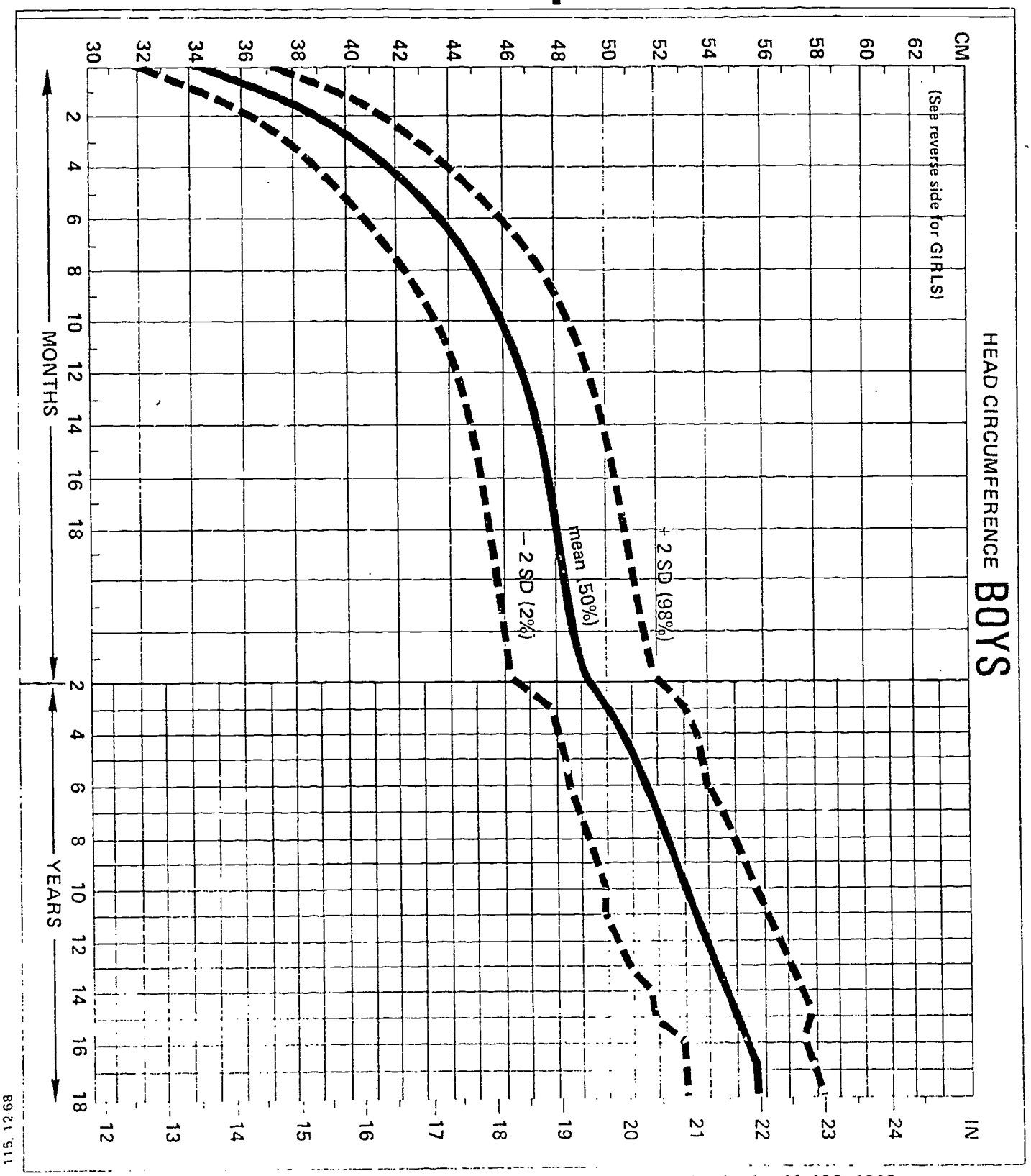
Department of Health, Education, and Welfare, Public Health Service
Health Resources Administration, National Center for Health Statistics, and Center for Disease Control

Name _____

Birth Date _____

Notes:

PATIENT INFORMATION:



Ref: NELLHAUS, G., Composite International & Interracial Graphs, Pediatrics 41:106, 1968

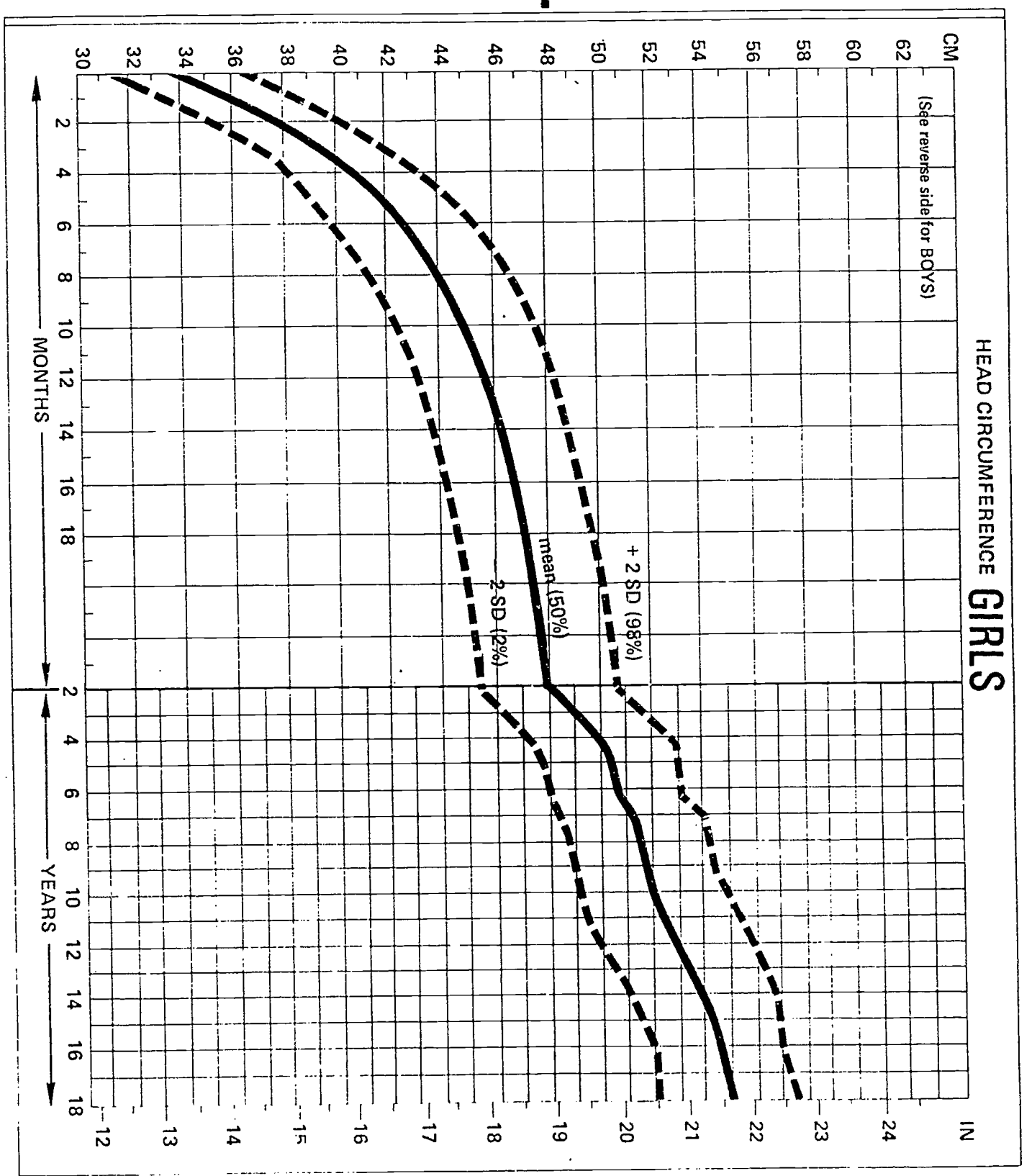
Name _____

Birth Date _____

Notes:

PATIENT INFORMATION:

HCP



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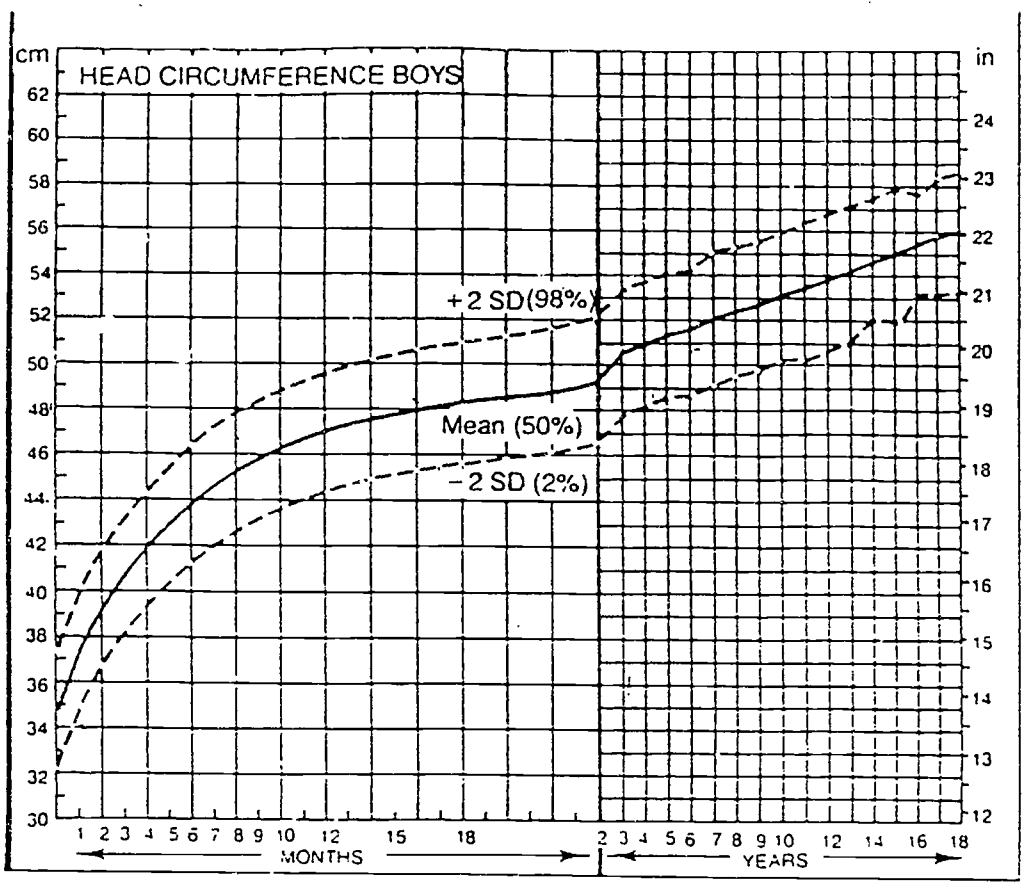

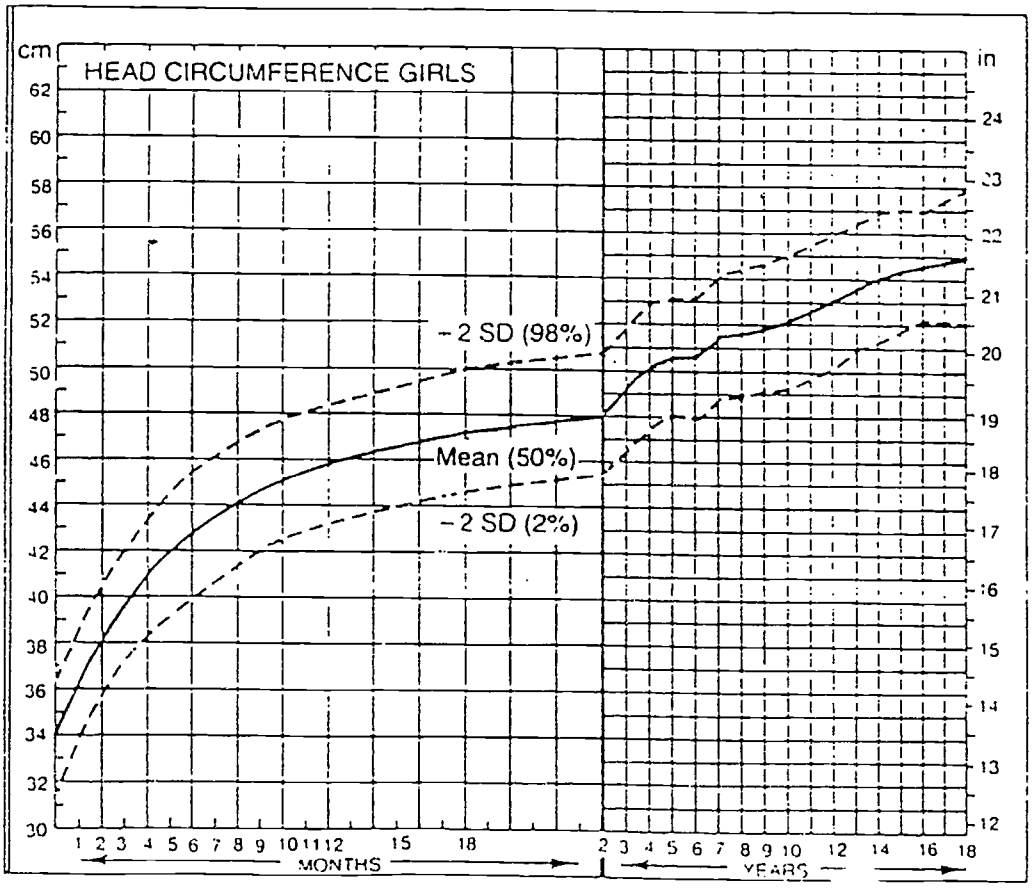

e 7–9. Head circumferences. (From Nellhaus, G · Pediatrics, 41:106, 1968. University of Colorado Medical er Printing Services.)